ABBREVIATED SITE CHARACTERIZATION REPORT (SCR)

FACILITY I.D. NUMBER 51-115577
TANK NO. 056A, SCHUYKILL RIVER TANK FARM
3144 PASSYUNK AVE.
PHILADELPHIA, PA

Prepared on Behalf of:
Philadelphia Energy Solutions Refining and Marketing LLC (PESRM)

Prepared By:
Ramboll US Consulting, Inc.

Date:
April 2023

Incident Number:
57902

Project Number:
1690028299

Version:
01

RAMBOLL

PROFESSIONAL GEOLOGIST STATEMENT

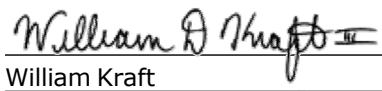
Pursuant to the requirements of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Pennsylvania Act 2 Program), adopted August 16, 1997, which state that:

> *Interpretation of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in the Commonwealth*

I hearby attest that, as a Professional Geologist licensed in the Commonwealth of Pennsylvania, I am familiar with, and have reviewed and/or prepared the interpretation of geology and hydrogeology presented in the attached report entitled:

> *Abbreviated Site Characterization Report (SCR), Facility I.D. Number 51-115577, Tank No. 056A, Schuylkill River Tank Farm, 3144 Passyunk Ave., Philadelphia, PA, dated April 2023.*

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



William Kraft
PG-003902
Expires September 30, 2023

CONTENTS

1.	**INTRODUCTION**	**1**
2.	**SITE SETTING AND HISTORY**	**2**
2.1	Site Location, and Description	2
3.	**SITE AND SURROUNDING AREA GEOLOGY AND HYDROLOGY**	**4**
4.	**INTERIM REMEDIAL ACTIONS**	**6**
5.	**SITE CHARACTERIZATION SCOPE OF WORK**	**7**
5.1	Post-Excavation Attainment Soil Sample Collection	7
5.2	Prior Site Characterization Sampling (September through December 2022)	7
5.3	Quality Assurance and Quality Control (QA/QC)	7
6.	**RAMBOLL SITE INVESTIGATION RESULTS**	**8**
6.1	Post-Excavation Attainment Soil Sample Results	8
6.2	Prior Site Characterization Sampling (September through December 2022) Results	8
7.	**CONCEPTUAL SITE MODEL**	**9**
7.1	Sources of Contamination	9
7.2	Ecological Receptors	9
7.3	Exposure Pathway Analysis	9
8.	**DEMONSTRATION OF ATTAINMENT**	**10**
9.	**REQUEST FOR SITE CHARACTERIZATION APPROVAL**	**11**
10.	**REFERENCES**	**12**

TABLES

Table 6.1: Summary of Detected Constituents in Post-Excavation Attainment Soil Samples

FIGURES

Figure 1.1: Site Location
Figure 2.1: Tank 056A Location
Figure 5.1: Post-Excavation Attainment Soil Sample Locations
Figure 6.1: Lead Exceedances in Soil

APPENDICES

Appendix A: Tank Inspection Report and Pennsylvania Department of Environmental Protection Release Response Letter
Appendix B: Select Figures and Excerpts from Previous Reports
Appendix C: Photolog
Appendix D: Prior Site Characterization Sampling (September through December 2022)
Appendix E: Analytical Data Reporting Sheets for Attainment Samples

1. INTRODUCTION

On behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), Ramboll US Consulting, Inc. (Ramboll) has prepared this Abbreviated Site Characterization Report (SCR) for a reported release of petroleum from aboveground storage tank (AST) Tank 056A (the "Site") at the Schuylkill River Tank Farm (SRTF or the "Property"), located at 3144 West Passyunk Avenue, Philadelphia, Pennsylvania (Figure 1.1.).[1] This SCR has been prepared in general accordance with Title 25 of Pennsylvania Code (Pa. Code) §245.310(b). This SCR presents a description of Site setting and history (Section 2), Site and surrounding area geology and hydrology (Section 3), a description of the release and an overview of interim remedial actions (Section 4), the Site characterization scope of work (Section 5), a summary of Site investigation results (Section 6), a conceptual Site model (Section 7), a demonstration of attainment (Section 8), and a request for Site characterization approval (Section 9).

The Site characterization accomplishes the objectives listed in §245.310(b), as outlined below.

(1) A concise statement that describes the release, including information such as the amount of regulated substance that was released, the extent of contamination and interim remedial actions taken under §245.306.

- A description of the release is presented in Section 2 of this report.
- Interim remedial actions are discussed in Section 4 of this report.

(2) Data demonstrating that the interim remedial actions have attained the Statewide Health Standard (SHS) for the Site in accordance with §250, Subchapter G (relating to demonstration of attainment).

- Site investigation results are presented in Section 6 of this report.
- A discussion and demonstration of attainment is present in Section 8 of this report.

(3) The basis for selection of the residential or nonresidential SHS.

- Selection of screening criteria is described in Section 6.

(4) The results of the evaluation of ecological receptors conducted in accordance with §250.311.

- An evaluation of ecological receptors is provided in Section 7 and 8.

(5) Additional information as identified in subsection (a) necessary to fully describe the release, the extent of contamination and the interim remedial actions taken to address the release.

- Information relating to the release is presented in Section 2 of this report.
- Interim remedial actions are discussed in Section 4 of this report.
- Data demonstrating extent of the release is presented in Section 6 of this report.

[1] Ramboll notes that Tank 056A is located within the SRTF, which is physically located across the river from the listed address, which is associated with the Former Philadelphia Refinery.

2. SITE SETTING AND HISTORY

2.1 Site Location, and Description

The SRTF is located on the west side of the Schuylkill River (approximately 1.5 miles northwest of the Delaware River), and is approximately 4.5 miles southwest from downtown Philadelphia, Pennsylvania. Evergreen Resources Group, LLC[2] (Evergreen) is investigating the former Sunoco refinery under the Pennsylvania Act 2 Program (ACT 2) and has divided the former refinery complex into 11 areas of interest (AOIs). The SRTF is designated as AOI 9 (see Figure 2.1). Tank 056A is located at the north end of the SRTF and is surrounded by an earthen containment berm. Tank 056A has a capacity of approximately 31,726 gallons and is used to store recovered oil from an oil/water separator that is part of the SRTF's stormwater drainage system. Tank 056A was emptied of most contents in February 2022; approximately 10 inches of material (about 32 barrels) remain in the tank.

2.2 SRTF History

The SRTF has an extensive history of petroleum transportation, storage, and processing. Petroleum-related activities began in portions of the SRTF in the 1860s when Atlantic Petroleum Company (Atlantic) established an oil distribution center in connection with a refinery situated on the east side of the Schuylkill River.

In 1993 Sunoco entered into a Consent Order and Agreement (CO&A) with the Pennsylvania Department of Environmental Protection (PADEP) for investigation of the refinery; the CO&A was replaced with an amended agreement in 2003 which expanded the scope to include the SRTF as well as other areas.

The SRTF comprises approximately 211 acres. Portions of the SRTF were utilized as a product storage and transshipment tank farm handling finished distillate, liquid petroleum gas products (LPG), and gasoline fuels. The SRTF is currently idle. Remedial investigation activities are being conducted at the SRTF by Evergreen under Act 2. The 2021 Second Remedial Investigation Report (RIR) Addendum for the SRTF was approved by PADEP. PESRM acquired the Property in June 2020. Following PESRM's acquisition, tank farm operations continued under a designated third-party operator until approximately December 2021 at which point the tank farm was idled. Remediation activities will be conducted at the SRTF under Act 2 by both PESRM and Evergreen in accordance with the 2012 Buyer-Seller Agreement and the 2020 First Amendment to that Agreement.

2.3 Surrounding Area Use

The Site is located at the north end of the SRTF. Tank 056A is surrounded by an earthen containment berm. Beyond the berm is a small, wooded area to the north; an oil/water separator that is part of the SRTF stormwater drainage system to the west; the remainder of the SRTF to the south; and an open gravel area to the east. The SRTF is enclosed with a fence and is secured.

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

The SRTF is bounded by another tank farm to the north, mixed commercial and industrial properties to the west, a narrow-wooded area, vehicle storage area, and the Schuylkill River to the east, and Mingo Creek to the south, beyond which are additional commercial and industrial properties.

2.4 Site Regulatory Background

An inspection performed on April 13, 2022 by a PADEP-certified tank inspector, identified visual evidence of a petroleum release at Tank 056A. A copy of the tank inspection report is included as Appendix A. Following the inspection in April 2022, PESRM received a Notice of Violation (NOV) from the PADEP in relation to Tank 056A on July 15, 2022. The NOV noted that the inspection identified certain deficiencies and violations in relation to Tank 056A; no active leaks were identified. The violation relevant to this SCR was:

- Product staining was observed on piping, flanges and earthen berm with no active leaks identified. The facility should provide appropriate maintenance on all ancillary equipment and document that all tank components are liquid tight. PADEP has not received a release notification for the product staining that was observed, and the facility is in violation of 25 Pa. Code §245.305 for failure to report the release.

Following receipt of the July 15, 2022 NOV, PESRM submitted the required release notification on July 25, 2022. PADEP subsequently issued a letter dated July 27, 2022, requiring the completion of Site characterization activities in accordance with the PADEP Corrective Action Process and submittal of a SCR by October 10, 2022.

A preliminary SCR was submitted to PADEP on October 10, 2022. However, given the limited time available prior to submittal of the preliminary SCR, Ramboll was unable to perform sufficient investigation to adequately characterize the Site. As such, in accordance with the Corrective Action Process, additional Site investigation work was conducted at the Site in November 2022 through March 2023. Following a series of phone conferences between representatives of PESRM and PADEP in December 2022 and January 2023, it was determined by PADEP that, because interim remedial actions were performed at the Site, preparation of an Abbreviated SCR in accordance with 25 Pa. Code §245.310b is appropriate for the Site. PESRM agreed to submit an Abbreviated SCR to PADEP on or before April 12, 2023.

3. SITE AND SURROUNDING AREA GEOLOGY AND HYDROLOGY

To better understand soil and groundwater conditions within the SRTF, Ramboll performed a review of the following documents:

- *Remedial Investigation Report (RIR), AOI 9, PESRM, Philadelphia Refining Complex, Philadelphia, PA,* prepared by Langan Engineering & Environmental Services, Inc., on December 31, 2015 (the "2015 RIR");
- *RIR Addendum, AOI 9, PESRM, Philadelphia Refining Complex, Philadelphia, PA,* prepared by Langan Engineering & Environmental Services, Inc., on February 8, 2017 (the "2017 RIR Addendum");
- *Second RIR Addendum, AOI 9, Former Philadelphia Refinery*, prepared by Stantec on September 20, 2021 (the "2021 RIR Addendum"); and
- *Sitewide RIR Addendum, Former Philadelphia Refinery,* prepared by Stantec and dated May 20, 2022 (the "2022 RIR Addendum").

3.1 Area Geology

The greater SRTF geology is described in the 2017 and 2021 RIR Addendum reports and is summarized below for local area context. Based on previously installed borings within the SRTF, up to approximately 22 feet (ft) of urban fill are present from the ground surface downward, indicative of prior land-filling operations. The fill is heterogeneous in nature and is frequently described as black to dark gray silt and/or clay characterized by a mixture of sediment with debris including stones, coal, glass, bricks, tile, and shells. Below the urban fill layer approximately 2 ft of Holocene-age mud (a mixture of clay and silt) have been observed at one location in the SRTF, although such deposits might be present at other locations at the base of the urban fill layer. This Holocene-age unit is further underlain by Pleistocene-age deposits comprised of an upper mud layer 2 to 12 feet in thickness, which is underlain by sands and gravels to depths of up to approximately 50 feet below ground surface (ft bgs)[3]. Cretaceous-age deposits are interpreted to be present below the Pleistocene unit and consist of alternating interbedded clay and sand units to a depth of approximately 76 ft bgs. Through prior sampling, the Wissahickon Schist has been identified as the bedrock unit. The weathered zone of the Wissahickon Schist was encountered at depths of approximately 99 to 117 ft bgs.

3.2 Area Hydrogeology

The greater SRTF hydrogeology is described in the 2017 and 2021 RIR Addendum reports. Three groundwater zones have been identified beneath the SRTF including a shallow perched groundwater zone, an unconfined shallow aquifer, and a lower semi-confined aquifer. Perched groundwater has been encountered beneath the northern portion of the SRTF at depths of approximately 1 to 2 ft bgs

[3] Prior reports cite the following reference in relation to area geology; Ramboll did not independently review this reference: Owens, J.P., and Mindard, J.P. 1979. Upper Cenozoic Sediments of the Lower Delaware Valley and the Norther Delmarva Peninsula, New Jersey, Pennsylvania, Delaware, and Maryland: U.S. Geological Survey Professional Paper. 1067-D, 47 p.

within coarser-grained fill material. Hydraulic connection between this perched groundwater and the underlying shallow unconfined aquifer unit has not been confirmed at this time.

The unconfined aquifer is located in the Holocene-age mud layer, defined previously above, which is heavily influenced by pumping in the Mingo Creek Flood Control basin (Mingo Creek basin) situated south of the SRTF. According to the City of Philadelphia Water Department (PWD), pumping from the Mingo Creek basin occurs approximately every 1 to 3 days depending on water level conditions. Large-capacity pumps are programmed to control the basin's water surface elevation between negative 10.5 and negative 11 feet below mean sea level (amsl). Based on unconfined aquifer water level observations collected by Stantec, groundwater in the northern third of SRTF (including in the vicinity of Tank 056A) generally flows to the south while groundwater in the central portion of the SRTF flows radially outward from a potentiometric high point (as shown on Figure 4.2e in Appendix B).

The lower aquifer consists of the Pleistocene-age sand and gravel units and the Cretaceous-age deposits. Groundwater in the lower semi-confined aquifer generally flows to the south towards the Mingo Creek basin, with possible flow under the river toward the Mingo Creek basin pumping wells. Due to the absence of the interbedded clay layers in the northern portion of the SRTF, this aquifer is not present beneath the Site.

3.3 Previously Documented Soil Conditions

No prior soil investigation activities are known to have been conducted within the bermed area surrounding Tank 056A. However, testing of soils proximal to Tank 056A has been completed by others; key excerpts from prior reports are included as Appendix B to this report. Based on a review of boring logs and analytical results for those soil samples collected closest to Tank 056A, lead has been documented in surface and shallow subsurface soil in the northern portion of the tank farm at concentrations up to 690 milligrams per kilogram (mg/kg), exceeding the lead PADEP SHS medium-specific concentration (MSC) based on soil to groundwater migration for non-residential used aquifers with total dissolved solids (TDS) less than 2,500 milligrams per liter (mg/L) of 450 mg/kg, but below the approved site-specific MSC for lead of 1,000 mg/kg; all other petroleum constituents at these locations were below applicable criteria. As outlined in the 2021 RIR Addendum, the elevated concentrations of lead in soil are coincident with historical fill.

3.4 Previously Documented Groundwater Conditions

No prior groundwater investigation activities are known to have been conducted within the immediate vicinity of Tank 056A. However, testing of groundwater proximal to Tank 056A has been completed by others, with the nearest monitoring wells situated approximately 170 feet east of Tank 056A (S-133SRTF) and approximately 224 feet northwest of Tank 056A (S-108SRTF) (see Appendix B, Figures 4-2e and 4-9a from the 2022 RIR Addendum). Shallow groundwater flow beneath the northern portion of the SRTF has been documented to the south-southwest. Based on sampling conducted at nearby monitoring wells within the northern portion of the SRTF in 2009 and 2015, groundwater samples collected within 170 to 224 feet of Tank 056A did not contain petroleum-based constituents in excess of applicable MSCs.

4. INTERIM REMEDIAL ACTIONS

Interim actions were performed by representatives of PESRM following receipt of the NOV, and included the following actions listed below which are relevant to this SCR.

- Wiped down the piping valve and flange where the tank inspector had observed a sheen.
- Inspected the piping, including the flange and valve, for indication of an ongoing release; no indication of an ongoing release was observed.
- Confirmed that the level of remaining product in the tank was below the pipe level (and thus, no further product could enter the piping).
- Excavated a small volume of soil (approximately 0.5 to 1 cubic foot [ft^3]) from the berm in the area of observed staining and containerized the soil and gravel in a 55-gallon drum, which was staged at the SRTF and will be disposed off-Site following characterization.

No further interim action related to this SCR was completed as no immediate threat to human health, or the environment was identified. A photolog including photographic documentation of above actions is included as Appendix C.

5. SITE CHARACTERIZATION SCOPE OF WORK

5.1 Post-Excavation Attainment Soil Sample Collection

To document adequate removal of material affected by the release in accordance with 25 Pa. Code Chapter 250.707(b)(1)(iii)(B)(VI), Ramboll collected two soil samples (SB-01A and SB-01B) from a depth of 0 to 0.5 ft bgs using hand auger methods on March 1, 2023 (Figure 5.1). Soil samples were collected and placed into laboratory-provided sample containers, labeled, packaged on ice, and transported under chain-of-custody procedures to Phase Separation Science (PSS) in Baltimore, Maryland (MD) for the analysis of Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual) including select volatile organic compounds (VOCs)[4] by United States Environmental Protection Agency (USEPA) method 8260, select semi-volatile organic compounds (SVOCs) by USEPA method 8270, and lead by USEPA method 6020.

5.2 Prior Site Characterization Sampling (September through December 2022)

Ramboll conducted Site investigation activities in September 2022 through December 2022 to evaluate Site conditions. Investigation activities included the collection of soil samples for laboratory analysis using stainless steel hand augers and direct push methods both within and outside of the tank berm, installation and development of one groundwater monitoring well, and collection of groundwater for laboratory analysis, see Appendix D for further details.

5.3 Quality Assurance and Quality Control (QA/QC)

During investigation activities, re-useable sampling equipment was decontaminated between sample locations using a non-phosphate detergent and tap water rinse. Following the completion of each field investigation, an equipment rinse blank was collected for analysis of SVOCs by USEPA method 8270 and lead by USEPA method 6020. Additionally, Ramboll included trip blanks with each cooler sent to the lab for the analysis of VOCs by USEPA method 8260. Results, including laboratory quality assurance data, were reviewed to evaluate data quality. Reporting limits for all compounds were below the MSCs and no data quality concerns were identified.

[4] Soil samples for VOCs were collected using TerraCores® in conjunction with USEPA method 5035.

6. RAMBOLL SITE INVESTIGATION RESULTS

6.1 Post-Excavation Attainment Soil Sample Results

As described in Section 5, Ramboll collected two attainment soil samples (SB-01A and SB-01B) in accordance with 25 Pa. Code Chapter 250.707(b)(1)(iii)(B)(VI), and submitted the samples for analysis of the Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual). Results are summarized in Tables 6.1 and complete laboratory analytical data reporting sheets are included as Appendix E. Concentrations of detected constituents were compared to the PADEP SHS MSCs for nonresidential direct contact with surface soil, for soil to groundwater migration for nonresidential used aquifers with TDS of less than or equal to 2,500 mg/L, and to the site-specific MSC for lead at the SRTF outlined in the 2021 RIR Addendum of 1,000 mg/kg. No constituents were detected at concentrations exceeding the MSCs.

6.2 Prior Site Characterization Sampling (September through December 2022) Results

Fifteen additional soil samples and groundwater were collected for laboratory analysis for lead, VOCs, and/or SVOCs, see Appendix D. Summaries of detected constituents included on the Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual) in soil are summarized in as Appendix D. Concentrations of detected constituents in soil and groundwater were compared to applicable screening criteria. Lead exceeded the MSC for soil to groundwater migration, but all detections of lead were below the MSC for non-residential direct contact with shallow soils and the site-specific MSC for lead established under the Pennsylvania Act 2 Program by Evergreen. The widespread presence of lead in soil within the northern portion of the SRTF will be addressed by Evergreen under Act 2 in accordance with the 2012 Buyer-Seller Agreement and the 2020 First Amendment to that Agreement, Figure 6.1.

7. CONCEPTUAL SITE MODEL

7.1 Sources of Contamination

Based on the observations made and results of sample collection and analysis, the source of contamination as observed by the tank inspector appears to have been minor drippage from a piping flange situated over the tank berm on the south side of the tank. Based on a review of photographs included in the tank inspection report and on a discussion with a worker at the tank farm, the area of observed impact was approximately six inches in diameter and no obvious impact to soil underlying the gravel surface was apparent at the time of removal of the petroleum impacted material. The volume of impacted material (gravel and soil) removed as part of the interim remedial actions was approximately 0.5 to 1 ft^3. During preliminary inspection of the area by Ramboll, Ramboll personnel pushed back the gravel beneath the flange to look for any visual indication of impact to the underlying soil; no apparent indication of impact was observed. Testing of soil subsequent to removal of the visibly stained material on the berm did not identify petroleum constituents at concentrations exceeding applicable MSCs. Following the initial wipe down of the piping and flange, no further sheen or oily residue has been observed on the piping or flange verifying that there is not an ongoing release and, as indicated above, the level of product in the tank is being maintained below the tank piping such that product cannot enter that piping.

7.2 Ecological Receptors

Ramboll reviewed ecological risk receptors including threatened species, endangered species, and species of concern that have been identified through a preliminary Pennsylvania Natural Diversity Inventory (PNDI) program search in conjunction with previously completed searches for the SRTF and general knowledge resulting from work at other nearby sites. Species listed within 2,500 feet of the site include fish species (Atlantic sturgeon, shortnose sturgeon, and hickory shad) and one plant species (waterhemp ragweed). The nearest surface water body, the Schuylkill River, is located greater than 1,200 feet east of Tank 056A. The Site has been developed for industrial use for over 100 years and the ground surface is gravel covered. As such, no impact to the listed aquatic species or plant species is anticipated in relation to the minor release of petroleum from Tank 056A.

7.3 Exposure Pathway Analysis

No complete exposure pathways were identified given the restricted (non-residential) Site use, the fact that the Site is gravel-surfaced, and the absence of constituents of concern in soil or groundwater at concentrations exceeding the applicable MSCs, including the site-specific MSC for lead in soil.

8. DEMONSTRATION OF ATTAINMENT

PESRM performed interim remedial measures to address the observations outlined in the NOV. Interim measures included the excavation (and pending off-site disposal) of approximately 0.5 to 1 ft^3 of visibly affected gravel and soil beneath the pipe flange situated above the berm. Laboratory analytical results for two post excavation soil samples (SB-01A and SB-01B) indicate no detectable petroleum constituents. Remaining concerns identified in the NOV have been addressed as discussed in Section 4 of this report.

Concentrations of detected constituents in Site soil were compared to non-residential MSCs. Non-residential MSCs are appropriate for the Site as the current Site use is industrial, and both Evergreen and PESRM have agreed that future Site use would be limited to non-residential use and that a land use restriction would be incorporated as part of the overall remedy for the SRTF. The SRTF is currently fenced and secured, and on-site work is conducted in accordance with a site health and safety plan. Concentrations of lead in soil were additionally compared to the SRTF site specific lead MSC of 1,000 mg/kg. The application of the site specific MSC for the SRTF is appropriate given that measured concentrations of lead in Site soil do not appear to be associated with a release of petroleum from Tank 056A. The more widespread presence of lead in soil within the northern portion of the SRTF will be addressed by Evergreen under Act 2 in accordance with the 2012 Buyer-Seller Agreement and the 2020 First Amendment to that Agreement.

9. REQUEST FOR SITE CHARACTERIZATION APPROVAL

Based on the results of the site characterization activities, no further site characterization is required.

10. REFERENCES

Langan. 2017. Remedial Investigation Report Addendum Area of Interest 9, Philadelphia Energy Solution Refining & Marketing, LLC, Philadelphia Refining Complex, Philadelphia, Pennsylvania. February 8.

Langan. 2015. Remedial Investigation Report Addendum Area of Interest 9, Philadelphia Energy Solution Refining & Marketing, LLC, Philadelphia Refining Complex, Philadelphia, Pennsylvania. February 8.

Owens, J.P., and Mindard, J.P. 1979. Upper Cenozoic Sediments of the Lower Delaware Valley and the Norther Delmarva Peninsula, New Jersey, Pennsylvania, Delaware, and Maryland: U.S. Geological Survey Professional Paper. 1067-D, 47 p.

Stantec Consulting Services, Inc. 2022. Sitewide Remedial Investigation Report Addendum, Former Philadelphia Refinery 3144 Passyunk Avenue, Philadelphia, Pennsylvania. May 20.

TABLES

TABLE 6.1: Summary of Detected Constituents in Post-Excavation Attainment Soil Samples
Site Characterization Report
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil		SB-01A	SB-01B
	Direct Contact	Soil to Groundwater		
	Nonresidential MSCs	Used Aquifer, Nonresidential TDS	0-0.5ft bgs	0-0.5ft bgs
	Surface Soil 0-2 ft bgs	</= 2,500	3/1/2023	3/1/2023
Metals (mg/kg)				
Lead	1,000	450	95	76
Volatile Organic Compounds (VOCs) (mg/kg)				
Toluene	10,000	44	< 0.00099	0.0014
m&p-Xylene[1]	7,900	990	0.0013 J	0.0014 J
Semi-Volatile Organic Compounds (SVOCs) (mg/kg)				
Benzo(a)anthracene	130	340	0.014	0.013
Benzo(a)pyrene	91	46	0.015	0.013
Benzo(b)fluoranthene	76	170	0.012	0.011
Benzo(g,h,i)perylene	190,000	180	0.0099	0.01
Chrysene	760	230	0.034	0.029
Indeno(1,2,3-c,d)Pyrene	76	18,000	0.01	0.0084 J
Naphthalene	66	25	0.0062 J	0.0084 J
Phenanthrene	190,000	10,000	0.0062 J	0.0084 J
Pyrene	96,000	2,200	0.027	0.036

Notes:
Soil was analyzed for total lead using United States Environmental Protection Agency (USEPA) Method 6020B, select volatile organic compounds (VOCs) using USEPA Method 8260D, and select semi-volatile organic compounds (SVOCs) using USEPA Method 8270E from the Short List of Petroleum Products (Table III-5). No exceedances were noted. Complete analytical data reporting sheets are included in Appendix E.
Detected concentrations of constituents were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).
1 - Speciated xylene criteria has not been established thus total xylene value was compared.
mg/kg - milligrams per kilogram.
"<" - Less than the reporting limit.
ft bgs - feet below ground surface.
J - Estimated value below the reporting limit.

FIGURES

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PROJECT: 1690028299 | DATED: 10/7/2022 | DESIGNER: DBLANCHARD

Map Scale: 1:24,000 | Map Center: 75°13'15"W 39°53'58"N

PROPERTY BOUNDARY (APPROXIMATE)

KEY MAP (not to scale)

0 1,000 2,000 Feet

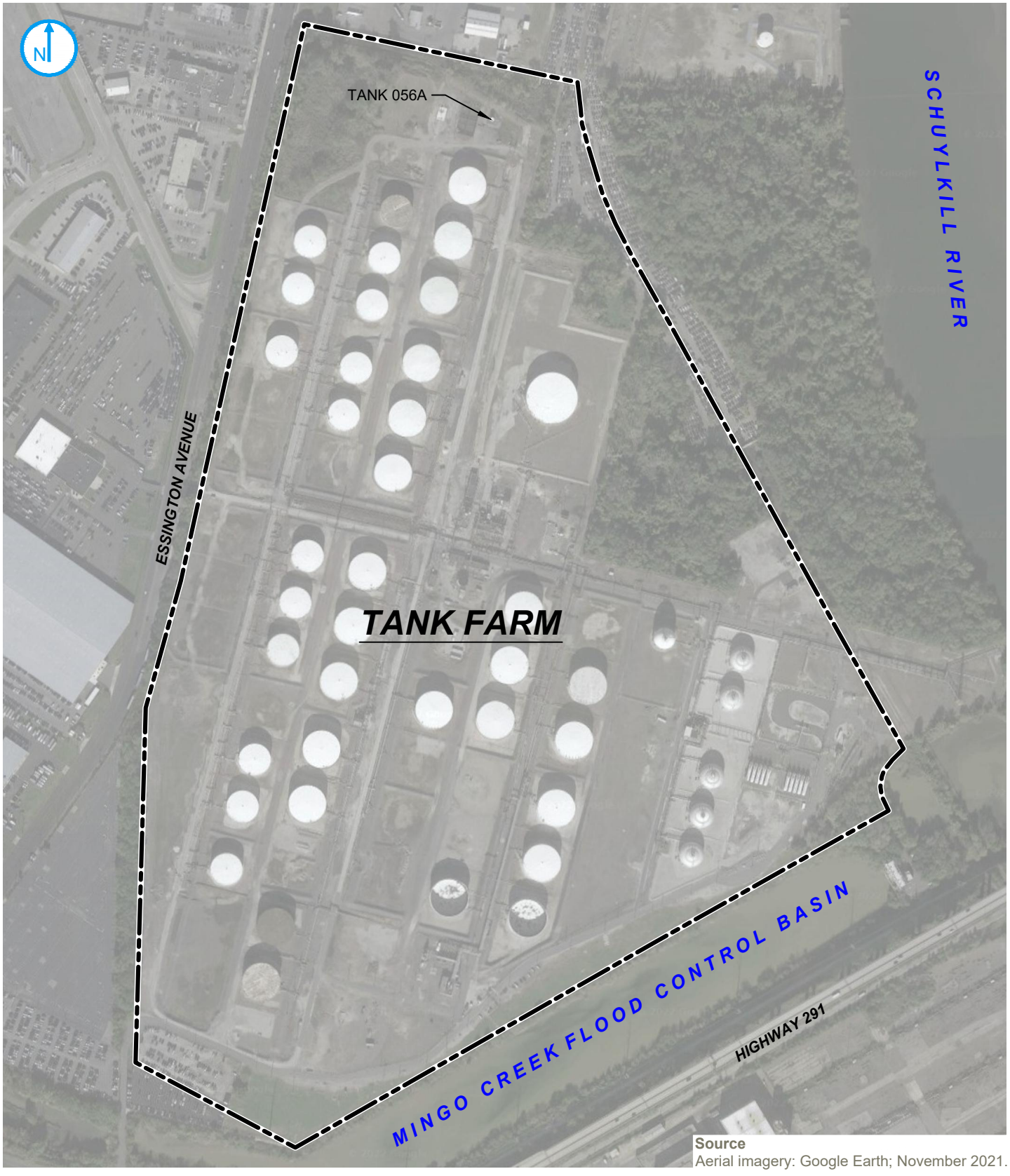
SITE LOCATION

SCHUYLKILL RIVER TANK FARM
TANK 056 LOCATION
PHILADELPHIA, PENNSYLVANIA

FIGURE 1.1

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL



Source
Aerial imagery: Google Earth; November 2021.

\\tapprichfs\CAD\Graeme\169002829\SITE_LAYOUT_PHILADEPHIA_PA.dwg
DESIGNER: DBLANCHARD
DATED: 10/6/2022
PROJECT: PHILY_PA

TANK FARM BOUNDARY (APPROXIMATE)

0 500 Feet

TANK 056A LOCATION

FIGURE 2.1

SCHUYLKILL RIVER TANK FARM
TANK 056 LOCATION
PHILADELPHIA, PENNSYLVANIA

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

LEGEND:

- SOIL SAMPLE LOCATION
- OVERHEAD ELECTRIC LINE
- ABOVEGROUND FUEL LINE
- SOIL BORING LOCATION (NO SAMPLE COLLECTED)

Sources:
Aerial imagery: Google Earth; November 2021.
Photograph: Taken from inspection report taken 4/13/22.
Notes:
All locations are approximate.

Post-Excavation Attainment Soil Sample Locations

SCHUYLKILL RIVER TANK FARM
TANK 056A LOCATION
PHILADELPHIA, PENNSYLVANIA

RAMBOLL

FIGURE
5.1

DRAFTED BY: TRC | DATE: 2/27/23

Constituent	PADEP Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil		
	Direct Contact		Soil to Groundwater
	Nonresidential MSCs		
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs	Used Aquifer, Nonresidential TDS </= 2,500
Metals (mg/kg)			
Lead	1,000	190,000	450

Legend

- Ramboll Soil Sample Location
- Evergreen Soil Sample Location

0 15 30 45 60 Feet

1 inch = 30 feet

Notes:
Aerial imagery source NearMap (September 23, 2022)
Sample results are in micrograms per kilogram (mg/kg).
Base map adapted from terraphase engineering.

RAMBOLL

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Tank 056A

PROJECT NUMBER:

Lead Exceedances in Soil

FIGURE 6.1

APPENDICES

APPENDIX A
TANK INSPECTION REPORT AND PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RELEASE RESPONSE LETTER

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

July 27, 2022

Anne Garr
Philadelphia Energy Solutions Refining & Marketing LLC
111 S. Wacker Drive, Suite 3000
Chicago, IL 60606

Re: Storage Tank Program
Facility ID No. 51-11557
Incident No. 57902
Tank No. 056A
Phila Ref Schuylkill River Tank Farm
3144 W. Passyunk Avenue
Philadelphia City
Philadelphia County

Dear Anne Garr:

The Department of Environmental Protection (DEP) received notification of a reportable release of a regulated substance at the above-named facility that was confirmed on April 13, 2022. This release is a violation of Section 1310 of the Pennsylvania Storage Tank and Spill Prevention Act.

This letter is to advise you that you have certain responsibilities regarding this release under the Corrective Action Process (CAP) regulations in 25 Pa. Code Chapter 245, Subchapter D. You should carefully review these regulations to determine the specific requirements applicable to the release at your facility. The CAP regulations and several helpful fact sheets are available on DEP's website at www.dep.pa.gov, search term: Tank Cleanup. This information can help you address the release quickly and effectively.

Upon confirmation of a release, the CAP regulations require that you immediately implement any necessary interim remedial actions as described in Section 245.306 including: removing regulated substances from leaking tank systems; mitigating fire, explosion and safety hazards; preventing further migration of released substances; and identifying and sampling affected or potentially affected water supplies. Appropriate and timely interim remedial actions can often resolve environmental impacts caused by the release or limit their severity, thus making site cleanup easier and less expensive.

A site characterization must be performed upon confirmation of a release in accordance with Section 245.309 of the CAP regulations. A Site Characterization Report (SCR) detailing the findings of the site characterization must be submitted to this office within 180 days of reporting the release in accordance with Section 245.310. We recommend that you engage the services of an experienced environmental consulting firm, with a Licensed Professional Geologist on staff, to conduct the site characterization and prepare the SCR. Completion of a comprehensive site characterization and submission of a detailed SCR are critical in determining whether additional steps are needed to address the release at your facility.

The Site Characterization Report for this release is due on or before October 10, 2022.

The SCR must address all the elements of Section 245.310. Requests for an extension of the deadline for SCR submittal will only be considered based on valid technical reasons. Requests for an extension must be made in writing to this office at least 30 days before the SCR due date. Your written request must specify the technical reason(s) for the extension and include a new proposed submission date. No extension of the SCR due date will be permitted without written approval from DEP.

You may wish to investigate potential sources of financial assistance. We recommend that you contact the Pennsylvania Department of Community and Economic Development at 866.466.3972 or visit their website at www.newpa.com.

Please forward all documents, reports, and written requests electronically through the OnBase DEP Upload Form accessed at: https://www.dep.pa.gov/DataandTools/Pages/Application-Form-Upload.aspx. When uploading documents, please select the appropriate FORM NAME, such as "STORAGE TANK SITE CHARACTERIZATION REPORT," "STORAGE TANK SITE CHARACTERIZATION REPORT – 245.310(B)," or "STORAGE TANK REQUEST FOR ALTERNATE TIMEFRAME." Or forward by mail to Richard Staron, Professional Geologist Manager, ECB Corrective Action Section, at the address listed on this letter.

If you have any questions, please contact lstrobridg@pa.gov or by telephone at 484.250.5796.

Sincerely,

Thomas D. Canigiani, Jr.
Environmental Group Manager, Storage Tanks
Environmental Cleanup and Brownfields

cc: Ralph DiPietro, Philadelphia L & I
Lisa Strobridge
Re

APPENDIX B
SELECT FIGURES AND EXCERPTS FROM PREVIOUS REPORTS

AOI9-BH-22-07	
1/24/2022	0 - 2 ft
LEAD	2,080

AOI9-BH-21-15	
12/21/2021	0 - 2 ft
LEAD	680

AOI9-BH-21-04	
4/8/2021	0 - 2 ft
LEAD	1,400

AOI9-BH-22-01	
1/24/2022	0 - 2 ft
LEAD	2,910

AOI9-BH-21-03	
4/8/2021	0 - 2 ft
LEAD	1,700

AOI9-BH-21-16	
12/21/2021	0 - 2 ft
LEAD	5,500

AOI9-BH-22-02	
1/24/2022	0 - 2 ft
LEAD	1,860

AOI9-BH-21-14	
8/31/2021	0 - 2 ft
LEAD	1,200

AOI9-BH-22-04	
1/24/2022	0 - 2 ft
LEAD	2,990

AOI9-BH-21-17	
12/21/2021	0 - 2 ft
LEAD	2,100

AOI9-BH-22-05	
1/24/2022	0 - 2 ft
LEAD	500

AOI9-BH-21-02	
4/8/2021	0 - 2 ft
LEAD	350

AOI9-BH-21-13	
8/31/2021	0 - 2 ft
LEAD	900

AOI9-BH-21-01	
4/8/2021	0 - 2 ft
LEAD	910

AOI9-BH-21-05	
4/8/2021	0 - 2 ft
LEAD	2,800

AOI9-BH-21-10	
7/6/2021	0 - 2 ft
LEAD	1,700

AOI9-BH-21-11	
7/6/2021	0 - 2 ft
LEAD	1,200

AOI9-BH-21-12	
7/6/2021	0 - 2 ft
LEAD	860

AOI9-BH-21-06	
4/8/2021	0 - 2 ft
LEAD	1,800

AOI9-BH-21-07	
4/8/2021	0 - 2 ft
LEAD	710

AOI9-BH-21-08	
4/8/2021	0 - 2 ft
LEAD	960

AOI9-BH-21-09	
4/8/2021	0 - 2 ft
LEAD	160

AOI 9

ESSINGTON AVE

MINGO AVENUE SEWER

SCHUYLKILL WEST SIDE INTERCEPTOR

SCHUYLKILL RIVER

Tank 056A

SRTF CONTROL ROOM BUILDING SR1

BLENDER BUILDING SR19

1ST STREET

2ND ST

3RD ST

4TH ST

MAIN STREET

MINGO ST

PENROSE AVENUE

PENROSE FERRY ROAD

AVENUE L

LPG Bullets

MINGO CREEK

MINGO CREEK FLOOD CONTROL BASIN

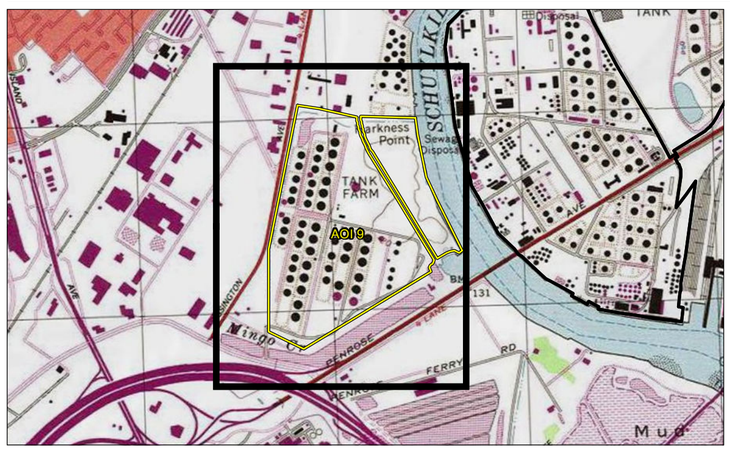
BARTRAM AVE

DELAWARE EXP

DELAWARE EXP RMP

PENROSE AVE

PENROSE FERRY RD



LEGEND

- SHALLOW SOIL DOES NOT EXCEED THE PADEP SOIL TO GROUNDWATER VALUE, 450 MILLIGRAMS PER KILOGRAM (MG/KG)
- SHALLOW SOIL EXCEEDS THE PADEP SOIL TO GROUNDWATER VALUE, 450 MG/KG
- SHALLOW SOIL EXCEEDS THE PADEP NON-RESIDENTIAL DIRECT CONTACT STANDARD, 1,000 MG/KG
- SHALLOW SOIL EXCEEDS THE SITE-SPECIFIC STANDARD, 2,240 MG/KG
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- AREA OF INTEREST (AOI) 9 BOUNDARY
- FORMER PHILADELPHIA REFINERY
- 1,600 — 2021/2022 LEAD DELINEATION SAMPLE, CONCENTRATION EXCEEDS PADEP NON -RESIDENTIAL DIRECT CONTACT STANDARD, 1,000 MG/KG
- 430 — 2021/2022 LEAD DELINEATION SAMPLE, CONCENTRATION DOES NOT EXCEED THE PADEP NON - RESIDENTIAL DIRECT CONTACT STANDARD, 1,000 MG/KG
- 30 — TANK ID

0 210 420 Feet

1:2,520 (At original document size of 22x34)

N

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec
3. Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed PEMA Philadelphia County 2018 Aerial Imagery

Figures annotated by Ramboll.

Figure No.

2-2

Title

LEAD IN SURFACE SOIL - AOI 9 DELINEATION LOCATIONS (2021/2022)

Client/Project

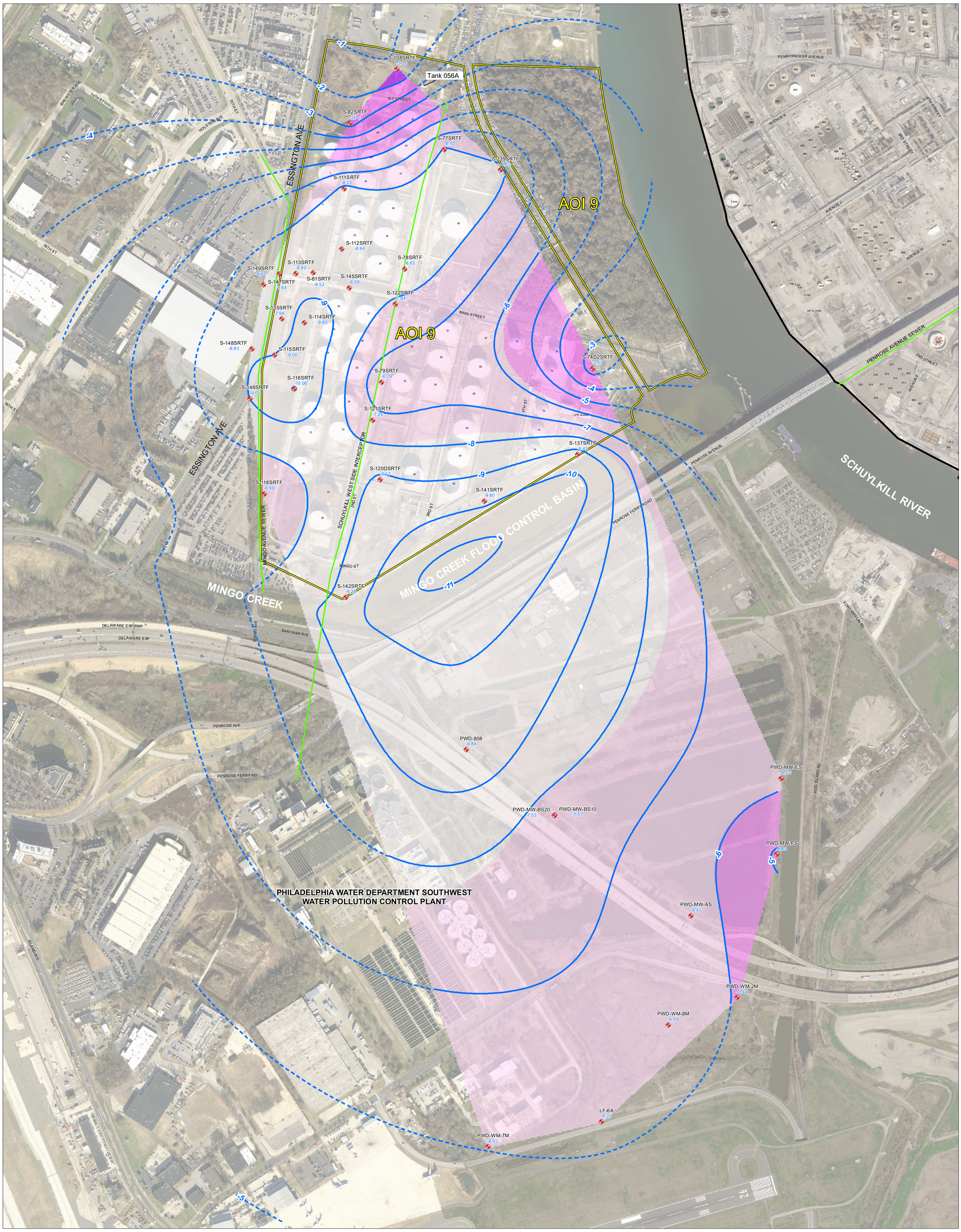
PHILADELPHIA REFINERY OPERATIONS, A SERIES OF
EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

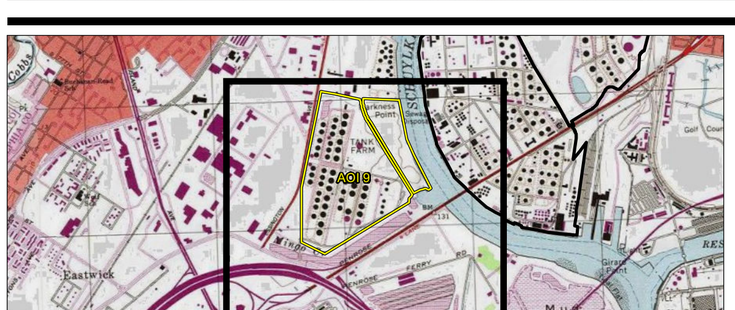
Project Location

City of Philadelphia,
Philadelphia County,
Pennsylvania

213403364
Prepared by GWC on 1/20/2022
Technical Review by AJH on 2/14/2022
Independent Review by JKK on 2/22/2022

Stantec





LEGEND

- MONITORING WELL SCREENED IN UNCONFINED AQUIFER, UTILIZED FOR AUGUST 2021 ELEVATION SURFACE
- KT3D GENERATED AUGUST 2021 UNCONFINED AQUIFER GROUNDWATER ELEVATION CONTOUR
- KT3D GENERATED AUGUST 2021 UNCONFINED AQUIFER GROUNDWATER INFERRED ELEVATION CONTOUR
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- AREA OF INTEREST (AOI) 9 BOUNDARY
- FORMER PHILADELPHIA REFINERY
- -8.94 CORRECTED GROUNDWATER ELEVATION (FT NAVD88)
- 30 TANK ID

AUGUST 2021 WATER-TABLE ELEVATION - SURFER GENERATED

FT NAVD88

- -2 to 0
- -4 to -2
- -6 to -4
- -8 to -6
- -10 to -8

0 350 700 Feet

1:4,200 (At original document size of 22x34)

N

Figure No.

4-2e

Title

UNCONFINED AQUIFER ELEVATION, AUGUST 2021

Client/Project

PHILADELPHIA REFINERY OPERATIONS, A SERIES OF
EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Project Location

City of Philadelphia,
Philadelphia County,
Pennsylvania

213403364
Prepared by GWC on 9/15/2021
Technical Review by JKK on 9/21/2021
Independent Review by JLM on 9/23/2021

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet North American Vertical Datum of 1988 (NAVD 88)
2. Sources: Stantec
3. Depth to groundwater and LNAPL, where present, were measured in each well to the nearest one-hundredth of a foot using an interface probe.
4. FT NAVD88 = feet referenced to the North American Vertical Datum of 1988
5. Groundwater elevation data was interpolated using point kriging with a linear variogram model in Surfer to produce a surface model shown in purple to white color flooding. The model is interpreted to be a reasonable approximation of the unconfined aquifer elevation within the limits of the available well data.
6. KT3D = KT3D_H2O Version 3.0 by S.S Papadopulos & Associates, Inc.
7. Aerial & Topo Copyright:© 2013 National Geographic Society, i-cubed PEMA Philadelphia County 2018 Aerial Imagery

Figures annotated by Ramboll.

MONITORING WELL LOG: S-108SRTF

PROJECT:	**Sunoco - Philadelphia Refinery**	DRILLING CO.:	**Total Quality Drilling**
SITE LOCATION:	**AOI-9 - SRTF**	DRILLING METHOD:	**6" Hollow Stem Auger**
JOB NO.:		SAMPLING METHOD:	**Split Spoon Sampling**
LOGGED BY:	**Shaun Sykes**	SCREEN/RISER DIAMETER:	**4"**
DATES DRILLED:	**6/17/2009**	WELLBORE DIAMETER:	**6"**
TOTAL DEPTH:	**12'**	ELEVATION:	**-**

Depth (feet)	OVM (ppm)	USCS	LITHOLOGY	COMMENTS	WELL CONSTRUCTION	WELL DIAGRAM
0	0.0		Fill, gravel, cinders, brick, glass, moist dark brown clayey silt	Sample taken from 1-2' on 6/2/2009	2' PVC Riser	
	0.0		Same, wet			
-5				Cleared to 10', backfilled with sand		
					10' PVC Screen	
-10	0.0		Gray/black fine sand and gravels, wet, no odor			
	0.0		Same as above			
	0.2		Same as above			
	0.0		Same as above			
	0.0		Gray/black fine sandy clay and gravel, wet, no odor			
	0.0		Same as above			
-15						

MONITORING WELL LOG: S-133SRTF

PROJECT:	**Sunoco - Philadelphia Refinery**	DRILLING CO.:	**Total Quality Drilling**
SITE LOCATION:	**AOI-9 - SRTF**	DRILLING METHOD:	**6" Hollow Stem Auger**
JOB NO.:		SAMPLING METHOD:	**Split Spoon Sampling**
LOGGED BY:	**Shaun Sykes**	SCREEN/RISER DIAMETER:	**4"**
DATES DRILLED:	**6/8/2009**	WELLBORE DIAMETER:	**6"**
TOTAL DEPTH:	**15'**	ELEVATION:	**-**

Depth (feet)	OVM (ppm)	USCS	LITHOLOGY	COMMENTS	WELL CONSTRUCTION	WELL DIAGRAM
0			Fill	Sample taken from 1-2' on 6/24/2009	5' PVC Riser	
-5				Cleared to 10', backfilled with sand		
-10	0.0		Very moist to wet, fine sandy gray clay, organic matter, no odor		10' PVC Screen	
	0.0		Same			
	0.0		Very moist fine sandy gray clay, no odor			
	0.0		Same			
			Same, organic matter (wood)			
	0.0		Very moist fine sandy gray clay and gravel increasing with depth, no odor			
-15	0.0					

PROJECT: **Philly Refinery - SRTF**
LOCATION: **AOI-9**
PROJECT NUMBER:

WELL / PROBEHOLE / BOREHOLE NO:
BH-15-033 PAGE 1 OF 1

Aquaterra Technologies, Inc.

DRILLING / INSTALLATION:
STARTED **7/20/15** COMPLETED: **7/20/15**
DRILLING COMPANY: **Aquaterra**
DRILLING EQUIPMENT:
DRILLING METHOD:
SAMPLING EQUIPMENT: **Hand Auger**

NORTHING (ft):
EASTING (ft):
LAT:
LONG:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **1.25**
WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered**
BOREHOLE DEPTH (ft): **1.5**
WELL CASING DIA. (in): **---**
BOREHOLE DIA. (in): **2**
LOGGED BY: **LM**
CHECKED BY: **TD**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			CLAY WITH FINE TO COARSE GRAVEL ; dark brown; moist; fill (glass, brick)		1345 BH-15-33 _0.5-1			0.0	
			GRAVEL WITH CLAY ; dark brown; fine to coarse-grained; wet; fill (glass, brick)		BH-15-033@ 1-1.5'			0.0	▽
			Borehole terminated at 1.5 feet.						
5									5
10									10
15									15

GEO FORM 304 PHILLY AOI-9 LOGS 2015.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 9/1/15

APPENDIX C
PHOTOLOG

Photo 1 (September 2022): Photograph of flange where staining was noted by tank inspector in March 2022.

Photo 2 (February 2023): Photograph of flange where tank inspector identified oily residue on exterior of piping in March 2022. No clear staining observed on ground surface and no remaining residue on piping.

RAMBOLL

Site Photographs

Tank 056A

Schuylkill River Tank Farm, Philadelphia, PA

Photo 3 (September 2022): North side of Tank 056A; no staining observed.

Photo 4 (September 2022): SB01 soils.

Photo 4 (September 2022): SB01 soils.

Photo 5 (September 2022): SB05 soils.

Photo 6 (February 2023): Approximately 0.5 cubic foot of soil removed from the berm beneath the valve. Material removed consists of mainly gravel with some medium sand.

Photo 7 (February 2023): Close-up of the flange previously noted in the inspector report.

APPENDIX D
PRIOR SITE CHARACTERIZATION SAMPLING (SEPTEMBER THROUGH DECEMBER 2022)

APPENDIX D
SEPTEMBER THROUGH DECEMBER 2022 SITE CHARACTERIZATION SAMPLING

Prepared on Behalf of:
Philadelphia Energy Solutions Refining and Marketing LLC (PESRM)

Prepared By:
Ramboll US Consulting, Inc.

Date:
April 2023

Incident Number:
57902

Project Number:
1690028299

Version:
01

CONTENTS

1.	**SITE CHARACTERIZATION SCOPE OF WORK**	**1**
1.2	September 2022 Soil Boring Installation and Soil Sample Collection	1
1.3	November 2022 Soil Boring Installation and Soil Sample Collection	1
1.4	Monitoring Well Installation and Development	2
1.5	Groundwater Sample Collection	2
1.6	Quality Assurance and Quality Control (QA/QC)	3
2.	**RAMBOLL SITE INVESTIGATION RESULTS**	**4**
2.1	Field Observations	4
2.2	Soil Characterization Sampling Results	4
2.3	Groundwater Results	5

TABLES

Table 1: Summary of Detected Metals in Soil
Table 2: Summary of Detected Volatile Organic Compounds (VOCs) in Soil
Table 3: Summary of Detected Semi-Volatile Organic Compounds (SVOCs) in Soil
Table 4: Summary of Detected Compounds in Groundwater

FIGURES

Figure 1: Sample Locations

ATTACHMENTS

Attachment A: Soil Boring Logs
Attachment B: Analytical Data Reporting Sheets

1. SITE CHARACTERIZATION SCOPE OF WORK

Ramboll conducted Site investigation activities in September 2022 through December 2022 to evaluate Site conditions; Figure 1 depicts soil boring and sample locations. Investigation activities included the collection of soil samples for laboratory analysis using stainless steel hand augers and direct push methods, installation and development of one groundwater monitoring well, and collection of groundwater for laboratory analysis.

1.1 Field Planning and Reconnaissance

Prior to the start of field investigation activities, Ramboll prepared a Site-specific Health and Safety Plan (HASP). In addition, Ramboll also requested a public subsurface utility mark out from the Pennsylvania One Call system, reviewed available drawings depicting subsurface utility lines, and completed a private subsurface utility clearance prior to the commencement of intrusive work.

While on-Site, Ramboll performed a visual reconnaissance of Tank 056A and the surrounding area to look for indications of a release; no evidence of a release was identified. Ramboll also visually inspected the aboveground piping, valves and flanges to look for any sheen or other indication of petroleum on the surface of the piping. No sheen or oily residue was observed.

1.2 September 2022 Soil Boring Installation and Soil Sample Collection

To evaluate potential impacts to soil, in September 2022, Ramboll installed thirteen hand auger soil borings (SB-01 through SB-13) to depths ranging from 1.2 to 3.5 feet below ground surface (ft bgs); hand auger refusal was encountered at the terminal depths of these borings. Six of these borings were installed for the purposes of sample collection and analysis and seven additional borings (SB-07 to SB-13) were installed for the purposes of making visual observations relating to the presence of black fine silty clay soil. At each soil boring location, continuous soil cores were collected, screened on-Site for the presence of volatile organic vapors using a photoionization detector (PID), described in general accordance with the United Soil Classification System (USCS), and inspected for evidence of potential impacts (i.e., visual staining and/or odor). Ramboll notes that during this initial investigation, the PID was malfunctioning and would not hold a calibration; therefore, the organic vapor readings are considered erroneous. Soil boring logs are included as Attachment A.

Based on visual observation, three soil samples each were collected from SB-01 through SB-03 at the following depths: 1.0 to 1.5 ft bgs; 2.0 to 2.5 ft bgs; and 2.5 to 3.0 ft bgs. One soil sample each was collected from SB-04 through SB-06 from the depth interval with the greatest field evidence of potential impact. Soil samples were collected and placed into laboratory-provided sample containers, labeled, packaged on ice, and transported under chain-of-custody procedures to Phase Separation Science (PSS) in Baltimore, Maryland (MD) for the analysis of volatile organic compounds (VOCs)[1] by United States Environmental Protection Agency (USEPA) method 8260, semi-volatile organic compounds (SVOCs) by USEPA method 8270, and lead by USEPA method 6020.

1.3 November 2022 Soil Boring Installation and Soil Sample Collection

Due to the detection of lead in soil collected from SB-03 at concentrations exceeding applicable screening levels, Ramboll returned to the site in November 2022 and installed six additional soil

[1] Soil samples for VOCs were collected using TerraCores® in conjunction with USEPA method 5035.

borings (SB-14 through SB-19) to depths ranging from 2 to 12 ft bgs using direct-push drilling methods. The additional borings were installed based on the following rationale:

- SB-14 was installed beneath the valve on which oily staining had been observed by the tank inspector to evaluate soil impacts directly beneath the valve.
- SB-15 through SB-17 were installed as step out borings to assist in the delineation of any soil impacts potentially identified at SB-14; samples from these borings were placed on hold at the laboratory for potential analysis.[2]
- SB-18 was installed east of SB-03 to assist in delineating the extent of lead in soil.
- SB-19 was installed south of SB-03 to assist in delineating the extent of lead in soil.

At each soil boring location, continuous soil cores were collected, screened on-Site for the presence of volatile organic vapors using a PID, described in general accordance with the USCS, and inspected for evidence of potential impacts (i.e., visual staining and/or odor). Soil boring logs are included as Attachment A.

Screening of soil at SB-14 through SB-19 did not indicate the presence of potential impact thus, soil samples were collected from SB-14, SB-18, and SB-19 at a default interval of 0.5 to 2.0 ft bgs (just beneath the gravel surface cover). This interval was determined to be the most-likely impacted interval in the case of a surface release and also coincides with the highest concentration of lead detected in soil during the September 2022 sampling. Soil samples were placed into laboratory-provided sample containers, labeled, packaged on ice, and transported under chain-of-custody procedures to PSS in Baltimore, MD. The soil sample collected from SB-14 was analyzed for Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual) including select VOCs by USEPA method 8260, select SVOCs by USEPA method 8270, and lead by USEPA method 6020; soil samples collected from SB-18 and SB-19 were analyzed for lead only.

1.4 Monitoring Well Installation and Development

A permanent groundwater monitoring well was installed by converting SB-19 to PESRM-MW-01 by over-drilling the borehole with 3-inch diameter direct push tooling and installing 10 feet of 1-inch diameter polyvinylchloride (PVC) 0.010-inch factory-slotted well screen fitted with a bottom end cap, and sufficient riser to reach the ground surface. The annulus surrounding the PVC well screen and riser was filled with clean silica sand to a depth approximately one foot above the well screen, followed by bentonite which was hydrated to form a seal to the surface. The well was completed at the surface with a 12-inch diameter steel cover installed into a 2-feet by 2-feet by 4-inch-thick concrete pad set flush with the ground surface. An expandable locking plug was secured in the top of the well.

On November 14, 2022, five days following groundwater monitoring well installation, the well was developed by surging and purging the well with a 0.75-inch bailer to reduce turbidity and to establish a connection between the well and the surrounding formation in accordance with USEPA guidance. No sheen or other evidence of free product was observed on the water surface.

1.5 Groundwater Sample Collection

To evaluate potential impacts to groundwater, Ramboll collected one groundwater sample from PESRM-MW-01 on December 13, 2022. Groundwater was collected using a peristaltic pump and

[2] No impacts were noted at SB-14 therefore the samples collected from SB-15 through SB-17 were not analyzed.

dedicated disposable polyethene tubing in general accordance with USEPA low-flow sampling procedures. Water quality parameters, including pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature, specific conductance, and turbidity were monitored and recorded while purging at flow rates less than 500 milliliters per minute (mL/min) from the approximate mid-point of the screened interval. Concurrent with low-flow purging, the water level in the well was monitored. Stabilization over three consecutive 5-minute readings of the following parameters was utilized to determine groundwater stability for sampling:

- pH ±0.1 unit
- Specific Conductance ±3%
- Temperature ±3%
- DO ±0.3 milligrams per liter (mg/L) or ±10%
- Turbidity <10 nephelometric turbidity units (NTUs) or ±10%
- ORP ±10 millivolts (mV)
- Water Level Drawdown <0.3 foot from static or ±10% after flow adjustments[3]

The groundwater sample was collected into laboratory-provided sample containers, labeled, packaged on ice, and transported under chain-of-custody procedures to PSS in Baltimore, MD for the analysis of Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual) including select VOCs by USEPA method 8260, select SVOCs by USEPA method 8270, and dissolved lead by USEPA method 200.8.

1.6 Quality Assurance and Quality Control (QA/QC)

During the investigation activities, re-useable sampling equipment was decontaminated between sample locations using a non-phosphate detergent and tap water rinse. Following the completion of each field investigation, an equipment rinse blank was collected for analysis of SVOCs by USEPA method 8270 and lead by USEPA method 6020. Additionally, Ramboll included trip blanks with each cooler sent to the lab for the analysis of VOCs by USEPA method 8260. Results, including laboratory quality assurance data, were reviewed to evaluate data quality. Reporting limits for all compounds were below the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standard (SHS) medium-specific concentration (MSC) and no data quality concerns were identified.

[3] The well dewatered prior to the completion of the collection of the second 1-liter amber for the analysis of SVOCs. Ramboll waited approximately 4 hours for the well to recharge; the final amber was collected at that time and sent to the lab for analysis.

2. RAMBOLL SITE INVESTIGATION RESULTS

2.1 Field Observations

A visual inspection of the Tank 056A area was conducted by Ramboll during each Site visit; no staining was observed at the Site. Site soils were observed to consist primarily of six to twelve inches of gravel underlain by a mixture of tan to black fine sandy clay or silt fill, which was observed to include fragments of glass, brick, and other urban debris. Perched groundwater was encountered at several locations at approximately 1 to 2 ft bgs. Field screening of soils with a PID during the November 2022 sampling activities did not identify organic vapor readings in excess of background (0.0 to 9.2 parts per million [ppm]) and verified the absence of visible free product or stained soils. Soil boring logs are included as Attachment A.

2.2 Soil Characterization Sampling Results

Fifteen soil samples and two field duplicates were collected for laboratory analysis for lead, VOCs, and/or SVOCs. Summaries of detected constituents included on the Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual) in soil are summarized in Table 1, 2, and 3; complete laboratory analytical data sheets for the 2022 investigation activities are included as Attachment B.

Concentrations of detected constituents in soil were compared to non-residential MSCs. Non-residential MSCs are appropriate for the site as both Evergreen and Philadelphia Energy Solutions Refining and Marketing LLC (PESRM) have agreed that future site use would be limited to non-residential use and that a land use restriction would be incorporated as part of the overall remedy for the Schuylkill River Tank Farm (SRTF). The site SRTF is currently fenced and secured, and on-site work is conducted in accordance with a site health and safety plan. More specifically soil results were compared to the PADEP SHS MSCs for nonresidential direct contact with surface soil and subsurface soil, for soil to groundwater migration for nonresidential used aquifers with total dissolved solid (TDS) of less than or equal to 2,500 mg/L, and to the site-specific MSC for lead at the SRTF outlined in the 2021 RIR Addendum[4] of 1,000 milligram per kilogram (mg/kg). Reporting limits for all compounds are below the applicable MSCs.

VOCs and SVOCs were not detected in soil samples above the applicable MSCs. Lead was detected at concentrations exceeding the MSC for soil to groundwater migration (450 mg/kg) in soil collected from SB-03 and SB-18, however, was not detected at concentrations exceeding the MSCs at the locations installed directly beneath the flange and bonnet valve (SB-01 and SB-14) where petroleum residual was observed by the tank inspector. More specifically, exceedances of the lead MSC for soil to groundwater migration were identified in soil samples collected at depths of 1.0 to 1.5 ft bgs and 2.0 to 2.5 ft bgs at SB-03 (650 mg/kg and 580 mg/kg, respectively) and 0.5 to 2.0 ft bgs at SB-18 (540 mg/kg). Lead was detected at a concentration of 240 mg/kg (below the soil to groundwater MSC) in a deeper soil sample collected at a depth of 2.5 to 3.0 ft bgs at SB-03 indicating limited vertical migration. All detected concentrations of lead were below the MSC for non-residential direct contact with shallow soils (1,000 mg/kg) and the site-specific MSC for lead established under the Act 2 Program by Evergreen of 1,000 mg/kg.

[4] *Second RI Report Addendum, AOI 9, Former Philadelphia Refinery*, prepared by Stantec on September 20, 2021.

2.3 Groundwater Results

One groundwater sample was collected for laboratory analysis of Short List of Petroleum Products (Table III-5 of the Land Recycling Program Technical Guidance Manual) including dissolved lead, select VOCs, and select SVOCs. Table 4 summarizes the detected constituents in groundwater; complete laboratory analytical data sheets are included as Attachment B. Concentrations of detected constituents were compared to the PADEP SHS MSCs for used aquifers in a non-residential area with TDS of less than or equal to 2,500 mg/L.

Dissolved lead, VOCs, and SVOCs were not detected above the MSCs for groundwater.

TABLES

TABLE 1: Summary of Detected Metals in Soil
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil			SB-01			SB-02		
	Direct Contact		Soil to Groundwater						
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS </= 2,500	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		9/29/2022			9/29/2022		
Metals (mg/kg)									
Lead	1,000	190,000	450	270	340	340	320	240	130

Notes:

Soil was analyzed for total lead using United States Environmental Protection Agency (USEPA) Method 6020B. Complete analytical data reporting sheets are included in Attachment B.

Detected concentrations of lead in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).

Duplicate sample results are reported after the slash.

mg/kg - milligrams per kilogram.

ft bgs - feet below ground surface.

Bold values exceed the PADEP SHS MSCs for Soil to Groundwater for Used Aquifer for Nonresidential Areas, TDS of less than or equal to 2,500 mg/L.

TABLE 1: Summary of Detected Metals in Soil
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil			SB-03			SB-04	SB-05	SB-06	SB-14	SB-18	SB-19
	Direct Contact		Soil to Groundwater									
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS </= 2,500	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs	1.0-1.5 ft bgs	0.5-1.0 ft bgs	3.0-3.5 ft bgs	0.5-2.0 ft bgs	0.5-2.0 ft bgs	0.5-2.0 ft bgs
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		9/29/2022			9/29/2022	9/30/2022	9/30/2022	11/9/2022	11/9/2022	11/9/2022
Metals (mg/kg)												
Lead	1,000	190,000	450	**650**	**580**	240	14 / 15	32	30	190 / 140	**540**	180

Notes:

Soil was analyzed for total lead using United States Environmental Protection Agency (USEPA) Method 6020B. Complete analytical data reporting sheets are included in Attachment B.

Detected concentrations of lead in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).

Duplicate sample results are reported after the slash.

mg/kg - milligrams per kilogram.

ft bgs - feet below ground surface.

Bold values exceed the PADEP SHS MSCs for Soil to Groundwater for Used Aquifer for Nonresidential Areas, TDS of less than or equal to 2,500 mg/L.

TABLE 2: Summary of Detected Volatile Organic Compounds (VOCs) in Soil
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil			SB-01			SB-02		
	Direct Contact		Soil to Groundwater						
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS </= 2,500	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		9/29/2022			9/29/2022		
Volatile Organic Compounds (VOCs) (mg/kg)									
Benzene	280	330	0.13	0.0014	0.0026	0.0018	0.0020	0.0028	0.0014
Isopropylbenzene	10,000	10,000	2,500	< 0.00089	< 0.00096	< 0.0011	< 0.00085	< 0.00087	< 0.00079
Methyl-t-Butyl Ether	8,500	9,800	0.28	< 0.00089	< 0.00096	< 0.0011	< 0.00085	< 0.00087	< 0.00079
Naphthalene	66	77	25	< 0.00089	< 0.00096	0.0017	< 0.00085	< 0.00087	0.0010
Toluene	10,000	10,000	44	0.0014	0.0063	0.0049	0.0059	0.028	0.0048
m&p-Xylene[1]	7,900	9,100	990	0.0015 J	0.0026	0.0026	0.0020	0.0058	0.0017
o-Xylene[1]	7,900	9,100	990	< 0.00089	< 0.00096	< 0.0011	0.0011	0.0020	< 0.00079

Notes:

Soil was analyzed for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260D. Only detected constituents from the Short List of Petroleum Products (Table III-5) are shown. All other detected constituents were compared to applicable regulatory criteria and no exceedances were noted. Complete analytical data reporting sheets are included in Attachment B.

Detected concentrations of lead in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).

1 - Speciated xylene criteria has not been established thus total xylene value was compared.

Duplicate sample results are reported after the slash.

mg/kg - milligrams per kilogram.

ft bgs - feet below ground surface.

"<" - Less than the reporting limit.

J - Estimated value below the reporting limit.

TABLE 2: Summary of Detected Volatile Organic Compounds (VOCs) in Soil
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHS) Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil			SB-03			SB-04	SB-05	SB-06	SB-14
	Direct Contact		Soil to Groundwater							
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS </= 2,500	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs	0.5-1.0 ft bgs	0.5-1.0 ft bgs	3.0-3.5 ft bgs	0.5-2.0 ft bgs
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		9/29/2022			9/29/2022	9/30/2022	9/30/2022	11/9/2022
Volatile Organic Compounds (VOCs) (mg/kg)										
Benzene	280	330	0.13	0.0015	0.0032	< 0.0012	< 0.00097 / < 0.00096	< 0.00096	< 0.0010	< 0.0011 / <0.0013
Isopropylbenzene	10,000	10,000	2,500	< 0.0011	< 0.0013	< 0.0012	< 0.00097 / < 0.00096	< 0.00096	0.0012	< 0.0011 / <0.0013
Methyl-t-Butyl Ether	8,500	9,800	0.28	< 0.0011	< 0.0013	0.0016	< 0.00097 / < 0.00096	< 0.00096	0.0011	0.0028 / 0.0041
Naphthalene	66	77	25	< 0.0011	< 0.0013	< 0.0012	< 0.00097 / < 0.00096	< 0.00096	0.0020	< 0.0011 / <0.0013
Toluene	10,000	10,000	44	0.0014	0.0016	< 0.0012	< 0.00097 / < 0.00096	< 0.00096	< 0.0010	< 0.0011 / <0.0013
m&p-Xylene[1]	7,900	9,100	990	< 0.0021	< 0.0026	< 0.0024	< 0.019 / < 0.019	< 0.0019	< 0.0020	<0.0023 / <0.0026
o-Xylene[1]	7,900	9,100	990	< 0.0011	< 0.0013	< 0.0012	< 0.00097 / < 0.00096	< 0.00096	< 0.0010	< 0.0011 / <0.0013

Notes:

Soil was analyzed for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260D. Only detected constituents from the Short List of Petroleum Products (Table III-5) are shown. All other detected constituents were compared to applicable regulatory criteria and no exceedances were noted. Complete analytical data reporting sheets are included in Attachment B.

Detected concentrations of lead in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).

1 - Speciated xylene criteria has not been established thus total xylene value was compared.

Duplicate sample results are reported after the slash.

mg/kg - milligrams per kilogram.

ft bgs - feet below ground surface.

"<" - Less than the reporting limit.

J - Estimated value below the reporting limit.

TABLE 3: Summary of Detected Semi-Volatile Organic Compounds (SVOCs) in Soil
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards Medium-Specific (SHS) Concentrations (MSCs) for Organic Regulated Substances in Soil			SB-01			SB-02		
	Direct Contact		Soil to Groundwater						
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS </= 2,500	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		9/29/2022			9/29/2022		
Semi-Volatile Organic Compounds (SVOCs) (mg/kg)									
Anthracene	190,000	190,000	350	0.023	< 0.011	0.0094 J	0.011	< 0.085	< 0.0093
Benzo(a)anthracene	130	190,000	340	0.20	0.018	0.022	0.039	0.022	0.019
Benzo(a)pyrene	91	190,000	46	0.15	0.026	0.021	0.040	0.026	0.027
Benzo(b)fluoranthene	76	190,000	170	0.17	0.025	0.017	0.048	0.030	0.028
Benzo(g,h,i)perylene	190,000	190,000	180	0.084	0.023	0.015	0.057	0.030	0.031
Chrysene	760	190,000	230	0.20	0.017	0.020	0.039	0.022	0.023
Fluorene	130,000	190,000	3,800	< 0.0093	< 0.011	< 0.012	< 0.0095	< 0.011	< 0.0093
Indeno(1,2,3-c,d)Pyrene	76	190,000	18,000	0.082	0.021	0.015	0.031	0.020	0.023
Phenanthrene	190,000	190,000	10,000	0.067	< 0.011	0.036	0.025	0.012	0.011
Pyrene	96,000	190,000	2,200	0.28	0.021	0.035	0.053	0.028	0.025

Notes:
Soil was analyzed for semi-volatile organic compounds (SVOCs) using United States Environmental Protection Agency (USEPA) Method 8270E. Only detected constituents from the Short List of Petroleum Products (Table III-5) are shown. All other detected constituents were compared to applicable regulatory criteria and no exceedances were noted. Complete analytical data reporting sheets are included in Attachment B.
Detected concentrations of lead in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).
Duplicate sample results are reported after the slash.
mg/kg - milligrams per kilogram.
ft bgs - feet below ground surface.
"<" - Less than the reporting limit.
J - Estimated value below the reporting limit.

TABLE 3: Summary of Detected Semi-Volatile Organic Compounds (SVOCs) in Soil
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards Medium-Specific (SHS) Concentrations (MSCs) for Organic Regulated Substances in Soil			SB-03			SB-04	SB05	SB06	SB14
	Direct Contact		Soil to Groundwater							
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS </= 2,500	1.0-1.5 ft bgs	2.0-2.5 ft bgs	2.5-3.0 ft bgs	1.0-1.5 ft bgs	0.5-1.0 ft bgs	3.0-3.5 ft bgs	0.5-2.0 ft bgs
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		9/29/2022			9/29/2022	9/30/2022	9/30/2022	11/9/2022
Semi-Volatile Organic Compounds (SVOCs) (mg/kg)										
Anthracene	190,000	190,000	350	0.020	0.15	0.010 J	< 0.010 / < 0.011	< 0.010	< 0.012	< 0.012 / < 0.012
Benzo(a)anthracene	130	190,000	340	0.12	0.52	0.058	< 0.010 / < 0.011	< 0.010	< 0.012	0.021 / 0.016
Benzo(a)pyrene	91	190,000	46	0.14	0.52	0.069	< 0.010 / < 0.011	< 0.010	< 0.012	0.025 / 0.018
Benzo(b)fluoranthene	76	190,000	170	0.13	0.46	0.066	< 0.010 / < 0.011	< 0.010	< 0.012	0.024 / 0.017
Benzo(g,h,i)perylene	190,000	190,000	180	0.096	0.29	0.047	< 0.010 / < 0.011	< 0.010	< 0.012	0.020 / 0.013
Chrysene	760	190,000	230	0.13	0.50	0.059	< 0.010 / < 0.011	< 0.010	< 0.012	0.023 / 0.017
Fluorene	130,000	190,000	3,800	< 0.011	0.030	< 0.011	< 0.010 / < 0.011	< 0.010	< 0.012	< 0.012 / < 0.012
Indeno(1,2,3-c,d)Pyrene	76	190,000	18,000	0.093	0.30	0.045	< 0.010 / < 0.011	< 0.010	< 0.012	0.021 / 0.015
Phenanthrene	190,000	190,000	10,000	0.086	0.55	0.037	< 0.010 / < 0.011	< 0.010	0.031	0.015 / 0.014
Pyrene	96,000	190,000	2,200	0.19	0.91	0.079	< 0.010 / < 0.011	< 0.010	< 0.012	0.030 / 0.025

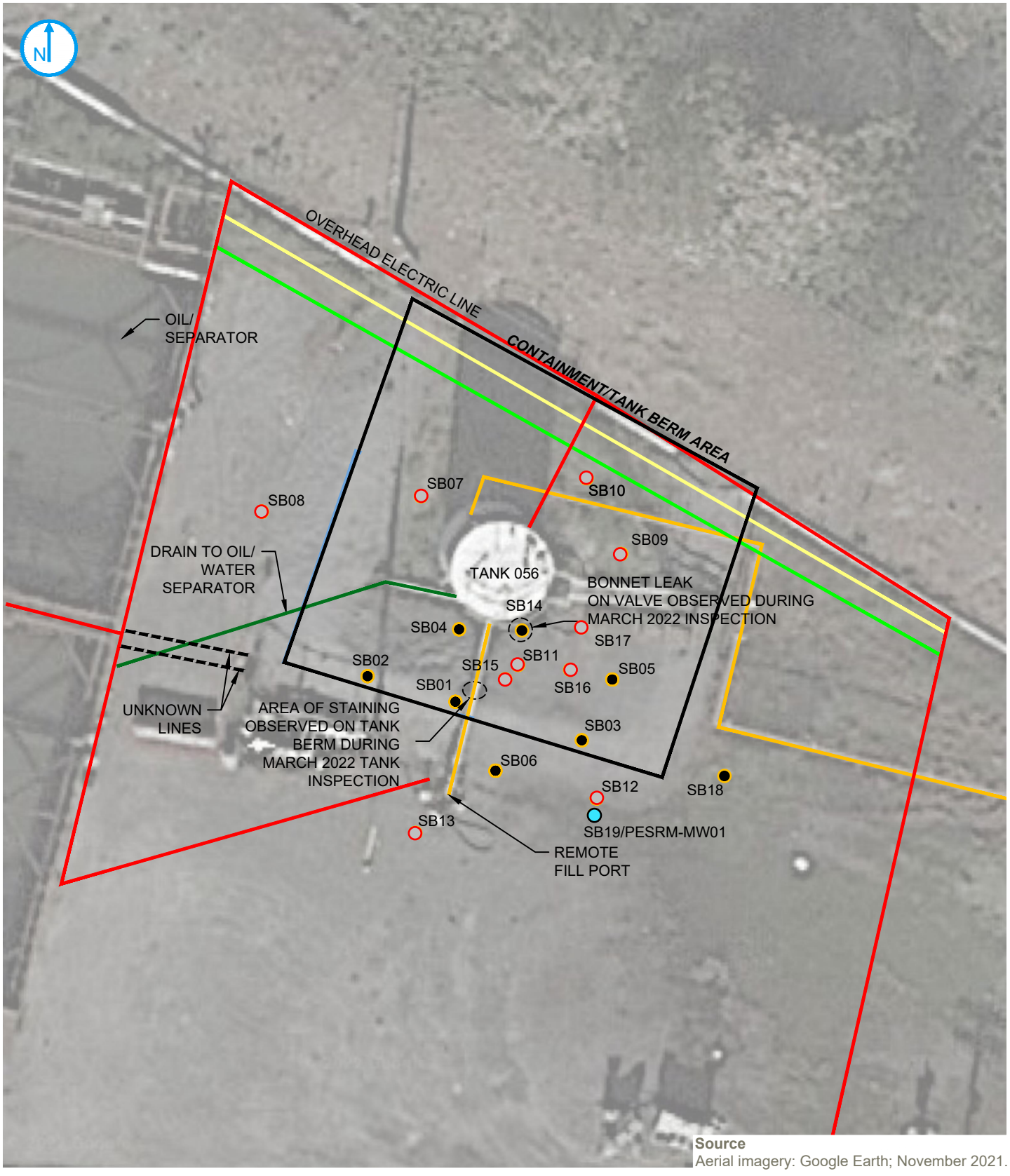
Notes:
Soil was analyzed for semi-volatile organic compounds (SVOCs) using United States Environmental Protection Agency (USEPA) Method 8270E. Only detected constituents from the Short List of Petroleum Products (Table III-5) are shown. All other detected constituents were compared to applicable regulatory criteria and no exceedances were noted. Complete analytical data reporting sheets are included in Attachment B.
Detected concentrations of lead in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil, Subsurface Soil, and Soil to Groundwater MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).
Duplicate sample results are reported after the slash.
mg/kg - milligrams per kilogram.
ft bgs - feet below ground surface.
"<" - Less than the reporting limit.
J - Estimated value below the reporting limit.

TABLE 4: Summary of Detected Compounds in Groundwater (December 2022)
Site Characterization Sampling
Tank 056A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards Medium-Specific (SHS) Concentrations (MSCs) for Regulated Substances in Groundwater	PESRM-MW-01
	Used Aquifer, Nonresidential TDS </= 2,500	
Volatile Organic Compounds (VOCs) (µg/L)		
Isopropylbenzene	3,500	1.1
Methyl-t-Butyl Ether	20	2.4
Lead (µg/L)		
Dissolved Lead	5.0	2.1

Notes:
Groundwater was analyzed for semi-volatile organic compounds (SVOCs) using United States Environmental Protection Agency (USEPA) Method 8270E, volatile organic compounds (VOCs) using USEPA Method 8260D, and dissolved lead using USEPA Method 200.8. Only detected constituents from are shown. Complete analytical data reporting sheets are included in Attachment B.
Detected concentrations in groundwater were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Regulated Substances in Groundwater. More specifically, MSCs for Used Aquifer for Nonresidential Areas, total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L).
µg/L - micrograms per liter.

FIGURES



Source
Aerial imagery: Google Earth; November 2021.

\\tappricfs\CAD\Graeme\169002829\SOIL SAMPLE_LOCATIONS_PHILADEPHIA_PA.dwg
DESIGNER: DBLANCHARD
DATED: 10/6/2022
PROJECT: PHILY_PA

- SOIL SAMPLE LOCATION
- OVERHEAD ELECTRIC LINE
- ABOVEGROUND FUEL LINE
- STORMWATER LINE
- DRAIN TO OIL/WATER SEPARATOR
- GAS LINE
- SOIL BORING LOCATION (NO SAMPLE COLLECTED)
- MONITORING WELL LOCATION

0 20 Feet

2022 SAMPLE LOCATIONS

SCHUYLKILL RIVER TANK FARM
TANK 056 LOCATION
PHILADELPHIA, PENNSYLVANIA

FIGURE 1

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

ATTACHMENTS

ATTACHMENT A

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/29/2022
Borehole Diameter	4 inches	Boring ID	SB-01

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB01_1.0-1.5	1.0-1.5 ft bgs	11:30	TCL SVOCs, TCL VOCs, Total Lead
PESR_Tank056_SB01_2.0-2.5	2.0-2.5 ft bgs	11:35	TCL SVOCs, TCL VOCs, Total Lead
PESR_Tank056_SB01_2.5-3.0	2.5-3.0 ft bgs	11:40	TCL SVOCs, TCL VOCs, Total Lead

Comments: PID Malfunction; will not hold calibration.

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	1.0	1.0	Light grey gravelly well graded coarse SAND (SW), medium dense, dry.	SW	0.0-0.5	3.0
Y	1.0	3.0	2.0	Medium brown stiff lean CLAY (CL), trace fine sand, moist.	CL	0.5-1.0	9.8
						1.0-1.5	7.4
						1.5-2.0	>15,000
						2.0-2.5	331.5
						2.5-3.0	>15,000
	3.0	3.5	0.5	Dark grey to black, moist, fine sandy CLAY (CH), high plasticity.	CH	3.0-3.5	0.0

Notes

ft bgs - feet below ground surface
TCL - Target compound list
VOC - Volatile organic compound
SVOC - Semi-volatile organic compound
ppm - Parts per million

Facility ID	51-115577	Total Depth	3.0 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/29/2022
Borehole Diameter	4 inches	Boring ID	SB-02

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB02_1.0-1.5	1.0-1.5 ft bgs	13:00	TCL SVOCs, TCL VOCs, Total Lead
PESR_Tank056_SB02_2.0-2.5	2.0-2.5 ft bgs	13:02	TCL SVOCs, TCL VOCs, Total Lead
PESR_Tank056_SB02_2.5-3.0	2.5-3.0 ft bgs	13:04	TCL SVOCs, TCL VOCs, Total Lead

Comments: PID Malfunction; will not hold calibration.

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	1.0	1.0	Light grey gravelly well graded coarse SAND (SW), medium dense, dry.	SW		
Y	1.0	3.0	2.0	Medium brown stiff lean CLAY (CL), trace fine sand, moist.	CL	1.0-1.5	>15,000
						1.5-2.0	>15,000
						2.0-2.5	>15,000
						2.5-3.0	538.4

Notes

ft bgs - feet below ground surface
TCL - Target compound list
VOC - Volatile organic compound
SVOC - Semi-volatile organic compound
ppm - Parts per million

Facility ID	51-115577	Total Depth	3.0 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/29/2022
Borehole Diameter	4 inches	Boring ID	SB-03

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB03_1.0-1.5	1.0-1.5 ft bgs	13:06	TCL SVOCs, TCL VOCs, Total Lead
PESR_Tank056_SB03_2.0-2.5	2.0-2.5 ft bgs	13:08	TCL SVOCs, TCL VOCs, Total Lead
PESR_Tank056_SB03_2.5-3.0	2.5-3.0 ft bgs	13:10	TCL SVOCs, TCL VOCs, Total Lead

Comments: Hand Auger Refusal at 3 ft bgs. PID Malfunction; will not hold calibration.

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	1.0	1.0	Light grey gravelly well graded coarse SAND (SW), medium dense, dry.	SW	0.0-0.5	313.6
Y	1.0	3.0	2.0	Medium brown stiff lean CLAY (CL), trace fine sand, moist.	CL	0.5-1.0	>15,000
						1.0-1.5	>15,000
						1.5-2.0	>15,000
						2.0-2.5	828.4
						2.5-3.0	6.9

Notes

ft bgs - feet below ground surface
TCL - Target compound list
VOC - Volatile organic compound
SVOC - Semi-volatile organic compound
ppm - Parts per million

Facility ID	51-115577	Total Depth	1.2 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/29/2022
Borehole Diameter	4 inches	Boring ID	SB-04

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB04_0.5-1.0	0.5-1.0 ft bgs	14:40	TCL SVOCs, TCL VOCs, Total Lead

Comments: Perched groundwater encountered at 1.2 ft bgs. No sheen noted. PID Malfunction; will not hold calibration.

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	0.6
Y	0.5	1.0	0.5	Orange medium coarse gravelly well graded course SAND (SW), moist, medium dense.	SW	0.5-1.0	1.2
	1.0	1.2	0.2	Perched groundwater encountered. Dark grey fine sandy well graded angular GRAVEL (GW).	GW	1.0-1.2	0.4

Notes

ft bgs - feet below ground surface
TCL - Target compound list
VOC - Volatile organic compound
SVOC - Semi-volatile organic compound
ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-05

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB05_0.5-1.0	0.5-1.0 ft bgs	9:30	TCL SVOCs, TCL VOCs, Total Lead

Comments: Hand Auger Refusal at 3.5 ft bgs. PID Malfunction; will not hold calibration.

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	>15,000
Y	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH	0.5-1.0	>15,000
						1.0-1.5	>15,000
	1.0	3.5	2.5	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.		1.5-2.0	>15,000
						2.0-2.5	>15,000
						2.5-3.0	>15,000
						3.0-3.5	>15,000

Notes

ft bgs - feet below ground surface

TCL - Target compound list

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-06

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB06_3.0-3.5	0.5-1.0 ft bgs	10:30	TCL SVOCs, TCL VOCs, Total Lead
Comments: PID Malfunction; will not hold calibration.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
Y	1.0	3.5	3.0	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

TCL - Target compound list

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	2.0 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-07
Comments: PID malfunction.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
	1.0	2.0	1.0	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	1.0 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-08
Comments: PID Malfunction; will not hold calibration. Hand auger refusal on cement at several locations at and around SB-08.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-09
Comments: PID Malfunction; will not hold calibration.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
	1.0	3.5	2.5	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-10
Comments: PID Malfunction; will not hold calibration.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
	1.0	3.5	2.5	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-11
Comments: PID Malfunction; will not hold calibration.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
	1.0	3.5	2.5	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-12
Comments: PID Malfunction; will not hold calibration.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
	1.0	3.5	2.5	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	3.5 ft bgs
DEP Tank ID	056A	Field Staff	E Ruger & B Bancewicz
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Hand Auger	Date	9/30/2022
Borehole Diameter	4 inches	Boring ID	SB-13
Comments: PID Malfunction; will not hold calibration.			

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	0.5	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW		
	0.5	1.0	0.5	Tan to light brown high plasticity CLAY (CH), trace fine sand, moist, soft.	CH		
	1.0	3.5	2.5	Dark grey high plasticity CLAY (CH), trace gravel, glass debris and fine sand, moist.			

Notes

ft bgs - feet below ground surface

ppm - Parts per million

Facility ID	51-115577	Total Depth	4.0 ft bgs
DEP Tank ID	056A	Field Staff	Jansen Costello
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Direct Push	Date	11/9/2022
Borehole Diameter	2-inch	Boring ID	SB-14

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB14_0.5-2.0	0.5-2.0 ft bgs	1230	Select SVOCs and VOCs, Total Lead

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	3.0	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	0.0
Y	0.5	1.0		Light tan, fine to medium sandy CLAY (CL), low plasticity, wet, loose, little clay.	CL	0.5-1.0	0.0
	1.0	4.0		Dark grey to black, wet, fine sandy CLAY (CH), high plasticity.	CH	1.0-2.5	0.0
						2.5-4.0	0.0

Notes

ft bgs - feet below ground surface

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	2.0 ft bgs
DEP Tank ID	056A	Field Staff	Jansen Costello
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Direct Push	Date	11/9/2022
Borehole Diameter	2-inch	Boring ID	SB-15

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	2.0	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	0.0
	0.5	1.0		Light tan, fine to medium sandy CLAY (CL), low plasticity, wet, loose, little clay.	CL	0.5-1.0	0.0
	1.0	2.0		Dark grey to black, wet, fine sandy CLAY (CH), high plasticity.	CH	1.0-1.5	0.0
						1.5-2.0	0.0

Notes

ft bgs - feet below ground surface

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	2 ft bgs
DEP Tank ID	056A	Field Staff	Jansen Costello
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Direct Push	Date	11/9/2022
Borehole Diameter	2-inch	Boring ID	SB-16

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	2.0	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	0.0
	0.5	1.0		Light tan, fine to medium sandy CLAY (CL), low plasticity, wet, loose, little clay.	CL	0.5-1.0	0.0
	1.0	2.0		Dark grey to black, wet, fine sandy CLAY (CH), high plasticity.	CH	1.0-1.5	7.5
						1.5-2.0	6.2

Notes

ft bgs - feet below ground surface

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	2.0 ft bgs
DEP Tank ID	056A	Field Staff	Jansen Costello
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Direct Push	Date	11/9/2022
Borehole Diameter	2-inch	Boring ID	SB-17

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	2.0	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	0.0
	0.5	1.0		Light tan, fine to medium sandy CLAY (CL), low plasticity, wet, loose, little clay.	CL	0.5-1.0	0.0
	1.0	2.0		Dark grey to black, wet, fine sandy CLAY (CH), high plasticity.	CH	1.0-1.5	0.0
						1.5-2.0	0.0

Notes

ft bgs - feet below ground surface

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	2.0 ft bgs
DEP Tank ID	056A	Field Staff	Jansen Costello
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Direct Push	Date	11/9/2022
Borehole Diameter	2-inch	Boring ID	SB-18

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB18_0.5-2.0	0.5-2.0 ft bgs	1200	Total Lead

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	2.0	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	0.0
Y	0.5	2.0		Medium to dark brown coarse sandy fine angular GRAVEL (GW), trace silt and debris (i.e. slag and glass), loose, moist to wet at 1.7 ft bgs.		0.5-1.0	0.0
						1.0-1.5	0.0
						1.5-2.0	0.0

Notes

ft bgs - feet below ground surface

VOC - Volatile organic compound

SVOC - Semi-volatile organic compound

ppm - Parts per million

Facility ID	51-115577	Total Depth	12
DEP Tank ID	056A	Field Staff	Taylor Carroll
Project Location	Philadelphia, PA	Project Manager	Greg Grose
Drilling Method	Direct Push	Date	11/9/2022
Borehole Diameter	1.75-inch, 3-inch for monitoring well	Boring ID	SB-19/PESRM-MW-01

Sample IDs	Sample Interval	Time	Constituent
PESR_Tank056_SB19_0.5-2.0	0.5-2.0 ft bgs	950	Total Lead

Comments:3-inch overdrilled for well installation with direct push rods. 10 feet of screen set at 12 ft bgs.

Sampled (Y/N)	Start Depth (ft bgs)	End Depth (ft bgs)	Recovery (ft)	Soil Description	Group Symbol	PID	
						Depth Interval (ft bgs)	ppm
	0.0	0.5	2.8	Light grey coarse angular GRAVEL (GW), medium dense, dry.	GW	0.0-0.5	1.4
Y	0.5	2.0		Medium to dark brown coarse sandy fine angular GRAVEL (GW), trace silt and debris (i.e. slag and glass), loose, dry.		0.5-1.0	0.2
						1.0-1.5	0.0
						1.5-2.0	0.0
	2.0	4.0		Dark grey, high plasticity CLAY (CH), trace silt, hard, saturated at 2.5 ft bgs, moist to wet.	CH	2.0-2.5	0.2
						2.5-3.0	0.0
						3.0-3.5	0.0
						3.5-4.0	1.2
	4.0	8.0	2.3			4.0-4.5	5.3
						4.5-5.0	4.6
						5.0-5.5	9.2
						5.5-6.0	7.9
						6.0-6.5	5.6
						6.5-7.0	2.5
						7.0-7.5	0.7
						7.5-8.0	0.4
	8.0	12.0	2.3	Dark grey, high plasticity CLAY (CH), trace silt and fine sand, soft to medium firm, wet.		8.0-8.5	0.3
						8.5-9.0	2.2
						9.0-10	2.2
						10-10.5	0.0
						10.5-11	0.0
						11-11.5	0.0
						11.5-12	0.0

Notes

ft bgs - feet below ground surface
VOC - Volatile organic compound
SVOC - Semi-volatile organic compound
ppm - Parts per million

ATTACHMENT B

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
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www.phaseonline.com

Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

October 4, 2022

Sam Weaver
Ramboll US Corp. - Princeton
101 Carnegie Center, Suite 200
Princeton, NJ 08540

Reference: PSS Project No: **22093003**
Project Name: Philly Tank Farm
Project Location: Philadelphia, PA
Project ID.: 1690005561

Dear Sam Weaver:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22093003**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 4, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

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Baltimore, MD 21228
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Explanation of Qualifiers

Project Name: Philly Tank Farm

PSS Project No.: 22093003

Project ID: 1690005561

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/30/2022 at 10:25 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22093003-001	PESR_Tank056_SB01_1.0-1.5	SOIL	09/29/22 11:30
22093003-002	PESR_Tank056_SB01_2.0-2.5	SOIL	09/29/22 11:35
22093003-003	PESR_Tank056_SB01_2.5-3.0	SOIL	09/29/22 11:40
22093003-004	PESR_Tank056_SB02_1.0-1.5	SOIL	09/29/22 13:00
22093003-005	PESR_Tank056_SB02_2.0-2.5	SOIL	09/29/22 13:02
22093003-006	PESR_Tank056_SB02_2.5-3.0	SOIL	09/29/22 13:04
22093003-007	PESR_Tank056_SB03_1.0-1.5	SOIL	09/29/22 13:06
22093003-008	PESR_Tank056_SB03_2.0-2.5	SOIL	09/29/22 13:08
22093003-009	PESR_Tank056_SB03_2.5-3.0	SOIL	09/29/22 13:10
22093003-010	PESR_Tank056_SB04_0.5-1.0	SOIL	09/29/22 14:40
22093003-011	DUP01-20220929	SOIL	09/29/22 00:00
22093003-012	EB01-20220929	WATER	09/29/22 15:50
22093003-013	TB01-2022092	WATER	09/29/22 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

PHASE SEPARATION SCIENCE

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Explanation of Qualifiers

Project Name: Philly Tank Farm

PSS Project No.: 22093003

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_1.0-1.5 **Date/Time Sampled: 09/29/2022 11:30** **PSS Sample ID: 22093003-001**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**270**	mg/kg	0.49		1	0.37	10/03/22	10/04/22 00:54	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.027**	mg/kg	0.018		1	0.0098	10/03/22	10/03/22 17:56	1045
Benzene	**0.0014**	mg/kg	0.00089		1	0.00038	10/03/22	10/03/22 17:56	1045
Bromochloromethane	ND	mg/kg	0.00089		1	0.00042	10/03/22	10/03/22 17:56	1045
Bromodichloromethane	ND	mg/kg	0.00089		1	0.00039	10/03/22	10/03/22 17:56	1045
Bromoform	ND	mg/kg	0.00089		1	0.00045	10/03/22	10/03/22 17:56	1045
Bromomethane	ND	mg/kg	0.00089		1	0.00089	10/03/22	10/03/22 17:56	1045
2-Butanone (MEK)	**0.020**	mg/kg	0.0044		1	0.002	10/03/22	10/03/22 17:56	1045
Carbon Disulfide	ND	mg/kg	0.00089		1	0.00037	10/03/22	10/03/22 17:56	1045
Carbon tetrachloride	ND	mg/kg	0.00089		1	0.00033	10/03/22	10/03/22 17:56	1045
Chlorobenzene	ND	mg/kg	0.00089		1	0.00048	10/03/22	10/03/22 17:56	1045
Chloroethane	ND	mg/kg	0.00089		1	0.00059	10/03/22	10/03/22 17:56	1045
Chloroform	ND	mg/kg	0.0044		1	0.00058	10/03/22	10/03/22 17:56	1045
Chloromethane	ND	mg/kg	0.00089		1	0.00044	10/03/22	10/03/22 17:56	1045
Cyclohexane	ND	mg/kg	0.00089		1	0.00036	10/03/22	10/03/22 17:56	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00089		1	0.00077	10/03/22	10/03/22 17:56	1045
Dibromochloromethane	ND	mg/kg	0.00089		1	0.00027	10/03/22	10/03/22 17:56	1045
1,2-Dibromoethane	ND	mg/kg	0.00089		1	0.00044	10/03/22	10/03/22 17:56	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00089		1	0.00039	10/03/22	10/03/22 17:56	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00089		1	0.0004	10/03/22	10/03/22 17:56	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00089		1	0.00077	10/03/22	10/03/22 17:56	1045
Dichlorodifluoromethane	ND	mg/kg	0.00089		1	0.00042	10/03/22	10/03/22 17:56	1045
1,1-Dichloroethane	ND	mg/kg	0.00089		1	0.00038	10/03/22	10/03/22 17:56	1045
1,2-Dichloroethane	ND	mg/kg	0.00089		1	0.00032	10/03/22	10/03/22 17:56	1045
1,1-Dichloroethene	ND	mg/kg	0.00089		1	0.00036	10/03/22	10/03/22 17:56	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00089		1	0.00038	10/03/22	10/03/22 17:56	1045
1,2-Dichloropropane	ND	mg/kg	0.00089		1	0.00043	10/03/22	10/03/22 17:56	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00089		1	0.00038	10/03/22	10/03/22 17:56	1045

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_1.0-1.5 **Date/Time Sampled: 09/29/2022 11:30** **PSS Sample ID: 22093003-001**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00089		1	0.00041	10/03/22	10/03/22 17:56	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00089		1	0.00036	10/03/22	10/03/22 17:56	1045
Ethylbenzene	ND	mg/kg	0.00089		1	0.00033	10/03/22	10/03/22 17:56	1045
2-Hexanone (MBK)	ND	mg/kg	0.00089		1	0.00058	10/03/22	10/03/22 17:56	1045
Isopropylbenzene	ND	mg/kg	0.00089		1	0.00035	10/03/22	10/03/22 17:56	1045
Methyl Acetate	ND	mg/kg	0.022		1	0.00098	10/03/22	10/03/22 17:56	1045
Methylcyclohexane	ND	mg/kg	0.00089		1	0.00039	10/03/22	10/03/22 17:56	1045
Methylene chloride	ND	mg/kg	0.0044		1	0.0032	10/03/22	10/03/22 17:56	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00089		1	0.00057	10/03/22	10/03/22 17:56	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00089		1	0.00034	10/03/22	10/03/22 17:56	1045
Naphthalene	ND	mg/kg	0.00089		1	0.00052	10/03/22	10/03/22 17:56	1045
Styrene	ND	mg/kg	0.00089		1	0.00036	10/03/22	10/03/22 17:56	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00089		1	0.00054	10/03/22	10/03/22 17:56	1045
Tetrachloroethene	ND	mg/kg	0.00089		1	0.00039	10/03/22	10/03/22 17:56	1045
Toluene	**0.0014**	mg/kg	0.00089		1	0.0004	10/03/22	10/03/22 17:56	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00089		1	0.00046	10/03/22	10/03/22 17:56	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00089		1	0.0004	10/03/22	10/03/22 17:56	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00089		1	0.00032	10/03/22	10/03/22 17:56	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00089		1	0.0003	10/03/22	10/03/22 17:56	1045
Trichloroethene	ND	mg/kg	0.00089		1	0.00048	10/03/22	10/03/22 17:56	1045
Trichlorofluoromethane	ND	mg/kg	0.00089		1	0.00042	10/03/22	10/03/22 17:56	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00089		1	0.00034	10/03/22	10/03/22 17:56	1045
Vinyl chloride	ND	mg/kg	0.0044		1	0.00029	10/03/22	10/03/22 17:56	1045
m&p-Xylene	**0.0015**	mg/kg	0.0018	J	1	0.00098	10/03/22	10/03/22 17:56	1045
o-Xylene	ND	mg/kg	0.00089		1	0.00033	10/03/22	10/03/22 17:56	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*106*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 17:56*	*1045*
Dibromofluoromethane	*99*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 17:56*	*1045*
Toluene-D8	*102*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 17:56*	*1045*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_1.0-1.5 **Date/Time Sampled: 09/29/2022 11:30** **PSS Sample ID: 22093003-001**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.0093		1	0.0067	10/03/22	10/03/22 20:08	1070
Acenaphthylene	ND	mg/kg	0.0093		1	0.0063	10/03/22	10/03/22 20:08	1070
Acetophenone	ND	mg/kg	0.037		1	0.024	10/03/22	10/03/22 20:08	1070
Anthracene	**0.023**	mg/kg	0.0093		1	0.0048	10/03/22	10/03/22 20:08	1070
Atrazine	ND	mg/kg	0.074		1	0.019	10/03/22	10/03/22 20:08	1070
Benzo(a)anthracene	**0.20**	mg/kg	0.0093		1	0.0037	10/03/22	10/03/22 20:08	1070
Benzo(a)pyrene	**0.15**	mg/kg	0.0093		1	0.0052	10/03/22	10/03/22 20:08	1070
Benzo(b)fluoranthene	**0.17**	mg/kg	0.0093		1	0.0048	10/03/22	10/03/22 20:08	1070
Benzo(g,h,i)perylene	**0.084**	mg/kg	0.0093		1	0.0067	10/03/22	10/03/22 20:08	1070
Benzo(k)fluoranthene	**0.13**	mg/kg	0.0093		1	0.0082	10/03/22	10/03/22 20:08	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.037		1	0.02	10/03/22	10/03/22 20:08	1070
Butyl benzyl phthalate	ND	mg/kg	0.037		1	0.024	10/03/22	10/03/22 20:08	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.037		1	0.024	10/03/22	10/03/22 20:08	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.037		1	0.0048	10/03/22	10/03/22 20:08	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.037		1	0.0056	10/03/22	10/03/22 20:08	1070
bis(2-ethylhexyl) phthalate	**0.026**	mg/kg	0.037	J	1	0.026	10/03/22	10/03/22 20:08	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.037		1	0.019	10/03/22	10/03/22 20:08	1070
Di-n-butyl phthalate	ND	mg/kg	0.037		1	0.019	10/03/22	10/03/22 20:08	1070
Carbazole	ND	mg/kg	0.037		1	0.029	10/03/22	10/03/22 20:08	1070
Caprolactam	ND	mg/kg	0.074		1	0.013	10/03/22	10/03/22 20:08	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.037		1	0.032	10/03/22	10/03/22 20:08	1070
4-Chloroaniline	ND	mg/kg	0.037		1	0.029	10/03/22	10/03/22 20:08	1070
2-Chloronaphthalene	ND	mg/kg	0.037		1	0.026	10/03/22	10/03/22 20:08	1070
2-Chlorophenol	ND	mg/kg	0.037		1	0.019	10/03/22	10/03/22 20:08	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.037		1	0.021	10/03/22	10/03/22 20:08	1070
Chrysene	**0.20**	mg/kg	0.0093		1	0.0045	10/03/22	10/03/22 20:08	1070
Dibenz(a,h)Anthracene	**0.028**	mg/kg	0.0093		1	0.0063	10/03/22	10/03/22 20:08	1070
Dibenzofuran	ND	mg/kg	0.037		1	0.022	10/03/22	10/03/22 20:08	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.037		1	0.02	10/03/22	10/03/22 20:08	1070
2,4-Dichlorophenol	ND	mg/kg	0.037		1	0.029	10/03/22	10/03/22 20:08	1070
Diethyl phthalate	ND	mg/kg	0.037		1	0.022	10/03/22	10/03/22 20:08	1070
Dimethyl phthalate	ND	mg/kg	0.037		1	0.022	10/03/22	10/03/22 20:08	1070
2,4-Dimethylphenol	ND	mg/kg	0.037		1	0.035	10/03/22	10/03/22 20:08	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.19		1	0.044	10/03/22	10/03/22 20:08	1070
2,4-Dinitrophenol	ND	mg/kg	0.19		1	0.084	10/03/22	10/03/22 20:08	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_1.0-1.5 **Date/Time Sampled: 09/29/2022 11:30** **PSS Sample ID: 22093003-001**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.074		1	0.026	10/03/22	10/03/22 20:08	1070
2,6-Dinitrotoluene	ND	mg/kg	0.074		1	0.022	10/03/22	10/03/22 20:08	1070
Fluoranthene	**0.30**	mg/kg	0.0093		1	0.0041	10/03/22	10/03/22 20:08	1070
Fluorene	ND	mg/kg	0.0093		1	0.0063	10/03/22	10/03/22 20:08	1070
Hexachlorobenzene	ND	mg/kg	0.037		1	0.0071	10/03/22	10/03/22 20:08	1070
Hexachlorobutadiene	ND	mg/kg	0.037		1	0.021	10/03/22	10/03/22 20:08	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.074		1	0.041	10/03/22	10/03/22 20:08	1070
Hexachloroethane	ND	mg/kg	0.037		1	0.024	10/03/22	10/03/22 20:08	1070
Indeno(1,2,3-c,d)Pyrene	**0.082**	mg/kg	0.0093		1	0.0086	10/03/22	10/03/22 20:08	1070
Isophorone	ND	mg/kg	0.037		1	0.025	10/03/22	10/03/22 20:08	1070
2-Methylnaphthalene	ND	mg/kg	0.0093		1	0.0089	10/03/22	10/03/22 20:08	1070
2-Methyl phenol	ND	mg/kg	0.037		1	0.02	10/03/22	10/03/22 20:08	1070
3&4-Methylphenol	ND	mg/kg	0.037		1	0.027	10/03/22	10/03/22 20:08	1070
Naphthalene	ND	mg/kg	0.0093		1	0.0059	10/03/22	10/03/22 20:08	1070
2-Nitroaniline	ND	mg/kg	0.074		1	0.021	10/03/22	10/03/22 20:08	1070
3-Nitroaniline	ND	mg/kg	0.074		1	0.026	10/03/22	10/03/22 20:08	1070
4-Nitroaniline	ND	mg/kg	0.074		1	0.037	10/03/22	10/03/22 20:08	1070
Nitrobenzene	ND	mg/kg	0.037		1	0.028	10/03/22	10/03/22 20:08	1070
2-Nitrophenol	ND	mg/kg	0.037		1	0.03	10/03/22	10/03/22 20:08	1070
4-Nitrophenol	ND	mg/kg	0.19		1	0.057	10/03/22	10/03/22 20:08	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.037		1	0.0033	10/03/22	10/03/22 20:08	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.037		1	0.02	10/03/22	10/03/22 20:08	1070
Di-n-octyl phthalate	ND	mg/kg	0.074		1	0.038	10/03/22	10/03/22 20:08	1070
Pentachlorophenol	ND	mg/kg	0.074		1	0.045	10/03/22	10/03/22 20:08	1070
Phenanthrene	**0.067**	mg/kg	0.0093		1	0.0056	10/03/22	10/03/22 20:08	1070
Phenol	ND	mg/kg	0.037		1	0.028	10/03/22	10/03/22 20:08	1070
Pyrene	**0.28**	mg/kg	0.0093		1	0.0048	10/03/22	10/03/22 20:08	1070
Pyridine	ND	mg/kg	0.037		1	0.017	10/03/22	10/03/22 20:08	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.037		1	0.0045	10/03/22	10/03/22 20:08	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.037		1	0.029	10/03/22	10/03/22 20:08	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_1.0-1.5 **Date/Time Sampled: 09/29/2022 11:30** **PSS Sample ID: 22093003-001**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*77*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 20:08*	*1070*
2-Fluorophenol	*67*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 20:08*	*1070*
Nitrobenzene-d5	*69*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 20:08*	*1070*
Phenol-d6	*68*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 20:08*	*1070*
Terphenyl-D14	*88*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 20:08*	*1070*
2,4,6-Tribromophenol	*74*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 20:08*	*1070*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.0-2.5 **Date/Time Sampled: 09/29/2022 11:35** **PSS Sample ID: 22093003-002**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.6**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**340**	mg/kg	0.66		1	0.5	10/03/22	10/04/22 01:14	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.041**	mg/kg	0.019		1	0.011	10/03/22	10/03/22 18:18	1045
Benzene	**0.0026**	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 18:18	1045
Bromochloromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 18:18	1045
Bromodichloromethane	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 18:18	1045
Bromoform	ND	mg/kg	0.00096		1	0.00049	10/03/22	10/03/22 18:18	1045
Bromomethane	ND	mg/kg	0.00096		1	0.00096	10/03/22	10/03/22 18:18	1045
2-Butanone (MEK)	**0.0066**	mg/kg	0.0048		1	0.0022	10/03/22	10/03/22 18:18	1045
Carbon Disulfide	ND	mg/kg	0.00096		1	0.0004	10/03/22	10/03/22 18:18	1045
Carbon tetrachloride	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 18:18	1045
Chlorobenzene	ND	mg/kg	0.00096		1	0.00052	10/03/22	10/03/22 18:18	1045
Chloroethane	ND	mg/kg	0.00096		1	0.00063	10/03/22	10/03/22 18:18	1045
Chloroform	ND	mg/kg	0.0048		1	0.00062	10/03/22	10/03/22 18:18	1045
Chloromethane	ND	mg/kg	0.00096		1	0.00048	10/03/22	10/03/22 18:18	1045
Cyclohexane	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 18:18	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00096		1	0.00084	10/03/22	10/03/22 18:18	1045
Dibromochloromethane	ND	mg/kg	0.00096		1	0.00029	10/03/22	10/03/22 18:18	1045
1,2-Dibromoethane	ND	mg/kg	0.00096		1	0.00048	10/03/22	10/03/22 18:18	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 18:18	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 18:18	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00084	10/03/22	10/03/22 18:18	1045
Dichlorodifluoromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 18:18	1045
1,1-Dichloroethane	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 18:18	1045
1,2-Dichloroethane	ND	mg/kg	0.00096		1	0.00035	10/03/22	10/03/22 18:18	1045
1,1-Dichloroethene	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 18:18	1045
1,2-Dichloropropane	ND	mg/kg	0.00096		1	0.00046	10/03/22	10/03/22 18:18	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 18:18	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 18:18	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.0-2.5 **Date/Time Sampled: 09/29/2022 11:35** **PSS Sample ID: 22093003-002**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.6**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00096		1	0.00044	10/03/22	10/03/22 18:18	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00096		1	0.00039	10/03/22	10/03/22 18:18	1045
Ethylbenzene	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 18:18	1045
2-Hexanone (MBK)	ND	mg/kg	0.00096		1	0.00062	10/03/22	10/03/22 18:18	1045
Isopropylbenzene	ND	mg/kg	0.00096		1	0.00037	10/03/22	10/03/22 18:18	1045
Methyl Acetate	ND	mg/kg	0.024		1	0.0011	10/03/22	10/03/22 18:18	1045
Methylcyclohexane	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 18:18	1045
Methylene chloride	ND	mg/kg	0.0048		1	0.0035	10/03/22	10/03/22 18:18	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00096		1	0.00061	10/03/22	10/03/22 18:18	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00096		1	0.00037	10/03/22	10/03/22 18:18	1045
Naphthalene	ND	mg/kg	0.00096		1	0.00056	10/03/22	10/03/22 18:18	1045
Styrene	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 18:18	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00096		1	0.00059	10/03/22	10/03/22 18:18	1045
Tetrachloroethene	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 18:18	1045
Toluene	**0.0063**	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 18:18	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00096		1	0.0005	10/03/22	10/03/22 18:18	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 18:18	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00096		1	0.00035	10/03/22	10/03/22 18:18	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00096		1	0.00033	10/03/22	10/03/22 18:18	1045
Trichloroethene	ND	mg/kg	0.00096		1	0.00052	10/03/22	10/03/22 18:18	1045
Trichlorofluoromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 18:18	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00096		1	0.00037	10/03/22	10/03/22 18:18	1045
Vinyl chloride	ND	mg/kg	0.0048		1	0.00032	10/03/22	10/03/22 18:18	1045
m&p-Xylene	**0.0026**	mg/kg	0.0019		1	0.0011	10/03/22	10/03/22 18:18	1045
o-Xylene	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 18:18	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*98*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 18:18*	*1045*
Dibromofluoromethane	*99*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 18:18*	*1045*
Toluene-D8	*102*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 18:18*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.0-2.5 **Date/Time Sampled: 09/29/2022 11:35** **PSS Sample ID: 22093003-002**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.6**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.011		1	0.0082	10/03/22	10/03/22 19:16	1070
Acenaphthylene	ND	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 19:16	1070
Acetophenone	ND	mg/kg	0.046		1	0.029	10/03/22	10/03/22 19:16	1070
Anthracene	ND	mg/kg	0.011		1	0.0059	10/03/22	10/03/22 19:16	1070
Atrazine	ND	mg/kg	0.091		1	0.023	10/03/22	10/03/22 19:16	1070
Benzo(a)anthracene	**0.018**	mg/kg	0.011		1	0.0046	10/03/22	10/03/22 19:16	1070
Benzo(a)pyrene	**0.026**	mg/kg	0.011		1	0.0064	10/03/22	10/03/22 19:16	1070
Benzo(b)fluoranthene	**0.025**	mg/kg	0.011		1	0.0059	10/03/22	10/03/22 19:16	1070
Benzo(g,h,i)perylene	**0.023**	mg/kg	0.011		1	0.0082	10/03/22	10/03/22 19:16	1070
Benzo(k)fluoranthene	**0.020**	mg/kg	0.011		1	0.01	10/03/22	10/03/22 19:16	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:16	1070
Butyl benzyl phthalate	ND	mg/kg	0.046		1	0.03	10/03/22	10/03/22 19:16	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.046		1	0.03	10/03/22	10/03/22 19:16	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.046		1	0.0059	10/03/22	10/03/22 19:16	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.046		1	0.0068	10/03/22	10/03/22 19:16	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 19:16	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:16	1070
Di-n-butyl phthalate	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:16	1070
Carbazole	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:16	1070
Caprolactam	ND	mg/kg	0.091		1	0.016	10/03/22	10/03/22 19:16	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.046		1	0.04	10/03/22	10/03/22 19:16	1070
4-Chloroaniline	ND	mg/kg	0.046		1	0.035	10/03/22	10/03/22 19:16	1070
2-Chloronaphthalene	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 19:16	1070
2-Chlorophenol	ND	mg/kg	0.046		1	0.023	10/03/22	10/03/22 19:16	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 19:16	1070
Chrysene	**0.017**	mg/kg	0.011		1	0.0055	10/03/22	10/03/22 19:16	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 19:16	1070
Dibenzofuran	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 19:16	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.046		1	0.025	10/03/22	10/03/22 19:16	1070
2,4-Dichlorophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:16	1070
Diethyl phthalate	ND	mg/kg	0.046		1	0.027	10/03/22	10/03/22 19:16	1070
Dimethyl phthalate	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 19:16	1070
2,4-Dimethylphenol	ND	mg/kg	0.046		1	0.043	10/03/22	10/03/22 19:16	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.23		1	0.054	10/03/22	10/03/22 19:16	1070
2,4-Dinitrophenol	ND	mg/kg	0.23		1	0.1	10/03/22	10/03/22 19:16	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.0-2.5 **Date/Time Sampled: 09/29/2022 11:35** **PSS Sample ID: 22093003-002**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.6**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.091		1	0.032	10/03/22	10/03/22 19:16	1070
2,6-Dinitrotoluene	ND	mg/kg	0.091		1	0.026	10/03/22	10/03/22 19:16	1070
Fluoranthene	**0.021**	mg/kg	0.011		1	0.005	10/03/22	10/03/22 19:16	1070
Fluorene	ND	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 19:16	1070
Hexachlorobenzene	ND	mg/kg	0.046		1	0.0087	10/03/22	10/03/22 19:16	1070
Hexachlorobutadiene	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 19:16	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.091		1	0.051	10/03/22	10/03/22 19:16	1070
Hexachloroethane	ND	mg/kg	0.046		1	0.029	10/03/22	10/03/22 19:16	1070
Indeno(1,2,3-c,d)Pyrene	**0.021**	mg/kg	0.011		1	0.01	10/03/22	10/03/22 19:16	1070
Isophorone	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 19:16	1070
2-Methylnaphthalene	ND	mg/kg	0.011		1	0.011	10/03/22	10/03/22 19:16	1070
2-Methyl phenol	ND	mg/kg	0.046		1	0.025	10/03/22	10/03/22 19:16	1070
3&4-Methylphenol	ND	mg/kg	0.046		1	0.033	10/03/22	10/03/22 19:16	1070
Naphthalene	ND	mg/kg	0.011		1	0.0073	10/03/22	10/03/22 19:16	1070
2-Nitroaniline	ND	mg/kg	0.091		1	0.026	10/03/22	10/03/22 19:16	1070
3-Nitroaniline	ND	mg/kg	0.091		1	0.032	10/03/22	10/03/22 19:16	1070
4-Nitroaniline	ND	mg/kg	0.091		1	0.046	10/03/22	10/03/22 19:16	1070
Nitrobenzene	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 19:16	1070
2-Nitrophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:16	1070
4-Nitrophenol	ND	mg/kg	0.23		1	0.07	10/03/22	10/03/22 19:16	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.046		1	0.0041	10/03/22	10/03/22 19:16	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:16	1070
Di-n-octyl phthalate	ND	mg/kg	0.091		1	0.046	10/03/22	10/03/22 19:16	1070
Pentachlorophenol	ND	mg/kg	0.091		1	0.055	10/03/22	10/03/22 19:16	1070
Phenanthrene	ND	mg/kg	0.011		1	0.0068	10/03/22	10/03/22 19:16	1070
Phenol	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 19:16	1070
Pyrene	**0.021**	mg/kg	0.011		1	0.0059	10/03/22	10/03/22 19:16	1070
Pyridine	ND	mg/kg	0.046		1	0.021	10/03/22	10/03/22 19:16	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.046		1	0.0055	10/03/22	10/03/22 19:16	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:16	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.0-2.5 **Date/Time Sampled: 09/29/2022 11:35** **PSS Sample ID: 22093003-002**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.6**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*77*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 19:16*	*1070*
2-Fluorophenol	*67*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 19:16*	*1070*
Nitrobenzene-d5	*69*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 19:16*	*1070*
Phenol-d6	*69*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 19:16*	*1070*
Terphenyl-D14	*91*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 19:16*	*1070*
2,4,6-Tribromophenol	*74*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 19:16*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.5-3.0 **Date/Time Sampled: 09/29/2022 11:40** **PSS Sample ID: 22093003-003**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.0**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**340**	mg/kg	0.52		1	0.39	10/03/22	10/04/22 01:19	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.070**	mg/kg	0.023		1	0.013	10/03/22	10/03/22 18:41	1045
Benzene	**0.0018**	mg/kg	0.0011		1	0.00049	10/03/22	10/03/22 18:41	1045
Bromochloromethane	ND	mg/kg	0.0011		1	0.00054	10/03/22	10/03/22 18:41	1045
Bromodichloromethane	ND	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 18:41	1045
Bromoform	ND	mg/kg	0.0011		1	0.00058	10/03/22	10/03/22 18:41	1045
Bromomethane	ND	mg/kg	0.0011		1	0.0011	10/03/22	10/03/22 18:41	1045
2-Butanone (MEK)	**0.0089**	mg/kg	0.0057		1	0.0026	10/03/22	10/03/22 18:41	1045
Carbon Disulfide	ND	mg/kg	0.0011		1	0.00048	10/03/22	10/03/22 18:41	1045
Carbon tetrachloride	ND	mg/kg	0.0011		1	0.00042	10/03/22	10/03/22 18:41	1045
Chlorobenzene	ND	mg/kg	0.0011		1	0.00061	10/03/22	10/03/22 18:41	1045
Chloroethane	ND	mg/kg	0.0011		1	0.00075	10/03/22	10/03/22 18:41	1045
Chloroform	ND	mg/kg	0.0057		1	0.00074	10/03/22	10/03/22 18:41	1045
Chloromethane	ND	mg/kg	0.0011		1	0.00057	10/03/22	10/03/22 18:41	1045
Cyclohexane	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 18:41	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0011		1	0.00099	10/03/22	10/03/22 18:41	1045
Dibromochloromethane	ND	mg/kg	0.0011		1	0.00034	10/03/22	10/03/22 18:41	1045
1,2-Dibromoethane	ND	mg/kg	0.0011		1	0.00057	10/03/22	10/03/22 18:41	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 18:41	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0011		1	0.00051	10/03/22	10/03/22 18:41	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0011		1	0.00099	10/03/22	10/03/22 18:41	1045
Dichlorodifluoromethane	ND	mg/kg	0.0011		1	0.00054	10/03/22	10/03/22 18:41	1045
1,1-Dichloroethane	ND	mg/kg	0.0011		1	0.00049	10/03/22	10/03/22 18:41	1045
1,2-Dichloroethane	ND	mg/kg	0.0011		1	0.00041	10/03/22	10/03/22 18:41	1045
1,1-Dichloroethene	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 18:41	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0011		1	0.00049	10/03/22	10/03/22 18:41	1045
1,2-Dichloropropane	ND	mg/kg	0.0011		1	0.00055	10/03/22	10/03/22 18:41	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0011		1	0.00049	10/03/22	10/03/22 18:41	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.5-3.0 **Date/Time Sampled: 09/29/2022 11:40** **PSS Sample ID: 22093003-003**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.0**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.0011		1	0.00052	10/03/22	10/03/22 18:41	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0011		1	0.00047	10/03/22	10/03/22 18:41	1045
Ethylbenzene	ND	mg/kg	0.0011		1	0.00042	10/03/22	10/03/22 18:41	1045
2-Hexanone (MBK)	ND	mg/kg	0.0011		1	0.00074	10/03/22	10/03/22 18:41	1045
Isopropylbenzene	ND	mg/kg	0.0011		1	0.00044	10/03/22	10/03/22 18:41	1045
Methyl Acetate	ND	mg/kg	0.028		1	0.0013	10/03/22	10/03/22 18:41	1045
Methylcyclohexane	**0.0017**	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 18:41	1045
Methylene chloride	ND	mg/kg	0.0057		1	0.0041	10/03/22	10/03/22 18:41	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0011		1	0.00073	10/03/22	10/03/22 18:41	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0011		1	0.00043	10/03/22	10/03/22 18:41	1045
Naphthalene	**0.0017**	mg/kg	0.0011		1	0.00066	10/03/22	10/03/22 18:41	1045
Styrene	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 18:41	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0011		1	0.00069	10/03/22	10/03/22 18:41	1045
Tetrachloroethene	ND	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 18:41	1045
Toluene	**0.0049**	mg/kg	0.0011		1	0.00051	10/03/22	10/03/22 18:41	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0011		1	0.00059	10/03/22	10/03/22 18:41	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0011		1	0.00051	10/03/22	10/03/22 18:41	1045
1,1,1-Trichloroethane	ND	mg/kg	0.0011		1	0.00041	10/03/22	10/03/22 18:41	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0011		1	0.00039	10/03/22	10/03/22 18:41	1045
Trichloroethene	ND	mg/kg	0.0011		1	0.00061	10/03/22	10/03/22 18:41	1045
Trichlorofluoromethane	ND	mg/kg	0.0011		1	0.00054	10/03/22	10/03/22 18:41	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0011		1	0.00043	10/03/22	10/03/22 18:41	1045
Vinyl chloride	ND	mg/kg	0.0057		1	0.00038	10/03/22	10/03/22 18:41	1045
m&p-Xylene	**0.0026**	mg/kg	0.0023		1	0.0013	10/03/22	10/03/22 18:41	1045
o-Xylene	ND	mg/kg	0.0011		1	0.00042	10/03/22	10/03/22 18:41	1045

Surrogate(s)	*Recovery*		*Limits*					
4-Bromofluorobenzene	*112*	*%*	*89-111*	*	*1*	*10/03/22*	*10/03/22 18:41*	*1045*
Dibromofluoromethane	*99*	*%*	*91-108*		*1*	*10/03/22*	*10/03/22 18:41*	*1045*
Toluene-D8	*102*	*%*	*93-104*		*1*	*10/03/22*	*10/03/22 18:41*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.5-3.0 **Date/Time Sampled: 09/29/2022 11:40** **PSS Sample ID: 22093003-003**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.0**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.012		1	0.0084	10/03/22	10/03/22 15:51	1070
Acenaphthylene	ND	mg/kg	0.012		1	0.008	10/03/22	10/03/22 15:51	1070
Acetophenone	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 15:51	1070
Anthracene	**0.0094**	mg/kg	0.012	J	1	0.0061	10/03/22	10/03/22 15:51	1070
Atrazine	ND	mg/kg	0.094		1	0.023	10/03/22	10/03/22 15:51	1070
Benzo(a)anthracene	**0.022**	mg/kg	0.012		1	0.0047	10/03/22	10/03/22 15:51	1070
Benzo(a)pyrene	**0.021**	mg/kg	0.012		1	0.0065	10/03/22	10/03/22 15:51	1070
Benzo(b)fluoranthene	**0.017**	mg/kg	0.012		1	0.0061	10/03/22	10/03/22 15:51	1070
Benzo(g,h,i)perylene	**0.015**	mg/kg	0.012		1	0.0084	10/03/22	10/03/22 15:51	1070
Benzo(k)fluoranthene	**0.017**	mg/kg	0.012		1	0.01	10/03/22	10/03/22 15:51	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.047		1	0.025	10/03/22	10/03/22 15:51	1070
Butyl benzyl phthalate	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 15:51	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 15:51	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.047		1	0.0061	10/03/22	10/03/22 15:51	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.047		1	0.007	10/03/22	10/03/22 15:51	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.047		1	0.032	10/03/22	10/03/22 15:51	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.047		1	0.024	10/03/22	10/03/22 15:51	1070
Di-n-butyl phthalate	ND	mg/kg	0.047		1	0.024	10/03/22	10/03/22 15:51	1070
Carbazole	ND	mg/kg	0.047		1	0.036	10/03/22	10/03/22 15:51	1070
Caprolactam	ND	mg/kg	0.094		1	0.017	10/03/22	10/03/22 15:51	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.047		1	0.041	10/03/22	10/03/22 15:51	1070
4-Chloroaniline	ND	mg/kg	0.047		1	0.036	10/03/22	10/03/22 15:51	1070
2-Chloronaphthalene	ND	mg/kg	0.047		1	0.032	10/03/22	10/03/22 15:51	1070
2-Chlorophenol	ND	mg/kg	0.047		1	0.023	10/03/22	10/03/22 15:51	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.047		1	0.026	10/03/22	10/03/22 15:51	1070
Chrysene	**0.020**	mg/kg	0.012		1	0.0056	10/03/22	10/03/22 15:51	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.012		1	0.008	10/03/22	10/03/22 15:51	1070
Dibenzofuran	ND	mg/kg	0.047		1	0.027	10/03/22	10/03/22 15:51	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.047		1	0.026	10/03/22	10/03/22 15:51	1070
2,4-Dichlorophenol	ND	mg/kg	0.047		1	0.037	10/03/22	10/03/22 15:51	1070
Diethyl phthalate	ND	mg/kg	0.047		1	0.028	10/03/22	10/03/22 15:51	1070
Dimethyl phthalate	ND	mg/kg	0.047		1	0.027	10/03/22	10/03/22 15:51	1070
2,4-Dimethylphenol	ND	mg/kg	0.047		1	0.044	10/03/22	10/03/22 15:51	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.23		1	0.056	10/03/22	10/03/22 15:51	1070
2,4-Dinitrophenol	ND	mg/kg	0.23		1	0.11	10/03/22	10/03/22 15:51	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.5-3.0 **Date/Time Sampled: 09/29/2022 11:40** **PSS Sample ID: 22093003-003**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.0**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.094		1	0.033	10/03/22	10/03/22 15:51	1070
2,6-Dinitrotoluene	ND	mg/kg	0.094		1	0.027	10/03/22	10/03/22 15:51	1070
Fluoranthene	**0.038**	mg/kg	0.012		1	0.0051	10/03/22	10/03/22 15:51	1070
Fluorene	ND	mg/kg	0.012		1	0.008	10/03/22	10/03/22 15:51	1070
Hexachlorobenzene	ND	mg/kg	0.047		1	0.0089	10/03/22	10/03/22 15:51	1070
Hexachlorobutadiene	ND	mg/kg	0.047		1	0.027	10/03/22	10/03/22 15:51	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.094		1	0.052	10/03/22	10/03/22 15:51	1070
Hexachloroethane	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 15:51	1070
Indeno(1,2,3-c,d)Pyrene	**0.015**	mg/kg	0.012		1	0.011	10/03/22	10/03/22 15:51	1070
Isophorone	ND	mg/kg	0.047		1	0.032	10/03/22	10/03/22 15:51	1070
2-Methylnaphthalene	ND	mg/kg	0.012		1	0.011	10/03/22	10/03/22 15:51	1070
2-Methyl phenol	ND	mg/kg	0.047		1	0.026	10/03/22	10/03/22 15:51	1070
3&4-Methylphenol	ND	mg/kg	0.047		1	0.034	10/03/22	10/03/22 15:51	1070
Naphthalene	ND	mg/kg	0.012		1	0.0075	10/03/22	10/03/22 15:51	1070
2-Nitroaniline	ND	mg/kg	0.094		1	0.027	10/03/22	10/03/22 15:51	1070
3-Nitroaniline	ND	mg/kg	0.094		1	0.033	10/03/22	10/03/22 15:51	1070
4-Nitroaniline	ND	mg/kg	0.094		1	0.047	10/03/22	10/03/22 15:51	1070
Nitrobenzene	ND	mg/kg	0.047		1	0.035	10/03/22	10/03/22 15:51	1070
2-Nitrophenol	ND	mg/kg	0.047		1	0.037	10/03/22	10/03/22 15:51	1070
4-Nitrophenol	ND	mg/kg	0.23		1	0.072	10/03/22	10/03/22 15:51	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.047		1	0.0042	10/03/22	10/03/22 15:51	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.047		1	0.025	10/03/22	10/03/22 15:51	1070
Di-n-octyl phthalate	ND	mg/kg	0.094		1	0.047	10/03/22	10/03/22 15:51	1070
Pentachlorophenol	ND	mg/kg	0.094		1	0.057	10/03/22	10/03/22 15:51	1070
Phenanthrene	**0.036**	mg/kg	0.012		1	0.007	10/03/22	10/03/22 15:51	1070
Phenol	ND	mg/kg	0.047		1	0.035	10/03/22	10/03/22 15:51	1070
Pyrene	**0.035**	mg/kg	0.012		1	0.0061	10/03/22	10/03/22 15:51	1070
Pyridine	ND	mg/kg	0.047		1	0.022	10/03/22	10/03/22 15:51	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.047		1	0.0056	10/03/22	10/03/22 15:51	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.047		1	0.037	10/03/22	10/03/22 15:51	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB01_2.5-3.0 **Date/Time Sampled: 09/29/2022 11:40** **PSS Sample ID: 22093003-003**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.0**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*79*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 15:51*	*1070*
2-Fluorophenol	*73*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 15:51*	*1070*
Nitrobenzene-d5	*73*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 15:51*	*1070*
Phenol-d6	*76*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 15:51*	*1070*
Terphenyl-D14	*93*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 15:51*	*1070*
2,4,6-Tribromophenol	*84*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 15:51*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:00** **PSS Sample ID: 22093003-004**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 88.2**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**320**	mg/kg	0.50		1	0.38	10/03/22	10/04/22 01:24	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.027**	mg/kg	0.017		1	0.0094	10/03/22	10/03/22 19:03	1045
Benzene	**0.0020**	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
Bromochloromethane	ND	mg/kg	0.00085		1	0.0004	10/03/22	10/03/22 19:03	1045
Bromodichloromethane	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
Bromoform	ND	mg/kg	0.00085		1	0.00043	10/03/22	10/03/22 19:03	1045
Bromomethane	ND	mg/kg	0.00085		1	0.00085	10/03/22	10/03/22 19:03	1045
2-Butanone (MEK)	**0.0052**	mg/kg	0.0043		1	0.002	10/03/22	10/03/22 19:03	1045
Carbon Disulfide	ND	mg/kg	0.00085		1	0.00036	10/03/22	10/03/22 19:03	1045
Carbon tetrachloride	ND	mg/kg	0.00085		1	0.00031	10/03/22	10/03/22 19:03	1045
Chlorobenzene	ND	mg/kg	0.00085		1	0.00046	10/03/22	10/03/22 19:03	1045
Chloroethane	ND	mg/kg	0.00085		1	0.00056	10/03/22	10/03/22 19:03	1045
Chloroform	ND	mg/kg	0.0043		1	0.00055	10/03/22	10/03/22 19:03	1045
Chloromethane	ND	mg/kg	0.00085		1	0.00043	10/03/22	10/03/22 19:03	1045
Cyclohexane	ND	mg/kg	0.00085		1	0.00034	10/03/22	10/03/22 19:03	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00085		1	0.00074	10/03/22	10/03/22 19:03	1045
Dibromochloromethane	ND	mg/kg	0.00085		1	0.00026	10/03/22	10/03/22 19:03	1045
1,2-Dibromoethane	ND	mg/kg	0.00085		1	0.00043	10/03/22	10/03/22 19:03	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00085		1	0.00038	10/03/22	10/03/22 19:03	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00085		1	0.00074	10/03/22	10/03/22 19:03	1045
Dichlorodifluoromethane	ND	mg/kg	0.00085		1	0.0004	10/03/22	10/03/22 19:03	1045
1,1-Dichloroethane	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
1,2-Dichloroethane	ND	mg/kg	0.00085		1	0.00031	10/03/22	10/03/22 19:03	1045
1,1-Dichloroethene	ND	mg/kg	0.00085		1	0.00034	10/03/22	10/03/22 19:03	1045
1,2-Dichloropropane	ND	mg/kg	0.00085		1	0.00041	10/03/22	10/03/22 19:03	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:00** **PSS Sample ID: 22093003-004**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 88.2**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00085		1	0.00039	10/03/22	10/03/22 19:03	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00085		1	0.00035	10/03/22	10/03/22 19:03	1045
Ethylbenzene	ND	mg/kg	0.00085		1	0.00031	10/03/22	10/03/22 19:03	1045
2-Hexanone (MBK)	ND	mg/kg	0.00085		1	0.00055	10/03/22	10/03/22 19:03	1045
Isopropylbenzene	ND	mg/kg	0.00085		1	0.00033	10/03/22	10/03/22 19:03	1045
Methyl Acetate	ND	mg/kg	0.021		1	0.00094	10/03/22	10/03/22 19:03	1045
Methylcyclohexane	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
Methylene chloride	ND	mg/kg	0.0043		1	0.0031	10/03/22	10/03/22 19:03	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00085		1	0.00054	10/03/22	10/03/22 19:03	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00085		1	0.00032	10/03/22	10/03/22 19:03	1045
Naphthalene	ND	mg/kg	0.00085		1	0.00049	10/03/22	10/03/22 19:03	1045
Styrene	ND	mg/kg	0.00085		1	0.00034	10/03/22	10/03/22 19:03	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00085		1	0.00052	10/03/22	10/03/22 19:03	1045
Tetrachloroethene	ND	mg/kg	0.00085		1	0.00037	10/03/22	10/03/22 19:03	1045
Toluene	**0.0059**	mg/kg	0.00085		1	0.00038	10/03/22	10/03/22 19:03	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00085		1	0.00044	10/03/22	10/03/22 19:03	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00085		1	0.00038	10/03/22	10/03/22 19:03	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00085		1	0.00031	10/03/22	10/03/22 19:03	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00085		1	0.00029	10/03/22	10/03/22 19:03	1045
Trichloroethene	ND	mg/kg	0.00085		1	0.00046	10/03/22	10/03/22 19:03	1045
Trichlorofluoromethane	ND	mg/kg	0.00085		1	0.0004	10/03/22	10/03/22 19:03	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00085		1	0.00032	10/03/22	10/03/22 19:03	1045
Vinyl chloride	ND	mg/kg	0.0043		1	0.00028	10/03/22	10/03/22 19:03	1045
m&p-Xylene	**0.0020**	mg/kg	0.0017		1	0.00094	10/03/22	10/03/22 19:03	1045
o-Xylene	**0.0011**	mg/kg	0.00085		1	0.00031	10/03/22	10/03/22 19:03	1045

Surrogate(s)	*Recovery*		*Limits*					
4-Bromofluorobenzene	*115*	*%*	*89-111*	*	*1*		*10/03/22*	*10/03/22 19:03*	*1045*
Dibromofluoromethane	*94*	*%*	*91-108*		*1*		*10/03/22*	*10/03/22 19:03*	*1045*
Toluene-D8	*101*	*%*	*93-104*		*1*		*10/03/22*	*10/03/22 19:03*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:00** **PSS Sample ID: 22093003-004**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 88.2**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.0095		1	0.0068	10/03/22	10/03/22 21:50	1070
Acenaphthylene	ND	mg/kg	0.0095		1	0.0064	10/03/22	10/03/22 21:50	1070
Acetophenone	ND	mg/kg	0.038		1	0.024	10/03/22	10/03/22 21:50	1070
Anthracene	**0.011**	mg/kg	0.0095		1	0.0049	10/03/22	10/03/22 21:50	1070
Atrazine	ND	mg/kg	0.076		1	0.019	10/03/22	10/03/22 21:50	1070
Benzo(a)anthracene	**0.039**	mg/kg	0.0095		1	0.0038	10/03/22	10/03/22 21:50	1070
Benzo(a)pyrene	**0.040**	mg/kg	0.0095		1	0.0053	10/03/22	10/03/22 21:50	1070
Benzo(b)fluoranthene	**0.048**	mg/kg	0.0095		1	0.0049	10/03/22	10/03/22 21:50	1070
Benzo(g,h,i)perylene	**0.057**	mg/kg	0.0095		1	0.0068	10/03/22	10/03/22 21:50	1070
Benzo(k)fluoranthene	**0.035**	mg/kg	0.0095		1	0.0083	10/03/22	10/03/22 21:50	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.038		1	0.02	10/03/22	10/03/22 21:50	1070
Butyl benzyl phthalate	ND	mg/kg	0.038		1	0.025	10/03/22	10/03/22 21:50	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.038		1	0.025	10/03/22	10/03/22 21:50	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.038		1	0.0049	10/03/22	10/03/22 21:50	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.038		1	0.0057	10/03/22	10/03/22 21:50	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.038		1	0.026	10/03/22	10/03/22 21:50	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.038		1	0.02	10/03/22	10/03/22 21:50	1070
Di-n-butyl phthalate	ND	mg/kg	0.038		1	0.02	10/03/22	10/03/22 21:50	1070
Carbazole	ND	mg/kg	0.038		1	0.029	10/03/22	10/03/22 21:50	1070
Caprolactam	ND	mg/kg	0.076		1	0.014	10/03/22	10/03/22 21:50	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.038		1	0.033	10/03/22	10/03/22 21:50	1070
4-Chloroaniline	ND	mg/kg	0.038		1	0.029	10/03/22	10/03/22 21:50	1070
2-Chloronaphthalene	ND	mg/kg	0.038		1	0.026	10/03/22	10/03/22 21:50	1070
2-Chlorophenol	ND	mg/kg	0.038		1	0.019	10/03/22	10/03/22 21:50	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.038		1	0.021	10/03/22	10/03/22 21:50	1070
Chrysene	**0.039**	mg/kg	0.0095		1	0.0045	10/03/22	10/03/22 21:50	1070
Dibenz(a,h)Anthracene	**0.014**	mg/kg	0.0095		1	0.0064	10/03/22	10/03/22 21:50	1070
Dibenzofuran	ND	mg/kg	0.038		1	0.022	10/03/22	10/03/22 21:50	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.038		1	0.021	10/03/22	10/03/22 21:50	1070
2,4-Dichlorophenol	ND	mg/kg	0.038		1	0.03	10/03/22	10/03/22 21:50	1070
Diethyl phthalate	ND	mg/kg	0.038		1	0.023	10/03/22	10/03/22 21:50	1070
Dimethyl phthalate	ND	mg/kg	0.038		1	0.022	10/03/22	10/03/22 21:50	1070
2,4-Dimethylphenol	ND	mg/kg	0.038		1	0.036	10/03/22	10/03/22 21:50	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.19		1	0.045	10/03/22	10/03/22 21:50	1070
2,4-Dinitrophenol	ND	mg/kg	0.19		1	0.086	10/03/22	10/03/22 21:50	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:00** **PSS Sample ID: 22093003-004**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 88.2**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.076		1	0.026	10/03/22	10/03/22 21:50	1070
2,6-Dinitrotoluene	ND	mg/kg	0.076		1	0.022	10/03/22	10/03/22 21:50	1070
Fluoranthene	**0.057**	mg/kg	0.0095		1	0.0042	10/03/22	10/03/22 21:50	1070
Fluorene	ND	mg/kg	0.0095		1	0.0064	10/03/22	10/03/22 21:50	1070
Hexachlorobenzene	ND	mg/kg	0.038		1	0.0072	10/03/22	10/03/22 21:50	1070
Hexachlorobutadiene	ND	mg/kg	0.038		1	0.022	10/03/22	10/03/22 21:50	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.076		1	0.042	10/03/22	10/03/22 21:50	1070
Hexachloroethane	ND	mg/kg	0.038		1	0.024	10/03/22	10/03/22 21:50	1070
Indeno(1,2,3-c,d)Pyrene	**0.031**	mg/kg	0.0095		1	0.0087	10/03/22	10/03/22 21:50	1070
Isophorone	ND	mg/kg	0.038		1	0.026	10/03/22	10/03/22 21:50	1070
2-Methylnaphthalene	ND	mg/kg	0.0095		1	0.0091	10/03/22	10/03/22 21:50	1070
2-Methyl phenol	ND	mg/kg	0.038		1	0.021	10/03/22	10/03/22 21:50	1070
3&4-Methylphenol	ND	mg/kg	0.038		1	0.028	10/03/22	10/03/22 21:50	1070
Naphthalene	ND	mg/kg	0.0095		1	0.006	10/03/22	10/03/22 21:50	1070
2-Nitroaniline	ND	mg/kg	0.076		1	0.022	10/03/22	10/03/22 21:50	1070
3-Nitroaniline	ND	mg/kg	0.076		1	0.026	10/03/22	10/03/22 21:50	1070
4-Nitroaniline	ND	mg/kg	0.076		1	0.038	10/03/22	10/03/22 21:50	1070
Nitrobenzene	ND	mg/kg	0.038		1	0.028	10/03/22	10/03/22 21:50	1070
2-Nitrophenol	ND	mg/kg	0.038		1	0.03	10/03/22	10/03/22 21:50	1070
4-Nitrophenol	ND	mg/kg	0.19		1	0.058	10/03/22	10/03/22 21:50	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.038		1	0.0034	10/03/22	10/03/22 21:50	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.038		1	0.02	10/03/22	10/03/22 21:50	1070
Di-n-octyl phthalate	ND	mg/kg	0.076		1	0.038	10/03/22	10/03/22 21:50	1070
Pentachlorophenol	ND	mg/kg	0.076		1	0.046	10/03/22	10/03/22 21:50	1070
Phenanthrene	**0.025**	mg/kg	0.0095		1	0.0057	10/03/22	10/03/22 21:50	1070
Phenol	ND	mg/kg	0.038		1	0.028	10/03/22	10/03/22 21:50	1070
Pyrene	**0.053**	mg/kg	0.0095		1	0.0049	10/03/22	10/03/22 21:50	1070
Pyridine	ND	mg/kg	0.038		1	0.017	10/03/22	10/03/22 21:50	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.038		1	0.0045	10/03/22	10/03/22 21:50	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.038		1	0.03	10/03/22	10/03/22 21:50	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:00** **PSS Sample ID: 22093003-004**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 88.2**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*82*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 21:50*	*1070*
2-Fluorophenol	*69*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 21:50*	*1070*
Nitrobenzene-d5	*71*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 21:50*	*1070*
Phenol-d6	*74*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 21:50*	*1070*
Terphenyl-D14	*93*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 21:50*	*1070*
2,4,6-Tribromophenol	*77*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 21:50*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:02** **PSS Sample ID: 22093003-005**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 78.4**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**240**	mg/kg	0.44		1	0.34	10/03/22	10/04/22 01:29	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.049**	mg/kg	0.017		1	0.0095	10/03/22	10/03/22 19:25	1045
Benzene	**0.0028**	mg/kg	0.00087		1	0.00037	10/03/22	10/03/22 19:25	1045
Bromochloromethane	ND	mg/kg	0.00087		1	0.00041	10/03/22	10/03/22 19:25	1045
Bromodichloromethane	ND	mg/kg	0.00087		1	0.00038	10/03/22	10/03/22 19:25	1045
Bromoform	ND	mg/kg	0.00087		1	0.00044	10/03/22	10/03/22 19:25	1045
Bromomethane	ND	mg/kg	0.00087		1	0.00087	10/03/22	10/03/22 19:25	1045
2-Butanone (MEK)	ND	mg/kg	0.0043		1	0.002	10/03/22	10/03/22 19:25	1045
Carbon Disulfide	ND	mg/kg	0.00087		1	0.00036	10/03/22	10/03/22 19:25	1045
Carbon tetrachloride	ND	mg/kg	0.00087		1	0.00032	10/03/22	10/03/22 19:25	1045
Chlorobenzene	ND	mg/kg	0.00087		1	0.00047	10/03/22	10/03/22 19:25	1045
Chloroethane	ND	mg/kg	0.00087		1	0.00057	10/03/22	10/03/22 19:25	1045
Chloroform	ND	mg/kg	0.0043		1	0.00056	10/03/22	10/03/22 19:25	1045
Chloromethane	ND	mg/kg	0.00087		1	0.00043	10/03/22	10/03/22 19:25	1045
Cyclohexane	ND	mg/kg	0.00087		1	0.00035	10/03/22	10/03/22 19:25	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00087		1	0.00075	10/03/22	10/03/22 19:25	1045
Dibromochloromethane	ND	mg/kg	0.00087		1	0.00026	10/03/22	10/03/22 19:25	1045
1,2-Dibromoethane	ND	mg/kg	0.00087		1	0.00043	10/03/22	10/03/22 19:25	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00087		1	0.00038	10/03/22	10/03/22 19:25	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00087		1	0.00039	10/03/22	10/03/22 19:25	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00087		1	0.00075	10/03/22	10/03/22 19:25	1045
Dichlorodifluoromethane	ND	mg/kg	0.00087		1	0.00041	10/03/22	10/03/22 19:25	1045
1,1-Dichloroethane	ND	mg/kg	0.00087		1	0.00037	10/03/22	10/03/22 19:25	1045
1,2-Dichloroethane	ND	mg/kg	0.00087		1	0.00031	10/03/22	10/03/22 19:25	1045
1,1-Dichloroethene	ND	mg/kg	0.00087		1	0.00035	10/03/22	10/03/22 19:25	1045
1,2-Dichloropropane	ND	mg/kg	0.00087		1	0.00042	10/03/22	10/03/22 19:25	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00087		1	0.00037	10/03/22	10/03/22 19:25	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00087		1	0.00037	10/03/22	10/03/22 19:25	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:02** **PSS Sample ID: 22093003-005**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 78.4**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00087		1	0.0004	10/03/22	10/03/22 19:25	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00087		1	0.00036	10/03/22	10/03/22 19:25	1045
Ethylbenzene	ND	mg/kg	0.00087		1	0.00032	10/03/22	10/03/22 19:25	1045
2-Hexanone (MBK)	ND	mg/kg	0.00087		1	0.00056	10/03/22	10/03/22 19:25	1045
Isopropylbenzene	ND	mg/kg	0.00087		1	0.00034	10/03/22	10/03/22 19:25	1045
Methyl Acetate	ND	mg/kg	0.022		1	0.00095	10/03/22	10/03/22 19:25	1045
Methylcyclohexane	ND	mg/kg	0.00087		1	0.00038	10/03/22	10/03/22 19:25	1045
Methylene chloride	ND	mg/kg	0.0043		1	0.0031	10/03/22	10/03/22 19:25	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00087		1	0.00055	10/03/22	10/03/22 19:25	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00087		1	0.00033	10/03/22	10/03/22 19:25	1045
Naphthalene	ND	mg/kg	0.00087		1	0.0005	10/03/22	10/03/22 19:25	1045
Styrene	ND	mg/kg	0.00087		1	0.00035	10/03/22	10/03/22 19:25	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00087		1	0.00053	10/03/22	10/03/22 19:25	1045
Tetrachloroethene	ND	mg/kg	0.00087		1	0.00038	10/03/22	10/03/22 19:25	1045
Toluene	**0.028**	mg/kg	0.00087		1	0.00039	10/03/22	10/03/22 19:25	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00087		1	0.00045	10/03/22	10/03/22 19:25	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00087		1	0.00039	10/03/22	10/03/22 19:25	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00087		1	0.00031	10/03/22	10/03/22 19:25	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00087		1	0.00029	10/03/22	10/03/22 19:25	1045
Trichloroethene	ND	mg/kg	0.00087		1	0.00047	10/03/22	10/03/22 19:25	1045
Trichlorofluoromethane	ND	mg/kg	0.00087		1	0.00041	10/03/22	10/03/22 19:25	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00087		1	0.00033	10/03/22	10/03/22 19:25	1045
Vinyl chloride	ND	mg/kg	0.0043		1	0.00029	10/03/22	10/03/22 19:25	1045
m&p-Xylene	**0.0058**	mg/kg	0.0017		1	0.00095	10/03/22	10/03/22 19:25	1045
o-Xylene	**0.0020**	mg/kg	0.00087		1	0.00032	10/03/22	10/03/22 19:25	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*98*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 19:25*	*1045*
Dibromofluoromethane	*93*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 19:25*	*1045*
Toluene-D8	*100*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 19:25*	*1045*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:02** **PSS Sample ID: 22093003-005**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 78.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.011		1	0.0076	10/03/22	10/03/22 21:24	1070
Acenaphthylene	ND	mg/kg	0.011		1	0.0072	10/03/22	10/03/22 21:24	1070
Acetophenone	ND	mg/kg	0.042		1	0.027	10/03/22	10/03/22 21:24	1070
Anthracene	ND	mg/kg	0.011		1	0.0055	10/03/22	10/03/22 21:24	1070
Atrazine	ND	mg/kg	0.085		1	0.021	10/03/22	10/03/22 21:24	1070
Benzo(a)anthracene	**0.022**	mg/kg	0.011		1	0.0042	10/03/22	10/03/22 21:24	1070
Benzo(a)pyrene	**0.026**	mg/kg	0.011		1	0.0059	10/03/22	10/03/22 21:24	1070
Benzo(b)fluoranthene	**0.030**	mg/kg	0.011		1	0.0055	10/03/22	10/03/22 21:24	1070
Benzo(g,h,i)perylene	**0.030**	mg/kg	0.011		1	0.0076	10/03/22	10/03/22 21:24	1070
Benzo(k)fluoranthene	**0.021**	mg/kg	0.011		1	0.0093	10/03/22	10/03/22 21:24	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 21:24	1070
Butyl benzyl phthalate	ND	mg/kg	0.042		1	0.028	10/03/22	10/03/22 21:24	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.042		1	0.028	10/03/22	10/03/22 21:24	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.042		1	0.0055	10/03/22	10/03/22 21:24	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.042		1	0.0063	10/03/22	10/03/22 21:24	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.042		1	0.029	10/03/22	10/03/22 21:24	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 21:24	1070
Di-n-butyl phthalate	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 21:24	1070
Carbazole	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 21:24	1070
Caprolactam	ND	mg/kg	0.085		1	0.015	10/03/22	10/03/22 21:24	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.042		1	0.037	10/03/22	10/03/22 21:24	1070
4-Chloroaniline	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 21:24	1070
2-Chloronaphthalene	ND	mg/kg	0.042		1	0.029	10/03/22	10/03/22 21:24	1070
2-Chlorophenol	ND	mg/kg	0.042		1	0.021	10/03/22	10/03/22 21:24	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.042		1	0.024	10/03/22	10/03/22 21:24	1070
Chrysene	**0.022**	mg/kg	0.011		1	0.0051	10/03/22	10/03/22 21:24	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.011		1	0.0072	10/03/22	10/03/22 21:24	1070
Dibenzofuran	ND	mg/kg	0.042		1	0.025	10/03/22	10/03/22 21:24	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.042		1	0.023	10/03/22	10/03/22 21:24	1070
2,4-Dichlorophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 21:24	1070
Diethyl phthalate	ND	mg/kg	0.042		1	0.025	10/03/22	10/03/22 21:24	1070
Dimethyl phthalate	ND	mg/kg	0.042		1	0.025	10/03/22	10/03/22 21:24	1070
2,4-Dimethylphenol	ND	mg/kg	0.042		1	0.04	10/03/22	10/03/22 21:24	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.21		1	0.05	10/03/22	10/03/22 21:24	1070
2,4-Dinitrophenol	ND	mg/kg	0.21		1	0.096	10/03/22	10/03/22 21:24	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:02** **PSS Sample ID: 22093003-005**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 78.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.085		1	0.03	10/03/22	10/03/22 21:24	1070
2,6-Dinitrotoluene	ND	mg/kg	0.085		1	0.025	10/03/22	10/03/22 21:24	1070
Fluoranthene	**0.031**	mg/kg	0.011		1	0.0047	10/03/22	10/03/22 21:24	1070
Fluorene	ND	mg/kg	0.011		1	0.0072	10/03/22	10/03/22 21:24	1070
Hexachlorobenzene	ND	mg/kg	0.042		1	0.008	10/03/22	10/03/22 21:24	1070
Hexachlorobutadiene	ND	mg/kg	0.042		1	0.024	10/03/22	10/03/22 21:24	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.085		1	0.047	10/03/22	10/03/22 21:24	1070
Hexachloroethane	ND	mg/kg	0.042		1	0.027	10/03/22	10/03/22 21:24	1070
Indeno(1,2,3-c,d)Pyrene	**0.020**	mg/kg	0.011		1	0.0097	10/03/22	10/03/22 21:24	1070
Isophorone	ND	mg/kg	0.042		1	0.029	10/03/22	10/03/22 21:24	1070
2-Methylnaphthalene	ND	mg/kg	0.011		1	0.01	10/03/22	10/03/22 21:24	1070
2-Methyl phenol	ND	mg/kg	0.042		1	0.023	10/03/22	10/03/22 21:24	1070
3&4-Methylphenol	ND	mg/kg	0.042		1	0.031	10/03/22	10/03/22 21:24	1070
Naphthalene	ND	mg/kg	0.011		1	0.0068	10/03/22	10/03/22 21:24	1070
2-Nitroaniline	ND	mg/kg	0.085		1	0.024	10/03/22	10/03/22 21:24	1070
3-Nitroaniline	ND	mg/kg	0.085		1	0.03	10/03/22	10/03/22 21:24	1070
4-Nitroaniline	ND	mg/kg	0.085		1	0.042	10/03/22	10/03/22 21:24	1070
Nitrobenzene	ND	mg/kg	0.042		1	0.032	10/03/22	10/03/22 21:24	1070
2-Nitrophenol	ND	mg/kg	0.042		1	0.034	10/03/22	10/03/22 21:24	1070
4-Nitrophenol	ND	mg/kg	0.21		1	0.065	10/03/22	10/03/22 21:24	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.042		1	0.0038	10/03/22	10/03/22 21:24	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 21:24	1070
Di-n-octyl phthalate	ND	mg/kg	0.085		1	0.043	10/03/22	10/03/22 21:24	1070
Pentachlorophenol	ND	mg/kg	0.085		1	0.051	10/03/22	10/03/22 21:24	1070
Phenanthrene	**0.012**	mg/kg	0.011		1	0.0063	10/03/22	10/03/22 21:24	1070
Phenol	ND	mg/kg	0.042		1	0.031	10/03/22	10/03/22 21:24	1070
Pyrene	**0.028**	mg/kg	0.011		1	0.0055	10/03/22	10/03/22 21:24	1070
Pyridine	ND	mg/kg	0.042		1	0.019	10/03/22	10/03/22 21:24	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.042		1	0.0051	10/03/22	10/03/22 21:24	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 21:24	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:02** **PSS Sample ID: 22093003-005**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 78.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*79*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 21:24*	*1070*
2-Fluorophenol	*68*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 21:24*	*1070*
Nitrobenzene-d5	*68*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 21:24*	*1070*
Phenol-d6	*71*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 21:24*	*1070*
Terphenyl-D14	*89*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 21:24*	*1070*
2,4,6-Tribromophenol	*78*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 21:24*	*1070*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:04** **PSS Sample ID: 22093003-006**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**130**	mg/kg	0.40		1	0.3	10/03/22	10/04/22 01:34	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.025**	mg/kg	0.016		1	0.0086	10/03/22	10/03/22 19:48	1045
Benzene	**0.0014**	mg/kg	0.00079		1	0.00034	10/03/22	10/03/22 19:48	1045
Bromochloromethane	ND	mg/kg	0.00079		1	0.00037	10/03/22	10/03/22 19:48	1045
Bromodichloromethane	ND	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
Bromoform	ND	mg/kg	0.00079		1	0.0004	10/03/22	10/03/22 19:48	1045
Bromomethane	ND	mg/kg	0.00079		1	0.00079	10/03/22	10/03/22 19:48	1045
2-Butanone (MEK)	**0.0048**	mg/kg	0.0039		1	0.0018	10/03/22	10/03/22 19:48	1045
Carbon Disulfide	ND	mg/kg	0.00079		1	0.00033	10/03/22	10/03/22 19:48	1045
Carbon tetrachloride	ND	mg/kg	0.00079		1	0.00029	10/03/22	10/03/22 19:48	1045
Chlorobenzene	ND	mg/kg	0.00079		1	0.00042	10/03/22	10/03/22 19:48	1045
Chloroethane	ND	mg/kg	0.00079		1	0.00052	10/03/22	10/03/22 19:48	1045
Chloroform	ND	mg/kg	0.0039		1	0.00051	10/03/22	10/03/22 19:48	1045
Chloromethane	ND	mg/kg	0.00079		1	0.00039	10/03/22	10/03/22 19:48	1045
Cyclohexane	ND	mg/kg	0.00079		1	0.00031	10/03/22	10/03/22 19:48	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00079		1	0.00068	10/03/22	10/03/22 19:48	1045
Dibromochloromethane	ND	mg/kg	0.00079		1	0.00024	10/03/22	10/03/22 19:48	1045
1,2-Dibromoethane	ND	mg/kg	0.00079		1	0.00039	10/03/22	10/03/22 19:48	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00079		1	0.00068	10/03/22	10/03/22 19:48	1045
Dichlorodifluoromethane	ND	mg/kg	0.00079		1	0.00037	10/03/22	10/03/22 19:48	1045
1,1-Dichloroethane	ND	mg/kg	0.00079		1	0.00034	10/03/22	10/03/22 19:48	1045
1,2-Dichloroethane	ND	mg/kg	0.00079		1	0.00028	10/03/22	10/03/22 19:48	1045
1,1-Dichloroethene	ND	mg/kg	0.00079		1	0.00031	10/03/22	10/03/22 19:48	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00079		1	0.00034	10/03/22	10/03/22 19:48	1045
1,2-Dichloropropane	ND	mg/kg	0.00079		1	0.00038	10/03/22	10/03/22 19:48	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00079		1	0.00034	10/03/22	10/03/22 19:48	1045

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:04** **PSS Sample ID: 22093003-006**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00079		1	0.00036	10/03/22	10/03/22 19:48	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00079		1	0.00032	10/03/22	10/03/22 19:48	1045
Ethylbenzene	ND	mg/kg	0.00079		1	0.00029	10/03/22	10/03/22 19:48	1045
2-Hexanone (MBK)	ND	mg/kg	0.00079		1	0.00051	10/03/22	10/03/22 19:48	1045
Isopropylbenzene	ND	mg/kg	0.00079		1	0.00031	10/03/22	10/03/22 19:48	1045
Methyl Acetate	ND	mg/kg	0.020		1	0.00086	10/03/22	10/03/22 19:48	1045
Methylcyclohexane	ND	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
Methylene chloride	ND	mg/kg	0.0039		1	0.0028	10/03/22	10/03/22 19:48	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00079		1	0.0005	10/03/22	10/03/22 19:48	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00079		1	0.0003	10/03/22	10/03/22 19:48	1045
Naphthalene	**0.0010**	mg/kg	0.00079		1	0.00046	10/03/22	10/03/22 19:48	1045
Styrene	ND	mg/kg	0.00079		1	0.00031	10/03/22	10/03/22 19:48	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00079		1	0.00048	10/03/22	10/03/22 19:48	1045
Tetrachloroethene	ND	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
Toluene	**0.0048**	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00079		1	0.00041	10/03/22	10/03/22 19:48	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00079		1	0.00035	10/03/22	10/03/22 19:48	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00079		1	0.00028	10/03/22	10/03/22 19:48	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00079		1	0.00027	10/03/22	10/03/22 19:48	1045
Trichloroethene	ND	mg/kg	0.00079		1	0.00042	10/03/22	10/03/22 19:48	1045
Trichlorofluoromethane	ND	mg/kg	0.00079		1	0.00037	10/03/22	10/03/22 19:48	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00079		1	0.0003	10/03/22	10/03/22 19:48	1045
Vinyl chloride	ND	mg/kg	0.0039		1	0.00026	10/03/22	10/03/22 19:48	1045
m&p-Xylene	**0.0017**	mg/kg	0.0016		1	0.00086	10/03/22	10/03/22 19:48	1045
o-Xylene	ND	mg/kg	0.00079		1	0.00029	10/03/22	10/03/22 19:48	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*111*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 19:48*	*1045*
Dibromofluoromethane	*94*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 19:48*	*1045*
Toluene-D8	*98*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 19:48*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:04** **PSS Sample ID: 22093003-006**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.0093		1	0.0067	10/03/22	10/04/22 11:37	1070
Acenaphthylene	ND	mg/kg	0.0093		1	0.0063	10/03/22	10/04/22 11:37	1070
Acetophenone	ND	mg/kg	0.037		1	0.024	10/03/22	10/04/22 11:37	1070
Anthracene	ND	mg/kg	0.0093		1	0.0048	10/03/22	10/04/22 11:37	1070
Atrazine	ND	mg/kg	0.074		1	0.019	10/03/22	10/04/22 11:37	1070
Benzo(a)anthracene	**0.019**	mg/kg	0.0093		1	0.0037	10/03/22	10/04/22 11:37	1070
Benzo(a)pyrene	**0.027**	mg/kg	0.0093		1	0.0052	10/03/22	10/04/22 11:37	1070
Benzo(b)fluoranthene	**0.028**	mg/kg	0.0093		1	0.0048	10/03/22	10/04/22 11:37	1070
Benzo(g,h,i)perylene	**0.031**	mg/kg	0.0093		1	0.0067	10/03/22	10/04/22 11:37	1070
Benzo(k)fluoranthene	**0.023**	mg/kg	0.0093		1	0.0082	10/03/22	10/04/22 11:37	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.037		1	0.02	10/03/22	10/04/22 11:37	1070
Butyl benzyl phthalate	ND	mg/kg	0.037		1	0.024	10/03/22	10/04/22 11:37	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.037		1	0.024	10/03/22	10/04/22 11:37	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.037		1	0.0048	10/03/22	10/04/22 11:37	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.037		1	0.0056	10/03/22	10/04/22 11:37	1070
bis(2-ethylhexyl) phthalate	**0.058**	mg/kg	0.037		1	0.026	10/03/22	10/04/22 11:37	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.037		1	0.019	10/03/22	10/04/22 11:37	1070
Di-n-butyl phthalate	ND	mg/kg	0.037		1	0.019	10/03/22	10/04/22 11:37	1070
Carbazole	ND	mg/kg	0.037		1	0.029	10/03/22	10/04/22 11:37	1070
Caprolactam	ND	mg/kg	0.074		1	0.013	10/03/22	10/04/22 11:37	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.037		1	0.032	10/03/22	10/04/22 11:37	1070
4-Chloroaniline	ND	mg/kg	0.037		1	0.029	10/03/22	10/04/22 11:37	1070
2-Chloronaphthalene	ND	mg/kg	0.037		1	0.026	10/03/22	10/04/22 11:37	1070
2-Chlorophenol	ND	mg/kg	0.037		1	0.019	10/03/22	10/04/22 11:37	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.037		1	0.021	10/03/22	10/04/22 11:37	1070
Chrysene	**0.023**	mg/kg	0.0093		1	0.0045	10/03/22	10/04/22 11:37	1070
Dibenz(a,h)Anthracene	**0.0086**	mg/kg	0.0093	J	1	0.0063	10/03/22	10/04/22 11:37	1070
Dibenzofuran	ND	mg/kg	0.037		1	0.022	10/03/22	10/04/22 11:37	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.037		1	0.02	10/03/22	10/04/22 11:37	1070
2,4-Dichlorophenol	ND	mg/kg	0.037		1	0.029	10/03/22	10/04/22 11:37	1070
Diethyl phthalate	ND	mg/kg	0.037		1	0.022	10/03/22	10/04/22 11:37	1070
Dimethyl phthalate	ND	mg/kg	0.037		1	0.022	10/03/22	10/04/22 11:37	1070
2,4-Dimethylphenol	ND	mg/kg	0.037		1	0.035	10/03/22	10/04/22 11:37	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.19		1	0.044	10/03/22	10/04/22 11:37	1070
2,4-Dinitrophenol	ND	mg/kg	0.19		1	0.084	10/03/22	10/04/22 11:37	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:04** **PSS Sample ID: 22093003-006**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.074		1	0.026	10/03/22	10/04/22 11:37	1070
2,6-Dinitrotoluene	ND	mg/kg	0.074		1	0.022	10/03/22	10/04/22 11:37	1070
Fluoranthene	**0.026**	mg/kg	0.0093		1	0.0041	10/03/22	10/04/22 11:37	1070
Fluorene	ND	mg/kg	0.0093		1	0.0063	10/03/22	10/04/22 11:37	1070
Hexachlorobenzene	ND	mg/kg	0.037		1	0.0071	10/03/22	10/04/22 11:37	1070
Hexachlorobutadiene	ND	mg/kg	0.037		1	0.021	10/03/22	10/04/22 11:37	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.074		1	0.041	10/03/22	10/04/22 11:37	1070
Hexachloroethane	ND	mg/kg	0.037		1	0.024	10/03/22	10/04/22 11:37	1070
Indeno(1,2,3-c,d)Pyrene	**0.023**	mg/kg	0.0093		1	0.0086	10/03/22	10/04/22 11:37	1070
Isophorone	ND	mg/kg	0.037		1	0.025	10/03/22	10/04/22 11:37	1070
2-Methylnaphthalene	ND	mg/kg	0.0093		1	0.0089	10/03/22	10/04/22 11:37	1070
2-Methyl phenol	ND	mg/kg	0.037		1	0.02	10/03/22	10/04/22 11:37	1070
3&4-Methylphenol	ND	mg/kg	0.037		1	0.027	10/03/22	10/04/22 11:37	1070
Naphthalene	ND	mg/kg	0.0093		1	0.0059	10/03/22	10/04/22 11:37	1070
2-Nitroaniline	ND	mg/kg	0.074		1	0.021	10/03/22	10/04/22 11:37	1070
3-Nitroaniline	ND	mg/kg	0.074		1	0.026	10/03/22	10/04/22 11:37	1070
4-Nitroaniline	ND	mg/kg	0.074		1	0.037	10/03/22	10/04/22 11:37	1070
Nitrobenzene	ND	mg/kg	0.037		1	0.028	10/03/22	10/04/22 11:37	1070
2-Nitrophenol	ND	mg/kg	0.037		1	0.03	10/03/22	10/04/22 11:37	1070
4-Nitrophenol	ND	mg/kg	0.19		1	0.057	10/03/22	10/04/22 11:37	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.037		1	0.0033	10/03/22	10/04/22 11:37	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.037		1	0.02	10/03/22	10/04/22 11:37	1070
Di-n-octyl phthalate	ND	mg/kg	0.074		1	0.038	10/03/22	10/04/22 11:37	1070
Pentachlorophenol	ND	mg/kg	0.074		1	0.045	10/03/22	10/04/22 11:37	1070
Phenanthrene	**0.011**	mg/kg	0.0093		1	0.0056	10/03/22	10/04/22 11:37	1070
Phenol	ND	mg/kg	0.037		1	0.028	10/03/22	10/04/22 11:37	1070
Pyrene	**0.025**	mg/kg	0.0093		1	0.0048	10/03/22	10/04/22 11:37	1070
Pyridine	ND	mg/kg	0.037		1	0.017	10/03/22	10/04/22 11:37	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.037		1	0.0045	10/03/22	10/04/22 11:37	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.037		1	0.029	10/03/22	10/04/22 11:37	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB02_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:04** **PSS Sample ID: 22093003-006**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 89.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*98*	*%*	*52-109*	*1*	*10/03/22*	*10/04/22 11:37*	*1070*
2-Fluorophenol	*84*	*%*	*30-102*	*1*	*10/03/22*	*10/04/22 11:37*	*1070*
Nitrobenzene-d5	*86*	*%*	*39-101*	*1*	*10/03/22*	*10/04/22 11:37*	*1070*
Phenol-d6	*91*	*%*	*36-109*	*1*	*10/03/22*	*10/04/22 11:37*	*1070*
Terphenyl-D14	*115*	*%*	*66-121*	*1*	*10/03/22*	*10/04/22 11:37*	*1070*
2,4,6-Tribromophenol	*107*	*%*	*39-118*	*1*	*10/03/22*	*10/04/22 11:37*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:06** **PSS Sample ID: 22093003-007**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 76.9**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**650**	mg/kg	4.9		10	3.7	10/03/22	10/04/22 13:25	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.030**	mg/kg	0.021		1	0.012	10/03/22	10/03/22 20:10	1045
Benzene	**0.0015**	mg/kg	0.0011		1	0.00045	10/03/22	10/03/22 20:10	1045
Bromochloromethane	ND	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 20:10	1045
Bromodichloromethane	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 20:10	1045
Bromoform	ND	mg/kg	0.0011		1	0.00054	10/03/22	10/03/22 20:10	1045
Bromomethane	ND	mg/kg	0.0011		1	0.0011	10/03/22	10/03/22 20:10	1045
2-Butanone (MEK)	ND	mg/kg	0.0053		1	0.0024	10/03/22	10/03/22 20:10	1045
Carbon Disulfide	ND	mg/kg	0.0011		1	0.00044	10/03/22	10/03/22 20:10	1045
Carbon tetrachloride	ND	mg/kg	0.0011		1	0.00039	10/03/22	10/03/22 20:10	1045
Chlorobenzene	ND	mg/kg	0.0011		1	0.00057	10/03/22	10/03/22 20:10	1045
Chloroethane	ND	mg/kg	0.0011		1	0.0007	10/03/22	10/03/22 20:10	1045
Chloroform	ND	mg/kg	0.0053		1	0.00069	10/03/22	10/03/22 20:10	1045
Chloromethane	ND	mg/kg	0.0011		1	0.00053	10/03/22	10/03/22 20:10	1045
Cyclohexane	ND	mg/kg	0.0011		1	0.00042	10/03/22	10/03/22 20:10	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0011		1	0.00092	10/03/22	10/03/22 20:10	1045
Dibromochloromethane	ND	mg/kg	0.0011		1	0.00032	10/03/22	10/03/22 20:10	1045
1,2-Dibromoethane	ND	mg/kg	0.0011		1	0.00053	10/03/22	10/03/22 20:10	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 20:10	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0011		1	0.00047	10/03/22	10/03/22 20:10	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0011		1	0.00092	10/03/22	10/03/22 20:10	1045
Dichlorodifluoromethane	ND	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 20:10	1045
1,1-Dichloroethane	ND	mg/kg	0.0011		1	0.00045	10/03/22	10/03/22 20:10	1045
1,2-Dichloroethane	ND	mg/kg	0.0011		1	0.00038	10/03/22	10/03/22 20:10	1045
1,1-Dichloroethene	ND	mg/kg	0.0011		1	0.00042	10/03/22	10/03/22 20:10	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0011		1	0.00045	10/03/22	10/03/22 20:10	1045
1,2-Dichloropropane	ND	mg/kg	0.0011		1	0.00051	10/03/22	10/03/22 20:10	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0011		1	0.00045	10/03/22	10/03/22 20:10	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:06** **PSS Sample ID: 22093003-007**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 76.9**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.0011		1	0.00048	10/03/22	10/03/22 20:10	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0011		1	0.00043	10/03/22	10/03/22 20:10	1045
Ethylbenzene	ND	mg/kg	0.0011		1	0.00039	10/03/22	10/03/22 20:10	1045
2-Hexanone (MBK)	ND	mg/kg	0.0011		1	0.00069	10/03/22	10/03/22 20:10	1045
Isopropylbenzene	ND	mg/kg	0.0011		1	0.00041	10/03/22	10/03/22 20:10	1045
Methyl Acetate	ND	mg/kg	0.026		1	0.0012	10/03/22	10/03/22 20:10	1045
Methylcyclohexane	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 20:10	1045
Methylene chloride	ND	mg/kg	0.0053		1	0.0038	10/03/22	10/03/22 20:10	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0011		1	0.00067	10/03/22	10/03/22 20:10	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0011		1	0.0004	10/03/22	10/03/22 20:10	1045
Naphthalene	ND	mg/kg	0.0011		1	0.00061	10/03/22	10/03/22 20:10	1045
Styrene	ND	mg/kg	0.0011		1	0.00042	10/03/22	10/03/22 20:10	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0011		1	0.00064	10/03/22	10/03/22 20:10	1045
Tetrachloroethene	ND	mg/kg	0.0011		1	0.00046	10/03/22	10/03/22 20:10	1045
Toluene	**0.0014**	mg/kg	0.0011		1	0.00047	10/03/22	10/03/22 20:10	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0011		1	0.00055	10/03/22	10/03/22 20:10	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0011		1	0.00047	10/03/22	10/03/22 20:10	1045
1,1,1-Trichloroethane	ND	mg/kg	0.0011		1	0.00038	10/03/22	10/03/22 20:10	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0011		1	0.00036	10/03/22	10/03/22 20:10	1045
Trichloroethene	ND	mg/kg	0.0011		1	0.00057	10/03/22	10/03/22 20:10	1045
Trichlorofluoromethane	ND	mg/kg	0.0011		1	0.0005	10/03/22	10/03/22 20:10	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0011		1	0.0004	10/03/22	10/03/22 20:10	1045
Vinyl chloride	ND	mg/kg	0.0053		1	0.00035	10/03/22	10/03/22 20:10	1045
m&p-Xylene	ND	mg/kg	0.0021		1	0.0012	10/03/22	10/03/22 20:10	1045
o-Xylene	ND	mg/kg	0.0011		1	0.00039	10/03/22	10/03/22 20:10	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*99*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 20:10*	*1045*
Dibromofluoromethane	*97*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 20:10*	*1045*
Toluene-D8	*102*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 20:10*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:06** **PSS Sample ID: 22093003-007**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 76.9**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 20:59	1070
Acenaphthylene	ND	mg/kg	0.011		1	0.0073	10/03/22	10/03/22 20:59	1070
Acetophenone	ND	mg/kg	0.043		1	0.028	10/03/22	10/03/22 20:59	1070
Anthracene	**0.020**	mg/kg	0.011		1	0.0056	10/03/22	10/03/22 20:59	1070
Atrazine	ND	mg/kg	0.086		1	0.022	10/03/22	10/03/22 20:59	1070
Benzo(a)anthracene	**0.12**	mg/kg	0.011		1	0.0043	10/03/22	10/03/22 20:59	1070
Benzo(a)pyrene	**0.14**	mg/kg	0.011		1	0.006	10/03/22	10/03/22 20:59	1070
Benzo(b)fluoranthene	**0.13**	mg/kg	0.011		1	0.0056	10/03/22	10/03/22 20:59	1070
Benzo(g,h,i)perylene	**0.096**	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 20:59	1070
Benzo(k)fluoranthene	**0.12**	mg/kg	0.011		1	0.0095	10/03/22	10/03/22 20:59	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.043		1	0.023	10/03/22	10/03/22 20:59	1070
Butyl benzyl phthalate	ND	mg/kg	0.043		1	0.028	10/03/22	10/03/22 20:59	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.043		1	0.028	10/03/22	10/03/22 20:59	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.043		1	0.0056	10/03/22	10/03/22 20:59	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.043		1	0.0065	10/03/22	10/03/22 20:59	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.043		1	0.03	10/03/22	10/03/22 20:59	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.043		1	0.022	10/03/22	10/03/22 20:59	1070
Di-n-butyl phthalate	**0.071**	mg/kg	0.043		1	0.022	10/03/22	10/03/22 20:59	1070
Carbazole	ND	mg/kg	0.043		1	0.034	10/03/22	10/03/22 20:59	1070
Caprolactam	ND	mg/kg	0.086		1	0.016	10/03/22	10/03/22 20:59	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.043		1	0.038	10/03/22	10/03/22 20:59	1070
4-Chloroaniline	ND	mg/kg	0.043		1	0.033	10/03/22	10/03/22 20:59	1070
2-Chloronaphthalene	ND	mg/kg	0.043		1	0.03	10/03/22	10/03/22 20:59	1070
2-Chlorophenol	ND	mg/kg	0.043		1	0.022	10/03/22	10/03/22 20:59	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.043		1	0.024	10/03/22	10/03/22 20:59	1070
Chrysene	**0.13**	mg/kg	0.011		1	0.0052	10/03/22	10/03/22 20:59	1070
Dibenz(a,h)Anthracene	**0.034**	mg/kg	0.011		1	0.0073	10/03/22	10/03/22 20:59	1070
Dibenzofuran	ND	mg/kg	0.043		1	0.025	10/03/22	10/03/22 20:59	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.043		1	0.024	10/03/22	10/03/22 20:59	1070
2,4-Dichlorophenol	ND	mg/kg	0.043		1	0.034	10/03/22	10/03/22 20:59	1070
Diethyl phthalate	ND	mg/kg	0.043		1	0.026	10/03/22	10/03/22 20:59	1070
Dimethyl phthalate	ND	mg/kg	0.043		1	0.025	10/03/22	10/03/22 20:59	1070
2,4-Dimethylphenol	ND	mg/kg	0.043		1	0.041	10/03/22	10/03/22 20:59	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.22		1	0.051	10/03/22	10/03/22 20:59	1070
2,4-Dinitrophenol	ND	mg/kg	0.22		1	0.098	10/03/22	10/03/22 20:59	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:06** **PSS Sample ID: 22093003-007**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 76.9**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.086		1	0.03	10/03/22	10/03/22 20:59	1070
2,6-Dinitrotoluene	ND	mg/kg	0.086		1	0.025	10/03/22	10/03/22 20:59	1070
Fluoranthene	**0.21**	mg/kg	0.011		1	0.0047	10/03/22	10/03/22 20:59	1070
Fluorene	ND	mg/kg	0.011		1	0.0073	10/03/22	10/03/22 20:59	1070
Hexachlorobenzene	ND	mg/kg	0.043		1	0.0082	10/03/22	10/03/22 20:59	1070
Hexachlorobutadiene	ND	mg/kg	0.043		1	0.025	10/03/22	10/03/22 20:59	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.086		1	0.048	10/03/22	10/03/22 20:59	1070
Hexachloroethane	ND	mg/kg	0.043		1	0.028	10/03/22	10/03/22 20:59	1070
Indeno(1,2,3-c,d)Pyrene	**0.093**	mg/kg	0.011		1	0.0099	10/03/22	10/03/22 20:59	1070
Isophorone	ND	mg/kg	0.043		1	0.029	10/03/22	10/03/22 20:59	1070
2-Methylnaphthalene	ND	mg/kg	0.011		1	0.01	10/03/22	10/03/22 20:59	1070
2-Methyl phenol	ND	mg/kg	0.043		1	0.024	10/03/22	10/03/22 20:59	1070
3&4-Methylphenol	ND	mg/kg	0.043		1	0.031	10/03/22	10/03/22 20:59	1070
Naphthalene	ND	mg/kg	0.011		1	0.0069	10/03/22	10/03/22 20:59	1070
2-Nitroaniline	ND	mg/kg	0.086		1	0.025	10/03/22	10/03/22 20:59	1070
3-Nitroaniline	ND	mg/kg	0.086		1	0.03	10/03/22	10/03/22 20:59	1070
4-Nitroaniline	ND	mg/kg	0.086		1	0.043	10/03/22	10/03/22 20:59	1070
Nitrobenzene	ND	mg/kg	0.043		1	0.032	10/03/22	10/03/22 20:59	1070
2-Nitrophenol	ND	mg/kg	0.043		1	0.034	10/03/22	10/03/22 20:59	1070
4-Nitrophenol	ND	mg/kg	0.22		1	0.066	10/03/22	10/03/22 20:59	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.043		1	0.0039	10/03/22	10/03/22 20:59	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.043		1	0.023	10/03/22	10/03/22 20:59	1070
Di-n-octyl phthalate	ND	mg/kg	0.086		1	0.044	10/03/22	10/03/22 20:59	1070
Pentachlorophenol	ND	mg/kg	0.086		1	0.052	10/03/22	10/03/22 20:59	1070
Phenanthrene	**0.086**	mg/kg	0.011		1	0.0065	10/03/22	10/03/22 20:59	1070
Phenol	ND	mg/kg	0.043		1	0.032	10/03/22	10/03/22 20:59	1070
Pyrene	**0.19**	mg/kg	0.011		1	0.0056	10/03/22	10/03/22 20:59	1070
Pyridine	ND	mg/kg	0.043		1	0.02	10/03/22	10/03/22 20:59	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.043		1	0.0052	10/03/22	10/03/22 20:59	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.043		1	0.034	10/03/22	10/03/22 20:59	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_1.0-1.5 **Date/Time Sampled: 09/29/2022 13:06** **PSS Sample ID: 22093003-007**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 76.9**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*80*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 20:59*	*1070*
2-Fluorophenol	*70*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 20:59*	*1070*
Nitrobenzene-d5	*69*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 20:59*	*1070*
Phenol-d6	*72*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 20:59*	*1070*
Terphenyl-D14	*92*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 20:59*	*1070*
2,4,6-Tribromophenol	*76*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 20:59*	*1070*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:08** **PSS Sample ID: 22093003-008**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.5**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**580**	mg/kg	0.66		1	0.5	10/03/22	10/04/22 01:44	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.056**	mg/kg	0.026		1	0.014	10/03/22	10/03/22 20:32	1045
Benzene	**0.0032**	mg/kg	0.0013		1	0.00055	10/03/22	10/03/22 20:32	1045
Bromochloromethane	ND	mg/kg	0.0013		1	0.0006	10/03/22	10/03/22 20:32	1045
Bromodichloromethane	ND	mg/kg	0.0013		1	0.00056	10/03/22	10/03/22 20:32	1045
Bromoform	ND	mg/kg	0.0013		1	0.00065	10/03/22	10/03/22 20:32	1045
Bromomethane	ND	mg/kg	0.0013		1	0.0013	10/03/22	10/03/22 20:32	1045
2-Butanone (MEK)	ND	mg/kg	0.0064		1	0.0029	10/03/22	10/03/22 20:32	1045
Carbon Disulfide	ND	mg/kg	0.0013		1	0.00054	10/03/22	10/03/22 20:32	1045
Carbon tetrachloride	ND	mg/kg	0.0013		1	0.00047	10/03/22	10/03/22 20:32	1045
Chlorobenzene	ND	mg/kg	0.0013		1	0.00069	10/03/22	10/03/22 20:32	1045
Chloroethane	ND	mg/kg	0.0013		1	0.00085	10/03/22	10/03/22 20:32	1045
Chloroform	ND	mg/kg	0.0064		1	0.00083	10/03/22	10/03/22 20:32	1045
Chloromethane	ND	mg/kg	0.0013		1	0.00064	10/03/22	10/03/22 20:32	1045
Cyclohexane	ND	mg/kg	0.0013		1	0.00051	10/03/22	10/03/22 20:32	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0013		1	0.0011	10/03/22	10/03/22 20:32	1045
Dibromochloromethane	ND	mg/kg	0.0013		1	0.00038	10/03/22	10/03/22 20:32	1045
1,2-Dibromoethane	ND	mg/kg	0.0013		1	0.00064	10/03/22	10/03/22 20:32	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0013		1	0.00056	10/03/22	10/03/22 20:32	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0013		1	0.00058	10/03/22	10/03/22 20:32	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0013		1	0.0011	10/03/22	10/03/22 20:32	1045
Dichlorodifluoromethane	ND	mg/kg	0.0013		1	0.0006	10/03/22	10/03/22 20:32	1045
1,1-Dichloroethane	ND	mg/kg	0.0013		1	0.00055	10/03/22	10/03/22 20:32	1045
1,2-Dichloroethane	ND	mg/kg	0.0013		1	0.00046	10/03/22	10/03/22 20:32	1045
1,1-Dichloroethene	ND	mg/kg	0.0013		1	0.00051	10/03/22	10/03/22 20:32	1045
1,2-Dichloropropane	ND	mg/kg	0.0013		1	0.00062	10/03/22	10/03/22 20:32	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0013		1	0.00055	10/03/22	10/03/22 20:32	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0013		1	0.00055	10/03/22	10/03/22 20:32	1045

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:08** **PSS Sample ID: 22093003-008**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.5**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.0013		1	0.00059	10/03/22	10/03/22 20:32	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0013		1	0.00053	10/03/22	10/03/22 20:32	1045
Ethylbenzene	ND	mg/kg	0.0013		1	0.00047	10/03/22	10/03/22 20:32	1045
2-Hexanone (MBK)	ND	mg/kg	0.0013		1	0.00083	10/03/22	10/03/22 20:32	1045
Isopropylbenzene	ND	mg/kg	0.0013		1	0.0005	10/03/22	10/03/22 20:32	1045
Methyl Acetate	ND	mg/kg	0.032		1	0.0014	10/03/22	10/03/22 20:32	1045
Methylcyclohexane	ND	mg/kg	0.0013		1	0.00056	10/03/22	10/03/22 20:32	1045
Methylene chloride	ND	mg/kg	0.0064		1	0.0046	10/03/22	10/03/22 20:32	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0013		1	0.00082	10/03/22	10/03/22 20:32	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0013		1	0.00049	10/03/22	10/03/22 20:32	1045
Naphthalene	ND	mg/kg	0.0013		1	0.00074	10/03/22	10/03/22 20:32	1045
Styrene	ND	mg/kg	0.0013		1	0.00051	10/03/22	10/03/22 20:32	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0013		1	0.00078	10/03/22	10/03/22 20:32	1045
Tetrachloroethene	ND	mg/kg	0.0013		1	0.00056	10/03/22	10/03/22 20:32	1045
Toluene	**0.0016**	mg/kg	0.0013		1	0.00058	10/03/22	10/03/22 20:32	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0013		1	0.00067	10/03/22	10/03/22 20:32	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0013		1	0.00058	10/03/22	10/03/22 20:32	1045
1,1,1-Trichloroethane	ND	mg/kg	0.0013		1	0.00046	10/03/22	10/03/22 20:32	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0013		1	0.00044	10/03/22	10/03/22 20:32	1045
Trichloroethene	ND	mg/kg	0.0013		1	0.00069	10/03/22	10/03/22 20:32	1045
Trichlorofluoromethane	ND	mg/kg	0.0013		1	0.0006	10/03/22	10/03/22 20:32	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0013		1	0.00049	10/03/22	10/03/22 20:32	1045
Vinyl chloride	ND	mg/kg	0.0064		1	0.00042	10/03/22	10/03/22 20:32	1045
m&p-Xylene	ND	mg/kg	0.0026		1	0.0014	10/03/22	10/03/22 20:32	1045
o-Xylene	ND	mg/kg	0.0013		1	0.00047	10/03/22	10/03/22 20:32	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*103*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 20:32*	*1045*
Dibromofluoromethane	*94*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 20:32*	*1045*
Toluene-D8	*98*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 20:32*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:08** **PSS Sample ID: 22093003-008**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	**0.037**	mg/kg	0.011		1	0.0083	10/03/22	10/03/22 19:42	1070
Acenaphthylene	ND	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 19:42	1070
Acetophenone	ND	mg/kg	0.046		1	0.029	10/03/22	10/03/22 19:42	1070
Anthracene	**0.15**	mg/kg	0.011		1	0.006	10/03/22	10/03/22 19:42	1070
Atrazine	ND	mg/kg	0.092		1	0.023	10/03/22	10/03/22 19:42	1070
Benzo(a)anthracene	**0.52**	mg/kg	0.011		1	0.0046	10/03/22	10/03/22 19:42	1070
Benzo(a)pyrene	**0.52**	mg/kg	0.011		1	0.0064	10/03/22	10/03/22 19:42	1070
Benzo(b)fluoranthene	**0.46**	mg/kg	0.011		1	0.006	10/03/22	10/03/22 19:42	1070
Benzo(g,h,i)perylene	**0.29**	mg/kg	0.011		1	0.0083	10/03/22	10/03/22 19:42	1070
Benzo(k)fluoranthene	**0.40**	mg/kg	0.011		1	0.01	10/03/22	10/03/22 19:42	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:42	1070
Butyl benzyl phthalate	ND	mg/kg	0.046		1	0.03	10/03/22	10/03/22 19:42	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.046		1	0.03	10/03/22	10/03/22 19:42	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.046		1	0.006	10/03/22	10/03/22 19:42	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.046		1	0.0069	10/03/22	10/03/22 19:42	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.046		1	0.032	10/03/22	10/03/22 19:42	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:42	1070
Di-n-butyl phthalate	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:42	1070
Carbazole	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:42	1070
Caprolactam	ND	mg/kg	0.092		1	0.017	10/03/22	10/03/22 19:42	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.046		1	0.04	10/03/22	10/03/22 19:42	1070
4-Chloroaniline	ND	mg/kg	0.046		1	0.035	10/03/22	10/03/22 19:42	1070
2-Chloronaphthalene	ND	mg/kg	0.046		1	0.032	10/03/22	10/03/22 19:42	1070
2-Chlorophenol	ND	mg/kg	0.046		1	0.023	10/03/22	10/03/22 19:42	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 19:42	1070
Chrysene	**0.50**	mg/kg	0.011		1	0.0055	10/03/22	10/03/22 19:42	1070
Dibenz(a,h)Anthracene	**0.098**	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 19:42	1070
Dibenzofuran	ND	mg/kg	0.046		1	0.027	10/03/22	10/03/22 19:42	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.046		1	0.025	10/03/22	10/03/22 19:42	1070
2,4-Dichlorophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:42	1070
Diethyl phthalate	ND	mg/kg	0.046		1	0.028	10/03/22	10/03/22 19:42	1070
Dimethyl phthalate	ND	mg/kg	0.046		1	0.027	10/03/22	10/03/22 19:42	1070
2,4-Dimethylphenol	ND	mg/kg	0.046		1	0.044	10/03/22	10/03/22 19:42	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.23		1	0.055	10/03/22	10/03/22 19:42	1070
2,4-Dinitrophenol	ND	mg/kg	0.23		1	0.1	10/03/22	10/03/22 19:42	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:08** **PSS Sample ID: 22093003-008**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.092		1	0.032	10/03/22	10/03/22 19:42	1070
2,6-Dinitrotoluene	ND	mg/kg	0.092		1	0.027	10/03/22	10/03/22 19:42	1070
Fluoranthene	**1.1**	mg/kg	0.011		1	0.0051	10/03/22	10/03/22 19:42	1070
Fluorene	**0.030**	mg/kg	0.011		1	0.0078	10/03/22	10/03/22 19:42	1070
Hexachlorobenzene	ND	mg/kg	0.046		1	0.0087	10/03/22	10/03/22 19:42	1070
Hexachlorobutadiene	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 19:42	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.092		1	0.051	10/03/22	10/03/22 19:42	1070
Hexachloroethane	ND	mg/kg	0.046		1	0.029	10/03/22	10/03/22 19:42	1070
Indeno(1,2,3-c,d)Pyrene	**0.30**	mg/kg	0.011		1	0.011	10/03/22	10/03/22 19:42	1070
Isophorone	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 19:42	1070
2-Methylnaphthalene	ND	mg/kg	0.011		1	0.011	10/03/22	10/03/22 19:42	1070
2-Methyl phenol	ND	mg/kg	0.046		1	0.025	10/03/22	10/03/22 19:42	1070
3&4-Methylphenol	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 19:42	1070
Naphthalene	ND	mg/kg	0.011		1	0.0074	10/03/22	10/03/22 19:42	1070
2-Nitroaniline	ND	mg/kg	0.092		1	0.026	10/03/22	10/03/22 19:42	1070
3-Nitroaniline	ND	mg/kg	0.092		1	0.032	10/03/22	10/03/22 19:42	1070
4-Nitroaniline	ND	mg/kg	0.092		1	0.046	10/03/22	10/03/22 19:42	1070
Nitrobenzene	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 19:42	1070
2-Nitrophenol	ND	mg/kg	0.046		1	0.037	10/03/22	10/03/22 19:42	1070
4-Nitrophenol	ND	mg/kg	0.23		1	0.071	10/03/22	10/03/22 19:42	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.046		1	0.0041	10/03/22	10/03/22 19:42	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 19:42	1070
Di-n-octyl phthalate	ND	mg/kg	0.092		1	0.046	10/03/22	10/03/22 19:42	1070
Pentachlorophenol	ND	mg/kg	0.092		1	0.056	10/03/22	10/03/22 19:42	1070
Phenanthrene	**0.55**	mg/kg	0.011		1	0.0069	10/03/22	10/03/22 19:42	1070
Phenol	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 19:42	1070
Pyrene	**0.91**	mg/kg	0.011		1	0.006	10/03/22	10/03/22 19:42	1070
Pyridine	ND	mg/kg	0.046		1	0.021	10/03/22	10/03/22 19:42	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.046		1	0.0055	10/03/22	10/03/22 19:42	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 19:42	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.0-2.5 **Date/Time Sampled: 09/29/2022 13:08** **PSS Sample ID: 22093003-008**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 72.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*87*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 19:42*	*1070*
2-Fluorophenol	*75*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 19:42*	*1070*
Nitrobenzene-d5	*78*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 19:42*	*1070*
Phenol-d6	*75*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 19:42*	*1070*
Terphenyl-D14	*99*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 19:42*	*1070*
2,4,6-Tribromophenol	*79*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 19:42*	*1070*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:10** **PSS Sample ID: 22093003-009**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 73.9**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**240**	mg/kg	0.67		1	0.51	10/03/22	10/04/22 01:49	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.034**	mg/kg	0.024		1	0.013	10/03/22	10/03/22 20:55	1045
Benzene	ND	mg/kg	0.0012		1	0.00051	10/03/22	10/03/22 20:55	1045
Bromochloromethane	ND	mg/kg	0.0012		1	0.00056	10/03/22	10/03/22 20:55	1045
Bromodichloromethane	ND	mg/kg	0.0012		1	0.00052	10/03/22	10/03/22 20:55	1045
Bromoform	ND	mg/kg	0.0012		1	0.00061	10/03/22	10/03/22 20:55	1045
Bromomethane	ND	mg/kg	0.0012		1	0.0012	10/03/22	10/03/22 20:55	1045
2-Butanone (MEK)	**0.0064**	mg/kg	0.0059		1	0.0027	10/03/22	10/03/22 20:55	1045
Carbon Disulfide	ND	mg/kg	0.0012		1	0.0005	10/03/22	10/03/22 20:55	1045
Carbon tetrachloride	ND	mg/kg	0.0012		1	0.00044	10/03/22	10/03/22 20:55	1045
Chlorobenzene	ND	mg/kg	0.0012		1	0.00064	10/03/22	10/03/22 20:55	1045
Chloroethane	ND	mg/kg	0.0012		1	0.00078	10/03/22	10/03/22 20:55	1045
Chloroform	ND	mg/kg	0.0059		1	0.00077	10/03/22	10/03/22 20:55	1045
Chloromethane	ND	mg/kg	0.0012		1	0.00059	10/03/22	10/03/22 20:55	1045
Cyclohexane	ND	mg/kg	0.0012		1	0.00048	10/03/22	10/03/22 20:55	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0012		1	0.001	10/03/22	10/03/22 20:55	1045
Dibromochloromethane	ND	mg/kg	0.0012		1	0.00036	10/03/22	10/03/22 20:55	1045
1,2-Dibromoethane	ND	mg/kg	0.0012		1	0.00059	10/03/22	10/03/22 20:55	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0012		1	0.00052	10/03/22	10/03/22 20:55	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0012		1	0.00054	10/03/22	10/03/22 20:55	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0012		1	0.001	10/03/22	10/03/22 20:55	1045
Dichlorodifluoromethane	ND	mg/kg	0.0012		1	0.00056	10/03/22	10/03/22 20:55	1045
1,1-Dichloroethane	ND	mg/kg	0.0012		1	0.00051	10/03/22	10/03/22 20:55	1045
1,2-Dichloroethane	ND	mg/kg	0.0012		1	0.00043	10/03/22	10/03/22 20:55	1045
1,1-Dichloroethene	ND	mg/kg	0.0012		1	0.00048	10/03/22	10/03/22 20:55	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0012		1	0.00051	10/03/22	10/03/22 20:55	1045
1,2-Dichloropropane	ND	mg/kg	0.0012		1	0.00057	10/03/22	10/03/22 20:55	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0012		1	0.00051	10/03/22	10/03/22 20:55	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:10** **PSS Sample ID: 22093003-009**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 73.9**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.0012		1	0.00055	10/03/22	10/03/22 20:55	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0012		1	0.00049	10/03/22	10/03/22 20:55	1045
Ethylbenzene	ND	mg/kg	0.0012		1	0.00044	10/03/22	10/03/22 20:55	1045
2-Hexanone (MBK)	ND	mg/kg	0.0012		1	0.00077	10/03/22	10/03/22 20:55	1045
Isopropylbenzene	ND	mg/kg	0.0012		1	0.00046	10/03/22	10/03/22 20:55	1045
Methyl Acetate	ND	mg/kg	0.030		1	0.0013	10/03/22	10/03/22 20:55	1045
Methylcyclohexane	**0.0017**	mg/kg	0.0012		1	0.00052	10/03/22	10/03/22 20:55	1045
Methylene chloride	ND	mg/kg	0.0059		1	0.0043	10/03/22	10/03/22 20:55	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0012		1	0.00076	10/03/22	10/03/22 20:55	1045
Methyl-t-Butyl Ether	**0.0016**	mg/kg	0.0012		1	0.00045	10/03/22	10/03/22 20:55	1045
Naphthalene	ND	mg/kg	0.0012		1	0.00069	10/03/22	10/03/22 20:55	1045
Styrene	ND	mg/kg	0.0012		1	0.00048	10/03/22	10/03/22 20:55	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0012		1	0.00073	10/03/22	10/03/22 20:55	1045
Tetrachloroethene	ND	mg/kg	0.0012		1	0.00052	10/03/22	10/03/22 20:55	1045
Toluene	ND	mg/kg	0.0012		1	0.00054	10/03/22	10/03/22 20:55	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0012		1	0.00062	10/03/22	10/03/22 20:55	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0012		1	0.00054	10/03/22	10/03/22 20:55	1045
1,1,1-Trichloroethane	ND	mg/kg	0.0012		1	0.00043	10/03/22	10/03/22 20:55	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0012		1	0.0004	10/03/22	10/03/22 20:55	1045
Trichloroethene	ND	mg/kg	0.0012		1	0.00064	10/03/22	10/03/22 20:55	1045
Trichlorofluoromethane	ND	mg/kg	0.0012		1	0.00056	10/03/22	10/03/22 20:55	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0012		1	0.00045	10/03/22	10/03/22 20:55	1045
Vinyl chloride	ND	mg/kg	0.0059		1	0.00039	10/03/22	10/03/22 20:55	1045
m&p-Xylene	ND	mg/kg	0.0024		1	0.0013	10/03/22	10/03/22 20:55	1045
o-Xylene	ND	mg/kg	0.0012		1	0.00044	10/03/22	10/03/22 20:55	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 20:55*	*1045*
Dibromofluoromethane	*94*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 20:55*	*1045*
Toluene-D8	*98*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 20:55*	*1045*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:10** **PSS Sample ID: 22093003-009**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 73.9**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.011		1	0.0082	10/03/22	10/03/22 18:25	1070
Acenaphthylene	ND	mg/kg	0.011		1	0.0077	10/03/22	10/03/22 18:25	1070
Acetophenone	ND	mg/kg	0.046		1	0.029	10/03/22	10/03/22 18:25	1070
Anthracene	**0.010**	mg/kg	0.011	J	1	0.0059	10/03/22	10/03/22 18:25	1070
Atrazine	ND	mg/kg	0.091		1	0.023	10/03/22	10/03/22 18:25	1070
Benzo(a)anthracene	**0.058**	mg/kg	0.011		1	0.0046	10/03/22	10/03/22 18:25	1070
Benzo(a)pyrene	**0.069**	mg/kg	0.011		1	0.0064	10/03/22	10/03/22 18:25	1070
Benzo(b)fluoranthene	**0.066**	mg/kg	0.011		1	0.0059	10/03/22	10/03/22 18:25	1070
Benzo(g,h,i)perylene	**0.047**	mg/kg	0.011		1	0.0082	10/03/22	10/03/22 18:25	1070
Benzo(k)fluoranthene	**0.052**	mg/kg	0.011		1	0.01	10/03/22	10/03/22 18:25	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 18:25	1070
Butyl benzyl phthalate	ND	mg/kg	0.046		1	0.03	10/03/22	10/03/22 18:25	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.046		1	0.03	10/03/22	10/03/22 18:25	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.046		1	0.0059	10/03/22	10/03/22 18:25	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.046		1	0.0068	10/03/22	10/03/22 18:25	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 18:25	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 18:25	1070
Di-n-butyl phthalate	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 18:25	1070
Carbazole	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 18:25	1070
Caprolactam	ND	mg/kg	0.091		1	0.016	10/03/22	10/03/22 18:25	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.046		1	0.04	10/03/22	10/03/22 18:25	1070
4-Chloroaniline	ND	mg/kg	0.046		1	0.035	10/03/22	10/03/22 18:25	1070
2-Chloronaphthalene	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 18:25	1070
2-Chlorophenol	ND	mg/kg	0.046		1	0.023	10/03/22	10/03/22 18:25	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 18:25	1070
Chrysene	**0.059**	mg/kg	0.011		1	0.0055	10/03/22	10/03/22 18:25	1070
Dibenz(a,h)Anthracene	**0.016**	mg/kg	0.011		1	0.0077	10/03/22	10/03/22 18:25	1070
Dibenzofuran	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 18:25	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.046		1	0.025	10/03/22	10/03/22 18:25	1070
2,4-Dichlorophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 18:25	1070
Diethyl phthalate	ND	mg/kg	0.046		1	0.027	10/03/22	10/03/22 18:25	1070
Dimethyl phthalate	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 18:25	1070
2,4-Dimethylphenol	ND	mg/kg	0.046		1	0.043	10/03/22	10/03/22 18:25	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.23		1	0.054	10/03/22	10/03/22 18:25	1070
2,4-Dinitrophenol	ND	mg/kg	0.23		1	0.1	10/03/22	10/03/22 18:25	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:10** **PSS Sample ID: 22093003-009**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 73.9**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.091		1	0.032	10/03/22	10/03/22 18:25	1070
2,6-Dinitrotoluene	ND	mg/kg	0.091		1	0.026	10/03/22	10/03/22 18:25	1070
Fluoranthene	**0.086**	mg/kg	0.011		1	0.005	10/03/22	10/03/22 18:25	1070
Fluorene	ND	mg/kg	0.011		1	0.0077	10/03/22	10/03/22 18:25	1070
Hexachlorobenzene	ND	mg/kg	0.046		1	0.0087	10/03/22	10/03/22 18:25	1070
Hexachlorobutadiene	ND	mg/kg	0.046		1	0.026	10/03/22	10/03/22 18:25	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.091		1	0.051	10/03/22	10/03/22 18:25	1070
Hexachloroethane	ND	mg/kg	0.046		1	0.029	10/03/22	10/03/22 18:25	1070
Indeno(1,2,3-c,d)Pyrene	**0.045**	mg/kg	0.011		1	0.01	10/03/22	10/03/22 18:25	1070
Isophorone	ND	mg/kg	0.046		1	0.031	10/03/22	10/03/22 18:25	1070
2-Methylnaphthalene	ND	mg/kg	0.011		1	0.011	10/03/22	10/03/22 18:25	1070
2-Methyl phenol	ND	mg/kg	0.046		1	0.025	10/03/22	10/03/22 18:25	1070
3&4-Methylphenol	ND	mg/kg	0.046		1	0.033	10/03/22	10/03/22 18:25	1070
Naphthalene	**0.013**	mg/kg	0.011		1	0.0073	10/03/22	10/03/22 18:25	1070
2-Nitroaniline	ND	mg/kg	0.091		1	0.026	10/03/22	10/03/22 18:25	1070
3-Nitroaniline	ND	mg/kg	0.091		1	0.032	10/03/22	10/03/22 18:25	1070
4-Nitroaniline	ND	mg/kg	0.091		1	0.046	10/03/22	10/03/22 18:25	1070
Nitrobenzene	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 18:25	1070
2-Nitrophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 18:25	1070
4-Nitrophenol	ND	mg/kg	0.23		1	0.07	10/03/22	10/03/22 18:25	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.046		1	0.0041	10/03/22	10/03/22 18:25	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.046		1	0.024	10/03/22	10/03/22 18:25	1070
Di-n-octyl phthalate	ND	mg/kg	0.091		1	0.046	10/03/22	10/03/22 18:25	1070
Pentachlorophenol	ND	mg/kg	0.091		1	0.055	10/03/22	10/03/22 18:25	1070
Phenanthrene	**0.037**	mg/kg	0.011		1	0.0068	10/03/22	10/03/22 18:25	1070
Phenol	ND	mg/kg	0.046		1	0.034	10/03/22	10/03/22 18:25	1070
Pyrene	**0.079**	mg/kg	0.011		1	0.0059	10/03/22	10/03/22 18:25	1070
Pyridine	ND	mg/kg	0.046		1	0.021	10/03/22	10/03/22 18:25	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.046		1	0.0055	10/03/22	10/03/22 18:25	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.046		1	0.036	10/03/22	10/03/22 18:25	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB03_2.5-3.0 **Date/Time Sampled: 09/29/2022 13:10** **PSS Sample ID: 22093003-009**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 73.9**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*82*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 18:25*	*1070*
2-Fluorophenol	*73*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 18:25*	*1070*
Nitrobenzene-d5	*74*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 18:25*	*1070*
Phenol-d6	*75*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 18:25*	*1070*
Terphenyl-D14	*94*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 18:25*	*1070*
2,4,6-Tribromophenol	*82*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 18:25*	*1070*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB04_0.5-1.0 **Date/Time Sampled: 09/29/2022 14:40** **PSS Sample ID: 22093003-010**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.5**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**14**	mg/kg	0.61		1	0.47	10/03/22	10/04/22 01:54	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.019		1	0.011	10/03/22	10/03/22 21:17	1045
Benzene	ND	mg/kg	0.00097		1	0.00042	10/03/22	10/03/22 21:17	1045
Bromochloromethane	ND	mg/kg	0.00097		1	0.00046	10/03/22	10/03/22 21:17	1045
Bromodichloromethane	ND	mg/kg	0.00097		1	0.00043	10/03/22	10/03/22 21:17	1045
Bromoform	ND	mg/kg	0.00097		1	0.0005	10/03/22	10/03/22 21:17	1045
Bromomethane	ND	mg/kg	0.00097		1	0.00097	10/03/22	10/03/22 21:17	1045
2-Butanone (MEK)	ND	mg/kg	0.0049		1	0.0022	10/03/22	10/03/22 21:17	1045
Carbon Disulfide	ND	mg/kg	0.00097		1	0.00041	10/03/22	10/03/22 21:17	1045
Carbon tetrachloride	ND	mg/kg	0.00097		1	0.00036	10/03/22	10/03/22 21:17	1045
Chlorobenzene	ND	mg/kg	0.00097		1	0.00052	10/03/22	10/03/22 21:17	1045
Chloroethane	ND	mg/kg	0.00097		1	0.00064	10/03/22	10/03/22 21:17	1045
Chloroform	ND	mg/kg	0.0049		1	0.00063	10/03/22	10/03/22 21:17	1045
Chloromethane	ND	mg/kg	0.00097		1	0.00049	10/03/22	10/03/22 21:17	1045
Cyclohexane	ND	mg/kg	0.00097		1	0.00039	10/03/22	10/03/22 21:17	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00097		1	0.00084	10/03/22	10/03/22 21:17	1045
Dibromochloromethane	ND	mg/kg	0.00097		1	0.00029	10/03/22	10/03/22 21:17	1045
1,2-Dibromoethane	ND	mg/kg	0.00097		1	0.00049	10/03/22	10/03/22 21:17	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00097		1	0.00043	10/03/22	10/03/22 21:17	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00097		1	0.00044	10/03/22	10/03/22 21:17	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00097		1	0.00084	10/03/22	10/03/22 21:17	1045
Dichlorodifluoromethane	ND	mg/kg	0.00097		1	0.00046	10/03/22	10/03/22 21:17	1045
1,1-Dichloroethane	ND	mg/kg	0.00097		1	0.00042	10/03/22	10/03/22 21:17	1045
1,2-Dichloroethane	ND	mg/kg	0.00097		1	0.00035	10/03/22	10/03/22 21:17	1045
1,1-Dichloroethene	ND	mg/kg	0.00097		1	0.00039	10/03/22	10/03/22 21:17	1045
1,2-Dichloropropane	ND	mg/kg	0.00097		1	0.00047	10/03/22	10/03/22 21:17	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00097		1	0.00042	10/03/22	10/03/22 21:17	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00097		1	0.00042	10/03/22	10/03/22 21:17	1045

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB04_0.5-1.0 **Date/Time Sampled: 09/29/2022 14:40** **PSS Sample ID: 22093003-010**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.5**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00097		1	0.00045	10/03/22	10/03/22 21:17	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00097		1	0.0004	10/03/22	10/03/22 21:17	1045
Ethylbenzene	ND	mg/kg	0.00097		1	0.00036	10/03/22	10/03/22 21:17	1045
2-Hexanone (MBK)	ND	mg/kg	0.00097		1	0.00063	10/03/22	10/03/22 21:17	1045
Isopropylbenzene	ND	mg/kg	0.00097		1	0.00038	10/03/22	10/03/22 21:17	1045
Methyl Acetate	ND	mg/kg	0.024		1	0.0011	10/03/22	10/03/22 21:17	1045
Methylcyclohexane	ND	mg/kg	0.00097		1	0.00043	10/03/22	10/03/22 21:17	1045
Methylene chloride	ND	mg/kg	0.0049		1	0.0035	10/03/22	10/03/22 21:17	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00097		1	0.00062	10/03/22	10/03/22 21:17	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00097		1	0.00037	10/03/22	10/03/22 21:17	1045
Naphthalene	ND	mg/kg	0.00097		1	0.00056	10/03/22	10/03/22 21:17	1045
Styrene	ND	mg/kg	0.00097		1	0.00039	10/03/22	10/03/22 21:17	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00097		1	0.00059	10/03/22	10/03/22 21:17	1045
Tetrachloroethene	ND	mg/kg	0.00097		1	0.00043	10/03/22	10/03/22 21:17	1045
Toluene	ND	mg/kg	0.00097		1	0.00044	10/03/22	10/03/22 21:17	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00097		1	0.0005	10/03/22	10/03/22 21:17	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00097		1	0.00044	10/03/22	10/03/22 21:17	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00097		1	0.00035	10/03/22	10/03/22 21:17	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00097		1	0.00033	10/03/22	10/03/22 21:17	1045
Trichloroethene	ND	mg/kg	0.00097		1	0.00052	10/03/22	10/03/22 21:17	1045
Trichlorofluoromethane	ND	mg/kg	0.00097		1	0.00046	10/03/22	10/03/22 21:17	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00097		1	0.00037	10/03/22	10/03/22 21:17	1045
Vinyl chloride	ND	mg/kg	0.0049		1	0.00032	10/03/22	10/03/22 21:17	1045
m&p-Xylene	ND	mg/kg	0.0019		1	0.0011	10/03/22	10/03/22 21:17	1045
o-Xylene	ND	mg/kg	0.00097		1	0.00036	10/03/22	10/03/22 21:17	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*98*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 21:17*	*1045*
Dibromofluoromethane	*97*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 21:17*	*1045*
Toluene-D8	*102*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 21:17*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB04_0.5-1.0 **Date/Time Sampled: 09/29/2022 14:40** **PSS Sample ID: 22093003-010**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.010		1	0.0075	10/03/22	10/03/22 14:34	1070
Acenaphthylene	ND	mg/kg	0.010		1	0.0071	10/03/22	10/03/22 14:34	1070
Acetophenone	ND	mg/kg	0.042		1	0.027	10/03/22	10/03/22 14:34	1070
Anthracene	ND	mg/kg	0.010		1	0.0054	10/03/22	10/03/22 14:34	1070
Atrazine	ND	mg/kg	0.084		1	0.021	10/03/22	10/03/22 14:34	1070
Benzo(a)anthracene	ND	mg/kg	0.010		1	0.0042	10/03/22	10/03/22 14:34	1070
Benzo(a)pyrene	ND	mg/kg	0.010		1	0.0059	10/03/22	10/03/22 14:34	1070
Benzo(b)fluoranthene	ND	mg/kg	0.010		1	0.0054	10/03/22	10/03/22 14:34	1070
Benzo(g,h,i)perylene	ND	mg/kg	0.010		1	0.0075	10/03/22	10/03/22 14:34	1070
Benzo(k)fluoranthene	ND	mg/kg	0.010		1	0.0092	10/03/22	10/03/22 14:34	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 14:34	1070
Butyl benzyl phthalate	ND	mg/kg	0.042		1	0.027	10/03/22	10/03/22 14:34	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.042		1	0.027	10/03/22	10/03/22 14:34	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.042		1	0.0054	10/03/22	10/03/22 14:34	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.042		1	0.0063	10/03/22	10/03/22 14:34	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.042		1	0.029	10/03/22	10/03/22 14:34	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 14:34	1070
Di-n-butyl phthalate	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 14:34	1070
Carbazole	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 14:34	1070
Caprolactam	ND	mg/kg	0.084		1	0.015	10/03/22	10/03/22 14:34	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.042		1	0.036	10/03/22	10/03/22 14:34	1070
4-Chloroaniline	ND	mg/kg	0.042		1	0.032	10/03/22	10/03/22 14:34	1070
2-Chloronaphthalene	ND	mg/kg	0.042		1	0.029	10/03/22	10/03/22 14:34	1070
2-Chlorophenol	ND	mg/kg	0.042		1	0.021	10/03/22	10/03/22 14:34	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.042		1	0.023	10/03/22	10/03/22 14:34	1070
Chrysene	ND	mg/kg	0.010		1	0.005	10/03/22	10/03/22 14:34	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.010		1	0.0071	10/03/22	10/03/22 14:34	1070
Dibenzofuran	ND	mg/kg	0.042		1	0.024	10/03/22	10/03/22 14:34	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.042		1	0.023	10/03/22	10/03/22 14:34	1070
2,4-Dichlorophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 14:34	1070
Diethyl phthalate	ND	mg/kg	0.042		1	0.025	10/03/22	10/03/22 14:34	1070
Dimethyl phthalate	ND	mg/kg	0.042		1	0.024	10/03/22	10/03/22 14:34	1070
2,4-Dimethylphenol	ND	mg/kg	0.042		1	0.04	10/03/22	10/03/22 14:34	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.21		1	0.05	10/03/22	10/03/22 14:34	1070
2,4-Dinitrophenol	ND	mg/kg	0.21		1	0.095	10/03/22	10/03/22 14:34	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB04_0.5-1.0 **Date/Time Sampled: 09/29/2022 14:40** **PSS Sample ID: 22093003-010**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.084		1	0.029	10/03/22	10/03/22 14:34	1070
2,6-Dinitrotoluene	ND	mg/kg	0.084		1	0.024	10/03/22	10/03/22 14:34	1070
Fluoranthene	ND	mg/kg	0.010		1	0.0046	10/03/22	10/03/22 14:34	1070
Fluorene	ND	mg/kg	0.010		1	0.0071	10/03/22	10/03/22 14:34	1070
Hexachlorobenzene	ND	mg/kg	0.042		1	0.0079	10/03/22	10/03/22 14:34	1070
Hexachlorobutadiene	ND	mg/kg	0.042		1	0.024	10/03/22	10/03/22 14:34	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.084		1	0.046	10/03/22	10/03/22 14:34	1070
Hexachloroethane	ND	mg/kg	0.042		1	0.027	10/03/22	10/03/22 14:34	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.010		1	0.0096	10/03/22	10/03/22 14:34	1070
Isophorone	ND	mg/kg	0.042		1	0.028	10/03/22	10/03/22 14:34	1070
2-Methylnaphthalene	ND	mg/kg	0.010		1	0.01	10/03/22	10/03/22 14:34	1070
2-Methyl phenol	ND	mg/kg	0.042		1	0.023	10/03/22	10/03/22 14:34	1070
3&4-Methylphenol	ND	mg/kg	0.042		1	0.031	10/03/22	10/03/22 14:34	1070
Naphthalene	ND	mg/kg	0.010		1	0.0067	10/03/22	10/03/22 14:34	1070
2-Nitroaniline	ND	mg/kg	0.084		1	0.024	10/03/22	10/03/22 14:34	1070
3-Nitroaniline	ND	mg/kg	0.084		1	0.029	10/03/22	10/03/22 14:34	1070
4-Nitroaniline	ND	mg/kg	0.084		1	0.042	10/03/22	10/03/22 14:34	1070
Nitrobenzene	ND	mg/kg	0.042		1	0.031	10/03/22	10/03/22 14:34	1070
2-Nitrophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 14:34	1070
4-Nitrophenol	ND	mg/kg	0.21		1	0.064	10/03/22	10/03/22 14:34	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.042		1	0.0038	10/03/22	10/03/22 14:34	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.042		1	0.022	10/03/22	10/03/22 14:34	1070
Di-n-octyl phthalate	ND	mg/kg	0.084		1	0.042	10/03/22	10/03/22 14:34	1070
Pentachlorophenol	ND	mg/kg	0.084		1	0.051	10/03/22	10/03/22 14:34	1070
Phenanthrene	ND	mg/kg	0.010		1	0.0063	10/03/22	10/03/22 14:34	1070
Phenol	ND	mg/kg	0.042		1	0.031	10/03/22	10/03/22 14:34	1070
Pyrene	ND	mg/kg	0.010		1	0.0054	10/03/22	10/03/22 14:34	1070
Pyridine	ND	mg/kg	0.042		1	0.019	10/03/22	10/03/22 14:34	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.042		1	0.005	10/03/22	10/03/22 14:34	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/03/22 14:34	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: PESR_Tank056_SB04_0.5-1.0 **Date/Time Sampled: 09/29/2022 14:40** **PSS Sample ID: 22093003-010**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.5**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*80*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 14:34*	*1070*
2-Fluorophenol	*74*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 14:34*	*1070*
Nitrobenzene-d5	*74*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 14:34*	*1070*
Phenol-d6	*78*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 14:34*	*1070*
Terphenyl-D14	*93*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 14:34*	*1070*
2,4,6-Tribromophenol	*75*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 14:34*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: DUP01-20220929 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-011**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.4**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**15**	mg/kg	0.50		1	0.38	10/03/22	10/04/22 01:59	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.019		1	0.011	10/03/22	10/03/22 21:39	1045
Benzene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 21:39	1045
Bromochloromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 21:39	1045
Bromodichloromethane	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 21:39	1045
Bromoform	ND	mg/kg	0.00096		1	0.00049	10/03/22	10/03/22 21:39	1045
Bromomethane	ND	mg/kg	0.00096		1	0.00096	10/03/22	10/03/22 21:39	1045
2-Butanone (MEK)	ND	mg/kg	0.0048		1	0.0022	10/03/22	10/03/22 21:39	1045
Carbon Disulfide	ND	mg/kg	0.00096		1	0.0004	10/03/22	10/03/22 21:39	1045
Carbon tetrachloride	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 21:39	1045
Chlorobenzene	ND	mg/kg	0.00096		1	0.00052	10/03/22	10/03/22 21:39	1045
Chloroethane	ND	mg/kg	0.00096		1	0.00063	10/03/22	10/03/22 21:39	1045
Chloroform	ND	mg/kg	0.0048		1	0.00062	10/03/22	10/03/22 21:39	1045
Chloromethane	ND	mg/kg	0.00096		1	0.00048	10/03/22	10/03/22 21:39	1045
Cyclohexane	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 21:39	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00096		1	0.00084	10/03/22	10/03/22 21:39	1045
Dibromochloromethane	ND	mg/kg	0.00096		1	0.00029	10/03/22	10/03/22 21:39	1045
1,2-Dibromoethane	ND	mg/kg	0.00096		1	0.00048	10/03/22	10/03/22 21:39	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 21:39	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 21:39	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00084	10/03/22	10/03/22 21:39	1045
Dichlorodifluoromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 21:39	1045
1,1-Dichloroethane	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 21:39	1045
1,2-Dichloroethane	ND	mg/kg	0.00096		1	0.00035	10/03/22	10/03/22 21:39	1045
1,1-Dichloroethene	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 21:39	1045
1,2-Dichloropropane	ND	mg/kg	0.00096		1	0.00046	10/03/22	10/03/22 21:39	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 21:39	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 21:39	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: DUP01-20220929 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-011**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.4**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00096		1	0.00044	10/03/22	10/03/22 21:39	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00096		1	0.00039	10/03/22	10/03/22 21:39	1045
Ethylbenzene	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 21:39	1045
2-Hexanone (MBK)	ND	mg/kg	0.00096		1	0.00062	10/03/22	10/03/22 21:39	1045
Isopropylbenzene	ND	mg/kg	0.00096		1	0.00037	10/03/22	10/03/22 21:39	1045
Methyl Acetate	ND	mg/kg	0.024		1	0.0011	10/03/22	10/03/22 21:39	1045
Methylcyclohexane	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 21:39	1045
Methylene chloride	ND	mg/kg	0.0048		1	0.0035	10/03/22	10/03/22 21:39	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00096		1	0.00061	10/03/22	10/03/22 21:39	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 21:39	1045
Naphthalene	ND	mg/kg	0.00096		1	0.00056	10/03/22	10/03/22 21:39	1045
Styrene	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 21:39	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00096		1	0.00059	10/03/22	10/03/22 21:39	1045
Tetrachloroethene	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 21:39	1045
Toluene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 21:39	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00096		1	0.0005	10/03/22	10/03/22 21:39	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 21:39	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00096		1	0.00035	10/03/22	10/03/22 21:39	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00096		1	0.00033	10/03/22	10/03/22 21:39	1045
Trichloroethene	ND	mg/kg	0.00096		1	0.00052	10/03/22	10/03/22 21:39	1045
Trichlorofluoromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 21:39	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 21:39	1045
Vinyl chloride	ND	mg/kg	0.0048		1	0.00032	10/03/22	10/03/22 21:39	1045
m&p-Xylene	ND	mg/kg	0.0019		1	0.0011	10/03/22	10/03/22 21:39	1045
o-Xylene	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 21:39	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*96*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 21:39*	*1045*
Dibromofluoromethane	*95*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 21:39*	*1045*
Toluene-D8	*102*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 21:39*	*1045*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: DUP01-20220929 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-011**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.011		1	0.0076	10/03/22	10/04/22 11:11	1070
Acenaphthylene	ND	mg/kg	0.011		1	0.0072	10/03/22	10/04/22 11:11	1070
Acetophenone	ND	mg/kg	0.042		1	0.027	10/03/22	10/04/22 11:11	1070
Anthracene	ND	mg/kg	0.011		1	0.0055	10/03/22	10/04/22 11:11	1070
Atrazine	ND	mg/kg	0.084		1	0.021	10/03/22	10/04/22 11:11	1070
Benzo(a)anthracene	ND	mg/kg	0.011		1	0.0042	10/03/22	10/04/22 11:11	1070
Benzo(a)pyrene	ND	mg/kg	0.011		1	0.0059	10/03/22	10/04/22 11:11	1070
Benzo(b)fluoranthene	ND	mg/kg	0.011		1	0.0055	10/03/22	10/04/22 11:11	1070
Benzo(g,h,i)perylene	ND	mg/kg	0.011		1	0.0076	10/03/22	10/04/22 11:11	1070
Benzo(k)fluoranthene	ND	mg/kg	0.011		1	0.0093	10/03/22	10/04/22 11:11	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.042		1	0.022	10/03/22	10/04/22 11:11	1070
Butyl benzyl phthalate	ND	mg/kg	0.042		1	0.027	10/03/22	10/04/22 11:11	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.042		1	0.027	10/03/22	10/04/22 11:11	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.042		1	0.0055	10/03/22	10/04/22 11:11	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.042		1	0.0063	10/03/22	10/04/22 11:11	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.042		1	0.029	10/03/22	10/04/22 11:11	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.042		1	0.022	10/03/22	10/04/22 11:11	1070
Di-n-butyl phthalate	ND	mg/kg	0.042		1	0.022	10/03/22	10/04/22 11:11	1070
Carbazole	ND	mg/kg	0.042		1	0.033	10/03/22	10/04/22 11:11	1070
Caprolactam	ND	mg/kg	0.084		1	0.015	10/03/22	10/04/22 11:11	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.042		1	0.037	10/03/22	10/04/22 11:11	1070
4-Chloroaniline	ND	mg/kg	0.042		1	0.032	10/03/22	10/04/22 11:11	1070
2-Chloronaphthalene	ND	mg/kg	0.042		1	0.029	10/03/22	10/04/22 11:11	1070
2-Chlorophenol	ND	mg/kg	0.042		1	0.021	10/03/22	10/04/22 11:11	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.042		1	0.024	10/03/22	10/04/22 11:11	1070
Chrysene	ND	mg/kg	0.011		1	0.0051	10/03/22	10/04/22 11:11	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.011		1	0.0072	10/03/22	10/04/22 11:11	1070
Dibenzofuran	ND	mg/kg	0.042		1	0.024	10/03/22	10/04/22 11:11	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.042		1	0.023	10/03/22	10/04/22 11:11	1070
2,4-Dichlorophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/04/22 11:11	1070
Diethyl phthalate	ND	mg/kg	0.042		1	0.025	10/03/22	10/04/22 11:11	1070
Dimethyl phthalate	ND	mg/kg	0.042		1	0.024	10/03/22	10/04/22 11:11	1070
2,4-Dimethylphenol	ND	mg/kg	0.042		1	0.04	10/03/22	10/04/22 11:11	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.21		1	0.05	10/03/22	10/04/22 11:11	1070
2,4-Dinitrophenol	ND	mg/kg	0.21		1	0.096	10/03/22	10/04/22 11:11	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: DUP01-20220929 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-011**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.084		1	0.03	10/03/22	10/04/22 11:11	1070
2,6-Dinitrotoluene	ND	mg/kg	0.084		1	0.024	10/03/22	10/04/22 11:11	1070
Fluoranthene	ND	mg/kg	0.011		1	0.0046	10/03/22	10/04/22 11:11	1070
Fluorene	ND	mg/kg	0.011		1	0.0072	10/03/22	10/04/22 11:11	1070
Hexachlorobenzene	ND	mg/kg	0.042		1	0.008	10/03/22	10/04/22 11:11	1070
Hexachlorobutadiene	ND	mg/kg	0.042		1	0.024	10/03/22	10/04/22 11:11	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.084		1	0.047	10/03/22	10/04/22 11:11	1070
Hexachloroethane	ND	mg/kg	0.042		1	0.027	10/03/22	10/04/22 11:11	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.011		1	0.0097	10/03/22	10/04/22 11:11	1070
Isophorone	ND	mg/kg	0.042		1	0.029	10/03/22	10/04/22 11:11	1070
2-Methylnaphthalene	ND	mg/kg	0.011		1	0.01	10/03/22	10/04/22 11:11	1070
2-Methyl phenol	ND	mg/kg	0.042		1	0.023	10/03/22	10/04/22 11:11	1070
3&4-Methylphenol	ND	mg/kg	0.042		1	0.031	10/03/22	10/04/22 11:11	1070
Naphthalene	ND	mg/kg	0.011		1	0.0067	10/03/22	10/04/22 11:11	1070
2-Nitroaniline	ND	mg/kg	0.084		1	0.024	10/03/22	10/04/22 11:11	1070
3-Nitroaniline	ND	mg/kg	0.084		1	0.03	10/03/22	10/04/22 11:11	1070
4-Nitroaniline	ND	mg/kg	0.084		1	0.042	10/03/22	10/04/22 11:11	1070
Nitrobenzene	ND	mg/kg	0.042		1	0.032	10/03/22	10/04/22 11:11	1070
2-Nitrophenol	ND	mg/kg	0.042		1	0.034	10/03/22	10/04/22 11:11	1070
4-Nitrophenol	ND	mg/kg	0.21		1	0.065	10/03/22	10/04/22 11:11	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.042		1	0.0038	10/03/22	10/04/22 11:11	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.042		1	0.022	10/03/22	10/04/22 11:11	1070
Di-n-octyl phthalate	ND	mg/kg	0.084		1	0.043	10/03/22	10/04/22 11:11	1070
Pentachlorophenol	ND	mg/kg	0.084		1	0.051	10/03/22	10/04/22 11:11	1070
Phenanthrene	ND	mg/kg	0.011		1	0.0063	10/03/22	10/04/22 11:11	1070
Phenol	ND	mg/kg	0.042		1	0.031	10/03/22	10/04/22 11:11	1070
Pyrene	ND	mg/kg	0.011		1	0.0055	10/03/22	10/04/22 11:11	1070
Pyridine	ND	mg/kg	0.042		1	0.019	10/03/22	10/04/22 11:11	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.042		1	0.0051	10/03/22	10/04/22 11:11	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.042		1	0.033	10/03/22	10/04/22 11:11	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: DUP01-20220929 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-011**
Matrix: SOIL **Date/Time Received: 09/30/2022 10:25** **% Solids SM2540G-11: 79.4**

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 E — Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*84*	*%*	*52-109*	*1*	*10/03/22*	*10/04/22 11:11*	*1070*
2-Fluorophenol	*76*	*%*	*30-102*	*1*	*10/03/22*	*10/04/22 11:11*	*1070*
Nitrobenzene-d5	*76*	*%*	*39-101*	*1*	*10/03/22*	*10/04/22 11:11*	*1070*
Phenol-d6	*78*	*%*	*36-109*	*1*	*10/03/22*	*10/04/22 11:11*	*1070*
Terphenyl-D14	*96*	*%*	*66-121*	*1*	*10/03/22*	*10/04/22 11:11*	*1070*
2,4,6-Tribromophenol	*84*	*%*	*39-118*	*1*	*10/03/22*	*10/04/22 11:11*	*1070*

Sample ID: EB01-20220929 **Date/Time Sampled: 09/29/2022 15:50** **PSS Sample ID: 22093003-012**
Matrix: WATER **Date/Time Received: 09/30/2022 10:25**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3010A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	ND	ug/L	1.0		1	0.39	10/03/22	10/03/22 19:14	1064

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Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: TB01-2022092 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-013**
Matrix: WATER **Date/Time Received: 09/30/2022 10:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 197857 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	1.5	10/03/22	10/03/22 13:56	1011
Benzene	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 13:56	1011
Bromochloromethane	ND	ug/L	1.0		1	0.28	10/03/22	10/03/22 13:56	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 13:56	1011
Bromoform	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 13:56	1011
Bromomethane	ND	ug/L	1.0		1	0.21	10/03/22	10/03/22 13:56	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	1.3	10/03/22	10/03/22 13:56	1011
Carbon Disulfide	ND	ug/L	1.0		1	0.35	10/03/22	10/03/22 13:56	1011
Carbon tetrachloride	ND	ug/L	1.0		1	0.22	10/03/22	10/03/22 13:56	1011
Chlorobenzene	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 13:56	1011
Chloroethane	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 13:56	1011
Chloroform	ND	ug/L	1.0		1	0.21	10/03/22	10/03/22 13:56	1011
Chloromethane	ND	ug/L	1.0		1	0.33	10/03/22	10/03/22 13:56	1011
Cyclohexane	ND	ug/L	1.0		1	0.32	10/03/22	10/03/22 13:56	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 13:56	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 13:56	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	0.22	10/03/22	10/03/22 13:56	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	0.2	10/03/22	10/03/22 13:56	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 13:56	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 13:56	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	0.26	10/03/22	10/03/22 13:56	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 13:56	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 13:56	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 13:56	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 13:56	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 13:56	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.15	10/03/22	10/03/22 13:56	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.15	10/03/22	10/03/22 13:56	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.29	10/03/22	10/03/22 13:56	1011
Ethylbenzene	ND	ug/L	1.0		1	0.15	10/03/22	10/03/22 13:56	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	0.83	10/03/22	10/03/22 13:56	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.13	10/03/22	10/03/22 13:56	1011
Methyl Acetate	ND	ug/L	1.0		1	0.24	10/03/22	10/03/22 13:56	1011
Methylcyclohexane	ND	ug/L	1.0		1	0.14	10/03/22	10/03/22 13:56	1011
Methylene chloride	ND	ug/L	1.0		1	0.71	10/03/22	10/03/22 13:56	1011

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Sample ID: TB01-2022092 **Date/Time Sampled: 09/29/2022 00:00** **PSS Sample ID: 22093003-013**
Matrix: WATER **Date/Time Received: 09/30/2022 10:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 197857 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	0.6	10/03/22	10/03/22 13:56	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 13:56	1011
Naphthalene	ND	ug/L	1.0		1	0.2	10/03/22	10/03/22 13:56	1011
Styrene	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 13:56	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.27	10/03/22	10/03/22 13:56	1011
Tetrachloroethene	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 13:56	1011
Toluene	ND	ug/L	1.0		1	0.52	10/03/22	10/03/22 13:56	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.3	10/03/22	10/03/22 13:56	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	0.26	10/03/22	10/03/22 13:56	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.16	10/03/22	10/03/22 13:56	1011
Trichloroethene	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 13:56	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.26	10/03/22	10/03/22 13:56	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 13:56	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 13:56	1011
Vinyl chloride	ND	ug/L	1.0		1	0.34	10/03/22	10/03/22 13:56	1011
m&p-Xylene	ND	ug/L	2.0		1	0.4	10/03/22	10/03/22 13:56	1011
o-Xylene	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 13:56	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*90*	*%*	*88-120*	*1*	*10/03/22*	*10/03/22 13:56*	*1011*
Dibromofluoromethane	*101*	*%*	*92-107*	*1*	*10/03/22*	*10/03/22 13:56*	*1011*
Toluene-D8	*100*	*%*	*95-106*	*1*	*10/03/22*	*10/03/22 13:56*	*1011*

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Project Name: Philly Tank Farm

PSS Project No.: 22093003

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Received 2-250mL plastic containers preserved with HNO3 for lead and SVOC for sample 012. Logged in for lead only.

Analytical:

TCL Volatile Organic Compounds

Batch: 197857

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Batch: 197874

Method exceedance: Laboratory control sample (LCS) exceedance identified; see QC summary.

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Analytical:

TCL Semivolatile Organic Compounds

Batch: 197855

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Matrix spike/matrix spike duplicate (MS/MSD)exceedances identified; see QC summary.

Method exceedances:
-Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified; see QC summary.
-Benzo-b-fluoranthene and benzo-k-fluoranthene do not meet resolution criteria.

Batch: 197880

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Method exceedance: Benzo-b-fluoranthene and benzo-k-fluoranthene do not meet resolution criteria.

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Project Name: Philly Tank Farm

PSS Project No.: 22093003

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

PHASE SEPARATION SCIENCE

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Lab Chronology

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM2540G	PESR_Tank056_SB01_1.0-1.5	Initial	22093003-001	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB01_2.0-2.5	Initial	22093003-002	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB01_2.5-3.0	Initial	22093003-003	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB02_1.0-1.5	Initial	22093003-004	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB02_2.0-2.5	Initial	22093003-005	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB02_2.5-3.0	Initial	22093003-006	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB03_1.0-1.5	Initial	22093003-007	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB03_2.0-2.5	Initial	22093003-008	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB03_2.5-3.0	Initial	22093003-009	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB04_0.5-1.0	Initial	22093003-010	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	DUP01-20220929	Initial	22093003-011	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	197816-1-BLK	BLK	197816-1-BLK	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	C060-092922-002 D	MD	22092916-002 D	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
	PESR_Tank056_SB03_2.5-3.0 D	MD	22093003-009 D	S	197816	197816	09/30/2022 14:30	09/30/2022 14:30
SW-846 6020 B	EB01-20220929	Initial	22093003-012	W	92578	197877	10/03/2022 10:00	10/03/2022 19:14
	92578-1-BKS	BKS	92578-1-BKS	W	92578	197877	10/03/2022 10:00	10/03/2022 19:09
	92578-1-BLK	BLK	92578-1-BLK	W	92578	197877	10/03/2022 10:00	10/03/2022 19:04
	EB01-20220929 S	MS	22093003-012 S	W	92578	197877	10/03/2022 10:00	10/03/2022 19:19
	EB01-20220929 SD	MSD	22093003-012 S	W	92578	197877	10/03/2022 10:00	10/03/2022 19:24
	PESR_Tank056_SB01_1.0-1.5	Initial	22093003-001	S	92580	197881	10/03/2022 10:55	10/04/2022 00:54
	PESR_Tank056_SB01_2.0-2.5	Initial	22093003-002	S	92580	197881	10/03/2022 10:55	10/04/2022 01:14
	PESR_Tank056_SB01_2.5-3.0	Initial	22093003-003	S	92580	197881	10/03/2022 10:55	10/04/2022 01:19
	PESR_Tank056_SB02_1.0-1.5	Initial	22093003-004	S	92580	197881	10/03/2022 10:55	10/04/2022 01:24
	PESR_Tank056_SB02_2.0-2.5	Initial	22093003-005	S	92580	197881	10/03/2022 10:55	10/04/2022 01:29
	PESR_Tank056_SB02_2.5-3.0	Initial	22093003-006	S	92580	197881	10/03/2022 10:55	10/04/2022 01:34
	PESR_Tank056_SB03_2.0-2.5	Initial	22093003-008	S	92580	197881	10/03/2022 10:55	10/04/2022 01:44
	PESR_Tank056_SB03_2.5-3.0	Initial	22093003-009	S	92580	197881	10/03/2022 10:55	10/04/2022 01:49
	PESR_Tank056_SB04_0.5-1.0	Initial	22093003-010	S	92580	197881	10/03/2022 10:55	10/04/2022 01:54
	DUP01-20220929	Initial	22093003-011	S	92580	197881	10/03/2022 10:55	10/04/2022 01:59
	92580-1-BKS	BKS	92580-1-BKS	S	92580	197881	10/03/2022 10:55	10/03/2022 23:28
	92580-1-BLK	BLK	92580-1-BLK	S	92580	197881	10/03/2022 10:55	10/03/2022 23:22
	GTA-NW-0-2' S	MS	22093005-001 S	S	92580	197881	10/03/2022 10:55	10/03/2022 23:38
	GTA-NW-0-2' SD	MSD	22093005-001 S	S	92580	197881	10/03/2022 10:55	10/03/2022 23:43
	PESR_Tank056_SB03	Reanalysis	22093003-007	S	92580	197881	10/03/2022 10:55	10/04/2022 13:25

PHASE SEPARATION SCIENCE

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Lab Chronology

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 6020 B	_1.0-1.5							
SW-846 8260 D	TB01-2022092	Initial	22093003-013	W	92604	197857	10/03/2022 08:48	10/03/2022 13:56
	92604-1-BKS	BKS	92604-1-BKS	W	92604	197857	10/03/2022 08:48	10/03/2022 08:48
	92604-1-BLK	BLK	92604-1-BLK	W	92604	197857	10/03/2022 08:48	10/03/2022 10:28
	14784-SB307-GW S	MS	22092818-016 S	W	92604	197857	10/03/2022 08:48	10/03/2022 15:04
	14784-SB307-GW SD	MSD	22092818-016 S	W	92604	197857	10/03/2022 08:48	10/03/2022 15:27
	PESR_Tank056_SB01_1.0-1.5	Initial	22093003-001	S	92612	197874	10/03/2022 14:04	10/03/2022 17:56
	PESR_Tank056_SB01_2.0-2.5	Initial	22093003-002	S	92612	197874	10/03/2022 14:04	10/03/2022 18:18
	PESR_Tank056_SB01_2.5-3.0	Initial	22093003-003	S	92612	197874	10/03/2022 14:04	10/03/2022 18:41
	PESR_Tank056_SB02_1.0-1.5	Initial	22093003-004	S	92612	197874	10/03/2022 14:04	10/03/2022 19:03
	PESR_Tank056_SB02_2.0-2.5	Initial	22093003-005	S	92612	197874	10/03/2022 14:04	10/03/2022 19:25
	PESR_Tank056_SB02_2.5-3.0	Initial	22093003-006	S	92612	197874	10/03/2022 14:04	10/03/2022 19:48
	PESR_Tank056_SB03_1.0-1.5	Initial	22093003-007	S	92612	197874	10/03/2022 14:04	10/03/2022 20:10
	PESR_Tank056_SB03_2.0-2.5	Initial	22093003-008	S	92612	197874	10/03/2022 14:04	10/03/2022 20:32
	PESR_Tank056_SB03_2.5-3.0	Initial	22093003-009	S	92612	197874	10/03/2022 14:04	10/03/2022 20:55
	PESR_Tank056_SB04_0.5-1.0	Initial	22093003-010	S	92612	197874	10/03/2022 14:04	10/03/2022 21:17
	DUP01-20220929	Initial	22093003-011	S	92612	197874	10/03/2022 14:04	10/03/2022 21:39
	92612-1-BKS	BKS	92612-1-BKS	S	92612	197874	10/03/2022 14:04	10/03/2022 14:35
	92612-1-BLK	BLK	92612-1-BLK	S	92612	197874	10/03/2022 14:04	10/03/2022 17:11
	92612-1-BSD	BSD	92612-1-BSD	S	92612	197874	10/03/2022 14:04	10/03/2022 14:57
	GTA-NW8-2-5' S	MS	22093005-009 S	S	92612	197874	10/03/2022 14:04	10/03/2022 15:19
	GTA-NW8-2-5' SD	MSD	22093005-009 S	S	92612	197874	10/03/2022 14:04	10/03/2022 15:42
SW-846 8270 E	PESR_Tank056_SB01_1.0-1.5	Initial	22093003-001	S	92574	197855	10/03/2022 09:08	10/03/2022 20:08
	PESR_Tank056_SB01_2.0-2.5	Initial	22093003-002	S	92574	197855	10/03/2022 09:08	10/03/2022 19:16
	PESR_Tank056_SB01_2.5-3.0	Initial	22093003-003	S	92574	197855	10/03/2022 09:08	10/03/2022 15:51
	PESR_Tank056_SB02_1.0-1.5	Initial	22093003-004	S	92574	197855	10/03/2022 09:08	10/03/2022 21:50
	PESR_Tank056_SB02_2.0-2.5	Initial	22093003-005	S	92574	197855	10/03/2022 09:08	10/03/2022 21:24
	PESR_Tank056_SB03_1.0-1.5	Initial	22093003-007	S	92574	197855	10/03/2022 09:08	10/03/2022 20:59
	PESR_Tank056_SB03_2.0-2.5	Initial	22093003-008	S	92574	197855	10/03/2022 09:08	10/03/2022 19:42
	PESR_Tank056_SB03_2.5-3.0	Initial	22093003-009	S	92574	197855	10/03/2022 09:08	10/03/2022 18:25
	PESR_Tank056_SB04_0.5-1.0	Initial	22093003-010	S	92574	197855	10/03/2022 09:08	10/03/2022 14:34
	92574-1-BKS	BKS	92574-1-BKS	S	92574	197855	10/03/2022 09:08	10/03/2022 12:51
	92574-1-BLK	BLK	92574-1-BLK	S	92574	197855	10/03/2022 09:08	10/03/2022 12:25
	92574-1-BSD	BSD	92574-1-BSD	S	92574	197855	10/03/2022 09:08	10/03/2022 13:17

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Lab Chronology

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8270 E	PESR_Tank056_SB04_0.5-1.0 S	MS	22093003-010 S	S	92574	197855	10/03/2022 09:08	10/03/2022 13:42
	PESR_Tank056_SB04_0.5-1.0 SD	MSD	22093003-010 S	S	92574	197855	10/03/2022 09:08	10/03/2022 14:08
	PESR_Tank056_SB02_2.5-3.0	Initial	22093003-006	S	92574	197880	10/03/2022 09:08	10/04/2022 11:37
	DUP01-20220929	Initial	22093003-011	S	92574	197880	10/03/2022 09:08	10/04/2022 11:11

PHASE SEPARATION SCIENCE

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 6020 B Prep Method: SW3010A
Seq Number: 197877 Matrix: Water Date Prep: 10/03/22
MB Sample Id: 92578-1-BLK LCS Sample Id: 92578-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3900	50.00	44.24	88	80-120	ug/L	

Analytical Method: SW-846 6020 B Prep Method: SW3050B
Seq Number: 197881 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92580-1-BLK LCS Sample Id: 92580-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3247	19.56	17.23	88	80-120	mg/kg	

Analytical Method: SW-846 6020 B Prep Method: SW3010A
Seq Number: 197877 Matrix: Water Date Prep: 10/03/22
Parent Sample Id: 22093003-012 MS Sample Id: 22093003-012 S MSD Sample Id: 22093003-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Lead	<0.3900	50.00	44.94	90	44.66	89	75-125	1	25	ug/L	

Analytical Method: SM2540G
Seq Number: 197816 Matrix: Soil
Parent Sample Id: 22093003-009 MD Sample Id: 22093003-009 D

Parameter	Parent Result	MD Result	RPD	RPD Limit	Units	Flag
Solids, percent	73.9	74.1	0	10	%	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8270 E Prep Method: SW3550C
Seq Number: 197855 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92574-1-BLK LCS Sample Id: 92574-1-BKS LCSD Sample Id: 92574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acenaphthene	<0.005988	1.333	1.126	84	1.194	90	67-111	6	25	mg/kg	
Acenaphthylene	<0.005655	1.333	1.165	87	1.225	92	65-118	5	25	mg/kg	
Acetophenone	<0.02129	1.333	1.135	85	1.222	92	68-111	7	25	mg/kg	
Anthracene	<0.004325	1.333	1.221	92	1.304	98	77-116	7	25	mg/kg	
Atrazine	<0.01663	1.333	0.8037	60	0.8341	63	33-76	4	25	mg/kg	
Benzo(a)anthracene	<0.003327	1.333	1.133	85	1.185	89	77-124	4	25	mg/kg	
Benzo(a)pyrene	<0.004657	1.333	1.397	105	1.463	110	91-141	5	25	mg/kg	
Benzo(b)fluoranthene	<0.004325	1.333	1.153	86	1.175	88	80-142	2	25	mg/kg	
Benzo(g,h,i)perylene	<0.005988	1.333	1.450	109	1.520	114	83-134	5	25	mg/kg	
Benzo(k)fluoranthene	<0.007319	1.333	1.338	100	1.439	108	80-126	7	25	mg/kg	
Biphenyl (Diphenyl)	<0.01763	1.333	1.592	119	1.832	138	75-111	14	25	mg/kg	H
Butyl benzyl phthalate	<0.02162	1.333	1.372	103	1.454	109	83-125	6	25	mg/kg	
bis(2-chloroethoxy) methane	<0.02162	1.333	1.130	85	1.182	89	68-110	4	25	mg/kg	
bis(2-chloroethyl) ether	<0.004325	1.333	1.072	80	1.130	85	66-114	5	25	mg/kg	
bis(2-chloroisopropyl) ether	<0.004990	1.333	1.008	76	1.107	83	52-125	9	25	mg/kg	
bis(2-ethylhexyl) phthalate	<0.02295	1.333	1.445	108	1.542	116	86-128	6	25	mg/kg	
4-Bromophenylphenyl ether	<0.01730	1.333	1.180	89	1.224	92	78-128	4	25	mg/kg	
Di-n-butyl phthalate	<0.01730	1.333	1.338	100	1.426	107	83-116	6	25	mg/kg	
Carbazole	<0.02595	1.333	1.207	91	1.274	96	81-109	5	25	mg/kg	
Caprolactam	<0.01198	1.333	1.241	93	1.298	97	64-123	4	25	mg/kg	
4-Chloro-3-methyl phenol	<0.02894	1.333	1.227	92	1.273	96	76-112	4	25	mg/kg	
4-Chloroaniline	<0.02562	1.333	1.045	78	1.117	84	64-107	7	25	mg/kg	
2-Chloronaphthalene	<0.02295	1.333	1.193	89	1.268	95	79-117	6	25	mg/kg	
2-Chlorophenol	<0.01663	1.333	1.144	86	1.204	90	66-107	5	25	mg/kg	
4-Chlorophenyl Phenyl ether	<0.01863	1.333	1.316	99	1.368	103	73-127	4	25	mg/kg	
Chrysene	<0.003992	1.333	1.217	91	1.277	96	77-122	5	25	mg/kg	
Dibenz(a,h)Anthracene	<0.005655	1.333	1.265	95	1.323	99	85-136	4	25	mg/kg	
Dibenzofuran	<0.01929	1.333	1.159	87	1.229	92	73-117	6	25	mg/kg	
3,3-Dichlorobenzidine	<0.01830	1.333	1.284	96	1.368	103	84-132	6	25	mg/kg	
2,4-Dichlorophenol	<0.02628	1.333	1.204	90	1.248	94	66-119	4	25	mg/kg	
Diethyl phthalate	<0.01996	1.333	1.206	90	1.290	97	77-124	7	25	mg/kg	
Dimethyl phthalate	<0.01929	1.333	1.183	89	1.245	93	69-120	5	25	mg/kg	
2,4-Dimethylphenol	<0.03160	1.333	1.198	90	1.269	95	71-119	6	25	mg/kg	
4,6-Dinitro-2-methyl phenol	<0.03959	1.333	1.253	94	1.275	96	62-146	2	25	mg/kg	
2,4-Dinitrophenol	<0.07552	1.333	1.305	98	1.326	100	49-139	2	25	mg/kg	
2,4-Dinitrotoluene	<0.02329	1.333	1.252	94	1.304	98	76-131	4	25	mg/kg	
2,6-Dinitrotoluene	<0.01929	1.333	1.240	93	1.290	97	72-131	4	25	mg/kg	
Fluoranthene	<0.003659	1.333	1.211	91	1.273	96	77-118	5	25	mg/kg	
Fluorene	<0.005655	1.333	1.219	91	1.304	98	74-120	7	25	mg/kg	
Hexachlorobenzene	<0.006321	1.333	1.295	97	1.364	102	82-119	5	25	mg/kg	
Hexachlorobutadiene	<0.01896	1.333	1.187	89	1.244	93	70-125	5	25	mg/kg	
Hexachlorocyclopentadiene	<0.03693	1.333	1.327	100	1.361	102	55-152	3	25	mg/kg	
Hexachloroethane	<0.02129	1.333	1.217	91	1.303	98	70-118	7	25	mg/kg	
Indeno(1,2,3-c,d)Pyrene	<0.007651	1.333	1.199	90	1.245	93	80-144	4	25	mg/kg	
Isophorone	<0.02262	1.333	1.374	103	1.445	108	66-138	5	25	mg/kg	
2-Methylnaphthalene	<0.007984	1.333	1.178	88	1.231	92	69-108	4	25	mg/kg	
2-Methyl phenol	<0.01830	1.333	1.158	87	1.229	92	67-111	6	25	mg/kg	
3&4-Methylphenol	<0.02428	1.333	1.126	84	1.204	90	68-112	7	25	mg/kg	
Naphthalene	<0.005323	1.333	1.127	85	1.196	90	66-104	6	25	mg/kg	
2-Nitroaniline	<0.01896	1.333	1.340	101	1.390	104	72-124	4	25	mg/kg	
3-Nitroaniline	<0.02329	1.333	1.246	93	1.337	100	78-119	7	25	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8270 E
Prep Method: SW3550C
Seq Number: 197855
Matrix: Solid
Date Prep: 10/03/22
MB Sample Id: 92574-1-BLK
LCS Sample Id: 92574-1-BKS
LCSD Sample Id: 92574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
4-Nitroaniline	<0.03327	1.333	1.323	99	1.394	105	75-128	5	25	mg/kg	
Nitrobenzene	<0.02495	1.333	1.098	82	1.148	86	63-106	4	25	mg/kg	
2-Nitrophenol	<0.02661	1.333	1.214	91	1.264	95	68-118	4	25	mg/kg	
4-Nitrophenol	<0.05123	1.333	1.206	90	1.242	93	70-137	3	25	mg/kg	
N-Nitrosodi-n-propyl amine	<0.002994	1.333	1.066	80	1.138	85	59-120	7	25	mg/kg	
N-Nitrosodiphenylamine	<0.01763	1.333	1.228	92	1.285	96	77-113	5	25	mg/kg	
Di-n-octyl phthalate	<0.03360	1.333	1.449	109	1.546	116	87-128	6	25	mg/kg	
Pentachlorophenol	<0.04025	1.333	1.036	78	1.045	78	49-136	1	25	mg/kg	
Phenanthrene	<0.004990	1.333	1.170	88	1.221	92	75-109	4	25	mg/kg	
Phenol	<0.02462	1.333	0.9680	73	1.016	76	59-111	5	25	mg/kg	
Pyrene	<0.004325	1.333	1.178	88	1.233	93	76-120	5	25	mg/kg	
Pyridine	<0.01530	1.333	1.042	78	1.108	83	53-100	6	25	mg/kg	
2,4,5-Trichlorophenol	<0.003992	1.333	1.241	93	1.276	96	66-125	3	25	mg/kg	
2,4,6-Trichlorophenol	<0.02628	1.333	1.089	82	1.119	84	64-121	3	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	87		82		86		52-109	%
2-Fluorophenol	90		80		85		30-102	%
Nitrobenzene-d5	84		77		82		39-101	%
Phenol-d6	86		81		86		36-109	%
Terphenyl-D14	91		83		86		66-121	%
2,4,6-Tribromophenol	80		86		89		39-118	%

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8270 E Prep Method: SW3550C
Seq Number: 197855 Matrix: Soil Date Prep: 10/03/22
Parent Sample Id: 22093003-010 MS Sample Id: 22093003-010 S MSD Sample Id: 22093003-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acenaphthene	<0.007522	1.674	1.397	83	1.374	82	63-105	2	30	mg/kg	
Acenaphthylene	<0.007104	1.674	1.423	85	1.404	84	64-110	1	30	mg/kg	
Acetophenone	<0.02675	1.674	1.402	84	1.370	82	60-103	2	30	mg/kg	
Anthracene	<0.005433	1.674	1.555	93	1.564	93	77-114	1	30	mg/kg	
Atrazine	<0.02089	1.674	0.9707	58	0.9668	58	34-73	0	30	mg/kg	
Benzo(a)anthracene	<0.004179	1.674	1.439	86	1.450	87	77-120	1	30	mg/kg	
Benzo(a)pyrene	<0.005851	1.674	1.755	105	1.763	105	93-136	0	30	mg/kg	
Benzo(b)fluoranthene	<0.005433	1.674	1.401	84	1.404	84	78-141	0	30	mg/kg	
Benzo(g,h,i)perylene	<0.007522	1.674	1.830	109	1.823	109	84-130	0	30	mg/kg	
Benzo(k)fluoranthene	<0.009194	1.674	1.710	102	1.739	104	78-122	2	30	mg/kg	
Biphenyl (Diphenyl)	<0.02215	1.674	1.993	119	1.944	116	69-109	2	30	mg/kg	X
Butyl benzyl phthalate	<0.02716	1.674	1.766	105	1.804	108	83-123	2	30	mg/kg	
bis(2-chloroethoxy) methane	<0.02716	1.674	1.378	82	1.353	81	59-103	2	30	mg/kg	
bis(2-chloroethyl) ether	<0.005433	1.674	1.316	79	1.293	77	56-107	2	30	mg/kg	
bis(2-chloroisopropyl) ether	<0.006268	1.674	1.372	82	1.379	82	47-116	1	30	mg/kg	
bis(2-ethylhexyl) phthalate	<0.02883	1.674	1.861	111	1.906	114	86-127	2	30	mg/kg	
4-Bromophenylphenyl ether	<0.02173	1.674	1.435	86	1.436	86	74-125	0	30	mg/kg	
Di-n-butyl phthalate	<0.02173	1.674	1.740	104	1.778	106	81-115	2	30	mg/kg	
Carbazole	<0.03260	1.674	1.527	91	1.508	90	80-108	1	30	mg/kg	
Caprolactam	<0.01504	1.674	1.498	89	1.490	89	61-118	1	30	mg/kg	
4-Chloro-3-methyl phenol	<0.03636	1.674	1.462	87	1.440	86	66-112	2	30	mg/kg	
4-Chloroaniline	<0.03218	1.674	1.256	75	1.257	75	58-98	0	30	mg/kg	
2-Chloronaphthalene	<0.02883	1.674	1.493	89	1.487	89	69-117	0	30	mg/kg	
2-Chlorophenol	<0.02089	1.674	1.375	82	1.342	80	56-100	2	30	mg/kg	
4-Chlorophenyl Phenyl ether	<0.02340	1.674	1.562	93	1.555	93	71-120	0	30	mg/kg	
Chrysene	<0.005015	1.674	1.541	92	1.557	93	79-117	1	30	mg/kg	
Dibenz(a,h)Anthracene	<0.007104	1.674	1.566	94	1.570	94	85-132	0	30	mg/kg	
Dibenzofuran	<0.02424	1.674	1.427	85	1.417	85	68-113	1	30	mg/kg	
3,3-Dichlorobenzidine	<0.02298	1.674	1.645	98	1.680	100	86-128	2	30	mg/kg	
2,4-Dichlorophenol	<0.03301	1.674	1.416	85	1.398	83	61-108	1	30	mg/kg	
Diethyl phthalate	<0.02507	1.674	1.550	93	1.572	94	76-119	1	30	mg/kg	
Dimethyl phthalate	<0.02424	1.674	1.446	86	1.437	86	69-115	1	30	mg/kg	
2,4-Dimethylphenol	<0.03970	1.674	1.441	86	1.356	81	62-108	6	30	mg/kg	
4,6-Dinitro-2-methyl phenol	<0.04973	1.674	1.495	89	1.497	89	37-159	0	30	mg/kg	
2,4-Dinitrophenol	<0.09486	1.674	1.506	90	1.499	89	32-145	0	30	mg/kg	
2,4-Dinitrotoluene	<0.02925	1.674	1.522	91	1.521	91	74-127	0	30	mg/kg	
2,6-Dinitrotoluene	<0.02424	1.674	1.486	89	1.493	89	68-126	0	30	mg/kg	
Fluoranthene	<0.004597	1.674	1.542	92	1.557	93	77-114	1	30	mg/kg	
Fluorene	<0.007104	1.674	1.567	94	1.561	93	71-115	0	30	mg/kg	
Hexachlorobenzene	<0.007940	1.674	1.642	98	1.645	98	76-122	0	30	mg/kg	
Hexachlorobutadiene	<0.02382	1.674	1.403	84	1.380	82	60-116	2	30	mg/kg	
Hexachlorocyclopentadiene	<0.04639	1.674	1.482	89	1.433	86	37-143	3	30	mg/kg	
Hexachloroethane	<0.02675	1.674	1.516	91	1.488	89	60-109	2	30	mg/kg	
Indeno(1,2,3-c,d)Pyrene	<0.009612	1.674	1.471	88	1.465	87	80-140	0	30	mg/kg	
Isophorone	<0.02842	1.674	1.678	100	1.653	99	61-129	2	30	mg/kg	
2-Methylnaphthalene	<0.01003	1.674	1.432	86	1.422	85	61-103	1	30	mg/kg	
2-Methyl phenol	<0.02298	1.674	1.390	83	1.371	82	60-103	1	30	mg/kg	
3&4-Methylphenol	<0.03051	1.674	1.404	84	1.373	82	62-104	2	30	mg/kg	
Naphthalene	<0.006686	1.674	1.391	83	1.372	82	57-99	1	30	mg/kg	
2-Nitroaniline	<0.02382	1.674	1.657	99	1.645	98	66-121	1	30	mg/kg	
3-Nitroaniline	<0.02925	1.674	1.606	96	1.602	96	72-118	0	30	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8270 E Prep Method: SW3550C
Seq Number: 197855 Matrix: Soil Date Prep: 10/03/22
Parent Sample Id: 22093003-010 MS Sample Id: 22093003-010 S MSD Sample Id: 22093003-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
4-Nitroaniline	<0.04179	1.674	1.610	96	1.599	95	71-124	1	30	mg/kg	
Nitrobenzene	<0.03134	1.674	1.344	80	1.310	78	54-101	3	30	mg/kg	
2-Nitrophenol	<0.03343	1.674	1.454	87	1.432	85	59-110	2	30	mg/kg	
4-Nitrophenol	<0.06436	1.674	1.411	84	1.397	83	67-132	1	30	mg/kg	
N-Nitrosodi-n-propyl amine	<0.003761	1.674	1.290	77	1.215	73	55-108	6	30	mg/kg	
N-Nitrosodiphenylamine	<0.02215	1.674	1.548	92	1.537	92	75-111	1	30	mg/kg	
Di-n-octyl phthalate	<0.04221	1.674	1.840	110	1.881	112	87-126	2	30	mg/kg	
Pentachlorophenol	<0.05057	1.674	1.224	73	1.236	74	42-136	1	30	mg/kg	
Phenanthrene	<0.006268	1.674	1.492	89	1.482	88	72-110	1	30	mg/kg	
Phenol	<0.03092	1.674	1.312	78	1.311	78	53-101	0	30	mg/kg	
Pyrene	<0.005433	1.674	1.535	92	1.565	93	79-117	2	30	mg/kg	
Pyridine	<0.01922	1.674	1.243	74	1.245	74	37-96	0	30	mg/kg	
2,4,5-Trichlorophenol	<0.005015	1.674	1.478	88	1.466	88	63-117	1	30	mg/kg	
2,4,6-Trichlorophenol	<0.03301	1.674	1.274	76	1.267	76	61-112	1	30	mg/kg	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
2-Fluorobiphenyl	80		81		52-109	%
2-Fluorophenol	76		76		30-102	%
Nitrobenzene-d5	77		76		39-101	%
Phenol-d6	79		79		36-109	%
Terphenyl-D14	86		88		66-121	%
2,4,6-Tribromophenol	81		81		39-118	%

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8260 D Prep Method: SW5030
Seq Number: 197874 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92612-1-BLK LCS Sample Id: 92612-1-BKS LCSD Sample Id: 92612-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acetone	<0.01100	0.06000	0.04564	76	0.04583	76	40-147	0	25	mg/kg	
Benzene	<0.00043	0.06000	0.06051	101	0.06018	100	85-118	1	25	mg/kg	
Bromochloromethane	<0.00047	0.06000	0.05854	98	0.05999	100	84-121	2	25	mg/kg	
Bromodichloromethane	<0.00044	0.06000	0.06371	106	0.06307	105	88-121	1	25	mg/kg	
Bromoform	<0.00051	0.06000	0.05562	93	0.05605	93	78-129	1	25	mg/kg	
Bromomethane	<0.001000	0.06000	0.06572	110	0.06644	111	66-117	1	25	mg/kg	
2-Butanone (MEK)	<0.002300	0.06000	0.05222	87	0.04932	82	62-115	6	25	mg/kg	
Carbon Disulfide	<0.00042	0.06000	0.06414	107	0.06105	102	79-128	5	25	mg/kg	
Carbon tetrachloride	<0.00037	0.06000	0.06277	105	0.06319	105	87-121	1	25	mg/kg	
Chlorobenzene	<0.00054	0.06000	0.05842	97	0.06033	101	85-119	3	25	mg/kg	
Chloroethane	<0.00066	0.06000	0.05350	89	0.05534	92	75-115	3	25	mg/kg	
Chloroform	<0.00065	0.06000	0.05914	99	0.06046	101	82-116	2	25	mg/kg	
Chloromethane	<0.0005	0.06000	0.05571	93	0.05657	94	69-124	2	25	mg/kg	
Cyclohexane	<0.0004	0.06000	0.05520	92	0.05862	98	72-132	6	25	mg/kg	
1,2-Dibromo-3-chloropropane	<0.00087	0.06000	0.05538	92	0.05434	91	64-141	2	25	mg/kg	
Dibromochloromethane	<0.0003	0.06000	0.05531	92	0.05551	93	87-122	0	25	mg/kg	
1,2-Dibromoethane	<0.0005	0.06000	0.05954	99	0.06037	101	87-117	1	25	mg/kg	
1,2-Dichlorobenzene	<0.00044	0.06000	0.05911	99	0.05722	95	83-121	3	25	mg/kg	
1,3-Dichlorobenzene	<0.00045	0.06000	0.06046	101	0.05985	100	84-121	1	25	mg/kg	
1,4-Dichlorobenzene	<0.00087	0.06000	0.05920	99	0.05850	98	84-121	1	25	mg/kg	
Dichlorodifluoromethane	<0.00047	0.06000	0.05628	94	0.05688	95	56-134	1	25	mg/kg	
1,1-Dichloroethane	<0.00043	0.06000	0.06399	107	0.06026	100	83-120	6	25	mg/kg	
1,2-Dichloroethane	<0.00036	0.06000	0.06508	108	0.06122	102	85-118	6	25	mg/kg	
1,1-Dichloroethene	<0.0004	0.06000	0.05835	97	0.05875	98	83-122	1	25	mg/kg	
1,2-Dichloropropane	<0.00048	0.06000	0.06152	103	0.06061	101	84-120	1	25	mg/kg	
cis-1,2-Dichloroethene	<0.00043	0.06000	0.06089	101	0.05909	98	84-120	3	25	mg/kg	
cis-1,3-Dichloropropene	<0.00043	0.06000	0.05814	97	0.05862	98	84-120	1	25	mg/kg	
trans-1,2-Dichloroethene	<0.00046	0.06000	0.06032	101	0.05986	100	84-121	1	25	mg/kg	
trans-1,3-Dichloropropene	<0.00041	0.06000	0.05873	98	0.05790	97	80-123	1	25	mg/kg	
Ethylbenzene	<0.00037	0.06000	0.05980	100	0.06077	101	87-121	2	25	mg/kg	
2-Hexanone (MBK)	<0.00065	0.06000	0.05331	89	0.05264	88	72-119	1	25	mg/kg	
Isopropylbenzene	<0.00039	0.06000	0.05916	99	0.05879	98	85-121	1	25	mg/kg	
Methyl Acetate	<0.001100	0.06000	0.05853	98	0.05251	88	75-123	11	25	mg/kg	
Methylcyclohexane	<0.00044	0.06000	0.06110	102	0.06111	102	84-123	0	25	mg/kg	
Methylene chloride	<0.003600	0.06000	0.06038	101	0.05604	93	81-117	7	25	mg/kg	
4-Methyl-2-Pentanone (MIBK)	<0.00064	0.06000	0.05339	89	0.05117	85	75-118	4	25	mg/kg	
Methyl-t-Butyl Ether	<0.00038	0.06000	0.07384	123	0.06897	115	74-122	7	25	mg/kg	H
Naphthalene	<0.00058	0.06000	0.06076	101	0.06139	102	77-120	1	25	mg/kg	
Styrene	<0.0004	0.06000	0.06197	103	0.06304	105	83-124	2	25	mg/kg	
1,1,2,2-Tetrachloroethane	<0.00061	0.06000	0.05763	96	0.05715	95	75-123	1	25	mg/kg	
Tetrachloroethene	<0.00044	0.06000	0.06304	105	0.06107	102	82-119	3	25	mg/kg	
Toluene	<0.00045	0.06000	0.05840	97	0.05903	98	84-118	1	25	mg/kg	
1,2,3-Trichlorobenzene	<0.00052	0.06000	0.06157	103	0.06061	101	76-127	2	25	mg/kg	
1,2,4-Trichlorobenzene	<0.00045	0.06000	0.06082	101	0.06065	101	82-131	0	25	mg/kg	
1,1,1-Trichloroethane	<0.00036	0.06000	0.06604	110	0.06509	108	84-121	1	25	mg/kg	
1,1,2-Trichloroethane	<0.00034	0.06000	0.06181	103	0.06038	101	83-118	2	25	mg/kg	
Trichloroethene	<0.00054	0.06000	0.06149	102	0.06109	102	85-118	1	25	mg/kg	
Trichlorofluoromethane	<0.00047	0.06000	0.06153	103	0.06141	102	81-121	0	25	mg/kg	
1,1,2-Trichlorotrifluoroethane	<0.00038	0.06000	0.06073	101	0.06079	101	83-122	0	25	mg/kg	
Vinyl chloride	<0.00033	0.06000	0.05874	98	0.06017	100	69-129	2	25	mg/kg	
m&p-Xylene	<0.001100	0.1200	0.1191	99	0.1189	99	86-123	0	25	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8260 D
Prep Method: SW5030
Seq Number: 197874
Matrix: Solid
Date Prep: 10/03/22
MB Sample Id: 92612-1-BLK
LCS Sample Id: 92612-1-BKS
LCSD Sample Id: 92612-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
o-Xylene	<0.00037	0.06000	0.06024	100	0.06245	104	84-121	4	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
4-Bromofluorobenzene	96		96		97		89-111	%
Dibromofluoromethane	94		101		103		91-108	%
Toluene-D8	98		102		101		93-104	%

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8260 D
Seq Number: 197857
MB Sample Id: 92604-1-BLK

Matrix: Water
LCS Sample Id: 92604-1-BKS

Prep Method: SW5030B
Date Prep: 10/03/22

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<1.500	50.00	41.16	82	49-154	ug/L	
Benzene	<0.1900	50.00	47.85	96	76-112	ug/L	
Bromochloromethane	<0.2800	50.00	57.34	115	74-119	ug/L	
Bromodichloromethane	<0.1800	50.00	48.66	97	78-117	ug/L	
Bromoform	<0.1700	50.00	56.50	113	69-123	ug/L	
Bromomethane	<0.2100	50.00	48.79	98	42-118	ug/L	
2-Butanone (MEK)	<1.300	50.00	48.94	98	55-136	ug/L	
Carbon Disulfide	<0.3500	50.00	46.80	94	80-124	ug/L	
Carbon tetrachloride	<0.2200	50.00	50.15	100	77-119	ug/L	
Chlorobenzene	<0.2300	50.00	52.03	104	76-114	ug/L	
Chloroethane	<0.2300	50.00	35.81	72	61-113	ug/L	
Chloroform	0.2100	50.00	46.09	92	75-113	ug/L	
Chloromethane	<0.3300	50.00	34.30	69	41-148	ug/L	
Cyclohexane	<0.3200	50.00	41.59	83	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<0.1900	50.00	44.71	89	52-131	ug/L	
Dibromochloromethane	<0.1800	50.00	51.86	104	79-121	ug/L	
1,2-Dibromoethane	<0.2200	50.00	52.42	105	77-119	ug/L	
1,2-Dichlorobenzene	<0.2000	50.00	55.81	112	75-121	ug/L	
1,3-Dichlorobenzene	<0.2300	50.00	55.40	111	77-120	ug/L	
Dichlorodifluoromethane	<0.2300	50.00	39.16	78	49-122	ug/L	
1,4-Dichlorobenzene	<0.2600	50.00	54.74	109	76-118	ug/L	
1,1-Dichloroethane	<0.1900	50.00	42.84	86	75-118	ug/L	
1,2-Dichloroethane	<0.1800	50.00	41.98	84	72-115	ug/L	
cis-1,2-Dichloroethene	<0.1900	50.00	52.60	105	75-119	ug/L	
1,1-Dichloroethene	<0.1800	50.00	47.62	95	74-119	ug/L	
1,2-Dichloropropane	<0.1700	50.00	43.52	87	76-115	ug/L	
cis-1,3-Dichloropropene	<0.1500	50.00	46.69	93	83-122	ug/L	
trans-1,3-Dichloropropene	<0.1500	50.00	46.21	92	76-118	ug/L	
trans-1,2-Dichloroethene	<0.2900	50.00	52.00	104	73-121	ug/L	
Ethylbenzene	<0.1500	50.00	48.78	98	78-118	ug/L	
2-Hexanone (MBK)	<0.8300	50.00	37.48	75	55-136	ug/L	
Isopropylbenzene	<0.1300	50.00	51.23	102	76-126	ug/L	
Methyl Acetate	<0.2400	50.00	50.83	102	61-117	ug/L	
Methylcyclohexane	<0.1400	50.00	49.96	100	82-126	ug/L	
Methylene chloride	<0.7100	50.00	48.73	97	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<0.6000	50.00	41.59	83	57-127	ug/L	
Methyl-t-Butyl Ether	<0.1700	50.00	48.21	96	71-114	ug/L	
Naphthalene	<0.2000	50.00	53.35	107	60-122	ug/L	
Styrene	<0.1700	50.00	53.03	106	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<0.2700	50.00	48.84	98	66-123	ug/L	
Tetrachloroethene	<0.2300	50.00	58.81	118	76-123	ug/L	
Toluene	<0.5200	50.00	50.39	101	77-112	ug/L	
1,2,3-Trichlorobenzene	<0.3000	50.00	54.24	108	73-129	ug/L	
1,2,4-Trichlorobenzene	<0.2600	50.00	54.59	109	73-130	ug/L	
1,1,1-Trichloroethane	<0.1600	50.00	47.87	96	79-118	ug/L	
Trichloroethene	<0.1900	50.00	50.18	100	77-112	ug/L	
1,1,2-Trichloroethane	<0.2600	50.00	49.44	99	75-115	ug/L	
Trichlorofluoromethane	<0.1700	50.00	44.32	89	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<0.1700	50.00	48.10	96	77-123	ug/L	
Vinyl chloride	<0.3400	50.00	37.24	74	53-151	ug/L	
m&p-Xylene	<0.4000	100	102.7	103	79-121	ug/L	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22093003

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 197857
Matrix: Water
Date Prep: 10/03/22
MB Sample Id: 92604-1-BLK
LCS Sample Id: 92604-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<0.1800	50.00	51.57	103	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	90		88		88-120	%
Dibromofluoromethane	101		102		92-107	%
Toluene-D8	100		99		95-106	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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① PSS CLIENT: Ramboll | OFFICE LOCATION: Princeton, NJ 101 Carnegie Ctr. #200

BILL TO (if different): | PHONE #: (814)758-7321

CONTACT: Sam Weaver | EMAIL: sweaver@ramboll.com

PROJECT NAME: Philly Tank Farm | PROJECT #: 1690005561

SITE LOCATION: Philadelphia, PA | P.O. #:

SAMPLER(S): Bart Bancewicz, Ed Ruger | DW CERT #:

PSS Work Order #: 22093003 | PAGE 1 OF 2

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ④

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes / Analysis/ Method Required ③ VOCs	SVOCs	Lead
1	PESR_Tank056_SB01_1.0-1.5	9/29/22	1130	S	5		X	X	X
2	PESR_Tank056_SB01_2.0-2.5		1135				X	X	X
3	PESR_Tank056_SB01_2.5-3.0		1140				X	X	X
4	PESR_Tank056_SB02_1.0-1.5		1300				X	X	X
5	PESR_Tank056_SB02_2.0-2.5	9/29/22	1302				X	X	X
6	PESR_Tank056_SB02_2.5-3.0	9/29/22	1304				X	X	X
7	PESR_Tank056_SB03_1.0-1.5		1306				X	X	X
8	PESR_Tank056_SB03_2.0-2.5		1308				X	X	X
9	PESR_Tank056_SB03_2.5-3.0		1310				X	X	X
10	PESR_Tank056_SB04_0.5-1.0		1440				X	X	X

3 9/29/22

⑤

Relinquished By:	Date	Time	Received By:
(1) B.B	9/29/22	1705	JC 9/30 FEDEX
(2) 2785 7404 5254	9/30/22	1025	
(3)			
(4)			

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☑ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE: EDD

Ice Present: PRES

Custody Seal: ABS

Coolers: 3 Temp: 5.4-6.8 °C 0 AM 9/30/22

Shipping Carrier: FEDEX

Special Instructions: email results to fcarroll@ramboll.com

FEDEX 2785 7404 5232
2785 7404 5243

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① PSS CLIENT: Ramboll | OFFICE LOCATION: Princeton, NJ 101 Carnegie Ctr. #200

BILL TO (if different): | PHONE #: (814) 758-7321

CONTACT: Sam Weaver | EMAIL: sweaver@ramboll.com

PROJECT NAME: Philly Tank Farm | PROJECT #: 1690005561

SITE LOCATION: Philadelphia, PA | P.O. #:

SAMPLER(S): Bart Bancewicz, Ed Ruger | DW CERT #:

PSS Work Order #: 22093003 | PAGE 2 OF 2

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	Analysis/ Method Required: VOCs	SVOCs	Lead
11	DUP01-20220929	9/29	—	S	5			X	X	X
12	EB01-20220929	9/29	1550	WQ	2				X	X
13	TB01-20220929	9/29	—	WQ	2			X		

9/29/22

⑤

Relinquished By: (1)	Date	Time	Received By:
B.B	9/29/22	1705	FedEx
Relinquished By: (2) 2785 7404 5254	9/30/22	1025	
Relinquished By: (3)			
Relinquished By: (4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☑ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☑ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE: EDD

Ice Present: Pres

Custody Seal: ABS 0

Coolers: 3 Temp: 5.4-6.8 °C

Shipping Carrier: FedEx on 9/30/22

FedEx 2785 7404 5232

2785 7404 5243

Special Instructions: email results to Ecarroll@ramboll.com

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Client Name Ramboll US Corp. - Princeton
Disposal Date 11/04/2022

Received By Jillian Chapman
Date Received 09/30/2022 10:25:00 AM
Delivered By Federal Express
Tracking No 278574045232, 278574045254, 278574045243
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 3

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	6.0
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Bart Bancewicz, Ed Ruger
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	No	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	13
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	59

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

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Sample Receipt Checklist

Project Name: Philly Tank Farm
PSS Project No.: 22093003

Client Name	Ramboll US Corp. - Princeton	**Received By**	Jillian Chapman
Disposal Date	11/04/2022	**Date Received**	09/30/2022 10:25:00 AM
		Delivered By	Federal Express
		Tracking No	278574045232, 278574045254, 278574045243
		Logged In By	Jillian Chapman

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Received 2-250mL plastic containers preserved with HNO3 for lead and SVOC for sample 012. Logged in for lead only.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 09/30/2022

PM Review and Approval: Amber Confer Date: 09/30/2022

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

October 5, 2022

Sam Weaver
Ramboll US Corp. - Princeton
101 Carnegie Center, Suite 200
Princeton, NJ 08540

Reference: PSS Project No: **22100301**
Project Name: Philly Tank Farm
Project Location: Philadelphia, PA
Project ID.: 1690005561

Dear Sam Weaver:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22100301**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 7, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: Philly Tank Farm

PSS Project No.: 22100301

Project ID: 1690005561

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/03/2022 at 08:45 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22100301-001	PESR_Tank056_SB05_0.5-1.0	SOIL	09/30/22 09:30
22100301-002	PESR_Tank056_SB06_3.0-3.5	SOIL	09/30/22 10:30
22100301-003	EB01-20220930	WATER	09/30/22 11:55
22100301-004	TB01-20220930	WATER	09/30/22 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB05_0.5-1.0 **Date/Time Sampled: 09/30/2022 09:30** **PSS Sample ID: 22100301-001**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 80.6**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**32**	mg/kg	0.60		1	0.45	10/03/22	10/04/22 18:35	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	**0.013**	mg/kg	0.019	J	1	0.011	10/03/22	10/03/22 22:46	1045
Benzene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 22:46	1045
Bromochloromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 22:46	1045
Bromodichloromethane	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 22:46	1045
Bromoform	ND	mg/kg	0.00096		1	0.00049	10/03/22	10/03/22 22:46	1045
Bromomethane	ND	mg/kg	0.00096		1	0.00096	10/03/22	10/03/22 22:46	1045
2-Butanone (MEK)	ND	mg/kg	0.0048		1	0.0022	10/03/22	10/03/22 22:46	1045
Carbon Disulfide	ND	mg/kg	0.00096		1	0.0004	10/03/22	10/03/22 22:46	1045
Carbon tetrachloride	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 22:46	1045
Chlorobenzene	ND	mg/kg	0.00096		1	0.00052	10/03/22	10/03/22 22:46	1045
Chloroethane	ND	mg/kg	0.00096		1	0.00064	10/03/22	10/03/22 22:46	1045
Chloroform	ND	mg/kg	0.0048		1	0.00063	10/03/22	10/03/22 22:46	1045
Chloromethane	ND	mg/kg	0.00096		1	0.00048	10/03/22	10/03/22 22:46	1045
Cyclohexane	ND	mg/kg	0.00096		1	0.00039	10/03/22	10/03/22 22:46	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00096		1	0.00084	10/03/22	10/03/22 22:46	1045
Dibromochloromethane	ND	mg/kg	0.00096		1	0.00029	10/03/22	10/03/22 22:46	1045
1,2-Dibromoethane	ND	mg/kg	0.00096		1	0.00048	10/03/22	10/03/22 22:46	1045
1,2-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 22:46	1045
1,3-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 22:46	1045
1,4-Dichlorobenzene	ND	mg/kg	0.00096		1	0.00084	10/03/22	10/03/22 22:46	1045
Dichlorodifluoromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 22:46	1045
1,1-Dichloroethane	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 22:46	1045
1,2-Dichloroethane	ND	mg/kg	0.00096		1	0.00035	10/03/22	10/03/22 22:46	1045
1,1-Dichloroethene	ND	mg/kg	0.00096		1	0.00039	10/03/22	10/03/22 22:46	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 22:46	1045
1,2-Dichloropropane	ND	mg/kg	0.00096		1	0.00046	10/03/22	10/03/22 22:46	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.00096		1	0.00041	10/03/22	10/03/22 22:46	1045

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB05_0.5-1.0 **Date/Time Sampled: 09/30/2022 09:30** **PSS Sample ID: 22100301-001**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 80.6**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.00096		1	0.00044	10/03/22	10/03/22 22:46	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.00096		1	0.00039	10/03/22	10/03/22 22:46	1045
Ethylbenzene	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 22:46	1045
2-Hexanone (MBK)	ND	mg/kg	0.00096		1	0.00063	10/03/22	10/03/22 22:46	1045
Isopropylbenzene	ND	mg/kg	0.00096		1	0.00038	10/03/22	10/03/22 22:46	1045
Methyl Acetate	ND	mg/kg	0.024		1	0.0011	10/03/22	10/03/22 22:46	1045
Methylcyclohexane	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 22:46	1045
Methylene chloride	ND	mg/kg	0.0048		1	0.0035	10/03/22	10/03/22 22:46	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.00096		1	0.00062	10/03/22	10/03/22 22:46	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00096		1	0.00037	10/03/22	10/03/22 22:46	1045
Naphthalene	ND	mg/kg	0.00096		1	0.00056	10/03/22	10/03/22 22:46	1045
Styrene	ND	mg/kg	0.00096		1	0.00039	10/03/22	10/03/22 22:46	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00096		1	0.00059	10/03/22	10/03/22 22:46	1045
Tetrachloroethene	ND	mg/kg	0.00096		1	0.00042	10/03/22	10/03/22 22:46	1045
Toluene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 22:46	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.00096		1	0.0005	10/03/22	10/03/22 22:46	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00096		1	0.00043	10/03/22	10/03/22 22:46	1045
1,1,1-Trichloroethane	ND	mg/kg	0.00096		1	0.00035	10/03/22	10/03/22 22:46	1045
1,1,2-Trichloroethane	ND	mg/kg	0.00096		1	0.00033	10/03/22	10/03/22 22:46	1045
Trichloroethene	ND	mg/kg	0.00096		1	0.00052	10/03/22	10/03/22 22:46	1045
Trichlorofluoromethane	ND	mg/kg	0.00096		1	0.00045	10/03/22	10/03/22 22:46	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00096		1	0.00037	10/03/22	10/03/22 22:46	1045
Vinyl chloride	ND	mg/kg	0.0048		1	0.00032	10/03/22	10/03/22 22:46	1045
m&p-Xylene	ND	mg/kg	0.0019		1	0.0011	10/03/22	10/03/22 22:46	1045
o-Xylene	ND	mg/kg	0.00096		1	0.00036	10/03/22	10/03/22 22:46	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*96*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 22:46*	*1045*
Dibromofluoromethane	*92*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 22:46*	*1045*
Toluene-D8	*96*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 22:46*	*1045*

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB05_0.5-1.0 **Date/Time Sampled: 09/30/2022 09:30** **PSS Sample ID: 22100301-001**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 80.6**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.010		1	0.0074	10/03/22	10/04/22 12:02	1070
Acenaphthylene	ND	mg/kg	0.010		1	0.007	10/03/22	10/04/22 12:02	1070
Acetophenone	ND	mg/kg	0.041		1	0.026	10/03/22	10/04/22 12:02	1070
Anthracene	ND	mg/kg	0.010		1	0.0053	10/03/22	10/04/22 12:02	1070
Atrazine	ND	mg/kg	0.082		1	0.021	10/03/22	10/04/22 12:02	1070
Benzo(a)anthracene	ND	mg/kg	0.010		1	0.0041	10/03/22	10/04/22 12:02	1070
Benzo(a)pyrene	ND	mg/kg	0.010		1	0.0058	10/03/22	10/04/22 12:02	1070
Benzo(b)fluoranthene	ND	mg/kg	0.010		1	0.0053	10/03/22	10/04/22 12:02	1070
Benzo(g,h,i)perylene	ND	mg/kg	0.010		1	0.0074	10/03/22	10/04/22 12:02	1070
Benzo(k)fluoranthene	ND	mg/kg	0.010		1	0.009	10/03/22	10/04/22 12:02	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.041		1	0.022	10/03/22	10/04/22 12:02	1070
Butyl benzyl phthalate	ND	mg/kg	0.041		1	0.027	10/03/22	10/04/22 12:02	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.041		1	0.027	10/03/22	10/04/22 12:02	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.041		1	0.0053	10/03/22	10/04/22 12:02	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.041		1	0.0062	10/03/22	10/04/22 12:02	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.041		1	0.028	10/03/22	10/04/22 12:02	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.041		1	0.021	10/03/22	10/04/22 12:02	1070
Di-n-butyl phthalate	ND	mg/kg	0.041		1	0.021	10/03/22	10/04/22 12:02	1070
Carbazole	ND	mg/kg	0.041		1	0.032	10/03/22	10/04/22 12:02	1070
Caprolactam	ND	mg/kg	0.082		1	0.015	10/03/22	10/04/22 12:02	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.041		1	0.036	10/03/22	10/04/22 12:02	1070
4-Chloroaniline	ND	mg/kg	0.041		1	0.032	10/03/22	10/04/22 12:02	1070
2-Chloronaphthalene	ND	mg/kg	0.041		1	0.028	10/03/22	10/04/22 12:02	1070
2-Chlorophenol	ND	mg/kg	0.041		1	0.021	10/03/22	10/04/22 12:02	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.041		1	0.023	10/03/22	10/04/22 12:02	1070
Chrysene	ND	mg/kg	0.010		1	0.0049	10/03/22	10/04/22 12:02	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.010		1	0.007	10/03/22	10/04/22 12:02	1070
Dibenzofuran	ND	mg/kg	0.041		1	0.024	10/03/22	10/04/22 12:02	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.041		1	0.023	10/03/22	10/04/22 12:02	1070
2,4-Dichlorophenol	ND	mg/kg	0.041		1	0.032	10/03/22	10/04/22 12:02	1070
Diethyl phthalate	ND	mg/kg	0.041		1	0.025	10/03/22	10/04/22 12:02	1070
Dimethyl phthalate	ND	mg/kg	0.041		1	0.024	10/03/22	10/04/22 12:02	1070
2,4-Dimethylphenol	ND	mg/kg	0.041		1	0.039	10/03/22	10/04/22 12:02	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.21		1	0.049	10/03/22	10/04/22 12:02	1070
2,4-Dinitrophenol	ND	mg/kg	0.21		1	0.093	10/03/22	10/04/22 12:02	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB05_0.5-1.0 **Date/Time Sampled: 09/30/2022 09:30** **PSS Sample ID: 22100301-001**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 80.6**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.082		1	0.029	10/03/22	10/04/22 12:02	1070
2,6-Dinitrotoluene	ND	mg/kg	0.082		1	0.024	10/03/22	10/04/22 12:02	1070
Fluoranthene	**0.011**	mg/kg	0.010		1	0.0045	10/03/22	10/04/22 12:02	1070
Fluorene	ND	mg/kg	0.010		1	0.007	10/03/22	10/04/22 12:02	1070
Hexachlorobenzene	ND	mg/kg	0.041		1	0.0078	10/03/22	10/04/22 12:02	1070
Hexachlorobutadiene	ND	mg/kg	0.041		1	0.023	10/03/22	10/04/22 12:02	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.082		1	0.046	10/03/22	10/04/22 12:02	1070
Hexachloroethane	ND	mg/kg	0.041		1	0.026	10/03/22	10/04/22 12:02	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.010		1	0.0094	10/03/22	10/04/22 12:02	1070
Isophorone	ND	mg/kg	0.041		1	0.028	10/03/22	10/04/22 12:02	1070
2-Methylnaphthalene	ND	mg/kg	0.010		1	0.0099	10/03/22	10/04/22 12:02	1070
2-Methyl phenol	ND	mg/kg	0.041		1	0.023	10/03/22	10/04/22 12:02	1070
3&4-Methylphenol	ND	mg/kg	0.041		1	0.03	10/03/22	10/04/22 12:02	1070
Naphthalene	ND	mg/kg	0.010		1	0.0066	10/03/22	10/04/22 12:02	1070
2-Nitroaniline	ND	mg/kg	0.082		1	0.023	10/03/22	10/04/22 12:02	1070
3-Nitroaniline	ND	mg/kg	0.082		1	0.029	10/03/22	10/04/22 12:02	1070
4-Nitroaniline	ND	mg/kg	0.082		1	0.041	10/03/22	10/04/22 12:02	1070
Nitrobenzene	ND	mg/kg	0.041		1	0.031	10/03/22	10/04/22 12:02	1070
2-Nitrophenol	ND	mg/kg	0.041		1	0.033	10/03/22	10/04/22 12:02	1070
4-Nitrophenol	ND	mg/kg	0.21		1	0.063	10/03/22	10/04/22 12:02	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.041		1	0.0037	10/03/22	10/04/22 12:02	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.041		1	0.022	10/03/22	10/04/22 12:02	1070
Di-n-octyl phthalate	ND	mg/kg	0.082		1	0.041	10/03/22	10/04/22 12:02	1070
Pentachlorophenol	ND	mg/kg	0.082		1	0.05	10/03/22	10/04/22 12:02	1070
Phenanthrene	ND	mg/kg	0.010		1	0.0062	10/03/22	10/04/22 12:02	1070
Phenol	ND	mg/kg	0.041		1	0.03	10/03/22	10/04/22 12:02	1070
Pyrene	ND	mg/kg	0.010		1	0.0053	10/03/22	10/04/22 12:02	1070
Pyridine	ND	mg/kg	0.041		1	0.019	10/03/22	10/04/22 12:02	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.041		1	0.0049	10/03/22	10/04/22 12:02	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.041		1	0.032	10/03/22	10/04/22 12:02	1070

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB05_0.5-1.0 **Date/Time Sampled: 09/30/2022 09:30** **PSS Sample ID: 22100301-001**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 80.6**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197880 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*78*	*%*	*52-109*	*1*	*10/03/22*	*10/04/22 12:02*	*1070*
2-Fluorophenol	*70*	*%*	*30-102*	*1*	*10/03/22*	*10/04/22 12:02*	*1070*
Nitrobenzene-d5	*70*	*%*	*39-101*	*1*	*10/03/22*	*10/04/22 12:02*	*1070*
Phenol-d6	*73*	*%*	*36-109*	*1*	*10/03/22*	*10/04/22 12:02*	*1070*
Terphenyl-D14	*88*	*%*	*66-121*	*1*	*10/03/22*	*10/04/22 12:02*	*1070*
2,4,6-Tribromophenol	*81*	*%*	*39-118*	*1*	*10/03/22*	*10/04/22 12:02*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB06_3.0-3.5 **Date/Time Sampled: 09/30/2022 10:30** **PSS Sample ID: 22100301-002**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 70.4**

Total Metals — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**30**	mg/kg	0.67		1	0.51	10/03/22	10/04/22 18:40	1064

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.020		1	0.011	10/03/22	10/03/22 23:09	1045
Benzene	ND	mg/kg	0.0010		1	0.00043	10/03/22	10/03/22 23:09	1045
Bromochloromethane	ND	mg/kg	0.0010		1	0.00047	10/03/22	10/03/22 23:09	1045
Bromodichloromethane	ND	mg/kg	0.0010		1	0.00044	10/03/22	10/03/22 23:09	1045
Bromoform	ND	mg/kg	0.0010		1	0.00051	10/03/22	10/03/22 23:09	1045
Bromomethane	ND	mg/kg	0.0010		1	0.001	10/03/22	10/03/22 23:09	1045
2-Butanone (MEK)	**0.0060**	mg/kg	0.0050		1	0.0023	10/03/22	10/03/22 23:09	1045
Carbon Disulfide	ND	mg/kg	0.0010		1	0.00042	10/03/22	10/03/22 23:09	1045
Carbon tetrachloride	ND	mg/kg	0.0010		1	0.00037	10/03/22	10/03/22 23:09	1045
Chlorobenzene	ND	mg/kg	0.0010		1	0.00054	10/03/22	10/03/22 23:09	1045
Chloroethane	ND	mg/kg	0.0010		1	0.00066	10/03/22	10/03/22 23:09	1045
Chloroform	ND	mg/kg	0.0050		1	0.00065	10/03/22	10/03/22 23:09	1045
Chloromethane	ND	mg/kg	0.0010		1	0.0005	10/03/22	10/03/22 23:09	1045
Cyclohexane	**0.0022**	mg/kg	0.0010		1	0.0004	10/03/22	10/03/22 23:09	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0010		1	0.00087	10/03/22	10/03/22 23:09	1045
Dibromochloromethane	ND	mg/kg	0.0010		1	0.0003	10/03/22	10/03/22 23:09	1045
1,2-Dibromoethane	ND	mg/kg	0.0010		1	0.0005	10/03/22	10/03/22 23:09	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0010		1	0.00044	10/03/22	10/03/22 23:09	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0010		1	0.00045	10/03/22	10/03/22 23:09	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0010		1	0.00087	10/03/22	10/03/22 23:09	1045
Dichlorodifluoromethane	ND	mg/kg	0.0010		1	0.00047	10/03/22	10/03/22 23:09	1045
1,1-Dichloroethane	ND	mg/kg	0.0010		1	0.00043	10/03/22	10/03/22 23:09	1045
1,2-Dichloroethane	ND	mg/kg	0.0010		1	0.00036	10/03/22	10/03/22 23:09	1045
1,1-Dichloroethene	ND	mg/kg	0.0010		1	0.0004	10/03/22	10/03/22 23:09	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0010		1	0.00043	10/03/22	10/03/22 23:09	1045
1,2-Dichloropropane	ND	mg/kg	0.0010		1	0.00048	10/03/22	10/03/22 23:09	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0010		1	0.00043	10/03/22	10/03/22 23:09	1045

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB06_3.0-3.5 **Date/Time Sampled: 09/30/2022 10:30** **PSS Sample ID: 22100301-002**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 70.4**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5035A

Qualifier(s): See Batch 197874 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	ND	mg/kg	0.0010		1	0.00046	10/03/22	10/03/22 23:09	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0010		1	0.00041	10/03/22	10/03/22 23:09	1045
Ethylbenzene	ND	mg/kg	0.0010		1	0.00037	10/03/22	10/03/22 23:09	1045
2-Hexanone (MBK)	ND	mg/kg	0.0010		1	0.00065	10/03/22	10/03/22 23:09	1045
Isopropylbenzene	**0.0012**	mg/kg	0.0010		1	0.00039	10/03/22	10/03/22 23:09	1045
Methyl Acetate	ND	mg/kg	0.025		1	0.0011	10/03/22	10/03/22 23:09	1045
Methylcyclohexane	**0.0060**	mg/kg	0.0010		1	0.00044	10/03/22	10/03/22 23:09	1045
Methylene chloride	ND	mg/kg	0.0050		1	0.0036	10/03/22	10/03/22 23:09	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0010		1	0.00064	10/03/22	10/03/22 23:09	1045
Methyl-t-Butyl Ether	**0.0011**	mg/kg	0.0010		1	0.00038	10/03/22	10/03/22 23:09	1045
Naphthalene	**0.0020**	mg/kg	0.0010		1	0.00058	10/03/22	10/03/22 23:09	1045
Styrene	ND	mg/kg	0.0010		1	0.0004	10/03/22	10/03/22 23:09	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0010		1	0.00061	10/03/22	10/03/22 23:09	1045
Tetrachloroethene	ND	mg/kg	0.0010		1	0.00044	10/03/22	10/03/22 23:09	1045
Toluene	ND	mg/kg	0.0010		1	0.00045	10/03/22	10/03/22 23:09	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0010		1	0.00052	10/03/22	10/03/22 23:09	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0010		1	0.00045	10/03/22	10/03/22 23:09	1045
1,1,1-Trichloroethane	ND	mg/kg	0.0010		1	0.00036	10/03/22	10/03/22 23:09	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0010		1	0.00034	10/03/22	10/03/22 23:09	1045
Trichloroethene	ND	mg/kg	0.0010		1	0.00054	10/03/22	10/03/22 23:09	1045
Trichlorofluoromethane	ND	mg/kg	0.0010		1	0.00047	10/03/22	10/03/22 23:09	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0010		1	0.00038	10/03/22	10/03/22 23:09	1045
Vinyl chloride	ND	mg/kg	0.0050		1	0.00033	10/03/22	10/03/22 23:09	1045
m&p-Xylene	ND	mg/kg	0.0020		1	0.0011	10/03/22	10/03/22 23:09	1045
o-Xylene	ND	mg/kg	0.0010		1	0.00037	10/03/22	10/03/22 23:09	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*102*	*%*	*89-111*	*1*	*10/03/22*	*10/03/22 23:09*	*1045*
Dibromofluoromethane	*105*	*%*	*91-108*	*1*	*10/03/22*	*10/03/22 23:09*	*1045*
Toluene-D8	*100*	*%*	*93-104*	*1*	*10/03/22*	*10/03/22 23:09*	*1045*

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB06_3.0-3.5 **Date/Time Sampled: 09/30/2022 10:30** **PSS Sample ID: 22100301-002**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 70.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.012		1	0.0084	10/03/22	10/03/22 14:59	1070
Acenaphthylene	ND	mg/kg	0.012		1	0.008	10/03/22	10/03/22 14:59	1070
Acetophenone	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 14:59	1070
Anthracene	ND	mg/kg	0.012		1	0.0061	10/03/22	10/03/22 14:59	1070
Atrazine	ND	mg/kg	0.094		1	0.023	10/03/22	10/03/22 14:59	1070
Benzo(a)anthracene	ND	mg/kg	0.012		1	0.0047	10/03/22	10/03/22 14:59	1070
Benzo(a)pyrene	ND	mg/kg	0.012		1	0.0066	10/03/22	10/03/22 14:59	1070
Benzo(b)fluoranthene	ND	mg/kg	0.012		1	0.0061	10/03/22	10/03/22 14:59	1070
Benzo(g,h,i)perylene	ND	mg/kg	0.012		1	0.0084	10/03/22	10/03/22 14:59	1070
Benzo(k)fluoranthene	ND	mg/kg	0.012		1	0.01	10/03/22	10/03/22 14:59	1070
Biphenyl (Diphenyl)	ND	mg/kg	0.047		1	0.025	10/03/22	10/03/22 14:59	1070
Butyl benzyl phthalate	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 14:59	1070
bis(2-chloroethoxy) methane	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 14:59	1070
bis(2-chloroethyl) ether	ND	mg/kg	0.047		1	0.0061	10/03/22	10/03/22 14:59	1070
bis(2-chloroisopropyl) ether	ND	mg/kg	0.047		1	0.007	10/03/22	10/03/22 14:59	1070
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.047		1	0.032	10/03/22	10/03/22 14:59	1070
4-Bromophenylphenyl ether	ND	mg/kg	0.047		1	0.024	10/03/22	10/03/22 14:59	1070
Di-n-butyl phthalate	ND	mg/kg	0.047		1	0.024	10/03/22	10/03/22 14:59	1070
Carbazole	ND	mg/kg	0.047		1	0.037	10/03/22	10/03/22 14:59	1070
Caprolactam	ND	mg/kg	0.094		1	0.017	10/03/22	10/03/22 14:59	1070
4-Chloro-3-methyl phenol	ND	mg/kg	0.047		1	0.041	10/03/22	10/03/22 14:59	1070
4-Chloroaniline	ND	mg/kg	0.047		1	0.036	10/03/22	10/03/22 14:59	1070
2-Chloronaphthalene	ND	mg/kg	0.047		1	0.032	10/03/22	10/03/22 14:59	1070
2-Chlorophenol	ND	mg/kg	0.047		1	0.023	10/03/22	10/03/22 14:59	1070
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.047		1	0.026	10/03/22	10/03/22 14:59	1070
Chrysene	ND	mg/kg	0.012		1	0.0056	10/03/22	10/03/22 14:59	1070
Dibenz(a,h)Anthracene	ND	mg/kg	0.012		1	0.008	10/03/22	10/03/22 14:59	1070
Dibenzofuran	ND	mg/kg	0.047		1	0.027	10/03/22	10/03/22 14:59	1070
3,3-Dichlorobenzidine	ND	mg/kg	0.047		1	0.026	10/03/22	10/03/22 14:59	1070
2,4-Dichlorophenol	ND	mg/kg	0.047		1	0.037	10/03/22	10/03/22 14:59	1070
Diethyl phthalate	ND	mg/kg	0.047		1	0.028	10/03/22	10/03/22 14:59	1070
Dimethyl phthalate	ND	mg/kg	0.047		1	0.027	10/03/22	10/03/22 14:59	1070
2,4-Dimethylphenol	ND	mg/kg	0.047		1	0.045	10/03/22	10/03/22 14:59	1070
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.23		1	0.056	10/03/22	10/03/22 14:59	1070
2,4-Dinitrophenol	ND	mg/kg	0.23		1	0.11	10/03/22	10/03/22 14:59	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB06_3.0-3.5 **Date/Time Sampled: 09/30/2022 10:30** **PSS Sample ID: 22100301-002**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 70.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.094		1	0.033	10/03/22	10/03/22 14:59	1070
2,6-Dinitrotoluene	ND	mg/kg	0.094		1	0.027	10/03/22	10/03/22 14:59	1070
Fluoranthene	ND	mg/kg	0.012		1	0.0052	10/03/22	10/03/22 14:59	1070
Fluorene	ND	mg/kg	0.012		1	0.008	10/03/22	10/03/22 14:59	1070
Hexachlorobenzene	ND	mg/kg	0.047		1	0.0089	10/03/22	10/03/22 14:59	1070
Hexachlorobutadiene	ND	mg/kg	0.047		1	0.027	10/03/22	10/03/22 14:59	1070
Hexachlorocyclopentadiene	ND	mg/kg	0.094		1	0.052	10/03/22	10/03/22 14:59	1070
Hexachloroethane	ND	mg/kg	0.047		1	0.03	10/03/22	10/03/22 14:59	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.012		1	0.011	10/03/22	10/03/22 14:59	1070
Isophorone	ND	mg/kg	0.047		1	0.032	10/03/22	10/03/22 14:59	1070
2-Methylnaphthalene	ND	mg/kg	0.012		1	0.011	10/03/22	10/03/22 14:59	1070
2-Methyl phenol	ND	mg/kg	0.047		1	0.026	10/03/22	10/03/22 14:59	1070
3&4-Methylphenol	ND	mg/kg	0.047		1	0.034	10/03/22	10/03/22 14:59	1070
Naphthalene	ND	mg/kg	0.012		1	0.0075	10/03/22	10/03/22 14:59	1070
2-Nitroaniline	ND	mg/kg	0.094		1	0.027	10/03/22	10/03/22 14:59	1070
3-Nitroaniline	ND	mg/kg	0.094		1	0.033	10/03/22	10/03/22 14:59	1070
4-Nitroaniline	ND	mg/kg	0.094		1	0.047	10/03/22	10/03/22 14:59	1070
Nitrobenzene	ND	mg/kg	0.047		1	0.035	10/03/22	10/03/22 14:59	1070
2-Nitrophenol	ND	mg/kg	0.047		1	0.038	10/03/22	10/03/22 14:59	1070
4-Nitrophenol	ND	mg/kg	0.23		1	0.072	10/03/22	10/03/22 14:59	1070
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.047		1	0.0042	10/03/22	10/03/22 14:59	1070
N-Nitrosodiphenylamine	ND	mg/kg	0.047		1	0.025	10/03/22	10/03/22 14:59	1070
Di-n-octyl phthalate	ND	mg/kg	0.094		1	0.047	10/03/22	10/03/22 14:59	1070
Pentachlorophenol	ND	mg/kg	0.094		1	0.057	10/03/22	10/03/22 14:59	1070
Phenanthrene	**0.031**	mg/kg	0.012		1	0.007	10/03/22	10/03/22 14:59	1070
Phenol	ND	mg/kg	0.047		1	0.035	10/03/22	10/03/22 14:59	1070
Pyrene	ND	mg/kg	0.012		1	0.0061	10/03/22	10/03/22 14:59	1070
Pyridine	ND	mg/kg	0.047		1	0.022	10/03/22	10/03/22 14:59	1070
2,4,5-Trichlorophenol	ND	mg/kg	0.047		1	0.0056	10/03/22	10/03/22 14:59	1070
2,4,6-Trichlorophenol	ND	mg/kg	0.047		1	0.037	10/03/22	10/03/22 14:59	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: PESR_Tank056_SB06_3.0-3.5 **Date/Time Sampled: 09/30/2022 10:30** **PSS Sample ID: 22100301-002**
Matrix: SOIL **Date/Time Received: 10/03/2022 08:45** **% Solids SM2540G-11: 70.4**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 197855 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*84*	*%*	*52-109*	*1*	*10/03/22*	*10/03/22 14:59*	*1070*
2-Fluorophenol	*77*	*%*	*30-102*	*1*	*10/03/22*	*10/03/22 14:59*	*1070*
Nitrobenzene-d5	*75*	*%*	*39-101*	*1*	*10/03/22*	*10/03/22 14:59*	*1070*
Phenol-d6	*79*	*%*	*36-109*	*1*	*10/03/22*	*10/03/22 14:59*	*1070*
Terphenyl-D14	*96*	*%*	*66-121*	*1*	*10/03/22*	*10/03/22 14:59*	*1070*
2,4,6-Tribromophenol	*88*	*%*	*39-118*	*1*	*10/03/22*	*10/03/22 14:59*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: EB01-20220930 **Date/Time Sampled: 09/30/2022 11:55** **PSS Sample ID: 22100301-003**
Matrix: WATER **Date/Time Received: 10/03/2022 08:45**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3510C

Qualifier(s): See Batch 197879 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.25		1	0.11	10/03/22	10/04/22 10:45	1070
Acenaphthylene	ND	ug/L	0.25		1	0.11	10/03/22	10/04/22 10:45	1070
Acetophenone	ND	ug/L	1.0		1	0.85	10/03/22	10/04/22 10:45	1070
Anthracene	ND	ug/L	0.25		1	0.1	10/03/22	10/04/22 10:45	1070
Atrazine	ND	ug/L	2.0		1	0.63	10/03/22	10/04/22 10:45	1070
Benzo(a)anthracene	ND	ug/L	0.25		1	0.09	10/03/22	10/04/22 10:45	1070
Benzo(a)pyrene	ND	ug/L	0.25		1	0.11	10/03/22	10/04/22 10:45	1070
Benzo(b)fluoranthene	ND	ug/L	0.25		1	0.13	10/03/22	10/04/22 10:45	1070
Benzo(g,h,i)perylene	ND	ug/L	0.25		1	0.13	10/03/22	10/04/22 10:45	1070
Benzo(k)fluoranthene	ND	ug/L	0.25		1	0.16	10/03/22	10/04/22 10:45	1070
Biphenyl (Diphenyl)	ND	ug/L	1.0		1	0.67	10/03/22	10/04/22 10:45	1070
Butyl benzyl phthalate	ND	ug/L	1.0		1	0.64	10/03/22	10/04/22 10:45	1070
bis(2-chloroethoxy) methane	ND	ug/L	1.0		1	0.77	10/03/22	10/04/22 10:45	1070
bis(2-chloroethyl) ether	ND	ug/L	1.0		1	0.08	10/03/22	10/04/22 10:45	1070
bis(2-chloroisopropyl) ether	ND	ug/L	1.0		1	0.13	10/03/22	10/04/22 10:45	1070
bis(2-ethylhexyl) phthalate	ND	ug/L	1.0		1	0.67	10/03/22	10/04/22 10:45	1070
4-Bromophenylphenyl ether	ND	ug/L	1.0		1	0.67	10/03/22	10/04/22 10:45	1070
Di-n-butyl phthalate	ND	ug/L	1.0		1	0.68	10/03/22	10/04/22 10:45	1070
Carbazole	ND	ug/L	1.0		1	0.18	10/03/22	10/04/22 10:45	1070
Caprolactam	ND	ug/L	2.0		1	1.1	10/03/22	10/04/22 10:45	1070
4-Chloro-3-methyl phenol	ND	ug/L	1.0		1	0.86	10/03/22	10/04/22 10:45	1070
4-Chloroaniline	ND	ug/L	1.0		1	0.88	10/03/22	10/04/22 10:45	1070
2-Chloronaphthalene	ND	ug/L	1.0		1	0.91	10/03/22	10/04/22 10:45	1070
2-Chlorophenol	ND	ug/L	1.0		1	0.7	10/03/22	10/04/22 10:45	1070
4-Chlorophenyl Phenyl ether	ND	ug/L	1.0		1	0.74	10/03/22	10/04/22 10:45	1070
Chrysene	ND	ug/L	0.25		1	0.1	10/03/22	10/04/22 10:45	1070
Dibenz(a,h)Anthracene	ND	ug/L	0.25		1	0.18	10/03/22	10/04/22 10:45	1070
Dibenzofuran	ND	ug/L	1.0		1	0.82	10/03/22	10/04/22 10:45	1070
3,3-Dichlorobenzidine	ND	ug/L	1.0		1	0.46	10/03/22	10/04/22 10:45	1070
2,4-Dichlorophenol	ND	ug/L	1.0		1	0.95	10/03/22	10/04/22 10:45	1070
Diethyl phthalate	ND	ug/L	1.0		1	0.83	10/03/22	10/04/22 10:45	1070
Dimethyl phthalate	ND	ug/L	1.0		1	0.79	10/03/22	10/04/22 10:45	1070
2,4-Dimethylphenol	ND	ug/L	1.0		1	0.78	10/03/22	10/04/22 10:45	1070
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	1.7	10/03/22	10/04/22 10:45	1070
2,4-Dinitrophenol	ND	ug/L	5.0		1	5	10/03/22	10/04/22 10:45	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: EB01-20220930 **Date/Time Sampled: 09/30/2022 11:55** **PSS Sample ID: 22100301-003**
Matrix: WATER **Date/Time Received: 10/03/2022 08:45**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3510C

Qualifier(s): See Batch 197879 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	ug/L	2.0		1	0.93	10/03/22	10/04/22 10:45	1070
2,6-Dinitrotoluene	ND	ug/L	2.0		1	0.92	10/03/22	10/04/22 10:45	1070
Fluoranthene	ND	ug/L	0.25		1	0.09	10/03/22	10/04/22 10:45	1070
Fluorene	ND	ug/L	0.25		1	0.13	10/03/22	10/04/22 10:45	1070
Hexachlorobenzene	ND	ug/L	1.0		1	0.15	10/03/22	10/04/22 10:45	1070
Hexachlorobutadiene	ND	ug/L	1.0		1	0.74	10/03/22	10/04/22 10:45	1070
Hexachlorocyclopentadiene	ND	ug/L	2.0		1	0.94	10/03/22	10/04/22 10:45	1070
Hexachloroethane	ND	ug/L	1.0		1	0.84	10/03/22	10/04/22 10:45	1070
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.25		1	0.22	10/03/22	10/04/22 10:45	1070
Isophorone	ND	ug/L	1.0		1	0.89	10/03/22	10/04/22 10:45	1070
2-Methylnaphthalene	ND	ug/L	0.25		1	0.19	10/03/22	10/04/22 10:45	1070
2-Methyl phenol	ND	ug/L	1.0		1	0.76	10/03/22	10/04/22 10:45	1070
3&4-Methylphenol	ND	ug/L	1.0		1	0.86	10/03/22	10/04/22 10:45	1070
Naphthalene	ND	ug/L	0.25		1	0.12	10/03/22	10/04/22 10:45	1070
2-Nitroaniline	ND	ug/L	2.0		1	0.88	10/03/22	10/04/22 10:45	1070
3-Nitroaniline	ND	ug/L	2.0		1	1.1	10/03/22	10/04/22 10:45	1070
4-Nitroaniline	ND	ug/L	2.0		1	1.5	10/03/22	10/04/22 10:45	1070
Nitrobenzene	ND	ug/L	1.0		1	0.15	10/03/22	10/04/22 10:45	1070
2-Nitrophenol	ND	ug/L	1.0		1	1.2	10/03/22	10/04/22 10:45	1070
4-Nitrophenol	ND	ug/L	5.0		1	1.8	10/03/22	10/04/22 10:45	1070
N-Nitrosodi-n-propyl amine	ND	ug/L	1.0		1	0.08	10/03/22	10/04/22 10:45	1070
N-Nitrosodiphenylamine	ND	ug/L	1.0		1	0.75	10/03/22	10/04/22 10:45	1070
Di-n-octyl phthalate	ND	ug/L	2.0		1	0.9	10/03/22	10/04/22 10:45	1070
Pentachlorophenol	ND	ug/L	2.0		1	0.85	10/03/22	10/04/22 10:45	1070
Phenanthrene	ND	ug/L	0.25		1	0.13	10/03/22	10/04/22 10:45	1070
Phenol	ND	ug/L	1.0		1	0.91	10/03/22	10/04/22 10:45	1070
Pyrene	ND	ug/L	0.25		1	0.1	10/03/22	10/04/22 10:45	1070
Pyridine	ND	ug/L	1.0		1	0.72	10/03/22	10/04/22 10:45	1070
2,4,5-Trichlorophenol	ND	ug/L	1.0		1	1	10/03/22	10/04/22 10:45	1070
2,4,6-Trichlorophenol	ND	ug/L	1.0		1	1	10/03/22	10/04/22 10:45	1070

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: EB01-20220930 **Date/Time Sampled: 09/30/2022 11:55** **PSS Sample ID: 22100301-003**
Matrix: WATER **Date/Time Received: 10/03/2022 08:45**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 E Preparation Method: SW3510C

Qualifier(s): See Batch 197879 on Case Narrative.

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*73*	*%*	*59-108*	*1*	*10/03/22*	*10/04/22 10:45*	*1070*
2-Fluorophenol	*67*	*%*	*47-100*	*1*	*10/03/22*	*10/04/22 10:45*	*1070*
Nitrobenzene-d5	*68*	*%*	*47-108*	*1*	*10/03/22*	*10/04/22 10:45*	*1070*
Phenol-d6	*70*	*%*	*57-102*	*1*	*10/03/22*	*10/04/22 10:45*	*1070*
Terphenyl-D14	*85*	*%*	*77-120*	*1*	*10/03/22*	*10/04/22 10:45*	*1070*
2,4,6-Tribromophenol	*74*	*%*	*55-120*	*1*	*10/03/22*	*10/04/22 10:45*	*1070*

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Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: TB01-20220930 **Date/Time Sampled: 09/30/2022 00:00** **PSS Sample ID: 22100301-004**
Matrix: WATER **Date/Time Received: 10/03/2022 08:45**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 197857 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	1.5	10/03/22	10/03/22 16:58	1011
Benzene	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 16:58	1011
Bromochloromethane	ND	ug/L	1.0		1	0.28	10/03/22	10/03/22 16:58	1011
Bromodichloromethane	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 16:58	1011
Bromoform	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 16:58	1011
Bromomethane	ND	ug/L	1.0		1	0.21	10/03/22	10/03/22 16:58	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	1.3	10/03/22	10/03/22 16:58	1011
Carbon Disulfide	ND	ug/L	1.0		1	0.35	10/03/22	10/03/22 16:58	1011
Carbon tetrachloride	ND	ug/L	1.0		1	0.22	10/03/22	10/03/22 16:58	1011
Chlorobenzene	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 16:58	1011
Chloroethane	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 16:58	1011
Chloroform	ND	ug/L	1.0		1	0.21	10/03/22	10/03/22 16:58	1011
Chloromethane	ND	ug/L	1.0		1	0.33	10/03/22	10/03/22 16:58	1011
Cyclohexane	ND	ug/L	1.0		1	0.32	10/03/22	10/03/22 16:58	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 16:58	1011
Dibromochloromethane	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 16:58	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	0.22	10/03/22	10/03/22 16:58	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	0.2	10/03/22	10/03/22 16:58	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 16:58	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 16:58	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	0.26	10/03/22	10/03/22 16:58	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 16:58	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 16:58	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 16:58	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 16:58	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 16:58	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	0.15	10/03/22	10/03/22 16:58	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	0.15	10/03/22	10/03/22 16:58	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	0.29	10/03/22	10/03/22 16:58	1011
Ethylbenzene	ND	ug/L	1.0		1	0.15	10/03/22	10/03/22 16:58	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	0.83	10/03/22	10/03/22 16:58	1011
Isopropylbenzene	ND	ug/L	1.0		1	0.13	10/03/22	10/03/22 16:58	1011
Methyl Acetate	ND	ug/L	1.0		1	0.24	10/03/22	10/03/22 16:58	1011
Methylcyclohexane	ND	ug/L	1.0		1	0.14	10/03/22	10/03/22 16:58	1011
Methylene chloride	ND	ug/L	1.0		1	0.71	10/03/22	10/03/22 16:58	1011

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Certificate of Analysis

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Sample ID: TB01-20220930 **Date/Time Sampled: 09/30/2022 00:00** **PSS Sample ID: 22100301-004**
Matrix: WATER **Date/Time Received: 10/03/2022 08:45**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

Qualifier(s): See Batch 197857 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	0.6	10/03/22	10/03/22 16:58	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 16:58	1011
Naphthalene	ND	ug/L	1.0		1	0.2	10/03/22	10/03/22 16:58	1011
Styrene	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 16:58	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	0.27	10/03/22	10/03/22 16:58	1011
Tetrachloroethene	ND	ug/L	1.0		1	0.23	10/03/22	10/03/22 16:58	1011
Toluene	ND	ug/L	1.0		1	0.52	10/03/22	10/03/22 16:58	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	0.3	10/03/22	10/03/22 16:58	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	0.26	10/03/22	10/03/22 16:58	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	0.16	10/03/22	10/03/22 16:58	1011
Trichloroethene	ND	ug/L	1.0		1	0.19	10/03/22	10/03/22 16:58	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	0.26	10/03/22	10/03/22 16:58	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 16:58	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	0.17	10/03/22	10/03/22 16:58	1011
Vinyl chloride	ND	ug/L	1.0		1	0.34	10/03/22	10/03/22 16:58	1011
m&p-Xylene	ND	ug/L	2.0		1	0.4	10/03/22	10/03/22 16:58	1011
o-Xylene	ND	ug/L	1.0		1	0.18	10/03/22	10/03/22 16:58	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*90*	*%*	*88-120*	*1*	*10/03/22*	*10/03/22 16:58*	*1011*
Dibromofluoromethane	*99*	*%*	*92-107*	*1*	*10/03/22*	*10/03/22 16:58*	*1011*
Toluene-D8	*99*	*%*	*95-106*	*1*	*10/03/22*	*10/03/22 16:58*	*1011*

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Project Name: Philly Tank Farm

PSS Project No.: 22100301

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Preservative not indicated on COC for VOC for sample 004. Received containers preserved with HCl.

Analytical:

TCL Volatile Organic Compounds

Batch: 197857
Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Batch: 197874
Method exceedance: Laboratory control sample (LCS) exceedance identified; see QC summary.

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Analytical:

TCL Semivolatile Organic Compounds

Batch: 197855
Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified; see QC summary.

Batch: 197879
Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Batch: 197880
Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM2540G	PESR_Tank056_SB05_0.5-1.0	Initial	22100301-001	S	197892	197892	10/04/2022 17:30	10/04/2022 17:30
	PESR_Tank056_SB06_3.0-3.5	Initial	22100301-002	S	197892	197892	10/04/2022 17:30	10/04/2022 17:30
	197892-1-BLK	BLK	197892-1-BLK	S	197892	197892	10/04/2022 17:30	10/04/2022 17:30
	PESR_Tank056_SB05_0.5-1.0 D	MD	22100301-001 D	S	197892	197892	10/04/2022 17:30	10/04/2022 17:30
	14355-Comp-N-CE D	MD	22100316-001 D	S	197892	197892	10/04/2022 17:30	10/04/2022 17:30
SW-846 6020 B	PESR_Tank056_SB05_0.5-1.0	Initial	22100301-001	S	92585	197915	10/03/2022 14:05	10/04/2022 18:35
	PESR_Tank056_SB06_3.0-3.5	Initial	22100301-002	S	92585	197915	10/03/2022 14:05	10/04/2022 18:40
	92585-1-BKS	BKS	92585-1-BKS	S	92585	197915	10/03/2022 14:05	10/04/2022 17:48
	92585-1-BLK	BLK	92585-1-BLK	S	92585	197915	10/03/2022 14:05	10/04/2022 17:43
	Soil Piles S	MS	22093018-001 S	S	92585	197915	10/03/2022 14:05	10/04/2022 18:14
	Soil Piles SD	MSD	22093018-001 S	S	92585	197915	10/03/2022 14:05	10/04/2022 18:19
SW-846 8260 D	TB01-20220930	Initial	22100301-004	W	92604	197857	10/03/2022 08:48	10/03/2022 16:58
	92604-1-BKS	BKS	92604-1-BKS	W	92604	197857	10/03/2022 08:48	10/03/2022 08:48
	92604-1-BLK	BLK	92604-1-BLK	W	92604	197857	10/03/2022 08:48	10/03/2022 10:28
	14784-SB307-GW S	MS	22092818-016 S	W	92604	197857	10/03/2022 08:48	10/03/2022 15:04
	14784-SB307-GW SD	MSD	22092818-016 S	W	92604	197857	10/03/2022 08:48	10/03/2022 15:27
	PESR_Tank056_SB05_0.5-1.0	Initial	22100301-001	S	92612	197874	10/03/2022 14:04	10/03/2022 22:46
	PESR_Tank056_SB06_3.0-3.5	Initial	22100301-002	S	92612	197874	10/03/2022 14:04	10/03/2022 23:09
	92612-1-BKS	BKS	92612-1-BKS	S	92612	197874	10/03/2022 14:04	10/03/2022 14:35
	92612-1-BLK	BLK	92612-1-BLK	S	92612	197874	10/03/2022 14:04	10/03/2022 17:11
	92612-1-BSD	BSD	92612-1-BSD	S	92612	197874	10/03/2022 14:04	10/03/2022 14:57
	GTA-NW8-2-5' S	MS	22093005-009 S	S	92612	197874	10/03/2022 14:04	10/03/2022 15:19
	GTA-NW8-2-5' SD	MSD	22093005-009 S	S	92612	197874	10/03/2022 14:04	10/03/2022 15:42
SW-846 8270 E	PESR_Tank056_SB06_3.0-3.5	Initial	22100301-002	S	92574	197855	10/03/2022 10:40	10/03/2022 14:59
	92574-1-BKS	BKS	92574-1-BKS	S	92574	197855	10/03/2022 09:08	10/03/2022 12:51
	92574-1-BLK	BLK	92574-1-BLK	S	92574	197855	10/03/2022 09:08	10/03/2022 12:25
	92574-1-BSD	BSD	92574-1-BSD	S	92574	197855	10/03/2022 09:08	10/03/2022 13:17
	PESR_Tank056_SB04_0.5-1.0 S	MS	22093003-010 S	S	92574	197855	10/03/2022 09:08	10/03/2022 13:42
	PESR_Tank056_SB04_0.5-1.0 SD	MSD	22093003-010 S	S	92574	197855	10/03/2022 09:08	10/03/2022 14:08
	EB01-20220930	Initial	22100301-003	W	92581	197879	10/03/2022 10:21	10/04/2022 10:45
	92581-1-BKS	BKS	92581-1-BKS	W	92581	197879	10/03/2022 10:21	10/04/2022 09:27
	92581-1-BLK	BLK	92581-1-BLK	W	92581	197879	10/03/2022 10:21	10/04/2022 09:02
	92581-1-BSD	BSD	92581-1-BSD	W	92581	197879	10/03/2022 10:21	10/04/2022 09:53
	PESR_Tank056_SB05_0.5-1.0	Initial	22100301-001	S	92574	197880	10/03/2022 10:40	10/04/2022 12:02

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 6020 B Prep Method: SW3050B
Seq Number: 197915 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92585-1-BLK LCS Sample Id: 92585-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3191	23.64	22.49	95	80-120	mg/kg	

Analytical Method: SM2540G
Seq Number: 197892 Matrix: Soil
Parent Sample Id: 22100301-001 MD Sample Id: 22100301-001 D

Parameter	Parent Result	MD Result	RPD	RPD Limit	Units	Flag
Solids, percent	80.6	80.6	0	10	%	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E Prep Method: SW3550C
Seq Number: 197855 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92574-1-BLK LCS Sample Id: 92574-1-BKS LCSD Sample Id: 92574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acenaphthene	<0.005988	1.333	1.126	84	1.194	90	67-111	6	25	mg/kg	
Acenaphthylene	<0.005655	1.333	1.165	87	1.225	92	65-118	5	25	mg/kg	
Acetophenone	<0.02129	1.333	1.135	85	1.222	92	68-111	7	25	mg/kg	
Anthracene	<0.004325	1.333	1.221	92	1.304	98	77-116	7	25	mg/kg	
Atrazine	<0.01663	1.333	0.8037	60	0.8341	63	33-76	4	25	mg/kg	
Benzo(a)anthracene	<0.003327	1.333	1.133	85	1.185	89	77-124	4	25	mg/kg	
Benzo(a)pyrene	<0.004657	1.333	1.397	105	1.463	110	91-141	5	25	mg/kg	
Benzo(b)fluoranthene	<0.004325	1.333	1.153	86	1.175	88	80-142	2	25	mg/kg	
Benzo(g,h,i)perylene	<0.005988	1.333	1.450	109	1.520	114	83-134	5	25	mg/kg	
Benzo(k)fluoranthene	<0.007319	1.333	1.338	100	1.439	108	80-126	7	25	mg/kg	
Biphenyl (Diphenyl)	<0.01763	1.333	1.592	119	1.832	138	75-111	14	25	mg/kg	H
Butyl benzyl phthalate	<0.02162	1.333	1.372	103	1.454	109	83-125	6	25	mg/kg	
bis(2-chloroethoxy) methane	<0.02162	1.333	1.130	85	1.182	89	68-110	4	25	mg/kg	
bis(2-chloroethyl) ether	<0.004325	1.333	1.072	80	1.130	85	66-114	5	25	mg/kg	
bis(2-chloroisopropyl) ether	<0.004990	1.333	1.008	76	1.107	83	52-125	9	25	mg/kg	
bis(2-ethylhexyl) phthalate	<0.02295	1.333	1.445	108	1.542	116	86-128	6	25	mg/kg	
4-Bromophenylphenyl ether	<0.01730	1.333	1.180	89	1.224	92	78-128	4	25	mg/kg	
Di-n-butyl phthalate	<0.01730	1.333	1.338	100	1.426	107	83-116	6	25	mg/kg	
Carbazole	<0.02595	1.333	1.207	91	1.274	96	81-109	5	25	mg/kg	
Caprolactam	<0.01198	1.333	1.241	93	1.298	97	64-123	4	25	mg/kg	
4-Chloro-3-methyl phenol	<0.02894	1.333	1.227	92	1.273	96	76-112	4	25	mg/kg	
4-Chloroaniline	<0.02562	1.333	1.045	78	1.117	84	64-107	7	25	mg/kg	
2-Chloronaphthalene	<0.02295	1.333	1.193	89	1.268	95	79-117	6	25	mg/kg	
2-Chlorophenol	<0.01663	1.333	1.144	86	1.204	90	66-107	5	25	mg/kg	
4-Chlorophenyl Phenyl ether	<0.01863	1.333	1.316	99	1.368	103	73-127	4	25	mg/kg	
Chrysene	<0.003992	1.333	1.217	91	1.277	96	77-122	5	25	mg/kg	
Dibenz(a,h)Anthracene	<0.005655	1.333	1.265	95	1.323	99	85-136	4	25	mg/kg	
Dibenzofuran	<0.01929	1.333	1.159	87	1.229	92	73-117	6	25	mg/kg	
3,3-Dichlorobenzidine	<0.01830	1.333	1.284	96	1.368	103	84-132	6	25	mg/kg	
2,4-Dichlorophenol	<0.02628	1.333	1.204	90	1.248	94	66-119	4	25	mg/kg	
Diethyl phthalate	<0.01996	1.333	1.206	90	1.290	97	77-124	7	25	mg/kg	
Dimethyl phthalate	<0.01929	1.333	1.183	89	1.245	93	69-120	5	25	mg/kg	
2,4-Dimethylphenol	<0.03160	1.333	1.198	90	1.269	95	71-119	6	25	mg/kg	
4,6-Dinitro-2-methyl phenol	<0.03959	1.333	1.253	94	1.275	96	62-146	2	25	mg/kg	
2,4-Dinitrophenol	<0.07552	1.333	1.305	98	1.326	100	49-139	2	25	mg/kg	
2,4-Dinitrotoluene	<0.02329	1.333	1.252	94	1.304	98	76-131	4	25	mg/kg	
2,6-Dinitrotoluene	<0.01929	1.333	1.240	93	1.290	97	72-131	4	25	mg/kg	
Fluoranthene	<0.003659	1.333	1.211	91	1.273	96	77-118	5	25	mg/kg	
Fluorene	<0.005655	1.333	1.219	91	1.304	98	74-120	7	25	mg/kg	
Hexachlorobenzene	<0.006321	1.333	1.295	97	1.364	102	82-119	5	25	mg/kg	
Hexachlorobutadiene	<0.01896	1.333	1.187	89	1.244	93	70-125	5	25	mg/kg	
Hexachlorocyclopentadiene	<0.03693	1.333	1.327	100	1.361	102	55-152	3	25	mg/kg	
Hexachloroethane	<0.02129	1.333	1.217	91	1.303	98	70-118	7	25	mg/kg	
Indeno(1,2,3-c,d)Pyrene	<0.007651	1.333	1.199	90	1.245	93	80-144	4	25	mg/kg	
Isophorone	<0.02262	1.333	1.374	103	1.445	108	66-138	5	25	mg/kg	
2-Methylnaphthalene	<0.007984	1.333	1.178	88	1.231	92	69-108	4	25	mg/kg	
2-Methyl phenol	<0.01830	1.333	1.158	87	1.229	92	67-111	6	25	mg/kg	
3&4-Methylphenol	<0.02428	1.333	1.126	84	1.204	90	68-112	7	25	mg/kg	
Naphthalene	<0.005323	1.333	1.127	85	1.196	90	66-104	6	25	mg/kg	
2-Nitroaniline	<0.01896	1.333	1.340	101	1.390	104	72-124	4	25	mg/kg	
3-Nitroaniline	<0.02329	1.333	1.246	93	1.337	100	78-119	7	25	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E
Prep Method: SW3550C
Seq Number: 197855
Matrix: Solid
Date Prep: 10/03/22
MB Sample Id: 92574-1-BLK
LCS Sample Id: 92574-1-BKS
LCSD Sample Id: 92574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
4-Nitroaniline	<0.03327	1.333	1.323	99	1.394	105	75-128	5	25	mg/kg	
Nitrobenzene	<0.02495	1.333	1.098	82	1.148	86	63-106	4	25	mg/kg	
2-Nitrophenol	<0.02661	1.333	1.214	91	1.264	95	68-118	4	25	mg/kg	
4-Nitrophenol	<0.05123	1.333	1.206	90	1.242	93	70-137	3	25	mg/kg	
N-Nitrosodi-n-propyl amine	<0.002994	1.333	1.066	80	1.138	85	59-120	7	25	mg/kg	
N-Nitrosodiphenylamine	<0.01763	1.333	1.228	92	1.285	96	77-113	5	25	mg/kg	
Di-n-octyl phthalate	<0.03360	1.333	1.449	109	1.546	116	87-128	6	25	mg/kg	
Pentachlorophenol	<0.04025	1.333	1.036	78	1.045	78	49-136	1	25	mg/kg	
Phenanthrene	<0.004990	1.333	1.170	88	1.221	92	75-109	4	25	mg/kg	
Phenol	<0.02462	1.333	0.9680	73	1.016	76	59-111	5	25	mg/kg	
Pyrene	<0.004325	1.333	1.178	88	1.233	93	76-120	5	25	mg/kg	
Pyridine	<0.01530	1.333	1.042	78	1.108	83	53-100	6	25	mg/kg	
2,4,5-Trichlorophenol	<0.003992	1.333	1.241	93	1.276	96	66-125	3	25	mg/kg	
2,4,6-Trichlorophenol	<0.02628	1.333	1.089	82	1.119	84	64-121	3	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	87		82		86		52-109	%
2-Fluorophenol	90		80		85		30-102	%
Nitrobenzene-d5	84		77		82		39-101	%
Phenol-d6	86		81		86		36-109	%
Terphenyl-D14	91		83		86		66-121	%
2,4,6-Tribromophenol	80		86		89		39-118	%

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E Prep Method: SW3510C
Seq Number: 197879 Matrix: Water Date Prep: 10/03/22
MB Sample Id: 92581-1-BLK LCS Sample Id: 92581-1-BKS LCSD Sample Id: 92581-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acenaphthene	<0.1100	40.00	33.22	83	32.43	81	68-108	2	20	ug/L	
Acenaphthylene	<0.1100	40.00	34.50	86	33.79	84	68-112	2	20	ug/L	
Acetophenone	<0.8500	40.00	32.98	82	32.55	81	67-113	1	20	ug/L	
Anthracene	<0.1000	40.00	35.96	90	34.70	87	75-114	4	20	ug/L	
Atrazine	<0.6300	40.00	23.65	59	23.27	58	16-109	2	20	ug/L	
Benzo(a)anthracene	<0.09000	40.00	34.36	86	33.24	83	77-116	3	20	ug/L	
Benzo(a)pyrene	<0.1100	40.00	40.54	101	39.42	99	84-138	3	20	ug/L	
Benzo(b)fluoranthene	<0.1300	40.00	37.39	93	36.00	90	77-139	4	20	ug/L	
Benzo(g,h,i)perylene	<0.1300	40.00	42.03	105	41.16	103	79-127	2	20	ug/L	
Benzo(k)fluoranthene	<0.1600	40.00	34.20	86	34.08	85	73-122	0	20	ug/L	
Biphenyl (Diphenyl)	<0.6700	40.00	43.71	109	42.40	106	70-114	3	20	ug/L	
Butyl benzyl phthalate	<0.6400	40.00	40.48	101	39.14	98	78-130	3	20	ug/L	
bis(2-chloroethoxy) methane	<0.7700	40.00	32.89	82	32.65	82	61-117	1	20	ug/L	
bis(2-chloroethyl) ether	<0.08000	40.00	30.97	77	30.54	76	64-113	1	20	ug/L	
bis(2-chloroisopropyl) ether	<0.1300	40.00	28.24	71	27.79	69	60-114	2	20	ug/L	
bis(2-ethylhexyl) phthalate	<0.6700	40.00	42.27	106	40.91	102	81-131	3	20	ug/L	
4-Bromophenylphenyl ether	<0.6700	40.00	34.18	85	33.75	84	77-125	1	20	ug/L	
Di-n-butyl phthalate	<0.6800	40.00	39.26	98	38.16	95	74-124	3	20	ug/L	
Carbazole	<0.1800	40.00	36.06	90	35.24	88	71-114	2	20	ug/L	
Caprolactam	<1.130	40.00	35.78	89	34.99	87	59-122	2	20	ug/L	
4-Chloro-3-methyl phenol	<0.8600	40.00	35.93	90	35.00	88	68-127	3	20	ug/L	
4-Chloroaniline	<0.8800	40.00	36.41	91	35.76	89	53-113	2	20	ug/L	
2-Chloronaphthalene	<0.9100	40.00	34.89	87	34.30	86	74-115	2	20	ug/L	
2-Chlorophenol	<0.7000	40.00	33.17	83	32.69	82	64-113	1	20	ug/L	
4-Chlorophenyl Phenyl ether	<0.7400	40.00	38.22	96	37.40	94	77-119	2	20	ug/L	
Chrysene	<0.1000	40.00	34.62	87	34.18	85	76-121	1	20	ug/L	
Dibenz(a,h)Anthracene	<0.1800	40.00	36.94	92	36.22	91	80-130	2	20	ug/L	
Dibenzofuran	<0.8200	40.00	34.17	85	33.43	84	75-111	2	20	ug/L	
3,3-Dichlorobenzidine	<0.4600	40.00	44.33	111	43.33	108	80-128	2	20	ug/L	
2,4-Dichlorophenol	<0.9500	40.00	35.14	88	34.47	86	65-123	2	20	ug/L	
Diethyl phthalate	<0.8300	40.00	35.39	88	34.56	86	74-126	2	20	ug/L	
Dimethyl phthalate	<0.7900	40.00	35.20	88	33.97	85	71-118	4	20	ug/L	
2,4-Dimethylphenol	<0.7800	40.00	33.68	84	33.07	83	67-124	2	20	ug/L	
4,6-Dinitro-2-methyl phenol	<1.680	40.00	37.36	93	36.78	92	46-154	2	20	ug/L	
2,4-Dinitrophenol	<5.000	40.00	38.47	96	37.68	94	42-141	2	20	ug/L	
2,4-Dinitrotoluene	<0.9300	40.00	36.56	91	35.70	89	69-129	2	20	ug/L	
2,6-Dinitrotoluene	<0.9200	40.00	36.56	91	35.57	89	64-131	3	20	ug/L	
Fluoranthene	<0.09000	40.00	35.86	90	34.76	87	76-118	3	20	ug/L	
Fluorene	<0.1300	40.00	35.50	89	35.02	88	75-116	1	20	ug/L	
Hexachlorobenzene	<0.1500	40.00	38.28	96	37.12	93	67-134	3	20	ug/L	
Hexachlorobutadiene	<0.7400	40.00	34.68	87	34.11	85	71-118	2	20	ug/L	
Hexachlorocyclopentadiene	<0.9400	40.00	37.70	94	37.01	93	42-143	2	20	ug/L	
Hexachloroethane	<0.8400	40.00	35.19	88	34.56	86	60-123	2	20	ug/L	
Indeno(1,2,3-c,d)Pyrene	<0.2200	40.00	36.13	90	35.77	89	74-137	1	20	ug/L	
Isophorone	<0.8900	40.00	40.54	101	39.62	99	52-128	2	20	ug/L	
2-Methylnaphthalene	<0.1900	40.00	33.98	85	33.70	84	60-116	1	20	ug/L	
2-Methyl phenol	<0.7600	40.00	33.27	83	32.87	82	65-117	1	20	ug/L	
3&4-Methylphenol	<0.8600	40.00	32.95	82	32.35	81	63-120	2	20	ug/L	
Naphthalene	<0.1200	40.00	32.54	81	31.98	80	65-102	2	20	ug/L	
2-Nitroaniline	<0.8800	40.00	39.92	100	39.18	98	71-122	2	20	ug/L	
3-Nitroaniline	<1.070	40.00	41.74	104	40.80	102	69-120	2	20	ug/L	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E Prep Method: SW3510C
Seq Number: 197879 Matrix: Water Date Prep: 10/03/22
MB Sample Id: 92581-1-BLK LCS Sample Id: 92581-1-BKS LCSD Sample Id: 92581-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
4-Nitroaniline	<1.540	40.00	40.57	101	39.36	98	57-133	3	20	ug/L	
Nitrobenzene	<0.1500	40.00	32.26	81	31.52	79	61-110	2	20	ug/L	
2-Nitrophenol	<1.190	40.00	35.54	89	35.08	88	59-127	1	20	ug/L	
4-Nitrophenol	<1.750	40.00	38.17	95	36.94	92	68-147	3	20	ug/L	
N-Nitrosodi-n-propyl amine	<0.08000	40.00	33.13	83	32.43	81	58-122	2	20	ug/L	
N-Nitrosodiphenylamine	<0.7500	40.00	36.00	90	35.17	88	72-115	2	20	ug/L	
Di-n-octyl phthalate	<0.9000	40.00	42.28	106	40.72	102	78-137	4	20	ug/L	
Pentachlorophenol	<0.8500	40.00	31.31	78	30.06	75	52-147	4	20	ug/L	
Phenanthrene	<0.1300	40.00	34.49	86	33.40	84	69-116	3	20	ug/L	
Phenol	<0.9100	40.00	28.03	70	27.88	70	61-111	1	20	ug/L	
Pyrene	<0.1000	40.00	34.35	86	33.68	84	80-114	2	20	ug/L	
Pyridine	<0.7200	40.00	29.63	74	28.07	70	39-110	5	20	ug/L	
2,4,5-Trichlorophenol	<1.030	40.00	36.96	92	36.10	90	69-124	2	20	ug/L	
2,4,6-Trichlorophenol	<1.030	40.00	32.36	81	31.62	79	66-124	2	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	80		82		82		59-108	%
2-Fluorophenol	76		78		78		47-100	%
Nitrobenzene-d5	75		75		76		47-108	%
Phenol-d6	78		79		79		57-102	%
Terphenyl-D14	88		80		80		77-120	%
2,4,6-Tribromophenol	83		83		84		55-120	%

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D Prep Method: SW5030
Seq Number: 197874 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92612-1-BLK LCS Sample Id: 92612-1-BKS LCSD Sample Id: 92612-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acetone	<0.01100	0.06000	0.04564	76	0.04583	76	40-147	0	25	mg/kg	
Benzene	<0.00043	0.06000	0.06051	101	0.06018	100	85-118	1	25	mg/kg	
Bromochloromethane	<0.00047	0.06000	0.05854	98	0.05999	100	84-121	2	25	mg/kg	
Bromodichloromethane	<0.00044	0.06000	0.06371	106	0.06307	105	88-121	1	25	mg/kg	
Bromoform	<0.00051	0.06000	0.05562	93	0.05605	93	78-129	1	25	mg/kg	
Bromomethane	<0.001000	0.06000	0.06572	110	0.06644	111	66-117	1	25	mg/kg	
2-Butanone (MEK)	<0.002300	0.06000	0.05222	87	0.04932	82	62-115	6	25	mg/kg	
Carbon Disulfide	<0.00042	0.06000	0.06414	107	0.06105	102	79-128	5	25	mg/kg	
Carbon tetrachloride	<0.00037	0.06000	0.06277	105	0.06319	105	87-121	1	25	mg/kg	
Chlorobenzene	<0.00054	0.06000	0.05842	97	0.06033	101	85-119	3	25	mg/kg	
Chloroethane	<0.00066	0.06000	0.05350	89	0.05534	92	75-115	3	25	mg/kg	
Chloroform	<0.00065	0.06000	0.05914	99	0.06046	101	82-116	2	25	mg/kg	
Chloromethane	<0.0005	0.06000	0.05571	93	0.05657	94	69-124	2	25	mg/kg	
Cyclohexane	<0.0004	0.06000	0.05520	92	0.05862	98	72-132	6	25	mg/kg	
1,2-Dibromo-3-chloropropane	<0.00087	0.06000	0.05538	92	0.05434	91	64-141	2	25	mg/kg	
Dibromochloromethane	<0.0003	0.06000	0.05531	92	0.05551	93	87-122	0	25	mg/kg	
1,2-Dibromoethane	<0.0005	0.06000	0.05954	99	0.06037	101	87-117	1	25	mg/kg	
1,2-Dichlorobenzene	<0.00044	0.06000	0.05911	99	0.05722	95	83-121	3	25	mg/kg	
1,3-Dichlorobenzene	<0.00045	0.06000	0.06046	101	0.05985	100	84-121	1	25	mg/kg	
1,4-Dichlorobenzene	<0.00087	0.06000	0.05920	99	0.05850	98	84-121	1	25	mg/kg	
Dichlorodifluoromethane	<0.00047	0.06000	0.05628	94	0.05688	95	56-134	1	25	mg/kg	
1,1-Dichloroethane	<0.00043	0.06000	0.06399	107	0.06026	100	83-120	6	25	mg/kg	
1,2-Dichloroethane	<0.00036	0.06000	0.06508	108	0.06122	102	85-118	6	25	mg/kg	
1,1-Dichloroethene	<0.0004	0.06000	0.05835	97	0.05875	98	83-122	1	25	mg/kg	
1,2-Dichloropropane	<0.00048	0.06000	0.06152	103	0.06061	101	84-120	1	25	mg/kg	
cis-1,2-Dichloroethene	<0.00043	0.06000	0.06089	101	0.05909	98	84-120	3	25	mg/kg	
cis-1,3-Dichloropropene	<0.00043	0.06000	0.05814	97	0.05862	98	84-120	1	25	mg/kg	
trans-1,2-Dichloroethene	<0.00046	0.06000	0.06032	101	0.05986	100	84-121	1	25	mg/kg	
trans-1,3-Dichloropropene	<0.00041	0.06000	0.05873	98	0.05790	97	80-123	1	25	mg/kg	
Ethylbenzene	<0.00037	0.06000	0.05980	100	0.06077	101	87-121	2	25	mg/kg	
2-Hexanone (MBK)	<0.00065	0.06000	0.05331	89	0.05264	88	72-119	1	25	mg/kg	
Isopropylbenzene	<0.00039	0.06000	0.05916	99	0.05879	98	85-121	1	25	mg/kg	
Methyl Acetate	<0.001100	0.06000	0.05853	98	0.05251	88	75-123	11	25	mg/kg	
Methylcyclohexane	<0.00044	0.06000	0.06110	102	0.06111	102	84-123	0	25	mg/kg	
Methylene chloride	<0.003600	0.06000	0.06038	101	0.05604	93	81-117	7	25	mg/kg	
4-Methyl-2-Pentanone (MIBK)	<0.00064	0.06000	0.05339	89	0.05117	85	75-118	4	25	mg/kg	
Methyl-t-Butyl Ether	<0.00038	0.06000	0.07384	123	0.06897	115	74-122	7	25	mg/kg	H
Naphthalene	<0.00058	0.06000	0.06076	101	0.06139	102	77-120	1	25	mg/kg	
Styrene	<0.0004	0.06000	0.06197	103	0.06304	105	83-124	2	25	mg/kg	
1,1,2,2-Tetrachloroethane	<0.00061	0.06000	0.05763	96	0.05715	95	75-123	1	25	mg/kg	
Tetrachloroethene	<0.00044	0.06000	0.06304	105	0.06107	102	82-119	3	25	mg/kg	
Toluene	<0.00045	0.06000	0.05840	97	0.05903	98	84-118	1	25	mg/kg	
1,2,3-Trichlorobenzene	<0.00052	0.06000	0.06157	103	0.06061	101	76-127	2	25	mg/kg	
1,2,4-Trichlorobenzene	<0.00045	0.06000	0.06082	101	0.06065	101	82-131	0	25	mg/kg	
1,1,1-Trichloroethane	<0.00036	0.06000	0.06604	110	0.06509	108	84-121	1	25	mg/kg	
1,1,2-Trichloroethane	<0.00034	0.06000	0.06181	103	0.06038	101	83-118	2	25	mg/kg	
Trichloroethene	<0.00054	0.06000	0.06149	102	0.06109	102	85-118	1	25	mg/kg	
Trichlorofluoromethane	<0.00047	0.06000	0.06153	103	0.06141	102	81-121	0	25	mg/kg	
1,1,2-Trichlorotrifluoroethane	<0.00038	0.06000	0.06073	101	0.06079	101	83-122	0	25	mg/kg	
Vinyl chloride	<0.00033	0.06000	0.05874	98	0.06017	100	69-129	2	25	mg/kg	
m&p-Xylene	<0.001100	0.1200	0.1191	99	0.1189	99	86-123	0	25	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D Prep Method: SW5030
Seq Number: 197874 Matrix: Solid Date Prep: 10/03/22
MB Sample Id: 92612-1-BLK LCS Sample Id: 92612-1-BKS LCSD Sample Id: 92612-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
o-Xylene	<0.00037	0.06000	0.06024	100	0.06245	104	84-121	4	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
4-Bromofluorobenzene	96		96		97		89-111	%
Dibromofluoromethane	94		101		103		91-108	%
Toluene-D8	98		102		101		93-104	%

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 197857
Matrix: Water
Date Prep: 10/03/22
MB Sample Id: 92604-1-BLK
LCS Sample Id: 92604-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<1.500	50.00	41.16	82	49-154	ug/L	
Benzene	<0.1900	50.00	47.85	96	76-112	ug/L	
Bromochloromethane	<0.2800	50.00	57.34	115	74-119	ug/L	
Bromodichloromethane	<0.1800	50.00	48.66	97	78-117	ug/L	
Bromoform	<0.1700	50.00	56.50	113	69-123	ug/L	
Bromomethane	<0.2100	50.00	48.79	98	42-118	ug/L	
2-Butanone (MEK)	<1.300	50.00	48.94	98	55-136	ug/L	
Carbon Disulfide	<0.3500	50.00	46.80	94	80-124	ug/L	
Carbon tetrachloride	<0.2200	50.00	50.15	100	77-119	ug/L	
Chlorobenzene	<0.2300	50.00	52.03	104	76-114	ug/L	
Chloroethane	<0.2300	50.00	35.81	72	61-113	ug/L	
Chloroform	0.2100	50.00	46.09	92	75-113	ug/L	
Chloromethane	<0.3300	50.00	34.30	69	41-148	ug/L	
Cyclohexane	<0.3200	50.00	41.59	83	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<0.1900	50.00	44.71	89	52-131	ug/L	
Dibromochloromethane	<0.1800	50.00	51.86	104	79-121	ug/L	
1,2-Dibromoethane	<0.2200	50.00	52.42	105	77-119	ug/L	
1,2-Dichlorobenzene	<0.2000	50.00	55.81	112	75-121	ug/L	
1,3-Dichlorobenzene	<0.2300	50.00	55.40	111	77-120	ug/L	
Dichlorodifluoromethane	<0.2300	50.00	39.16	78	49-122	ug/L	
1,4-Dichlorobenzene	<0.2600	50.00	54.74	109	76-118	ug/L	
1,1-Dichloroethane	<0.1900	50.00	42.84	86	75-118	ug/L	
1,2-Dichloroethane	<0.1800	50.00	41.98	84	72-115	ug/L	
cis-1,2-Dichloroethene	<0.1900	50.00	52.60	105	75-119	ug/L	
1,1-Dichloroethene	<0.1800	50.00	47.62	95	74-119	ug/L	
1,2-Dichloropropane	<0.1700	50.00	43.52	87	76-115	ug/L	
cis-1,3-Dichloropropene	<0.1500	50.00	46.69	93	83-122	ug/L	
trans-1,3-Dichloropropene	<0.1500	50.00	46.21	92	76-118	ug/L	
trans-1,2-Dichloroethene	<0.2900	50.00	52.00	104	73-121	ug/L	
Ethylbenzene	<0.1500	50.00	48.78	98	78-118	ug/L	
2-Hexanone (MBK)	<0.8300	50.00	37.48	75	55-136	ug/L	
Isopropylbenzene	<0.1300	50.00	51.23	102	76-126	ug/L	
Methyl Acetate	<0.2400	50.00	50.83	102	61-117	ug/L	
Methylcyclohexane	<0.1400	50.00	49.96	100	82-126	ug/L	
Methylene chloride	<0.7100	50.00	48.73	97	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<0.6000	50.00	41.59	83	57-127	ug/L	
Methyl-t-Butyl Ether	<0.1700	50.00	48.21	96	71-114	ug/L	
Naphthalene	<0.2000	50.00	53.35	107	60-122	ug/L	
Styrene	<0.1700	50.00	53.03	106	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<0.2700	50.00	48.84	98	66-123	ug/L	
Tetrachloroethene	<0.2300	50.00	58.81	118	76-123	ug/L	
Toluene	<0.5200	50.00	50.39	101	77-112	ug/L	
1,2,3-Trichlorobenzene	<0.3000	50.00	54.24	108	73-129	ug/L	
1,2,4-Trichlorobenzene	<0.2600	50.00	54.59	109	73-130	ug/L	
1,1,1-Trichloroethane	<0.1600	50.00	47.87	96	79-118	ug/L	
Trichloroethene	<0.1900	50.00	50.18	100	77-112	ug/L	
1,1,2-Trichloroethane	<0.2600	50.00	49.44	99	75-115	ug/L	
Trichlorofluoromethane	<0.1700	50.00	44.32	89	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<0.1700	50.00	48.10	96	77-123	ug/L	
Vinyl chloride	<0.3400	50.00	37.24	74	53-151	ug/L	
m&p-Xylene	<0.4000	100	102.7	103	79-121	ug/L	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 197857
Matrix: Water
Date Prep: 10/03/22
MB Sample Id: 92604-1-BLK
LCS Sample Id: 92604-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<0.1800	50.00	51.57	103	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	90		88		88-120	%
Dibromofluoromethane	101		102		92-107	%
Toluene-D8	100		99		95-106	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: SW-846 6020 B
Seq Number: 197915 Matrix: Solid
CCV Sample Id: CCV 1 Analyzed Date: 10/04/22 17:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	98.31	98	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 197915 Matrix: Solid
CCV Sample Id: CCV 2 Analyzed Date: 10/04/22 18:04

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	99.49	99	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 197915 Matrix: Solid
CCV Sample Id: CCV 3 Analyzed Date: 10/04/22 19:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	96.94	97	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 197915 Matrix: Solid
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 10/04/22 15:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	53.47	107	90-110	ug/kg	

Analytical Method: SW-846 8270 E

Seq Number: 197855 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 10/03/22 11:54

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acenaphthene	40.00	36.06	90	80-120	mg/kg	
Acenaphthylene	40.00	37.18	93	80-120	mg/kg	
Acetophenone	40.00	35.71	89	80-120	mg/kg	
Anthracene	40.00	38.98	97	80-120	mg/kg	
Atrazine	40.00	37.70	94	80-120	mg/kg	
Benzo(a)anthracene	40.00	38.39	96	80-120	mg/kg	
Benzo(a)pyrene	40.00	44.61	112	80-120	mg/kg	
Benzo(b)fluoranthene	40.00	38.92	97	80-120	mg/kg	
Benzo(g,h,i)perylene	40.00	46.87	117	80-120	mg/kg	
Benzo(k)fluoranthene	40.00	40.35	101	80-120	mg/kg	
Biphenyl (Diphenyl)	40.00	47.99	120	80-120	mg/kg	
Butyl benzyl phthalate	40.00	43.73	109	80-120	mg/kg	
bis(2-chloroethoxy) methane	40.00	34.49	86	80-120	mg/kg	
bis(2-chloroethyl) ether	40.00	34.82	87	80-120	mg/kg	
bis(2-chloroisopropyl) ether	40.00	29.29	73	80-120	mg/kg	X
bis(2-ethylhexyl) phthalate	40.00	46.20	116	80-120	mg/kg	
4-Bromophenylphenyl ether	40.00	37.97	95	80-120	mg/kg	
Di-n-butyl phthalate	40.00	40.39	101	80-120	mg/kg	
Carbazole	40.00	38.17	95	80-120	mg/kg	
Caprolactam	40.00	37.70	94	80-120	mg/kg	
4-Chloro-3-methyl phenol	40.00	38.83	97	80-120	mg/kg	
4-Chloroaniline	40.00	38.45	96	80-120	mg/kg	
2-Chloronaphthalene	40.00	37.59	94	80-120	mg/kg	
2-Chlorophenol	40.00	37.20	93	80-120	mg/kg	
4-Chlorophenyl Phenyl ether	40.00	41.63	104	80-120	mg/kg	
Chrysene	40.00	39.57	99	80-120	mg/kg	
Dibenz(a,h)Anthracene	40.00	41.89	105	80-120	mg/kg	
Dibenzofuran	40.00	36.21	91	80-120	mg/kg	
3,3-Dichlorobenzidine	40.00	47.90	120	80-120	mg/kg	
2,4-Dichlorophenol	40.00	38.51	96	80-120	mg/kg	
Diethyl phthalate	40.00	35.11	88	80-120	mg/kg	
Dimethyl phthalate	40.00	36.60	92	80-120	mg/kg	
2,4-Dimethylphenol	40.00	36.19	90	80-120	mg/kg	
4,6-Dinitro-2-methyl phenol	40.00	40.02	100	80-120	mg/kg	
2,4-Dinitrophenol	40.00	41.24	103	80-120	mg/kg	
2,4-Dinitrotoluene	40.00	39.63	99	80-120	mg/kg	
2,6-Dinitrotoluene	40.00	39.89	100	80-120	mg/kg	
Fluoranthene	40.00	38.10	95	80-120	mg/kg	
Fluorene	40.00	37.87	95	80-120	mg/kg	
Hexachlorobenzene	40.00	40.39	101	80-120	mg/kg	
Hexachlorobutadiene	40.00	41.17	103	80-120	mg/kg	
Hexachlorocyclopentadiene	40.00	44.51	111	80-120	mg/kg	
Hexachloroethane	40.00	40.84	102	80-120	mg/kg	
Indeno(1,2,3-c,d)Pyrene	40.00	41.45	104	80-120	mg/kg	
Isophorone	40.00	45.17	113	80-120	mg/kg	
2-Methylnaphthalene	40.00	36.90	92	80-120	mg/kg	
2-Methyl phenol	40.00	36.34	91	80-120	mg/kg	
3&4-Methylphenol	40.00	35.05	88	80-120	mg/kg	
Naphthalene	40.00	35.96	90	80-120	mg/kg	
2-Nitroaniline	40.00	39.41	99	80-120	mg/kg	
3-Nitroaniline	40.00	41.61	104	80-120	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E

Seq Number: 197855 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 10/03/22 11:54

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
4-Nitroaniline	40.00	39.31	98	80-120	mg/kg	
Nitrobenzene	40.00	36.51	91	80-120	mg/kg	
2-Nitrophenol	40.00	40.19	100	80-120	mg/kg	
4-Nitrophenol	40.00	36.96	92	80-120	mg/kg	
N-Nitrosodi-n-propyl amine	40.00	35.72	89	80-120	mg/kg	
N-Nitrosodiphenylamine	40.00	38.81	97	80-120	mg/kg	
Di-n-octyl phthalate	40.00	44.94	112	80-120	mg/kg	
Pentachlorophenol	40.00	34.77	87	80-120	mg/kg	
Phenanthrene	40.00	37.04	93	80-120	mg/kg	
Phenol	40.00	36.38	91	80-120	mg/kg	
Pyrene	40.00	38.16	95	80-120	mg/kg	
Pyridine	40.00	36.29	91	80-120	mg/kg	
2,4,5-Trichlorophenol	40.00	39.97	100	80-120	mg/kg	
2,4,6-Trichlorophenol	40.00	34.73	87	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	92	80-120	%	
2-Fluorophenol	93	80-120	%	
Nitrobenzene-d5	91	80-120	%	
Phenol-d6	92	80-120	%	
Terphenyl-D14	99	80-120	%	
2,4,6-Tribromophenol	110	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 197879 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/04/22 08:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acenaphthene	40000	36220	91	80-120	ug/L	
Acenaphthylene	40000	37120	93	80-120	ug/L	
Acetophenone	40000	37350	93	80-120	ug/L	
Anthracene	40000	39620	99	80-120	ug/L	
Caprolactam	40000	37740	94	80-120	ug/L	
Biphenyl (Diphenyl)	40000	54680	137	80-120	ug/L	X
Atrazine	40000	37430	94	80-120	ug/L	
Benzo(a)anthracene	40000	37710	94	80-120	ug/L	
Benzo(a)pyrene	40000	44890	112	80-120	ug/L	
Benzo(b)fluoranthene	40000	37130	93	80-120	ug/L	
Benzo(g,h,i)perylene	40000	46770	117	80-120	ug/L	
Benzo(k)fluoranthene	40000	43250	108	80-120	ug/L	
Butyl benzyl phthalate	40000	45350	113	80-120	ug/L	
bis(2-chloroethoxy) methane	40000	34800	87	80-120	ug/L	
bis(2-chloroethyl) ether	40000	35960	90	80-120	ug/L	
bis(2-chloroisopropyl) ether	40000	35110	88	80-120	ug/L	
bis(2-ethylhexyl) phthalate	40000	48980	122	80-120	ug/L	X
4-Bromophenylphenyl ether	40000	36610	92	80-120	ug/L	
Di-n-butyl phthalate	40000	42550	106	80-120	ug/L	
Carbazole	40000	38480	96	80-120	ug/L	
4-Chloro-3-methyl phenol	40000	37860	95	80-120	ug/L	
4-Chloroaniline	40000	38520	96	80-120	ug/L	
2-Chloronaphthalene	40000	38940	97	80-120	ug/L	
2-Chlorophenol	40000	37150	93	80-120	ug/L	
4-Chlorophenyl phenyl ether	40000	40440	101	80-120	ug/L	
Chrysene	40000	39270	98	80-120	ug/L	
Dibenz(a,h)Anthracene	40000	41680	104	80-120	ug/L	
Dibenzofuran	40000	36130	90	80-120	ug/L	
3,3-Dichlorobenzidine	40000	49190	123	80-120	ug/L	X
2,4-Dichlorophenol	40000	37730	94	80-120	ug/L	
Diethyl phthalate	40000	37490	94	80-120	ug/L	
Dimethyl phthalate	40000	36400	91	80-120	ug/L	
2,4-Dimethylphenol	40000	35000	88	80-120	ug/L	
4,6-Dinitro-2-methyl phenol	40000	38110	95	80-120	ug/L	
2,4-Dinitrophenol	40000	38980	97	80-120	ug/L	
2,4-Dinitrotoluene	40000	39100	98	80-120	ug/L	
2,6-Dinitrotoluene	40000	38640	97	80-120	ug/L	
Fluoranthene	40000	38030	95	80-120	ug/L	
Fluorene	40000	39670	99	80-120	ug/L	
Hexachlorobenzene	40000	41270	103	80-120	ug/L	
Hexachlorobutadiene	40000	39570	99	80-120	ug/L	
Hexachlorocyclopentadiene	40000	40700	102	80-120	ug/L	
Hexachloroethane	40000	42300	106	80-120	ug/L	
Indeno(1,2,3-c,d)Pyrene	40000	39130	98	80-120	ug/L	
Isophorone	40000	45130	113	80-120	ug/L	
2-Methylnaphthalene	40000	37320	93	80-120	ug/L	
2-Methyl phenol	40000	36970	92	80-120	ug/L	
3&4-Methylphenol	40000	36730	92	80-120	ug/L	
Naphthalene	40000	36440	91	80-120	ug/L	
4-Nitroaniline	40000	38560	96	80-120	ug/L	
3-Nitroaniline	40000	40850	102	80-120	ug/L	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E

Seq Number: 197879 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/04/22 08:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
2-Nitroaniline	40000	38920	97	80-120	ug/L	
Nitrobenzene	40000	36060	90	80-120	ug/L	
2-Nitrophenol	40000	39290	98	80-120	ug/L	
4-Nitrophenol	40000	35030	88	80-120	ug/L	
N-Nitrosodi-n-propyl amine	40000	34650	87	80-120	ug/L	
N-Nitrosodiphenylamine	40000	39120	98	80-120	ug/L	
Di-n-octyl phthalate	40000	48810	122	80-120	ug/L	X
Pentachlorophenol	40000	32700	82	80-120	ug/L	
Phenanthrene	40000	37120	93	80-120	ug/L	
Phenol	40000	35280	88	80-120	ug/L	
Pyrene	40000	39690	99	80-120	ug/L	
Pyridine	40000	35360	88	80-120	ug/L	
2,4,6-Trichlorophenol	40000	33870	85	80-120	ug/L	
2,4,5-Trichlorophenol	40000	38520	96	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	92	80-120	%	
2-Fluorophenol	96	80-120	%	
Nitrobenzene-d5	89	80-120	%	
Phenol-d6	94	80-120	%	
Terphenyl-D14	100	80-120	%	
2,4,6-Tribromophenol	100	80-120	%	

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Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E

Seq Number: 197880 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 10/04/22 08:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acenaphthene	40.00	36.22	91	80-120	mg/kg	
Acenaphthylene	40.00	37.12	93	80-120	mg/kg	
Acetophenone	40.00	37.35	93	80-120	mg/kg	
Anthracene	40.00	39.62	99	80-120	mg/kg	
Atrazine	40.00	37.43	94	80-120	mg/kg	
Benzo(a)anthracene	40.00	37.71	94	80-120	mg/kg	
Benzo(a)pyrene	40.00	44.89	112	80-120	mg/kg	
Benzo(b)fluoranthene	40.00	37.13	93	80-120	mg/kg	
Benzo(g,h,i)perylene	40.00	46.77	117	80-120	mg/kg	
Benzo(k)fluoranthene	40.00	43.25	108	80-120	mg/kg	
Biphenyl (Diphenyl)	40.00	54.68	137	80-120	mg/kg	X
Butyl benzyl phthalate	40.00	45.35	113	80-120	mg/kg	
bis(2-chloroethoxy) methane	40.00	34.80	87	80-120	mg/kg	
bis(2-chloroethyl) ether	40.00	35.96	90	80-120	mg/kg	
bis(2-chloroisopropyl) ether	40.00	35.11	88	80-120	mg/kg	
bis(2-ethylhexyl) phthalate	40.00	48.98	122	80-120	mg/kg	X
4-Bromophenylphenyl ether	40.00	36.61	92	80-120	mg/kg	
Di-n-butyl phthalate	40.00	42.55	106	80-120	mg/kg	
Carbazole	40.00	38.48	96	80-120	mg/kg	
Caprolactam	40.00	37.74	94	80-120	mg/kg	
4-Chloro-3-methyl phenol	40.00	37.86	95	80-120	mg/kg	
4-Chloroaniline	40.00	38.52	96	80-120	mg/kg	
2-Chloronaphthalene	40.00	38.94	97	80-120	mg/kg	
2-Chlorophenol	40.00	37.15	93	80-120	mg/kg	
4-Chlorophenyl Phenyl ether	40.00	40.44	101	80-120	mg/kg	
Chrysene	40.00	39.27	98	80-120	mg/kg	
Dibenz(a,h)Anthracene	40.00	41.68	104	80-120	mg/kg	
Dibenzofuran	40.00	36.13	90	80-120	mg/kg	
3,3-Dichlorobenzidine	40.00	49.19	123	80-120	mg/kg	X
2,4-Dichlorophenol	40.00	37.73	94	80-120	mg/kg	
Diethyl phthalate	40.00	37.49	94	80-120	mg/kg	
Dimethyl phthalate	40.00	36.40	91	80-120	mg/kg	
2,4-Dimethylphenol	40.00	35.00	88	80-120	mg/kg	
4,6-Dinitro-2-methyl phenol	40.00	38.11	95	80-120	mg/kg	
2,4-Dinitrophenol	40.00	38.98	97	80-120	mg/kg	
2,4-Dinitrotoluene	40.00	39.10	98	80-120	mg/kg	
2,6-Dinitrotoluene	40.00	38.64	97	80-120	mg/kg	
Fluoranthene	40.00	38.03	95	80-120	mg/kg	
Fluorene	40.00	39.67	99	80-120	mg/kg	
Hexachlorobenzene	40.00	41.27	103	80-120	mg/kg	
Hexachlorobutadiene	40.00	39.57	99	80-120	mg/kg	
Hexachlorocyclopentadiene	40.00	40.70	102	80-120	mg/kg	
Hexachloroethane	40.00	42.30	106	80-120	mg/kg	
Indeno(1,2,3-c,d)Pyrene	40.00	39.13	98	80-120	mg/kg	
Isophorone	40.00	45.13	113	80-120	mg/kg	
2-Methylnaphthalene	40.00	37.32	93	80-120	mg/kg	
2-Methyl phenol	40.00	36.97	92	80-120	mg/kg	
3&4-Methylphenol	40.00	36.73	92	80-120	mg/kg	
Naphthalene	40.00	36.44	91	80-120	mg/kg	
2-Nitroaniline	40.00	38.92	97	80-120	mg/kg	
3-Nitroaniline	40.00	40.85	102	80-120	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8270 E

Seq Number: 197880 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 10/04/22 08:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
4-Nitroaniline	40.00	38.56	96	80-120	mg/kg	
Nitrobenzene	40.00	36.06	90	80-120	mg/kg	
2-Nitrophenol	40.00	39.29	98	80-120	mg/kg	
4-Nitrophenol	40.00	35.03	88	80-120	mg/kg	
N-Nitrosodi-n-propyl amine	40.00	34.65	87	80-120	mg/kg	
N-Nitrosodiphenylamine	40.00	39.12	98	80-120	mg/kg	
Di-n-octyl phthalate	40.00	48.81	122	80-120	mg/kg	X
Pentachlorophenol	40.00	32.70	82	80-120	mg/kg	
Phenanthrene	40.00	37.12	93	80-120	mg/kg	
Phenol	40.00	35.28	88	80-120	mg/kg	
Pyrene	40.00	39.69	99	80-120	mg/kg	
Pyridine	40.00	35.36	88	80-120	mg/kg	
2,4,5-Trichlorophenol	40.00	38.52	96	80-120	mg/kg	
2,4,6-Trichlorophenol	40.00	33.87	85	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	92	80-120	%	
2-Fluorophenol	96	80-120	%	
Nitrobenzene-d5	89	80-120	%	
Phenol-d6	94	80-120	%	
Terphenyl-D14	100	80-120	%	
2,4,6-Tribromophenol	100	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 196024 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/03/22 00:05

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acenaphthene	40000	35780	89	70-130	ug/L	
Acenaphthylene	40000	37040	93	70-130	ug/L	
Acetophenone	40000	37040	93	70-130	ug/L	
Anthracene	40000	36570	91	70-130	ug/L	
Atrazine	40000	39640	99	70-130	ug/L	
Benzo(a)anthracene	40000	39710	99	70-130	ug/L	
Benzo(a)pyrene	40000	45280	113	70-130	ug/L	
Benzo(b)fluoranthene	40000	38210	96	70-130	ug/L	
Benzo(g,h,i)perylene	40000	44080	110	70-130	ug/L	
Benzo(k)fluoranthene	40000	43660	109	70-130	ug/L	
Biphenyl (Diphenyl)	40000	35200	88	70-130	ug/L	
Butyl benzyl phthalate	40000	43650	109	70-130	ug/L	
bis(2-chloroethoxy) methane	40000	38240	96	70-130	ug/L	
bis(2-chloroethyl) ether	40000	38130	95	70-130	ug/L	
bis(2-chloroisopropyl) ether	40000	35070	88	70-130	ug/L	
bis(2-ethylhexyl) phthalate	40000	43550	109	70-130	ug/L	
4-Bromophenylphenyl ether	40000	39720	99	70-130	ug/L	
Di-n-butyl phthalate	40000	37570	94	70-130	ug/L	
Carbazole	40000	38290	96	70-130	ug/L	
Caprolactam	40000	41570	104	70-130	ug/L	
4-Chloro-3-methyl phenol	40000	40260	101	70-130	ug/L	
4-Chloroaniline	40000	40100	100	70-130	ug/L	
2-Chloronaphthalene	40000	33240	83	70-130	ug/L	
2-Chlorophenol	40000	39140	98	70-130	ug/L	
4-Chlorophenyl Phenyl ether	40000	35190	88	70-130	ug/L	
Chrysene	40000	39200	98	70-130	ug/L	
Dibenz(a,h)Anthracene	40000	40490	101	70-130	ug/L	
Dibenzofuran	40000	36900	92	70-130	ug/L	
3,3-Dichlorobenzidine	40000	45160	113	70-130	ug/L	
2,4-Dichlorophenol	40000	40320	101	70-130	ug/L	
Diethyl phthalate	40000	36800	92	70-130	ug/L	
Dimethyl phthalate	40000	37510	94	70-130	ug/L	
2,4-Dimethylphenol	40000	38300	96	70-130	ug/L	
4,6-Dinitro-2-methyl phenol	40000	38010	95	70-130	ug/L	
2,4-Dinitrophenol	40000	37700	94	70-130	ug/L	
2,4-Dinitrotoluene	40000	42140	105	70-130	ug/L	
2,6-Dinitrotoluene	40000	42140	105	70-130	ug/L	
Fluoranthene	40000	38440	96	70-130	ug/L	
Fluorene	40000	33370	83	70-130	ug/L	
Hexachlorobenzene	40000	36280	91	70-130	ug/L	
Hexachlorobutadiene	40000	39150	98	70-130	ug/L	
Hexachlorocyclopentadiene	40000	43360	108	70-130	ug/L	
Hexachloroethane	40000	37810	95	70-130	ug/L	
Indeno(1,2,3-c,d)Pyrene	40000	41350	103	70-130	ug/L	
Isophorone	40000	49770	124	70-130	ug/L	
2-Methylnaphthalene	40000	36520	91	70-130	ug/L	
2-Methyl phenol	40000	38360	96	70-130	ug/L	
3&4-Methylphenol	40000	37840	95	70-130	ug/L	
Naphthalene	40000	35340	88	70-130	ug/L	
2-Nitroaniline	40000	41390	103	70-130	ug/L	
3-Nitroaniline	40000	42280	106	70-130	ug/L	

Analytical Method: SW-846 8270 E

Seq Number: 196024 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/03/22 00:05

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
4-Nitroaniline	40000	42680	107	70-130	ug/L	
Nitrobenzene	40000	38560	96	70-130	ug/L	
2-Nitrophenol	40000	42260	106	70-130	ug/L	
4-Nitrophenol	40000	40350	101	70-130	ug/L	
N-Nitrosodi-n-propyl amine	40000	38410	96	70-130	ug/L	
N-Nitrosodiphenylamine	40000	38550	96	70-130	ug/L	
Di-n-octyl phthalate	40000	42170	105	70-130	ug/L	
Pentachlorophenol	40000	39930	100	70-130	ug/L	
Phenanthrene	40000	35070	88	70-130	ug/L	
Phenol	40000	36940	92	70-130	ug/L	
Pyrene	40000	39360	98	70-130	ug/L	
Pyridine	40000	41350	103	70-130	ug/L	
2,4,5-Trichlorophenol	40000	41800	105	70-130	ug/L	
2,4,6-Trichlorophenol	40000	37550	94	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	92	70-130	%	
2-Fluorophenol	95	70-130	%	
Nitrobenzene-d5	96	70-130	%	
Phenol-d6	94	70-130	%	
Terphenyl-D14	101	70-130	%	
2,4,6-Tribromophenol	107	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 197857 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/03/22 08:48

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	41.16	82	80-120	ug/L	
Benzene	50.00	47.85	96	80-120	ug/L	
Bromochloromethane	50.00	57.34	115	80-120	ug/L	
Bromodichloromethane	50.00	48.66	97	80-120	ug/L	
Bromoform	50.00	56.50	113	80-120	ug/L	
Bromomethane	50.00	48.79	98	80-120	ug/L	
2-Butanone (MEK)	50.00	48.94	98	80-120	ug/L	
Carbon Disulfide	50.00	46.80	94	80-120	ug/L	
Carbon tetrachloride	50.00	50.15	100	80-120	ug/L	
Chlorobenzene	50.00	52.03	104	80-120	ug/L	
Chloroethane	50.00	35.81	72	80-120	ug/L	X
Chloroform	50.00	46.09	92	80-120	ug/L	
Chloromethane	50.00	34.30	69	80-120	ug/L	X
Cyclohexane	50.00	41.59	83	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	44.71	89	80-120	ug/L	
Dibromochloromethane	50.00	51.86	104	80-120	ug/L	
1,2-Dibromoethane	50.00	52.42	105	80-120	ug/L	
1,2-Dichlorobenzene	50.00	55.81	112	80-120	ug/L	
1,3-Dichlorobenzene	50.00	55.40	111	80-120	ug/L	
Dichlorodifluoromethane	50.00	39.16	78	80-120	ug/L	X
1,4-Dichlorobenzene	50.00	54.74	109	80-120	ug/L	
1,1-Dichloroethane	50.00	42.84	86	80-120	ug/L	
1,2-Dichloroethane	50.00	41.98	84	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	52.60	105	80-120	ug/L	
1,1-Dichloroethene	50.00	47.62	95	80-120	ug/L	
1,2-Dichloropropane	50.00	43.52	87	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	46.69	93	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	46.21	92	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	52.00	104	80-120	ug/L	
Ethylbenzene	50.00	48.78	98	80-120	ug/L	
2-Hexanone (MBK)	50.00	37.48	75	80-120	ug/L	X
Isopropylbenzene	50.00	51.23	102	80-120	ug/L	
Methyl Acetate	50.00	50.83	102	80-120	ug/L	
Methylcyclohexane	50.00	49.96	100	80-120	ug/L	
Methylene chloride	50.00	48.73	97	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	41.59	83	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	48.21	96	80-120	ug/L	
Naphthalene	50.00	53.35	107	80-120	ug/L	
Styrene	50.00	53.03	106	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	48.84	98	80-120	ug/L	
Tetrachloroethene	50.00	58.81	118	80-120	ug/L	
Toluene	50.00	50.39	101	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	54.24	108	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	54.59	109	80-120	ug/L	
1,1,1-Trichloroethane	50.00	47.87	96	80-120	ug/L	
Trichloroethene	50.00	50.18	100	80-120	ug/L	
1,1,2-Trichloroethane	50.00	49.44	99	80-120	ug/L	
Trichlorofluoromethane	50.00	44.32	89	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	48.10	96	80-120	ug/L	
Vinyl chloride	50.00	37.24	74	80-120	ug/L	X
m&p-Xylene	100	102.7	103	80-120	ug/L	

PHASE SEPARATION SCIENCE

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D

Seq Number: 197857 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 10/03/22 08:48

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	51.57	103	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	88	80-120	%	
Dibromofluoromethane	102	80-120	%	
Toluene-D8	99	80-120	%	

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Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D

Seq Number: 197874 Matrix: Solid

CCV Sample Id: CCV, VOC-1 Analyzed Date: 10/03/22 14:04

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.06000	0.05499	92	80-120	mg/kg	
Chloromethane	0.06000	0.05532	92	80-120	mg/kg	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.06000	0.05851	98	80-120	mg/kg	
Vinyl Chloride	0.06000	0.05847	97	80-120	mg/kg	
Bromomethane	0.06000	0.06578	110	80-120	mg/kg	
Chloroethane	0.06000	0.05142	86	80-120	mg/kg	
Acetone	0.06000	0.04919	82	80-120	mg/kg	
Cyclohexane	0.06000	0.05809	97	80-120	mg/kg	
Trichlorofluoromethane	0.06000	0.05963	99	80-120	mg/kg	
1,1-Dichloroethene	0.06000	0.05888	98	80-120	mg/kg	
Methylene Chloride	0.06000	0.05612	94	80-120	mg/kg	
trans-1,2-Dichloroethene	0.06000	0.05910	99	80-120	mg/kg	
Methyl-t-butyl ether	0.06000	0.07385	123	80-120	mg/kg	X
1,1-Dichloroethane	0.06000	0.05841	97	80-120	mg/kg	
2-Butanone	0.06000	0.04851	81	80-120	mg/kg	
cis-1,2-Dichloroethene	0.06000	0.05871	98	80-120	mg/kg	
Bromochloromethane	0.06000	0.05903	98	80-120	mg/kg	
Chloroform	0.06000	0.05690	95	80-120	mg/kg	
1,1,1-Trichloroethane	0.06000	0.06287	105	80-120	mg/kg	
1,2-Dichloroethane	0.06000	0.05881	98	80-120	mg/kg	
Carbon Tetrachloride	0.06000	0.06221	104	80-120	mg/kg	
Benzene	0.06000	0.05903	98	80-120	mg/kg	
1,2-Dichloropropane	0.06000	0.06070	101	80-120	mg/kg	
Carbon Disulfide	0.06000	0.06052	101	80-120	mg/kg	
Methylcyclohexane	0.06000	0.06061	101	80-120	mg/kg	
Trichloroethene	0.06000	0.06061	101	80-120	mg/kg	
Methyl Acetate	0.06000	0.05500	92	80-120	mg/kg	
Bromodichloromethane	0.06000	0.06228	104	80-120	mg/kg	
cis-1,3-Dichloropropene	0.06000	0.05777	96	80-120	mg/kg	
4-Methyl-2-Pentanone	0.06000	0.05201	87	80-120	mg/kg	
trans-1,3-Dichloropropene	0.06000	0.05586	93	80-120	mg/kg	
1,1,2-Trichloroethane	0.06000	0.05868	98	80-120	mg/kg	
Toluene	0.06000	0.05829	97	80-120	mg/kg	
2-Hexanone	0.06000	0.05223	87	80-120	mg/kg	
1,2-Dibromoethane	0.06000	0.06381	106	80-120	mg/kg	
Dibromochloromethane	0.06000	0.05847	97	80-120	mg/kg	
Bromoform	0.06000	0.05783	96	80-120	mg/kg	
Tetrachloroethene	0.06000	0.05982	100	80-120	mg/kg	
Chlorobenzene	0.06000	0.06205	103	80-120	mg/kg	
Ethylbenzene	0.06000	0.06135	102	80-120	mg/kg	
m,p-Xylenes	0.1200	0.1248	104	80-120	mg/kg	
Styrene	0.06000	0.06236	104	80-120	mg/kg	
1,1,2,2-Tetrachloroethane	0.06000	0.05843	97	80-120	mg/kg	
o-Xylene	0.06000	0.06188	103	80-120	mg/kg	
Isopropylbenzene	0.06000	0.06108	102	80-120	mg/kg	
1,3-Dichlorobenzene	0.06000	0.06031	101	80-120	mg/kg	
1,4-Dichlorobenzene	0.06000	0.05995	100	80-120	mg/kg	
1,2-Dichlorobenzene	0.06000	0.05981	100	80-120	mg/kg	
1,2-Dibromo-3-Chloropropane	0.06000	0.05473	91	80-120	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.05762	96	80-120	mg/kg	
Naphthalene	0.06000	0.05729	95	80-120	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D

Seq Number: 197874 Matrix: Solid

CCV Sample Id: CCV, VOC-1 Analyzed Date: 10/03/22 14:04

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,2,3-Trichlorobenzene	0.06000	0.05752	96	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	97	80-120	%	
Dibromofluoromethane	98	80-120	%	
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 196353 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	54.16	108	70-130	ug/L	
Benzene	50.00	56.25	113	70-130	ug/L	
Bromochloromethane	50.00	56.97	114	70-130	ug/L	
Bromodichloromethane	50.00	57.61	115	70-130	ug/L	
Bromoform	50.00	54.78	110	70-130	ug/L	
Bromomethane	50.00	56.21	112	70-130	ug/L	
2-Butanone (MEK)	50.00	54.55	109	70-130	ug/L	
Carbon Disulfide	50.00	58.56	117	70-130	ug/L	
Carbon tetrachloride	50.00	57.52	115	70-130	ug/L	
Chlorobenzene	50.00	56.07	112	70-130	ug/L	
Chloroethane	50.00	53.53	107	70-130	ug/L	
Chloroform	50.00	54.47	109	70-130	ug/L	
Chloromethane	50.00	55.09	110	70-130	ug/L	
Cyclohexane	50.00	57.86	116	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	56.55	113	70-130	ug/L	
Dibromochloromethane	50.00	55.02	110	70-130	ug/L	
1,2-Dibromoethane	50.00	58.74	117	70-130	ug/L	
1,2-Dichlorobenzene	50.00	58.38	117	70-130	ug/L	
1,3-Dichlorobenzene	50.00	57.53	115	70-130	ug/L	
Dichlorodifluoromethane	50.00	54.21	108	70-130	ug/L	
1,4-Dichlorobenzene	50.00	57.33	115	70-130	ug/L	
1,1-Dichloroethane	50.00	56.41	113	70-130	ug/L	
1,2-Dichloroethane	50.00	54.50	109	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	57.31	115	70-130	ug/L	
1,1-Dichloroethene	50.00	55.40	111	70-130	ug/L	
1,2-Dichloropropane	50.00	57.29	115	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	55.82	112	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	55.72	111	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	56.84	114	70-130	ug/L	
Ethylbenzene	50.00	56.70	113	70-130	ug/L	
2-Hexanone (MBK)	50.00	56.67	113	70-130	ug/L	
Isopropylbenzene	50.00	59.62	119	70-130	ug/L	
Methyl Acetate	50.00	59.73	119	70-130	ug/L	
Methylcyclohexane	50.00	56.82	114	70-130	ug/L	
Methylene chloride	50.00	56.18	112	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	58.27	117	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	59.91	120	70-130	ug/L	
Naphthalene	50.00	58.87	118	70-130	ug/L	
Styrene	50.00	58.77	118	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	59.48	119	70-130	ug/L	
Tetrachloroethene	50.00	55.17	110	70-130	ug/L	
Toluene	50.00	55.21	110	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	58.23	116	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	57.72	115	70-130	ug/L	
1,1,1-Trichloroethane	50.00	56.98	114	70-130	ug/L	
Trichloroethene	50.00	56.37	113	70-130	ug/L	
1,1,2-Trichloroethane	50.00	56.36	113	70-130	ug/L	
Trichlorofluoromethane	50.00	54.73	109	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	55.17	110	70-130	ug/L	
Vinyl chloride	50.00	52.14	104	70-130	ug/L	
m&p-Xylene	100	112.6	113	70-130	ug/L	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D

Seq Number: 196353 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/15/22 13:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	56.32	113	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	102	70-130	%	
Dibromofluoromethane	101	70-130	%	
Toluene-D8	99	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 197640 Matrix: Solid

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 09/25/22 11:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	0.06000	0.04862	81	70-130	mg/kg	
Benzene	0.06000	0.06041	101	70-130	mg/kg	
Bromochloromethane	0.06000	0.06107	102	70-130	mg/kg	
Bromodichloromethane	0.06000	0.06132	102	70-130	mg/kg	
Bromoform	0.06000	0.05140	86	70-130	mg/kg	
Bromomethane	0.06000	0.06906	115	70-130	mg/kg	
2-Butanone (MEK)	0.06000	0.04984	83	70-130	mg/kg	
Carbon Disulfide	0.06000	0.06375	106	70-130	mg/kg	
Carbon tetrachloride	0.06000	0.06109	102	70-130	mg/kg	
Chlorobenzene	0.06000	0.06184	103	70-130	mg/kg	
Chloroethane	0.06000	0.05806	97	70-130	mg/kg	
Chloroform	0.06000	0.05845	97	70-130	mg/kg	
Chloromethane	0.06000	0.05985	100	70-130	mg/kg	
Cyclohexane	0.06000	0.06077	101	70-130	mg/kg	
1,2-Dibromo-3-chloropropane	0.06000	0.05127	85	70-130	mg/kg	
Dibromochloromethane	0.06000	0.05324	89	70-130	mg/kg	
1,2-Dibromoethane	0.06000	0.06088	101	70-130	mg/kg	
1,2-Dichlorobenzene	0.06000	0.05957	99	70-130	mg/kg	
1,3-Dichlorobenzene	0.06000	0.05941	99	70-130	mg/kg	
1,4-Dichlorobenzene	0.06000	0.05963	99	70-130	mg/kg	
Dichlorodifluoromethane	0.06000	0.06248	104	70-130	mg/kg	
1,1-Dichloroethane	0.06000	0.06043	101	70-130	mg/kg	
1,2-Dichloroethane	0.06000	0.05730	96	70-130	mg/kg	
1,1-Dichloroethene	0.06000	0.05928	99	70-130	mg/kg	
1,2-Dichloropropane	0.06000	0.06090	102	70-130	mg/kg	
cis-1,2-Dichloroethene	0.06000	0.06149	102	70-130	mg/kg	
cis-1,3-Dichloropropene	0.06000	0.05532	92	70-130	mg/kg	
trans-1,2-Dichloroethene	0.06000	0.06126	102	70-130	mg/kg	
trans-1,3-Dichloropropene	0.06000	0.05213	87	70-130	mg/kg	
Ethylbenzene	0.06000	0.06074	101	70-130	mg/kg	
2-Hexanone (MBK)	0.06000	0.05102	85	70-130	mg/kg	
Isopropylbenzene	0.06000	0.06121	102	70-130	mg/kg	
Methyl Acetate	0.06000	0.05694	95	70-130	mg/kg	
Methylcyclohexane	0.06000	0.06272	105	70-130	mg/kg	
Methylene chloride	0.06000	0.05726	95	70-130	mg/kg	
4-Methyl-2-Pentanone (MIBK)	0.06000	0.05108	85	70-130	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.05336	89	70-130	mg/kg	
Naphthalene	0.06000	0.06193	103	70-130	mg/kg	
Styrene	0.06000	0.06015	100	70-130	mg/kg	
1,1,2,2-Tetrachloroethane	0.06000	0.05639	94	70-130	mg/kg	
Tetrachloroethene	0.06000	0.06084	101	70-130	mg/kg	
Toluene	0.06000	0.05984	100	70-130	mg/kg	
1,2,3-Trichlorobenzene	0.06000	0.05923	99	70-130	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.05926	99	70-130	mg/kg	
1,1,1-Trichloroethane	0.06000	0.06122	102	70-130	mg/kg	
1,1,2-Trichloroethane	0.06000	0.05958	99	70-130	mg/kg	
Trichloroethene	0.06000	0.05993	100	70-130	mg/kg	
Trichlorofluoromethane	0.06000	0.06138	102	70-130	mg/kg	
1,1,2-Trichlorotrifluoroethane	0.06000	0.06084	101	70-130	mg/kg	
Vinyl chloride	0.06000	0.06553	109	70-130	mg/kg	
m&p-Xylene	0.1200	0.1231	103	70-130	mg/kg	

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QC Summary

Project Name Philly Tank Farm
PSS Project No.: 22100301

Analytical Method: SW-846 8260 D

Seq Number: 197640 Matrix: Solid
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 09/25/22 11:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	0.06000	0.06011	100	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	70-130	%	
Dibromofluoromethane	98	70-130	%	
Toluene-D8	99	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: Ramboll | OFFICE LOCATION: Princeton, NJ 101 Carnegie Ctr. #200

BILL TO (if different): | PHONE #: (814)758-7321

CONTACT: Sam Weaver | EMAIL: sweaver@ramboll.com

PROJECT NAME: Philly Tank Farm | PROJECT #: 1690005561

SITE LOCATION: Philadelphia, PA | P.O. #:

SAMPLER(S): Bart Bancewicz, Ed Ruger | DW CERT #:

PSS Work Order #: 22100301 | PAGE 1 OF 1

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs	SVOCs	Lead
1	PESR_Tank056_SB05_0.5-1.0	9/30/22	930	S	5		X	X	X
2	PESR_Tank056_SB06_3.0-3.5		1030	S	5		X	X	X
3	EB01-20220930		1155	WQ	1			X	X (BB)
4	TB01-20220930		—	WQ	5		X		

Preservatives Use Codes — Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

Analysis/ Method Required

B B

9/30/22

⑤

Relinquished By:	Date	Time	Received By:
(1) B.B	9/30/22	1515	Fed Ex
(2) Fed Ex 278604785286, 278604785275	10/1/22	0830	
(3)	10/3/22	0845	
(4)			

④

Requested TAT (One TAT per COC): ☐ 5-Day ☐ 3-Day ☑ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☑ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE: EDD

Ice Present: PRES

Custody Seal: ABS

Coolers: 2 Temp: 4.1-5.6°C

Shipping Carrier: PSS

Special Instructions: Email results to tcarroll@ramboll.com

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: Philly Tank Farm
PSS Project No.: 22100301

Client Name Ramboll US Corp. - Princeton
Disposal Date 11/07/2022

Received By Jillian Chapman
Date Received 10/03/2022 08:45:00 AM
Delivered By PSS Personnel
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 2

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	5.6
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Bart Bancewicz/Ed Ruger
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	4
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	13

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Preservative not indicated on COC for VOC for sample 004. Received containers preserved with HCl.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 10/03/2022

PM Review and Approval: Amber Confer Date: 10/03/2022

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

November 17, 2022

Taylor Carroll
Ramboll US Consulting - Arlington
4245 N. Fairfax Drive, Ste. 700
Arlington, VA 22203

Reference: PSS Project No: **22111008**
Project Name: TANK 056
Project Location: Phili, PA
Project ID.: PESRM

Dear Taylor Carroll:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22111008**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 15, 2022, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: TANK 056
PSS Project No.: 22111008

Project ID: PESRM

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/10/2022 at 11:50 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22111008-001	PESR-TANK-056_SB19_0.5-2.0	SOIL	11/09/22 09:50
22111008-002	PESR-TANK-056_SB18_0.5-2.0	SOIL	11/09/22 12:00
22111008-003	PESR-TANK-056_SB14_0.5-2.0	SOIL	11/09/22 12:20
22111008-008	Trip_Blank-20220911	WATER	11/09/22 00:00
22111008-009	EB_20220911	GROUND WATER	11/09/22 15:00
22111008-010	DUP01-20220911	SOIL	11/09/22 12:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

Sample ID: PESR-TANK-056_SB19_0.5-2.0 Date/Time Sampled: 11/09/2022 09:50 PSS Sample ID: 22111008-001
Matrix: SOIL Date/Time Received: 11/10/2022 11:50 % Solids SM2540G-11: 91.0

Total Lead Analytical Method: SW-846 6020 B Preparation Method: SW3050B

Qualifier(s): See Batch 198998 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**180**	mg/kg	0.50		1	0.38	11/14/22	11/15/22 23:56	1064

Sample ID: PESR-TANK-056_SB18_0.5-2.0 Date/Time Sampled: 11/09/2022 12:00 PSS Sample ID: 22111008-002
Matrix: SOIL Date/Time Received: 11/10/2022 11:50 % Solids SM2540G-11: 74.4

Total Lead Analytical Method: SW-846 6020 B Preparation Method: SW3050B

Qualifier(s): See Batch 198998 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**540**	mg/kg	0.64		1	0.49	11/14/22	11/16/22 00:22	1064

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

Sample ID: PESR-TANK-056_SB14_0.5-2.0 Date/Time Sampled: 11/09/2022 12:20 PSS Sample ID: 22111008-003
Matrix: SOIL Date/Time Received: 11/10/2022 11:50 % Solids SM2540G-11: 69.8

Total Lead — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

Qualifier(s): See Batch 198998 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**190**	mg/kg	0.61		1	0.46	11/14/22	11/16/22 00:27	1064

VOC (select list) — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 198928 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/kg	0.0011		1	0.00049	11/14/22	11/14/22 17:52	1045
1,2-Dibromoethane	ND	mg/kg	0.0011		1	0.00057	11/14/22	11/14/22 17:52	1045
1,2-Dichloroethane	ND	mg/kg	0.0011		1	0.00041	11/14/22	11/14/22 17:52	1045
Ethylbenzene	ND	mg/kg	0.0011		1	0.00042	11/14/22	11/14/22 17:52	1045
Isopropylbenzene	ND	mg/kg	0.0011		1	0.00044	11/14/22	11/14/22 17:52	1045
Methyl-t-Butyl Ether	**0.0028**	mg/kg	0.0011		1	0.00043	11/14/22	11/14/22 17:52	1045
Naphthalene	ND	mg/kg	0.0011		1	0.00066	11/14/22	11/14/22 17:52	1045
Toluene	ND	mg/kg	0.0011		1	0.00051	11/14/22	11/14/22 17:52	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0011		1	0.00051	11/14/22	11/14/22 17:52	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.0011		1	0.00044	11/14/22	11/14/22 17:52	1045
m&p-Xylene	ND	mg/kg	0.0023		1	0.0013	11/14/22	11/14/22 17:52	1045
o-Xylene	ND	mg/kg	0.0011		1	0.00042	11/14/22	11/14/22 17:52	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*108*	*%*	*89-111*	*1*	*11/14/22*	*11/14/22 17:52*	*1045*
Dibromofluoromethane	*107*	*%*	*91-108*	*1*	*11/14/22*	*11/14/22 17:52*	*1045*
Toluene-D8	*100*	*%*	*93-104*	*1*	*11/14/22*	*11/14/22 17:52*	*1045*

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3550C

Qualifier(s): See Batch 198933 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/kg	0.012		1	0.0062	11/11/22	11/14/22 13:57	1070
Benzo(a)anthracene	**0.021**	mg/kg	0.012		1	0.0048	11/11/22	11/14/22 13:57	1070
Benzo(a)pyrene	**0.025**	mg/kg	0.012		1	0.0067	11/11/22	11/14/22 13:57	1070
Benzo(b)fluoranthene	**0.024**	mg/kg	0.012		1	0.0062	11/11/22	11/14/22 13:57	1070
Benzo(g,h,i)perylene	**0.020**	mg/kg	0.012		1	0.0086	11/11/22	11/14/22 13:57	1070
Chrysene	**0.023**	mg/kg	0.012		1	0.0057	11/11/22	11/14/22 13:57	1070

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

Sample ID: PESR-TANK-056_SB14_0.5-2.0 Date/Time Sampled: 11/09/2022 12:20 PSS Sample ID: 22111008-003
Matrix: SOIL Date/Time Received: 11/10/2022 11:50 % Solids SM2540G-11: 69.8

PAHs (select list) Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 198933 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluorene	ND	mg/kg	0.012		1	0.0081	11/11/22	11/14/22 13:57	1070
Indeno(1,2,3-c,d)pyrene	**0.021**	mg/kg	0.012		1	0.011	11/11/22	11/14/22 13:57	1070
Phenanthrene	**0.015**	mg/kg	0.012		1	0.0071	11/11/22	11/14/22 13:57	1070
Pyrene	**0.030**	mg/kg	0.012		1	0.0062	11/11/22	11/14/22 13:57	1070

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*80*	*%*	*52-109*	*1*	*11/11/22*	*11/14/22 13:57*	*1070*
2-Fluorophenol	*70*	*%*	*30-102*	*1*	*11/11/22*	*11/14/22 13:57*	*1070*
Nitrobenzene-d5	*74*	*%*	*39-101*	*1*	*11/11/22*	*11/14/22 13:57*	*1070*
Phenol-d6	*78*	*%*	*36-109*	*1*	*11/11/22*	*11/14/22 13:57*	*1070*
Terphenyl-D14	*95*	*%*	*66-121*	*1*	*11/11/22*	*11/14/22 13:57*	*1070*
2,4,6-Tribromophenol	*95*	*%*	*39-118*	*1*	*11/11/22*	*11/14/22 13:57*	*1070*

Sample ID: Trip_Blank-20220911 Date/Time Sampled: 11/09/2022 00:00 PSS Sample ID: 22111008-008
Matrix: WATER Date/Time Received: 11/10/2022 11:50

VOC (select list) Analytical Method: SW-846 8260 D Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/L	0.0010		1	0.00019	11/15/22	11/15/22 18:56	1011
1,2-Dibromoethane	ND	mg/L	0.0010		1	0.00022	11/15/22	11/15/22 18:56	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	0.00018	11/15/22	11/15/22 18:56	1011
Ethylbenzene	ND	mg/L	0.0010		1	0.00015	11/15/22	11/15/22 18:56	1011
Isopropylbenzene	ND	mg/L	0.0010		1	0.00013	11/15/22	11/15/22 18:56	1011
Methyl-t-Butyl Ether	ND	mg/L	0.0010		1	0.00017	11/15/22	11/15/22 18:56	1011
Naphthalene	ND	mg/L	0.0010		1	0.0002	11/15/22	11/15/22 18:56	1011
Toluene	ND	mg/L	0.0010		1	0.00052	11/15/22	11/15/22 18:56	1011
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	0.00017	11/15/22	11/15/22 18:56	1011
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	0.00015	11/15/22	11/15/22 18:56	1011
m&p-Xylene	ND	mg/L	0.0020		1	0.0004	11/15/22	11/15/22 18:56	1011
o-Xylene	ND	mg/L	0.0010		1	0.00018	11/15/22	11/15/22 18:56	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*112*	*%*	*88-120*	*1*	*11/15/22*	*11/15/22 18:56*	*1011*
Dibromofluoromethane	*97*	*%*	*92-107*	*1*	*11/15/22*	*11/15/22 18:56*	*1011*
Toluene-D8	*98*	*%*	*95-106*	*1*	*11/15/22*	*11/15/22 18:56*	*1011*

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

Sample ID: EB_20220911 **Date/Time Sampled: 11/09/2022 15:00** **PSS Sample ID: 22111008-009**
Matrix: GROUND WATER **Date/Time Received: 11/10/2022 11:50**

Total Lead — Analytical Method: SW-846 6020 B — Preparation Method: SW3010A

Qualifier(s): See Batch 198994 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**0.019**	mg/L	0.0010		1	0.00039	11/14/22	11/16/22 18:05	1064

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3510C

Qualifier(s): See Batch 198980 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/L	0.00025		1	0.0001	11/15/22	11/15/22 17:11	1070
Benzo(a)anthracene	ND	mg/L	0.00025		1	0.00009	11/15/22	11/15/22 17:11	1070
Benzo(a)pyrene	ND	mg/L	0.00025		1	0.00011	11/15/22	11/15/22 17:11	1070
Benzo(b)fluoranthene	ND	mg/L	0.00025		1	0.00013	11/15/22	11/15/22 17:11	1070
Benzo(g,h,i)perylene	ND	mg/L	0.00025		1	0.00013	11/15/22	11/15/22 17:11	1070
Chrysene	ND	mg/L	0.00025		1	0.0001	11/15/22	11/15/22 17:11	1070
Fluorene	ND	mg/L	0.00025		1	0.00013	11/15/22	11/15/22 17:11	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/L	0.00025		1	0.00022	11/15/22	11/15/22 17:11	1070
Phenanthrene	ND	mg/L	0.00025		1	0.00013	11/15/22	11/15/22 17:11	1070
Pyrene	ND	mg/L	0.00025		1	0.0001	11/15/22	11/15/22 17:11	1070

Surrogate(s)	***Recovery***		***Limits***				
2-Fluorobiphenyl	*79*	*%*	*59-108*	*1*	*11/15/22*	*11/15/22 17:11*	*1070*
2-Fluorophenol	*72*	*%*	*47-100*	*1*	*11/15/22*	*11/15/22 17:11*	*1070*
Nitrobenzene-d5	*69*	*%*	*47-108*	*1*	*11/15/22*	*11/15/22 17:11*	*1070*
Phenol-d6	*74*	*%*	*57-102*	*1*	*11/15/22*	*11/15/22 17:11*	*1070*
Terphenyl-D14	*91*	*%*	*77-120*	*1*	*11/15/22*	*11/15/22 17:11*	*1070*
2,4,6-Tribromophenol	*82*	*%*	*55-120*	*1*	*11/15/22*	*11/15/22 17:11*	*1070*

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

Sample ID: DUP01-20220911 **Date/Time Sampled: 11/09/2022 12:20** **PSS Sample ID: 22111008-010**
Matrix: SOIL **Date/Time Received: 11/10/2022 11:50** **% Solids SM2540G-11: 67.9**

Total Lead — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

Qualifier(s): See Batch 198998 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**140**	mg/kg	0.66		1	0.5	11/14/22	11/16/22 00:32	1064

VOC (select list) — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 198928 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/kg	0.0013		1	0.00056	11/14/22	11/14/22 18:14	1045
1,2-Dibromoethane	ND	mg/kg	0.0013		1	0.00065	11/14/22	11/14/22 18:14	1045
1,2-Dichloroethane	ND	mg/kg	0.0013		1	0.00047	11/14/22	11/14/22 18:14	1045
Ethylbenzene	ND	mg/kg	0.0013		1	0.00048	11/14/22	11/14/22 18:14	1045
Isopropylbenzene	ND	mg/kg	0.0013		1	0.00051	11/14/22	11/14/22 18:14	1045
Methyl-t-Butyl Ether	**0.0041**	mg/kg	0.0013		1	0.0005	11/14/22	11/14/22 18:14	1045
Naphthalene	ND	mg/kg	0.0013		1	0.00076	11/14/22	11/14/22 18:14	1045
Toluene	ND	mg/kg	0.0013		1	0.00059	11/14/22	11/14/22 18:14	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0013		1	0.00059	11/14/22	11/14/22 18:14	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.0013		1	0.00051	11/14/22	11/14/22 18:14	1045
m&p-Xylene	ND	mg/kg	0.0026		1	0.0014	11/14/22	11/14/22 18:14	1045
o-Xylene	ND	mg/kg	0.0013		1	0.00048	11/14/22	11/14/22 18:14	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*107*	*%*	*89-111*	*1*	*11/14/22*	*11/14/22 18:14*	*1045*
Dibromofluoromethane	*102*	*%*	*91-108*	*1*	*11/14/22*	*11/14/22 18:14*	*1045*
Toluene-D8	*101*	*%*	*93-104*	*1*	*11/14/22*	*11/14/22 18:14*	*1045*

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3550C

Qualifier(s): See Batch 198933 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/kg	0.012		1	0.0064	11/11/22	11/14/22 13:28	1070
Benzo(a)anthracene	**0.016**	mg/kg	0.012		1	0.0049	11/11/22	11/14/22 13:28	1070
Benzo(a)pyrene	**0.018**	mg/kg	0.012		1	0.0069	11/11/22	11/14/22 13:28	1070
Benzo(b)fluoranthene	**0.017**	mg/kg	0.012		1	0.0064	11/11/22	11/14/22 13:28	1070
Benzo(g,h,i)perylene	**0.013**	mg/kg	0.012		1	0.0088	11/11/22	11/14/22 13:28	1070
Chrysene	**0.017**	mg/kg	0.012		1	0.0059	11/11/22	11/14/22 13:28	1070

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Certificate of Analysis

Project Name: TANK 056
PSS Project No.: 22111008

Sample ID: DUP01-20220911 **Date/Time Sampled: 11/09/2022 12:20** **PSS Sample ID: 22111008-010**
Matrix: SOIL **Date/Time Received: 11/10/2022 11:50** **% Solids SM2540G-11: 67.9**

PAHs (select list) Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 198933 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluorene	ND	mg/kg	0.012		1	0.0083	11/11/22	11/14/22 13:28	1070
Indeno(1,2,3-c,d)pyrene	**0.015**	mg/kg	0.012		1	0.011	11/11/22	11/14/22 13:28	1070
Phenanthrene	**0.014**	mg/kg	0.012		1	0.0073	11/11/22	11/14/22 13:28	1070
Pyrene	**0.025**	mg/kg	0.012		1	0.0064	11/11/22	11/14/22 13:28	1070

Surrogate(s)	***Recovery***		***Limits***				
2-Fluorobiphenyl	*73*	*%*	*52-109*		*1*	*11/11/22*	*11/14/22 13:28*	*1070*
2-Fluorophenol	*65*	*%*	*30-102*		*1*	*11/11/22*	*11/14/22 13:28*	*1070*
Nitrobenzene-d5	*67*	*%*	*39-101*		*1*	*11/11/22*	*11/14/22 13:28*	*1070*
Phenol-d6	*73*	*%*	*36-109*		*1*	*11/11/22*	*11/14/22 13:28*	*1070*
Terphenyl-D14	*87*	*%*	*66-121*		*1*	*11/11/22*	*11/14/22 13:28*	*1070*
2,4,6-Tribromophenol	*82*	*%*	*39-118*		*1*	*11/11/22*	*11/14/22 13:28*	*1070*

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Project Name: TANK 056

PSS Project No.: 22111008

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Preservative not indicated on COC for VOC for 008 and lead for sample 009. Received containers preserved with HCl and HNO3.

Analytical:

Total Metals

Batch: 198994
Matrix spike/matrix spike duplicate (MS/MSD) and/or Relative Percent Difference (RPD) exceedances identified; see QC summary.

Batch: 198998
The concentration of the following analyte(s) in the reference sample was greater than four times the matrix spike concentration : lead

Analytical:

VOC (select list)

Batch: 198928
Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Method exceedance: Laboratory control sample duplicate (LCSD) exceedance identified; see QC summary.

Analytical:

Polyaromatic Hydrocarbons (PAHs)

Batch: 198933
Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified,see QC summary.

Batch: 198980
Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: TANK 056
PSS Project No.: 22111008

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM2540G	PESR-TANK-056_SB19_0.5-2.0	Initial	22111008-001	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
	PESR-TANK-056_SB18_0.5-2.0	Initial	22111008-002	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
	PESR-TANK-056_SB14_0.5-2.0	Initial	22111008-003	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
	DUP01-20220911	Initial	22111008-010	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
	198931-1-BLK	BLK	198931-1-BLK	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
	13840-PEX-8-Subgrade D	MD	22111006-001 D	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
	13626-SB5-14' D	MD	22111014-017 D	S	198931	198931	11/14/2022 18:02	11/14/2022 18:02
SW-846 6020 B	93127-1-BKS	BKS	93127-1-BKS	W	93127	198994	11/14/2022 09:40	11/15/2022 15:00
	93127-1-BLK	BLK	93127-1-BLK	W	93127	198994	11/14/2022 09:40	11/15/2022 14:55
	EB_20220911 S	MS	22111008-009 S	W	93127	198994	11/14/2022 09:40	11/15/2022 15:09
	EB_20220911 SD	MSD	22111008-009 S	W	93127	198994	11/14/2022 09:40	11/15/2022 15:14
	PESR-TANK-056_SB19_0.5-2.0	Initial	22111008-001	S	93133	198998	11/14/2022 10:20	11/15/2022 23:56
	PESR-TANK-056_SB18_0.5-2.0	Initial	22111008-002	S	93133	198998	11/14/2022 10:20	11/16/2022 00:22
	PESR-TANK-056_SB14_0.5-2.0	Initial	22111008-003	S	93133	198998	11/14/2022 10:20	11/16/2022 00:27
	DUP01-20220911	Initial	22111008-010	S	93133	198998	11/14/2022 10:20	11/16/2022 00:32
	93133-1-BKS	BKS	93133-1-BKS	S	93133	198998	11/14/2022 10:20	11/15/2022 23:51
	93133-1-BLK	BLK	93133-1-BLK	S	93133	198998	11/14/2022 10:20	11/15/2022 23:46
	PESR-TANK-056_SB19_0.5-2.0 S	MS	22111008-001 S	S	93133	198998	11/14/2022 10:20	11/16/2022 00:02
	PESR-TANK-056_SB19_0.5-2.0 SD	MSD	22111008-001 S	S	93133	198998	11/14/2022 10:20	11/16/2022 00:07
	EB_20220911	Reanalysis	22111008-009	W	93127	199036	11/14/2022 09:40	11/16/2022 18:05
SW-846 8260 D	PESR-TANK-056_SB14_0.5-2.0	Initial	22111008-003	S	93140	198928	11/14/2022 09:59	11/14/2022 17:52
	DUP01-20220911	Initial	22111008-010	S	93140	198928	11/14/2022 09:59	11/14/2022 18:14
	93140-1-BKS	BKS	93140-1-BKS	S	93140	198928	11/14/2022 09:59	11/14/2022 10:26
	93140-1-BLK	BLK	93140-1-BLK	S	93140	198928	11/14/2022 09:59	11/14/2022 13:02
	93140-1-BSD	BSD	93140-1-BSD	S	93140	198928	11/14/2022 09:59	11/14/2022 10:48
	GTA-SB-5 5-6 S	MS	22110919-001 S	S	93140	198928	11/14/2022 09:59	11/14/2022 11:10
	GTA-SB-5 5-6 SD	MSD	22110919-001 S	S	93140	198928	11/14/2022 09:59	11/14/2022 11:33
	Trip_Blank-20220911	Initial	22111008-008	W	93166	198981	11/15/2022 16:31	11/15/2022 18:56
	93166-1-BKS	BKS	93166-1-BKS	W	93166	198981	11/15/2022 16:31	11/15/2022 16:31
	93166-1-BLK	BLK	93166-1-BLK	W	93166	198981	11/15/2022 16:31	11/15/2022 18:10
	MW-55 S	MS	22110923-021 S	W	93166	198981	11/15/2022 16:31	11/15/2022 19:18
	MW-55 SD	MSD	22110923-021 S	W	93166	198981	11/15/2022 16:31	11/15/2022 19:41
SW-846 8270 E	PESR-TANK-056_SB14_0.5-2.0	Initial	22111008-003	S	93103	198933	11/11/2022 08:47	11/14/2022 13:57
	DUP01-20220911	Initial	22111008-010	S	93103	198933	11/11/2022 08:47	11/14/2022 13:28
	93103-1-BKS	BKS	93103-1-BKS	S	93103	198933	11/11/2022 08:47	11/14/2022 09:40
	93103-1-BLK	BLK	93103-1-BLK	S	93103	198933	11/11/2022 08:47	11/14/2022 09:12
	93103-1-BSD	BSD	93103-1-BSD	S	93103	198933	11/11/2022 08:47	11/14/2022 10:09
	13840-PEX-10-Subgrade S	MS	22111[illegible]	S	93103	198933	11/11/2022 08:47	11/14/2022 10:37

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Lab Chronology

Project Name: TANK 056
PSS Project No.: 22111008

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8270 E	13840-PEX-10-Subgrade SD	MSD	22111006-002 S	S	93103	198933	11/11/2022 08:47	11/14/2022 11:06
	EB_20220911	Initial	22111008-009	W	93149	198980	11/15/2022 09:36	11/15/2022 17:11
	93149-1-BKS	BKS	93149-1-BKS	W	93149	198980	11/15/2022 09:36	11/15/2022 15:18
	93149-1-BLK	BLK	93149-1-BLK	W	93149	198980	11/15/2022 09:36	11/15/2022 14:49
	93149-1-BSD	BSD	93149-1-BSD	W	93149	198980	11/15/2022 09:36	11/15/2022 15:46

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QC Summary

Project Name TANK 056
PSS Project No.: 22111008

Analytical Method: SW-846 6020 B Prep Method: SW3010A
Seq Number: 198994 Matrix: Water Date Prep: 11/14/22
MB Sample Id: 93127-1-BLK LCS Sample Id: 93127-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3900	0.05000	0.05620	112	80-120	mg/L	

Analytical Method: SW-846 6020 B Prep Method: SW3050B
Seq Number: 198998 Matrix: Solid Date Prep: 11/14/22
MB Sample Id: 93133-1-BLK LCS Sample Id: 93133-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3118	21.90	21.63	99	80-120	mg/kg	

Analytical Method: SW-846 6020 B Prep Method: SW3010A
Seq Number: 198994 Matrix: Ground Water Date Prep: 11/14/22
Parent Sample Id: 22111008-009 MS Sample Id: 22111008-009 S MSD Sample Id: 22111008-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Lead	0.01953	0.05000	0.05603	73	0.05728	76	75-125	2	25	mg/L	X

Analytical Method: SW-846 6020 B Prep Method: SW3050B
Seq Number: 198998 Matrix: Soil Date Prep: 11/14/22
Parent Sample Id: 22111008-001 MS Sample Id: 22111008-001 S MSD Sample Id: 22111008-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Lead	181.4	24.45	290.4	446	217.1	133	75-125	29	30	mg/kg	X

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QC Summary

Project Name TANK 056
PSS Project No.: 22111008

Analytical Method: SW-846 8270 E Prep Method: SW3550C
Seq Number: 198933 Matrix: Solid Date Prep: 11/11/22
MB Sample Id: 93103-1-BLK LCS Sample Id: 93103-1-BKS LCSD Sample Id: 93103-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Anthracene	<0.004328	1.331	1.096	82	1.061	80	77-116	3	25	mg/kg	
Benzo(a)anthracene	<0.003329	1.331	1.250	94	1.167	88	77-124	7	25	mg/kg	
Benzo(a)pyrene	<0.004660	1.331	1.252	94	1.173	88	91-141	7	25	mg/kg	L
Benzo(b)fluoranthene	<0.004328	1.331	1.102	83	1.026	77	80-142	7	25	mg/kg	L
Benzo(g,h,i)perylene	<0.005992	1.331	1.261	95	1.171	88	83-134	7	25	mg/kg	
Chrysene	<0.003995	1.331	1.236	93	1.168	88	77-122	6	25	mg/kg	
Fluorene	<0.005659	1.331	1.044	78	1.008	76	74-120	4	25	mg/kg	
Indeno(1,2,3-c,d)pyrene	<0.007656	1.331	1.177	88	1.043	78	80-144	12	25	mg/kg	L
Phenanthrene	<0.004993	1.331	1.040	78	1.008	76	75-109	3	25	mg/kg	
Pyrene	<0.004328	1.331	1.195	90	1.152	86	76-120	4	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	84		89		81		52-109	%
2-Fluorophenol	80		83		72		30-102	%
Nitrobenzene-d5	79		81		72		39-101	%
Phenol-d6	85		79		75		36-109	%
Terphenyl-D14	90		97		93		66-121	%
2,4,6-Tribromophenol	80		113		97		39-118	%

Analytical Method: SW-846 8270 E Prep Method: SW3510C
Seq Number: 198980 Matrix: Water Date Prep: 11/15/22
MB Sample Id: 93149-1-BLK LCS Sample Id: 93149-1-BKS LCSD Sample Id: 93149-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Anthracene	<0.1000	0.04000	0.03043	76	0.03164	79	75-114	4	20	mg/L	
Benzo(a)anthracene	<0.09000	0.04000	0.03235	81	0.03285	82	77-116	2	20	mg/L	
Benzo(a)pyrene	<0.1100	0.04000	0.03307	83	0.03393	85	84-138	3	20	mg/L	L
Benzo(b)fluoranthene	<0.1300	0.04000	0.02915	73	0.02904	73	77-139	0	20	mg/L	L
Benzo(g,h,i)perylene	<0.1300	0.04000	0.03274	82	0.03369	84	79-127	3	20	mg/L	
Chrysene	<0.1000	0.04000	0.03263	82	0.03328	83	76-121	2	20	mg/L	
Fluorene	<0.1300	0.04000	0.03015	75	0.03132	78	75-116	4	20	mg/L	
Indeno(1,2,3-c,d)Pyrene	<0.2200	0.04000	0.02994	75	0.03035	76	74-137	1	20	mg/L	
Phenanthrene	<0.1300	0.04000	0.02873	72	0.02994	75	69-116	4	20	mg/L	
Pyrene	<0.1000	0.04000	0.03230	81	0.03346	84	80-114	4	20	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	74		83		81		59-108	%
2-Fluorophenol	66		72		75		47-100	%
Nitrobenzene-d5	66		73		72		47-108	%
Phenol-d6	72		76		78		57-102	%
Terphenyl-D14	82		86		86		77-120	%
2,4,6-Tribromophenol	76		95		91		55-120	%

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QC Summary

Project Name TANK 056
PSS Project No.: 22111008

Analytical Method: SW-846 8260 D Prep Method: SW5030
Seq Number: 198928 Matrix: Solid Date Prep: 11/14/22
MB Sample Id: 93140-1-BLK LCS Sample Id: 93140-1-BKS LCSD Sample Id: 93140-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Benzene	<0.00043	0.06000	0.05927	99	0.06040	101	85-118	2	25	mg/kg	
1,2-Dibromoethane	<0.0005	0.06000	0.06840	114	0.06945	116	87-117	2	25	mg/kg	
1,2-Dichloroethane	<0.00036	0.06000	0.06000	100	0.06092	102	85-118	2	25	mg/kg	
Ethylbenzene	<0.00037	0.06000	0.06601	110	0.06566	109	87-121	1	25	mg/kg	
Isopropylbenzene	<0.00039	0.06000	0.06490	108	0.06543	109	85-121	1	25	mg/kg	
Methyl-t-Butyl Ether	<0.00038	0.06000	0.06086	101	0.04964	83	74-122	20	25	mg/kg	
Naphthalene	<0.00058	0.06000	0.06726	112	0.06720	112	77-120	0	25	mg/kg	
Toluene	<0.00045	0.06000	0.06292	105	0.06266	104	84-118	0	25	mg/kg	
1,2,4-Trichlorobenzene	<0.00045	0.06000	0.06418	107	0.06295	105	82-131	2	25	mg/kg	
1,3,5-Trimethylbenzene	<0.00039	0.06000	0.06726	112	0.06637	111	85-120	1	25	mg/kg	
m&p-Xylene	<0.001100	0.1200	0.1307	109	0.1344	112	86-123	3	25	mg/kg	
o-Xylene	<0.00037	0.06000	0.06553	109	0.06495	108	84-121	1	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
4-Bromofluorobenzene	107		104		102		89-111	%
Dibromofluoromethane	101		93		103		91-108	%
Toluene-D8	93		99		98		93-104	%

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 198981 Matrix: Water Date Prep: 11/15/22
MB Sample Id: 93166-1-BLK LCS Sample Id: 93166-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Benzene	<0.1900	0.05000	0.05354	107	76-112	mg/L	
1,2-Dibromoethane	<0.2200	0.05000	0.05048	101	77-119	mg/L	
1,2-Dichloroethane	<0.1800	0.05000	0.04990	100	72-115	mg/L	
Ethylbenzene	<0.1500	0.05000	0.05112	102	78-118	mg/L	
Isopropylbenzene	<0.1300	0.05000	0.05003	100	76-126	mg/L	
Methyl-t-Butyl Ether	<0.1700	0.05000	0.04718	94	71-114	mg/L	
Naphthalene	<0.2000	0.05000	0.04647	93	60-122	mg/L	
Toluene	<0.5200	0.05000	0.05054	101	77-112	mg/L	
1,2,4-Trimethylbenzene	<0.1700	0.05000	0.04919	98	76-127	mg/L	
1,3,5-Trimethylbenzene	<0.1500	0.05000	0.04946	99	76-126	mg/L	
m&p-Xylene	<0.4000	0.1000	0.1015	102	79-121	mg/L	
o-Xylene	<0.1800	0.05000	0.05034	101	78-122	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	108		102		88-120	%
Dibromofluoromethane	99		95		92-107	%
Toluene-D8	100		100		95-106	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: SW-846 6020 B
Seq Number: 198994 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 11/15/22 15:47

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	110	110	90-110	ug/L	

Analytical Method: SW-846 6020 B
Seq Number: 198998 Matrix: Solid
CCV Sample Id: CCV 1 Analyzed Date: 11/15/22 23:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	96.33	96	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 198998 Matrix: Solid
CCV Sample Id: CCV 2 Analyzed Date: 11/16/22 00:43

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	105	105	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 198998 Matrix: Solid
CCV Sample Id: CCV 3 Analyzed Date: 11/16/22 01:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	96.97	97	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 198998 Matrix: Solid
CCV Sample Id: CCV 4 Analyzed Date: 11/16/22 02:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	106.4	106	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 199036 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 11/16/22 17:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	194.2	97	90-110	ug/L	
Iron	1000	1029	103	90-110	ug/L	
Lead	100	102.5	103	90-110	ug/L	

Analytical Method: SW-846 6020 B
Seq Number: 199036 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 11/16/22 18:20

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	197.8	99	90-110	ug/L	
Iron	1000	1037	104	90-110	ug/L	
Lead	100	103.5	104	90-110	ug/L	

Analytical Method: SW-846 6020 B
Seq Number: 199036 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 11/16/22 19:32

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	198.5	99	90-110	ug/L	
Iron	1000	1039	104	90-110	ug/L	
Lead	100	105.7	106	90-110	ug/L	

Analytical Method: SW-846 6020 B
Seq Number: 198994 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/15/22 12:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	49.66	99	90-110	ug/L	

Analytical Method: SW-846 6020 B
Seq Number: 198998 Matrix: Solid
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/15/22 23:09

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	46.81	94	90-110	ug/kg	

Analytical Method: SW-846 6020 B

Seq Number: 199036 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 11/16/22 15:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	100	93.13	93	90-110	ug/L	
Iron	500	501.1	100	90-110	ug/L	
Lead	50.00	47.27	95	90-110	ug/L	

Analytical Method: SW-846 8270 E

Seq Number: 198933 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 11/14/22 08:43

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Anthracene	40.00	37.81	95	80-120	mg/kg	
Benzo(a)anthracene	40.00	40.49	101	80-120	mg/kg	
Benzo(a)pyrene	40.00	34.99	87	80-120	mg/kg	
Benzo(b)fluoranthene	40.00	36.76	92	80-120	mg/kg	
Benzo(g,h,i)perylene	40.00	40.43	101	80-120	mg/kg	
Chrysene	40.00	39.41	99	80-120	mg/kg	
Fluorene	40.00	38.00	95	80-120	mg/kg	
Indeno(1,2,3-c,d)pyrene	40.00	34.98	87	80-120	mg/kg	
Phenanthrene	40.00	35.74	89	80-120	mg/kg	
Pyrene	40.00	40.72	102	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	93	80-120	%	
2-Fluorophenol	91	80-120	%	
Nitrobenzene-d5	89	80-120	%	
Phenol-d6	94	80-120	%	
Terphenyl-D14	99	80-120	%	
2,4,6-Tribromophenol	110	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 198980 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 11/15/22 11:30

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Anthracene	40000	36930	92	80-120	ug/L	
Benzo(a)anthracene	40000	40790	102	80-120	ug/L	
Benzo(a)pyrene	40000	35580	89	80-120	ug/L	
Benzo(b)fluoranthene	40000	39440	99	80-120	ug/L	
Benzo(g,h,i)perylene	40000	41080	103	80-120	ug/L	
Chrysene	40000	40030	100	80-120	ug/L	
Fluorene	40000	36070	90	80-120	ug/L	
Indeno(1,2,3-c,d)Pyrene	40000	37820	95	80-120	ug/L	
Phenanthrene	40000	34540	86	80-120	ug/L	
Pyrene	40000	39220	98	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	92	80-120	%	
2-Fluorophenol	95	80-120	%	
Nitrobenzene-d5	94	80-120	%	
Phenol-d6	91	80-120	%	
Terphenyl-D14	98	80-120	%	
2,4,6-Tribromophenol	117	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 196948 Matrix: Solid

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 09/02/22 20:46

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Anthracene	40.00	36.04	90	70-130	mg/kg	
Benzo(a)anthracene	40.00	39.97	100	70-130	mg/kg	
Benzo(a)pyrene	40.00	43.73	109	70-130	mg/kg	
Benzo(b)fluoranthene	40.00	38.66	97	70-130	mg/kg	
Benzo(g,h,i)perylene	40.00	42.60	107	70-130	mg/kg	
Chrysene	40.00	39.47	99	70-130	mg/kg	
Fluorene	40.00	35.19	88	70-130	mg/kg	
Indeno(1,2,3-c,d)pyrene	40.00	38.27	96	70-130	mg/kg	
Phenanthrene	40.00	33.89	85	70-130	mg/kg	
Pyrene	40.00	39.49	99	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	91	70-130	%	
2-Fluorophenol	95	70-130	%	
Nitrobenzene-d5	96	70-130	%	
Phenol-d6	92	70-130	%	
Terphenyl-D14	100	70-130	%	
2,4,6-Tribromophenol	108	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 198928 Matrix: Solid

CCV Sample Id: CCV, VOC-1 Analyzed Date: 11/14/22 09:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Benzene	0.06000	0.05907	98	80-120	mg/kg	
1,2-Dibromoethane	0.06000	0.06944	116	80-120	mg/kg	
1,2-Dichloroethane	0.06000	0.06004	100	80-120	mg/kg	
Ethylbenzene	0.06000	0.06487	108	80-120	mg/kg	
Isopropylbenzene	0.06000	0.06482	108	80-120	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.06386	106	80-120	mg/kg	
Naphthalene	0.06000	0.06844	114	80-120	mg/kg	
Toluene	0.06000	0.06107	102	80-120	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.06330	106	80-120	mg/kg	
1,3,5-Trimethylbenzene	0.06000	0.06736	112	80-120	mg/kg	
m&p-Xylene	0.1200	0.1309	109	80-120	mg/kg	
o-Xylene	0.06000	0.06158	103	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	104	80-120	%	
Dibromofluoromethane	98	80-120	%	
Toluene-D8	97	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 198981 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 11/15/22 16:31

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Benzene	50.00	53.54	107	80-120	ug/L	
1,2-Dibromoethane	50.00	50.48	101	80-120	ug/L	
1,2-Dichloroethane	50.00	49.90	100	80-120	ug/L	
Ethylbenzene	50.00	51.12	102	80-120	ug/L	
Isopropylbenzene	50.00	50.03	100	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	47.18	94	80-120	ug/L	
Naphthalene	50.00	46.47	93	80-120	ug/L	
Toluene	50.00	50.54	101	80-120	ug/L	
1,2,4-Trimethylbenzene	50.00	49.19	98	80-120	ug/L	
1,3,5-Trimethylbenzene	50.00	49.46	99	80-120	ug/L	
m&p-Xylene	100	101.5	102	80-120	ug/L	
o-Xylene	50.00	50.34	101	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	102	80-120	%	
Dibromofluoromethane	95	80-120	%	
Toluene-D8	100	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 198170 Matrix: Solid
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/16/22 18:06

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Benzene	0.06000	0.05928	99	70-130	mg/kg	
1,2-Dibromoethane	0.06000	0.06435	107	70-130	mg/kg	
1,2-Dichloroethane	0.06000	0.06071	101	70-130	mg/kg	
Ethylbenzene	0.06000	0.06225	104	70-130	mg/kg	
Isopropylbenzene	0.06000	0.05938	99	70-130	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.06099	102	70-130	mg/kg	
Naphthalene	0.06000	0.07509	125	70-130	mg/kg	
Toluene	0.06000	0.06020	100	70-130	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.06908	115	70-130	mg/kg	
1,3,5-Trimethylbenzene	0.06000	0.06156	103	70-130	mg/kg	
m&p-Xylene	0.1200	0.1225	102	70-130	mg/kg	
o-Xylene	0.06000	0.06193	103	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	99	70-130	%	
Dibromofluoromethane	101	70-130	%	
Toluene-D8	102	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 198854 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 11/10/22 08:02

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Benzene	50.00	50.25	101	70-130	ug/L	
1,2-Dibromoethane	50.00	54.46	109	70-130	ug/L	
1,2-Dichloroethane	50.00	49.38	99	70-130	ug/L	
Ethylbenzene	50.00	56.53	113	70-130	ug/L	
Isopropylbenzene	50.00	56.93	114	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	52.12	104	70-130	ug/L	
Naphthalene	50.00	55.56	111	70-130	ug/L	
Toluene	50.00	52.39	105	70-130	ug/L	
1,2,4-Trimethylbenzene	50.00	57.81	116	70-130	ug/L	
1,3,5-Trimethylbenzene	50.00	55.10	110	70-130	ug/L	
m&p-Xylene	100	111.7	112	70-130	ug/L	
o-Xylene	50.00	56.92	114	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	100	70-130	%	
Dibromofluoromethane	93	70-130	%	
Toluene-D8	96	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: Ramboll | OFFICE LOCATION: Arlington | PSS Work Order #: 2211008 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 914 374 0003

CONTACT: T. Carroll | EMAIL: Tcarroll@ramboll.com

PROJECT NAME: TANK 056 | PROJECT #: PESRM

SITE LOCATION: Phili, PA | P.O. #:

SAMPLER(S): T. Carroll Jansen C. | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

Preservatives Use Codes: 9

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Lead	Short list VOC	Short list SVOC	TRIP blank								
1	PESR-TANK056_SB19_0.5-2.0	11/9/22	0950	SOL	1	G	✓											
2	PESR-TANK056-SB18-0.5-2.0	11/9/22	1200	SOL	1	G	✓											
3	PESR-TANK056-SB14-0.5-2.0	11/9/22	1230	SOL	5	G	✓	✓	✓									
4	PESR-TANK056-SB14-2.0-4.0	11/9/22	1230	SOL	5	G	✓	✓	✓									Place onhold
5	PESR-TANK056-SB15-0.5-2.0	11/9/22	1325 1315 TR	SOL	5	G	✓	✓	✓									Place onhold
6	PESR-TANK056-SB16-0.5-2.0	11/9/22	1305	SOL	5	G	✓	✓	✓									Place on hold
7	PESR-TANK056-SB17-0.5-2.0	11/9/22	1315	SOL	5	G	✓	✓	✓									Place on hold
8	TRIP-BLANK-20220911	11/9/22	—	—	2	—				✓								
9	EB-20220911	11/9/22	1500	GW	2	G	✓		✓									
10	DUP01-20220911	11/9/22	1220	SOL	5	G	✓	✓	✓									

⑤

Relinquished By: (1)	Date	Time	Received By:
Taylor Surface	11/10/22	1000	
Relinquished By: (2)	Date	Time	Received By:
	11/10/22	1150	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)

☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Special Instructions:

Ice Present: PRES

Custody Seal: ABS

Coolers: 1 Temp: 1.2-2.9°C

Shipping Carrier: FED EX

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: TANK 056
PSS Project No.: 22111008

Client Name Ramboll US Consulting - Arlington
Disposal Date 12/15/2022

Received By Jillian Chapman
Date Received 11/10/2022 11:50:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Jillian Chapman

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	2.9
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	T. Carroll, Janson C.
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	10
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	42

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Preservative not indicated on COC for VOC for 008 and lead for sample 009. Received containers preserved with HCl and HNO3.

Samples Inspected/Checklist Completed By: Jillian Chapman Date: 11/10/2022

PM Review and Approval: Amber Zaffer Date: 11/10/2022

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Certificate of Analysis

Project Name: PESRM Tank 056A
PSS Project No.: 22121413

December 21, 2022

Taylor Carroll
Ramboll US Consulting - Arlington
4245 N. Fairfax Drive, Ste. 700
Arlington, VA 22203

Reference: PSS Project No: **22121413**
Project Name: PESRM Tank 056A
Project Location: Phili, PA

Dear Taylor Carroll:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **22121413**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 18, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: PESRM Tank 056A

PSS Project No.: 22121413

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/14/2022 at 12:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
22121413-001	PESRM-MW-01-121322	GROUND WATER	12/13/22 11:30
22121413-002	Trip-Blank-121322	WATER	12/13/22 00:00
22121413-003	EB-01-121322	GROUND WATER	12/13/22 11:45

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: PESRM Tank 056A
PSS Project No.: 22121413

Sample ID: PESRM-MW-01-121322 **Date/Time Sampled: 12/13/2022 11:30** **PSS Sample ID: 22121413-001**
Matrix: GROUND WATER **Date/Time Received: 12/14/2022 12:30**

Total Lead — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**8.1**	ug/L	1.0		1	0.39	12/15/22	12/16/22 17:42	1064

Dissolved Lead — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**2.1**	ug/L	1.0		1	0.39	12/19/22	12/19/22 23:37	1064

VOC (select list) — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/L	0.0010		1	0.00019	12/19/22	12/19/22 12:27	1011
1,2-Dibromoethane	ND	mg/L	0.0010		1	0.00022	12/19/22	12/19/22 12:27	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	0.00018	12/19/22	12/19/22 12:27	1011
Ethylbenzene	ND	mg/L	0.0010		1	0.00015	12/19/22	12/19/22 12:27	1011
Isopropylbenzene	**0.0011**	mg/L	0.0010		1	0.00013	12/19/22	12/19/22 12:27	1011
Methyl-t-Butyl Ether	**0.0024**	mg/L	0.0010		1	0.00017	12/19/22	12/19/22 12:27	1011
Naphthalene	ND	mg/L	0.0010		1	0.0002	12/19/22	12/19/22 12:27	1011
Toluene	ND	mg/L	0.0010		1	0.00052	12/19/22	12/19/22 12:27	1011
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	0.00017	12/19/22	12/19/22 12:27	1011
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	0.00015	12/19/22	12/19/22 12:27	1011
m&p-Xylene	ND	mg/L	0.0020		1	0.0004	12/19/22	12/19/22 12:27	1011
o-Xylene	ND	mg/L	0.0010		1	0.00018	12/19/22	12/19/22 12:27	1011

Surrogate(s)	***Recovery***		***Limits***				
4-Bromofluorobenzene	*101*	*%*	*88-120*	*1*	*12/19/22*	*12/19/22 12:27*	*1011*
Dibromofluoromethane	*105*	*%*	*92-107*	*1*	*12/19/22*	*12/19/22 12:27*	*1011*
Toluene-D8	*101*	*%*	*95-106*	*1*	*12/19/22*	*12/19/22 12:27*	*1011*

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Project Name: PESRM Tank 056A
PSS Project No.: 22121413

Sample ID: PESRM-MW-01-121322 **Date/Time Sampled: 12/13/2022 11:30** **PSS Sample ID: 22121413-001**
Matrix: GROUND WATER **Date/Time Received: 12/14/2022 12:30**

PAHs (select list) Analytical Method: SW-846 8270 E Preparation Method: SW3510C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/L	0.00025		1	0.0001	12/15/22	12/15/22 15:50	1070
Benzo(a)anthracene	ND	mg/L	0.00025		1	0.00009	12/15/22	12/15/22 15:50	1070
Benzo(a)pyrene	ND	mg/L	0.00025		1	0.00011	12/15/22	12/15/22 15:50	1070
Benzo(b)fluoranthene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 15:50	1070
Benzo(g,h,i)perylene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 15:50	1070
Chrysene	ND	mg/L	0.00025		1	0.0001	12/15/22	12/15/22 15:50	1070
Fluorene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 15:50	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/L	0.00025		1	0.00022	12/15/22	12/15/22 15:50	1070
Phenanthrene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 15:50	1070
Pyrene	ND	mg/L	0.00025		1	0.0001	12/15/22	12/15/22 15:50	1070

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*85*	*%*	*59-108*	*1*	*12/15/22*	*12/15/22 15:50*	*1070*
2-Fluorophenol	*72*	*%*	*47-100*	*1*	*12/15/22*	*12/15/22 15:50*	*1070*
Nitrobenzene-d5	*79*	*%*	*47-108*	*1*	*12/15/22*	*12/15/22 15:50*	*1070*
Phenol-d6	*81*	*%*	*57-102*	*1*	*12/15/22*	*12/15/22 15:50*	*1070*
Terphenyl-D14	*101*	*%*	*77-120*	*1*	*12/15/22*	*12/15/22 15:50*	*1070*
2,4,6-Tribromophenol	*90*	*%*	*55-120*	*1*	*12/15/22*	*12/15/22 15:50*	*1070*

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Project Name: PESRM Tank 056A
PSS Project No.: 22121413

Sample ID: Trip-Blank-121322 **Date/Time Sampled: 12/13/2022 00:00** **PSS Sample ID: 22121413-002**
Matrix: WATER **Date/Time Received: 12/14/2022 12:30**

VOC (select list) Analytical Method: SW-846 8260 D Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/L	0.0010		1	0.00019	12/19/22	12/19/22 12:50	1011
1,2-Dibromoethane	ND	mg/L	0.0010		1	0.00022	12/19/22	12/19/22 12:50	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	0.00018	12/19/22	12/19/22 12:50	1011
Ethylbenzene	ND	mg/L	0.0010		1	0.00015	12/19/22	12/19/22 12:50	1011
Isopropylbenzene	ND	mg/L	0.0010		1	0.00013	12/19/22	12/19/22 12:50	1011
Methyl-t-Butyl Ether	ND	mg/L	0.0010		1	0.00017	12/19/22	12/19/22 12:50	1011
Naphthalene	ND	mg/L	0.0010		1	0.0002	12/19/22	12/19/22 12:50	1011
Toluene	ND	mg/L	0.0010		1	0.00052	12/19/22	12/19/22 12:50	1011
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	0.00017	12/19/22	12/19/22 12:50	1011
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	0.00015	12/19/22	12/19/22 12:50	1011
m&p-Xylene	ND	mg/L	0.0020		1	0.0004	12/19/22	12/19/22 12:50	1011
o-Xylene	ND	mg/L	0.0010		1	0.00018	12/19/22	12/19/22 12:50	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*105*	*%*	*88-120*	*1*	*12/19/22*	*12/19/22 12:50*	*1011*
Dibromofluoromethane	*102*	*%*	*92-107*	*1*	*12/19/22*	*12/19/22 12:50*	*1011*
Toluene-D8	*102*	*%*	*95-106*	*1*	*12/19/22*	*12/19/22 12:50*	*1011*

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Project Name: PESRM Tank 056A
PSS Project No.: 22121413

Sample ID: EB-01-121322 **Date/Time Sampled: 12/13/2022 11:45** **PSS Sample ID: 22121413-003**
Matrix: GROUND WATER **Date/Time Received: 12/14/2022 12:30**

Total Lead — Analytical Method: EPA 200.8 — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	ND	ug/L	1.0		1	0.39	12/15/22	12/16/22 17:47	1064

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3510C

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/L	0.00025		1	0.0001	12/15/22	12/15/22 16:18	1070
Benzo(a)anthracene	ND	mg/L	0.00025		1	0.00009	12/15/22	12/15/22 16:18	1070
Benzo(a)pyrene	ND	mg/L	0.00025		1	0.00011	12/15/22	12/15/22 16:18	1070
Benzo(b)fluoranthene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 16:18	1070
Benzo(g,h,i)perylene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 16:18	1070
Chrysene	ND	mg/L	0.00025		1	0.0001	12/15/22	12/15/22 16:18	1070
Fluorene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 16:18	1070
Indeno(1,2,3-c,d)Pyrene	ND	mg/L	0.00025		1	0.00022	12/15/22	12/15/22 16:18	1070
Phenanthrene	ND	mg/L	0.00025		1	0.00013	12/15/22	12/15/22 16:18	1070
Pyrene	ND	mg/L	0.00025		1	0.0001	12/15/22	12/15/22 16:18	1070

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*81*	*%*	*59-108*	*1*	*12/15/22*	*12/15/22 16:18*	*1070*
2-Fluorophenol	*71*	*%*	*47-100*	*1*	*12/15/22*	*12/15/22 16:18*	*1070*
Nitrobenzene-d5	*78*	*%*	*47-108*	*1*	*12/15/22*	*12/15/22 16:18*	*1070*
Phenol-d6	*78*	*%*	*57-102*	*1*	*12/15/22*	*12/15/22 16:18*	*1070*
Terphenyl-D14	*96*	*%*	*77-120*	*1*	*12/15/22*	*12/15/22 16:18*	*1070*
2,4,6-Tribromophenol	*81*	*%*	*55-120*	*1*	*12/15/22*	*12/15/22 16:18*	*1070*

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Project Name: PESRM Tank 056A

PSS Project No.: 22121413

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: PESRM Tank 056A
PSS Project No.: 22121413

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	PESRM-MW-01-121322	Initial	22121413-001	W	93534	199826	12/15/2022 09:40	12/16/2022 17:42
	EB-01-121322	Initial	22121413-003	W	93534	199826	12/15/2022 09:40	12/16/2022 17:47
	93534-1-BKS	BKS	93534-1-BKS	W	93534	199826	12/15/2022 09:40	12/16/2022 17:11
	93534-1-BLK	BLK	93534-1-BLK	W	93534	199826	12/15/2022 09:40	12/16/2022 17:06
	001A S	MS	22121406-001 S	W	93534	199826	12/15/2022 09:40	12/16/2022 17:21
	001A SD	MSD	22121406-001 S	W	93534	199826	12/15/2022 09:40	12/16/2022 17:26
EPA 200.8 Dissolved	PESRM-MW-01-121322	Initial	22121413-001	W	93581	199859	12/19/2022 10:15	12/19/2022 23:37
	93581-1-BKS	BKS	93581-1-BKS	W	93581	199859	12/19/2022 10:15	12/19/2022 23:16
	93581-1-BLK	BLK	93581-1-BLK	W	93581	199859	12/19/2022 10:15	12/19/2022 23:11
	Parcel H Discharge 121322 S	MS	22121308-001 S	W	93581	199859	12/19/2022 10:15	12/19/2022 23:27
	Parcel H Discharge 121322 SD	MSD	22121308-001 S	W	93581	199859	12/19/2022 10:15	12/19/2022 23:32
SW-846 8260 D	PESRM-MW-01-121322	Initial	22121413-001	W	93598	199843	12/19/2022 09:59	12/19/2022 12:27
	Trip-Blank-121322	Initial	22121413-002	W	93598	199843	12/19/2022 09:59	12/19/2022 12:50
	93598-1-BKS	BKS	93598-1-BKS	W	93598	199843	12/19/2022 09:59	12/19/2022 09:59
	93598-1-BLK	BLK	93598-1-BLK	W	93598	199843	12/19/2022 09:59	12/19/2022 11:39
	RW-1 S	MS	22121906-001 S	W	93598	199843	12/19/2022 09:59	12/19/2022 17:40
	RW-1 SD	MSD	22121906-001 S	W	93598	199843	12/19/2022 09:59	12/19/2022 18:02
SW-846 8270 E	PESRM-MW-01-121322	Initial	22121413-001	W	93539	199758	12/15/2022 13:24	12/15/2022 15:50
	EB-01-121322	Initial	22121413-003	W	93539	199758	12/15/2022 13:24	12/15/2022 16:18
	93539-1-BKS	BKS	93539-1-BKS	W	93539	199758	12/15/2022 09:46	12/15/2022 13:03
	93539-1-BLK	BLK	93539-1-BLK	W	93539	199758	12/15/2022 09:46	12/15/2022 12:35
	93539-1-BSD	BSD	93539-1-BSD	W	93539	199758	12/15/2022 09:46	12/15/2022 13:31

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QC Summary

Project Name PESRM Tank 056A
PSS Project No.: 22121413

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 199826 Matrix: Water Date Prep: 12/15/22
MB Sample Id: 93534-1-BLK LCS Sample Id: 93534-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3900	50.00	54.88	110	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 199859 Matrix: Water Date Prep: 12/19/22
MB Sample Id: 93581-1-BLK LCS Sample Id: 93581-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3900	50.00	43.69	87	85-115	ug/L	

Analytical Method: SW-846 8270 E Prep Method: SW3510C
Seq Number: 199758 Matrix: Water Date Prep: 12/15/22
MB Sample Id: 93539-1-BLK LCS Sample Id: 93539-1-BKS LCSD Sample Id: 93539-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Anthracene	<0.1000	0.04000	0.03839	96	0.04077	102	75-114	6	20	mg/L	
Benzo(a)anthracene	<0.09000	0.04000	0.03628	91	0.03848	96	77-116	6	20	mg/L	
Benzo(a)pyrene	<0.1100	0.04000	0.04704	118	0.04967	124	84-138	5	20	mg/L	
Benzo(b)fluoranthene	<0.1300	0.04000	0.03685	92	0.03789	95	77-139	3	20	mg/L	
Benzo(g,h,i)perylene	<0.1300	0.04000	0.03910	98	0.04172	104	79-127	6	20	mg/L	
Chrysene	<0.1000	0.04000	0.03783	95	0.04038	101	76-121	7	20	mg/L	
Fluorene	<0.1300	0.04000	0.03684	92	0.03848	96	75-116	4	20	mg/L	
Indeno(1,2,3-c,d)Pyrene	<0.2200	0.04000	0.03887	97	0.04203	105	74-137	8	20	mg/L	
Phenanthrene	<0.1300	0.04000	0.03669	92	0.03846	96	69-116	5	20	mg/L	
Pyrene	<0.1000	0.04000	0.03807	95	0.04033	101	80-114	6	20	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	94		88		94		59-108	%
2-Fluorophenol	94		85		91		47-100	%
Nitrobenzene-d5	94		87		91		47-108	%
Phenol-d6	94		87		93		57-102	%
Terphenyl-D14	99		95		101		77-120	%
2,4,6-Tribromophenol	90		89		95		55-120	%

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QC Summary

Project Name PESRM Tank 056A
PSS Project No.: 22121413

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 199843
Matrix: Water
Date Prep: 12/19/22
MB Sample Id: 93598-1-BLK
LCS Sample Id: 93598-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Benzene	<0.1900	0.05000	0.04325	87	76-112	mg/L	
1,2-Dibromoethane	<0.2200	0.05000	0.04498	90	77-119	mg/L	
1,2-Dichloroethane	<0.1800	0.05000	0.04454	89	72-115	mg/L	
Ethylbenzene	<0.1500	0.05000	0.04634	93	78-118	mg/L	
Isopropylbenzene	<0.1300	0.05000	0.04723	94	76-126	mg/L	
Methyl-t-Butyl Ether	<0.1700	0.05000	0.04388	88	71-114	mg/L	
Naphthalene	<0.2000	0.05000	0.04575	92	60-122	mg/L	
Toluene	<0.5200	0.05000	0.04326	87	77-112	mg/L	
1,2,4-Trimethylbenzene	<0.1700	0.05000	0.04908	98	76-127	mg/L	
1,3,5-Trimethylbenzene	<0.1500	0.05000	0.04763	95	76-126	mg/L	
m&p-Xylene	<0.4000	0.1000	0.09250	93	79-121	mg/L	
o-Xylene	<0.1800	0.05000	0.04615	92	78-122	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	104		99		88-120	%
Dibromofluoromethane	103		100		92-107	%
Toluene-D8	100		100		95-106	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: EPA 200.8
Seq Number: 199826 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 12/16/22 16:56

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	100.5	101	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199826 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 12/16/22 18:42

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	91.23	91	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199826 Matrix: Water
CCV Sample Id: CCV 3 Analyzed Date: 12/16/22 19:49

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	102	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 199826 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 12/16/22 16:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	52.45	105	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199859 Matrix: Water
CCV Sample Id: CCV 4 Analyzed Date: 12/19/22 23:00

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	99.24	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved
Seq Number: 199859 Matrix: Water
CCV Sample Id: CCV 5 Analyzed Date: 12/20/22 00:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	109.7	110	85-115	ug/L	

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QC Summary

Project Name PESRM Tank 056A
PSS Project No.: 22121413

Analytical Method: EPA 200.8 Dissolved

Seq Number: 199859 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 12/19/22 19:24

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	50.52	101	90-110	ug/L	

Analytical Method: SW-846 8270 E

Seq Number: 199758 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 12/15/22 11:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Anthracene	40000	41510	104	80-120	ug/L	
Benzo(a)anthracene	40000	39690	99	80-120	ug/L	
Benzo(a)pyrene	40000	43230	108	80-120	ug/L	
Benzo(b)fluoranthene	40000	42010	105	80-120	ug/L	
Benzo(g,h,i)perylene	40000	42090	105	80-120	ug/L	
Chrysene	40000	40100	100	80-120	ug/L	
Fluorene	40000	40530	101	80-120	ug/L	
Indeno(1,2,3-c,d)Pyrene	40000	42410	106	80-120	ug/L	
Phenanthrene	40000	39140	98	80-120	ug/L	
Pyrene	40000	41770	104	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	101	80-120	%	
2-Fluorophenol	102	80-120	%	
Nitrobenzene-d5	102	80-120	%	
Phenol-d6	103	80-120	%	
Terphenyl-D14	105	80-120	%	
2,4,6-Tribromophenol	106	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 199711 Matrix: Solid
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 12/14/22 15:57

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Anthracene	40.00	40.48	101	70-130	mg/kg	
Benzo(a)anthracene	40.00	40.55	101	70-130	mg/kg	
Benzo(a)pyrene	40.00	43.57	109	70-130	mg/kg	
Benzo(b)fluoranthene	40.00	44.74	112	70-130	mg/kg	
Benzo(g,h,i)perylene	40.00	42.83	107	70-130	mg/kg	
Chrysene	40.00	40.02	100	70-130	mg/kg	
Fluorene	40.00	38.73	97	70-130	mg/kg	
Indeno(1,2,3-c,d)Pyrene	40.00	45.19	113	70-130	mg/kg	
Phenanthrene	40.00	38.69	97	70-130	mg/kg	
Pyrene	40.00	41.12	103	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	100	70-130	%	
2-Fluorophenol	102	70-130	%	
Nitrobenzene-d5	101	70-130	%	
Phenol-d6	101	70-130	%	
Terphenyl-D14	104	70-130	%	
2,4,6-Tribromophenol	109	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 199843 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 12/19/22 09:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Benzene	50.00	43.25	87	80-120	ug/L	
1,2-Dibromoethane	50.00	44.98	90	80-120	ug/L	
1,2-Dichloroethane	50.00	44.54	89	80-120	ug/L	
Ethylbenzene	50.00	46.34	93	80-120	ug/L	
Isopropylbenzene	50.00	47.23	94	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	43.88	88	80-120	ug/L	
Naphthalene	50.00	45.75	92	80-120	ug/L	
Toluene	50.00	43.26	87	80-120	ug/L	
1,2,4-Trimethylbenzene	50.00	49.08	98	80-120	ug/L	
1,3,5-Trimethylbenzene	50.00	47.63	95	80-120	ug/L	
m&p-Xylene	100	92.50	93	80-120	ug/L	
o-Xylene	50.00	46.15	92	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	99	80-120	%	
Dibromofluoromethane	100	80-120	%	
Toluene-D8	100	80-120	%	

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QC Summary

Project Name PESRM Tank 056A
PSS Project No.: 22121413

Analytical Method: SW-846 8260 D

Seq Number: 199729 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 12/14/22 19:08

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Benzene	50.00	52.64	105	70-130	ug/L	
1,2-Dibromoethane	50.00	52.84	106	70-130	ug/L	
1,2-Dichloroethane	50.00	48.44	97	70-130	ug/L	
Ethylbenzene	50.00	52.83	106	70-130	ug/L	
Isopropylbenzene	50.00	52.93	106	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	52.45	105	70-130	ug/L	
Naphthalene	50.00	56.23	112	70-130	ug/L	
Toluene	50.00	51.22	102	70-130	ug/L	
1,2,4-Trimethylbenzene	50.00	52.28	105	70-130	ug/L	
1,3,5-Trimethylbenzene	50.00	51.28	103	70-130	ug/L	
m&p-Xylene	100	104.7	105	70-130	ug/L	
o-Xylene	50.00	51.70	103	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	100	70-130	%	
Dibromofluoromethane	97	70-130	%	
Toluene-D8	99	70-130	%	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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①

PSS CLIENT: Ramboll	OFFICE LOCATION: Arlington, VA
BILL TO (if different):	PHONE #: 914 374 0003
CONTACT: T. Carroll	EMAIL: Tcarroll@ramboll.com
PROJECT NAME: PESRM Tank 056A	PROJECT #:
SITE LOCATION: Phili, PA	P.O. #:
SAMPLER(S): T. Carroll	DW CERT #:

PSS Work Order #: 22121413 PAGE 1 OF 1

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

②

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	Analysis/ Method Required ③											
								Target 11 ST VOC	Target 11 ST SVOC	Dissolved metals Lead	Total metals Lead								
1	PESRM-MW-01-121322	12/13/22	1130	GW	5	G		✓	✓	✓	✓								
2	TRIP-Blank-121322	12/13/22	—	—	2	—		✓											Trip blank
3	EB-01-121322	12/13/22	1145	GW	2	—			✓		✓								

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

	Date	Time	Received By:
Relinquished By: (1) T. Carroll	12/14/22	9:20	
Relinquished By: (2)	12/14	11:55	
Relinquished By: (3)	12/14/22	1230	
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Special Instructions:

Ice Present: Pres

Custody Seal: Abs

Coolers: 1 Temp: 0.4-2.1°C

Shipping Carrier: FTE

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation, including any and all attorney's and other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: PESRM Tank 056A
PSS Project No.: 22121413

Client Name Ramboll US Consulting - Arlington
Disposal Date 01/18/2023

Received By Marissa Vertucci
Date Received 12/14/2022 12:30:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	2.1
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Taylor Carroll
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	9

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	Yes
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 12/14/2022

PM Review and Approval: Lynn Jackson Date: 12/15/2022

APPENDIX E
ANALYTICAL DATA REPORTING SHEETS FOR ATTAINMENT SAMPLES

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Certificate of Analysis

Project Name: HRP Philly
PSS Project No.: 23030121

March 8, 2023

Taylor Carroll
Ramboll US Consulting - Arlington
4245 N. Fairfax Drive, Ste. 700
Arlington, VA 22203

Reference: PSS Project No: **23030121**
Project Name: HRP Philly
Project Location: 7801 Mingo Ave, Philadelphia, PA 19153
Project ID.: 1690028299-001

Dear Taylor Carroll:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **23030121**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 5, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: HRP Philly
PSS Project No.: 23030121

Project ID: 1690028299-001

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/01/2023 at 03:10 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
23030121-001	SB1A	SOIL	03/01/23 11:30
23030121-002	SB1B	SOIL	03/01/23 11:55
23030121-003	RB_030123	WATER	03/01/23 12:00
23030121-004	FD_030123	SOIL	03/01/23 00:00
23030121-005	Trip Blank_030123	WATER	03/01/23 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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Certificate of Analysis

Project Name: HRP Philly
PSS Project No.: 23030121

Sample ID: SB1A **Date/Time Sampled: 03/01/2023 11:30** **PSS Sample ID: 23030121-001**
Matrix: SOIL **Date/Time Received: 03/01/2023 15:10** **% Solids SM2540G-11: 90.9**

Total Lead — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**90**	mg/kg	0.52		1	0.39	03/02/23	03/02/23 22:10	1064

VOC (select list) — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 201703 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/kg	0.00099		1	0.00043	03/06/23	03/06/23 18:42	1045
1,2-Dibromoethane	ND	mg/kg	0.00099		1	0.0005	03/06/23	03/06/23 18:42	1045
1,2-Dichloroethane	ND	mg/kg	0.00099		1	0.00036	03/06/23	03/06/23 18:42	1045
Ethylbenzene	ND	mg/kg	0.00099		1	0.00037	03/06/23	03/06/23 18:42	1045
Isopropylbenzene	ND	mg/kg	0.00099		1	0.00039	03/06/23	03/06/23 18:42	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00099		1	0.00038	03/06/23	03/06/23 18:42	1045
Naphthalene	ND	mg/kg	0.00099		1	0.00057	03/06/23	03/06/23 18:42	1045
Toluene	ND	mg/kg	0.00099		1	0.00045	03/06/23	03/06/23 18:42	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00099		1	0.00045	03/06/23	03/06/23 18:42	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.00099		1	0.00039	03/06/23	03/06/23 18:42	1045
m&p-Xylene	**0.0013**	mg/kg	0.0020	J	1	0.0011	03/06/23	03/06/23 18:42	1045
o-Xylene	ND	mg/kg	0.00099		1	0.00037	03/06/23	03/06/23 18:42	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*102*	*%*	*89-111*	*1*	*03/06/23*	*03/06/23 18:42*	*1045*
Dibromofluoromethane	*93*	*%*	*91-108*	*1*	*03/06/23*	*03/06/23 18:42*	*1045*
Toluene-D8	*97*	*%*	*93-104*	*1*	*03/06/23*	*03/06/23 18:42*	*1045*

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3550C

Qualifier(s): See Batch 201738 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/kg	0.0091		1	0.0047	03/03/23	03/07/23 09:29	1070
Benzo(a)anthracene	**0.014**	mg/kg	0.0091		1	0.0037	03/03/23	03/07/23 09:29	1070
Benzo(a)pyrene	**0.015**	mg/kg	0.0091		1	0.0051	03/03/23	03/07/23 09:29	1070
Benzo(b)fluoranthene	**0.012**	mg/kg	0.0091		1	0.0047	03/03/23	03/07/23 09:29	1070
Benzo(g,h,i)perylene	**0.0099**	mg/kg	0.0091		1	0.0066	03/03/23	03/07/23 09:29	1070
Chrysene	**0.034**	mg/kg	0.0091		1	0.0044	03/03/23	03/07/23 09:29	1070

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Certificate of Analysis

Project Name: HRP Philly
PSS Project No.: 23030121

Sample ID: SB1A **Date/Time Sampled: 03/01/2023 11:30** **PSS Sample ID: 23030121-001**
Matrix: SOIL **Date/Time Received: 03/01/2023 15:10** **% Solids SM2540G-11: 90.9**

PAHs (select list) Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 201738 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluorene	ND	mg/kg	0.0091		1	0.0062	03/03/23	03/07/23 09:29	1070
Indeno(1,2,3-c,d)pyrene	**0.010**	mg/kg	0.0091		1	0.0084	03/03/23	03/07/23 09:29	1070
Phenanthrene	**0.0062**	mg/kg	0.0091	J	1	0.0055	03/03/23	03/07/23 09:29	1070
Pyrene	**0.027**	mg/kg	0.0091		1	0.0047	03/03/23	03/07/23 09:29	1070

Surrogate(s)	***Recovery***		***Limits***				
2-Fluorobiphenyl	*87*	*%*	*52-109*	*1*	*03/03/23*	*03/07/23 09:29*	*1070*
2-Fluorophenol	*79*	*%*	*30-102*	*1*	*03/03/23*	*03/07/23 09:29*	*1070*
Nitrobenzene-d5	*86*	*%*	*39-101*	*1*	*03/03/23*	*03/07/23 09:29*	*1070*
Phenol-d6	*82*	*%*	*36-109*	*1*	*03/03/23*	*03/07/23 09:29*	*1070*
Terphenyl-D14	*98*	*%*	*66-121*	*1*	*03/03/23*	*03/07/23 09:29*	*1070*
2,4,6-Tribromophenol	*92*	*%*	*39-118*	*1*	*03/03/23*	*03/07/23 09:29*	*1070*

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Certificate of Analysis

Project Name: HRP Philly
PSS Project No.: 23030121

Sample ID: SB1B **Date/Time Sampled: 03/01/2023 11:55** **PSS Sample ID: 23030121-002**
Matrix: SOIL **Date/Time Received: 03/01/2023 15:10** **% Solids SM2540G-11: 90.7**

Total Lead — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**55**	mg/kg	0.48		1	0.36	03/02/23	03/02/23 22:15	1064

VOC (select list) — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 201703 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/kg	0.00086		1	0.00037	03/06/23	03/06/23 19:04	1045
1,2-Dibromoethane	ND	mg/kg	0.00086		1	0.00043	03/06/23	03/06/23 19:04	1045
1,2-Dichloroethane	ND	mg/kg	0.00086		1	0.00031	03/06/23	03/06/23 19:04	1045
Ethylbenzene	ND	mg/kg	0.00086		1	0.00032	03/06/23	03/06/23 19:04	1045
Isopropylbenzene	ND	mg/kg	0.00086		1	0.00034	03/06/23	03/06/23 19:04	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.00086		1	0.00033	03/06/23	03/06/23 19:04	1045
Naphthalene	ND	mg/kg	0.00086		1	0.0005	03/06/23	03/06/23 19:04	1045
Toluene	**0.0014**	mg/kg	0.00086		1	0.00039	03/06/23	03/06/23 19:04	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.00086		1	0.00039	03/06/23	03/06/23 19:04	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.00086		1	0.00034	03/06/23	03/06/23 19:04	1045
m&p-Xylene	**0.0014**	mg/kg	0.0017	J	1	0.00095	03/06/23	03/06/23 19:04	1045
o-Xylene	ND	mg/kg	0.00086		1	0.00032	03/06/23	03/06/23 19:04	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*97*	*%*	*89-111*	*1*	*03/06/23*	*03/06/23 19:04*	*1045*
Dibromofluoromethane	*100*	*%*	*91-108*	*1*	*03/06/23*	*03/06/23 19:04*	*1045*
Toluene-D8	*104*	*%*	*93-104*	*1*	*03/06/23*	*03/06/23 19:04*	*1045*

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3550C

Qualifier(s): See Batch 201738 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/kg	0.0091		1	0.0047	03/03/23	03/07/23 11:18	1070
Benzo(a)anthracene	**0.013**	mg/kg	0.0091		1	0.0036	03/03/23	03/07/23 11:18	1070
Benzo(a)pyrene	**0.013**	mg/kg	0.0091		1	0.0051	03/03/23	03/07/23 11:18	1070
Benzo(b)fluoranthene	**0.011**	mg/kg	0.0091		1	0.0047	03/03/23	03/07/23 11:18	1070
Benzo(g,h,i)perylene	**0.010**	mg/kg	0.0091		1	0.0066	03/03/23	03/07/23 11:18	1070
Chrysene	**0.029**	mg/kg	0.0091		1	0.0044	03/03/23	03/07/23 11:18	1070

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Certificate of Analysis

Project Name: HRP Philly
PSS Project No.: 23030121

Sample ID: SB1B **Date/Time Sampled: 03/01/2023 11:55** **PSS Sample ID: 23030121-002**
Matrix: SOIL **Date/Time Received: 03/01/2023 15:10** **% Solids SM2540G-11: 90.7**

PAHs (select list) Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 201738 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluorene	ND	mg/kg	0.0091		1	0.0062	03/03/23	03/07/23 11:18	1070
Indeno(1,2,3-c,d)pyrene	**0.0084**	mg/kg	0.0091	J	1	0.0084	03/03/23	03/07/23 11:18	1070
Phenanthrene	**0.0084**	mg/kg	0.0091	J	1	0.0055	03/03/23	03/07/23 11:18	1070
Pyrene	**0.036**	mg/kg	0.0091		1	0.0047	03/03/23	03/07/23 11:18	1070

Surrogate(s)	***Recovery***		***Limits***				
2-Fluorobiphenyl	*82*	*%*	*52-109*	*1*	*03/03/23*	*03/07/23 11:18*	*1070*
2-Fluorophenol	*75*	*%*	*30-102*	*1*	*03/03/23*	*03/07/23 11:18*	*1070*
Nitrobenzene-d5	*80*	*%*	*39-101*	*1*	*03/03/23*	*03/07/23 11:18*	*1070*
Phenol-d6	*77*	*%*	*36-109*	*1*	*03/03/23*	*03/07/23 11:18*	*1070*
Terphenyl-D14	*99*	*%*	*66-121*	*1*	*03/03/23*	*03/07/23 11:18*	*1070*
2,4,6-Tribromophenol	*93*	*%*	*39-118*	*1*	*03/03/23*	*03/07/23 11:18*	*1070*

Sample ID: RB_030123 **Date/Time Sampled: 03/01/2023 12:00** **PSS Sample ID: 23030121-003**
Matrix: WATER **Date/Time Received: 03/01/2023 15:10**

Total Lead Analytical Method: SW-846 6020 B Preparation Method: SW3010A

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	ND	mg/L	0.0010		1	0.00039	03/07/23	03/07/23 13:19	1059

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Project Name: HRP Philly
PSS Project No.: 23030121

Sample ID: FD_030123 **Date/Time Sampled: 03/01/2023 00:00** **PSS Sample ID: 23030121-004**
Matrix: SOIL **Date/Time Received: 03/01/2023 15:10** **% Solids SM2540G-11: 89.5**

Total Lead — Analytical Method: SW-846 6020 B — Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Lead	**76**	mg/kg	0.44		1	0.34	03/02/23	03/02/23 22:20	1064

VOC (select list) — Analytical Method: SW-846 8260 D — Preparation Method: SW5035A

Qualifier(s): See Batch 201703 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/kg	0.0010		1	0.00044	03/06/23	03/06/23 19:27	1045
1,2-Dibromoethane	ND	mg/kg	0.0010		1	0.00052	03/06/23	03/06/23 19:27	1045
1,2-Dichloroethane	ND	mg/kg	0.0010		1	0.00037	03/06/23	03/06/23 19:27	1045
Ethylbenzene	**0.0033**	mg/kg	0.0010		1	0.00038	03/06/23	03/06/23 19:27	1045
Isopropylbenzene	ND	mg/kg	0.0010		1	0.0004	03/06/23	03/06/23 19:27	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0010		1	0.00039	03/06/23	03/06/23 19:27	1045
Naphthalene	ND	mg/kg	0.0010		1	0.0006	03/06/23	03/06/23 19:27	1045
Toluene	**0.0012**	mg/kg	0.0010		1	0.00046	03/06/23	03/06/23 19:27	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0010		1	0.00046	03/06/23	03/06/23 19:27	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.0010		1	0.0004	03/06/23	03/06/23 19:27	1045
m&p-Xylene	**0.014**	mg/kg	0.0021		1	0.0011	03/06/23	03/06/23 19:27	1045
o-Xylene	**0.0080**	mg/kg	0.0010		1	0.00038	03/06/23	03/06/23 19:27	1045

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*100*	*%*	*89-111*	*1*	*03/06/23*	*03/06/23 19:27*	*1045*
Dibromofluoromethane	*94*	*%*	*91-108*	*1*	*03/06/23*	*03/06/23 19:27*	*1045*
Toluene-D8	*100*	*%*	*93-104*	*1*	*03/06/23*	*03/06/23 19:27*	*1045*

PAHs (select list) — Analytical Method: SW-846 8270 E — Preparation Method: SW3550C

Qualifier(s): See Batch 201738 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Anthracene	ND	mg/kg	0.0093		1	0.0048	03/03/23	03/07/23 10:23	1070
Benzo(a)anthracene	**0.016**	mg/kg	0.0093		1	0.0037	03/03/23	03/07/23 10:23	1070
Benzo(a)pyrene	**0.017**	mg/kg	0.0093		1	0.0052	03/03/23	03/07/23 10:23	1070
Benzo(b)fluoranthene	**0.014**	mg/kg	0.0093		1	0.0048	03/03/23	03/07/23 10:23	1070
Benzo(g,h,i)perylene	**0.012**	mg/kg	0.0093		1	0.0067	03/03/23	03/07/23 10:23	1070
Chrysene	**0.024**	mg/kg	0.0093		1	0.0044	03/03/23	03/07/23 10:23	1070

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Project Name: HRP Philly
PSS Project No.: 23030121

Sample ID: FD_030123 **Date/Time Sampled: 03/01/2023 00:00** **PSS Sample ID: 23030121-004**
Matrix: SOIL **Date/Time Received: 03/01/2023 15:10** **% Solids SM2540G-11: 89.5**

PAHs (select list) Analytical Method: SW-846 8270 E Preparation Method: SW3550C

Qualifier(s): See Batch 201738 on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluorene	ND	mg/kg	0.0093		1	0.0063	03/03/23	03/07/23 10:23	1070
Indeno(1,2,3-c,d)pyrene	**0.013**	mg/kg	0.0093		1	0.0085	03/03/23	03/07/23 10:23	1070
Phenanthrene	**0.0085**	mg/kg	0.0093	J	1	0.0056	03/03/23	03/07/23 10:23	1070
Pyrene	**0.032**	mg/kg	0.0093		1	0.0048	03/03/23	03/07/23 10:23	1070

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*84*	*%*	*52-109*	*1*	*03/03/23*	*03/07/23 10:23*	*1070*
2-Fluorophenol	*77*	*%*	*30-102*	*1*	*03/03/23*	*03/07/23 10:23*	*1070*
Nitrobenzene-d5	*82*	*%*	*39-101*	*1*	*03/03/23*	*03/07/23 10:23*	*1070*
Phenol-d6	*78*	*%*	*36-109*	*1*	*03/03/23*	*03/07/23 10:23*	*1070*
Terphenyl-D14	*99*	*%*	*66-121*	*1*	*03/03/23*	*03/07/23 10:23*	*1070*
2,4,6-Tribromophenol	*91*	*%*	*39-118*	*1*	*03/03/23*	*03/07/23 10:23*	*1070*

Sample ID: Trip Blank_030123 **Date/Time Sampled: 03/01/2023 00:00** **PSS Sample ID: 23030121-005**
Matrix: WATER **Date/Time Received: 03/01/2023 15:10**

VOC (select list) Analytical Method: SW-846 8260 D Preparation Method: SW5030B

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Benzene	ND	mg/L	0.0010		1	0.00019	03/03/23	03/03/23 19:28	1011
1,2-Dibromoethane	ND	mg/L	0.0010		1	0.00022	03/03/23	03/03/23 19:28	1011
1,2-Dichloroethane	ND	mg/L	0.0010		1	0.00018	03/03/23	03/03/23 19:28	1011
Ethylbenzene	ND	mg/L	0.0010		1	0.00015	03/03/23	03/03/23 19:28	1011
Isopropylbenzene	ND	mg/L	0.0010		1	0.00027	03/03/23	03/03/23 19:28	1011
Methyl-t-Butyl Ether	ND	mg/L	0.0010		1	0.00017	03/03/23	03/03/23 19:28	1011
Naphthalene	ND	mg/L	0.0010		1	0.0006	03/03/23	03/03/23 19:28	1011
Toluene	ND	mg/L	0.0010		1	0.00052	03/03/23	03/03/23 19:28	1011
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	0.00017	03/03/23	03/03/23 19:28	1011
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	0.00015	03/03/23	03/03/23 19:28	1011
m&p-Xylene	ND	mg/L	0.0020		1	0.0004	03/03/23	03/03/23 19:28	1011
o-Xylene	ND	mg/L	0.0010		1	0.00018	03/03/23	03/03/23 19:28	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*88-120*	*1*	*03/03/23*	*03/03/23 19:28*	*1011*
Dibromofluoromethane	*103*	*%*	*92-107*	*1*	*03/03/23*	*03/03/23 19:28*	*1011*
Toluene-D8	*103*	*%*	*95-106*	*1*	*03/03/23*	*03/03/23 19:28*	*1011*

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Project Name: HRP Philly

PSS Project No.: 23030121

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Preservative not indicated on COC for lead for sample 003 and VOC for sample 005. Received containers preserved with HNO3 and HCl.

Analytical:

VOC (select list)

Batch: 201703

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Method exceedance: Laboratory control sample duplicate (LCSD) exceedance identified; see QC summary.

Analytical:

PAHs (select list)

Batch: 201738

Method exceedance: Benzo-b-fluoranthene and benzo-k-fluoranthene do not meet resolution criteria.

Analytical:

TCL Semivolatile Organic Compounds

Batch: 201651

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified; see QC summary. Exceedances meet marginal exceedance criteria.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: HRP Philly
PSS Project No.: 23030121

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM2540G	SB1A	Initial	23030121-001	S	201573	201573	03/01/2023 22:48	03/01/2023 22:48
	SB1B	Initial	23030121-002	S	201573	201573	03/01/2023 22:48	03/01/2023 22:48
	FD_030123	Initial	23030121-004	S	201573	201573	03/01/2023 22:48	03/01/2023 22:48
	201573-1-BLK	BLK	201573-1-BLK	S	201573	201573	03/01/2023 22:48	03/01/2023 22:48
	B-1 (GW) D	MD	23030112-001 D	S	201573	201573	03/01/2023 22:48	03/01/2023 22:48
	SB-3(15') D	MD	23030122-001 D	S	201573	201573	03/01/2023 22:48	03/01/2023 22:48
SW-846 6020 B	SB1A	Initial	23030121-001	S	94499	201624	03/02/2023 11:00	03/02/2023 22:10
	SB1B	Initial	23030121-002	S	94499	201624	03/02/2023 11:00	03/02/2023 22:15
	FD_030123	Initial	23030121-004	S	94499	201624	03/02/2023 11:00	03/02/2023 22:20
	94499-1-BKS	BKS	94499-1-BKS	S	94499	201624	03/02/2023 11:00	03/02/2023 21:24
	94499-1-BLK	BLK	94499-1-BLK	S	94499	201624	03/02/2023 11:00	03/02/2023 21:19
	14368-comp-2/23 S	MS	23030113-001 S	S	94499	201624	03/02/2023 11:00	03/02/2023 21:34
	14368-comp-2/23 SD	MSD	23030113-001 S	S	94499	201624	03/02/2023 11:00	03/02/2023 21:39
	RB_030123	Initial	23030121-003	W	94568	201751	03/07/2023 09:15	03/07/2023 13:19
	94568-1-BKS	BKS	94568-1-BKS	W	94568	201751	03/07/2023 09:15	03/07/2023 13:13
	94568-1-BLK	BLK	94568-1-BLK	W	94568	201751	03/07/2023 09:15	03/07/2023 13:08
	RB_030123 S	MS	23030121-003 S	W	94568	201751	03/07/2023 09:15	03/07/2023 13:24
	RB_030123 SD	MSD	23030121-003 S	W	94568	201751	03/07/2023 09:15	03/07/2023 13:29
SW-846 8260 D	Trip Blank_030123	Initial	23030121-005	W	94545	201656	03/03/2023 09:01	03/03/2023 19:28
	94545-1-BKS	BKS	94545-1-BKS	W	94545	201656	03/03/2023 09:01	03/03/2023 09:01
	94545-1-BLK	BLK	94545-1-BLK	W	94545	201656	03/03/2023 09:01	03/03/2023 10:17
	MW-5d S	MS	23030101-001 S	W	94545	201656	03/03/2023 09:01	03/03/2023 14:10
	MW-5d SD	MSD	23030101-001 S	W	94545	201656	03/03/2023 09:01	03/03/2023 14:33
	SB1A	Initial	23030121-001	S	94561	201703	03/06/2023 11:47	03/06/2023 18:42
	SB1B	Initial	23030121-002	S	94561	201703	03/06/2023 11:47	03/06/2023 19:04
	FD_030123	Initial	23030121-004	S	94561	201703	03/06/2023 11:47	03/06/2023 19:27
	94561-1-BKS	BKS	94561-1-BKS	S	94561	201703	03/06/2023 11:47	03/06/2023 12:14
	94561-1-BLK	BLK	94561-1-BLK	S	94561	201703	03/06/2023 11:47	03/06/2023 14:36
	94561-1-BSD	BSD	94561-1-BSD	S	94561	201703	03/06/2023 11:47	03/06/2023 12:44
	B-7 (GW) S	MS	23030307-002 S	S	94561	201703	03/06/2023 11:47	03/06/2023 13:06
	B-7 (GW) SD	MSD	23030307-002 S	S	94561	201703	03/06/2023 11:47	03/06/2023 13:29
SW-846 8270 E	94516-1-BKS	BKS	94516-1-BKS	S	94516	201651	03/03/2023 09:04	03/03/2023 12:37
	94516-1-BLK	BLK	94516-1-BLK	S	94516	201651	03/03/2023 09:04	03/03/2023 10:48
	94516-1-BSD	BSD	94516-1-BSD	S	94516	201651	03/03/2023 09:04	03/03/2023 13:04
	Conf-07-8/9-030223 S	MS	23030219-010 S	S	94516	201651	03/03/2023 09:04	03/03/2023 18:02
	Conf-07-8/9-030223 SD	MSD	23030219-010 S	S	94516	201651	03/03/2023 09:04	03/03/2023 18:29
	SB1A	Initial	23030121-001	S	94516	201738	03/03/2023 09:04	03/07/2023 09:29
	SB1B	Initial	23030121-002	S	94516	201738	03/03/2023 09:04	03/07/2023 11:18
	FD_030123	Initial	23030121-004	S	94516	201738	03/03/2023 09:04	03/07/2023 10:23

Analytical Method: SW-846 6020 B Prep Method: SW3050B
Seq Number: 201624 Matrix: Solid Date Prep: 03/02/23
MB Sample Id: 94499-1-BLK LCS Sample Id: 94499-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3754	23.73	25.02	105	80-120	mg/kg	

Analytical Method: SW-846 6020 B Prep Method: SW3010A
Seq Number: 201751 Matrix: Water Date Prep: 03/07/23
MB Sample Id: 94568-1-BLK LCS Sample Id: 94568-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<0.3900	0.05000	0.04936	99	80-120	mg/L	

Analytical Method: SW-846 6020 B Prep Method: SW3010A
Seq Number: 201751 Matrix: Water Date Prep: 03/07/23
Parent Sample Id: 23030121-003 MS Sample Id: 23030121-003 S MSD Sample Id: 23030121-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Lead	<0.00039	0.05000	0.04806	96	0.04796	96	75-125	0	25	mg/L	

Analytical Method: SW-846 8270 E Prep Method: SW3550C
Seq Number: 201651 Matrix: Solid Date Prep: 03/03/23
MB Sample Id: 94516-1-BLK LCS Sample Id: 94516-1-BKS LCSD Sample Id: 94516-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Anthracene	<0.004330	1.333	1.188	89	1.155	87	77-116	3	25	mg/kg	
Benzo(a)anthracene	<0.003331	1.333	1.156	87	1.124	84	77-124	3	25	mg/kg	
Benzo(a)pyrene	<0.004664	1.333	1.356	102	1.339	101	91-141	1	25	mg/kg	
Benzo(b)fluoranthene	<0.004330	1.333	1.033	77	1.012	76	80-142	2	25	mg/kg	L
Benzo(g,h,i)perylene	<0.005996	1.333	1.340	101	1.316	99	83-134	2	25	mg/kg	
Chrysene	<0.003997	1.333	1.294	97	1.238	93	77-122	4	25	mg/kg	
Fluorene	<0.005663	1.333	1.198	90	1.173	88	74-120	2	25	mg/kg	
Indeno(1,2,3-c,d)pyrene	<0.007662	1.333	1.234	93	1.230	92	80-144	0	25	mg/kg	
Phenanthrene	<0.004997	1.333	1.056	79	1.047	79	75-109	1	25	mg/kg	
Pyrene	<0.004330	1.333	1.257	94	1.206	91	76-120	4	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	93		96		92		52-109	%
2-Fluorophenol	100		94		89		30-102	%
Nitrobenzene-d5	97		94		93		39-101	%
Phenol-d6	97		92		86		36-109	%
Terphenyl-D14	97		102		98		66-121	%
2,4,6-Tribromophenol	86		97		93		39-118	%

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QC Summary

Project Name HRP Philly
PSS Project No.: 23030121

Analytical Method: SW-846 8260 D Prep Method: SW5030
Seq Number: 201703 Matrix: Solid Date Prep: 03/06/23
MB Sample Id: 94561-1-BLK LCS Sample Id: 94561-1-BKS LCSD Sample Id: 94561-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Benzene	<0.00043	0.06000	0.05716	95	0.05983	100	85-118	5	25	mg/kg	
1,2-Dibromoethane	<0.0005	0.06000	0.05586	93	0.05991	100	87-117	7	25	mg/kg	
1,2-Dichloroethane	<0.00036	0.06000	0.05414	90	0.05693	95	85-118	5	25	mg/kg	
Ethylbenzene	<0.00037	0.06000	0.05588	93	0.05965	99	87-121	7	25	mg/kg	
Isopropylbenzene	<0.00039	0.06000	0.05811	97	0.06192	103	85-121	6	25	mg/kg	
Methyl-t-Butyl Ether	<0.00038	0.06000	0.06955	116	0.07037	117	74-122	1	25	mg/kg	
Naphthalene	<0.00058	0.06000	0.06647	111	0.07474	125	77-120	12	25	mg/kg	H
Toluene	<0.00045	0.06000	0.05807	97	0.06251	104	84-118	7	25	mg/kg	
1,2,4-Trichlorobenzene	<0.00045	0.06000	0.06224	104	0.07134	119	82-131	14	25	mg/kg	
1,3,5-Trimethylbenzene	<0.00039	0.06000	0.05861	98	0.06191	103	85-120	5	25	mg/kg	
m&p-Xylene	<0.001100	0.1200	0.1201	100	0.1259	105	86-123	5	25	mg/kg	
o-Xylene	<0.00037	0.06000	0.05651	94	0.06130	102	84-121	8	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
4-Bromofluorobenzene	98		94		94		89-111	%
Dibromofluoromethane	94		98		98		91-108	%
Toluene-D8	102		100		101		93-104	%

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 201656 Matrix: Water Date Prep: 03/03/23
MB Sample Id: 94545-1-BLK LCS Sample Id: 94545-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Benzene	<0.1900	0.05000	0.04652	93	76-112	mg/L	
1,2-Dibromoethane	<0.2200	0.05000	0.04819	96	77-119	mg/L	
1,2-Dichloroethane	<0.1800	0.05000	0.04860	97	72-115	mg/L	
Ethylbenzene	<0.1500	0.05000	0.04652	93	78-118	mg/L	
Isopropylbenzene	<0.2700	0.05000	0.04654	93	76-126	mg/L	
Methyl-t-Butyl Ether	<0.1700	0.05000	0.04509	90	71-114	mg/L	
Naphthalene	<0.6000	0.05000	0.04441	89	60-122	mg/L	
Toluene	<0.5200	0.05000	0.04766	95	77-112	mg/L	
1,2,4-Trimethylbenzene	<0.1700	0.05000	0.04816	96	76-127	mg/L	
1,3,5-Trimethylbenzene	<0.1500	0.05000	0.04712	94	76-126	mg/L	
m&p-Xylene	<0.4000	0.1000	0.09483	95	79-121	mg/L	
o-Xylene	<0.1800	0.05000	0.04847	97	78-122	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	99		91		88-120	%
Dibromofluoromethane	101		102		92-107	%
Toluene-D8	103		103		95-106	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Analytical Method: SW-846 6020 B
Seq Number: 201624 Matrix: Solid
CCV Sample Id: CCV 3 Analyzed Date: 03/02/23 20:48

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	105.3	105	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 201624 Matrix: Solid
CCV Sample Id: CCV 4 Analyzed Date: 03/02/23 21:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	105.3	105	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 201624 Matrix: Solid
CCV Sample Id: CCV 5 Analyzed Date: 03/02/23 22:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	102.6	103	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 201751 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 03/07/23 13:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	100	102.7	103	90-110	ug/L	

Analytical Method: SW-846 6020 B
Seq Number: 201624 Matrix: Solid
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/02/23 17:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	50.96	102	90-110	ug/kg	

Analytical Method: SW-846 6020 B
Seq Number: 201751 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 03/07/23 12:07

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	50.00	50.96	102	90-110	ug/L	

Analytical Method: SW-846 8270 E

Seq Number: 201651 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 03/03/23 10:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Anthracene	40.00	35.98	90	80-120	mg/kg	
Benzo(a)anthracene	40.00	35.48	89	80-120	mg/kg	
Benzo(a)pyrene	40.00	39.91	100	80-120	mg/kg	
Benzo(b)fluoranthene	40.00	34.89	87	80-120	mg/kg	
Benzo(g,h,i)perylene	40.00	39.61	99	80-120	mg/kg	
Chrysene	40.00	38.68	97	80-120	mg/kg	
Fluorene	40.00	37.37	93	80-120	mg/kg	
Indeno(1,2,3-c,d)Pyrene	40.00	38.46	96	80-120	mg/kg	
Phenanthrene	40.00	32.00	80	80-120	mg/kg	
Pyrene	40.00	37.37	93	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	98	80-120	%	
2-Fluorophenol	99	80-120	%	
Nitrobenzene-d5	100	80-120	%	
Phenol-d6	97	80-120	%	
Terphenyl-D14	95	80-120	%	
2,4,6-Tribromophenol	102	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 201738 Matrix: Solid

CCV Sample Id: CCV-01 Analyzed Date: 03/07/23 05:53

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Anthracene	40.00	36.50	91	80-120	mg/kg	
Benzo(a)anthracene	40.00	38.81	97	80-120	mg/kg	
Benzo(a)pyrene	40.00	39.93	100	80-120	mg/kg	
Benzo(b)fluoranthene	40.00	43.69	109	80-120	mg/kg	
Benzo(g,h,i)perylene	40.00	39.87	100	80-120	mg/kg	
Chrysene	40.00	35.93	90	80-120	mg/kg	
Fluorene	40.00	37.05	93	80-120	mg/kg	
Indeno(1,2,3-c,d)pyrene	40.00	41.07	103	80-120	mg/kg	
Phenanthrene	40.00	32.14	80	80-120	mg/kg	
Pyrene	40.00	37.26	93	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	94	80-120	%	
2-Fluorophenol	100	80-120	%	
Nitrobenzene-d5	101	80-120	%	
Phenol-d6	102	80-120	%	
Terphenyl-D14	97	80-120	%	
2,4,6-Tribromophenol	102	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 201555 Matrix: Solid

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 02/28/23 16:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Anthracene	40.00	38.75	97	70-130	mg/kg	
Benzo(a)anthracene	40.00	40.65	102	70-130	mg/kg	
Benzo(a)pyrene	40.00	40.29	101	70-130	mg/kg	
Benzo(b)fluoranthene	40.00	46.19	115	70-130	mg/kg	
Benzo(g,h,i)perylene	40.00	39.70	99	70-130	mg/kg	
Chrysene	40.00	35.77	89	70-130	mg/kg	
Fluorene	40.00	36.99	92	70-130	mg/kg	
Indeno(1,2,3-c,d)pyrene	40.00	43.12	108	70-130	mg/kg	
Phenanthrene	40.00	36.89	92	70-130	mg/kg	
Pyrene	40.00	38.16	95	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	93	70-130	%	
2-Fluorophenol	97	70-130	%	
Nitrobenzene-d5	100	70-130	%	
Phenol-d6	100	70-130	%	
Terphenyl-D14	99	70-130	%	
2,4,6-Tribromophenol	105	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 201656 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 03/03/23 09:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Benzene	50.00	46.52	93	80-120	ug/L	
1,2-Dibromoethane	50.00	48.19	96	80-120	ug/L	
1,2-Dichloroethane	50.00	48.60	97	80-120	ug/L	
Ethylbenzene	50.00	46.52	93	80-120	ug/L	
Isopropylbenzene	50.00	46.54	93	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	45.09	90	80-120	ug/L	
Naphthalene	50.00	44.41	89	80-120	ug/L	
Toluene	50.00	47.66	95	80-120	ug/L	
1,2,4-Trimethylbenzene	50.00	48.16	96	80-120	ug/L	
1,3,5-Trimethylbenzene	50.00	47.12	94	80-120	ug/L	
m&p-Xylene	100	94.83	95	80-120	ug/L	
o-Xylene	50.00	48.47	97	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	91	80-120	%	
Dibromofluoromethane	102	80-120	%	
Toluene-D8	103	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 201703 Matrix: Solid

CCV Sample Id: CCV, VOC-1 Analyzed Date: 03/06/23 11:47

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Benzene	0.06000	0.06035	101	80-120	mg/kg	
1,2-Dibromoethane	0.06000	0.05924	99	80-120	mg/kg	
1,2-Dichloroethane	0.06000	0.05735	96	80-120	mg/kg	
Ethylbenzene	0.06000	0.06045	101	80-120	mg/kg	
Isopropylbenzene	0.06000	0.05987	100	80-120	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.07350	123	80-120	mg/kg	X
Naphthalene	0.06000	0.07011	117	80-120	mg/kg	
Toluene	0.06000	0.06136	102	80-120	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.06607	110	80-120	mg/kg	
1,3,5-Trimethylbenzene	0.06000	0.06038	101	80-120	mg/kg	
m&p-Xylene	0.1200	0.1227	102	80-120	mg/kg	
o-Xylene	0.06000	0.06131	102	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	92	80-120	%	
Dibromofluoromethane	97	80-120	%	
Toluene-D8	103	80-120	%	

Analytical Method: SW-846 8260 D

Seq Number: 201425 Matrix: Solid

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 02/23/23 14:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Benzene	0.06000	0.05408	90	70-130	mg/kg	
1,2-Dibromoethane	0.06000	0.05463	91	70-130	mg/kg	
1,2-Dichloroethane	0.06000	0.05477	91	70-130	mg/kg	
Ethylbenzene	0.06000	0.05538	92	70-130	mg/kg	
Isopropylbenzene	0.06000	0.05521	92	70-130	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.05771	96	70-130	mg/kg	
Naphthalene	0.06000	0.05852	98	70-130	mg/kg	
Toluene	0.06000	0.05341	89	70-130	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.05830	97	70-130	mg/kg	
1,3,5-Trimethylbenzene	0.06000	0.05441	91	70-130	mg/kg	
m&p-Xylene	0.1200	0.1118	93	70-130	mg/kg	
o-Xylene	0.06000	0.05724	95	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	102	70-130	%	
Dibromofluoromethane	103	70-130	%	
Toluene-D8	99	70-130	%	

X = Recovery outside of QC Criteria

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

① PSS CLIENT: Ramboll | OFFICE LOCATION: Arlington | PSS Work Order #: 23030121 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 914 374 0003

CONTACT: Taylor Carroll | EMAIL: tcarroll@ramboll.com

PROJECT NAME: HRP Philly | PROJECT #: 1690028299-001

SITE LOCATION: 7801 Mingo Ave, Philadelphia, PA, 19153 | P.O. #:

SAMPLER(S): M. Bauer | DW CERT #:

Matrix Codes: SW=Surface Water | DW=Drinking Water | GW=Ground Water | WW=Waste Water | O=Oil | S=Soil | SOL=Solid | A=Air | WI=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	9,6	6	6	VOC 1:5T	SVOC 1:5T	Lead
1	SB1A	3/1/23	1130	S	6						X	X	X
2	SB1B	3/1/23	1155	S	6						X	X	X
3	RB_030123	3/1/23	1200	W	1								X
4	FD-030123	3/1/23	—	S	6						X	X	X
5	Trip Blank_030123	3/1/23	—	W	2						X		

Preservative Codes: 1 - HCL | 2 - H_2SO_4 | 3 - HNO_3 | 4 - NaOH | 5 - E624KIT | 6 - ICE | 7 - Sodium Thiosulfate | 8 - Ascorbic Acid | 9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
McNeill Bauer	3/1/23	15:10	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC): ☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

STATE RESULTS REPORTED TO: ☐ MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

COMPLIANCE? ☐ DW ☐ WW

EDD FORMAT TYPE

Special Instructions:

Ice Present: Yes

Custody Seal: Abs

Coolers: 1 Temp: 0.7-1.6°C

Shipping Carrier: Client

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Sample Receipt Checklist

Project Name: HRP Philly
PSS Project No.: 23030121

Client Name Ramboll US Consulting - Arlington
Disposal Date 04/05/2023

Received By Marissa Vertucci
Date Received 03/01/2023 03:10:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	1.6
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	McNeill Bauer
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	5
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	21

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Preservative not indicated on COC for lead for sample 003 and VOC for sample 005. Received containers preserved with HNO3 and HCl.

Samples Inspected/Checklist Completed By: Marissa Vertucci Date: 03/01/2023

PM Review and Approval: Amber Loafer Date: 03/02/2023