

CORRECTIVE ACTION PROCESS REPORT/PLAN COVER SHEET
CHAPTER 245 - STORAGE TANK AND SPILL PREVENTION ACT

Storage Tank Facility ID #: 51-115577

Consultant Name: Ramboll US Consulting, Inc.

Consultant Mailing Address: 4245 North Fairfax Drive, Suite 700, Arlington, Virginia 22203

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Responsible Party Name: Philadelphia Energy Solutions Refining and Marketing LLC (PESRM)

Responsible Party Mailing Address: 111 S. Wacker Dr., Suite 3000, Chicago, IL 60606

Responsible Party Email Address: Anne Garr: agarr@hilcoglobal.com

Media of Concern: **Soil** **Groundwater**

Contaminant(s) (e.g. unleaded gasoline): Fuel No. 6

(check all that apply to the enclosed submission)

- Remedial Action Progress Report**
- Risk Assessment Report** (*e.g. vapor intrusion, ecological, or human health risk calculations*)
- Site Characterization Report – Section 245.310(b)**
 - Residential Nonresidential
- Site Characterization Report – Statewide Health or Background Standard**
 - Residential Nonresidential
- Site Characterization Report – Site Specific Standard**
 - Residential Nonresidential
- Remedial Action Plan – Statewide Health or Background Standard**
 - Residential Nonresidential
- Remedial Action Plan – Site Specific Standard**
 - Residential Nonresidential
- Remedial Action Completion Report – Statewide Health or Background Standard**
 - Residential Nonresidential
- Remedial Action Completion Report – Site Specific Standard**
 - Residential Nonresidential
- Post Remediation Care Report**
- Environmental Covenant**
 - Draft Final
- Other:** _____

ABBREVIATED 310B SITE CHARACTERIZATION REPORT (SCR)

FACILITY I.D. NUMBER 51-115577
TANK NO. 022A, SCHUYKILL RIVER TANK FARM
3144 PASSYUNK AVE.
PHILADELPHIA, PA

Prepared on Behalf of:

Philadelphia Energy Solutions Refining and Marketing LLC (PESRM)

Prepared By:

Ramboll Americas Engineering Solutions, Inc. (RAES)

Date:

December 2023

Incident Number:

59035

Project Number:

1690028299_Conv

Version:

01



PROFESSIONAL GEOLOGIST STATEMENT

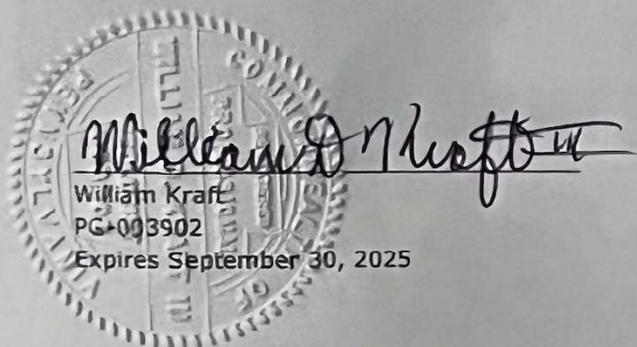
Pursuant to the requirements of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Pennsylvania Act 2 Program), adopted August 16, 1997, which state that:

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

I hereby 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 310B Site Characterization Report (SCR), Facility I.D. Number 51-115577, Tank No. 022A, Schuylkill River Tank Farm, 3144 Passyunk Ave., Philadelphia, PA, dated December 2023.

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



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1. INTRODUCTION

On behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), Ramboll Americas Engineering Solutions (Ramboll) has prepared this Abbreviated 310B Site Characterization Report (SCR) for a reported release of heating oil product from two product lines associated with former aboveground storage tank (AST) Tank 022A (also known as GP SR-30 and P-43), at the Schuylkill River Tank Farm (SRTF or the "Property"), located at 3144 West Passyunk Avenue, Philadelphia, Pennsylvania (PA); Figure 1.1.¹ For the purposes of this report, "Site" refers to the parcel of land upon which Tank 022A was situated. This SCR has been prepared in general accordance with Title 25 of Pennsylvania Code (Pa. Code) §245.310(b).

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 3 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).

- Attainment sample results are presented in Section 4 of this report.
- A discussion and demonstration of attainment is present in Section 5 of this report.

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

- Selection of standards is described in Section 5.

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

- An evaluation of ecological receptors is provided in Section 4.

(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.

- A description of the release is presented in Section 2 of this report.
- Interim remedial actions are discussed in Section 3 of this report.

¹ Ramboll notes that Tank 022A 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 of Release

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, LLC² (Evergreen) is investigating the Former Philadelphia 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 022A was located at the south end of the SRTF. Tank 022A had a capacity of approximately 5,527,200 gallons and was previously used to store No.2 heating oil and No. 6 heating oil.

Tank 022A was emptied of product and removed from the Site by NorthStar Contracting Group, Inc. (NorthStar) using an excavator mounted mechanical shear on April 13, 2023³. During the removal of Tank 022A, the valves on the two (2) aboveground product lines were turned to the off position and the tank was removed. The remaining aboveground product lines east of Tank 022A were not removed yet. Temporary flange covers were placed over the product piping by NorthStar within three feet of Tank 022A. On June 29, 2023, it was observed by Ramboll that the temporary flange covers had failed, and residual product that remained in an approximately one-foot section of piping between the valve and the temporary flange cover in each line had been released to the ground. Impacts appeared to be limited to surface and shallow subsurface soils over areas measuring approximately 4 square feet and 2 square feet, respectively beneath the two pipes. The Pennsylvania Department of Environmental Protection (PADEP) was verbally notified of the release on June 30, 2023. PADEP issued a letter to PESRM dated July 6, 2023, requiring actions to address the release including the conduct of initial response actions and performance of a site characterization in accordance with Section 245.309 of the Corrective Action Process (CAP) regulations under 25 Pennsylvania Code Chapter 245, Subchapter D. The Notification of Release form was submitted to PADEP on July 13, 2023.

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 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), heating oils, 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

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.

³ PESRM plans to perform a tank closure assessment independent of this Abbreviated SCR.

(RIR) 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. Future site assessment and remediation activities will be conducted at the SRTF under Act 2 and Act 32 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 south end of the SRTF. A berm surrounds the site. The site is bounded to the east by a SRTF maintenance road and aboveground pipeline, to the south by a gravel surfaced parking pad and a SRTF maintenance road, to the north a bermed area that surrounded a former AST, and to the west by vacant land and an SRTF maintenance road. The SRTF is enclosed with a fence and is secured. 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.

3. INTERIM REMEDIAL ACTIONS

The following interim remedial actions were taken at Tank 022A as listed below.

- Temporary flange covers were removed and replaced with permanent flange covers on June 30, 2023 and July 5, 2023 by NorthStar.
- Excavation of visibly impacted soil was initiated on July 6, 2023. Surface material (i.e., gravel) was removed from beneath both flanges and placed into a 55-gallon drum. Subsequent to removal of the surface material, oil affected soil beneath each of the two pipes was hand excavated by NorthStar using a shovel and placed into a 55-gallon drum. Following excavation, interim soil samples were collected from beneath each of the two flanges to inform further excavation extent.
- Based on the results of the July 6 soil samples, additional soil excavation was performed by NorthStar on October 2, 2023. Additional soil was removed from within the footprint of the former excavation (i.e., beneath both flanges) using a shovel, and placed into two additional 55-gallon drums. The resulting excavation measured approximately 0.5 to 2.5 feet (ft) in depth, with the deepest excavation extending beneath the flanges, over an area of 2 ft by 9 ft. The approximate area of excavation is depicted on Figure 3.1.

All drummed material has been transported offsite for disposal at Republic Environmental Systems LLC of Hatfield, Pennsylvania by NorthStar (Appendix A).

4. ATTAINMENT SAMPLE RESULTS

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 samples (T30A-021023, and T30B-021023) from the base of the excavation at depths of 1.0 to 1.5 ft and 2.0 to 2.5 ft below ground surface (bgs), respectively, using a trowel on October 2, 2023 (Figure 3.1); a duplicate soil sample was also collected. Soil samples were collected and placed into laboratory-provided sample containers, labeled, packaged on ice, and transported under chain-of-custody procedures to Eurofins Lancaster Laboratories Environmental Testing in Lancaster, Pennsylvania for the analysis of No. 2 heating oil and No. 6 heating oil constituents, including select volatile organic compounds (VOCs)⁴ by United States Environmental Protection Agency (USEPA) method 8260, and select semi-volatile organic compounds (SVOCs) by USEPA method 8270, as outlined on *Table 2 of the Site Assessment Sampling Requirements at Regulated Storage Tank System Closures Guidance Document* dated February 2022.

Results are summarized in Table 4.1 and complete laboratory analytical data reporting sheets are included as Appendix B. Concentrations of detected constituents were compared to the PADEP SHS Medium Specific Concentrations (MSCs) for nonresidential direct contact with surface soil, subsurface soil, and for soil to groundwater migration for nonresidential used aquifers with total dissolved solids (TDS) of less than or equal to 2,500 milligrams per liter (mg/L). Non-residential MSCs are appropriate for the Site as the current Site use is industrial, and 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. No constituents were detected at concentrations exceeding the MSCs.

4.1 Quality Assurance and Quality Control (QA/QC)

One duplicate soil sample was collected to document data reproducibility. During sampling activities, re-useable sampling equipment was decontaminated between sample locations using a non-phosphate detergent and tap water rinse. Following the completion of the sampling, an equipment rinse blank was collected for analysis of VOCs by USEPA method 8260 and SVOCs by USEPA method 8270. 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.

4.2 Ecological Receptors

Ramboll reviewed ecological 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; see Appendix C. 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 Mingo Creek, is located approximately 600 feet south of Tank 022A. The Site has been developed for industrial use for over

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

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 residual heating oil from Tank 022A.

5. DEMONSTRATION OF ATTAINMENT

Ramboll in conjunction with NorthStar performed interim remedial measures to address the observations outlined in the Notification of Release. Interim measures included the installation of permanent flange covers and the excavation of approximately 0.7 cubic yard of affected gravel and soil. Laboratory analytical results for two attainment soil samples (T30A-021023 and T30B-021023) and a duplicate sample indicate no constituents of concern exceeding applicable standards. Based on the results of the site characterization activities, no further site characterization is required.

6. 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. 2021. Sitewide Remedial Investigation Report Addendum, Former Philadelphia Refinery 3144 Passyunk Avenue, Philadelphia, Pennsylvania. May 20.

TABLES

TABLE 4.1: Summary of Detected Volatile Organic Compounds (VOCs) in Soil (2023)
Excavation Sampling
Tank 022A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHSs) Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil			T30A-021023	T30B-021023	DUP-01-021023
	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	
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		10/2/2023	10/2/2023	
Volatile Organic Compounds (VOCs) (mg/kg)						
1,2,4-Trimethylbenzene	4,700	5,400	300	0.0225	< 0.000232	< 0.000267
1,3,5-Trimethylbenzene	4,700	5,400	93	0.00827	< 0.000296	< 0.000341
Benzene	280	330	0.13	0.00325	< 0.000244	< 0.000280
Ethylbenzene	880	1,000	46	0.00156	< 0.000188	< 0.000216
Isopropylbenzene	10,000	10,000	2,500	0.00172	< 0.000269	< 0.000309
Naphthalene	66	77	25	0.0153	< 0.000387	< 0.000445
Toluene	10,000	10,000	44	0.00226	< 0.000221	< 0.000254

Notes:

Soil was analyzed for full list volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260. Only detected constituents are shown.

Detected concentrations of VOCs in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Organic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil and 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).

mg/kg - milligrams per kilogram.

ft bgs - feet below ground surface.

"<" - Less than the method detection limit.

TABLE 4.1: Summary of Detected Semi-Volatile Organic Compounds (SVOCs) in Soil (2023)
 Excavation Sampling
 Tank 022A, Schuylkill River Tank Farm, Philadelphia, Pennsylvania

Constituent	PADEP Statewide Health Standards (SHSs) Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil			T30A-021023	T30B-021023	DUP-01-021023
	Direct Contact		Soil to Groundwater	1.0-1.5 ft bgs	2.0-2.5 ft bgs	
	Nonresidential MSCs		Used Aquifer, Nonresidential TDS <= 2,500			
	Surface Soil 0-2 ft bgs	Subsurface Soil 2-15 ft bgs		10/2/2023	10/2/2023	
Semi-Volatile Organic Compounds (SVOCs) (mg/kg)						
Anthracene	190,000	190,000	350	0.199 J	0.0493 J	0.0522 J
Benzo(a)anthracene	130	190,000	340	0.256	0.175	0.145
Benzo(a)pyrene	91	190,000	46	0.208	0.217	0.210
Benzo(b)fluoranthene	76	190,000	170	0.278	0.204	0.180
Benzo(g,h,i)perylene	190,000	190,000	180	0.116 J	0.143 J	0.166 J
Chrysene	760	190,000	230	0.323 J	0.436	0.372 J
Fluorene	130,000	190,000	3,800	0.312 J	0.0483 J	0.0393 J
Phenanthrene	190,000	190,000	10,000	1.070	0.110 J	0.0934 J
Pyrene	96,000	190,000	2,200	0.609	0.417	0.327 J

Notes:

Soil was analyzed for semi-volatile organic compounds (SVOCs) using United States Environmental Protection Agency (USEPA) Method 8270. Only detected constituents are shown.

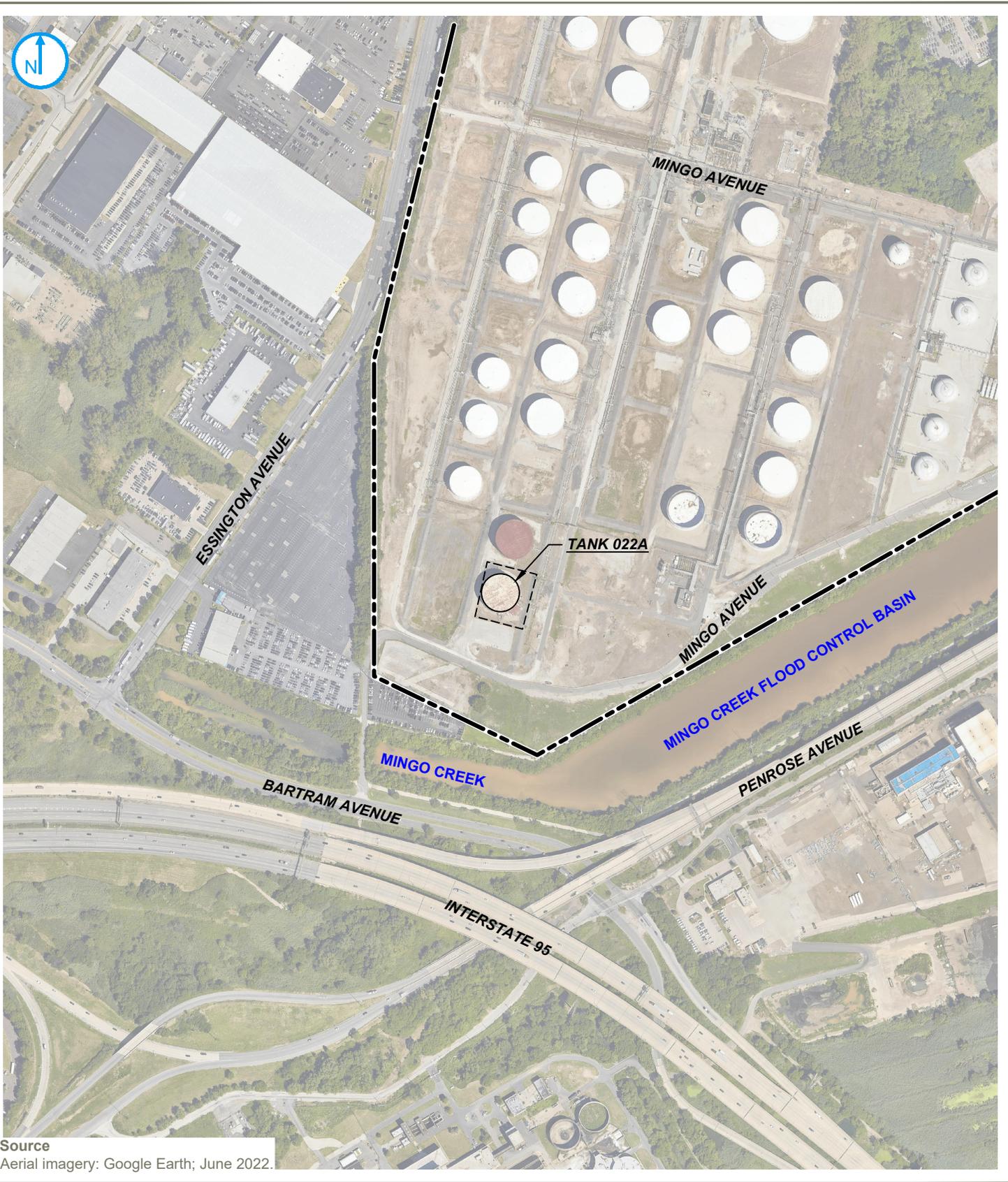
Detected concentrations of SVOCs in soil were compared to the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs) for Organic Regulated Substances in Soil. More specifically, Direct Contact values for Nonresidential MSCs for Surface Soil and 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).

mg/kg - milligrams per kilogram.

ft bgs - feet below ground surface.

J - Estimated value below the reporting limit.

FIGURES



--- PROPERTY BOUNDARY (APPROXIMATE)

SITE LAYOUT

FIGURE 1.1



PHILADELPHIA REFINERY OPERATIONS
 3144 PASSYUNIC AVENUE
 PHILADELPHIA, PENNSYLVANIA

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC.





Source
 Aerial imagery: Google Earth; June 2022.

-  SITE BOUNDARY (APPROXIMATE)
-  ABOVEGROUND PRODUCT LINE
-  SOIL BORING LOCATION
-  AREA OF EXCAVATION

Post-Excavation Attainment Soil Sample Locations

FIGURE 3.1



SCHUYLKILL RIVER TANK FARM

3144 PASSYUNIC AVENUE
 PHILADELPHIA, PENNSYLVANIA

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC.



APPENDICES

APPENDIX A
WASTE DISPOSAL MANIFESTS

627865-23

11/2 5385098

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number PAD980555312	2. Page 1 of 1	3. Emergency Response Phone 609-338-3293	4. Manifest Tracking Number 016609233 FLE					
5. Generator's Name and Mailing Address Philadelphia Energy Solutions Refining and Marketing LLC 3144 Passyunk Avenue Philadelphia, PA 19145 Generator's Phone: 440 228-1524				Generator's Site Address (if different than mailing address) Philadelphia Energy Solutions Refining and Marketing LLC 70th Street and Essington Avenue Philadelphia PA 19145						
6. Transporter 1 Company Name Active Environmental Technologies Inc				U.S. EPA ID Number NJR986647105						
7. Transporter 2 Company Name REPUBLIC ENV SYS (TRANS GRP) LLC				U.S. EPA ID Number PAD982661381						
8. Designated Facility Name and Site Address Republic Environmental Systems (PA) LLC 2869 Sandstone Dr Hatfield PA 19440 Facility's Phone: 215-822-8995				U.S. EPA ID Number PAD085690592						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	X	1. NA3077, Hazardous waste, solid, n.o.s (lead) 9, PGIII		002	DM	01000	P	D008		
		2.								
		3.								
		4.								
14. Special Handling Instructions and Additional Information SR-30 soil 1)(E) APPROVAL 2300019493-STAB07 ERG#171										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offeror's Printed/Typed Name Robert Amos								Signature <i>[Signature]</i>		Month Day Year 10 17 23
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name William Sweet Signature <i>[Signature]</i> Month Day Year 10 17 23 Transporter 2 Printed/Typed Name Jessica Phung Signature <i>[Signature]</i> Month Day Year 10 26 23									
TRANSPORTER	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____ U.S. EPA ID Number: _____									
	18b. Alternate Facility (or Generator) Facility's Phone: _____									
	18c. Signature of Alternate Facility (or Generator)								Month Day Year ____	
DESIGNATED FACILITY	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. H110 2. _____ 3. _____ 4. _____									
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name MAWETAUNA Signature <i>[Signature]</i> Month Day Year 11 10 23									

55/518-23

53391163 9/21

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number PAD98055312	2. Page 1 of 1	3. Emergency Response Phone 440-228-1524	4. Manifest Tracking Number 016609179 FLE
---	---------------------------------------	-------------------	---	--

5. Generator's Name and Mailing Address Philadelphia Energy Solutions Refining and Marketing LLC 3144 Passyunk Avenue Philadelphia PA 19145	Generator's Site Address (if different than mailing address) Philadelphia Energy Solutions Refining and Marketing LLC 70th Street and Essington Avenue Philadelphia PA 19145
--	---

Generator's Phone: 440 228-1524	U.S. EPA ID Number NJR986647105
---------------------------------	------------------------------------

6. Transporter 1 Company Name Active Environmental Technologies Inc	U.S. EPA ID Number PAD982401381
--	------------------------------------

7. Transporter 2 Company Name <i>Republic Env Sys (Trans Group) LLC</i>	U.S. EPA ID Number
--	--------------------

8. Designated Facility Name and Site Address Republic Environmental Systems (PA) LLC 2869 Sandstone Dr Hatfield PA 19440	U.S. EPA ID Number PAD085690592
---	------------------------------------

Facility's Phone: 215 822-8995

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
X	1-NA3077, Hazardous waste, solid, n.o.s (lead) 9, PGIII	001	DF ^{SG} DM	00500	P	D008		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information	1)(E) APPROVAL 2300019493-STAB07 ERG#171
--	--

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Officer's Printed/Typed Name <i>Auth Agent for P&S Am LLC</i>	Signature <i>[Signature]</i>	Month Day Year 09/10/23
--	---------------------------------	----------------------------

16. International Shipments	<input type="checkbox"/> Import to U.S.	<input type="checkbox"/> Export from U.S.	Part of entry/exit: Date leaving U.S.:
-----------------------------	---	---	---

17. Transporter Acknowledgment of Receipt of Materials	Transporter 1 Printed/Typed Name <i>Julian Gonzalez</i>	Signature <i>[Signature]</i>	Month Day Year 19/5/23
--	--	---------------------------------	---------------------------

Transporter 2 Printed/Typed Name <i>Heidi Godshell</i>	Signature <i>[Signature]</i>	Month Day Year 9/14/23
---	---------------------------------	---------------------------

18. Discrepancy	<input type="checkbox"/> Quantity	<input type="checkbox"/> Type	<input type="checkbox"/> Residue	<input type="checkbox"/> Partial Rejection	<input type="checkbox"/> Full Rejection
-----------------	-----------------------------------	-------------------------------	----------------------------------	--	---

18a. Discrepancy Indication Space	Manifest Reference Number:	U.S. EPA ID Number
-----------------------------------	----------------------------	--------------------

18b. Alternate Facility (or Generator)	U.S. EPA ID Number
--	--------------------

Facility's Phone:	Month Day Year
-------------------	----------------

18c. Signature of Alternate Facility (or Generator)	Month Day Year
---	----------------

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)	1. H110	2.	3.	4.
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20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a	Printed/Typed Name <i>MALVEY/AMMA</i>	Signature <i>[Signature]</i>	Month Day Year 09/21/23
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DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

**APPENDIX B
ANALYTICAL DATA REPORTING SHEETS
FROM ATTAINMENT SAMPLES**

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Taylor Carroll
Ramboll Americas Engineering Solutions
4245 Fairfax Dr
Suite 700
Arlington, Virginia 22203

Generated 10/9/2023 6:53:32 AM

JOB DESCRIPTION

Soil Sampling

JOB NUMBER

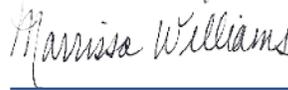
410-145266-1

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
10/9/2023 6:53:32 AM

Authorized for release by
Marrison Williams, Project Manager
Marrison.Williams@et.eurofinsus.com
(717)556-7246

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

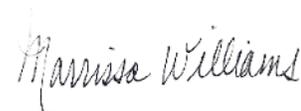




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Definitions/Glossary

Client: Ramboll Americas Engineering Solutions
Project/Site: Soil Sampling

Job ID: 410-145266-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ramboll Americas Engineering Solutions
Project/Site: Soil Sampling

Job ID: 410-145266-1

Job ID: 410-145266-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-145266-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/3/2023 1:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

Client Sample ID: T30A-021023

Lab Sample ID: 410-145266-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	22.5		1.01	0.249	ug/Kg	1	✳	8260D	Total/NA
1,3,5-Trimethylbenzene	8.27		1.01	0.318	ug/Kg	1	✳	8260D	Total/NA
Benzene	3.25		1.01	0.261	ug/Kg	1	✳	8260D	Total/NA
Ethylbenzene	1.56		1.01	0.202	ug/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	1.72		1.01	0.289	ug/Kg	1	✳	8260D	Total/NA
Naphthalene	15.3		1.52	0.415	ug/Kg	1	✳	8260D	Total/NA
Toluene	2.26		1.01	0.237	ug/Kg	1	✳	8260D	Total/NA
Anthracene	199	J	354	10.8	ug/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	256		35.4	26.7	ug/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	208		35.4	9.46	ug/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	278		35.4	9.18	ug/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	116	J	354	10.5	ug/Kg	1	✳	8270E	Total/NA
Chrysene	323	J	354	14.9	ug/Kg	1	✳	8270E	Total/NA
Fluorene	312	J	354	10.4	ug/Kg	1	✳	8270E	Total/NA
Phenanthrene	1070		354	14.5	ug/Kg	1	✳	8270E	Total/NA
Pyrene	609		354	8.83	ug/Kg	1	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

Client Sample ID: T30A-021023

Lab Sample ID: 410-145266-1

Date Collected: 10/02/23 10:10

Matrix: Solid

Date Received: 10/03/23 13:45

Percent Solids: 92.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	22.5		1.01	0.249	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
1,3,5-Trimethylbenzene	8.27		1.01	0.318	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
Benzene	3.25		1.01	0.261	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
Ethylbenzene	1.56		1.01	0.202	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
Isopropylbenzene	1.72		1.01	0.289	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
Methyl tert-butyl ether	<0.519		1.01	0.519	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
Naphthalene	15.3		1.52	0.415	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1
Toluene	2.26		1.01	0.237	ug/Kg	☼	10/06/23 10:38	10/08/23 08:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		72 - 138	10/06/23 10:38	10/08/23 08:06	1
4-Bromofluorobenzene	102		63 - 139	10/06/23 10:38	10/08/23 08:06	1
Dibromofluoromethane (Surr)	111		54 - 150	10/06/23 10:38	10/08/23 08:06	1
Toluene-d8 (Surr)	112		71 - 126	10/06/23 10:38	10/08/23 08:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	199	J	354	10.8	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Benzo[a]anthracene	256		35.4	26.7	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Benzo[a]pyrene	208		35.4	9.46	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Benzo[b]fluoranthene	278		35.4	9.18	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Benzo[g,h,i]perylene	116	J	354	10.5	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Chrysene	323	J	354	14.9	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Fluorene	312	J	354	10.4	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Phenanthrene	1070		354	14.5	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1
Pyrene	609		354	8.83	ug/Kg	☼	10/04/23 10:59	10/05/23 00:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	61		24 - 137	10/04/23 10:59	10/05/23 00:05	1
2-Fluorobiphenyl	66		48 - 120	10/04/23 10:59	10/05/23 00:05	1
2-Fluorophenol (Surr)	60		31 - 120	10/04/23 10:59	10/05/23 00:05	1
Nitrobenzene-d5 (Surr)	57		38 - 120	10/04/23 10:59	10/05/23 00:05	1
Phenol-d5 (Surr)	65		39 - 120	10/04/23 10:59	10/05/23 00:05	1
Terphenyl-d14 (Surr)	65		25 - 126	10/04/23 10:59	10/05/23 00:05	1

General Chemistry

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	7.1		1.0	1.0	%			10/03/23 21:55	1
Percent Solids (EPA Moisture)	92.9		1.0	1.0	%			10/03/23 21:55	1

Surrogate Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: Soil Sampling

Job ID: 410-145266-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (72-138)	BFB (63-139)	DBFM (54-150)	TOL (71-126)
410-145266-1	T30A-021023	121	102	111	112
LCS 460-936893/3	Lab Control Sample	89	82	89	95
LCSD 460-936893/4	Lab Control Sample Dup	93	86	94	97
MB 460-936893/7	Method Blank	94	90	95	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (24-137)	FBP (48-120)	2FP (31-120)	NBZ (38-120)	PHL (39-120)	TPHL (25-126)
410-145266-1	T30A-021023	61	66	60	57	65	65
LCS 460-936131/2-A	Lab Control Sample	88	87	87	88	90	103
LCSD 460-936131/3-A	Lab Control Sample Dup	91	89	90	91	91	106
MB 460-936131/1-A	Method Blank	89	90	91	93	93	110

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

QC Sample Results

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-936893/7

Matrix: Solid

Analysis Batch: 936893

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trimethylbenzene	<0.246		1.00	0.246	ug/Kg			10/08/23 07:13	1
1,3,5-Trimethylbenzene	<0.314		1.00	0.314	ug/Kg			10/08/23 07:13	1
Benzene	<0.258		1.00	0.258	ug/Kg			10/08/23 07:13	1
Ethylbenzene	<0.199		1.00	0.199	ug/Kg			10/08/23 07:13	1
Isopropylbenzene	<0.285		1.00	0.285	ug/Kg			10/08/23 07:13	1
Methyl tert-butyl ether	<0.512		1.00	0.512	ug/Kg			10/08/23 07:13	1
Naphthalene	<0.410		1.50	0.410	ug/Kg			10/08/23 07:13	1
Toluene	<0.234		1.00	0.234	ug/Kg			10/08/23 07:13	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	94		72 - 138		10/08/23 07:13	1
4-Bromofluorobenzene	90		63 - 139		10/08/23 07:13	1
Dibromofluoromethane (Surr)	95		54 - 150		10/08/23 07:13	1
Toluene-d8 (Surr)	96		71 - 126		10/08/23 07:13	1

Lab Sample ID: LCS 460-936893/3

Matrix: Solid

Analysis Batch: 936893

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,2,4-Trimethylbenzene	20.0	21.32		ug/Kg		107	71 - 120
1,3,5-Trimethylbenzene	20.0	21.37		ug/Kg		107	70 - 120
Benzene	20.0	19.27		ug/Kg		96	75 - 130
Ethylbenzene	20.0	18.14		ug/Kg		91	80 - 120
Isopropylbenzene	20.0	18.14		ug/Kg		91	80 - 120
Methyl tert-butyl ether	20.0	17.33		ug/Kg		87	74 - 125
Naphthalene	20.0	18.52		ug/Kg		93	42 - 150
Toluene	20.0	18.64		ug/Kg		93	80 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		72 - 138
4-Bromofluorobenzene	82		63 - 139
Dibromofluoromethane (Surr)	89		54 - 150
Toluene-d8 (Surr)	95		71 - 126

Lab Sample ID: LCSD 460-936893/4

Matrix: Solid

Analysis Batch: 936893

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
		Result	Qualifier						
1,2,4-Trimethylbenzene	20.0	21.70		ug/Kg		108	71 - 120	2	30
1,3,5-Trimethylbenzene	20.0	21.68		ug/Kg		108	70 - 120	1	30
Benzene	20.0	18.84		ug/Kg		94	75 - 130	2	30
Ethylbenzene	20.0	18.57		ug/Kg		93	80 - 120	2	30
Isopropylbenzene	20.0	18.57		ug/Kg		93	80 - 120	2	30
Methyl tert-butyl ether	20.0	18.28		ug/Kg		91	74 - 125	5	30
Naphthalene	20.0	19.37		ug/Kg		97	42 - 150	5	30
Toluene	20.0	18.73		ug/Kg		94	80 - 120	0	30

QC Sample Results

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		72 - 138
4-Bromofluorobenzene	86		63 - 139
Dibromofluoromethane (Surr)	94		54 - 150
Toluene-d8 (Surr)	97		71 - 126

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-936131/1-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 936131

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Anthracene	<10.1		330	10.1	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[a]anthracene	<24.9		33.0	24.9	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[a]pyrene	<8.81		33.0	8.81	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[b]fluoranthene	<8.56		33.0	8.56	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[g,h,i]perylene	<9.76		330	9.76	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Chrysene	<13.9		330	13.9	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Fluorene	<9.68		330	9.68	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Phenanthrene	<13.5		330	13.5	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Pyrene	<8.23		330	8.23	ug/Kg		10/04/23 10:59	10/04/23 19:13	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol (Surr)	89		24 - 137	10/04/23 10:59	10/04/23 19:13	1
2-Fluorobiphenyl	90		48 - 120	10/04/23 10:59	10/04/23 19:13	1
2-Fluorophenol (Surr)	91		31 - 120	10/04/23 10:59	10/04/23 19:13	1
Nitrobenzene-d5 (Surr)	93		38 - 120	10/04/23 10:59	10/04/23 19:13	1
Phenol-d5 (Surr)	93		39 - 120	10/04/23 10:59	10/04/23 19:13	1
Terphenyl-d14 (Surr)	110		25 - 126	10/04/23 10:59	10/04/23 19:13	1

Lab Sample ID: LCS 460-936131/2-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 936131

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Anthracene	3330	2811		ug/Kg		84	67 - 120
Benzo[a]anthracene	3330	2969		ug/Kg		89	69 - 120
Benzo[a]pyrene	3330	3211		ug/Kg		96	66 - 123
Benzo[b]fluoranthene	3330	3186		ug/Kg		96	70 - 125
Benzo[g,h,i]perylene	3330	2785		ug/Kg		84	66 - 120
Chrysene	3330	2941		ug/Kg		88	63 - 120
Fluorene	3330	2699		ug/Kg		81	70 - 120
Phenanthrene	3330	2856		ug/Kg		86	66 - 120
Pyrene	3330	3177		ug/Kg		95	67 - 121

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	88		24 - 137
2-Fluorobiphenyl	87		48 - 120
2-Fluorophenol (Surr)	87		31 - 120
Nitrobenzene-d5 (Surr)	88		38 - 120
Phenol-d5 (Surr)	90		39 - 120

QC Sample Results

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-936131/2-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 936131

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	103		25 - 126

Lab Sample ID: LCSD 460-936131/3-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 936131

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec		RPD	
		Result	Qualifier				Limits	RPD	Limit	
Anthracene	3330	2918		ug/Kg		88	67 - 120	4	30	
Benzo[a]anthracene	3330	3028		ug/Kg		91	69 - 120	2	30	
Benzo[a]pyrene	3330	3319		ug/Kg		100	66 - 123	3	30	
Benzo[b]fluoranthene	3330	3224		ug/Kg		97	70 - 125	1	30	
Benzo[g,h,i]perylene	3330	2894		ug/Kg		87	66 - 120	4	30	
Chrysene	3330	2999		ug/Kg		90	63 - 120	2	30	
Fluorene	3330	2772		ug/Kg		83	70 - 120	3	30	
Phenanthrene	3330	2956		ug/Kg		89	66 - 120	3	30	
Pyrene	3330	3291		ug/Kg		99	67 - 121	4	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	91		24 - 137
2-Fluorobiphenyl	89		48 - 120
2-Fluorophenol (Surr)	90		31 - 120
Nitrobenzene-d5 (Surr)	91		38 - 120
Phenol-d5 (Surr)	91		39 - 120
Terphenyl-d14 (Surr)	106		25 - 126

Method: Moisture - Percent Moisture

Lab Sample ID: 410-145266-1 DU

Matrix: Solid

Analysis Batch: 936024

Client Sample ID: T30A-021023

Prep Type: Total/NA

Analyte	Sample Sample		DU DU		Unit	D	RPD	
	Result	Qualifier	Result	Qualifier			RPD	Limit
Percent Moisture	7.1		6.4		%		10	20
Percent Solids	92.9		93.6		%		0.7	20

QC Association Summary

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

GC/MS VOA

Prep Batch: 936645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145266-1	T30A-021023	Total/NA	Solid	5035	

Analysis Batch: 936893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145266-1	T30A-021023	Total/NA	Solid	8260D	936645
MB 460-936893/7	Method Blank	Total/NA	Solid	8260D	
LCS 460-936893/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 460-936893/4	Lab Control Sample Dup	Total/NA	Solid	8260D	

GC/MS Semi VOA

Prep Batch: 936131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145266-1	T30A-021023	Total/NA	Solid	3546	
MB 460-936131/1-A	Method Blank	Total/NA	Solid	3546	
LCS 460-936131/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 460-936131/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 936212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145266-1	T30A-021023	Total/NA	Solid	8270E	936131
MB 460-936131/1-A	Method Blank	Total/NA	Solid	8270E	936131
LCS 460-936131/2-A	Lab Control Sample	Total/NA	Solid	8270E	936131
LCSD 460-936131/3-A	Lab Control Sample Dup	Total/NA	Solid	8270E	936131

General Chemistry

Analysis Batch: 936024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145266-1	T30A-021023	Total/NA	Solid	Moisture	
410-145266-1 DU	T30A-021023	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Ramboll Americas Engineering Solutions
 Project/Site: Soil Sampling

Job ID: 410-145266-1

Client Sample ID: T30A-021023

Lab Sample ID: 410-145266-1

Date Collected: 10/02/23 10:10

Matrix: Solid

Date Received: 10/03/23 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	936024	CJC	EET EDI	10/03/23 21:55

Client Sample ID: T30A-021023

Lab Sample ID: 410-145266-1

Date Collected: 10/02/23 10:10

Matrix: Solid

Date Received: 10/03/23 13:45

Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			936645	SAS	EET EDI	10/06/23 10:38
Total/NA	Analysis	8260D		1	936893	VBP	EET EDI	10/08/23 08:06
Total/NA	Prep	3546			936131	FHW	EET EDI	10/04/23 10:59
Total/NA	Analysis	8270E		1	936212	MME	EET EDI	10/05/23 00:05

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900



Accreditation/Certification Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: Soil Sampling

Job ID: 410-145266-1

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-24
Massachusetts	State	M-NJ312	06-30-24
New Jersey	NELAP	12028	06-30-24
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

Method Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: Soil Sampling

Job ID: 410-145266-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET EDI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET EDI
Moisture	Percent Moisture	EPA	EET EDI
3546	Microwave Extraction	SW846	EET EDI
5035	Closed System Purge and Trap	SW846	EET EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900



Sample Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: Soil Sampling

Job ID: 410-145266-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-145266-1	T30A-021023	Solid	10/02/23 10:10	10/03/23 13:45

1

2

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15

Chain of Custody Record



Client Information		Lab PIV: Williams Mattressa C		Carrier Tracking No(s): 410-99026-28159 1						
Client Contact: Mr. McNeill Bauer		E-Mail: Marrisona.Williams@et.eurofins.com		Page: 1 of 1						
Company: Ramboll US Corporation		PWSID: 914 374 9003		Job #: 410-145266						
Address: 4245 Fairfax Dr Suite 700		Due Date Requested: 10/19/23		Analysis Requested						
City: Arlington		TAT Requested (days): 5 @ 10 day		Preservation Codes:						
State, Zip: VA, 22203		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		A HCL M Hexane B NaOH N None C Zn Acetate O AsNaO2 D Nitric Acid P Na2OAS E NaHSO4 Q Na2SO3 F MeOH R Na2S2O3 G Amchlor S TSP Dodecahydrate H Ascorbic Acid U Acetone I Ice V MCAA J DI Water W pH 4-5 K EDTA Y Trizma L EDA Z other (specify) Other						
Phone:		Purchase Order Requested		Total Number of Containers						
Email: TCarroll@ramboll.com		WO #:		Special Instructions/Note:						
Project Name: SRPF		Project #: 41013830		<p>410-145266 Chain of Custody</p>						
Site: HTP RESTRA PHILI		SSOW#:								
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D TCL VOCs 4.3	8270E TCL 4.3 SVOCs	8280D TCL VOCs 4.3	Analysis Requested
T30A - 021023	10/2/23	10:10	G	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N	X	X	
RB- 021023	10/2/23	11:50	G	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N	X	X	
<p><i>See log for details</i></p>										
<p>Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological</p> <p>Deliverable Requested: I II III IV Other (specify)</p> <p>Empty Kit Relinquished by: _____ Date: _____</p> <p>Relinquished by: T. Carroll Date/Time: 10/2/23 12:30 Company: Ramboll</p> <p>Relinquished by: [Signature] Date/Time: 10/2/23 Company: [Signature]</p> <p>Relinquished by: [Signature] Date/Time: 10/2/23 18:00 Company: [Signature]</p> <p>Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Custody Seal No.</p> <p>Special Instructions/Note: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p> <p>Special Instructions/QC Requirements:</p> <p>Method of Shipment: _____</p> <p>Received by: [Signature] Date/Time: 10/2/23 12:30 Company: [Signature]</p> <p>Received by: [Signature] Date/Time: 10/2/23 18:00 Company: [Signature]</p> <p>Received by: [Signature] Date/Time: 10/2/23 18:00 Company: [Signature]</p> <p>Cooler Temperature(s): °C and Other Remarks:</p>										

10/9/2023

Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 410-145266-1

Login Number: 145266

List Number: 2

Creator: Rivera, Kenneth

List Source: Eurofins Edison

List Creation: 10/03/23 05:46 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4°C, IR #10
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Taylor Carroll
Ramboll Americas Engineering Solutions
4245 Fairfax Dr
Suite 700
Arlington, Virginia 22203

Generated 10/9/2023 7:18:16 AM

JOB DESCRIPTION

SRTF Philly

JOB NUMBER

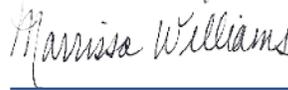
410-145253-1

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
10/9/2023 7:18:16 AM

Authorized for release by
Marrison Williams, Project Manager
Marrison.Williams@et.eurofinsus.com
(717)556-7246

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

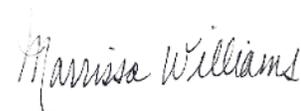




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Definitions/Glossary

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Job ID: 410-145253-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-145253-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/3/2023 1:23 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Client Sample ID: T30B-021023

Lab Sample ID: 410-145253-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Anthracene	49.3	J	360	11.0	ug/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	175		36.0	27.2	ug/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	217		36.0	9.62	ug/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	204		36.0	9.34	ug/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	143	J	360	10.6	ug/Kg	1	✳	8270E	Total/NA
Chrysene	436		360	15.2	ug/Kg	1	✳	8270E	Total/NA
Fluorene	48.3	J	360	10.6	ug/Kg	1	✳	8270E	Total/NA
Phenanthrene	110	J	360	14.7	ug/Kg	1	✳	8270E	Total/NA
Pyrene	417		360	8.98	ug/Kg	1	✳	8270E	Total/NA

Client Sample ID: DUP-01-021023

Lab Sample ID: 410-145253-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Anthracene	52.2	J	381	11.6	ug/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	145		38.1	28.7	ug/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	210		38.1	10.2	ug/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	180		38.1	9.88	ug/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	166	J	381	11.3	ug/Kg	1	✳	8270E	Total/NA
Chrysene	372	J	381	16.0	ug/Kg	1	✳	8270E	Total/NA
Fluorene	39.3	J	381	11.2	ug/Kg	1	✳	8270E	Total/NA
Phenanthrene	93.4	J	381	15.6	ug/Kg	1	✳	8270E	Total/NA
Pyrene	327	J	381	9.49	ug/Kg	1	✳	8270E	Total/NA

Client Sample ID: TB-01-021023

Lab Sample ID: 410-145253-4

No Detections.

This Detection Summary does not include radiochemical test results.

Euofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Client Sample ID: T30B-021023

Lab Sample ID: 410-145253-1

Date Collected: 10/02/23 10:00

Matrix: Solid

Date Received: 10/03/23 13:23

Percent Solids: 91.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	<0.232		0.944	0.232	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
1,3,5-Trimethylbenzene	<0.296		0.944	0.296	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
Benzene	<0.244		0.944	0.244	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
Ethylbenzene	<0.188		0.944	0.188	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
Isopropylbenzene	<0.269		0.944	0.269	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
Methyl tert-butyl ether	<0.483		0.944	0.483	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
Naphthalene	<0.387		1.42	0.387	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1
Toluene	<0.221		0.944	0.221	ug/Kg	☼	10/06/23 10:39	10/08/23 08:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		72 - 138	10/06/23 10:39	10/08/23 08:31	1
4-Bromofluorobenzene	92		63 - 139	10/06/23 10:39	10/08/23 08:31	1
Dibromofluoromethane (Surr)	93		54 - 150	10/06/23 10:39	10/08/23 08:31	1
Toluene-d8 (Surr)	91		71 - 126	10/06/23 10:39	10/08/23 08:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	49.3	J	360	11.0	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Benzo[a]anthracene	175		36.0	27.2	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Benzo[a]pyrene	217		36.0	9.62	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Benzo[b]fluoranthene	204		36.0	9.34	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Benzo[g,h,i]perylene	143	J	360	10.6	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Chrysene	436		360	15.2	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Fluorene	48.3	J	360	10.6	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Phenanthrene	110	J	360	14.7	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1
Pyrene	417		360	8.98	ug/Kg	☼	10/04/23 10:59	10/05/23 00:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	70		24 - 137	10/04/23 10:59	10/05/23 00:27	1
2-Fluorobiphenyl	73		48 - 120	10/04/23 10:59	10/05/23 00:27	1
2-Fluorophenol (Surr)	65		31 - 120	10/04/23 10:59	10/05/23 00:27	1
Nitrobenzene-d5 (Surr)	66		38 - 120	10/04/23 10:59	10/05/23 00:27	1
Phenol-d5 (Surr)	70		39 - 120	10/04/23 10:59	10/05/23 00:27	1
Terphenyl-d14 (Surr)	75		25 - 126	10/04/23 10:59	10/05/23 00:27	1

General Chemistry

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	8.7		1.0	1.0	%			10/03/23 21:55	1
Percent Solids (EPA Moisture)	91.3		1.0	1.0	%			10/03/23 21:55	1

Client Sample ID: DUP-01-021023

Lab Sample ID: 410-145253-2

Date Collected: 10/02/23 00:00

Matrix: Solid

Date Received: 10/03/23 13:23

Percent Solids: 86.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	<0.267		1.08	0.267	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Client Sample ID: DUP-01-021023

Lab Sample ID: 410-145253-2

Date Collected: 10/02/23 00:00

Matrix: Solid

Date Received: 10/03/23 13:23

Percent Solids: 86.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	<0.341		1.08	0.341	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Benzene	<0.280		1.08	0.280	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Ethylbenzene	<0.216		1.08	0.216	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Isopropylbenzene	<0.309		1.08	0.309	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Methyl tert-butyl ether	<0.555		1.08	0.555	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Naphthalene	<0.445		1.63	0.445	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Toluene	<0.254		1.08	0.254	ug/Kg	☼	10/06/23 10:39	10/08/23 08:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		72 - 138				10/06/23 10:39	10/08/23 08:56	1
4-Bromofluorobenzene	91		63 - 139				10/06/23 10:39	10/08/23 08:56	1
Dibromofluoromethane (Surr)	95		54 - 150				10/06/23 10:39	10/08/23 08:56	1
Toluene-d8 (Surr)	92		71 - 126				10/06/23 10:39	10/08/23 08:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	52.2	J	381	11.6	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Benzo[a]anthracene	145		38.1	28.7	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Benzo[a]pyrene	210		38.1	10.2	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Benzo[b]fluoranthene	180		38.1	9.88	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Benzo[g,h,i]perylene	166	J	381	11.3	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Chrysene	372	J	381	16.0	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Fluorene	39.3	J	381	11.2	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Phenanthrene	93.4	J	381	15.6	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Pyrene	327	J	381	9.49	ug/Kg	☼	10/04/23 10:59	10/05/23 00:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	72		24 - 137				10/04/23 10:59	10/05/23 00:50	1
2-Fluorobiphenyl	76		48 - 120				10/04/23 10:59	10/05/23 00:50	1
2-Fluorophenol (Surr)	63		31 - 120				10/04/23 10:59	10/05/23 00:50	1
Nitrobenzene-d5 (Surr)	63		38 - 120				10/04/23 10:59	10/05/23 00:50	1
Phenol-d5 (Surr)	67		39 - 120				10/04/23 10:59	10/05/23 00:50	1
Terphenyl-d14 (Surr)	73		25 - 126				10/04/23 10:59	10/05/23 00:50	1

General Chemistry

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	13.5		1.0	1.0	%			10/03/23 21:55	1
Percent Solids (EPA Moisture)	86.5		1.0	1.0	%			10/03/23 21:55	1

Client Sample ID: TB-01-021023

Lab Sample ID: 410-145253-4

Date Collected: 10/02/23 00:00

Matrix: Water

Date Received: 10/03/23 13:23

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.203		1.00	0.203	ug/L			10/08/23 12:17	1
Toluene	<0.379		1.00	0.379	ug/L			10/08/23 12:17	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Ramboll Americas Engineering Solutions
 Project/Site: SRTF Philly

Job ID: 410-145253-1

Client Sample ID: TB-01-021023

Lab Sample ID: 410-145253-4

Date Collected: 10/02/23 00:00

Matrix: Water

Date Received: 10/03/23 13:23

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab: Eurofins Edison

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.298		1.00	0.298	ug/L			10/08/23 12:17	1
Methyl tert-butyl ether	<0.216		1.00	0.216	ug/L			10/08/23 12:17	1
Naphthalene	<0.881		1.00	0.881	ug/L			10/08/23 12:17	1
1,2,4-Trimethylbenzene	<0.374		1.00	0.374	ug/L			10/08/23 12:17	1
1,3,5-Trimethylbenzene	<0.326		1.00	0.326	ug/L			10/08/23 12:17	1
Isopropylbenzene	<0.336		1.00	0.336	ug/L			10/08/23 12:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 128		10/08/23 12:17	1
Toluene-d8 (Surr)	97		80 - 120		10/08/23 12:17	1
4-Bromofluorobenzene	100		76 - 120		10/08/23 12:17	1
Dibromofluoromethane (Surr)	96		77 - 132		10/08/23 12:17	1

Surrogate Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (72-138)	BFB (63-139)	DBFM (54-150)	TOL (71-126)
410-145253-1	T30B-021023	100	92	93	91
410-145253-2	DUP-01-021023	100	91	95	92
LCS 460-936893/3	Lab Control Sample	89	82	89	95
LCSD 460-936893/4	Lab Control Sample Dup	93	86	94	97
MB 460-936893/7	Method Blank	94	90	95	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-128)	TOL (80-120)	BFB (76-120)	DBFM (77-132)
410-145253-4	TB-01-021023	93	97	100	96
LCS 460-936909/3	Lab Control Sample	89	99	100	93
MB 460-936909/8	Method Blank	92	99	101	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (24-137)	FBP (48-120)	2FP (31-120)	NBZ (38-120)	PHL (39-120)	TPHL (25-126)
410-145253-1	T30B-021023	70	73	65	66	70	75
410-145253-2	DUP-01-021023	72	76	63	63	67	73
LCS 460-936131/2-A	Lab Control Sample	88	87	87	88	90	103
LCSD 460-936131/3-A	Lab Control Sample Dup	91	89	90	91	91	106
MB 460-936131/1-A	Method Blank	89	90	91	93	93	110

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

QC Sample Results

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-936893/7

Matrix: Solid

Analysis Batch: 936893

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.258		1.00	0.258	ug/Kg			10/08/23 07:13	1
Ethylbenzene	<0.199		1.00	0.199	ug/Kg			10/08/23 07:13	1
1,2,4-Trimethylbenzene	<0.246		1.00	0.246	ug/Kg			10/08/23 07:13	1
1,3,5-Trimethylbenzene	<0.314		1.00	0.314	ug/Kg			10/08/23 07:13	1
Methyl tert-butyl ether	<0.512		1.00	0.512	ug/Kg			10/08/23 07:13	1
Isopropylbenzene	<0.285		1.00	0.285	ug/Kg			10/08/23 07:13	1
Naphthalene	<0.410		1.50	0.410	ug/Kg			10/08/23 07:13	1
Toluene	<0.234		1.00	0.234	ug/Kg			10/08/23 07:13	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	94		72 - 138		10/08/23 07:13	1
4-Bromofluorobenzene	90		63 - 139		10/08/23 07:13	1
Dibromofluoromethane (Surr)	95		54 - 150		10/08/23 07:13	1
Toluene-d8 (Surr)	96		71 - 126		10/08/23 07:13	1

Lab Sample ID: LCS 460-936893/3

Matrix: Solid

Analysis Batch: 936893

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	20.0	19.27		ug/Kg		96	75 - 130
Ethylbenzene	20.0	18.14		ug/Kg		91	80 - 120
1,2,4-Trimethylbenzene	20.0	21.32		ug/Kg		107	71 - 120
1,3,5-Trimethylbenzene	20.0	21.37		ug/Kg		107	70 - 120
Methyl tert-butyl ether	20.0	17.33		ug/Kg		87	74 - 125
Isopropylbenzene	20.0	18.14		ug/Kg		91	80 - 120
Naphthalene	20.0	18.52		ug/Kg		93	42 - 150
Toluene	20.0	18.64		ug/Kg		93	80 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		72 - 138
4-Bromofluorobenzene	82		63 - 139
Dibromofluoromethane (Surr)	89		54 - 150
Toluene-d8 (Surr)	95		71 - 126

Lab Sample ID: LCSD 460-936893/4

Matrix: Solid

Analysis Batch: 936893

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
		Result	Qualifier						
Benzene	20.0	18.84		ug/Kg		94	75 - 130	2	30
Ethylbenzene	20.0	18.57		ug/Kg		93	80 - 120	2	30
1,2,4-Trimethylbenzene	20.0	21.70		ug/Kg		108	71 - 120	2	30
1,3,5-Trimethylbenzene	20.0	21.68		ug/Kg		108	70 - 120	1	30
Methyl tert-butyl ether	20.0	18.28		ug/Kg		91	74 - 125	5	30
Isopropylbenzene	20.0	18.57		ug/Kg		93	80 - 120	2	30
Naphthalene	20.0	19.37		ug/Kg		97	42 - 150	5	30
Toluene	20.0	18.73		ug/Kg		94	80 - 120	0	30

QC Sample Results

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		72 - 138
4-Bromofluorobenzene	86		63 - 139
Dibromofluoromethane (Surr)	94		54 - 150
Toluene-d8 (Surr)	97		71 - 126

Lab Sample ID: MB 460-936909/8

Matrix: Water

Analysis Batch: 936909

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.203		1.00	0.203	ug/L			10/08/23 10:37	1
Ethylbenzene	<0.298		1.00	0.298	ug/L			10/08/23 10:37	1
1,2,4-Trimethylbenzene	<0.374		1.00	0.374	ug/L			10/08/23 10:37	1
1,3,5-Trimethylbenzene	<0.326		1.00	0.326	ug/L			10/08/23 10:37	1
Methyl tert-butyl ether	<0.216		1.00	0.216	ug/L			10/08/23 10:37	1
Isopropylbenzene	<0.336		1.00	0.336	ug/L			10/08/23 10:37	1
Naphthalene	<0.881		1.00	0.881	ug/L			10/08/23 10:37	1
Toluene	<0.379		1.00	0.379	ug/L			10/08/23 10:37	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	92		70 - 128		10/08/23 10:37	1
4-Bromofluorobenzene	101		76 - 120		10/08/23 10:37	1
Dibromofluoromethane (Surr)	93		77 - 132		10/08/23 10:37	1
Toluene-d8 (Surr)	99		80 - 120		10/08/23 10:37	1

Lab Sample ID: LCS 460-936909/3

Matrix: Water

Analysis Batch: 936909

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	20.0	20.53		ug/L		103	71 - 126
Ethylbenzene	20.0	19.68		ug/L		98	78 - 120
1,2,4-Trimethylbenzene	20.0	20.34		ug/L		102	75 - 125
1,3,5-Trimethylbenzene	20.0	20.46		ug/L		102	75 - 125
Methyl tert-butyl ether	20.0	18.48		ug/L		92	72 - 131
Isopropylbenzene	20.0	20.34		ug/L		102	79 - 125
Naphthalene	20.0	21.18		ug/L		106	44 - 120
Toluene	20.0	19.93		ug/L		100	78 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		70 - 128
4-Bromofluorobenzene	100		76 - 120
Dibromofluoromethane (Surr)	93		77 - 132
Toluene-d8 (Surr)	99		80 - 120

QC Sample Results

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-936131/1-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 936131

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Anthracene	<10.1		330	10.1	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[a]anthracene	<24.9		33.0	24.9	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[a]pyrene	<8.81		33.0	8.81	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[b]fluoranthene	<8.56		33.0	8.56	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Benzo[g,h,i]perylene	<9.76		330	9.76	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Chrysene	<13.9		330	13.9	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Fluorene	<9.68		330	9.68	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Phenanthrene	<13.5		330	13.5	ug/Kg		10/04/23 10:59	10/04/23 19:13	1
Pyrene	<8.23		330	8.23	ug/Kg		10/04/23 10:59	10/04/23 19:13	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol (Surr)	89		24 - 137	10/04/23 10:59	10/04/23 19:13	1
2-Fluorobiphenyl	90		48 - 120	10/04/23 10:59	10/04/23 19:13	1
2-Fluorophenol (Surr)	91		31 - 120	10/04/23 10:59	10/04/23 19:13	1
Nitrobenzene-d5 (Surr)	93		38 - 120	10/04/23 10:59	10/04/23 19:13	1
Phenol-d5 (Surr)	93		39 - 120	10/04/23 10:59	10/04/23 19:13	1
Terphenyl-d14 (Surr)	110		25 - 126	10/04/23 10:59	10/04/23 19:13	1

Lab Sample ID: LCS 460-936131/2-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 936131

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Anthracene	3330	2811		ug/Kg		84	67 - 120
Benzo[a]anthracene	3330	2969		ug/Kg		89	69 - 120
Benzo[a]pyrene	3330	3211		ug/Kg		96	66 - 123
Benzo[b]fluoranthene	3330	3186		ug/Kg		96	70 - 125
Benzo[g,h,i]perylene	3330	2785		ug/Kg		84	66 - 120
Chrysene	3330	2941		ug/Kg		88	63 - 120
Fluorene	3330	2699		ug/Kg		81	70 - 120
Phenanthrene	3330	2856		ug/Kg		86	66 - 120
Pyrene	3330	3177		ug/Kg		95	67 - 121

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	88		24 - 137
2-Fluorobiphenyl	87		48 - 120
2-Fluorophenol (Surr)	87		31 - 120
Nitrobenzene-d5 (Surr)	88		38 - 120
Phenol-d5 (Surr)	90		39 - 120
Terphenyl-d14 (Surr)	103		25 - 126

Lab Sample ID: LCSD 460-936131/3-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 936131

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Anthracene	3330	2918		ug/Kg		88	67 - 120	4	30
Benzo[a]anthracene	3330	3028		ug/Kg		91	69 - 120	2	30

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Ramboll Americas Engineering Solutions
 Project/Site: SRTF Philly

Job ID: 410-145253-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-936131/3-A

Matrix: Solid

Analysis Batch: 936212

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 936131

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec		RPD	RPD
	Added	Result	Qualifier				Limits	RPD	Limit	
Benzo[a]pyrene	3330	3319		ug/Kg		100	66 - 123	3	30	
Benzo[b]fluoranthene	3330	3224		ug/Kg		97	70 - 125	1	30	
Benzo[g,h,i]perylene	3330	2894		ug/Kg		87	66 - 120	4	30	
Chrysene	3330	2999		ug/Kg		90	63 - 120	2	30	
Fluorene	3330	2772		ug/Kg		83	70 - 120	3	30	
Phenanthrene	3330	2956		ug/Kg		89	66 - 120	3	30	
Pyrene	3330	3291		ug/Kg		99	67 - 121	4	30	

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	91		24 - 137
2-Fluorobiphenyl	89		48 - 120
2-Fluorophenol (Surr)	90		31 - 120
Nitrobenzene-d5 (Surr)	91		38 - 120
Phenol-d5 (Surr)	91		39 - 120
Terphenyl-d14 (Surr)	106		25 - 126

QC Association Summary

Client: Ramboll Americas Engineering Solutions
 Project/Site: SRTF Philly

Job ID: 410-145253-1

GC/MS VOA

Prep Batch: 936645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145253-1	T30B-021023	Total/NA	Solid	5035	
410-145253-2	DUP-01-021023	Total/NA	Solid	5035	

Analysis Batch: 936893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145253-1	T30B-021023	Total/NA	Solid	8260D	936645
410-145253-2	DUP-01-021023	Total/NA	Solid	8260D	936645
MB 460-936893/7	Method Blank	Total/NA	Solid	8260D	
LCS 460-936893/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 460-936893/4	Lab Control Sample Dup	Total/NA	Solid	8260D	

Analysis Batch: 936909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145253-4	TB-01-021023	Total/NA	Water	8260D	
MB 460-936909/8	Method Blank	Total/NA	Water	8260D	
LCS 460-936909/3	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 936131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145253-1	T30B-021023	Total/NA	Solid	3546	
410-145253-2	DUP-01-021023	Total/NA	Solid	3546	
MB 460-936131/1-A	Method Blank	Total/NA	Solid	3546	
LCS 460-936131/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 460-936131/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 936212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145253-1	T30B-021023	Total/NA	Solid	8270E	936131
410-145253-2	DUP-01-021023	Total/NA	Solid	8270E	936131
MB 460-936131/1-A	Method Blank	Total/NA	Solid	8270E	936131
LCS 460-936131/2-A	Lab Control Sample	Total/NA	Solid	8270E	936131
LCSD 460-936131/3-A	Lab Control Sample Dup	Total/NA	Solid	8270E	936131

General Chemistry

Analysis Batch: 936024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145253-1	T30B-021023	Total/NA	Solid	Moisture	
410-145253-2	DUP-01-021023	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Client Sample ID: T30B-021023

Lab Sample ID: 410-145253-1

Date Collected: 10/02/23 10:00

Matrix: Solid

Date Received: 10/03/23 13:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	936024	CJC	EET EDI	10/03/23 21:55

Client Sample ID: T30B-021023

Lab Sample ID: 410-145253-1

Date Collected: 10/02/23 10:00

Matrix: Solid

Date Received: 10/03/23 13:23

Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			936645	SAS	EET EDI	10/06/23 10:39
Total/NA	Analysis	8260D		1	936893	VBP	EET EDI	10/08/23 08:31
Total/NA	Prep	3546			936131	FHW	EET EDI	10/04/23 10:59
Total/NA	Analysis	8270E		1	936212	MME	EET EDI	10/05/23 00:27

Client Sample ID: DUP-01-021023

Lab Sample ID: 410-145253-2

Date Collected: 10/02/23 00:00

Matrix: Solid

Date Received: 10/03/23 13:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	936024	CJC	EET EDI	10/03/23 21:55

Client Sample ID: DUP-01-021023

Lab Sample ID: 410-145253-2

Date Collected: 10/02/23 00:00

Matrix: Solid

Date Received: 10/03/23 13:23

Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			936645	SAS	EET EDI	10/06/23 10:39
Total/NA	Analysis	8260D		1	936893	VBP	EET EDI	10/08/23 08:56
Total/NA	Prep	3546			936131	FHW	EET EDI	10/04/23 10:59
Total/NA	Analysis	8270E		1	936212	MME	EET EDI	10/05/23 00:50

Client Sample ID: TB-01-021023

Lab Sample ID: 410-145253-4

Date Collected: 10/02/23 00:00

Matrix: Water

Date Received: 10/03/23 13:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	936909	KLB	EET EDI	10/08/23 12:17

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-24
Massachusetts	State	M-NJ312	06-30-24
New Jersey	NELAP	12028	06-30-24
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

Method Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET EDI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET EDI
Moisture	Percent Moisture	EPA	EET EDI
3546	Microwave Extraction	SW846	EET EDI
5030C	Purge and Trap	SW846	EET EDI
5035	Closed System Purge and Trap	SW846	EET EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900



Sample Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: SRTF Philly

Job ID: 410-145253-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-145253-1	T30B-021023	Solid	10/02/23 10:00	10/03/23 13:23
410-145253-2	DUP-01-021023	Solid	10/02/23 00:00	10/03/23 13:23
410-145253-4	TB-01-021023	Water	10/02/23 00:00	10/03/23 13:23

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Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 410-145253-1

Login Number: 145253

List Number: 2

Creator: Rivera, Kenneth

List Source: Eurofins Edison

List Creation: 10/03/23 05:46 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4°C, IR #10
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**APPENDIX C
PENNSYLVANIA NATURAL DIVERSITY
INVENTORY SEARCH RESULTS**

1. PROJECT INFORMATION

Project Name: **SRTF**

Date of Review: **11/20/2023 12:13:17 PM**

Project Category: **Hazardous Waste Clean-up, Site Remediation, and Reclamation, Other**

Project Area: **169.49 acres**

County(s): **Philadelphia**

Township/Municipality(s): **PHILADELPHIA**

ZIP Code:

Quadrangle Name(s): **PHILADELPHIA**

Watersheds HUC 8: **Schuylkill**

Watersheds HUC 12: **City of Philadelphia-Schuylkill River**

Decimal Degrees: **39.899354, -75.221637**

Degrees Minutes Seconds: **39° 53' 57.6744" N, 75° 13' 17.8917" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

SRTF

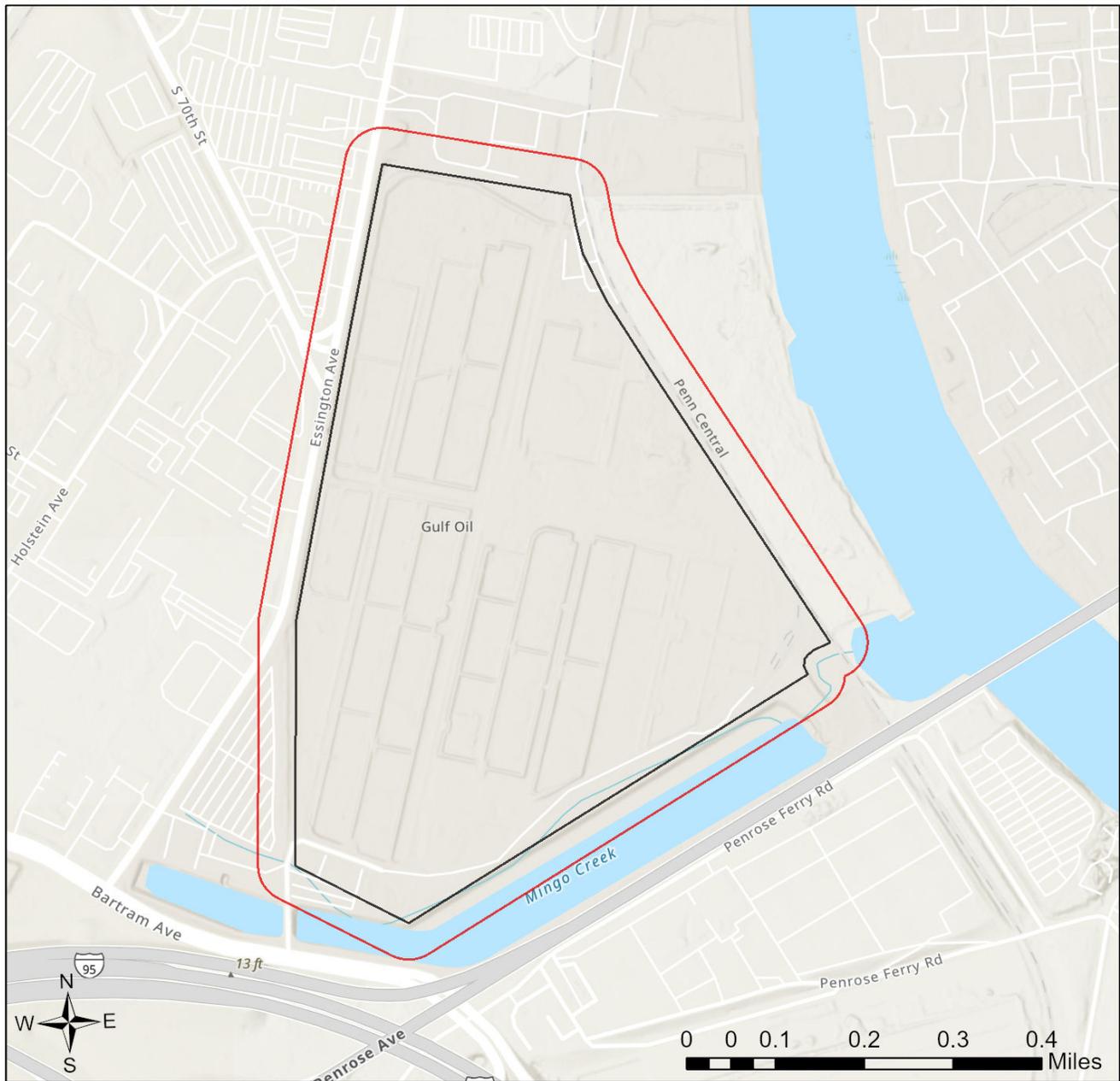


-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

SRTF



-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission **RESPONSE:**

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PGC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Cistothorus palustris	Marsh Wren	Special Concern Species*
Ixobrychus exilis	Least Bittern	Endangered

PA Department of Conservation and Natural Resources **RESPONSE:**

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: <https://conservationexplorer.dcnr.pa.gov/content/survey-protocols>)

Scientific Name	Common Name	Current Status	Proposed Status	Survey Window
Amaranthus cannabinus	Waterhemp Ragweed	Special Concern Species*	Special Concern Species*	Flowers July - September

PA Fish and Boat Commission **RESPONSE:**

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Endangered

Scientific Name	Common Name	Current Status
Sensitive Species**		Endangered
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).

*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

