

12 April 2024

Ms. Stephanie Fitzgerald
Division of Environmental Remediation
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204

RE: DRAFT Summary of Soil, Soil Gas, Soil Vapor Intrusion, and Surface Water Results
Contract/Work Assignment No: D009806-31
Owego Heat Treat, Apalachin, New York
Site No. 754011

Dear Ms. Fitzgerald:

This letter provides a summary of analytical results for soil, soil gas, surface water, and soil vapor intrusion (SVI) investigation samples collected at the Owego Heat Treat Site (No. 754011) in the Town of Apalachin, Tioga County, New York (**Figure 1**). EA Engineering, P.C. and its affiliate EA Science and Technology (EA) completed field sampling activities as described in the Remedial System Optimization Investigation Letter Work Plan.¹

SUMMARY OF FIELD INVESTIGATION

EA performed soil and surface water sampling activities in April 2023. EA collected a surface water sample from a pond on-site and soil samples from two intervals at 10 locations and from three intervals at 20 locations, to evaluate the extent of the contamination at the request of New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) (**Figure 2**). Soil samples were submitted to Pace Analytical and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) via U.S. Environmental Protection Agency (EPA) Method 8260D, TCL semi-volatile organic compounds (SVOCs) via EPA Method 8270E, Target Analyte List (TAL) Metals via EPA Methods 6010D and 7471B (mercury), pesticides and polychlorinated biphenyls (PCBs) via EPA Methods 8081B and 8082A, respectively. The surface water sample was submitted to Pace Analytical and analyzed for TCL VOCs via EPA Method 8260D.

EA performed soil gas sampling activities in June and July 2023 and SVI sampling activities in July 2023. At the request of NYSDEC and NYSDOH, EA collected soil gas samples from six soil gas points as well as SVI samples from within an on-site residential property (**Figure 3**). Six soil gas samples and 3 SVI samples (one sub-slab soil vapor, one indoor air, and one outdoor air) were collected and submitted to Pace Analytical for VOC analysis via EPA Method TO-15. Daily inspection reports are provided in **Attachment A**. Field forms are included in **Attachment B**.

¹ EA. 2023. Remedial System Optimization Investigation Letter Work Plan. 7 March.



SUMMARY OF RESULTS

Summaries of validated analytical results from the April, June and July 2023 sampling compared to appropriate screening criteria are provided in **Tables 1 through 3**. The laboratory reports are provided as **Attachment C**. Data was validated by Environmental Data Services, Ltd. Data Usability Summary Reports are provided as **Attachment D**.

Soil

Five VOCs were detected in the soil: acetone, ethylbenzene, methyl acetate, 2-butanone, and toluene. Acetone was the only VOC to exceed NYSDEC Soil Cleanup Objectives (SCOs) for Unrestricted Use in 58 of 80 soil samples. There were no VOC exceedances of NYSDEC SCOs for Residential Use. Pesticides and SVOCs showed no exceedances of SCOs, while PCBs were not detected in any sample.

Several TAL metals exceeded the SCOs for Unrestricted Use in the soil samples. The concentrations of mercury, nickel, and zinc exceeded the Unrestricted Use SCOs in at least one sample. Mercury exceeded the Unrestricted Use SCO of 0.18 milligram per kilogram (mg/kg) in six samples ranging in concentration from 0.20 mg/kg to 0.65 mg/kg. These exceedances appeared in samples collected from SS2-08 from the 0 to 2 inches (in.) below ground surface (bgs) and 2 to 12 in. bgs intervals; SS2-09 from the 0 to 2 in. bgs and 2 to 12 in. bgs intervals; and SS2-10 from the 0 to 2 in. bgs and 2 to 12 in. bgs intervals. Nickel exceeded the Unrestricted Use SCO of 30 mg/kg in SS3-08 in the 0 to 2 in. bgs interval with a concentration of 53 mg/kg. The concentration of zinc exceeded the Unrestricted Use SCO of 109 mg/kg in the samples collected from SS3-19 from 0 to 2 in. bgs and 2 to 12 in. bgs with concentrations of 120 mg/kg and 110 mg/kg, respectively. Iron exceeded the CP-51 soil cleanup guidance value for Residential Use of 2,000 mg/kg in every sample. Concentrations ranged from 2,600 mg/kg at SS3-19 in the 2 to 12 in. bgs interval to 36,000 mg/kg at SS3-17 in the 2 to 12 in. bgs interval. All soil results for analytes that were detected are summarized in **Table 1** and displayed in **Figures 4 and 5**.

Surface Water

The one surface water sample (SW-01) only showed a detection of acetone at a concentration of 4.4 micrograms per liter, which is below NYSDEC ambient water quality standards (**Table 1**).

Soil Gas

No soil gas samples contained detections of trichloroethylene (TCE), *cis*-1,2-dichloroethene (DCE), or vinyl chloride. Tetrachloroethylene (PCE) was detected in five soil gas samples. PCE concentrations ranged from 0.72 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) at SGP-01 to $4.6 \mu\text{g}/\text{m}^3$ at SGP-06; PCE was not detected in SGP-03. There is no screening criteria for soil gas; however as a reference, the NYSDOH ambient air quality guideline for PCE is $30 \mu\text{g}/\text{m}^3$. All soil gas results are summarized in **Table 2** and displayed on **Figure 6**.



Soil Vapor Intrusion

Of the SVI samples, the sub-slab vapor and indoor air samples were non-detect for TCE, *cis*-1,2-DCE, or vinyl chloride. PCE was detected at a concentration of 25 µg/m³ in the sub-slab vapor sample and at a concentration of 0.50 µg/m³ in the indoor air sample. In the outdoor air sample, TCE was detected at a concentration of 0.19 µg/m³, while PCE, *cis*-1,2-DCE, and vinyl chloride were not detected. VOCs detected in the SVI samples were below NYSDOH Standards, Criteria, and Guidance values. SVI sampling results are summarized in **Table 3** and displayed on **Figure 6**.

Sincerely yours,

EA SCIENCE AND TECHNOLOGY

Megan Miller
Project Manager

EA ENGINEERING, P.C.

Donald F. Conan, P.E., P.G.
Program Manager

Figures

- 1 Site Location
- 2 Soil and Surface Water Sampling Point Locations
- 3 Soil Gas and Soil Vapor Intrusion Sampling Point Locations
- 4 Two-Interval Soil Results
- 5 Three-Interval Soil Results
- 6 Surface Water, Soil Gas, and Soil Vapor Intrusion Results

Tables

- 1 Soil and Surface Water Results Summary (April 2023)
- 2 Soil Gas Sampling Results Summary (June/July 2023)
- 3 Soil Vapor Intrusion Results Summary (July 2023)

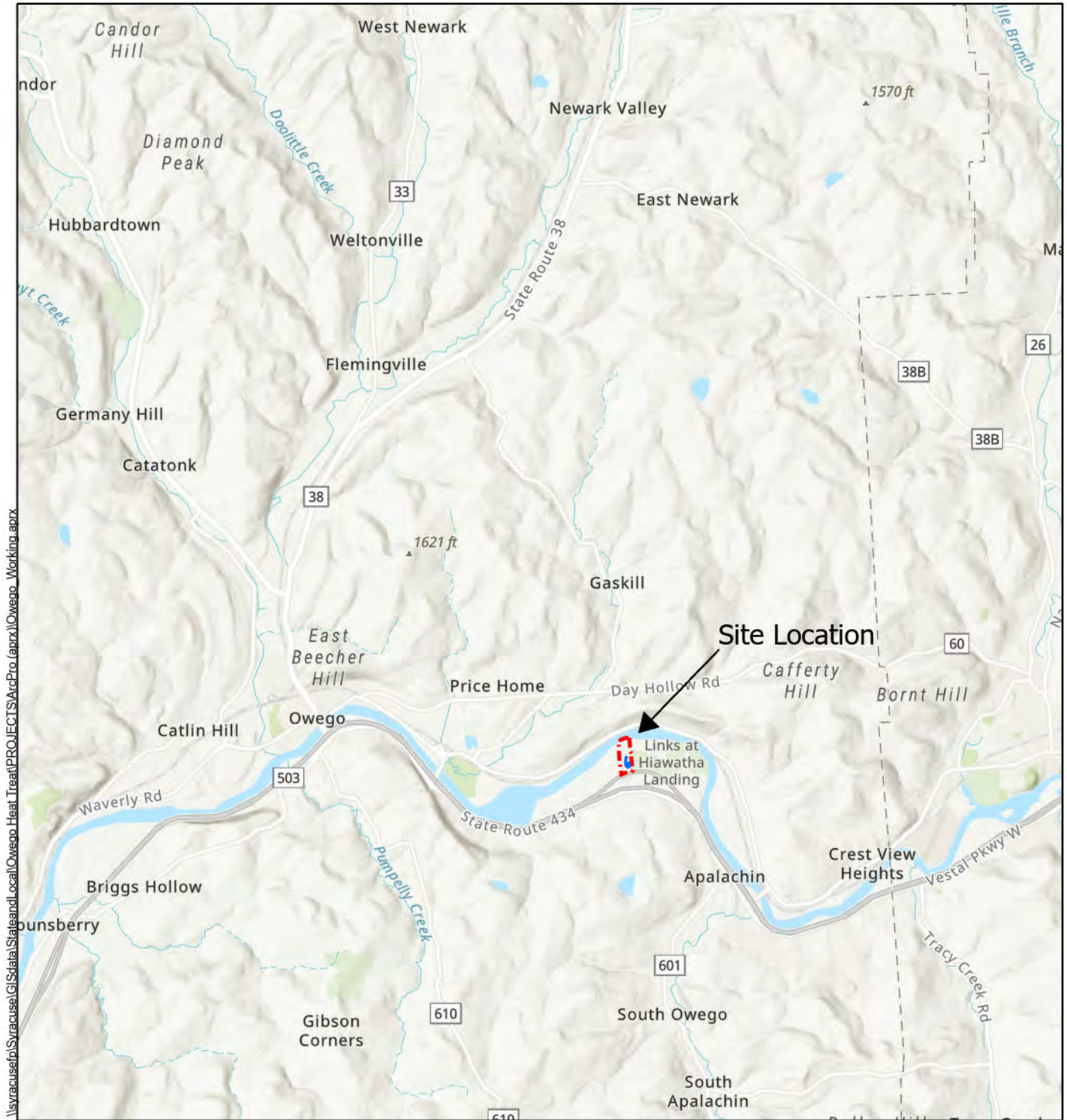


Attachments

- A Daily Field Reports
- B Field Forms
- C Laboratory Results
- D Data Usability Summary Reports

Figures

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0 90 180 Miles



Legend



Approximate Property Boundary

Figure 1
Site Location

Owego Heat Treat (Site No. 754011)
Apalachin, New York

Map Date: 9/28/2023
Projection: NAD 1983 State Plane New York Central

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0 100 200
Feet



Legend

- Soil Sample Locations - 2 Intervals
- Soil Sample Locations - 3 Intervals
- Surface Water Sample
- Approximate Property Boundary

Map Date: 10/11/2023
Projection: NAD 1983 State Plane New York Central

Figure 2
Soil and Surface Water
Sampling Point Locations
Owego Heat Treat (Site No. 754011)
Apalachin, New York

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Legend

- Soil Vapor Intrusion Location
- Soil Gas Points
- Approximate Property Boundary

Figure 3
Soil Gas, Soil Vapor Intrusion, and
Surface Water Sampling
Point Locations

Owego Heat Treat (Site No. 754011)
Apalachin, New York

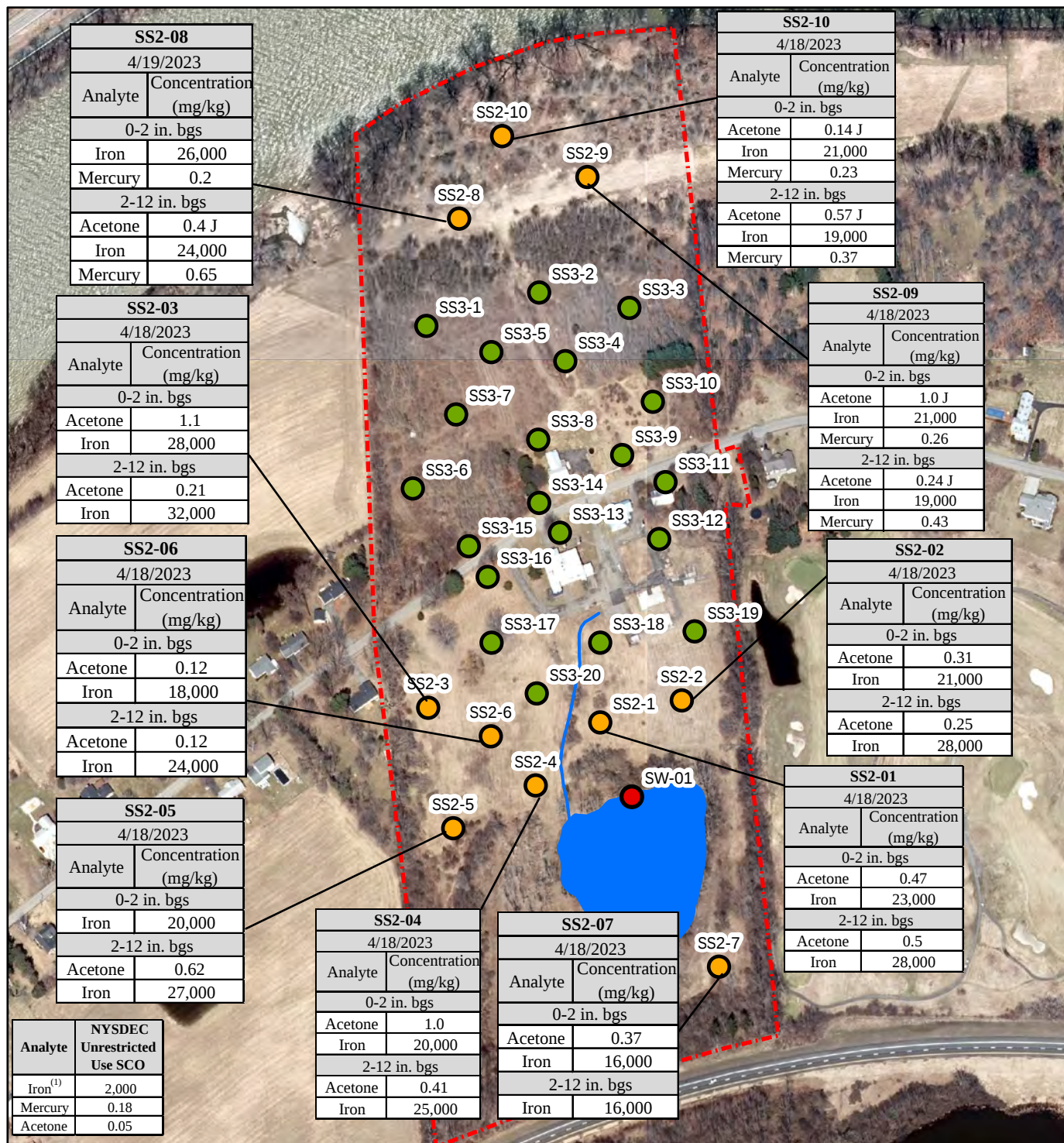
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1:2,266



Map Date: 10/11/2023
Projection: NAD 1983 State Plane New York Central

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0 100 200
Feet

Legend

- Soil Sample Locations - 2 Intervals
- Soil Sample Locations - 3 Intervals
- Surface Water Sample

Approximate Property Boundary

Notes:

(1) NYSDEC Commissioner's Policy (CP) - 51 Soil Cleanup Guidance applied for iron; no Part 375 SCO
bgs = below ground surface
in. = inches
mg/kg = milligram(s) per kilogram
NYSDEC = New York State Department of Environmental Conservation
SCO = Soil Cleanup Objective

Map Date: 4/12/2024
Projection: NAD 1983 State Plane New York Central

Figure 4
Two-Interval Soil Results
Owego Heat Treat (Site No. 754011)
Apalachin, New York

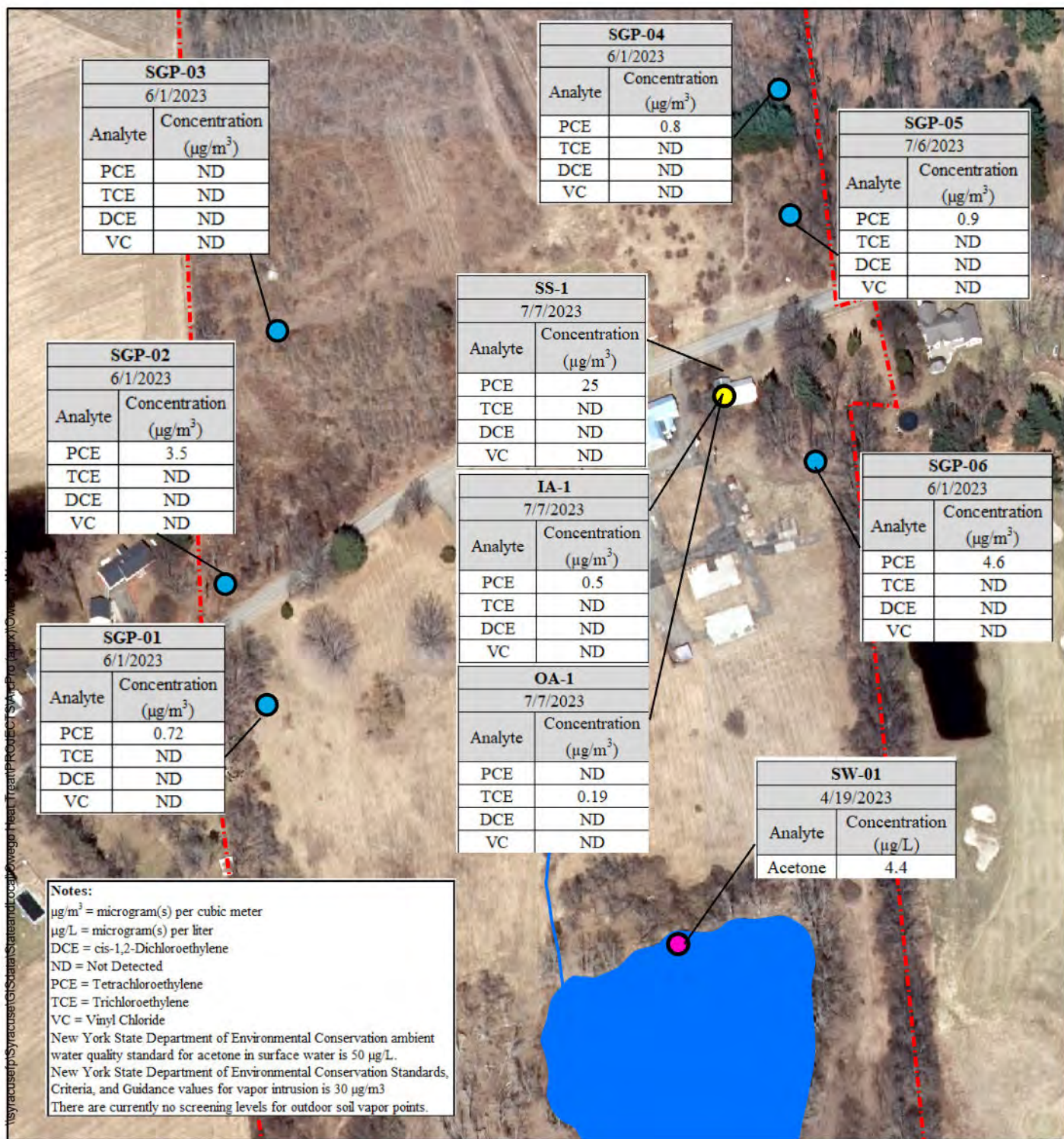


Figure 6
Surface Water, Soil Gas, and
Soil Vapor Intrusion Results
 Owego Heat Treat (Site No. 754011)
 Apalachin, New York



Legend

- Soil Vapor Intrusion Location
- Surface Water Sample
- Soil Gas Points
- Approximate Property Boundary

0 100 200
Feet



Map Date: 9/29/2023
 Projection: NAD 1983 State Plane New York Central

Tables

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Table 2. Soil Gas Sampling Results Summary (June/July 2023)

Parameters List TO-15	Sample ID	754011-SGP-01	754011-SGP-02	754011-SGP-03	754011-SGP-04	754011-SGP-05
	Sample Date	6/1/2023	6/1/2023	6/1/2023	6/1/2023	7/6/2023
	Parent Sample					
Acetone	µg/m ³	53	96	22	70	24
Benzene	µg/m ³	4.5	22	0.65	5.5	2.5
2-Butanone (MEK)	µg/m ³	4.1 J	6.0 J	< 3.1 U	5.4 J	4.7 J
Carbon Disulfide	µg/m ³	1.7 J	6.2	< 0.29 U	2.2 J	< 0.29 UJ
Chlorobenzene	µg/m ³	< 0.31 U	< 0.31 U	< 0.31 U	0.34 J	< 0.31 U
Chloroform	µg/m ³	< 0.46 U	0.71	< 0.46 U	< 0.46 U	< 0.46 U
Chloromethane	µg/m ³	< 0.16 U	0.85	0.28 J	0.31 J	0.19 J
Cyclohexane	µg/m ³	3	14	< 0.21 U	5	2.7
1,3-Dichlorobenzene	µg/m ³	15	16	19	14	3.2
Dichlorodifluoromethane (Freon 12)	µg/m ³	2.0 J	1.8 J	2.0 J	2.3 J	1.2
1,1-Dichloroethylene	µg/m ³	< 0.3 U	1.3	< 0.3 U	< 0.3 U	< 0.3 U
cis-1,2-Dichloroethylene	µg/m ³	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
trans-1,2-Dichloroethylene	µg/m ³	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U
Ethanol	µg/m ³	52	42	29	93	220 J
Ethyl Acetate	µg/m ³	2.6 J	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Ethylbenzene	µg/m ³	12	25	0.57	4.2	18
4-Ethyltoluene	µg/m ³	5.7	3.6	0.42 J	0.52	4.1
Heptane	µg/m ³	3.4	33	1.2	45	6.6
Hexane	µg/m ³	6.5 J	29	< 1.8 U	9.0 J	2.9 J
2-Hexanone (MBK)	µg/m ³	1.6	< 0.2 U	0.62	< 0.2 U	8.5
Isopropanol	µg/m ³	22	18	12	24	34
4-Methyl-2-pentanone (MIBK)	µg/m ³	< 0.22 U	< 0.22 U	0.53	< 0.22 U	2.2
Naphthalene	µg/m ³	3.1 J	7.5 J	5.2 J	1.1 J	1.9 J
Propene	µg/m ³	15	22	< 1.5 U	< 1.5 U	< 1.5 U
Styrene	µg/m ³	4.5	1.1	0.37 J	0.36 J	2.5
Tetrachloroethylene	µg/m ³	0.72	3.5	< 0.52 U	0.8	0.9
Tetrahydrofuran	µg/m ³	0.66 J	0.73 J	< 0.48 U	0.63 J	0.74 J
Toluene	µg/m ³	30	180	7.9	110	100
Trichloroethylene	µg/m ³	< 0.36 U	< 0.36 U	< 0.36 U	< 0.36 U	< 0.36 U
Trichlorofluoromethane (Freon 11)	µg/m ³	1.2 J	1.3 J	1.5 J	1.6 J	1.2 J
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/m ³	< 0.85 U	< 0.85 U	< 0.85 U	0.98 J	< 0.85 U
1,2,4-Trimethylbenzene	µg/m ³	18	11	6.2	5.6	20
1,3,5-Trimethylbenzene	µg/m ³	5.3	3.4	0.39 J	0.65	3.2
Vinyl Acetate	µg/m ³	< 1.9 U	< 1.9 U	3.2 J	< 1.9 U	< 1.9 U
m&p-Xylene	µg/m ³	58	86	2.6	14	72
o-Xylene	µg/m ³	21	24	1.1	4.6	23

Notes:

There are currently no screening levels for outdoor soil vapor points.

Data was validated by Environmental Data Services, Ltd.

(1) SGP-05 and the field duplicate were sampled twice due to faulty air canisters on 6/1/2023. Data from 7/6/2023 is the best representation of results at this soil gas point.

µg/m³ = microgram(s) per cubic meter

U = Analyte not detected.

Table 3. Soil Vapor Intrusion Results Summary (July 2023)

Parameter List EPA Method 8260D	Sample ID	754011-SS-1	754011-IA-1	754011-OA-1	NYSDOH Ambient Air Quality Guideline ¹	NYSDOH Ambient Air Quality Recommended Immediate Action Level ¹
	Sample Date	7/7/2023	7/7/2023	7/7/2023		
	Room	Basement	Basement	Outdoor		
	Sample Type	Subslab Soil Gas	Indoor Air	Outdoor Air		
Acetone	µg/m ³	6.8 J	14	20	---	---
Benzene	µg/m ³	0.5	2.5	0.31	---	---
1,3-Butadiene	µg/m ³	< 0.22 U	0.13	< 0.078 U	---	---
2-Butanone (MEK)	µg/m ³	< 12 U	2.1 J	3.7 J	---	---
Carbon Tetrachloride	µg/m ³	< 0.63 UJ	0.48 J	0.38 J	---	---
Chloroform	µg/m ³	0.62	< 0.17 U	< 0.17 U	---	---
Chloromethane	µg/m ³	< 0.41 U	0.55	1	---	---
Cyclohexane	µg/m ³	< 0.34 U	0.64	< 0.12 U	---	---
1,4-Dichlorobenzene	µg/m ³	< 0.6 U	1.1	< 0.21 U	---	---
Dichlorodifluoromethane (Freon 12)	µg/m ³	1.1	0.9	0.75	---	---
Ethanol	µg/m ³	7.1 J	8.6	13	---	---
Ethyl Acetate	µg/m ³	< 3.6 U	< 1.3 U	1.6	---	---
Ethylbenzene	µg/m ³	0.34 J	0.3	< 0.15 U	---	---
Heptane	µg/m ³	0.42	0.89	0.14 J	---	---
Hexane	µg/m ³	< 14 U	1.9 J	< 4.9 U	---	---
2-Hexanone (MBK)	µg/m ³	0.44	< 0.14 U	0.65	---	---
Isopropanol	µg/m ³	< 9.8 UJ	1.4 J	1.3 J	---	---
4-Methyl-2-pentanone (MIBK)	µg/m ³	< 0.41 U	0.095 J	0.26	---	---
Naphthalene	µg/m ³	< 0.52 UJ	0.54 J	< 0.18 UJ	---	---
Styrene	µg/m ³	< 0.43 U	1	< 0.15 U	---	---
Tetrachloroethylene	µg/m ³	25	0.5	< 0.24 U	30	300
Tetrahydrofuran	µg/m ³	< 2.9 U	< 1 U	< 1 U	---	---
Toluene	µg/m ³	3.1	2.4	0.59	---	---
Trichloroethylene	µg/m ³	< 0.54 U	< 0.19 U	0.19	2	20
Trichlorofluoromethane (Freon 11)	µg/m ³	1.1 J	1	1	---	---
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/m ³	< 3.1 U	0.38 J	0.40 J	---	---
1,2,4-Trimethylbenzene	µg/m ³	0.33 J	0.55	0.14 J	---	---
1,3,5-Trimethylbenzene	µg/m ³	< 0.49 U	0.15 J	< 0.17 U	---	---
Vinyl Acetate	µg/m ³	< 7 U	2.9	3.7	---	---
m&p-Xylene	µg/m ³	1.4	1.3	0.21 J	---	---
o-Xylene	µg/m ³	0.46	0.55	0.088 J	---	---

Notes:

Data validated by Environmental Data Services, Ltd.

1. NYSDOH Ambient Air Guidelines and Immediate Action Levels based on the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, and NYSDOH Soil Vapor Intrusion Updates dated September 2013, August 2015, and May 2017.

EPA = U.S. Environmental Protection Agency

µg/m³ = microgram(s) per cubic meter

ID = Identification

ND = Not detected

NYSDOH= New York State Department of Health

Attachment A

Daily Field Reports

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DAILY INSPECTION REPORT - No. 01
(Owego Heat Treat) Site No. 754011

Page 1 of 7
 Date: 04/17/2023

NYSDEC Division of Environmental Remediation				Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – N/A	
Site Location: Former Owego Heat Treat							
Weather Conditions							
General Description	Rain	AM	Sunny	PM			
Temperature	38 F	AM	58 F	PM			
Wind	9 mph NW	AM	13 mph N	PM			
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".							
Were there any changes to the Health & Safety Plan?					*Yes	No	NA
Were there any exceedances of the perimeter air monitoring reported on this date?					*Yes	No	<u>NA</u>
Were there any nuisance issues reported/observed on this date?					*Yes	No	<u>NA</u>
Health & Safety Comments Safety Topic: bugs, sun, slips, trips & falls.							
Summary of Work Performed		Arrived at site:	0800	Departed Site:	1830		
(0800) EA [M. Miller, H. Young, Cody Badman, T. Robinson, & K. Cassidy] onsite. (0830) Safety meeting. (0835) Calibrate equipment. (0900) Start to look for monitoring well locations, gauging monitoring wells & setup for surface soil sampling. M. Miller dug around location of MW-11, but could not locate well. MW-12 was also not located (has not been surveyed, suspected location is approximate). MW-1 was located but is broken/bent above grade and not able to be gauged or sampled. CMT2-05 contained heaved bentonite in the casing; CMT2-06 will be sampled in place of CMT2-05. (1030) NYSDEC (S. Fitzgerald) onsite for site visit. Walk site with M. Miller, talk to homeowner at 1645 Marshland Rd. GW Crew [H. Young & C. Badman]: (0930-1730) Groundwater synoptic gauging of all CMT wells. MWs locked and will be gauged in the AM on 4/18. (1500-1705) Purge & sample all 4 Ports of CMT1-01. CMT1-01 Port 2 went dry during purge (1504); waited for recharge and sampled at 1705. (1730) Put tubing down CMT wells for sampling. Surface Soil Crew [T. Robinson & K. Cassidy]: (0935-1755) Surface soil sampling at SS3-12, SS3-19, SS3-18, SS3-20, SS3-17, SS3-16, SS3-13 [3 intervals at each location]. [FD-01 & MS/MSD sample set taken]. (1330) S. Fitzgerald and M. Miller leave site. (1815) EA packs all equipment into vehicles. (1830) EA personnel offsite.							
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".							
Were there any vehicles which did not display proper D.O.T numbers and placards?					*Yes	No	<u>NA</u>
Were there any vehicles which were not tarped?					* Yes	No	<u>NA</u>
Were there any vehicles which were not decontaminated prior to exiting the work site?					* Yes	No	<u>NA</u>
Personnel and Equipment							
Individual	Company	Trade	Total Hours				
Haley Young	EA	Scientist	10.5				
Cody Badman	EA	Scientist	10.5				
Thomas Robinson	EA	Scientist	10.5				
Katie Cassidy	EA	Scientist	10.5				
Megan Miller	EA	Engineer	5.5				
Stepanie Fitzgerald	NYSDEC	Engineer	3				

DAILY INSPECTION REPORT - No. 01
(Owego Heat Treat) Site No. 754011

Page 2 of 7
 Date: 04/17/2023

Equipment Description		Contractor/Vendor		Quantity	Used	
Horiba U-52		Pine Environmental		1	No	
Peristaltic Pump		Pine Environmental		1	No	
Water Level Meter		Pine Environmental		2	No	
Mini Rae 3000		Pine Environmental		2	Yes	
Shovel		NA		1	Yes	
Hand auger		NA		1	Yes	

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
None.		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No

Site Representatives

Name	Representing
Ryan Lounsberry	1645 Marshland Rd. homeowner

Project Schedule Comments
On schedule
Issues Pending
Could not locate MW-11 or MW-12; will bring metal detector to site tomorrow (4/18/23). Could not open MW-9, MW-2, MW-4, MW-7, MW-5, MW-10, MW-8, or PZ-1-D/S; will bring bolt cutters to site tomorrow (4/18/23).
Interaction with Public, Property Owners, Media, etc.
None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)	
Comments	
None.	
Site Inspector(s): Haley Young	Date: 04/17/2023



MW-1



MW-1



CMT2-05

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐ No ☒

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☐	No ☐	N/A ☒
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A ☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A ☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A ☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A ☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒

Comments:

None.

* BART – Best Available Retrofit Technology

DAILY INSPECTION REPORT - No. 02
(Owego Heat Treat) Site No. 754011

Page 1 of 6
 Date: 04/18/2023

NYSDEC Division of Environmental Remediation				Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – N/A	
Site Location: Former Owego Heat Treat							
Weather Conditions							
General Description	Overcast	AM	Overcast	PM			
Temperature	37 F	AM	42 F	PM			
Wind	12 mph W	AM	15 mph W	PM			
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".							
Were there any changes to the Health & Safety Plan?					*Yes	<u>No</u>	NA
Were there any exceedances of the perimeter air monitoring reported on this date?					*Yes	No	<u>NA</u>
Were there any nuisance issues reported/observed on this date?					*Yes	No	<u>NA</u>
Health & Safety Comments Safety topic: ticks.							
Summary of Work Performed		Arrived at site:	0730	Departed Site:	1645		
(0730) EA [H. Young, C. Badman, T. Robinson, & K. Cassidy] onsite. (0745) Safety meeting. Calibrate equipment. GW Crew [H. Young & C. Badman]: (0800-1445) Purge & sample all 4 ports of CMT1-03, CMT1-04, CMT1-06, and CMT1-08. Attempted to locate MW-11 and MW-12 with metal detector, but still could not find them. Surface Soil Crew [T. Robinson & K. Cassidy]: (0800-1430) Surface soil sampling at SS2-7, SS2-14, SS3-18, SS2-5, SS2-3, SS2-6, SS2-1, SS2-2, SS3-11, SS2-10, and SS2-9. [RB-02, FD-02, & MS/MSD sample set taken]. (1445) EA begins packing coolers with samples and ice and completing groundwater and soil sample chains of custody. (1645) EA offsite to prepare sample coolers for shipping.							
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".							
Were there any vehicles which did not display proper D.O.T numbers and placards?					*Yes	No	<u>NA</u>
Were there any vehicles which were not tarped?					*Yes	No	<u>NA</u>
Were there any vehicles which were not decontaminated prior to exiting the work site?					*Yes	No	<u>NA</u>
Personnel and Equipment							
Individual		Company		Trade		Total Hours	
Haley Young		EA		Scientist		9	
Cody Badman		EA		Scientist		9	
Thomas Robinson		EA		Scientist		9	
Katie Cassidy		EA		Scientist		9	
Equipment Description		Contractor/Vendor			Quantity	Used	
Horiba U-52		Pine Environmental			1	Yes	
Peristaltic Pump		Pine Environmental			1	Yes	
Water Level Meter		Pine Environmental			2	Yes	
Mini Rae 3000		Pine Environmental			2	Yes	
Shovel		NA			1	Yes	
Hand auger		NA			1	Yes	
Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)		Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
None.		Yes	No
		Yes	No

Site Representatives

Name	Representing

Project Schedule Comments

On schedule

Issues Pending

None.

Interaction with Public, Property Owners, Media, etc.

None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)
--

Comments

None.

Site Inspector(s): Haley Young	Date: 04/18/2023
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Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☒	No ☐	N/A ☐
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> Carbon bucket for purge water treatment did not arrive from Pine; currently missing in the mail. Purge water being stored in buckets, will get drum to site tomorrow.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☐	N/A ☒
Was noise outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☐	N/A ☒
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A ☒
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☐
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒

Comments:

None.

* BART – Best Available Retrofit Technology

DAILY INSPECTION REPORT - No. 03
(Owego Heat Treat) Site No. 754011

Page 1 of 6
 Date: 04/19/2023

NYSDEC Division of Environmental Remediation				Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – N/A	
Site Location: Former Owego Heat Treat							
Weather Conditions							
General Description	Cloudy	AM	Cloudy	PM			
Temperature	41 F	AM	46 F	PM			
Wind	6 mph SW	AM	6 mph SE	PM			
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".							
Were there any changes to the Health & Safety Plan?					*Yes	No	NA
Were there any exceedances of the perimeter air monitoring reported on this date?					*Yes	No	<u>NA</u>
Were there any nuisance issues reported/observed on this date?					*Yes	No	<u>NA</u>
Health & Safety Comments Safety Topic: bugs, sun, slips, trips & falls.							
Summary of Work Performed		Arrived at site: 0800		Departed Site: 1830			
(0700) EA [H. Young, Cody Badman, T. Robinson, & K. Cassidy] onsite. (0715) Safety meeting. (0725) Calibrate equipment. (0745) H. Young offsite to ship out coolers and run to Home Depot for additional buckets & topsoil. (0750) C. Badman begin gauging all remaining monitoring wells. (0800) T. Robinson & K. Cassidy begin surface soil sampling. (0900) H. Young back onsite. GW Crew [H. Young & C. Badman]: (0900-1730) Purge & sample MW-2, MW-4, MW-8, MW-9, MW-10, PZ-1S & PZ-1D. Purge and sample all 4 Ports of CMT2-01 and 1 Port of CMT2-03. (1300) H. Bedell onsite to drop off drum. Mob offsite afterwards. Surface Soil Crew [T. Robinson & K. Cassidy]: (0800-1700) Surface soil sampling at ---- [FD-03 & MS/MSD sample set taken]. (1740) Rinse Blank taken. (1750) EA packs all equipment into vehicles. (1800) EA personnel offsite.							
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".							
Were there any vehicles which did not display proper D.O.T numbers and placards?					*Yes	No	<u>NA</u>
Were there any vehicles which were not tarped?					*Yes	No	<u>NA</u>
Were there any vehicles which were not decontaminated prior to exiting the work site?					*Yes	No	<u>NA</u>
Personnel and Equipment							
Individual	Company	Trade	Total Hours				
Haley Young	EA	Scientist	11				
Cody Badman	EA	Scientist	11				
Thomas Robinson	EA	Scientist	11				
Katie Cassidy	EA	Scientist	11				
Equipment Description	Contractor/Vendor			Quantity	Used		
Horiba U-52	Pine Environmental			2	Yes		
Peristaltic Pump	Pine Environmental			2	Yes		

DAILY INSPECTION REPORT - No. 03
(Owego Heat Treat) Site No. 754011

Page 2 of 6
 Date: 04/19/2023

Water Level Meter	Pine Environmental	2	Yes
RKI GX 6000	Pine Environmental	2	Yes
Shovel	NA	1	Yes
Hand auger	NA	1	Yes

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
None.		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No

Site Representatives

Name	Representing

Project Schedule Comments
On schedule
Issues Pending
None.
Interaction with Public, Property Owners, Media, etc.
None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)
--

Comments
None.
Site Inspector(s): Haley Young
Date: 04/19/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐ No ☒

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☒	No ☐	N/A ☐
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A ☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A ☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A ☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A ☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒

Comments:

None.

* BART – Best Available Retrofit Technology

DAILY INSPECTION REPORT - No. 04
(Owego Heat Treat) Site No. 754011

Page 1 of 5
 Date: 04/20/2023

NYSDEC Division of Environmental Remediation		 Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – N/A	
Site Location: Former Owego Heat Treat					
Weather Conditions					
General Description	Cloudy	AM	Cloudy	PM	
Temperature	43 F	AM	55 F	PM	
Wind	3 mph E	AM	Calm	PM	
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".					
Were there any changes to the Health & Safety Plan?				*Yes	No
Were there any exceedances of the perimeter air monitoring reported on this date?				*Yes	No
Were there any nuisance issues reported/observed on this date?				*Yes	No
Health & Safety Comments Safety Topic: ticks, sun, slips, trips & falls.					
Summary of Work Performed		Arrived at site:	0800	Departed Site:	1830
(0715) EA [H. Young, Cody Badman, T. Robinson, & K. Cassidy] onsite. (0723) Calibrate equipment. (0730) Safety meeting. (0745) T. Robinson & K. Cassidy begin surface soil sampling. H. Young and C. Badman to begin purging remaining monitoring wells. Surface Soil Crew [T. Robinson & K. Cassidy]: (0755-1055) Surface soil sampling at SS3-6, SS3-15, and SS3-14 [FD-04 & MS/MSD sample set taken; rinsate blank taken]. GW Crew [H. Young & C. Badman]: (0843-0845) Sample groundwater at CMT2-03 Port 5 and CMT2-06 Port 6. (0910) Run out of sample bottles for GW – call PM (M. Miller) – Plan to sample following day after mobilizing to Syracuse later today. (1100) Begin packing coolers and writing chains of custody. T. Robinson & K. Cassidy to deliver sample coolers to Syracuse Pace lab. (1230) EA offsite.					
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".					
Were there any vehicles which did not display proper D.O.T numbers and placards?				*Yes	No
Were there any vehicles which were not tarped?				*Yes	No
Were there any vehicles which were not decontaminated prior to exiting the work site?				*Yes	No
Personnel and Equipment					
Individual	Company	Trade	Total Hours		
Haley Young	EA	Scientist	5.5		
Cody Badman	EA	Scientist	5.5		
Thomas Robinson	EA	Scientist	5.5		
Katie Cassidy	EA	Scientist	5.5		
Equipment Description		Contractor/Vendor	Quantity	Used	
Horiba U-52		Pine Environmental	2	Yes	
Peristaltic Pump		Pine Environmental	2	Yes	
Water Level Meter		Pine Environmental	2	Yes	
RKI GX 6000		Pine Environmental	2	Yes	
Shovel		NA	1	Yes	
Hand auger		NA	1	Yes	

DAILY INSPECTION REPORT - No. 04
(Owego Heat Treat) Site No. 754011

Page 2 of 5
Date: 04/20/2023

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
None.		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No

Site Representatives

Name	Representing

Project Schedule Comments

Groundwater sampling will resume and be completed tomorrow, 4/21/23 due to running out of sample bottles.

Issues Pending
None.
Interaction with Public, Property Owners, Media, etc.
None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)
--

Comments
None.
Site Inspector(s): Haley Young
Date: 04/20/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐ No ☒

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐

4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☒	No ☐	N/A ☐
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A ☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A ☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A ☐



Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A ☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

* BART – Best Available Retrofit Technology

DAILY INSPECTION REPORT - No. 01
(Owego Heat Treat) Site No. 754011

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 Date: 06/01/2023

NYSDEC Division of Environmental Remediation				Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – H. Bedell	
Site Location: Former Owego Heat Treat							
Weather Conditions							
General Description	Sunny	AM	Sunny	PM			
Temperature	70 F	AM	87 F	PM			
Wind	Calm	AM	Calm	PM			
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".							
Were there any changes to the Health & Safety Plan?					*Yes	No	NA
Were there any exceedances of the perimeter air monitoring reported on this date?					*Yes	No	<u>NA</u>
Were there any nuisance issues reported/observed on this date?					*Yes	No	<u>NA</u>
Health & Safety Comments Safety Topic: bugs/ticks, sun, slips, trips & falls, site owners (dog/children) on property.							
Summary of Work Performed		Arrived at site:	0730	Departed Site:	1715		
(0730) EA [E. Ashton, C. Badman, J. Gill] & Matrix [R. Reagan, N. Auder] onsite. (0735) safety meeting. (0745) Calibrate equipment. (0800) EA [H. Bedell, C. Zook] onsite. Drilling Crew: [E. Ashton, C. Badman, J. Gil & Matrix] (0800) Drillers mob to Mw-14 to backfill with bentonite (0820) Mob to SB-01 and continue pushing 25-30' interval from previous day. (1115) Begin hand clearing MW-13D (1130) Begin hand clearing MW-13I (1136) Begin drilling and soil logging entirety of MW-13D (1350) Drillers break for lunch (1405) Drillers return from break. Continue pushing MW-13D (1700) EA [E. Ashton] offsite (1715) EA [C. Badman, J. Gill] & Matrix offsite Air Sampling/GW Sampling Crew: [H. Bedell, C. Zook] (0915) Mob to private well for sampling (1027) Sampled Residence-02-060123 (1135) Purge containerized IDW purge water through carbon bucket **Detailed description of field book shown for all air sampling activities (Included Below)** (1630) EA [H. Bedell, C. Zook] offsite							
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".							
Were there any vehicles which did not display proper D.O.T numbers and placards?					*Yes	No	<u>NA</u>
Were there any vehicles which were not tarped?					* Yes	No	<u>NA</u>
Were there any vehicles which were not decontaminated prior to exiting the work site?					* Yes	No	<u>NA</u>
Personnel and Equipment							
Individual	Company	Trade	Total Hours				
Cody Badman	EA	Scientist	9.75				
Jack Gill	EA	Scientist	9.75				
Edward Ashton	EA	Geologist	9.50				
Hannah Bedell	EA	Engineer	9				
Rick Reagan	Matrix	Driller	9.75				
Nick Auder	Matrix	Driller	9.75				
Clara Zook	EA	Scientist	9				

DAILY INSPECTION REPORT - No. 01
(Owego Heat Treat) Site No. 754011

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 Date: 06/01/2023

Equipment Description		Contractor/Vendor		Quantity	Used	
Mini Rae 3000		Pine Environmental		1	Yes	
Horiba U-52		Pine Environmental		1	Yes	
Peristaltic Pump		Pine Environmental		1	Yes	

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
None.		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No

Site Representatives

Name	Representing
Ryan Lounsberry	1645 Marshland Rd. homeowner

Project Schedule Comments
On schedule
Issues Pending
Interaction with Public, Property Owners, Media, etc.
None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

Comments

754011-SVG-03-060123 Start: 1310 Pressure: -29 "Hg End: 1413 Pressure: -3 "Hg	754011-SVG-06-060123 Start: 1505 Pressure: -28.5 "Hg End: 1602 Pressure: -6.5 "Hg	754011-SVG-FD-060123 Start: 1526 Pressure: -12 "Hg End: 1527 Pressure: -5 "Hg
754011-SVG-02-060123 Start: 1328 Pressure: -28 "Hg End: 1419 Pressure: -5 "Hg	754011-SVG-04-060123 Start: 1518 Pressure: -29 "Hg End: 1618 Pressure: -7 "Hg	Note: SVG-05 & SVG-FD had issue with duplicate tee so it ended up being more of a grab sample since the total time was between 1-2 minutes.
754011-SVG-01-060123 Start: 1350 Pressure: -27.5 "Hg End: 1450 Pressure: -5.5 "Hg	754011-SVG-05-060123 Start: 1526 Pressure: -12 "Hg End: 1527 Pressure: -5 "Hg	

Site Inspector(s): Cody Badman

Date: 06/01/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐ No ☒

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☐	No ☐	N/A ☒
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A ☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A ☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A ☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A ☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒

Comments:

None.

* BART – Best Available Retrofit Technology

DAILY INSPECTION REPORT - No. 01
(Owego Heat Treat) Site No. 754011

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 Date: 07/06/2023

NYSDEC Division of Environmental Remediation				Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – Hannah Bedell	
Site Location: Former Owego Heat Treat							
Weather Conditions							
General Description	Fog	AM	Sunny	PM			
Temperature	69 F	AM	92 F	PM			
Wind	2 mph E	AM	8 mph NE	PM			
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".							
Were there any changes to the Health & Safety Plan?					*Yes	<u>No</u>	NA
Were there any exceedances of the perimeter air monitoring reported on this date?					*Yes	No	<u>NA</u>
Were there any nuisance issues reported/observed on this date?					*Yes	No	<u>NA</u>
Health & Safety Comments Safety Topic: bugs, sun, slips, trips & falls.							
Summary of Work Performed		Arrived at site:	0730	Departed Site:	1230		
(0730) EA [H. Bedell & C. Zook] onsite. (0735) Calibrated Horiba and PID. (0755) Mobilized to SGP-05 to resample soil gas point and duplicate. (0805) conducted leak test on point and point passed. (0817) Started sampling at SGP-05 and duplicate. The starting pressure was -28 in. Hg. (0820) Mobilized to CMT1-07 to sample port 6. (0830) Started purge at CMT1-07. (0854) Sampled port 6 at CMT1-07. (0900) Mobilized to MW-13. (0915) Ended sampling at SGP-05 and duplicate. The ending pressure was -5 in. Hg. (0930) Started purge at MW-13. (1006) Sampled MW-13. (1015) Secured well and mobilized to residence for temporary SVI point install. (1030) Drilled sub slab point in ~4" concrete slab in basement of residence. (1055) Conducted leak test on sub slab point and point passed. (1104) Started sampling SS-1. The starting pressure was -28 in. Hg. (1106) Placed and started sampling IA-1 in breathing zone of basement. The starting pressure was -29 in. Hg. (1109) Placed and started sampling OA-1 in breathing zone near front porch of the residence. The starting pressure was -28 in. Hg. (1125) Secured residence and mobilized to MW-14. (1142) Started purge at MW-14. (1203) Sampled MW-14. (1215) Collected trip blank. (1230) Secured MW-14. EA offsite.							
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".							
Were there any vehicles which did not display proper D.O.T numbers and placards?					*Yes	No	<u>NA</u>
Were there any vehicles which were not tarped?					* Yes	No	<u>NA</u>
Were there any vehicles which were not decontaminated prior to exiting the work site?					* Yes	No	<u>NA</u>
Personnel and Equipment							
Individual	Company	Trade	Total Hours				
Hannah Bedell	EA	Engineer	5.0				
Clara Zook	EA	Intern	5.0				
Equipment Description	Contractor/Vendor	Quantity	Used				
Horiba U-52	Pine Environmental	1	Yes				
Peristaltic Pump	Pine Environmental	1	Yes				
Water Level Meter	Pine Environmental	1	Yes				
Mini Rae 3000	Pine Environmental	1	Yes				

DAILY INSPECTION REPORT - No. 01
(Owego Heat Treat) Site No. 754011

Page 2 of 6
 Date: 07/06/2023

MGD Helium Detector	Pine Environmental	1	Yes
Generator	Pine Environmental	1	Yes
Gil Air Pump	Pine Environmental	1	Yes
Air Sampling Tool Kit	EA	1	Yes
Hammer Drill	EA	1	Yes
F-150 Supercab	EA	1	Yes

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
None.		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No

Site Representatives

Name	Representing
Ryan Lounsberry	1645 Marshland Rd. homeowner

Project Schedule Comments
On schedule
Issues Pending
MW-14 needs to be filled in around the well casing. Very loose. And Soil Gas points to be removed once sufficient data is collected
Interaction with Public, Property Owners, Media, etc.
Ryan Lounsberry stopped to ask when the soil gas points will be removed.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Attached Separately)

Comments
None.
Site Inspector(s): Hannah Bedell
Date: 07/06/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐ No ☒

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☐	No ☐	N/A ☒
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A ☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A ☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A ☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A ☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒

Comments:

None.

* BART – Best Available Retrofit Technology

DAILY INSPECTION REPORT - No. 02
(Owego Heat Treat) Site No. 754011

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 Date: 07/07/2023

NYSDEC Division of Environmental Remediation		 Department of Environmental Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald Contractor Supt. – N/A Engineer PM – Megan Miller Engineer Insp. – Hannah Bedell	
Site Location: Former Owego Heat Treat					
Weather Conditions					
General Description	Sunny	AM	Sunny	PM	
Temperature	74 F	AM	81 F	PM	
Wind	3 mph SW	AM	8 mph NE	PM	
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".					
Were there any changes to the Health & Safety Plan?				*Yes	<u>No</u> NA
Were there any exceedances of the perimeter air monitoring reported on this date?				*Yes	No <u>NA</u>
Were there any nuisance issues reported/observed on this date?				*Yes	No <u>NA</u>
Health & Safety Comments Safety Topic: bugs, sun, slips, trips & falls.					
Summary of Work Performed		Arrived at site:	0745	Departed Site:	1130
(0745) EA [H. Bedell & C. Zook] onsite. (0750) Checked the air canisters, all of them still had pressures around -10" Hg. (1104) Collected summa canister at SS-1. The ending pressure was -7.5" Hg. (1106) Collected summa canister at IA-1. The ending pressure was -8" Hg. (1109) Collected summa canister at OA-1. The ending pressure was -8.5" Hg. (1115) Filled in sub-slabbed point. Closed and locked the residence. (1130) EA offsite.					
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".					
Were there any vehicles which did not display proper D.O.T numbers and placards?				*Yes	No <u>NA</u>
Were there any vehicles which were not tarped?				*Yes	No <u>NA</u>
Were there any vehicles which were not decontaminated prior to exiting the work site?				*Yes	No <u>NA</u>
Personnel and Equipment					
Individual	Company	Trade	Total Hours		
Hannah Bedell	EA	Engineer	3.75		
Clara Zook	EA	Intern	3.75		
Equipment Description	Contractor/Vendor	Quantity	Used		
Horiba U-52	Pine Environmental	1	No		
Peristaltic Pump	Pine Environmental	1	No		
Water Level Meter	Pine Environmental	1	No		
Mini Rae 3000	Pine Environmental	1	No		
MGD Helium Detector	Pine Environmental	1	No		
Generator	Pine Environmental	1	Yes		
Gil Air Pump	Pine Environmental	1	No		
Air Sampling Tool Kit	EA	1	Yes		
Hammer Drill	EA	1	No		
F-150 Supercab	EA	1	Yes		

DAILY INSPECTION REPORT - No. 02

(Owego Heat Treat) Site No. 754011

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Date: 07/07/2023

[illegible]

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

None.

Visitors to Site

[illegible]

Site Representatives

[illegible]

Project Schedule Comments
On schedule
Issues Pending
None.
Interaction with Public, Property Owners, Media, etc.
None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (None Taken)

Comments
None.
Site Inspector(s): Hannah Bedell
Date: 07/06/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes ☐ No ☒

REMEDIAL ACTIVITIES AT PROPERTIES

1. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
3. Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
4. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
5. If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
<u>Comments:</u> None.		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ☐	No ☐	N/A ☒
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes ☐	No ☐	N/A ☒
Containers are in good condition or properly overpacked?	Yes ☐	No ☐	N/A ☒
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes ☐	No ☐	N/A ☒
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes ☐	No ☐	N/A ☒
Piles are securely covered when not in use?	Yes ☐	No ☐	N/A ☒
Containers are closed when not in use?	Yes ☐	No ☐	N/A ☒
Staging areas should be inspected periodically and any issues addressed immediately?	Yes ☐	No ☐	N/A ☒
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes ☐	No ☐	N/A ☒
If any issues noted, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A ☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A ☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A ☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A ☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A ☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☐	N/A ☒
Was turbidity checked at the outfall(s)?	AM ☐	PM ☐	N/A ☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A ☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A ☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A ☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A ☒
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes ☐	No ☐	N/A ☒
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes ☐	No ☐	N/A ☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A ☒
Is BART-equipped equipment properly maintained and working?	Yes ☐	No ☐	N/A ☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A ☒
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes ☐	No ☐	N/A ☒
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes ☐	No ☐	N/A ☒
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A ☒
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A ☒
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A ☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A ☒

Comments:

None.

* BART – Best Available Retrofit Technology

Attachment B

Field Forms

- Calibration Logs
- Air Sampling Forms
- Soil Sampling Forms
- Surface Water Sampling Form

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Calibration Logs

FIELD CALIBRATION FORM

Site Name: Owego Heat Treat

INSTRUMENT: RKF GX-6000		INSTRUMENT ID No: Z1266	
OPERATOR: MWANGI Cody Bachman		WEATHER: Cloudy/rainy 45°F	
SPAN GAS TYPE: 100ppm Isobutylene		DATE: 4/17/2023 0835	
CALIBRATION NOTES:			
Zero: 0.0 ppm			
Span : 99.8 ppm			
COMMENTS:			
SIGNATURE: Cody Bachman		DATE: 4/17/2023	

FIELD CALIBRATION FORM

Site Name: Owego Heat Treat

[illegible]

FIELD CALIBRATION FORM

Site Name: Owego Heat Treat

[illegible]

FIELD CALIBRATION FORM

Site Name: Owego Head Tread

[illegible]

FIELD CALIBRATION FORM

Site Name:

[illegible]

FIELD CALIBRATION FORM

Site Name: Owego Heat Treat

INSTRUMENT:	RMI 6X-6000	INSTRUMENT ID No:	212166
OPERATOR:	T. Robinson	WEATHER:	3 ³⁰ / ₃₂ cloudy, rainy
SPAN GAS TYPE:	Isobutylene	DATE:	4-19-23
CALIBRATION NOTES:			
Isobutylene = 99.8 ppm Air = 0.0 ppm			
COMMENTS:			
SIGNATURE:	[Signature]	DATE:	4-19-23

FIELD CALIBRATION FORM

Site Name: Drygo Heat Treat

INSTRUMENT:	RHI GX-6000 PID	INSTRUMENT ID No:	42039
OPERATOR:	K. Cassidy	WEATHER:	39°F, overcast
SPAN GAS TYPE:	isobutylene	DATE:	4/20/2023
CALIBRATION NOTES:	Isobutylene = 99.7 Ppm		
SIGNATURE:	[Signature]	DATE:	4/20/2023

FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION		
DATE:	4/17/2023	
TIME:	1342	
METER ID:	41890	

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	6.85	3.77

CONDUCTIVITY CALIBRATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	5.09	4.50

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	4.4	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION		
DATE:	4/17/23	
TIME:	1338	
METER ID:	21299	

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	3.80	3.94

CONDUCTIVITY CALIBRATION

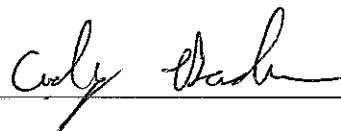
CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.52	4.51

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	11.5	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	4/18/2023
TIME:	0745
METER ID:	41890

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.03	3.99

CONDUCTIVITY CALIBRATION

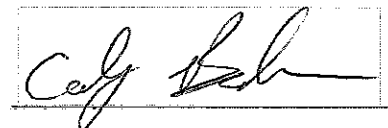
CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	2.70	4.53

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	1.8	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	4/18/2023
TIME:	0735
METER ID:	21299

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.03	3.96

CONDUCTIVITY CALIBRATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.35	4.54

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	7.8	0.6

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	4/19/2023
TIME:	0731
METER ID:	41890

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.85	3.96

CONDUCTIVITY CALIBRATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	5.16	4.62

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	1.1	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	4/19/2023
TIME:	0726
METER ID:	21299

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	3.90	3.94

CONDUCTIVITY CALIBRATION

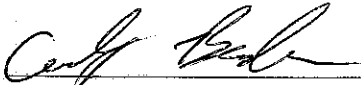
CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.68	4.55

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	1.1	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION		
DATE:	04/20/2023	
TIME:	0723	
METER ID:	41890	

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.33	3.89

CONDUCTIVITY CALIBRATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.57	4.58

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	0.0	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	04/20/2023
TIME:	0725
METER ID:	21299

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	3.91	3.88

CONDUCTIVITY CALIBRATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.51	4.54

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	0.0	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	9/21/2023
TIME:	0813
METER ID:	21299

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.79	3.94

CONDUCTIVITY CALIBRATION

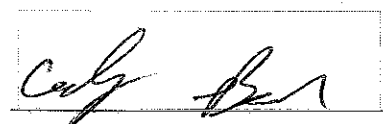
CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.93	4.51

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	0.9	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION	
DATE:	4/21/2023
TIME:	0815
METER ID:	41896

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.75	3.94

CONDUCTIVITY CALIBRATION

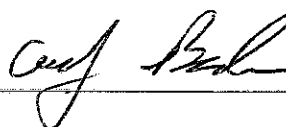
CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	5.16	4.51

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	0.0	0.0

COMMENTS

SIGNATURE



FIELD CALIBRATION FORM

Site Name: Owego Heat Treat (754011)

[illegible]

FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION
DATE: 07/06/23
TIME: 0735
METER ID: 21317

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	4.22	3.97

CONDUCTIVITY CALIBRATION

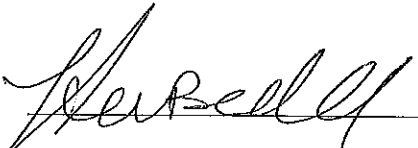
CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.77	4.5

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	1.3	0.1

COMMENTS

SIGNATURE



Air Sampling Forms

**NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY
QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name: Hannah Bedell Date/Time Prepared: 07/06/23 @ 1000

Preparer's Affiliation: EA Engineering Phone No: (315) 730-0872

Purpose of Investigation: Preparing an RSO

1. OCCUPANT: Interviewed: Y/☒ Property is unoccupied

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ☐)

Interviewed: Y/☒

Last Name: No It First Name: Marlin

Address: _____

County: _____

Home Phone: _____ Cell Phone: (315) 374-1110

3. BUILDING CHARACTERISTICS Type of

Building: (Circle appropriate response)

Residential School Commercial/Multi-use
Industrial Church Other:

If the property is residential, type? (Circle appropriate response) N/A

Ranch

Raised Ranch	2-Family Split Level	3-Family Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:

If multiple units, how many? One Unit

If the property is commercial, type?

Business Type(s) ~~Firewood Shop~~ ~~Newspaper Company~~

Does it include residences (i.e., multi-use)? Y / N If yes, how many?

Other characteristics:

Number of floors 1 Building age Unsure

Is the building insulated? Y / N How airtight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

N/A - one story

Airflow near source

None

Outdoor air infiltration

None

Infiltration into air ducts

None

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame concrete stone brick
- b. Basement type: full crawlspace slab other _____
- c. Basement floor: concrete dirt stone other _____
- d. Basement floor: uncovered covered covered with _____
- e. Concrete floor: unsealed sealed sealed with _____
- f. Foundation walls: poured block stone other _____
- g. Foundation walls: unsealed sealed sealed with _____
- h. The basement is: wet damp dry moldy
- i. The basement is: finished unfinished partially finished
- j. Sump present? Y (N)
- k. Water in sump? Y / N / Not applicable

Basement/Lowest level depth below grade: _____ (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

A ~2 in floor drain, inside door to the right

6. HEATING, VENTING and AIR CONDITIONING

Type of heating system(s) used in this building: (circle all that apply -note primary)

Unsure
Hot air circulation - Heat pump - Hot water baseboard - Space Heaters - Steam radiation - Radiant floor - Electric baseboard - Wood stove - Outdoor wood boiler
- Other _____

The primary type of fuel used is: Unsure

Natural Gas - Fuel Oil - Kerosene - Electric - Propane - Solar - Wood - Coal

Domestic hot water tank fueled by: _____

Boiler/furnace located in:

Basement - Outdoors - Main Floor - Other _____

Air conditioning:

Central Air - Window units - Open Windows - None

Are there air distribution ducts present? N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY Home is unoccupied
Is basement/lowest level occupied?

Full-time - Occasionally - Seldom - Almost Never

Level General Use of Each Floor (e.g., family room, bedroom, laundry, workshop, storage)

Basement Unfinished
1st Floor N/A
2nd Floor N/A
3rd Floor N/A
4th Floor N/A

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage?

Y / N

b. Does the garage have a separate heating unit?

Y / N / N/A

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)

Y / N / N/A

Please specify _____

d. Has the building ever had a fire?

Y / N When? _____

e. Is a kerosene or unvented gas space heater present?

Y / N Where? _____

f. Is there a workshop or hobby/craft area?

Y / N Where & Type? _____

g. Is there smoking in the building?

Y / N How frequently? _____

h. Have cleaning products been used recently?

Y / N When & Type? _____

i. Have cosmetic products been used recently?

Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months?

Y / N When & Type? _____

k. Is there new carpet, drapes or other textiles?

Y / N Where & When? _____

l. Have air fresheners been used recently?

Y / N When & Type? _____

m. Is there a kitchen exhaust fan?

If yes, where vented? Unsure
Y / N

n. Is there a bathroom exhaust fan?

If yes, where vented? Unsure
Y / N

o. Is there a clothes dryer?

Y / N If yes, is it vented? _____

p. Has there been a pesticide application?

Y / N When & Type? Unsure

Are there odors in the building? Y / (N) if
yes, please describe:

Do any of the building occupants use solvents at work?

(N) Building is unoccupied

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N / (N/A)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) (No)

Yes, use dry-cleaning infrequently (monthly or less) (Unknown)

Yes, work at a dry-cleaning service.

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation:

Is the system active or passive? Active/Passive (NA)

9. WATER AND SEWAGE

Water Supply: Public Water (Drilled Well) Driven Well Dug Well Other: _____
Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: Unsure

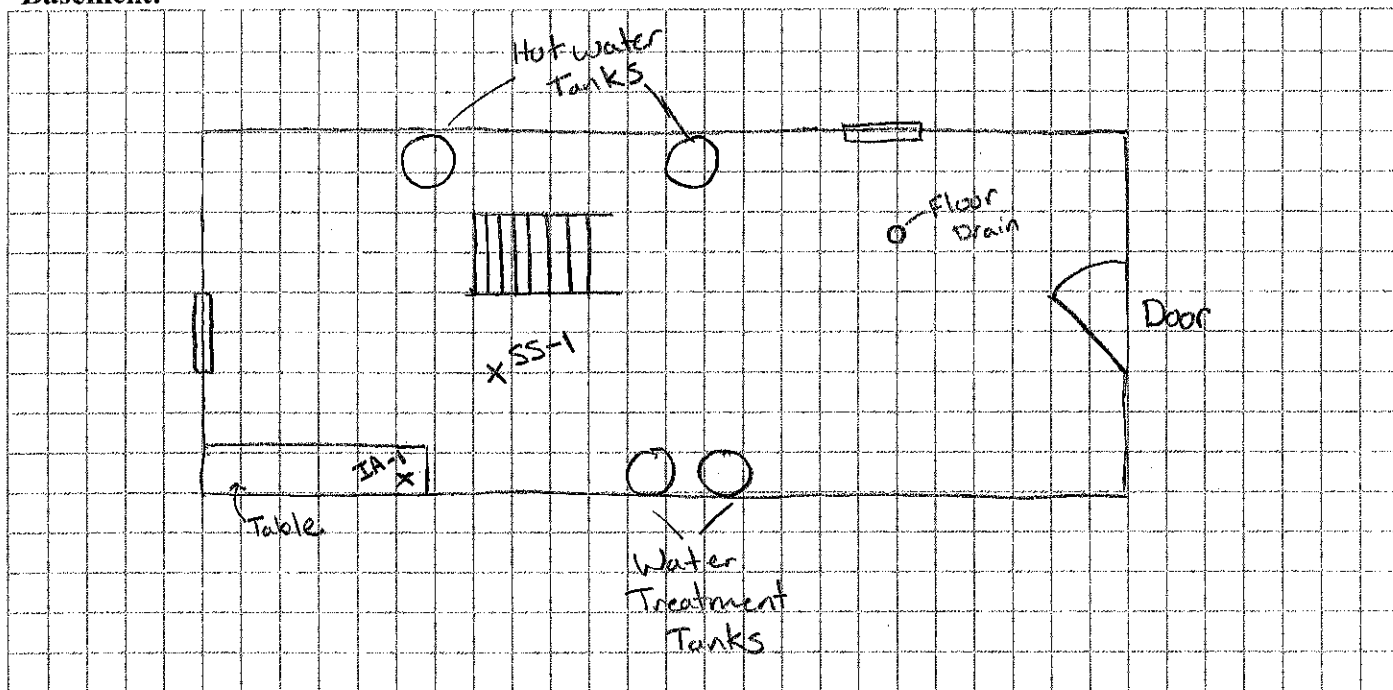
1.10. RELOCATION INFORMATION (for oil spill residential emergency)

- 1.a. Provide reasons why relocation is recommended: N/A
1.b. Residents choose to: remain in their home, relocate to friends/family relocate to hotel/motel.
1.c. Responsibility for costs associated with reimbursement explained. Y / N
1.d. Relocation package provided and explained to residents? Y / N

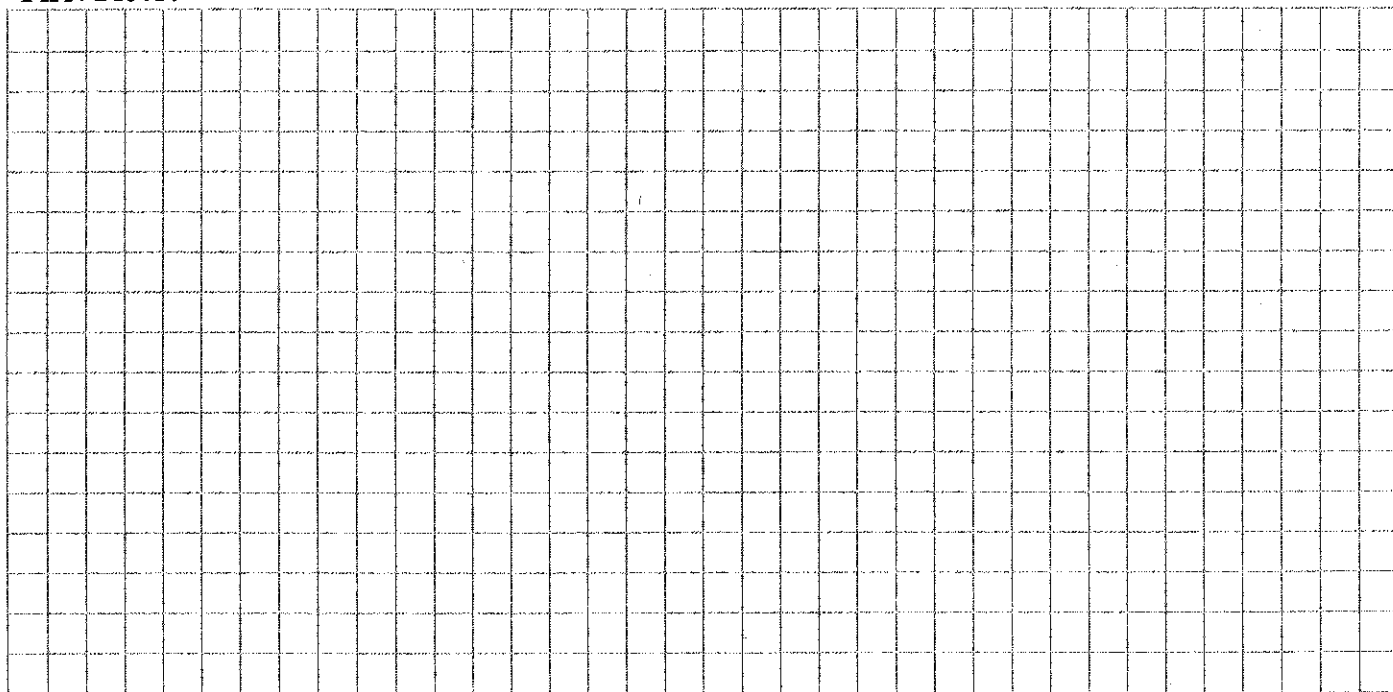
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



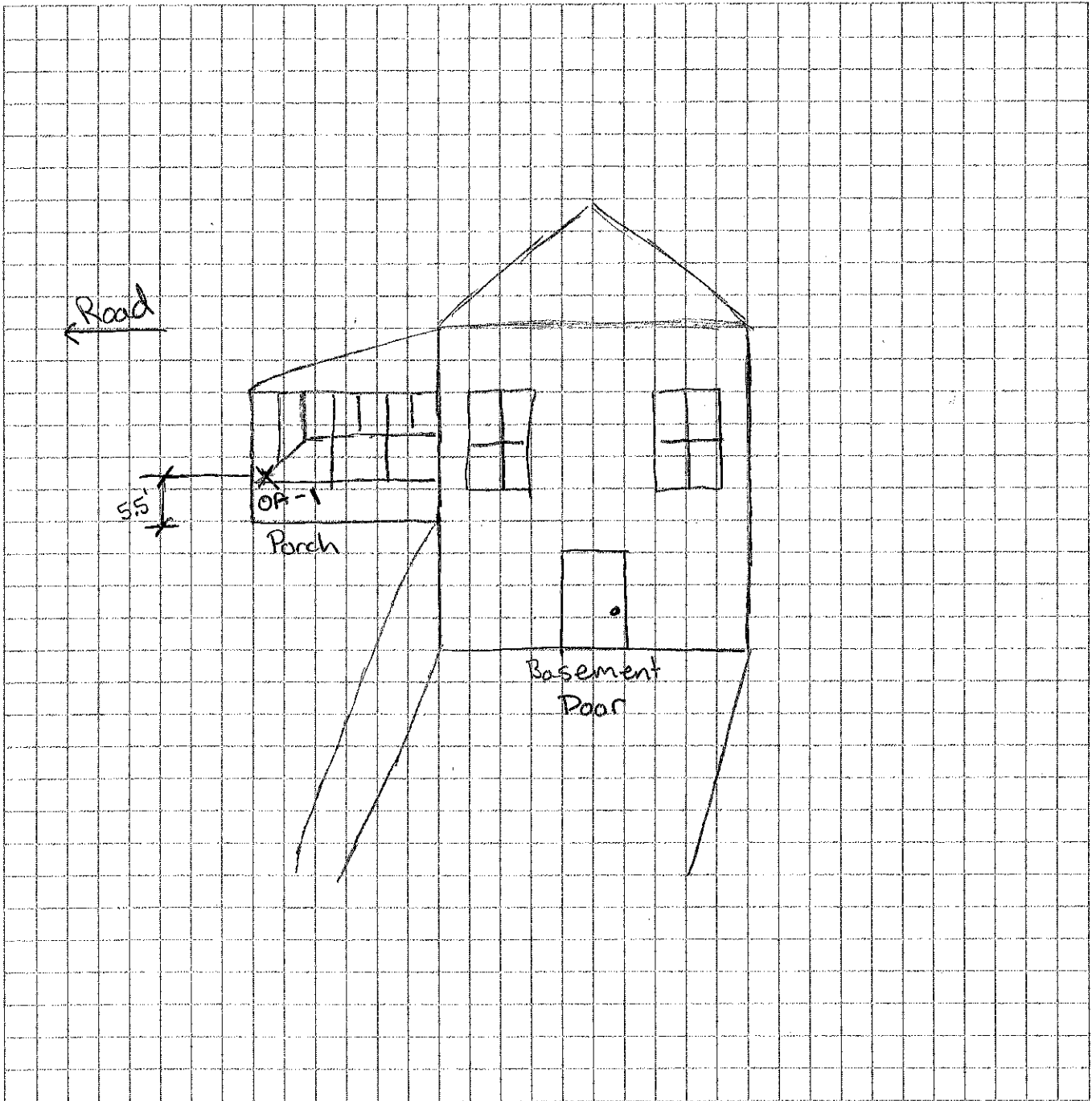
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repairshops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: Honeywell Mini RAE

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

**** Photographs of the front and back of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.**

BTSA\Sections\SIS\Oil Spills\Guidance Docs\Aiproto4.doc

[illegible]

FIELD AIR SAMPLING FORM



EA Engineering and Its Affiliate EA
Science & Technology
269 W Jefferson St
Syracuse, NY 13202

Project #: 1602531
Project Name: NYSEDEC - Owego Heat Treat
Location: Apalachin, NY
Project Manager: Megan Miller

Sample Location Information:

Site ID Number: 639053	754011				Sampler(s):	M.B. C. 2	
PID Meter Used: (Model, Serial #)	Monsieur mini (45675)				Building I.D. No.:	Res. 1	
SUMMA Canister Record:							
SUBSLAB SOIL GAS DUPLICATE		INDOOR AIR - BASEMENT		SUBSLAB SOIL GAS		OUTDOOR AIR	
Flow Regulator No.:	3435	Flow Regulator No.:	3645	Flow Regulator No.:		Flow Regulator No.:	3363
Canister Serial No.:	1722	Canister Serial No.:	9015	Canister Serial No.:		Canister Serial No.:	2263
Start Date/Time:	1104 07/06/23	Start Date/Time:	1106 07/06/23	Start Date/Time:		Start Date/Time:	1109 07/06/23
Start Pressure: (inches Hg)	-20	Start Pressure: (inches Hg)	-29	Start Pressure: (inches Hg)		Start Pressure: (inches Hg)	-28
Stop Date/Time:	1104 07/07/23	Stop Date/Time:	1106 07/07/23	Stop Date/Time:		Stop Date/Time:	1109 07/07/23
Stop Pressure: (inches Hg)	-7.5	Stop Pressure: (inches Hg)	-8	Stop Pressure: (inches Hg)		Stop Pressure: (inches Hg)	-8.5
Sample ID:	754011-SS-1	Sample ID:	754011-IA-1	Sample ID:		Sample ID:	754011-OA-1

Other Sampling Information:

Basement or Crawl Space?	basement	Story/Level	basement	Basement or Crawl Space?		Direction from Building	east side
Floor Slab Thickness (inches) [if present]	4 inch	Room	^	Floor Slab Thickness (inches) [if present]		Distance from Building	7 ft
Potential Vapor Entry Points Observed?	NA	Indoor Air Temp	65°F	Potential Vapor Entry Points Observed?		Intake Height Above Ground Level (ft.)	5.5 ft
Ground Surface Condition (Crawl Space Only)	-	Barometric Pressure?	-	Ground Surface Condition (Crawl Space Only)		Intake Tubing Used?	no
If slab, intake Depth If Crawl Space, intake height	4	Intake Height Above Floor Level (ft.)	4 ft	If slab, intake Depth If Crawl Space, intake height		Distance to nearest Roadway	20 ft
Noticeable Odor?	no	Noticeable Odor?	no	Noticeable Odor?		Noticeable Odor?	no
PID Reading (ppb)	0.5 ppm	PID Reading (ppb)	0.4 ppm	PID Reading (ppb)		PID Reading (ppb)	0.6
Duplicate Sample?		Duplicate Sample?		Duplicate Sample?		Duplicate Sample?	

Comments:

Leak Test:
Helium in Shroud: 64.2%
Helium in Bag: 0-0 ppm
Pass: yes

Sampler Signature:

FIELD SOIL VAPOR SAMPLING FORM

		Project #: 1602531	
		Project Name: Owego Heat Treat Site	
Location: Apalachin, NY		Project Manager: Megan Miller	
SOIL VAPOR SAMPLING LOG			
Sample Location Information:			
Site ID Number: 754011		Sampler(s): H. Bedell, C. Zook	
PID Meter Used (Model, Serial #):		Soil Vapor I.D. No.: SGP-01	
SUMMA Canister Record:			
SOIL VAPOR POINT		DUPLICATE SAMPLE (IF COLLECTED)	
Flow Regulator No.: 4761		Flow Regulator No.:	
Canister Serial No.: BC 11649		Canister Serial No.:	
Start Date/Time: 06/01/23 1350		Start Date/Time:	
Start Pressure: (inches Hg) -27.5		Start Pressure: (inches Hg)	
Stop Date/Time: 06/01/23 1450		Stop Date/Time:	
Stop Pressure: (inches Hg) -5.5		Stop Pressure: (inches Hg)	
Sample ID: 754011 - SGP-01 - 06/01/23		Sample ID:	
Other Sampling Information:			
Helium percentage achieved in enclosure for Tracer Gas Test:	89.1%	Depth to sample point:	
Tracer Gas test result (% of Helium):	0 ppm	Nearest Groundwater Elevation:	
Noticeable Odor?	No	Additional Info:	
Purge Volume PID Reading (ppb)	—		
Duplicate Sample?	—		
Outdoor Ambient Temperature:	85°F		
Wind Direction:	4 mph SW		
Comments:			
Sampler Signature: H. Bedell			

FIELD SOIL VAPOR SAMPLING FORM

		Project #: 1602531 Project Name: Owego Heat Treat Site Location: Apalachin, NY Project Manager: Megan Miller	
		SOIL VAPOR SAMPLING LOG	
Sample Location Information:			
Site ID Number: <u>754011</u>		Sampler(s): <u>1. Beck 11, C. Zook</u>	
PID Meter Used (Model, Serial #):		Soil Vapor I.D. No.: <u>SVL-02 SGP-02</u>	
SUMMA Canister Record:			
SOIL VAPOR POINT		DUPLICATE SAMPLE (IF COLLECTED)	
Flow Regulator No.:	<u>4124</u>	Flow Regulator No.:	
Canister Serial No.:	<u>1992</u>	Canister Serial No.:	
Start Date/Time:	<u>06/01/23 1328</u>	Start Date/Time:	
Start Pressure: (inches Hg)	<u>-28 inHg</u>	Start Pressure: (inches Hg)	
Stop Date/Time:	<u>06/01/23 1419</u>	Stop Date/Time:	
Stop Pressure: (inches Hg)	<u>-5 in Hg</u>	Stop Pressure: (inches Hg)	
Sample ID: <u>754011-SGP-02-060123</u>		Sample ID:	
Other Sampling Information:			
Helium percentage achieved in enclosure for Tracer Gas Test:	<u>92.8 %</u>	Depth to sample point:	
Tracer Gas test result (% of Helium):	<u>0</u>	Nearest Groundwater Elevation:	
Noticeable Odor?	<u>No</u>	Additional Info:	
Purge Volume PID Reading (ppb)	<u>—</u>		
Duplicate Sample?	<u>No</u>		
Outdoor Ambient Temperature:	<u>85°F</u>		
Wind Direction:	<u>4 mph, SW</u>		
Comments:			
Sampler Signature: <u>[Signature]</u>			

FIELD SOIL VAPOR SAMPLING FORM

		Project #: 1602531	
		Project Name: Owego Heat Treat Site	
Location: Apalachin, NY		Project Manager: Megan Miller	
SOIL VAPOR SAMPLING LOG			
Sample Location Information:			
Site ID Number:	754011	Sampler(s):	H. Bedell, C. Zook
PID Meter Used (Model, Serial #):		Soil Vapor I.D. No.:	SGP 546-03
SUMMA Canister Record:			
SOIL VAPOR POINT		DUPLICATE SAMPLE (IF COLLECTED)	
Flow Regulator No.:	4115	Flow Regulator No.:	
Canister Serial No.:	1508	Canister Serial No.:	
Start Date/Time:	06/01/23 1310	Start Date/Time:	
Start Pressure: (inches Hg)	-29" Hg	Start Pressure: (inches Hg)	
Stop Date/Time:	06/01/23 1413	Stop Date/Time:	
Stop Pressure: (inches Hg)	-3.0	Stop Pressure: (inches Hg)	
Sample ID: 754011- ^{SGP} 546 -03-060123		Sample ID:	
Other Sampling Information:			
Helium percentage achieved in enclosure for Tracer Gas Test:	95.4%	Depth to sample point:	
Tracer Gas test result (% of Helium):	0.0	Nearest Groundwater Elevation:	
Noticeable Odor?	No	Additional info:	
Purge Volume PID Reading (ppb)	—		
Duplicate Sample?	No		
Outdoor Ambient Temperature:	82°F		
Wind Direction:	3mph, SW		
Comments:			
Sampler Signature: <i>H. Bedell</i>			

FIELD SOIL VAPOR SAMPLING FORM

	EA Engineering, P.C. and Its Affiliate EA Science and Technology SOIL VAPOR SAMPLING LOG		Project #: 1602531 Project Name: Owego Heat Treat Site Location: Apalachin, NY Project Manager: Megan Miller	
	Sample Location Information:			
Site ID Number: 754011				Sampler(s): H. Bedell, C. Zook
PID Meter Used (Model, Serial #):				Soil Vapor I.D. No.: SGP-04 SGP-04
SUMMA Canister Record:				
SOIL VAPOR POINT			DUPLICATE SAMPLE (IF COLLECTED)	
Flow Regulator No.:	4759		Flow Regulator No.:	
Canister Serial No.:	1493		Canister Serial No.:	
Start Date/Time:	06/01/23 1518		Start Date/Time:	
Start Pressure: (inches Hg)	-29		Start Pressure: (inches Hg)	
Stop Date/Time:	06/01/23 1618		Stop Date/Time:	
Stop Pressure: (inches Hg)	-7		Stop Pressure: (inches Hg)	
Sample ID: 754011 - ^{SGP} SGP -04-060123			Sample ID:	
Other Sampling Information:				
Helium percentage achieved in enclosure for Tracer Gas Test:	71.9%		Depth to sample point:	
Tracer Gas test result (% of Helium):	0		Nearest Groundwater Elevation:	
Noticeable Odor?	No		Additional info:	
Purge Volume PID Reading (ppb)	/			
Duplicate Sample?	No			
Outdoor Ambient Temperature:	87°			
Wind Direction:	4 SW mph			
Comments:				
Sampler Signature: <i>H. Bedell</i>				

FIELD SOIL VAPOR SAMPLING FORM

 EA Engineering, P.C. and Its Affiliate EA Science and Technology SOIL VAPOR SAMPLING LOG		Project #: 1602531	
		Project Name: Owego Heat Treat Site	
Location: Apalachin, NY		Project Manager: Megan Miller	
Sample Location Information:			
Site ID Number: 754011		Sampler(s): H. Bedell, C. Zook	
PID Meter Used (Model, Serial #):		Soil Vapor I.D. No.: SV-05 SGP-05	
SUMMA Canister Record:			
SOIL VAPOR POINT		DUPLICATE SAMPLE (IF COLLECTED)	
Flow Regulator No.: 4680		Flow Regulator No.: 4680	
Canister Serial No.: 2003		Canister Serial No.: 2155 2155	
Start Date/Time: 06/01/23 1526		Start Date/Time: 06/05/23 1526	
Start Pressure: (Inches Hg) -12		Start Pressure: (Inches Hg) -12	
Stop Date/Time: 06/05/23 1527		Stop Date/Time: 06/01/23 1527	
Stop Pressure: (Inches Hg) -5		Stop Pressure: (Inches Hg) -5	
Sample ID: 754011 - SV-05 ^{SGP} -05-060123		Sample ID: 754011 - SV-05 ^{SGP} -FD-060123	
Other Sampling Information:			
Helium percentage achieved in enclosure for Tracer Gas Test: 86.9%		Depth to sample point:	
Tracer Gas test result (% of Helium): 0		Nearest Groundwater Elevation:	
Noticeable Odor? NO		Additional info:	
Purge Volume PID Reading (ppb): —			
Duplicate Sample? YES			
Outdoor Ambient Temperature: 87°F			
Wind Direction: 4 mph SW			
Comments:			
likely a faulty regulator, lost vacuum quickly. Individual cans were fine.			
GRAB sample total time: ~1-2 minutes			
Sampler Signature: <i>H. Bedell</i>			

[illegible]

FIELD SOIL VAPOR SAMPLING FORM

	® EA Engineering, P.C. and Its Affiliate EA Science and Technology SOIL VAPOR SAMPLING LOG	Project #: 1602531 Project Name: Owego Heat Treat Site Location: Apalachin, NY Project Manager: Megan Miller
	Sample Location Information:	
Site ID Number: 154011	PID Meter Used (Model, Serial #): 45675 (Honeywell Mini RAE)	Sampler(s): H. Bedell, C. 2000 Soil Vapor ID. No.: SGP-05
SUMMA Canister Record:		
SOIL VAPOR POINT		DUPLICATE SAMPLE (IF COLLECTED)
Flow Regulator No.: 4717	Flow Regulator No.: 4717	
Canister Serial No.: P1272	Canister Serial No.: P1705	
Start Date/Time: 07/06/23 0817	Start Date/Time: 07/06/23 0817	
Start Pressure: (inches Hg) -28	Start Pressure: (inches Hg) -28	
Stop Date/Time: 07/06/23 0915	Stop Date/Time: 07/06/23 0915	
Stop Pressure: (inches Hg) -5	Stop Pressure: (inches Hg) -5	
Sample ID: 154011-SGP-05	Sample ID: 154011-SGP-DUP	
Other Sampling Information:		
Helium percentage achieved in enclosure for Tracer Gas Test: 67.1%	Depth to sample point:	
Tracer Gas test result (% of Helium): 0.0	Nearest Groundwater Elevation:	
Noticeable Odor? No	Additional info:	
Purge Volume PID Reading (ppb) 0.0		
Duplicate Sample? Yes		
Outdoor Ambient Temperature: 70°F		
Wind Direction: 2 mph E		
Comments:		
(Empty space for comments)		
Sampler Signature: <i>H. Bedell</i>		

Soil Sampling Forms



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

N of pond in brushy
field, near abandoned
destroyed NW swamp

Sample Location IDs:

754011-SS2-1-(0-2)-041823

754011-SS2-1-(2-12)-041823

Sampling Date/Time

Sample Method:

hand auger/composite

Start

Finish

DATE 4/18/23 DATE 4/18/23
TIME 1102 TIME 1108

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions:
							Weather: 45°F <u>cloudy</u>
							Temperature: <u>overcast</u>
0-2	0.6	X	X	X	X		light brown, clay, moist, fine fine
2-12	0.8	X	X	X	X		dark brown, clay, moist, fine

Logged by: KE, TR

Date: 4/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 1102, 1108



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

large brushy field
SW of westmost bldg.

Sample Location IDs:

754011-552-6-(0-2)-041823
754011-552-6-(2-12)-041823

Sampling Date/Time

Sample Method:

hand auger / composite

Start

DATE 4/18/23
TIME 1034

Finish

DATE 4/18/23
TIME 1044

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: <u>dry</u>
							Weather: <u>44°F</u>
							Temperature: <u>overcast</u>
<u>0-2</u>	<u>0.8</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		<u>dark brown, sandy, rocky, medium</u>
<u>2-12</u>	<u>1.5</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		<u>brown, sandy, rocky, medium</u>

Logged by: KE, TR

Date: 4/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 1034, 1044



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SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

boggy field, west side

Sample Location IDs:

754011-SS2-3-(0-2)-041823

754011-SS2-3-(2-12)-041823

Sampling Date/Time

Sample Method:

hand auger/composite

Start

DATE 4/18/23
TIME 0938

Finish

DATE 4/18/23
TIME 0939

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	0.6	X	X	X	X	
2-12	2.1	X	X	X	X	

Surface Conditions: dry

Weather: 42°F

Temperature: overcast

dry, sandy, brown, fine

dry, sandy, brown, fine

Logged by: KJ TR

Date: 04/18/2023

QA/QC: dup + MS/MSD
to (2-12)

Sample Interval: 0-2, 2-12

Time: 0930, 0939



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011

Project: Owego Heat Treat

Location

Apalachin, NY

Sampling Location Description:

brushy field NW of
pond, SW of SS2-4

Sample Location IDs:

75401-SS2-5-(0-2)-041823

75401-SS2-5-(2-12)-041823

Sampling Date/Time

Sample Method:

hand auger / composite

Start

DATE 04/18/23

TIME 0859

Finish

DATE 04/18/23

TIME 0908

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	1.5	X	X	X	X	
2-12	0.8	X	X	X	X	

Surface Conditions:

Weather: 44°F dry

Temperature: overcast

brown, clay, damp/moist, fine

light brown, clay, dry, fine

Logged by: KL, TR

Date: 04/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 0859, 0908



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

NW of pond, in field

Sample Location IDs:

754011-SS2-4-(10-2)-041823
754011-SS2-4-(12-2)-041823

Sampling Date/Time

Sample Method:

hand auger/composite

Start

Finish

DATE 4/18/23
TIME 0830

DATE 4/18/23
TIME 0842

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	1.3	X	X	X	X	
2-12	1.1	X	X	X	X	

Surface Conditions: dry

Weather: 44°F

Temperature: overcast

dark brown, sandy, dry

brown, sandy, dry, rocky

Logged by: KR, TR

Date: 04/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 0830, 0842



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

SE of pond

Sample Location IDs:

754011-552-7-(6-2)-041813
754011-552-7-(2-12)-041813

Sampling Date/Time

Sample Method:

hand auger / composite

Start

Finish

DATE 04/18/23 DATE 04/18/23
TIME 0802 TIME 0812

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	0.1	X	X	X	X	
2-12	4.5	X	X	X	X	

Surface Conditions: dry

Weather: overcast

Temperature: 42°F

dark brown, sandy

brown, sandy

Logged by: KL, TR

Date: 04/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 0802, 0812



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 75401
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

In large airfield, E of
path from residence

Sample Location IDs:

75401-SS2-9-(6-2)-041823
75401-SS2-9-(2-12)-041823

Sampling Date/Time

Sample Method:

hand auger/composite

Start

Finish

DATE 4/18/23
TIME 1411

DATE 04/18/23
TIME 1422

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	4.8	X	X	X	X	
2-12	7.0	X	X	X	X	

Surface Conditions: dry

Weather: overcast

Temperature: 44°F

dark brown, dry, sandy

brown, more sandy, dry

Logged by: TR, Ke

Date: 04/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 1411, 1422



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job No. 1602581 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

NE of pond

Sample Location IDs:

754011-SS2-2-(0-2)-04182
754011-SS2-2-(2-12)-04182 22

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/18/23
TIME 1130

Finish

DATE 4/18/23
TIME 1137

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dry
0-2	1.5	x	x	x	x		Weather: Partly cloudy
2-12	5.3	x	x	x	x		Temperature: 42° F
							dark brown, sandy, dry
							brown, dry, rocky, fine/medium

Logged by: KE, TP

Date: 4/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 1130, 1137



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 734011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

Wooded area / clearing
E of residence near ~~trailer~~

Sample Location IDs:

75401-552-10-(0-2)-041823
75401-552-10-(2-12)-041823

Sampling Date/Time

Sample Method:

hand auger / composite

Start

Finish

DATE 4/18/23
TIME 1345

DATE 4/18/23
TIME 1356

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	4.5	X	X	X	X	
2-12	10.5	X	X	X	X	

Surface Conditions: dry / some moist

Weather: overcast

Temperature: 44°F

dark brown, clay, moist

Sandy clay, dark brown, moist, fine

Logged by: TR, KE

Date: 04/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12

Time: 1345, 1356



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 11602531 Client: NYSDEC 75401
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

front yard of abandoned
house

Sample Location IDs:

75401-SS3-11-(0-2)-041823
75401-SS3-11-(2-12)-041823
75401-SS3-11-(12-24)-041823

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/18/23
TIME 1200

Finish

DATE 4/18/23
TIME 1234

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	3.5	X	X	X	X	
2-12	4.2	X	X	X	X	
12-24	15.7	X	X	X	X	

Surface Conditions: dry

Weather: 45°F

Temperature: overcast

dark brown, sandy, moist, fine

brown, clayey sand, moist, fine

light brown, sandy clay, dry

Logged by: KE, TR

Date: 04/18/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1200, 1221, 1234



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job No. Client: NYSDEC 254011

160231 Project: Owego Heat Treat

Location

Apalachin, NY

Sampling Location Description:

in field W of westmost
bldg

Sample Location IDs:

754011-553-16-(8-2)-041723

754011-553-16-(12-12)-041723

754011-553-16-(12-24)-041723

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/17/23

TIME 1626

Finish

DATE 4/17/23

TIME 1653

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	0.7	X	X	X	X	
2-12	2.2	X	X	X	X	
12-24	14.2	X	X	X	X	

Surface Conditions: dry

Weather: overcast

Temperature: 50°F

dark brown, sandy

brown, sandy; dry, fine

brown clayey sandy, fine

Logged by: KR, TR

Date: 04/17/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1626, 1639, 1653



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

SW of abandoned house,
near blue shed (East of)

Sample Location IDs:

754011-553-12-1A-2-04 723
754011-553-12-2-12-04 723
754011-553-12-12-24-04 723

Sampling Date/Time

Sample Method:

handauger composite

Start

DATE 4/17/23
TIME 0935

Finish

DATE 4/17/23
TIME 1040

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log	Surface Conditions: dry
0"-2"	0.3	X	X	X	X		Weather: Light rain
2"-12"	0.0	X	X	X	X		Temperature: 43°F
12"-24"	13.2	X	X	X	X		brown, clay
							brown, clay, some iron, moist, fine (reddish streaks)
							darker brown, clayey sand, moist, fine

Logged by: KC, TR

Date: 04/17/2023

QA/QC: _____

Sample Interval: 0"-2", 2"-12", 12"-24"

Time: 0935, 1000, 1040



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job No. 160201 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

in brush w of bldg

Sample Location IDs:

75401-553-17-(6-2)-041723
75401-553-17-(2-12)-041723
75401-553-17-(12-24)-041723

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/17/23
TIME 1545

Finish

DATE 4/17/23
TIME 1605

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	1.2	X	X	X	X	
2-12	2.2	X	X	X	X	
12-24	15.1	X	X	X	X	

Surface Conditions: dry

Weather: 48°F

Temperature: overcast

brown, clayey, moist

light brown, sandy clay

light brown, clayey sand, moist

Logged by: K. TR

Sample Interval: 0-2, 2-12, 12-24

Time
Date:

1545, 1552, 1605

QA/QC: _____

Date
Time:

04/17/2023



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

field SW of wetmost
bldg.

Sample Location IDs:

754011-SS3-20-(0-2)-041723
754011-SS3-20-(2-12)-041723
754011-SS3-20-(12-24)-041723

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/17/23
TIME 1350

DATE 4/17/23
TIME 1455

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	0.6	X	X	X	X	
2-12	0.4	X	X	X	X	
12-24	0.4	X	X	X	X	
				X		

Surface Conditions: dry

Weather: overcast

Temperature: 43°F

dark brown, sandy, fine

dark brown, pebbly, sandy, dry, fine/med.

brown, sandy, pebbly, dry, fine/med.

Logged by: KE, TR

Date: 04/17/2023

QA/QC: dup, MS/MSD

Sample Interval: 0-2, 2-12, 12-24

Time: 1350, 1410, 1455

~~(0-2)~~ ~~(12-24)~~



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

in field S of westmost
bldg

Sample Location IDs:

75401-SS3-18-(0-2)-041723
75401-SS3-18-(2-12)-041723
75401-SS3-18-(12-24)-041723

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/17/23
TIME 1236

DATE 4/17/23
TIME 1325

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
<u>0-2</u>	<u>8.4</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	
<u>2-12</u>	<u>4.0</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	
<u>12-24</u>	<u>0.0</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	

Surface Conditions: dry

Weather: overcast

Temperature: 47°F

brown, clayey, moist

brown, sandy, fine

light brown, clayey, moist, fine

Logged by: KE, TR

Date: 04/17/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1236, 1300, 1325



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602331 Client: NYSDEC 75411
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

SE of middle bldg/
abandoned house. brushy.

Sample Location IDs:

754011-SS3-14-(0-2)-041223
754011-SS3-14-(2-12)-041223
754011-SS3-14-(12-24)-041223

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/17/23
TIME 1146

DATE 4/17/23
TIME 1211

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions:
							Weather: overcast
							Temperature: 45°F
0-2	2.1	X	X	X	X		brown, sandy, dry
2-12	2.8	X	X	X	X		light brown, sandy, medium
12-24	11.0	X	X	X	X		light brown, clayey, sand, dry, medium

Logged by: KL, TR

Date: 04/17/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1146, 11:53, 12:11



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job No. 160231 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

directly N of westmost
site bldg. S of Marshland
Rd

Sample Location IDs:

754011-553-13-(12-2)-041723
754011-553-13-(12-12)-041723
754011-553-13-(12-24)-041723

Sampling Date/Time

Sample Method:

Composite, hand auger

Start

DATE 4/17/23
TIME 1720

Finish

DATE 4/17/23
TIME 1755

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	1.2	X	X	X	X	
2-12	2.1	X	X	X	X	
12-24	2.4	X	X	X	X	

Surface Conditions: dry

Weather: Overcast / clear

Temperature: 48°F

Sandy, dry, fine / medium

dark brown, sandy, dry

brown, sandy

Logged by: Kc, TR

Date: 4/17/23

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1720, 1738, 1755



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754611
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

Wooded area NWS of house

Sample Location IDs:

754611-53-6-6-2-042023
754611-53-6-12-12-042023
754611-53-6-12-24-042023

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/20/23
TIME 0755

Finish

DATE 4/20/23
TIME 0814

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
-----------------------	-----------	----------	-----------	------------	---------------------	----------

0-2	0.3	X	X	X	X	
-----	-----	---	---	---	---	--

2-12	1.0	X	X	X	X	
------	-----	---	---	---	---	--

12-24		X	X	X	X	
-------	--	---	---	---	---	--

--	--	--	--	--	--	--

Surface Conditions: moist

Weather: overcast

Temperature: 38°F

Light brown, dry clay, fine/medium

Light brown, moist clay, fine/medium

Brown clay, moist, pebbly, fine/medium

Logged by: KC, TR

Date: 4/20/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 0755, 0805, 0814



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC #4011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

W of front yard of large
brushy area

Sample Location IDs:

#54011-553-15-(0-2)-042023
#54011-553-15-(0-12)-042023
#54011-553-15-(12-24)-042023

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 04/20/23
TIME 0845

Finish

DATE 04/20/23
TIME 0905

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	0.2	X	X	X	X	
2-12	130.0	X	X	X	X	
12-24	71.2 33.7 60	X	X	X	X	

Surface Conditions: moist

Weather: drizzle, overcast

Temperature: 39°F

Dark brown, dry, sandy clay

Light brown, dry sandy clay

Light brown, moist clay

Logged by: KLR

Date: 04/20/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 0845, 0854, 0905



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SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 704011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

W of house, front yard

Sample Location IDs:

754011-SS3-14-(0-2)-04/20/23
754011-SS3-14-(2-12)-04/20/23
754011-SS3-14-(12-24)-04/20/23

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/20/23
TIME 0949

DATE 4/20/23
TIME 1021

Surface Conditions: moist

Weather: overcast, drizzle

Temperature: 36°F

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	0.2	X	X	X	X	
2-12	0.3	X	X	X	X	
12-24	12.2	X	X	X	X	

Dry, brown clayey sand, fine

Light brown, dry, sandy clay, fine

Brown, dry, clayey sand, fine.

Logged by: KE, TR

Date: 4/20/2023

QA/QC: dup (2-12)

Sample Interval: 0-2, 2-12, 12-24

Time: 0949, 1000, 1021

MS/MSD (12-24)



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SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 254011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

West of cleared path to
airstrip, in open field

Sample Location IDs:

254011-552-8-(0-2)-041923

254011-552-8-(2-12)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 04/19/23
TIME 0756

Finish

DATE 04/19/23
TIME 0805

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	0.0	X	X	X	X	
2-12	0.0	X	X	X	X	

Surface Conditions: moist

Weather: Overcast

Temperature: 35.5 F

brown, dry, sandy

dark brown, dry, sandy

Logged by: VL, TR

Date: 04/19/2023

QA/QC: dup(2-12)

Sample Interval: 0-2, 2-12

Time: 0756, 0805



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

brushy wooded area NE
of residence

Sample Location IDs:

754011-SS3-1-(0-2)-041923
754011-SS3-1-(2-12)-041923
754011-SS3-1-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite.

Start

DATE 4/19/23
TIME 1621

Finish

DATE 4/19/23
TIME 1648

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	1.0	X	X	X	X	
2-12	5.4	X	X	X	X	
12-24	2.4	X	X	X	X	

Surface Conditions: moist

Weather: clear

Temperature: 48°F

Brown, dry clay

Dark brown, dry clay

Brown, wet/moist clay

Logged by: KL, TZ

Date: 04/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1621, 1636, 1648



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:
Wooded area N of residence

Sample Location IDs:
754011-53-5-(6-2)-041923
754011-553-5-12-12-041923
754011-553-5-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/19/23
TIME 1406

Finish

DATE 4/19/23
TIME 1450

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
-----------------------	-----------	----------	-----------	------------	---------------------	----------

0-2	1.4	X	X	X	X	
-----	-----	---	---	---	---	--

2-12	1.2	X	X	X	X	
------	-----	---	---	---	---	--

12-24	1.3	X	X	X	X	
-------	-----	---	---	---	---	--

--	--	--	--	--	--	--

Surface Conditions:

Weather: Sunny

Temperature: 99°F

Brown, dry, ~~et~~ sandy clay

Brown, dry, clay

Brown, moist, clay

Logged by: KR, TR

Date: 4/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1406, 1432, 1450



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SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:
backyard of residence

Sample Location IDs:
754011-553-8-(10-2)-04 1923
754011-553-8-(12-12)-04 1923
754011-553-8-(12-24)-04 1923

Sampling Date/Time

Sample Method:

Start

Finish

hand auger, composite

DATE 4/19/23 DATE 4/19/23
TIME 1319 TIME 1342

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dry Weather: Overcast Temperature: 43°F
0-2	2.4	X	X	X	X		Brown, dry clay
2-12	1.5	X	X	X	X		light brown dry, pebbly, clay
12-24	2.3	X	X	X	X		Brown, dry clay

Logged by: VL, TR

Date: 4/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1319, 1325, 1342



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SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

by yard road, east of
house, across street from
Heat Treat bldg

Sample Location IDs:

754011-553-9-(0-2)-041923
754011-553-9-(2-12)-041923
754011-553-9-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/19/23 DATE 4/19/23
TIME 1225 TIME 1255

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	1.2	x	x	x	x	
2-12	1.3	x	x	x	x	
12-24	8.0	x	x	x	x	

Surface Conditions: dry

Weather: overcast

Temperature: 39°F

loose clayey sand, dry, brown, fine

brown, sandy clay, semi-dry, fine

brown, sandy, dry, fine

Logged by: Ke, TR

Date: 04/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1225, 1240, 1255



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. _____ Client: NYSDEC
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:
cleaning by trailer NE of
residence

Sample Location IDs:
754011-553-4-(0-2)-041923
754011-553-4-(2-12)-041923
754011-553-4-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/14/23 DATE 4/19/23
TIME 1076 TIME 1049

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	1.6	X	X	X	X	
2-12	3.3	X	X	X	X	
12-24	5.5	X	X	X	X	
				X		

Surface Conditions: dry
Weather: 38°F overcast
Temperature: 38°F

semi dry brown, clay

Brown, dry, sandy clay

Brown, clay, dry

Logged by: KL, TR

Date: 4/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1026, 1036, 1049



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. Client: NYSDEC 754011

1602531 Project: Owego Heat Treat

Location

Apalachin, NY

Sampling Location Description:

Wooded area NE of
residence

Sample Location IDs:

754011-SS3-3-(02)-041923

754011-SS3-3-(12)-041923

754011-SS3-3-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

Finish

DATE 4/19/23

DATE 4/19/23

TIME 0940

TIME 1005

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
-----------------------	-----------	----------	-----------	------------	----------------------	----------

0-2	0.2	X	X	X	X	
-----	-----	---	---	---	---	--

2-12	3.0	X	X	X	X	
------	-----	---	---	---	---	--

12-24	58.1	X	X	X	X	
-------	------	---	---	---	---	--

Surface Conditions: moist

Weather: 36°F overcast

Temperature: 36°F

light brown, dry, clay

light brown, moist clay

light brown, clay, moist

Logged by: RL, TR

Date: 04/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 0940, 0951, 1005



EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____

Surface Elevation: _____

Reference Elevation: _____

Reference Description: _____

Job. No. 1612531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

Wooded area NE of residential
property

Sample Location IDs:

754011-553-7-(6-2)-041923
754011-553-7-(2-12)-041923
754011-553-7-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 7/19/23
TIME 1533

Finish

DATE 4/19/23
TIME 1559

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
-----------------------	-----------	----------	-----------	------------	---------------------	----------

Surface Conditions: moist

Weather: 54°F, sunny

Temperature: 54°F

0-2	1.5	X	X	X	X		Brown, moist, sandy clay.
-----	-----	---	---	---	---	--	---------------------------

2-12	1.2	X	X	X	X		Brown, moist, clay
------	-----	---	---	---	---	--	--------------------

12-24	1.4	X	X	X	X		Brown, clay, semi moist
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Logged by:

KL, TR

Date:

04/19/2023

QA/QC:

Sample Interval:

0-2, 2-12, 12-24

Time:

1533, 1544, 1559



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EA Science and Technology

SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

Wooded area, denser vegetation,
Northwest point

Sample Location IDs:

754011-553-10-(0-2)-041923
754011-553-10-(2-12)-041923
754011-553-10-(12-24)-041923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/19/23
TIME 1122

Finish

DATE 4/19/23
TIME 1147

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/Pesticides	USCS Log
0-2	1.1	X	X	X	X	
2-12	1.5	X	X	X	X	
12-24	1.6	X	X	X	X	

Surface Conditions: moist

Weather: ~~st~~ partly cloudy

Temperature: 49°F

dry, dark brown, sandy

dry, brown, sandy

dry, brown, sandy clay

Logged by: KE, TR

Date: 04/19/2023

QA/QC: _____

Sample Interval: 0-2, 2-12, 12-24

Time: 1122, 1134, 1147



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SURFACE SOIL SAMPLING LOG

Coordinates: Northing: _____ Easting: _____
Surface Elevation: _____
Reference Elevation: _____
Reference Description: _____

Job. No. 1602531 Client: NYSDEC 754011
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

Wooded area, N of residence

Sample Location IDs:

754011-553-2-(0-2)-041 923
754011-553-2-(2-12)-041 923
754011-553-2-(12-24)-041 923

Sampling Date/Time

Sample Method:

hand auger, composite

Start

DATE 4/19/23
TIME 0844

Finish

DATE 4/19/23
TIME 0918

Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log
0-2	0.4	X	X	X	X	
2-12	2.1	X	X	X	X	
12-24	70.2	X	X	X	X	

Surface Conditions: Moist

Weather: Overcast

Temperature: 36°F

brown, dry, sandy clay, fine

brown, dry, clay, fine

brown, semi-dry clay, fine/medium

Logged by: KE, TL

Date: 04/19/2023

QA/QC: MS/MSD (2-12)

Sample Interval: 0-2, 2-12, 12-24

Time: 0844, 0855, 0918

Surface Water Sampling Forms



EA Engineering, P.C. and Its Affiliate
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SURFACE WATER SAMPLE LOG

Coordinates:

Northings:

Easting:

Surface Water Elevation:

Reference Elevation:

Reference Description:

Northern Area of Pond

Job No.
754011

Client: NYSDEC
Project: Owego Heat Treat

Location
Apalachin, NY

Sampling Location Description:

Northern bank of Pond
(Southern portion of site)

Sample Location ID:

SW-01

Sheet 1 of 1

Sample Method: Grab

Depth of Water Body: —

Width of Water Body: —

Water Body Location

Southern Site - Northern Pond Area

Sampling Date/Time

Start

Finish

4/19/23

4/19/23

1500 TIME

1510 TIME

Surface Conditions: Good

Weather: 48°F Mostly Cloudy (SW winds)

Description of Surface Water

Water Quality Parameters

Time (hrs)	pH (pH units)	Cond. (mS/cm)	Turb. (ntu)	DO (mg/L)	Temp (°C)	ORP (mV)
1500	7.25	0.357	0.0	16.50	15.09	43
1505	7.58	0.356	0.0	17.32	15.08	55
1510	7.87	0.356	0.0	17.31	15.05	61

clear, no current

clear, no current

clear, no current

Total Quantity of Water Removed (gal): —

Samplers:

HV, KC

Sampling Date:

4/19/23

Sampling Time:

1510

Split Sample With:

N/A

Sample Type:

Grab

Attachment C

Laboratory Reports

(Provided Separately)

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Attachment D

Data Usability Summary Reports

(To be provided with final document)

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DATA VALIDATION REPORT

Owego Heat Site

**SDGs: 23D2439, 23D2453, 23D2490, 23D2671, 23F0349,
and 23G1177**

Chemical Analyses Performed by:

Con-Test, A Pace Analytical Laboratory

Prepared by

ENVIRONMENTAL DATA SERVICES, LTD.

Prepared for

EA Engineering, Science and Technology, Inc.

March 11, 2024



DATA USABILITY SUMMARY REPORT FOR TOTAL METALS

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2439

SAMPLE DATES: 04/17/2023 – 04/18/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01	754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS3-12-(2-12)-20230417	23D2439-02	754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS3-12-(12-24)-20230417	23D2439-03	754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS3-19-(0-2)-20230417	23D2439-04	754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS3-19-(2-12)-20230417	23D2439-05	754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS3-19-(12-24)-20230417	23D2439-06	754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS3-18-(0-2)-20230417	23D2439-07	754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS3-18-(2-12)-20230417	23D2439-08	754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS3-18-(12-24)-20230417	23D2439-09	754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS3-20-(0-2)-20230417	23D2439-10	754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS3-20-(2-12)-20230417	23D2439-11	754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS3-20-(12-24)-20230417	23D2439-12	754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS3-17-(0-2)-20230417	23D2439-13	754011-SS2-2-(2-12)-20230418	23D2439-36
754011-SS3-17-(2-12)-20230417	23D2439-14	754011-SS3-11-(0-2)-20230418	23D2439-37
754011-SS3-17-(12-24)-20230417	23D2439-15	754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-16-(0-2)-20230417	23D2439-16	754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS3-16-(2-12)-20230417	23D2439-17	754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS3-16-(12-24)-20230417	23D2439-18	754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS3-13-(0-2)-20230417	23D2439-19	754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS3-13-(2-12)-20230417	23D2439-20	754011-SS2-9-(2-12)-20230417	23D2439-43
754011-SS3-13-(12-24)-20230417	23D2439-21	754011-FD-02-20230418	23D2439-44
754011-FD-01-20230417	23D2439-22	754011-RB-01-20230417	23D2439-45
754011-SS2-7-(0-2)-20230418	23D2439-23	754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D and 7471B/7470A to determine the concentrations of metals including mercury.

Project specific quality assurance (QA) objectives and the USEPA Region II SOP, Hazardous Waste Support Section SOP No. HW-3a Revision 1 ISM02.2 ICP-AES Data Validation, September 2016, SOP No. HW-3c, Rev. 1 Mercury and Cyanide Data Validation, September 2016, and the United States Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Superfund Methods Data Review, OLEM 9240.1-66 EPA-542-R-20-006, November 2020, (USEPA 2020) have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

All data users should note two facts. First, an "R" flag means that the associated value is unusable due to significant quality control (QC) problems, the data is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on any data tables even as a last resort. Second, no analyte concentration, even if it passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes in the samples whose holding time has been exceeded will be qualified as estimated, "J-", or unusable, "R", if holding times are grossly exceeded.

The samples in this delivery group were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples contained in this delivery group were prepared and analyzed within the holding times established in the method and validation criteria.

2. BLANK CONTAMINATION

Quality assurance blanks, which include method, trip, field, or rinse blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank Contamination

Method blanks were evaluated at the proper frequency. No problems requiring result qualification were found for this criterion with the following exception. Cobalt was positively identified in a method blank associated with the samples listed in the table below. The positive results reported for the impacted analyte in the associated samples have been evaluated and qualified as appropriate per validation guidance.

754011-FD-02-20230418	754011-SS2-9-(2-12)-20230417
754011-SS2-10-(0-2)-20230418	754011-SS3-11-(0-2)-20230418
754011-SS2-10-(2-12)-20230418	754011-SS3-11-(12-24)-20230418
754011-SS2-9-(0-2)-20230418	754011-SS3-11-(2-12)-20230418

Field or Rinse Blank Contamination

Samples 754011-RB-01-20230417 and 754011-RB-02-20230418 were submitted as rinse blanks in association with the samples in this SDG. No problems were found for this criterion with the following exception. Zinc was positively identified in rinse blank 754011-RB-01-20230417 associated with the sample collected on 04/17/2023. Positive sample results for the impacted analyte in the associated samples have been evaluated and validation action was not required on this basis.

3. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data.

Initial and Continuing Calibration Verification

The initial calibration curve and its verification demonstrate that the instrument is capable of giving acceptable performance at the beginning of the analytical sequence. The continuing calibration verification standards provide information as to the continuing stability of the calibration curve.

No problems were found for this criterion.

Initial and Continuing Calibration Blanks

Qualification of sample results due to ICB contamination affects all samples in the analytical sequence while CCB contamination only affects samples immediately after or before the non-compliant CCB. If the highest level of contamination is found in the field or method blank, all samples are qualified based on that observation.

No problems requiring result qualification were found for this criterion.

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-20-(12-24)-041723 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in a need to qualify sample results with the following exceptions. The observed MS and MSD recoveries for antimony and thallium were less than the lowest acceptance limit. The results reported for the impacted analytes in the parent sample have been qualified "UJ" on this basis.

Sample 754011-SS2-3-(2-12)-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample 754011-SS3-11-(0-2)-041823 was submitted for MS/MSD evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable with the following exceptions. The observed MS and MSD recoveries for antimony were less than the extremely low (less than 30%). The laboratory analyzed a post-digestion spike (PDS) and the observed recovery for antimony was acceptable. The result reported for the impacted analyte in the parent sample has been qualified "UJ" on this basis.

Sample 754011-RB-01-041723 was submitted for MS evaluation in association with this SDG. Upon evaluation, all accuracy indicators were acceptable.

Sample 754011-FD-02-041823 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

5. LABORATORY DUPLICATE

The laboratory duplicate sample analysis is performed to determine long-term precision of the analytical method in a given matrix. The relative percent difference (RPD) between the sample and its duplicate may be used to qualify data.

Sample 754011-RB-01-041723 was submitted for laboratory duplicate evaluation for mercury in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated.

Sample 754011-SS3-11-(0-2)-041823 was submitted for laboratory duplicate evaluation for ICP metals in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated with the exception of barium. The result reported for the impacted analyte in the parent sample has been qualified "J" on this basis.

6. LABORATORY CONTROL SAMPLE

The laboratory control sample (LCS) is a quality control sample of known concentration, which is processed along with a batch of samples. The percent recovery of the LCS can be used to assess the accuracy of the analytical procedure performed by a specific individual, during a specific time period, and utilizing the same reagents and equipment as those used for sample analyses. The LCS data is independent of sample matrix and the results may formulate a basis for qualification.

LCS and LCS duplicates were processed at the proper frequency. Upon evaluation, all precision and accuracy indicators were acceptable or did not result in a need to qualify sample results with the following exception. Poor LCS/LCS duplicate precision was not for mercury for the LCS/LCSD duplicate associated with the samples listed in the table below. The positive results reported for the impacted analyte in the associated samples have been qualified "J" on this basis.

754011-SS2-1-(0-2)-20230418	754011-SS2-1-(2-12)-20230418
754011-SS2-2-(2-12)-20230418	754011-SS3-11-(0-2)-20230418
754011-SS3-16-(0-2)-20230417	754011-SS3-16-(2-12)-20230417
754011-SS3-17-(12-24)-20230417	754011-SS3-17-(2-12)-20230417
754011-SS3-20-(2-12)-20230417	754011-SS2-2-(0-2)-20230418
754011-SS3-11-(2-12)-20230418	754011-SS3-17-(0-2)-20230417
754011-SS3-20-(12-24)-20230417	

7. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated with the exception of silver. The results reported for the impacted analyte in the field duplicate pair have been qualified "J" or "UJ" as appropriate on this basis.

8. ICP INTERFERENCE CHECK SAMPLE

An ICP interference check sample (ICS) must be analyzed for ICP-AES. All elements in the ICP-AES interference check sample solution ICSA should exhibit recoveries within acceptance limits ($\pm$ CRQL of the true/mean value or $\pm$ 20% of the true value, whichever is greater) for the aqueous matrix. All elements in the ICP-AES solution ICSAB should exhibit acceptable recoveries (80-120% limits).

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high (concentration in the original sample is greater than 50 times the MDL, the percent difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. For a serial dilution analysis that does not meet the technical criteria, the action was applied to all samples of the same matrix.

Sample 754011-SS3-11-(0-2)-041823 was analyzed as a serial dilution in association with the samples in this SDG. No problems were found for this criterion with the following exceptions. Poor precision was noted for lead and zinc. The results reported for the impacted analytes in the parent sample have been qualified "J" on this basis.

10. OTHER

None.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Metals		Major	Minor
Holding Time/Sample Handling	x		
Method Blank			x
Field or Rinse Blank	x		
Initial Calibration	x		
Initial and Continuing Calibration Verification	x		
Initial and Continuing Calibration Blanks	x		
Matrix Spike/Matrix Spike Duplicate			x
Laboratory Duplicate			x
Laboratory Control Sample	x		
Field Duplicate			x
ICP Interference Check Sample	x		
ICP Serial Dilution			x
Other	x		

	Were acceptance criteria met?		
	Yes	No	
Mercury		Major	Minor
Holding Time	x		
Calibration	x		
Blank Contamination	x		
Laboratory Control Samples			x
Matrix Spike/Matrix Spike Duplicate	x		
Laboratory Duplicate	x		
Field Duplicate	x		
Other Quality Control Data out of Specification	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR TOTAL METALS

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2490

SAMPLE DATES: 04/19/2023 – 04/20/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01	754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS2-8-(2-12)-20230419	23D2490-02	754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-2-(0-2)-20230419	23D2490-03	754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-2-(2-12)-20230419	23D2490-04	754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-2-(12-24)-20230419	23D2490-05	754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-3-(0-2)-20230419	23D2490-06	754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-3-(2-12)-20230419	23D2490-07	754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-3-(12-24)-20230419	23D2490-08	754011-SS3-1-(12-24)-20230419	23D2490-29
754011-SS3-4-(0-2)-20230419	23D2490-09	754011-FD-03-20230419	23D2490-30
754011-SS3-4-(2-12)-20230419	23D2490-10	754011-RB-03-20230419	23D2490-31
754011-SS3-4-(12-24)-20230419	23D2490-11	754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-10-(0-2)-20230419	23D2490-12	754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-10-(2-12)-20230419	23D2490-13	754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-10-(12-24)-20230419	23D2490-14	754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-9-(0-2)-20230419	23D2490-15	754011-SS3-15-(2-12)-20230420	23D2490-36
754011-SS3-9-(2-12)-20230419	23D2490-16	754011-SS3-15-(12-24)-20230420	23D2490-37
754011-SS3-9-(12-24)-20230419	23D2490-17	754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-8-(0-2)-20230419	23D2490-18	754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-8-(2-12)-20230419	23D2490-19	754011-SS3-14-(12-24)-20230420	23D2490-40
754011-SS3-8-(12-24)-20230419	23D2490-20	754011-FD-04-20230420	23D2490-41
754011-SS3-5-(0-2)-20230419	23D2490-21	754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D and 7471B/7470A to determine the concentrations of metals including mercury.

Project specific quality assurance (QA) objectives and the USEPA Region II SOP, Hazardous Waste Support Section SOP No. HW-3a Revision 1 ISM02.2 ICP-AES Data Validation, September 2016, SOP No. HW-3c, Rev. 1 Mercury and Cyanide Data Validation, September 2016, and the United States Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Superfund Methods Data Review, OLEM 9240.1-66 EPA-542-R-20-006, November 2020, (USEPA 2020) have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

All data users should note two facts. First, an "R" flag means that the associated value is unusable due to significant quality control (QC) problems, the data is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on any data tables even as a last resort. Second, no analyte concentration, even if it passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes in the samples whose holding time has been exceeded will be qualified as estimated, "J-", or unusable, "R", if holding times are grossly exceeded.

The samples in this delivery group were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples contained in this delivery group were prepared and analyzed within the holding times established in the method and validation criteria.

2. BLANK CONTAMINATION

Quality assurance blanks, which include method, trip, field, or rinse blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank Contamination

Method blanks were evaluated at the proper frequency. No problems requiring result qualification were found for this criterion.

Field or Rinse Blank Contamination

Samples 754011-RB-03-20230419 and 754011-RB-04-20230420 were submitted as rinse blanks in association with the samples in this SDG. No problems were found for this criterion.

3. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data.

Initial and Continuing Calibration Verification

The initial calibration curve and its verification demonstrate that the instrument is capable of giving acceptable performance at the beginning of the analytical sequence. The continuing calibration verification standards provide information as to the continuing stability of the calibration curve.

No problems were found for this criterion.

Initial and Continuing Calibration Blanks

Qualification of sample results due to ICB contamination affects all samples in the analytical sequence while CCB contamination only affects samples immediately after or before the non-compliant CCB. If the highest level of contamination is found in the field or method blank, all samples are qualified based on that observation.

No problems requiring result qualification were found for this criterion.

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-2-(2-12)-20230419 was submitted for MS/MSD evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in a need to qualify sample results with the following exception. During reanalysis, the observed MS and MSD recoveries for antimony were lower than the lowest acceptance limit. The result reported for the impacted analyte in the parent sample has been qualified "UJ" on this basis.

Sample 754011-SS3-8-(2-12)-20230419 was submitted for MS evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy indicators were acceptable with the following exception. During initial analysis, the observed MS recovery for lead was lower than the lowest acceptance limit. The result reported for the impacted analyte in the parent sample has been qualified "J-" on this basis.

Sample 754011-SS3-14-(12-24)-20230420 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in the need to qualify sample results with the following exception. The observed MS and MSD recoveries for barium were lower than the lowest acceptance limit. The result reported for the impacted analyte in the parent sample has been qualified "J-" on this basis.

Sample 754011-RB-03-20230419 was submitted for MS evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy indicators were acceptable.

Sample 754011-FD-03-20230419 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample 754011-SS3-9-(0-2)-20230419 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample 754011-SS2-8-(0-2)-20230419 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

5. LABORATORY DUPLICATE

The laboratory duplicate sample analysis is performed to determine long-term precision of the analytical method in a given matrix. The relative percent difference (RPD) between the sample and its duplicate may be used to qualify data.

Sample 754011-SS3-8-(2-12)-20230419 was submitted for laboratory duplicate evaluation for ICP metals in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated.

Sample 754011-RB-03-20230419 was submitted for laboratory duplicate evaluation for ICP metals in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated.

6. LABORATORY CONTROL SAMPLE

The laboratory control sample (LCS) is a quality control sample of known concentration, which is processed along with a batch of samples. The percent recovery of the LCS can be used to assess the accuracy of the analytical procedure performed by a specific individual, during a specific time period, and utilizing the same reagents and equipment as those used for sample analyses. The LCS data is independent of sample matrix and the results may formulate a basis for qualification.

LCS and LCS duplicates were processed at the proper frequency. Upon evaluation, all precision and accuracy indicators were acceptable or did not result in a need to qualify sample results.

7. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated.

8. ICP INTERFERENCE CHECK SAMPLE

An ICP interference check sample (ICS) must be analyzed for ICP-AES. All elements in the ICP-AES interference check sample solution ICSA should exhibit recoveries within acceptance limits ($\pm$ CRQL of the true/mean value or $\pm$ 20% of the true value, whichever is greater) for the aqueous matrix. All elements in the ICP-AES solution ICSAB should exhibit acceptable recoveries (80-120% limits).

No problems requiring result qualification were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high (concentration in the original sample is greater than 50 times the MDL, the percent difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. For a serial dilution analysis that does not meet the technical criteria, the action was applied to all samples of the same matrix.

No sample was analyzed as a serial dilution in association with the samples in this SDG.

10. OTHER

None.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Metals		Major	Minor
Holding Time/Sample Handling	x		
Method Blank	x		
Field or Rinse Blank	x		
Initial Calibration	x		
Initial and Continuing Calibration Verification	x		
Initial and Continuing Calibration Blanks	x		
Matrix Spike/Matrix Spike Duplicate			x
Laboratory Duplicate	NA		
Laboratory Control Sample	x		
Field Duplicate	x		
ICP Interference Check Sample	x		
ICP Serial Dilution	NA		
Other	x		

	Were acceptance criteria met?		
	Yes	No	
Mercury		Major	Minor
Holding Time	x		
Calibration	x		
Blank Contamination	x		
Laboratory Control Samples	x		
Matrix Spike/Matrix Spike Duplicate	x		
Laboratory Duplicate	NA		
Field Duplicate	x		
Other Quality Control Data out of Specification	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

DATA USABILITY SUMMARY REPORT FOR AROCLOR PCBs AND PESTICIDES

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2439

SAMPLE DATES: 04/17/2023 – 04/18/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01	754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS3-12-(2-12)-20230417	23D2439-02	754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS3-12-(12-24)-20230417	23D2439-03	754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS3-19-(0-2)-20230417	23D2439-04	754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS3-19-(2-12)-20230417	23D2439-05	754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS3-19-(12-24)-20230417	23D2439-06	754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS3-18-(0-2)-20230417	23D2439-07	754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS3-18-(2-12)-20230417	23D2439-08	754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS3-18-(12-24)-20230417	23D2439-09	754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS3-20-(0-2)-20230417	23D2439-10	754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS3-20-(2-12)-20230417	23D2439-11	754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS3-20-(12-24)-20230417	23D2439-12	754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS3-17-(0-2)-20230417	23D2439-13	754011-SS2-2-(2-12)-20230418	23D2439-36
754011-SS3-17-(2-12)-20230417	23D2439-14	754011-SS3-11-(0-2)-20230418	23D2439-37
754011-SS3-17-(12-24)-20230417	23D2439-15	754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-16-(0-2)-20230417	23D2439-16	754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS3-16-(2-12)-20230417	23D2439-17	754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS3-16-(12-24)-20230417	23D2439-18	754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS3-13-(0-2)-20230417	23D2439-19	754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS3-13-(2-12)-20230417	23D2439-20	754011-SS2-9-(2-12)-20230417	23D2439-43
754011-SS3-13-(12-24)-20230417	23D2439-21	754011-FD-02-20230418	23D2439-44
754011-FD-01-20230417	23D2439-22	754011-RB-01-20230417	23D2439-45
754011-SS2-7-(0-2)-20230418	23D2439-23	754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW846 Method 8082A to determine the concentrations of Aroclor polychlorinated biphenyls (PCBs) and Method 8081B to determine the concentrations of organochlorine pesticides.

This Data Usability Summary Report (DUSR) has been prepared in general compliance with NYSDEC Analytical Services Protocols, USEPA National Functional Guidelines as well as the USEPA Region II SOP, Validating PCB Compounds PCBs by Gas Chromatography SW-846 Method 8082A Rev1, HW-45 Rev. 1, October 2006 and USEPA Region II SOP, Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, HW-44 Rev. 1.1, December 2010.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region II Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. The second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives data may not be valid.

The samples in this SDG were received by the laboratory within the proper temperature range as specified in the validation guidance.

All samples were prepared and analyzed within the holding time specified in the validation guideline.

2. BLANK CONTAMINATION

Quality assurance blanks which include; method, storage, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination of samples during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank

Method blanks were prepared and analyzed at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field Blank

Samples 754011-RB-01-20230417 and 754011-RB-02-20230418 were submitted as rinse blanks in association with the samples in this SDG. No problems were found for this criterion.

3. CALIBRATION

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to assess the stability of the specific compound response factor (RF) over increasing concentration. Percent difference (%D) compares the RF of the continuing calibration check to the mean RF from the initial calibration. The %D is a measure of the instrument's daily performance. For the PCB fraction, if initial calibration %RSD exceeds 20% (or the coefficient of determination greater than 0.990) or %D exceeds 20% for any analyte, all associated positive results are qualified as estimated, "J" or estimated non-detects, "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R". For the pesticide fraction, if %RSD exceeds limits outlined in validation guidance (or the coefficient of determination greater than 0.990), qualify all associated positive results "J". If the %D exceeds 20% for any analyte, qualify all associated positive results "J" and non-detects "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R".

PCB Fraction

A multi-point initial calibration employing all target Aroclors was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multi-component continuing calibration verification was assessed. Values for all target Aroclors met validation criteria on the reporting column. No data qualification was necessary on this basis.

Pesticide Fraction

A multi-point initial calibration employing all target analytes was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multi-component continuing calibration verification was assessed. Values for all target analytes met validation criteria on the reporting analytical column with the following exception. The observed %D for endosulfan sulfate was outside of acceptance limits on the reporting column for a continuing calibration verification (CCV) associated with sample 754011-SS2-3-(2-12)-20230418. The result reported for the impacted analyte in the associated sample has been qualified "UJ" on this basis.

4. INTERNAL STANDARD

An internal standard calibration technique was employed. Bracketed calibration verification standards are not required. However, the retention times of the internal standards and the area responses of the internal standards are to be checked. All internal standards are required to have retention time shifts less than 30 seconds from the retention time of the most recent calibration standard and maintain internal standard areas between -50 to +100%. A retention time shift of greater than 30 seconds and/or and internal standard peak area outside the limit requires reanalysis of sample. All sample extracts are spiked with internal standard prior to analysis and are included in each of the calibration standards.

Internal standards were not used for pesticide or PCB analyses.

5. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique.

Surrogate recovery summaries were present for the samples in this SDG. All observed surrogate standard recoveries for sample results reported by the validator were within validation acceptance limits for PCBs and pesticides.

6. COMPOUND IDENTIFICATION

The retention times of positively reported compounds must fall within the calculated retention time windows for the two-gas chromatographic (GC) columns. Additionally, the %Relative Percent Difference (RPD) of the positive results obtained on the two GC columns must be ≤ 40%.

PCB Fraction

Retention Time

No positively identified analytes were reported.

Relative Percent Difference

RPD criteria are not applicable in this data set.

Pesticide Fraction

Retention Time

All criteria were acceptable.

Relative Percent Difference

All criteria were acceptable with the following exceptions. Poor dual column precision was noted for the samples and analytes listed in the table below. The impacted results were qualified as appropriate per validation guidance.

Sample	Impacted Analyte
754011-SS3-12-(0-2)-041723	4,4'-DDE
754011-SS3-12-(12-24)-041723	4,4'-DDE
754011-SS3-19-(0-2)-041723	4,4'-DDE
754011-SS3-19-(12-24)-041723	4,4'-DDT
754011-SS3-16-(0-2)-041723	4,4'-DDT
754011-SS2-10-(2-12)-041823	4,4'-DDE

7. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike/matrix spike duplicate (MS/MSD) data are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample was submitted for 754011-SS3-20-(12-24)-041723 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in a need to qualify sample results.

Sample was submitted for 754011-SS3-13-(12-24)-041723 MS/MSD for pesticide evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-9-(2-12)-041723 MS/MSD for pesticide evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-3-(2-12)-041823 MS/MSD for pesticide evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-3-(2-12)-041823 MS/MSD for PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-9-(0-2)-041823 MS/MSD for PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

8. LABORATORY CONTROL SAMPLE

A laboratory control sample (LCS) and LCS duplicate (LCSD) were processed along with the samples in each delivery group. The laboratory applied in-house QC criteria. Both in-house and Region 2 criteria were applied.

All observed precision and accuracy indicators were acceptable for all PCBs and pesticides.

9. REPORTING

Samples were analyzed at dilutions and/or reanalyzed as necessary due to quality control issues or sample matrix. Reporting limits were elevated accordingly.

10. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

11. DATA COMPLETENESS

All criteria were met.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Aroclor PCBs		Major	Minor
Holding Time/Sample Handling	x		
Method Blanks	x		
Field Blanks	x		
Percent Relative Standard Deviation and Percent Difference	x		
Internal Standard	NA		
Surrogates/System Monitoring Compounds	x		
Compound Identification/Retention Time	x		
Compound Identification/Relative Percent Difference	x		
Matrix Spike/Matrix Spike Duplicate	x		
Laboratory Control Sample	x		
Other Quality Control Data out of Specification	x		
Field Duplicate	x		
	Were acceptance criteria met?		
	Yes	No	
Pesticides		Major	Minor
Holding Time/Sample Handling	x		
Method Blanks	x		
Field Blanks	x		
Percent Relative Standard Deviation and Percent Difference			x
Internal Standard	NA		
Surrogates/System Monitoring Compounds	x		
Compound Identification/Retention Time	x		
Compound Identification/Relative Percent Difference			x
Matrix Spike/Matrix Spike Duplicate	x		
Laboratory Control Sample	x		
Other Quality Control Data out of Specification	x		
Field Duplicate	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR AROCLOR PCBs AND PESTICIDES

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2490

SAMPLE DATES: 04/19/2023 – 04/20/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01	754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS2-8-(2-12)-20230419	23D2490-02	754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-2-(0-2)-20230419	23D2490-03	754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-2-(2-12)-20230419	23D2490-04	754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-2-(12-24)-20230419	23D2490-05	754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-3-(0-2)-20230419	23D2490-06	754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-3-(2-12)-20230419	23D2490-07	754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-3-(12-24)-20230419	23D2490-08	754011-SS3-1-(12-24)-20230419	23D2490-29
754011-SS3-4-(0-2)-20230419	23D2490-09	754011-FD-03-20230419	23D2490-30
754011-SS3-4-(2-12)-20230419	23D2490-10	754011-RB-03-20230419	23D2490-31
754011-SS3-4-(12-24)-20230419	23D2490-11	754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-10-(0-2)-20230419	23D2490-12	754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-10-(2-12)-20230419	23D2490-13	754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-10-(12-24)-20230419	23D2490-14	754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-9-(0-2)-20230419	23D2490-15	754011-SS3-15-(2-12)-20230420	23D2490-36
754011-SS3-9-(2-12)-20230419	23D2490-16	754011-SS3-15-(12-24)-20230420	23D2490-37
754011-SS3-9-(12-24)-20230419	23D2490-17	754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-8-(0-2)-20230419	23D2490-18	754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-8-(2-12)-20230419	23D2490-19	754011-SS3-14-(12-24)-20230420	23D2490-40
754011-SS3-8-(12-24)-20230419	23D2490-20	754011-FD-04-20230420	23D2490-41
754011-SS3-5-(0-2)-20230419	23D2490-21	754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW846 Method 8082A to determine the concentrations of Aroclor polychlorinated biphenyls (PCBs) and Method 8081B to determine the concentrations of organochlorine pesticides.

This Data Usability Summary Report (DUSR) has been prepared in general compliance with NYSDEC Analytical Services Protocols, USEPA National Functional Guidelines as well as the USEPA Region II SOP, Validating PCB Compounds PCBs by Gas Chromatography SW-846 Method 8082A Rev1, HW-45 Rev. 1, October 2006 and USEPA Region II SOP, Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, HW-44 Rev. 1.1, December 2010.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region II Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. The second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives data may not be valid.

The samples in this SDG were received by the laboratory within the proper temperature range as specified in the validation guidance.

All samples were prepared and analyzed within the holding time specified in the validation guideline.

2. BLANK CONTAMINATION

Quality assurance blanks which include; method, storage, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination of samples during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank

Method blanks were prepared and analyzed at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field Blank

Samples 754011-RB-03-20230419 and 754011-RB-04-20230420 were submitted as rinse blanks in association with the samples in this sample delivery group (SDG). No problems were found for this criterion.

3. CALIBRATION

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to assess the stability of the specific compound response factor (RF) over increasing concentration. Percent difference (%D) compares the RF of the continuing calibration check to the mean RF from the initial calibration. The %D is a measure of the instrument's daily performance. For the PCB fraction, if initial calibration %RSD exceeds 20% (or the coefficient of determination greater than 0.990) or %D exceeds 20% for any analyte, all associated positive results are qualified as estimated, "J" or estimated non-detects, "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R". For the pesticide fraction, if %RSD exceeds limits outlined in validation guidance (or the coefficient of determination greater than 0.990), qualify all associated positive results "J". If the %D exceeds 20% for any analyte, qualify all associated positive results "J" and non-detects "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R".

PCB Fraction

A multi-point initial calibration employing all target Aroclors was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multi-component continuing calibration verification was assessed. Values for all target Aroclors met validation criteria on the reporting column. No data qualification was necessary on this basis.

Pesticide Fraction

A multi-point initial calibration employing all target analytes was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multi-component continuing calibration verification was assessed. Values for all target analytes met validation criteria on the reporting analytical column. No data qualification was necessary on this basis.

4. INTERNAL STANDARD

An internal standard calibration technique was employed. Bracketed calibration verification standards are not required. However, the retention times of the internal standards and the area responses of the internal standards are to be checked. All internal standards are required to have retention time shifts less than 30 seconds from the retention time of the most recent calibration standard and maintain internal standard areas between -50 to +100%. A retention time shift of greater than 30 seconds and/or and internal standard peak area outside the limit requires reanalysis of sample. All sample extracts are spiked with internal standard prior to analysis and are included in each of the calibration standards.

Internal standards were not used for pesticide or PCB analyses.

5. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique.

Surrogate recovery summaries were present for the samples in this SDG. All observed surrogate standard recoveries for sample results reported by the validator were within validation acceptance limits for PCBs and pesticides.

6. COMPOUND IDENTIFICATION

The retention times of positively reported compounds must fall within the calculated retention time windows for the two-gas chromatographic (GC) columns. Additionally, the %Relative Percent Difference (RPD) of the positive results obtained on the two GC columns must be $\leq 40\%$.

PCB Fraction**Retention Time**

No positively identified analytes were reported.

Relative Percent Difference

RPD criteria are not applicable in this data set.

Pesticide Fraction**Retention Time**

All criteria were acceptable.

Relative Percent Difference

All criteria were acceptable with the following exceptions. Poor dual column precision was noted for the samples and analytes listed in the table below. The impacted results were qualified as appropriate per validation guidance.

<i>Sample</i>	<i>Impacted Analytes</i>
754011-SS2-8-(0-2)-041923	4,4'-DDT
754011-SS3-2-(0-2)-041923	4,4'-DDT
754011-SS3-2-(2-12)-041923	4,4'-DDE
754011-SS3-8-(2-12)-041923	4,4'-DDE
754011-SS3-7-(12-24)-041923	4,4'-DDE
754011-SS3-15-(0-2)-042023	dieldrin, heptachlor epoxide

7. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike/matrix spike duplicate (MS/MSD) data are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample was submitted for 754011-SS3-2-(2-12)-041923 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS3-14-(12-24)-042023 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS3-14-(2-12)-042023 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

8. LABORATORY CONTROL SAMPLE

A laboratory control sample (LCS) and LCS duplicate (LCSD) were processed along with the samples in each delivery group. The laboratory applied in-house QC criteria. Both in-house and Region 2 criteria were applied.

All observed precision and accuracy indicators were acceptable for all PCBs and pesticides.

9. REPORTING

Samples were analyzed at dilutions as necessary due to sample matrix. Reporting limits were elevated accordingly.

10. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

11. DATA COMPLETENESS

All criteria were met.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Aroclor PCBs		Major	Minor
Holding Time/Sample Handling	x		
Method Blanks	x		
Field Blanks	x		
Percent Relative Standard Deviation and Percent Difference	x		
Internal Standard	NA		
Surrogates/System Monitoring Compounds	x		
Compound Identification/Retention Time	x		
Compound Identification/Relative Percent Difference	x		
Matrix Spike/Matrix Spike Duplicate	x		
Laboratory Control Sample	x		
Other Quality Control Data out of Specification	x		
Field Duplicate	x		
	Were acceptance criteria met?		
	Yes	No	
Pesticides		Major	Minor
Holding Time/Sample Handling	x		
Method Blanks	x		
Field Blanks	x		
Percent Relative Standard Deviation and Percent Difference	x		
Internal Standard	NA		
Surrogates/System Monitoring Compounds	x		
Compound Identification/Retention Time	x		
Compound Identification/Relative Percent Difference			x
Matrix Spike/Matrix Spike Duplicate	x		
Laboratory Control Sample	x		
Other Quality Control Data out of Specification	x		
Field Duplicate	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR SEMIVOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2439

SAMPLE DATES: 04/17/2023 and 04/18/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01
754011-SS3-12-(2-12)-20230417	23D2439-02
754011-SS3-12-(12-24)-20230417	23D2439-03
754011-SS3-19-(0-2)-20230417	23D2439-04
754011-SS3-19-(2-12)-20230417	23D2439-05
754011-SS3-19-(12-24)-20230417	23D2439-06
754011-SS3-18-(0-2)-20230417	23D2439-07
754011-SS3-18-(2-12)-20230417	23D2439-08
754011-SS3-18-(12-24)-20230417	23D2439-09
754011-SS3-20-(0-2)-20230417	23D2439-10
754011-SS3-20-(2-12)-20230417	23D2439-11
754011-SS3-20-(12-24)-20230417	23D2439-12
754011-SS3-17-(0-2)-20230417	23D2439-13
754011-SS3-17-(2-12)-20230417	23D2439-14
754011-SS3-17-(12-24)-20230417	23D2439-15
754011-SS3-16-(0-2)-20230417	23D2439-16
754011-SS3-16-(2-12)-20230417	23D2439-17
754011-SS3-16-(12-24)-20230417	23D2439-18
754011-SS3-13-(0-2)-20230417	23D2439-19
754011-SS3-13-(2-12)-20230417	23D2439-20
754011-SS3-13-(12-24)-20230417	23D2439-21
754011-FD-01-20230417	23D2439-22
754011-SS2-7-(0-2)-20230418	23D2439-23
754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS2-2-(2-12)-20230418	23D2439-36

Client Sample ID	Laboratory Sample ID
754011-SS3-11-(0-2)-20230418	23D2439-37
754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS2-9-(2-12)-20230417	23D2439-43
754011-FD-02-20230418	23D2439-44
754011-RB-01-20230417	23D2439-45
754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via USEPA SW-846 8270E to determine the concentrations of semivolatile organic analytes (SVOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D, SOP # HW-22 Rev.5, December 2010 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in SDG were received by the laboratory within the proper temperature range outlined in validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines for all initial analyses with the following exception. Sample 754011-RB-02-20230418 was extracted two days outside the required preparation holding time. The sample results were all not detected and have been qualified "UJ" in this basis.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of the method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field/Rinse Blanks

Samples 754011-RB-01-20230417 and 754011-RB-02-20230418 were submitted as rinse/field blanks in association with the samples in this SDG. No problems were found for this criterion.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for semivolatiles is decafluorotriphenylphosphine (DFTPP). All tunes were fully compliant for method 8270D.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end

of each 12-hour analytical sequence, denoted as a “closing” calibration verification and ascertains acceptable performance at the conclusion of the run.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The response factors for the target compound list (TCL) analytes must be ≥ 0.05 in both the initial and continuing calibrations. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is < 0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent difference (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instruments daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $< 20\%$.

A %RSD value outside the initial calibration limit indicates the potential for quantitation errors. For this reason, all positive and non-detected results are qualified as estimated. Severe performance failures (RSD $> 90\%$) requires rejection of non-detected results.

The %D for continuing calibration verification (CCV) must be $< 20\%$.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated "J," and non-detects are qualified with "UJ."

All initial calibration (ICAL), initial calibration verification (ICV) and CCV %RSD and %D values were within defined QC criteria with the following exceptions.

The observed %D for 4-chloroaniline did not meet acceptance criteria for the ICV associated with the samples listed below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-12-(0-2)- 20230417	754011-SS3-18-(0-2)- 20230417	754011-SS3-17-(2-12)- 20230417
754011-SS3-12-(2-12)- 20230417	754011-SS3-18-(12-24)- 20230417	754011-SS3-17-(12-24)- 20230417
754011-SS3-12-(12-24)- 20230417	754011-SS3-20-(0-2)- 20230417	754011-SS3-16-(0-2)- 20230417
754011-SS3-19-(0-2)- 20230417	754011-SS3-20-(2-12)- 20230417	754011-SS3-16-(2-12)- 20230417
754011-SS3-19-(2-12)- 20230417	754011-SS3-20-(12-24)- 20230417	754011-SS3-16-(12-24)- 20230417
754011-SS3-19-(12-24)- 20230417	754011-SS3-17-(0-2)- 20230417	

The observed %D for 4-chloroaniline and benzaldehyde did not meet acceptance criteria for the ICV associated with the samples listed below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified "J" or "UJ", as appropriate on this basis.

754011-SS3-18-(2-12)-20230417	754011-SS2-5-(0-2)-20230418	754011-SS2-2-(2-12)-20230418
754011-SS3-13-(0-2)-20230417	754011-SS2-5-(2-12)-20230418	754011-SS3-11-(0-2)-20230418
754011-SS3-13-(2-12)-20230417	754011-SS2-3-(0-2)-20230418	754011-SS3-11-(2-12)-20230418
754011-SS3-13-(12-24)-20230417	754011-SS2-3-(2-12)-20230418	754011-SS3-11-(12-24)-20230418
754011-FD-01-20230417	754011-SS2-6-(0-2)-20230418	754011-SS2-10-(0-2)-20230418
754011-SS2-7-(0-2)-20230418	754011-SS2-6-(2-12)-20230418	754011-SS2-10-(2-12)-20230418
754011-SS2-7-(2-12)-20230418	754011-SS2-1-(0-2)-20230418	754011-SS2-9-(0-2)-20230418
754011-SS2-4-(0-2)-20230418	754011-SS2-1-(2-12)-20230418	754011-SS2-9-(2-12)-20230417
754011-SS2-4-(2-12)-20230418	754011-SS2-2-(0-2)-20230418	754011-FD-02-20230418

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to 200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results are qualified "J," estimated. When an observed area count is <50%, results are qualified "J" or "UJ" as appropriate; however, should area counts be <25%, all associated non-detect results are qualified "R," rejected.

The reported sample analysis had internal standard areas within acceptance criteria in all cases.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique.

The reported sample analyses had observed surrogate recoveries within the established limits with the following exceptions. The observed surrogate recovery for sample 754011-SS2-5-(0-2)-

20230418 was lower than the lowest acceptance limits. The results for the impacted sample have been qualified "J" or "UJ", as appropriate on this basis.

7. COMPOUND IDENTIFICATION

Semivolatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Semivolatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

No semivolatile TICs were reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-RB-02-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed recoveries for phenol and caprolactam were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis.

Sample 754011-SS2-3-(2-12)-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed recoveries for 2,4-dimethylphenol, 4-chloroaniline, and benzaldehyde were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis. In addition, the observed recovery for 3,3-dichlorobenzidine was less than ten percent in both the MS and MSD. The results reported for the impacted analytes in the parent sample was not detected and has been qualified "R" on this basis.

Sample 754011-SS2-9-(0-2)-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed recoveries for

hexachlorocyclopentadiene and 4-nitroaniline were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis. In addition, the observed recoveries for 3,3-dichlorobenzidine and 4-chloroaniline were less than ten percent in both the MS and MSD. The results reported for the impacted analyte in the parent sample were all not detected and have been qualified "R" on this basis.

Sample 754011-SS3-20-(12-24)-041723 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results.

9. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS evaluations were performed at the proper frequency and resulted in acceptable precision and accuracy with the following exceptions.

The observed recoveries for caprolactam were lower than the lowest acceptance limits in the LCS and LCSD associated with samples 754011-RB-01-20230417 and 754011-RB-02-20230418. The sample results for the impacted analyte in the associated samples were not detected and have been qualified "UJ" on this basis.

10. REPORTING

In the case of dilutions, re-extractions, and other re-analyses, the validator has selected the best and final result for reporting of each analyte. Note when dilutions were performed elevated reporting limits were provided.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Semivolatile Organics 8270E		Major	Minor
Holding Time/Sample Handling			x
Method Blanks	x		
Field Rinse Blanks	x		
Mass Spectrometer Tuning	x		
Calibration Response Factor	x		
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards Performance	x		
Surrogates			x
Compound Identification - Semivolatile	x		
Tentatively Identified Compounds – Semivolatile	NA		
Matrix Spike/Matrix Spike Duplicate		x	x
Laboratory Control Sample/Laboratory Control Sample Duplicate			x
Other Quality Control Data out of Specification	x		
Field Duplicate	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR SEMIVOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2490

SAMPLE DATES: 04/19/2023 - 04/20/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01
754011-SS2-8-(2-12)-20230419	23D2490-02
754011-SS3-2-(0-2)-20230419	23D2490-03
754011-SS3-2-(2-12)-20230419	23D2490-04
754011-SS3-2-(12-24)-20230419	23D2490-05
754011-SS3-3-(0-2)-20230419	23D2490-06
754011-SS3-3-(2-12)-20230419	23D2490-07
754011-SS3-3-(12-24)-20230419	23D2490-08
754011-SS3-4-(0-2)-20230419	23D2490-09
754011-SS3-4-(2-12)-20230419	23D2490-10
754011-SS3-4-(12-24)-20230419	23D2490-11
754011-SS3-10-(0-2)-20230419	23D2490-12
754011-SS3-10-(2-12)-20230419	23D2490-13
754011-SS3-10-(12-24)-20230419	23D2490-14
754011-SS3-9-(0-2)-20230419	23D2490-15
754011-SS3-9-(2-12)-20230419	23D2490-16
754011-SS3-9-(12-24)-20230419	23D2490-17
754011-SS3-8-(0-2)-20230419	23D2490-18
754011-SS3-8-(2-12)-20230419	23D2490-19
754011-SS3-8-(12-24)-20230419	23D2490-20
754011-SS3-5-(0-2)-20230419	23D2490-21
754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-1-(12-24)-20230419	23D2490-29
754011-FD-03-20230419	23D2490-30
754011-RB-03-20230419	23D2490-31
754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-15-(2-12)-20230420	23D2490-36

Client Sample ID	Laboratory Sample ID
754011-SS3-15-(12-24)-20230420	23D2490-37
754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-14-(12-24)-20230420	23D2490-40
754011-FD-04-20230420	23D2490-41
754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via USEPA SW-846 8270E to determine the concentrations of semivolatile organic analytes (SVOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D, SOP # HW-22 Rev.5, December 2010 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in SDG were received by the laboratory within the proper temperature range outlined in validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines for all initial analyses.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of the method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field/Rinse Blanks

Samples 754011-RB-03-20230419 and 754011-RB-04-20230420 were submitted as rinse/field blanks in association with the samples in this SDG. No problems requiring qualification of sample results were found for this criterion.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for semivolatiles is decafluorotriphenylphosphine (DFTPP). All tunes were fully compliant for method 8270D.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a “closing” calibration verification and ascertains acceptable performance at the conclusion of the run.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The response factors for the target compound list (TCL) analytes must be ≥ 0.05 in both the initial and continuing calibrations. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is < 0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent difference (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instruments daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $< 20\%$.

A %RSD value outside the initial calibration limit indicates the potential for quantitation errors. For this reason, all positive and non-detected results are qualified as estimated. Severe performance failures (RSD $> 90\%$) requires rejection of non-detected results.

The %D for continuing calibration verification (CCV) must be $< 20\%$.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated "J," and non-detects are qualified with "UJ."

All initial calibration (ICAL), initial calibration verification (ICV) and CCV %RSD and %D values were within defined QC criteria with the following exceptions.

The observed %D for 4-chloroaniline did not meet acceptance criteria for the ICV associated with the samples listed in the table below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified estimated "UJ" on this basis.

754011-SS3-6-(0-2)-20230420	754011-SS3-15-(2-12)-20230420	754011-SS3-14-(12-24)-20230420
754011-SS3-6-(2-12)-20230420	754011-SS3-15-(12-24)-20230420	754011-FD-04-20230420
754011-SS3-6-(12-24)-20230420	754011-SS3-14-(0-2)-20230420	
754011-SS3-15-(0-2)-20230420	754011-SS3-14-(2-12)-20230420	

The observed %D for 4-chloroaniline and benzaldehyde did not meet acceptance criteria for the ICV associated with the samples listed in the table below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified estimated "J" or "UJ" as appropriate on this basis.

754011-SS3-10-(0-2)-20230419	754011-SS3-8-(2-12)-20230419	754011-SS3-7-(2-12)-20230419
754011-SS3-10-(2-12)-20230419	754011-SS3-8-(12-24)-20230419	754011-SS3-7-(12-24)-20230419
754011-SS3-10-(12-24)-20230419	754011-SS3-5-(0-2)-20230419	754011-SS3-1-(0-2)-20230419
754011-SS3-9-(0-2)-20230419	754011-SS3-5-(2-12)-20230419	754011-SS3-1-(2-12)-20230419
754011-SS3-9-(2-12)-20230419	754011-SS3-5-(12-24)-20230419	754011-SS3-1-(12-24)-20230419
754011-SS3-9-(12-24)-20230419	754011-SS3-7-(0-2)-20230419	754011-FD-03-20230419
754011-SS3-8-(0-2)-20230419	754011-RB-04-20230420	754011-RB-03-20230419

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to 200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results are qualified "J," estimated. When an observed area count is <50%, results are qualified "J" or "UJ" as appropriate; however, should area counts be <25%, all associated non-detect results are qualified "R," rejected.

The reported sample analysis had internal standard areas within acceptance criteria in all cases.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique.

The reported sample analyses had observed surrogate recoveries within the established limits.

7. COMPOUND IDENTIFICATION

Semivolatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Semivolatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

No semivolatile TICs were reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-10-(0-2)-041923 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed percent recoveries for the analytes listed in the table below were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified estimated "UJ" on this basis.

<i>benzaldehyde</i>	<i>hexachloroethane</i>
<i>3-nitroaniline</i>	<i>4-nitroaniline</i>

In addition, the observed percent recoveries for 3,3-dichlorobenzidine and 4-chloroaniline were less than ten percent in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified rejected, "R", on this basis.

Sample 754011-SS3-14-(12-24)-042023 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results.

Sample 754011-SS3-2-(2-12)-041923 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed percent recoveries for 3,3-dichlorobenzidine were lower than the lowest acceptance limit in both the MS and MSD. The result reported for the impacted analyte in the parent sample was not detected and has been qualified estimated "UJ" on this basis.

9. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS evaluations were performed at the proper frequency and resulted in acceptable precision and accuracy with the following exceptions.

The observed percent recoveries for caprolactam were lower than the lowest acceptance limit in the LCS and LCSD associated with samples 754011-RB-03-20230419 and 754011-RB-04-20230420. The sample results for the impacted analyte in the associated samples were not detected and have been qualified estimated "UJ" on this basis.

10. REPORTING

In the case of dilutions, re-extractions, and other re-analyses, the validator has selected the best and final result for reporting of each analyte. Note when dilutions were performed elevated reporting limits were provided.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Semivolatile Organics 8270E		Major	Minor
Holding Time/Sample Handling	x		
Method Blanks	x		
Field Rinse Blanks	x		
Mass Spectrometer Tuning	x		
Calibration Response Factor	x		
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards Performance	x		
Surrogates	x		
Compound Identification - Semivolatile	x		
Tentatively Identified Compounds – Semivolatile	NA		
Matrix Spike/Matrix Spike Duplicate		x	x
Laboratory Control Sample/Laboratory Control Sample Duplicate			x
Other Quality Control Data out of Specification	x		
Field Duplicate	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science and Technology, Inc.

LABORATORY: Con-Test, Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23G1177

SAMPLE DATES: 07/07/2023

This sample delivery group consist of the following samples:

Sample Identification	Laboratory Identification
754011-SS-1	23G1177-01
754011-IA-1	23G1177-02
754011-OA-1	23G1177-03

The samples described above were analyzed via methods USEPA TO-15 and/or USEPA TO-15 SIM to determine the concentrations of trace volatile organic analytes (VOAs) in air samples.

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15 Data Validation, HW-31, Rev. 6, June 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this delivery group were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL).

Storage Blanks

No storage blanks were required for this sample delivery group (SDG).

Trip Blanks

No trip blanks were submitted in association with this SDG.

Field Blanks

No field blanks were submitted in association with this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB).

All tunes associated with this SDG were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 24-hour analytical sequence, denoted as a “closing” calibration verification and ascertains acceptable performance at the conclusion of the analytical sequence.

Note, no closing continuing calibration verifications were performed in association with this SDG.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the volatile organic analysis (VOA) target compound list (TCL) must be ≥ 0.05 in both the initial and continuing calibrations with exception of poor response compounds, where RRFs must be ≥ 0.01 . Additionally, the RRF in the closing continuing calibration must be ≥ 0.01 . A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is < 0.05 , or < 0.01 for poor response compounds, or the RRF for the closing continuing calibration is < 0.01 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $< 30\%$.

An RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated. Severe performance failures (RSD $> 90\%$) require qualification of non-detected results as well.

The %D for continuing calibration must be $< 30\%$.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated, and non-detects are qualified with "UJ".

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D value for naphthalene was outside of acceptance limits for the initial calibration verification (ICV) associated with all samples in this SDG. The results reported for naphthalene have been qualified "UJ" or "J", as appropriate on this basis.

The %D value for carbon tetrachloride was outside of acceptance limits for the continuing calibration verification (CCV) associated with all samples in this SDG. The results reported for carbon tetrachloride have been qualified "UJ" or "J", as appropriate on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 20 seconds from the associated continuing calibration standard. The area count must be within -60% to +140% range of the associated standard. If area count is >140% non-detected results are not qualified while positive results are qualified "J", estimated. However, when an observed area count is <60%, positive results are qualified "J" estimated while non-detected results are rejected.

The reported analysis for all samples, lab control sample, and associated method blanks had internal standard areas and retention times within QC criteria in all cases.

6. COMPOUND IDENTIFICATION

Volatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ", tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J", estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J", estimated.

Tentatively identified compounds were not reported by the laboratory and were not evaluated for this program.

7. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

All LCS accuracy indicators were favorable with the following exceptions.

The observed recovery for isopropanol was lower than the lowest acceptance limit. All samples in this SDG are associated with the non-compliant LCS. Potential low bias is indicated. The results reported for isopropanol in the associated samples have been qualified "UJ" or "J", as appropriate on this basis.

8. REPORTING

No problems were found for this criterion.

9. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

10. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

No samples were submitted as a field duplicate pair in association with this SDG.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Clean canisters were used to transport air samples in this SDG. All criteria were met to ensure containers were appropriate for sample storage.

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Volatiles		Major	Minor
Holding Time	x		
Method Blanks	x		
Storage Blanks	NA		
Trip Blanks	NA		
Field Blanks	NA		
Mass Spectrometer Tuning	x		
Calibration Response Factor	x		
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards	x		
Compound Identification - Volatile	x		
Tentatively Identified Compounds - Volatile	NA		
Laboratory Control Sample			x
Reporting	x		
Other Quality Control Data out of Specification	x		
Field Duplicate	NA		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2439

SAMPLE DATES: 04/17/2023 and 04/18/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01
754011-SS3-12-(2-12)-20230417	23D2439-02
754011-SS3-12-(12-24)-20230417	23D2439-03
754011-SS3-19-(0-2)-20230417	23D2439-04
754011-SS3-19-(2-12)-20230417	23D2439-05
754011-SS3-19-(12-24)-20230417	23D2439-06
754011-SS3-18-(0-2)-20230417	23D2439-07
754011-SS3-18-(2-12)-20230417	23D2439-08
754011-SS3-18-(12-24)-20230417	23D2439-09
754011-SS3-20-(0-2)-20230417	23D2439-10
754011-SS3-20-(2-12)-20230417	23D2439-11
754011-SS3-20-(12-24)-20230417	23D2439-12
754011-SS3-17-(0-2)-20230417	23D2439-13
754011-SS3-17-(2-12)-20230417	23D2439-14
754011-SS3-17-(12-24)-20230417	23D2439-15
754011-SS3-16-(0-2)-20230417	23D2439-16
754011-SS3-16-(2-12)-20230417	23D2439-17
754011-SS3-16-(12-24)-20230417	23D2439-18
754011-SS3-13-(0-2)-20230417	23D2439-19
754011-SS3-13-(2-12)-20230417	23D2439-20
754011-SS3-13-(12-24)-20230417	23D2439-21
754011-FD-01-20230417	23D2439-22
754011-SS2-7-(0-2)-20230418	23D2439-23
754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS2-2-(2-12)-20230418	23D2439-36
754011-SS3-11-(0-2)-20230418	23D2439-37

Client Sample ID	Laboratory Sample ID
754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS2-9-(2-12)-20230417	23D2439-43
754011-FD-02-20230418	23D2439-44
754011-RB-01-20230417	23D2439-45
754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via USEPA SW-846 8260C to determine the concentrations of low/medium volatile organic analytes (VOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP NO. HW-24 Revision 4, September 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R," rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this SDG were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in these SDGs at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Storage Blanks

No storage blanks were submitted in association with these SDGs.

Trip Blanks

No sample was submitted as a trip blank in association with all samples in this SDG.

Field Blanks

Sample 754011-RB-01-20230417 was submitted as a rinse blank in association with the samples collected on 04/17/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been qualified per validation guidance.

Sample 754011-RB-02-20230418 was submitted as a rinse blank in association with the samples collected on 04/18/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been qualified per validation guidance.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB). All tunes associated with these SDGs were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a “closing” calibration verification, and ascertains acceptable performance at the conclusion of the analytical sequence.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the VOA target compound list (TCL) compounds must be greater than the RRFs listed in Region II validation guidelines. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is below the specified limit for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations for method 8260D were found to be acceptable with the following exception. The RRF for 1,4-dioxane was extremely low (<0.01). The 1,4-dioxane results in all the samples were not detected and have been qualified “R” on this basis.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument’s daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $\leq 20\%$.

A %RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated and non-detect results are qualified using professional judgement.

The %D for opening continuing calibration must be $\leq 30\%$

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as “J,” estimated, and non-detects are qualified with “UJ.”

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D for dichlorodifluoromethane was outside of acceptance criteria in the continuing calibration verification (CCV) associated with the samples 754011-RB-01-20230417 and 754011-RB-02-

20230418 in this SDG. The results reported for the impacted analytes were all not detected and have been qualified "UJ" on this basis.

The %D for acetone, bromomethane, and dichlorodifluoromethane were outside of acceptance criteria in the initial calibration verification (ICV) and methyl acetate was outside of acceptance criteria in the CCV associated with the samples listed below in this SDG. The results reported for the impacted analytes have been qualified "J" or "UJ", as appropriate on this basis.

754011-SS3-11-(0-2)-20230418	754011-SS2-10-(0-2)-20230418	754011-SS2-9-(2-12)-20230417
754011-SS3-11-(2-12)-20230418	754011-SS2-10-(2-12)-20230418	754011-FD-02-20230418
754011-SS3-11-(12-24)-20230418	754011-SS2-9-(0-2)-20230418	

The %D for carbon disulfide and dichlorodifluoromethane were outside of acceptance criteria in the ICV and bromomethane, chloroethane, and chloromethane were outside of acceptance criteria in one or more CCV's associated with the samples listed below in this SDG. The results reported for the impacted analytes were all not detected and have been qualified "UJ" on this basis.

754011-SS3-12-(0-2)-20230417	754011-SS3-17-(0-2)-20230417	754011-SS2-4-(0-2)-20230418
754011-SS3-12-(2-12)-20230417	754011-SS3-17-(2-12)-20230417	754011-SS2-4-(2-12)-20230418
754011-SS3-12-(12-24)-20230417	754011-SS3-17-(12-24)-20230417	754011-SS2-5-(0-2)-20230418
754011-SS3-19-(0-2)-20230417	754011-SS3-16-(0-2)-20230417	754011-SS2-5-(2-12)-20230418
754011-SS3-19-(2-12)-20230417	754011-SS3-16-(2-12)-20230417	754011-SS2-3-(0-2)-20230418
754011-SS3-19-(12-24)-20230417	754011-SS3-16-(12-24)-20230417	754011-SS2-3-(2-12)-20230418
754011-SS3-18-(0-2)-20230417	754011-SS3-13-(0-2)-20230417	754011-SS2-6-(0-2)-20230418
754011-SS3-18-(2-12)-20230417	754011-SS3-13-(2-12)-20230417	754011-SS2-6-(2-12)-20230418
754011-SS3-18-(12-24)-20230417	754011-SS3-13-(12-24)-20230417	754011-SS2-1-(0-2)-20230418
754011-SS3-20-(0-2)-20230417	754011-FD-01-20230417	754011-SS2-1-(2-12)-20230418
754011-SS3-20-(2-12)-20230417	754011-SS2-7-(0-2)-20230418	754011-SS2-2-(0-2)-20230418
754011-SS3-20-(12-24)-20230417	754011-SS2-7-(2-12)-20230418	754011-SS2-2-(2-12)-20230418

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to +200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results associated with the non-compliant internal standard are qualified "J," estimated. However, when an observed area count is <50%, positive results associated with the non-compliant are qualified "J," estimated, while non-detected results are rejected.

Internal standard area counts are within acceptance criteria for all samples.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique. The observed recovery must be within laboratory limits as outlined in the project specific validation guidance.

The reported sample analyses had observed surrogate recoveries within the established acceptance limits in all cases.

7. COMPOUND IDENTIFICATION

Volatile

The project target analyte compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All samples were evaluated, and all identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

Volatile TICs were not reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-20-(12-24)-041723 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for chloromethane, methyl acetate, and 1,4-dioxane were lower than the lowest acceptance limits in both the MS and MSD. The results for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis.

Sample 754011-SS2-3-(2-12)-041823 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results.

9. LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS/LCS duplicate evaluations were processed at the proper frequency. . Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for chloromethane in the LCS and LCSD associated with the samples listed below in this SDG were lower than the lowest acceptance limits. The results for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-19-(0-2)-20230417	754011-SS3-18-(12-24)-20230417	754011-SS3-17-(2-12)-20230417
754011-SS3-19-(2-12)-20230417	754011-SS3-20-(0-2)-20230417	754011-SS3-17-(12-24)-20230417
754011-SS3-19-(12-24)-20230417	754011-SS3-20-(2-12)-20230417	754011-SS3-16-(0-2)-20230417
754011-SS3-18-(0-2)-20230417	754011-SS3-20-(12-24)-20230417	754011-SS3-16-(2-12)-20230417
754011-SS3-18-(2-12)-20230417	754011-SS3-17-(0-2)-20230417	754011-SS3-16-(12-24)-20230417
754011-SS3-13-(0-2)-20230417	754011-SS2-4-(0-2)-20230418	754011-SS2-6-(0-2)-20230418
754011-SS3-13-(2-12)-20230417	754011-SS2-4-(2-12)-20230418	754011-SS2-6-(2-12)-20230418
754011-SS3-13-(12-24)-20230417	754011-SS2-5-(0-2)-20230418	754011-SS2-1-(0-2)-20230418
754011-FD-01-20230417	754011-SS2-5-(2-12)-20230418	754011-SS2-1-(2-12)-20230418
754011-SS2-7-(0-2)-20230418	754011-SS2-3-(0-2)-20230418	754011-SS2-2-(0-2)-20230418
754011-SS2-7-(2-12)-20230418	754011-SS2-3-(2-12)-20230418	754011-SS2-2-(2-12)-20230418

The observed recoveries for methyl acetate in the LCS and LCSD associated with the samples listed below in this SDG were lower than the lowest acceptance limits. The results for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-11-(0-2)-20230418	754011-SS2-10-(0-2)-20230418	754011-SS2-9-(2-12)-20230417
754011-SS3-11-(2-12)-20230418	754011-SS2-10-(2-12)-20230418	754011-FD-02-20230418
754011-SS3-11-(12-24)-20230418	754011-SS2-9-(0-2)-20230418	

10. REPORTING

No problems were found for this criterion.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

No problems were found for this criterion.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Volatiles		Major	Minor
Holding Time	x		
Method Blanks	x		
Storage Blanks	NA		
Trip Blanks	NA		
Field/ Rinse Blanks			x
Mass Spectrometer Tuning	x		
Calibration Response Factor		x	
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards	x		
Surrogates	x		
Compound Identification - Volatile	x		
Tentatively Identified Compounds - Volatile	NA		
Matrix Spike/Matrix Spike Duplicate			x
Laboratory Control Sample/Laboratory Control Sample Duplicate			x
Other Quality Control Data out of Specification	x		
Field Duplicate	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2490

SAMPLE DATES: 04/19/2023 - 04/20/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01
754011-SS2-8-(2-12)-20230419	23D2490-02
754011-SS3-2-(0-2)-20230419	23D2490-03
754011-SS3-2-(2-12)-20230419	23D2490-04
754011-SS3-2-(12-24)-20230419	23D2490-05
754011-SS3-3-(0-2)-20230419	23D2490-06
754011-SS3-3-(2-12)-20230419	23D2490-07
754011-SS3-3-(12-24)-20230419	23D2490-08
754011-SS3-4-(0-2)-20230419	23D2490-09
754011-SS3-4-(2-12)-20230419	23D2490-10
754011-SS3-4-(12-24)-20230419	23D2490-11
754011-SS3-10-(0-2)-20230419	23D2490-12
754011-SS3-10-(2-12)-20230419	23D2490-13
754011-SS3-10-(12-24)-20230419	23D2490-14
754011-SS3-9-(0-2)-20230419	23D2490-15
754011-SS3-9-(2-12)-20230419	23D2490-16
754011-SS3-9-(12-24)-20230419	23D2490-17
754011-SS3-8-(0-2)-20230419	23D2490-18
754011-SS3-8-(2-12)-20230419	23D2490-19
754011-SS3-8-(12-24)-20230419	23D2490-20
754011-SS3-5-(0-2)-20230419	23D2490-21
754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-1-(12-24)-20230419	23D2490-29
754011-FD-03-20230419	23D2490-30
754011-RB-03-20230419	23D2490-31
754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-15-(2-12)-20230420	23D2490-36
754011-SS3-15-(12-24)-20230420	23D2490-37

Client Sample ID	Laboratory Sample ID
754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-14-(12-24)-20230420	23D2490-40
754011-FD-04-20230420	23D2490-41
754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via USEPA SW-846 8260C to determine the concentrations of low/medium volatile organic analytes (VOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP No. HW-24 Revision 4, September 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R," rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this sample delivery group (SDG) were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in these SDGs at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Storage Blanks

No storage blanks were submitted in association with these SDGs.

Trip Blanks

No sample was submitted as a trip blank in association with all samples in this SDG.

Field Blanks

Sample 754011-RB-03-20230419 was submitted as a rinse blank in association with the samples collected on 04/19/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been evaluated and qualified per validation guidance.

Sample 754011-RB-04-20230420 was submitted as a rinse blank in association with the samples collected on 04/20/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been evaluated and qualified per validation guidance.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB). All tunes associated with these SDGs were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a "closing" calibration verification, and ascertains acceptable performance at the conclusion of the analytical sequence.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the VOA target compound list (TCL) compounds must be greater than the RRFs listed in Region II validation guidelines. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is below the specified limit for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations for method 8260 were found to be acceptable with the following exception. The RRF for 1,4-dioxane was extremely low (<0.01). The 1,4-dioxane results in all the samples were not detected and have been qualified "R" on this basis.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $\leq 20\%$.

A %RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated and non-detect results are qualified using professional judgement.

The %D for opening continuing calibration must be $\leq 30\%$

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as "J," estimated, and non-detects are qualified with "UJ."

All initial calibration and continuing calibration %RSD and %D values were within defined quality control criteria with the following exceptions.

The %Ds for bromomethane and vinyl chloride were outside of acceptance criteria in the continuing calibration verification (CCV) associated with the samples 754011-RB-03-20230419 and 754011-RB-04-20230420 in this SDG. The results reported for the impacted analytes were all not detected and have been qualified "UJ" on this basis.

The %D for acetone, bromomethane, and dichlorodifluoromethane were outside of acceptance criteria in the initial calibration verification (ICV) and dichlorodifluoromethane was outside of acceptance criteria in the CCV's associated with the samples listed below in this SDG. The results reported for the impacted analytes in the associated samples have been qualified "J" or "UJ", as appropriate on this basis.

754011-SS2-8-(0-2)-20230419	754011-SS3-10-(0-2)-20230419	754011-SS3-5-(12-24)-20230419
754011-SS2-8-(2-12)-20230419	754011-SS3-10-(2-12)-20230419	754011-SS3-7-(0-2)-20230419
754011-SS3-2-(0-2)-20230419	754011-SS3-10-(12-24)-20230419	754011-SS3-7-(2-12)-20230419
754011-SS3-2-(2-12)-20230419	754011-SS3-9-(0-2)-20230419	754011-SS3-7-(12-24)-20230419
754011-SS3-2-(12-24)-20230419	754011-SS3-9-(2-12)-20230419	754011-SS3-1-(0-2)-20230419
754011-SS3-3-(0-2)-20230419	754011-SS3-9-(12-24)-20230419	754011-SS3-1-(2-12)-20230419
754011-SS3-3-(2-12)-20230419	754011-SS3-8-(0-2)-20230419	754011-SS3-1-(12-24)-20230419
754011-SS3-3-(12-24)-20230419	754011-SS3-8-(2-12)-20230419	754011-FD-03-20230419
754011-SS3-4-(0-2)-20230419	754011-SS3-8-(12-24)-20230419	754011-SS3-6-(0-2)-20230420
754011-SS3-4-(2-12)-20230419	754011-SS3-5-(0-2)-20230419	754011-SS3-6-(2-12)-20230420
754011-SS3-4-(12-24)-20230419	754011-SS3-5-(2-12)-20230419	

The %D for carbon disulfide and dichlorodifluoromethane were outside of acceptance criteria in the ICV and bromomethane and chloroethane was outside of acceptance criteria in the CCV associated with the samples listed below in this SDG. The results reported for the impacted analytes in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-6-(12-24)-20230420	754011-SS3-15-(12-24)-20230420	754011-SS3-14-(12-24)-20230420
754011-SS3-15-(0-2)-20230420	754011-SS3-14-(0-2)-20230420	754011-FD-04-20230420
754011-SS3-15-(2-12)-20230420	754011-SS3-14-(2-12)-20230420	

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to +200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results associated with the non-compliant internal standard are qualified "J," estimated. However, when an observed area count is <50%, positive results associated with the non-compliant are qualified "J," estimated, while non-detected results are rejected.

Internal standard area counts are within acceptance criteria for all samples.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique. The observed recovery must be within laboratory limits as outlined in the project specific validation guidance.

The reported sample analyses had observed surrogate recoveries within the established acceptance limits in all cases.

7. COMPOUND IDENTIFICATION

Volatile

The project target analyte compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All samples were evaluated, and all identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

Volatile TICs were not reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-14-(12-24)-042023 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for acetone were higher than the highest acceptance limits in the MS and lower than the lowest acceptance limits in the MSD. The precision between the MS and MSD was also outside acceptance limits. The results for the impacted analyte in the parent sample have been qualified "J" on this basis.

Sample 754011-SS3-2-(2-12)-20230419 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results.

9. LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS/LCS duplicate evaluations were processed at the proper frequency. . Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for acetone in the LCS and LCSD associated with the samples listed below in this SDG were lower than the lowest acceptance limits. The results for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS2-8-(0-2)-20230419	754011-SS3-3-(12-24)-20230419	754011-SS3-10-(12-24)-20230419
754011-SS2-8-(2-12)-20230419	754011-SS3-4-(0-2)-20230419	754011-SS3-9-(0-2)-20230419
754011-SS3-2-(0-2)-20230419	754011-SS3-4-(2-12)-20230419	754011-SS3-9-(2-12)-20230419
754011-SS3-2-(2-12)-20230419	754011-SS3-4-(12-24)-20230419	754011-SS3-9-(12-24)-20230419
754011-SS3-2-(12-24)-20230419	754011-SS3-10-(0-2)-20230419	754011-SS3-8-(0-2)-20230419
754011-SS3-3-(0-2)-20230419	754011-SS3-10-(2-12)-20230419	754011-SS3-8-(2-12)-20230419
754011-SS3-3-(2-12)-20230419		

10. REPORTING

No problems were found for this criterion.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

No problems were found for this criterion.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Volatiles		Major	Minor
Holding Time	x		
Method Blanks	x		
Storage Blanks	NA		
Trip Blanks	NA		
Field/ Rinse Blanks			x
Mass Spectrometer Tuning	x		
Calibration Response Factor		x	
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards	x		
Surrogates	x		
Compound Identification - Volatile	x		
Tentatively Identified Compounds - Volatile	NA		
Matrix Spike/Matrix Spike Duplicate			x
Laboratory Control Sample/Laboratory Control Sample Duplicate			x
Other Quality Control Data out of Specification	x		
Field Duplicate	x		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23F0349

SAMPLE DATES: 06/01/2023 - 06/02/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-RESIDENCE-01-060223	23F0349-01
754011-RESIDENCE-02-060123	23F0349-02
754011-SS3-18-(2-12)-060223	23F0349-09

The samples described above were analyzed via USEPA SW-846 8260C to determine the concentrations of low/medium volatile organic analytes (VOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP NO. HW-24 Revision 4, September 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R," rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this sample delivery group (SDG) were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in these SDGs at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Storage Blanks

No storage blanks were submitted in association with these SDGs.

Trip Blanks

No sample was submitted as a trip blank in association with all samples in this SDG.

Field Blanks

No sample was submitted as a rinse blank in association with the samples in this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB). All tunes associated with these SDGs were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical

sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a “closing” calibration verification, and ascertains acceptable performance at the conclusion of the analytical sequence.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the VOA target compound list (TCL) compounds must be greater than the RRFs listed in Region II validation guidelines. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is below the specified limit for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations for method 8260D were found to be acceptable with the following exception. The RRF for 1,4-dioxane was extremely low (<0.01). The 1,4-dioxane results in all the samples were not detected and have been qualified “R” on this basis.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument’s daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $\leq 20\%$.

A %RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated and non-detect results are qualified using professional judgement.

The %D for opening continuing calibration must be $\leq 30\%$

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as “J,” estimated, and non-detects are qualified with “UJ.”

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %Ds for carbon disulfide and dichlorodifluoromethane were outside of acceptance criteria in the initial calibration verification (ICV) and bromomethane, chloromethane, and chloroethane were outside of acceptance criteria in the CCV associated with sample 754011-SS3-18-(2-12)-060223 in this SDG. The results reported for the impacted analytes in the associated sample have been qualified “UJ” on this basis.

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to +200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results associated with the non-compliant internal standard are qualified "J," estimated. However, when an observed area count is <50%, positive results associated with the non-compliant are qualified "J," estimated, while non-detected results are rejected.

Internal standard area counts are within acceptance criteria for all samples.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique. The observed recovery must be within laboratory limits as outlined in the project specific validation guidance.

The reported sample analyses had observed surrogate recoveries within the established acceptance limits in all cases.

7. COMPOUND IDENTIFICATION

Volatile

The project target analyte compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All samples were evaluated, and all identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

Volatile TICs were not reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

No sample was submitted for MS/MSD analyses in association with this SDG.

9. LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS/LCS duplicate evaluations were processed at the proper frequency. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for chloromethane in the LCS and LCSD associated with sample 754011-SS3-18-(2-12)-060223 in this SDG were lower than the lowest acceptance limits. The result reported for the impacted analyte in the associated sample has been qualified "UJ" on this basis.

10. REPORTING

No problems were found for this criterion.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

No problems were found for this criterion.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

No samples were submitted as a field duplicate pair in association with these SDGs.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Volatiles		Major	Minor
Holding Time	x		
Method Blanks	x		
Storage Blanks	NA		
Trip Blanks	NA		
Field/ Rinse Blanks	NA		
Mass Spectrometer Tuning	x		
Calibration Response Factor		x	
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards	x		
Surrogates	x		
Compound Identification - Volatile	x		
Tentatively Identified Compounds - Volatile	NA		
Matrix Spike/Matrix Spike Duplicate	NA		
Laboratory Control Sample/Laboratory Control Sample Duplicate			x
Other Quality Control Data out of Specification	x		
Field Duplicate	NA		

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA VALIDATION REPORT

Owego Heat Site

SDGs: 23F0366, 23G0753 and 23G0805

Chemical Analyses Performed by:

Con-Test, A Pace Analytical Laboratory

Prepared by

ENVIRONMENTAL DATA SERVICES, LTD.

Prepared for

EA Engineering, Science and Technology, Inc.

November 1, 2023



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science and Technology, Inc.

LABORATORY: Con-Test, Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23F0366

SAMPLE DATES: 06/01/2023

This sample delivery group consist of the following samples:

Sample Identification	Laboratory Identification
754011-SGP-03-060123	23F0366-01
754011-SGP-02-060123	23F0366-02
754011-SGP-01-060123	23F0366-03
754011-SGP-06-060123	23F0366-04
754011-SGP-04-060123	23F0366-05
754011-SGP-05-060123	23F0366-06
754011-SGP-FD-060123	23F0366-07

The samples described above were analyzed via methods USEPA TO-15 and/or USEPA TO-15 SIM to determine the concentrations of trace volatile organic analytes (VOAs) in air samples.

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15 Data Validation, HW-31, Rev. 6, June 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. The second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this delivery group were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL).

Storage Blanks

No storage blanks were required for this sample delivery group (SDG).

Trip Blanks

No trip blanks were submitted in association with this SDG.

Field Blanks

No field blanks were submitted in association with this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB).

All tunes associated with this SDG were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 24-hour analytical sequence, denoted as a “closing” calibration verification and ascertains acceptable performance at the conclusion of the analytical sequence.

Note, no closing continuing calibration verifications were performed in association with this SDG.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the volatile organic analysis (VOA) target compound list (TCL) must be ≥ 0.05 in both the initial and continuing calibrations with exception of poor response compounds, where RRFs must be ≥ 0.01 . Additionally, the RRF in the closing continuing calibration must be ≥ 0.01 . A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is < 0.05 , or < 0.01 for poor response compounds, or the RRF for the closing continuing calibration is < 0.01 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $< 30\%$.

An RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated. Severe performance failures (RSD $> 90\%$) require qualification of non-detected results as well.

The %D for continuing calibration must be $< 30\%$.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated, and non-detects are qualified with "UJ".

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D values for chloroethane, dichlorodifluoromethane, and vinyl chloride were outside of acceptance limits for the continuing calibration verification CCV associated with all samples in this SDG. The results reported for the impacted analytes have been qualified "J" or "UJ", as appropriate on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than ± 20 seconds from the associated continuing calibration standard. The area count must be within -60% to +140% range of the associated standard. If area count is $>140\%$ non-detected results are not qualified while positive results are qualified "J", estimated. However, when an observed area count is $<60\%$, positive results are qualified "J" estimated while non-detected results are rejected.

The reported analysis for all samples, lab control sample, and associated method blanks had internal standard areas and retention times within QC criteria in all cases.

6. COMPOUND IDENTIFICATION

Volatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ", tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J", estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J", estimated.

Tentatively identified compounds were not reported by the laboratory and were not evaluated for this program.

7. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

All LCS accuracy indicators were favorable with the following exceptions.

The observed recoveries for naphthalene and 1,2,4-trichlorobenzene were lower than the lowest acceptance limits. All samples in this SDG are associated with the non-compliant LCS. Potential low bias is indicated. The results reported for the impacted analytes have been qualified "J" or "UJ", as appropriate on this basis.

8. REPORTING

No problems were found for this criterion.

9. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

10. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SGP-05-060123 and 754011-SGP-FD-060123 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated with the exception of the analytes listed below. The results reported for the impacted analytes in the field duplicate samples have been qualified "J" or "UJ", as appropriate on this basis.

<i>acetone</i>	<i>cis-1,2-dichloroethylene</i>	<i>ethyl acetate</i>
<i>tetrachloroethylene</i>	<i>trichloroethylene</i>	

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Clean canisters were used to transport air samples in this SDG. All criteria were met to ensure containers were appropriate for sample storage.

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Volatiles		Major	Minor
Holding Time	x		
Method Blanks	x		
Storage Blanks	NA		
Trip Blanks	NA		
Field Blanks	NA		
Mass Spectrometer Tuning	x		
Calibration Response Factor	x		
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards	x		
Compound Identification - Volatile	x		
Tentatively Identified Compounds - Volatile	NA		
Laboratory Control Sample			x
Reporting	x		
Other Quality Control Data out of Specification	x		
Field Duplicate			x

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science and Technology, Inc.

LABORATORY: Con-Test, Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23G0805

SAMPLE DATES: 07/06/2023

This sample delivery group consist of the following samples:

Sample Identification	Laboratory Identification
754011-SGP-05	23G0805-01
754011-SGP-DUP	23G0805-02

The samples described above were analyzed via methods USEPA TO-15 and/or USEPA TO-15 SIM to determine the concentrations of trace volatile organic analytes (VOAs) in air samples.

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15 Data Validation, HW-31, Rev. 6, June 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this delivery group were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL).

Storage Blanks

No storage blanks were required for this sample delivery group (SDG).

Trip Blanks

No trip blanks were submitted in association with this SDG.

Field Blanks

No field blanks were submitted in association with this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB).

All tunes associated with this SDG were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 24-hour analytical sequence, denoted as a “closing” calibration verification and ascertains acceptable performance at the conclusion of the analytical sequence.

Note, no closing continuing calibration verifications were performed in association with this SDG.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the volatile organic analysis (VOA) target compound list (TCL) must be ≥ 0.05 in both the initial and continuing calibrations with exception of poor response compounds, where RRFs must be ≥ 0.01 . Additionally, the RRF in the closing continuing calibration must be ≥ 0.01 . A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is < 0.05 , or < 0.01 for poor response compounds, or the RRF for the closing continuing calibration is < 0.01 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be $< 30\%$.

An RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated. Severe performance failures (RSD $> 90\%$) require qualification of non-detected results as well.

The %D for continuing calibration must be $< 30\%$.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated, and non-detects are qualified with "UJ".

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D value for carbon tetrachloride was outside of acceptance limits for the continuing calibration verification (CCV) associated with all samples in this SDG. The results reported for carbon tetrachloride have been qualified "UJ" on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than ± 20 seconds from the associated continuing calibration standard. The area count must be within -60% to +140% range of the associated standard. If area count is $>140\%$ non-detected results are not qualified while positive results are qualified "J", estimated. However, when an observed area count is $<60\%$, positive results are qualified "J" estimated while non-detected results are rejected.

The reported analysis for all samples, lab control sample, and associated method blanks had internal standard areas and retention times within QC criteria in all cases.

6. COMPOUND IDENTIFICATION

Volatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ", tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J", estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J", estimated.

Tentatively identified compounds were not reported by the laboratory and were not evaluated for this program.

7. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

All LCS accuracy indicators were favorable with the following exceptions.

The observed recovery for naphthalene was higher than the highest acceptance limit. All samples in this SDG are associated with the non-compliant LCS. Potential high bias is indicated. The results reported for naphthalene have been qualified "J" on this basis.

8. REPORTING

No problems were found for this criterion.

9. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

The laboratory analyzed a matrix duplicate on sample 754011-SGP-DUP. Adequate laboratory precision was demonstrated.

Ethanol exceeds the upper calibration limit of the instrument for samples 754011-SGP-05 and 754011-SGP-DUP. The ethanol results in the impacted samples have been qualified "J" on this basis.

10. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SGP-05 and 754011-SGP-DUP were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated with the exception of the carbon disulfide. Carbon disulfide results reported in the field duplicate samples have been qualified "J" or "UJ", as appropriate on this basis.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Clean canisters were used to transport air samples in this SDG. All criteria were met to ensure containers were appropriate for sample storage.

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1
Review Elements Summary

	Were acceptance criteria met?		
	Yes	No	
Volatiles		Major	Minor
Holding Time	x		
Method Blanks	x		
Storage Blanks	NA		
Trip Blanks	NA		
Field Blanks	NA		
Mass Spectrometer Tuning	x		
Calibration Response Factor	x		
Calibration Percent Relative Standard Deviation and Percent Difference			x
Internal Standards	x		
Compound Identification - Volatile	x		
Tentatively Identified Compounds - Volatile	NA		
Laboratory Control Sample			x
Reporting	x		
Other Quality Control Data out of Specification			x
Field Duplicate			x

Major= Major data quality issue identified resulting in rejection of data.

Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Table 2
Data Validation Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

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