RECOVERY WELL RE137 PUMPING TEST
TREATMENT SYSTEM EVALUATION
FEBRUARY 2, 2022 TEST RESULTS
NWIRP BETHPAGE, NEW YORK

Purpose

The Navy is in the process of constructing and conducting the initial testing of a treatment system to support the pumping test on recovery well RE137. Construction of the system is nearly complete, with some electrical and control parts outstanding due to current supply chain issues.

Field Testing

On February 2, 2022, the Navy conducted the initial startup operation and testing of the RE137 Pumping Test Treatment System using first potable water with the water recirculated through the treatment system and then with groundwater from the RE137 well. During the testing, the groundwater was treated with bag filtration to remove any sediment from the well, advanced oxidation process (AOP) technology using hydrogen peroxide and ultraviolet (UV) light, and granular activated carbon (GAC). The treated water was accumulated in two 21,000-gallons frac tanks, pending analytical results. Piping and Instrumentation Diagrams from the work plan are attached and further identify the treatment process and the location of the sample ports.

Four consecutive tests were conducted using RE137 groundwater (Tests A, B, C, and D). Tests A and B were at a nominal flowrate of 50 gallons per minute. Tests C and D were at a nominal flowrate of 100 gallons per minute. Peroxide dosing and UV lamp power were controlled by the Trojan PLC. Referenced sample ports are as follows:

- SP100 – Untreated RE137 groundwater
- SP201 – AOP effluent, prior to GAC units
- SF300 – GAC Unit No. 1 effluent, prior to GAC Unit No. 2
- SF303 – GAC Unit No. 2 effluent, discharge to frac tanks.

For the fixed-base laboratory testing, two facilities were used. ALS of Middletown Pennsylvania was used for the volatile organic compound (VOC), metal, and limited 1,4-dioxane analysis using the drinking water EPA Method 522. Eurofins of Lancaster Pennsylvania was used for 1,4-dioxane analysis using SW8260 SIM. Going forward,

the system treatment effluent will also be analyzed for 1,4-dioxane using SW8270SIM[1] and bis(2-ethyhexyl) phthalate using SW8270.[2]

Test Results

Test results are summarized in Table 1. Based on these test results, the AOP system reduced VOCs and 1,4-dioxane by approximately 70 to 90 percent. While demonstrating the viability of the technology, this removal is lower than the anticipated reduction of approximately 99 percent for most of the VOCs and 1,4-dioxane, (i.e., TCE less than 20 ug/L and 1,4-dioxane less than 0.1 ug/L). Some VOCs such as carbon tetrachloride, chloroform, and Freon 113 are known to be resistant to destruction via the AOP technology, and the GAC system was designed to remove these chemicals and TCE residuals.

The GAC, as expected, removed the residual VOCs following the AOP. However, it is not a good long-term approach to remove high concentrations of TCE (greater than 50 ug/L), as breakthrough of the GAC would be expected to occur in one to three months of operation. With the AOP system fully operating as designed, the breakthrough of the GAC is anticipated to occur in 6 to 12 months.

The GAC was also shown to be effective at removing 1,4-dioxane, at least in the short term. This data is consistent with the expectation that GAC can be used as a short-term buffer for the removal of 1,4-dioxane, (such in the event of a failure in the AOP technology), but would not be good long-term approach, as GAC breakthrough of the 1,4-dioxane would be expected to occur in less than one month.

Based on the limited success of the February 2, 2022 testing, the Navy plans to retest the system on February 22 or 23, 2022 and collect additional samples to demonstrate the effectiveness of the AOP technology. During the February 2, 2022, there were some problems noted with the hydrogen peroxide feed pumps tripping out or providing insufficient flow rate. There were no primary issues with the AOP reactor, other than it would automatically shut down when the hydrogen peroxide pumps tripped out.

As can be seen in the Table 1, except for chloromethane as discussed below, all of the effluent groundwater samples (SP303) meet the treatment goals. Additional data for other VOCs (all non detect) and the metals are provided in the Attachment from the laboratory. No elevated metal concentrations were noted. Iron will continue to be

[1] Note that 1,4-dixoane results using SW8270 SIM will be compared to the state groundwater standard of 0.35 ug/L and the 1,4-dioxane resulting using SW8260 SIM and EPA Method 522 will be compared to the state drinking water MCL of 1.0 ug/L. SW 82760 SIM results are generally lower than SW8260SIM and EPA 522 results.

[2] Bis(2-ethylhexyl) phthalate is not believed to be present in the site groundwater. Periodically it can be detected in water samples due to either laboratory contamination or from the PVC used in the well or treatment system piping.

tracked by the Navy, primarily because it may impact the lamps in the AOP reactor and require periodic cleaning or accumulate in the GAC units and require periodic backwashing.

Chloromethane was reported at a concentration of 5.4 to 5.8 ug/L in each of the effluent groundwater samples (SP303), as well as in the effluent from the first GAC unit (SP300) at concentrations of 3.7 to 4.1 ug/L. It was not detected in the influent groundwater samples (SP100) or AOP effluent samples (SP201), confirming that it is not present in the groundwater or formed in the AOP unit. This data indicates that the chloromethane (and to a less extent bromomethane) are associated with the GAC or the fiberglass GAC vessels. The Navy confirmed with the vendor that the GAC is virgin carbon made from coconut shells, and therefor chloromethane would not be expected to be present. These reported concentrations are only slightly greater than the MCL of 5 ug/L. Of the VOCs, chloromethane is very volatile, and residuals, if present, would have dissipated from the frac tanks over the past two weeks.

Path Forward

Currently, the Navy has approximately 25,000 gallons of water with quality consistent with results presented in Table 1 from four samples identified as SP303 (Tests A, B, C, and D). These samples were collected while the frac tanks were being filled. The pH of the water is approximately 6 to 7 SU. During the testing, the pH of the influent groundwater water started at 7.5 SU, went as high as 9.1 SU, and decreased to 5.1 SU by the end of the testing. Historically, under relatively stagnant conditions, well grout can locally increase the pH of groundwater.

On February 22, 2021, the Navy will be restarting the system by recycling treated frac water through the treatment system and back into the frac tank. During this time, the operation of the system and in particular, the hydrogen peroxide concentration in the system, will be confirmed and stabilized. At that time, approximately 20,000 gallons of water will be discharged to the Nassau County sump to provide space for storing freshly treated RE137 groundwater.

The testing will be conducted at approximately 100 gallons per minute. Two sets of samples (Test E and F) will be collected.

Sample location and parameters to be tested are as follows.

Sample Location	VOCs	1,4-Dioxane (8260 SIM)	1,4-Dioxane (8270 SIM)	1,4-Dioxane (EPA 522)	Bis (2-Ethylhexyl Phthalate (8270E)
SP100 (System Influent)	X	X	X	--	--
SP201 (AOP Effluent)	X	X	X	--	--
SP300 (GAC Unit 1 Effluent)	X	X	--	--	--
SP303 (System Effluent)	X	X	X	X	X

X – Sample to be collected.

Field instrument pH and hydrogen peroxide measurements will also be collected at these locations.

After this initial testing is complete, sampling frequency, locations, and analytical methods will be consistent with the February 16, 2022 letter from Jason Pelton, NYSDEC to Scott Sokolowski, Navy titled SPDES Permit Equivalent Application Naval Weapons Industrial Reserve Plant Site (NWIRP), Bethpage NYSDEC Site No. 130003B.

TABLE 1 - TEST RESULTS, PRE STARTUP
RE137 PILOT-SCALE TESTING, FEB 2, 2022
NWIRP BETHPAGE, NEW YORK

Test A - 50 GPM (1410)

Parameter	SP100 Influent (ug/L)	SP201 AOP Effluent (ug/L)	SP300 GAC1 Effluent (ug/L)	SP303 System Effluent (ug/L)
1,4-dioxane (8260 SIM)	17	5.6	ND	ND
1,4-dioxane (EPA 522)	NA	NA	NA	ND
1,1,2-Trichloroethane	1.1	1.2	ND	ND
1,1-Dichloroethane	1	1	ND	ND
1,1-Dichloroethene	6.9	0.67	ND	ND
Carbon Tetrachloride	2.8	2.5	ND	ND
Chloroform	1.4	1.4	ND	ND
cis-1,2-Dichloroethene	3.9	1	ND	ND
Freon 113	25.1	21.7	ND	ND
Tetrachloroethene	3.6	0.6	ND	ND
Trichloroethene	1930	414	ND	ND
Bromomethane	ND	ND	0.9	0.83
Chloromethane	ND	ND	3.7	5.8
Iron	2020	NA	NA	27

ug/L - microgram per lliter.
NA - not anlyzed.
ND - Not detected. ND = 0.17 ug/L, for 1,4-dioxane Method 8260 SIM.
ND = 0.023 ug/L, for 1,4 dioxane Method EPA 522.
ND = 0.33 ug/L, for VOCs.

TABLE 1 - TEST RESULTS, PRE STARTUP
RE137 PILOT-SCALE TESTING, FEB 2, 2022
NWIRP BETHPAGE, NEW YORK

Test B - 50 GPM (1460)

Parameter	SP100 Influent (ug/L)	SP201 AOP Effluent (ug/L)	SP300 GAC1 Effluent (ug/L)	SP303 System Effluent (ug/L)
1,4-dioxane (8260 SIM)	18	6.2	ND	ND
1,4-dioxane (EPA 522)	NA	NA	NA	ND
1,1,2-Trichloroethane	1	0.97	ND	ND
1,1-Dichloroethane	1	0.97	ND	ND
1,1-Dichloroethene	6.9	0.33	ND	ND
Carbon Tetrachloride	2.8	2.8	ND	ND
Chloroform	1.4	1.3	ND	ND
cis-1,2-Dichloroethene	3.9	0.44	ND	ND
Freon 113	23.7	24.4	ND	ND
Tetrachloroethene	3.7	0.33	ND	ND
Trichloroethene	1870	307	ND	ND
Bromomethane	ND	ND	0.45	1.2
Chloromethane	ND	ND	3.7	5.6
Iron	1360	NA	NA	45.5

ug/L - microgram per lliter.
NA - not anlyzed.
ND - Not detected. ND = 0.17 ug/L, for 1,4-dioxane Method 8260 SIM.
ND = 0.023 ug/L, for 1,4 dioxane Method EPA 522.
ND = 0.33 ug/L, for VOCs.

TABLE 1 - TEST RESULTS, PRE STARTUP
RE137 PILOT-SCALE TESTING, FEB 2, 2022
NWIRP BETHPAGE, NEW YORK

Test C -100 GPM (1550)

Parameter	SP100 Influent (ug/L)	SP201 AOP Effluent (ug/L)	SP300 GAC1 Effluent (ug/L)	SP303 System Effluent (ug/L)
1,4-dioxane (8260 SIM)	18	1.9	ND	ND
1,4-dioxane (EPA 522)	NA	NA	NA	ND
1,1,2-Trichloroethane	1	0.88	ND	ND
1,1-Dichloroethane	1	0.8	ND	ND
1,1-Dichloroethene	6.8	0.33	ND	ND
Carbon Tetrachloride	2.7	2.7	ND	ND
Chloroform	1.3	1.2	ND	ND
cis-1,2-Dichloroethene	3.7	0.33	ND	ND
Freon 113	24	23.6	ND	ND
Tetrachloroethene	3.8	0.38	ND	ND
Trichloroethene	1800	90	ND	ND
Bromomethane	ND	ND	ND	0.75
Chloromethane	ND	ND	3.9	5.7
Iron	1450	NA	NA	36.4

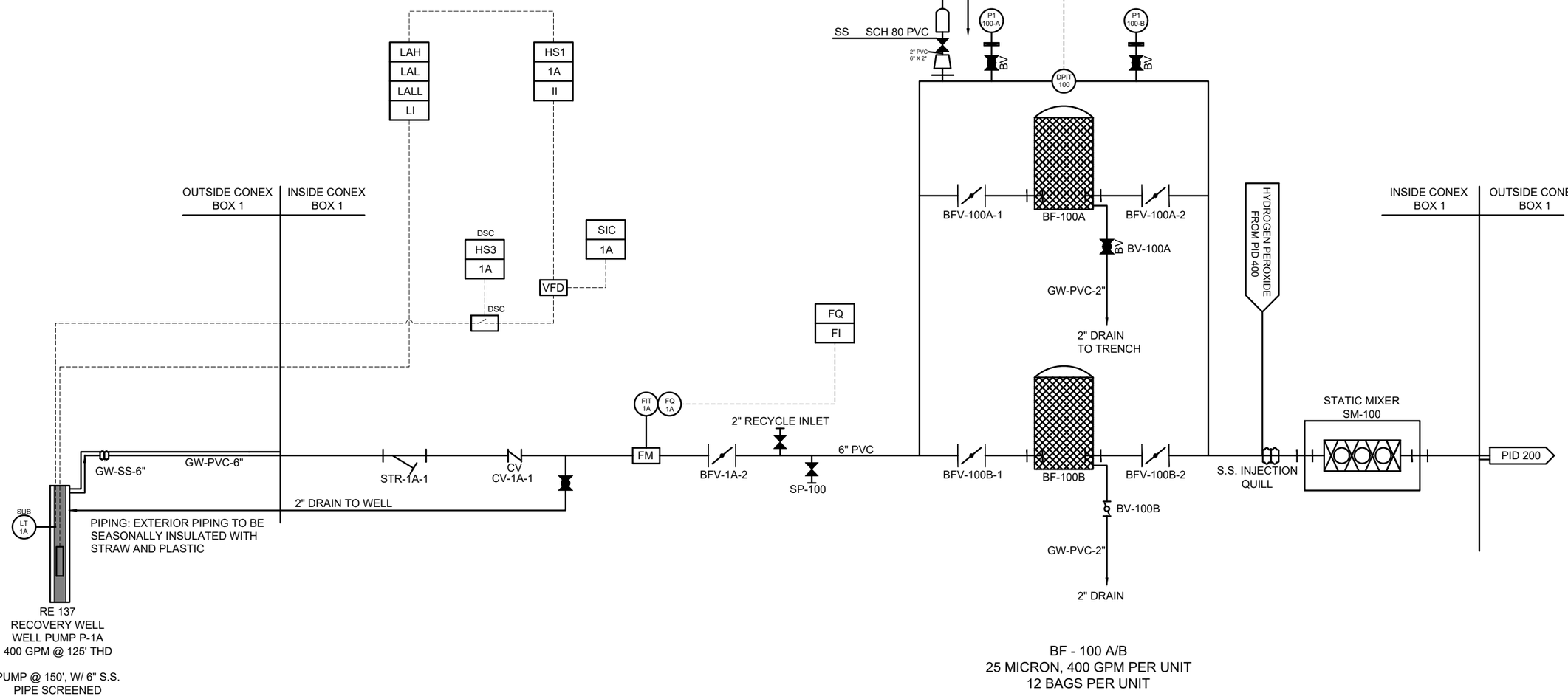
ug/L - microgram per lliter.
NA - not anlyzed.
ND - Not detected. ND = 0.17 ug/L, for 1,4-dioxane Method 8260 SIM.
ND = 0.023 ug/L, for 1,4 dioxane Method EPA 522.
ND = 0.33 ug/L, for VOCs.

TABLE 1 - TEST RESULTS, PRE STARTUP
RE137 PILOT-SCALE TESTING, FEB 2, 2022
NWIRP BETHPAGE, NEW YORK

Test D -100 GPM (1610)

Parameter	SP100 Influent (ug/L)	SP201 AOP Effluent (ug/L)	SP300 GAC1 Effluent (ug/L)	SP303 System Effluent (ug/L)
1,4-dioxane (8260 SIM)	18	4.5	ND	ND
1,4-dioxane (EPA 522)	NA	NA	NA	ND
1,1,2-Trichloroethane	1.1	0.89	ND	ND
1,1-Dichloroethane	1.1	0.87	ND	ND
1,1-Dichloroethene	6.4	0.33	ND	ND
Carbon Tetrachloride	2.5	2.5	ND	ND
Chloroform	1.3	1.2	ND	ND
cis-1,2-Dichloroethene	3.6	0.33	ND	ND
Freon 113	22.7	22.1	ND	ND
Tetrachloroethene	3.8	0.59	ND	ND
Trichloroethene	1730	225	ND	ND
Bromomethane	ND	ND	ND	1.2
Chloromethane	ND	ND	4.1	5.4
Iron	993	NA	NA	31.9

ug/L - microgram per lliter.
NA - not anlyzed.
ND - Not detected. ND = 0.17 ug/L, for 1,4-dioxane Method 8260 SIM.
ND = 0.023 ug/L, for 1,4 dioxane Method EPA 522.
ND = 0.33 ug/L, for VOCs.



APPR | DATE | DESCRIPTION | MJS

NAVFAC

PRELIMINARY
NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

XXXXX

SATISFACTORY TO DATE 11/16/2020

DES	DRW	CHK

PM/DM

BRANCH MANAGER

CHIEF ENG/ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MIDATLANTIC
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT
RE-137

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NEW YORK
RE 137 GROUNDWATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

SCALE:

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
1129008005

SHEET OF

P&ID-100

DRAWING REVISION: 07 AUG 2018

FAL 200 ALARM

HS 200A AOP START/STOP

YI 200B AOP ALARM INFO

FAL 200C AOP SHUT DOWN

FAL 200D AOP WARNING INFO

PLL P

A B C D

SKID LIMITS

LOCAL CONTROL SYSTEM PROVIDED BY AOP VENDOR

EXTERNAL INTERFACE CONTACTS

OUTSIDE CONEX BOX 2 | INSIDE CONEX BOX 2

INSIDE CONEX BOX 2 | OUTSIDE CONEX BOX 2

BV-HPV10

P1 201

BV-LPD4

6" S.S.

BFV-200B

GW-PVC-6"

PID 300

LC

SP - 201

P1 200

AOP 200

GW-PVC-6"

6" S.S.

FSL 200

BFV-200A

PID 100

SP-200

DRAIN

DRAIN

AOP-200
ADVANCED OXIDATION PROCESS
UV (1 CHAMBER SYSTEM)
400 GPM, 18KW, 480 VOLT

APPR | DATE | DESCRIPTION | NUM

NAVFAC

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SEAL

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FOR COMMANDER NAVFAC

ACTIVITY

XXXXX

SATISFACTORY TO DATE 11/16/2020

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
RE-137

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NEW YORK
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT
RE 137 GROUNDWATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

SCALE:

EPROJECT NO.:

CONSTR. CONTR. NO.

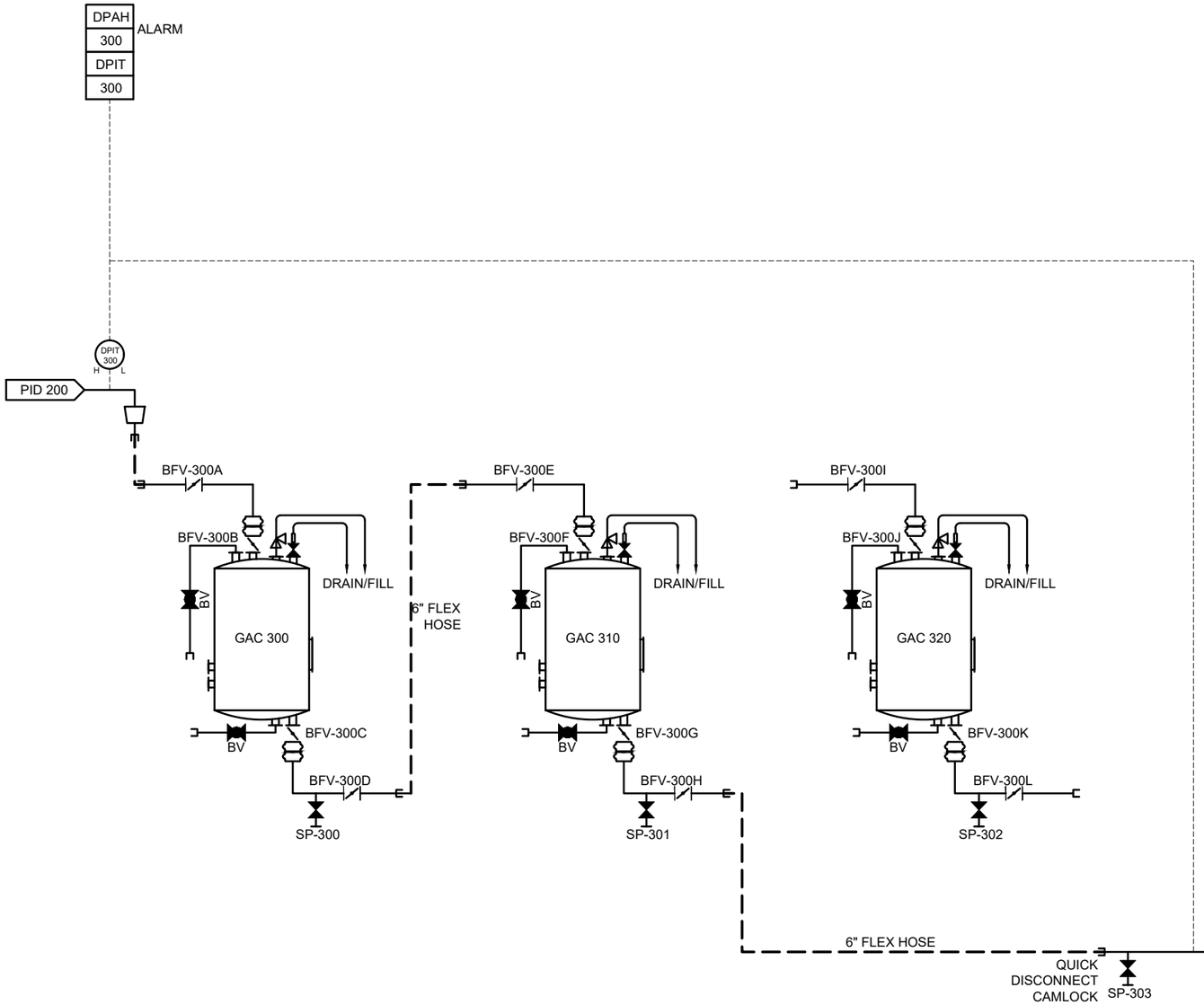
NAVFAC DRAWING NO.
112008005

SHEET OF

P&ID-200

DRAWFORM REVISION: 07 AUG 2018

FILE NAME: C:\Users\jordan.shaffer\AppData\Local\Temp\AcPublish_14764\RE_137 PFD.dwg LAYOUT NAME: P&ID (2) PLOTTED: Wednesday, February 10, 2021 - 10:35am USER: jordan.shaffer



GAC-300
GRANULAR ACTIVATED
CARBON TANKS
6,000 LB EACH,
IN SERIES

GAC-310
GRANULAR ACTIVATED
CARBON TANKS
6,000 LB EACH,
IN SERIES

GAC-320
GRANULAR ACTIVATED
CARBON TANK
6,000 LB SPARE

APPR	DATE	DESCRIPTION	MJG

NAVFAC

PRELIMINARY
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A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

XXXXX

SATISFACTORY TO DATE 11/16/2020

DES	DRW	CHK

PM/DM

BRANCH MANAGER

CHIEF ENG/ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT
RE-137

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NEW YORK
RE 137 GROUNDWATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

SCALE:

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
112008005

SHEET OF

P&ID-300

DRAWFORM REVISION: 07 AUG 2018

PLL P-400A/B

CHEMICAL FEED PUMP SKID

2" CPVC VENT WITH BIRDSCREEN MESH

S M STROKE ADJUST

PULSATION DAMPENER

½" S.S.

BV BPV BV

½" HDPE INSIDE 2" PVC

TO PAGE 1

PID 100

T-400

HYDROGEN PEROXIDE

2" CPVC VENT WITH BIRDSCREEN MESH

HDPE - 1/2"

P-400
HYDROGEN PEROXIDE METERING PUMP
MANUAL VARIABLE SPEED
2 TO 20 GPD

LAH

LS

CONEX BOX 1

LAH

LS

CONEX BOX 2

T-401

(2) HYDROGEN PEROXIDE TANK
120 GALLONS
48" X 40" X 46"

NAVFAC

PRELIMINARY NOT FOR CONSTRUCTION

SEAL

A/E INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

XXXXX

SATISFACTORY TO DATE 11/16/2020

DES DRW CHK

PM/DM

BRANCH MANAGER

CHIEF ENG/ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
RE-137

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NEW YORK
NWIRL INDUSTRIAL RESERVE ORDNANCE PLANT

RE 137 GROUNDWATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

SCALE:

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
1120080005

SHEET OF

P&ID-400

DRAWFORM REVISION: 07 AUG 2018

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **Earth Toxics Inc.**

Project EPR037|NWIRP BETHPAGE NY
Workorder 3225646
Report ID 149018 on 2/11/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Feb 04, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Ernie Wu - Tetra Tech Inc
Lauren Donston - Tetra Tech Inc
Vincent Varricchio - Tetra Tech Inc
David Brayack - Tetra Tech Inc
Rick Carr - Earth Toxics Inc.

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3225646001	SP-100-20220202A	Ground Water	02/02/2022 2:00 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646002	SP-201-20220202A	Ground Water	02/02/2022 2:05 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646003	SP-300-20220202A	Ground Water	02/02/2022 2:10 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646004	SP-303-20220202A	Ground Water	02/02/2022 2:15 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646005	SP-100-20220202B	Ground Water	02/02/2022 2:55 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646006	SP-201-20220202B	Ground Water	02/02/2022 2:59 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646007	SP-300-20220202B	Ground Water	02/02/2022 3:05 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646008	SP-303-20220202B	Ground Water	02/02/2022 3:10 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646009	SP-100-20220202C	Ground Water	02/02/2022 3:52 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646010	SP-201-20220202C	Ground Water	02/02/2022 3:55 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646011	SP-300-20220202C	Ground Water	02/02/2022 4:00 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646012	SP-303-20220202C	Ground Water	02/02/2022 4:04 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646013	SP-100-20220202D	Ground Water	02/02/2022 4:15 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646014	SP-201-20220202D	Ground Water	02/02/2022 4:18 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646015	SP-300-20220202D	Ground Water	02/02/2022 4:20 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646016	SP-303-20220202D	Ground Water	02/02/2022 4:22 PM	02/04/2022 8:45 AM	CBC	Collected By Client
3225646017	Trip Blank	Ground Water	02/02/2022 12:00 AM	02/04/2022 8:45 AM	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation #
0

Client Sample ID	**SP-100-20220202A**	Collected	**02/02/2022 2:00 PM**
Lab Sample ID	**3225646001**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646001-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 3:59 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	1.1	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethane	75-34-3	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethene	75-35-4	6.9	ug/L	1.0	0.75	0.33	C
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.8	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.4	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	3.9	ug/L	1.0	0.75	0.33	C
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	25.1	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	3.6	ug/L	1.0	0.75	0.33	C
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-100-20220202A**	Collected	**02/02/2022 2:00 PM**
Lab Sample ID	**3225646001**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103 %	81 – 118	
4-Bromofluorobenzene	460-00-4	102 %	85 – 114	
Dibromofluoromethane	1868-53-7	91.40 %	80 – 119	
Toluene-d8	2037-26-5	96.60 %	89 – 112	

Prep

Method	N/A	Container	3225646001-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	50
Date	02/09/2022 1:05 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	1930	ug/L	50.0	37.5	16.5	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105 %	81 – 118	
4-Bromofluorobenzene	460-00-4	105 %	85 – 114	
Dibromofluoromethane	1868-53-7	92.30 %	80 – 119	
Toluene-d8	2037-26-5	97.40 %	89 – 112	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646001-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:30 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.7J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	3500	ug/L	110	73.0	37.0	C
Chromium, Total	7440-47-3	1.5J	ug/L	2.2	1.5	0.74	C,J

Client Sample ID	**SP-100-20220202A**	Collected	**02/02/2022 2:00 PM**
Lab Sample ID	**3225646001**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Cobalt, Total	7440-48-4	2.4J	ug/L	5.6	3.7	1.9	C,J
Iron, Total	7439-89-6	2020	ug/L	56.0	37.0	19.0	C
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	1480	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	29.1	ug/L	5.6	3.7	1.9	C
Nickel, Total	7440-02-0	3.6J	ug/L	5.6	3.7	1.9	C,J
Potassium, Total	7440-09-7	654	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	9.2	ug/L	5.6	3.7	1.9	C

Prep

Method	SW846 3015	Container	3225646001-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 6:54 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	10900	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646001-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:24 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-201-20220202A**	Collected	**02/02/2022 2:05 PM**
Lab Sample ID	**3225646002**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646002-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 4:21 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	1.2	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethane	75-34-3	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethene	75-35-4	0.67J	ug/L	1.0	0.75	0.33	C,J
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	14.6	ug/L	5.0	3.8	1.6	C
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.5	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.4	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	1.0	ug/L	1.0	0.75	0.33	C
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	21.7	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.60J	ug/L	1.0	0.75	0.33	C,J
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-201-20220202A**	Collected	**02/02/2022 2:05 PM**
Lab Sample ID	**3225646002**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	
4-Bromofluorobenzene	460-00-4	103%	85 – 114	
Dibromofluoromethane	1868-53-7	88.50%	80 – 119	
Toluene-d8	2037-26-5	99%	89 – 112	

Prep

Method	N/A	Container	3225646002-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	10
Date	02/09/2022 12:17 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	418	ug/L	10.0	7.5	3.3	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	107%	81 – 118	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	
Dibromofluoromethane	1868-53-7	93.60%	80 – 119	
Toluene-d8	2037-26-5	97.80%	89 – 112	

Client Sample ID	**SP-300-20220202A**	Collected	**02/02/2022 2:10 PM**
Lab Sample ID	**3225646003**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646003-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 4:44 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.90J	ug/L	1.0	0.75	0.33	C,J
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	3.7	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-300-20220202A**	Collected	**02/02/2022 2:10 PM**
Lab Sample ID	**3225646003**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.49J	ug/L	1.0	0.75	0.33	C,J
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.20%	81 – 118	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	
Dibromofluoromethane	1868-53-7	89.90%	80 – 119	
Toluene-d8	2037-26-5	96.90%	89 – 112	

Client Sample ID	**SP-303-20220202A**	Collected	**02/02/2022 2:15 PM**
Lab Sample ID	**3225646004**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646004-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 5:06 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.83J	ug/L	1.0	0.75	0.33	C,J
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	5.8	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-303-20220202A**	Collected	**02/02/2022 2:15 PM**
Lab Sample ID	**3225646004**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101 %	81 – 118	
4-Bromofluorobenzene	460-00-4	106 %	85 – 114	
Dibromofluoromethane	1868-53-7	91.10 %	80 – 119	
Toluene-d8	2037-26-5	97.60 %	89 – 112	

Semi-Volatiles - GC/MS
EPA 522

Prep

Method	EPA 522	Container	3225646004-E(Na Sulfite and Na Bi
Batch	818641	Aliquot	100 mL
Date	02/09/2022 5:35 AM	Tech.	S7M

Analysis

Method	EPA 522	Fraction	
Batch	818728	Dilution	1
Date	02/09/2022 10:56 AM	Analyst	GEC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,4-Dioxane	123-91-1	0.070U	ug/L	0.070	0.070	0.023	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,4-Dioxane-d8	17647-74-4	79.60 %	70 – 130	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646004-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:32 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	3.7U	ug/L	5.6	3.7	1.9	C,U
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	2780	ug/L	110	73.0	37.0	C

Client Sample ID	**SP-303-20220202A**	Collected	**02/02/2022 2:15 PM**
Lab Sample ID	**3225646004**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Chromium, Total	7440-47-3	0.79J	ug/L	2.2	1.5	0.74	C,J
Cobalt, Total	7440-48-4	3.7U	ug/L	5.6	3.7	1.9	C,U
Iron, Total	7439-89-6	27.3J	ug/L	56.0	37.0	19.0	C,J
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	3210	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	3.7U	ug/L	5.6	3.7	1.9	C,U
Nickel, Total	7440-02-0	3.7U	ug/L	5.6	3.7	1.9	C,U
Potassium, Total	7440-09-7	34900	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	2.7J	ug/L	5.6	3.7	1.9	C,J

Prep

Method	SW846 3015	Container	3225646004-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 6:56 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	12200	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646004-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:25 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-100-20220202B**	Collected	**02/02/2022 2:55 PM**
Lab Sample ID	**3225646005**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646005-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 5:29 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethane	75-34-3	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethene	75-35-4	6.9	ug/L	1.0	0.75	0.33	C
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.8	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.4	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	3.9	ug/L	1.0	0.75	0.33	C
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	23.7	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	3.7	ug/L	1.0	0.75	0.33	C
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-100-20220202B**	Collected	**02/02/2022 2:55 PM**
Lab Sample ID	**3225646005**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99%	81 – 118	
4-Bromofluorobenzene	460-00-4	99.80%	85 – 114	
Dibromofluoromethane	1868-53-7	90.50%	80 – 119	
Toluene-d8	2037-26-5	96.60%	89 – 112	

Prep

Method	N/A	Container	3225646005-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	50
Date	02/09/2022 1:28 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	1870	ug/L	50.0	37.5	16.5	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	81 – 118	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	
Dibromofluoromethane	1868-53-7	91.90%	80 – 119	
Toluene-d8	2037-26-5	98.90%	89 – 112	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646005-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:35 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.5J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	3410	ug/L	110	73.0	37.0	C
Chromium, Total	7440-47-3	0.79J	ug/L	2.2	1.5	0.74	C,J

Client Sample ID	**SP-100-20220202B**	Collected	**02/02/2022 2:55 PM**
Lab Sample ID	**3225646005**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Cobalt, Total	7440-48-4	2.3J	ug/L	5.6	3.7	1.9	C,J
Iron, Total	7439-89-6	1360	ug/L	56.0	37.0	19.0	C
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	1420	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	21.9	ug/L	5.6	3.7	1.9	C
Nickel, Total	7440-02-0	3.1J	ug/L	5.6	3.7	1.9	C,J
Potassium, Total	7440-09-7	659	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	5.9	ug/L	5.6	3.7	1.9	C

Prep

Method	SW846 3015	Container	3225646005-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 6:58 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	11200	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646005-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:26 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-201-20220202B**	Collected	**02/02/2022 2:59 PM**
Lab Sample ID	**3225646006**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646006-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 5:51 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.97J	ug/L	1.0	0.75	0.33	C,J
1,1-Dichloroethane	75-34-3	0.97J	ug/L	1.0	0.75	0.33	C,J
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8J	ug/L	5.0	3.8	1.6	C,J
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.8	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.3	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	0.44J	ug/L	1.0	0.75	0.33	C,J
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	24.4	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-201-20220202B**	Collected	**02/02/2022 2:59 PM**
Lab Sample ID	**3225646006**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101 %	81 – 118	
4-Bromofluorobenzene	460-00-4	101 %	85 – 114	
Dibromofluoromethane	1868-53-7	90.50 %	80 – 119	
Toluene-d8	2037-26-5	97.20 %	89 – 112	

Prep

Method	N/A	Container	3225646006-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	5
Date	02/08/2022 11:54 PM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	307	ug/L	5.0	3.8	1.7	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105 %	81 – 118	
4-Bromofluorobenzene	460-00-4	105 %	85 – 114	
Dibromofluoromethane	1868-53-7	91.70 %	80 – 119	
Toluene-d8	2037-26-5	96.40 %	89 – 112	

Client Sample ID	**SP-300-20220202B**	Collected	**02/02/2022 3:05 PM**
Lab Sample ID	**3225646007**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646007-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 6:14 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.45J	ug/L	1.0	0.75	0.33	C,J
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	3.7	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-300-20220202B**	Collected	**02/02/2022 3:05 PM**
Lab Sample ID	**3225646007**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101 %	81 – 118	
4-Bromofluorobenzene	460-00-4	102 %	85 – 114	
Dibromofluoromethane	1868-53-7	89.60 %	80 – 119	
Toluene-d8	2037-26-5	95.20 %	89 – 112	

Client Sample ID	**SP-303-20220202B**	Collected	**02/02/2022 3:10 PM**
Lab Sample ID	**3225646008**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646008-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 6:36 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.3J	ug/L	5.0	3.8	1.6	C,J
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	1.2	ug/L	1.0	0.75	0.33	C
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	5.6	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-303-20220202B**	Collected	**02/02/2022 3:10 PM**
Lab Sample ID	**3225646008**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102 %	81 – 118	
4-Bromofluorobenzene	460-00-4	103 %	85 – 114	
Dibromofluoromethane	1868-53-7	90.20 %	80 – 119	
Toluene-d8	2037-26-5	94.90 %	89 – 112	

Semi-Volatiles - GC/MS
EPA 522

Prep

Method	EPA 522	Container	3225646008-E(Na Sulfite and Na Bi
Batch	818641	Aliquot	100 mL
Date	02/09/2022 5:35 AM	Tech.	S7M

Analysis

Method	EPA 522	Fraction	
Batch	818728	Dilution	1
Date	02/09/2022 11:20 AM	Analyst	GEC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,4-Dioxane	123-91-1	0.070U	ug/L	0.070	0.070	0.023	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,4-Dioxane-d8	17647-74-4	74.40 %	70 – 130	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646008-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:37 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.3J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	3840	ug/L	110	73.0	37.0	C

Client Sample ID	**SP-303-20220202B**	Collected	**02/02/2022 3:10 PM**
Lab Sample ID	**3225646008**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Chromium, Total	7440-47-3	0.86J	ug/L	2.2	1.5	0.74	C,J
Cobalt, Total	7440-48-4	3.7U	ug/L	5.6	3.7	1.9	C,U
Iron, Total	7439-89-6	45.5J	ug/L	56.0	37.0	19.0	C,J
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	3330	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	3.7U	ug/L	5.6	3.7	1.9	C,U
Nickel, Total	7440-02-0	3.7U	ug/L	5.6	3.7	1.9	C,U
Potassium, Total	7440-09-7	26400	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	2.3J	ug/L	5.6	3.7	1.9	C,J

Prep

Method	SW846 3015	Container	3225646008-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 7:00 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	13000	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646008-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:27 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-100-20220202C**	Collected	**02/02/2022 3:52 PM**
Lab Sample ID	**3225646009**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646009-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 6:59 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethane	75-34-3	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethene	75-35-4	6.8	ug/L	1.0	0.75	0.33	C
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.7	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.3	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	3.7	ug/L	1.0	0.75	0.33	C
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	24.0	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	3.8	ug/L	1.0	0.75	0.33	C
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-100-20220202C**	Collected	**02/02/2022 3:52 PM**
Lab Sample ID	**3225646009**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102 %	81 – 118	
4-Bromofluorobenzene	460-00-4	106 %	85 – 114	
Dibromofluoromethane	1868-53-7	89.90 %	80 – 119	
Toluene-d8	2037-26-5	97.70 %	89 – 112	

Prep

Method	N/A	Container	3225646009-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	50
Date	02/09/2022 1:50 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	1800	ug/L	50.0	37.5	16.5	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106 %	81 – 118	
4-Bromofluorobenzene	460-00-4	104 %	85 – 114	
Dibromofluoromethane	1868-53-7	90.90 %	80 – 119	
Toluene-d8	2037-26-5	97.60 %	89 – 112	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646009-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:48 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.3J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	3350	ug/L	110	73.0	37.0	C
Chromium, Total	7440-47-3	0.84J	ug/L	2.2	1.5	0.74	C,J

Client Sample ID	**SP-100-20220202C**	Collected	**02/02/2022 3:52 PM**
Lab Sample ID	**3225646009**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Cobalt, Total	7440-48-4	2.2J	ug/L	5.6	3.7	1.9	C,J
Iron, Total	7439-89-6	1450	ug/L	56.0	37.0	19.0	C
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	1380	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	18.0	ug/L	5.6	3.7	1.9	C
Nickel, Total	7440-02-0	7.0	ug/L	5.6	3.7	1.9	C
Potassium, Total	7440-09-7	664	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	12.2	ug/L	5.6	3.7	1.9	C

Prep

Method	SW846 3015	Container	3225646009-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 7:04 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	2.3J	ug/L	5.6	3.7	1.9	C,J
Sodium, Total	7440-23-5	11300	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646009-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:31 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-201-20220202C**	Collected	**02/02/2022 3:55 PM**
Lab Sample ID	**3225646010**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646010-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818180	Dilution	1
Date	02/07/2022 7:21 PM	Analyst	DPC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.88J	ug/L	1.0	0.75	0.33	C,J
1,1-Dichloroethane	75-34-3	0.80J	ug/L	1.0	0.75	0.33	C,J
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.7	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.2	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	23.6	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.38J	ug/L	1.0	0.75	0.33	C,J
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-201-20220202C**	Collected	**02/02/2022 3:55 PM**
Lab Sample ID	**3225646010**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	90.0	ug/L	1.0	0.75	0.33	C
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105 %	81 – 118	
4-Bromofluorobenzene	460-00-4	105 %	85 – 114	
Dibromofluoromethane	1868-53-7	92.90 %	80 – 119	
Toluene-d8	2037-26-5	97.90 %	89 – 112	

Client Sample ID	**SP-300-20220202C**	Collected	**02/02/2022 4:00 PM**
Lab Sample ID	**3225646011**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646011-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/08/2022 2:37 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	3.9	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-300-20220202C**	Collected	**02/02/2022 4:00 PM**
Lab Sample ID	**3225646011**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104 %	81 – 118	
4-Bromofluorobenzene	460-00-4	107 %	85 – 114	
Dibromofluoromethane	1868-53-7	92.70 %	80 – 119	
Toluene-d8	2037-26-5	98.90 %	89 – 112	

Client Sample ID	**SP-303-20220202C**	Collected	**02/02/2022 4:04 PM**
Lab Sample ID	**3225646012**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646012-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/08/2022 3:00 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75J	ug/L	1.0	0.75	0.33	C,J
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	5.7	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-303-20220202C**	Collected	**02/02/2022 4:04 PM**
Lab Sample ID	**3225646012**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101 %	81 – 118	
4-Bromofluorobenzene	460-00-4	103 %	85 – 114	
Dibromofluoromethane	1868-53-7	89.20 %	80 – 119	
Toluene-d8	2037-26-5	99.30 %	89 – 112	

Semi-Volatiles - GC/MS
EPA 522

Prep

Method	EPA 522	Container	3225646012-E(Na Sulfite and Na Bis
Batch	818641	Aliquot	100 mL
Date	02/09/2022 5:35 AM	Tech.	S7M

Analysis

Method	EPA 522	Fraction	
Batch	818728	Dilution	1
Date	02/09/2022 11:44 AM	Analyst	GEC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,4-Dioxane	123-91-1	0.070U	ug/L	0.070	0.070	0.023	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,4-Dioxane-d8	17647-74-4	86.50 %	70 – 130	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646012-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:50 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.1J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	4650	ug/L	110	73.0	37.0	C

Client Sample ID	**SP-303-20220202C**	Collected	**02/02/2022 4:04 PM**
Lab Sample ID	**3225646012**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Chromium, Total	7440-47-3	1.5U	ug/L	2.2	1.5	0.74	C,U
Cobalt, Total	7440-48-4	3.7U	ug/L	5.6	3.7	1.9	C,U
Iron, Total	7439-89-6	36.4J	ug/L	56.0	37.0	19.0	C,J
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	2500	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	3.7U	ug/L	5.6	3.7	1.9	C,U
Nickel, Total	7440-02-0	3.7U	ug/L	5.6	3.7	1.9	C,U
Potassium, Total	7440-09-7	15500	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	3.7U	ug/L	5.6	3.7	1.9	C,U

Prep

Method	SW846 3015	Container	3225646012-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 7:06 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	11900	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646012-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:32 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-100-20220202D**	Collected	**02/02/2022 4:15 PM**
Lab Sample ID	**3225646013**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646013-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/08/2022 3:23 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	1.1	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethane	75-34-3	1.0	ug/L	1.0	0.75	0.33	C
1,1-Dichloroethene	75-35-4	6.4	ug/L	1.0	0.75	0.33	C
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.5	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.3	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	3.6	ug/L	1.0	0.75	0.33	C
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	22.7	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	3.8	ug/L	1.0	0.75	0.33	C
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-100-20220202D**	Collected	**02/02/2022 4:15 PM**
Lab Sample ID	**3225646013**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	
Dibromofluoromethane	1868-53-7	92.80%	80 – 119	
Toluene-d8	2037-26-5	97.80%	89 – 112	

Prep

Method	N/A	Container	3225646013-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	50
Date	02/09/2022 2:13 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	1730	ug/L	50.0	37.5	16.5	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	
4-Bromofluorobenzene	460-00-4	103%	85 – 114	
Dibromofluoromethane	1868-53-7	94.10%	80 – 119	
Toluene-d8	2037-26-5	96%	89 – 112	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646013-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:52 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.3J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	3300	ug/L	110	73.0	37.0	C
Chromium, Total	7440-47-3	2.4	ug/L	2.2	1.5	0.74	C

Client Sample ID	**SP-100-20220202D**	Collected	**02/02/2022 4:15 PM**
Lab Sample ID	**3225646013**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Cobalt, Total	7440-48-4	2.1J	ug/L	5.6	3.7	1.9	C,J
Iron, Total	7439-89-6	993	ug/L	56.0	37.0	19.0	C
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	1420	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	16.1	ug/L	5.6	3.7	1.9	C
Nickel, Total	7440-02-0	2.9J	ug/L	5.6	3.7	1.9	C,J
Potassium, Total	7440-09-7	658	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	5.7	ug/L	5.6	3.7	1.9	C

Prep

Method	SW846 3015	Container	3225646013-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 7:08 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	11300	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646013-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:36 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**SP-201-20220202D**	Collected	**02/02/2022 4:18 PM**
Lab Sample ID	**3225646014**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646014-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/08/2022 3:45 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.89J	ug/L	1.0	0.75	0.33	C,J
1,1-Dichloroethane	75-34-3	0.87J	ug/L	1.0	0.75	0.33	C,J
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	2.5	ug/L	1.0	0.75	0.33	C
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	1.2	ug/L	1.0	0.75	0.33	C
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	0.47J	ug/L	1.0	0.75	0.33	C,J
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	22.1	ug/L	1.0	0.75	0.33	C
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.59J	ug/L	1.0	0.75	0.33	C,J
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-201-20220202D**	Collected	**02/02/2022 4:18 PM**
Lab Sample ID	**3225646014**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	
Dibromofluoromethane	1868-53-7	91.40%	80 – 119	
Toluene-d8	2037-26-5	97.70%	89 – 112	

Prep

Method	N/A	Container	3225646014-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818629	Dilution	10
Date	02/09/2022 12:39 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	225	ug/L	10.0	7.5	3.3	C

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	81 – 118	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	
Dibromofluoromethane	1868-53-7	94.70%	80 – 119	
Toluene-d8	2037-26-5	97.80%	89 – 112	

Client Sample ID	**SP-300-20220202D**	Collected	**02/02/2022 4:20 PM**
Lab Sample ID	**3225646015**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646015-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/08/2022 4:08 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	4.1	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-300-20220202D**	Collected	**02/02/2022 4:20 PM**
Lab Sample ID	**3225646015**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103 %	81 – 118	
4-Bromofluorobenzene	460-00-4	105 %	85 – 114	
Dibromofluoromethane	1868-53-7	89.90 %	80 – 119	
Toluene-d8	2037-26-5	98.30 %	89 – 112	

Client Sample ID	**SP-303-20220202D**	Collected	**02/02/2022 4:22 PM**
Lab Sample ID	**3225646016**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646016-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/08/2022 4:31 AM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	1.2	ug/L	1.0	0.75	0.33	C
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	5.4	ug/L	1.0	0.75	0.33	C
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**SP-303-20220202D**	Collected	**02/02/2022 4:22 PM**
Lab Sample ID	**3225646016**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102 %	81 – 118	
4-Bromofluorobenzene	460-00-4	104 %	85 – 114	
Dibromofluoromethane	1868-53-7	89.20 %	80 – 119	
Toluene-d8	2037-26-5	97.90 %	89 – 112	

Semi-Volatiles - GC/MS
EPA 522

Prep

Method	EPA 522	Container	3225646016-E(Na Sulfite and Na Bis
Batch	818641	Aliquot	100 mL
Date	02/09/2022 5:35 AM	Tech.	S7M

Analysis

Method	EPA 522	Fraction	
Batch	818728	Dilution	1
Date	02/09/2022 12:08 PM	Analyst	GEC

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,4-Dioxane	123-91-1	0.070U	ug/L	0.070	0.070	0.023	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,4-Dioxane-d8	17647-74-4	72.90 %	70 – 130	

Metals Analytical
SW846 6020B

Prep

Method	SW846 3015	Container	3225646016-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818261	Dilution	1
Date	02/07/2022 7:55 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Antimony, Total	7440-36-0	1.5U	ug/L	2.2	1.5	0.74	C,U
Arsenic, Total	7440-38-2	2.0U	ug/L	3.3	2.0	1.1	C,U
Barium, Total	7440-39-3	2.0J	ug/L	5.6	3.7	1.9	C,J
Beryllium, Total	7440-41-7	0.70U	ug/L	1.1	0.70	0.37	C,U
Cadmium, Total	7440-43-9	0.70U	ug/L	1.1	0.70	0.37	C,U
Calcium, Total	7440-70-2	4680	ug/L	110	73.0	37.0	C

Client Sample ID	**SP-303-20220202D**	Collected	**02/02/2022 4:22 PM**
Lab Sample ID	**3225646016**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Chromium, Total	7440-47-3	1.5U	ug/L	2.2	1.5	0.74	C,U
Cobalt, Total	7440-48-4	3.7U	ug/L	5.6	3.7	1.9	C,U
Iron, Total	7439-89-6	31.9J	ug/L	56.0	37.0	19.0	C,J
Lead, Total	7439-92-1	1.5U	ug/L	2.2	1.5	0.74	C,U
Magnesium, Total	7439-95-4	2380	ug/L	110	73.0	37.0	C
Manganese, Total	7439-96-5	3.7U	ug/L	5.6	3.7	1.9	C,U
Nickel, Total	7440-02-0	3.7U	ug/L	5.6	3.7	1.9	C,U
Potassium, Total	7440-09-7	13800	ug/L	110	73.0	37.0	C
Selenium, Total	7782-49-2	3.7U	ug/L	5.6	3.7	1.9	C,U
Silver, Total	7440-22-4	1.5U	ug/L	2.2	1.5	0.74	C,U
Thallium, Total	7440-28-0	0.70U	ug/L	1.1	0.70	0.37	C,U
Vanadium, Total	7440-62-2	1.5U	ug/L	2.2	1.5	0.74	C,U
Zinc, Total	7440-66-6	3.7U	ug/L	5.6	3.7	1.9	C,U

Prep

Method	SW846 3015	Container	3225646016-D(Nitric Acid)
Batch	818145	Aliquot	45 mL
Date	02/06/2022 10:07 PM	Tech.	SXC

Analysis

Method	SW846 6020B	Fraction	ICP_MS
Batch	818577	Dilution	1
Date	02/08/2022 7:28 PM	Analyst	RMD

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Aluminum, Total	7429-90-5	59.0U	ug/L	89.0	59.0	30.0	C,U
Copper, Total	7440-50-8	3.7U	ug/L	5.6	3.7	1.9	C,U
Sodium, Total	7440-23-5	11700	ug/L	110	73.0	37.0	C

Metals Analytical
SW846 7470A

Prep

Method	SW846 7470A	Container	3225646016-D(Nitric Acid)
Batch	819149	Aliquot	5 mL
Date	02/11/2022 12:45 PM	Tech.	A1S

Analysis

Method	SW846 7470A	Fraction	Hg
Batch	819188	Dilution	1
Date	02/11/2022 4:37 PM	Analyst	A1S

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Mercury, Total	7439-97-6	0.33U	ug/L	0.50	0.33	0.16	C,U

Client Sample ID	**Trip Blank**	Collected	**02/02/2022 12:00 AM**
Lab Sample ID	**3225646017**	Lab Receipt	**02/04/2022 8:45 AM**

Volatiles - GC/MS
SW846 8260C

Prep

Method	N/A	Container	3225646017-A(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260C	Fraction	VOA_Trace
Batch	818291	Dilution	1
Date	02/07/2022 11:37 PM	Analyst	PDK

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
1,1,1-Trichloroethane	71-55-6	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2,2-Tetrachloroethane	79-34-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1,2-Trichloroethane	79-00-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethane	75-34-3	0.75U	ug/L	1.0	0.75	0.33	C,U
1,1-Dichloroethene	75-35-4	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichlorobenzene	95-50-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloroethane	107-06-2	0.75U	ug/L	1.0	0.75	0.33	C,U
1,2-Dichloropropane	78-87-5	0.75U	ug/L	1.0	0.75	0.33	C,U
1,3-Dichlorobenzene	541-73-1	0.75U	ug/L	1.0	0.75	0.33	C,U
1,4-Dichlorobenzene	106-46-7	0.75U	ug/L	1.0	0.75	0.33	C,U
2-Butanone	78-93-3	3.8U	ug/L	5.0	3.8	1.6	C,U
2-Hexanone	591-78-6	3.8U	ug/L	5.0	3.8	1.6	C,U
4-Methyl-2-Pentanone(MIBK)	108-10-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Acetone	67-64-1	3.8U	ug/L	5.0	3.8	1.6	C,U
Benzene	71-43-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromodichloromethane	75-27-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromoform	75-25-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Bromomethane	74-83-9	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Disulfide	75-15-0	0.75U	ug/L	1.0	0.75	0.33	C,U
Carbon Tetrachloride	56-23-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorobenzene	108-90-7	0.75U	ug/L	1.0	0.75	0.33	C,U
Chlorodibromomethane	124-48-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroethane	75-00-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloroform	67-66-3	0.75U	ug/L	1.0	0.75	0.33	C,U
Chloromethane	74-87-3	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,2-Dichloroethene	156-59-2	0.75U	ug/L	1.0	0.75	0.33	C,U
cis-1,3-Dichloropropene	10061-01-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Ethylbenzene	100-41-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Freon 113	76-13-1	0.75U	ug/L	1.0	0.75	0.33	C,U
Isopropylbenzene	98-82-8	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl cyclohexane	108-87-2	0.75U	ug/L	1.0	0.75	0.33	C,U
Methyl t-Butyl Ether	1634-04-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Methylene Chloride	75-09-2	0.75U	ug/L	1.0	0.75	0.33	C,U
mp-Xylene	108383/106423	1.5U	ug/L	2.0	1.5	0.66	C,U
o-Xylene	95-47-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Styrene	100-42-5	0.75U	ug/L	1.0	0.75	0.33	C,U
Tetrachloroethene	127-18-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Toluene	108-88-3	0.75U	ug/L	1.0	0.75	0.33	C,U
trans-1,2-Dichloroethene	156-60-5	0.75U	ug/L	1.0	0.75	0.33	C,U

Client Sample ID	**Trip Blank**	Collected	**02/02/2022 12:00 AM**
Lab Sample ID	**3225646017**	Lab Receipt	**02/04/2022 8:45 AM**

RESULTS

Compound	CAS No	Result	Units	LOQ	LOD	DL	Qualifiers
Trichloroethene	79-01-6	0.75U	ug/L	1.0	0.75	0.33	C,U
Trichlorofluoromethane	75-69-4	0.75U	ug/L	1.0	0.75	0.33	C,U
Vinyl Chloride	75-01-4	0.75U	ug/L	1.0	0.75	0.33	C,U

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104 %	81 – 118	
4-Bromofluorobenzene	460-00-4	105 %	85 – 114	
Dibromofluoromethane	1868-53-7	92.80 %	80 – 119	
Toluene-d8	2037-26-5	98.20 %	89 – 112	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3225646001	SP-100-20220202A	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		SW846 8260C	N/A	
3225646002	SP-201-20220202A	SW846 8260C	N/A	
3225646003	SP-300-20220202A	SW846 8260C	N/A	
3225646004	SP-303-20220202A	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		EPA 522	EPA 522	
		SW846 8260C	N/A	
3225646005	SP-100-20220202B	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		SW846 8260C	N/A	
3225646006	SP-201-20220202B	SW846 8260C	N/A	
3225646007	SP-300-20220202B	SW846 8260C	N/A	
3225646008	SP-303-20220202B	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		EPA 522	EPA 522	
		SW846 8260C	N/A	
3225646009	SP-100-20220202C	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		SW846 8260C	N/A	
3225646010	SP-201-20220202C	SW846 8260C	N/A	
3225646011	SP-300-20220202C	SW846 8260C	N/A	
3225646012	SP-303-20220202C	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		EPA 522	EPA 522	
		SW846 8260C	N/A	
3225646013	SP-100-20220202D	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		SW846 8260C	N/A	
3225646014	SP-201-20220202D	SW846 8260C	N/A	
3225646015	SP-300-20220202D	SW846 8260C	N/A	
3225646016	SP-303-20220202D	SW846 6020B	SW846 3015	
		SW846 7470A	SW846 7470A	
		EPA 522	EPA 522	
		SW846 8260C	N/A	
3225646017	Trip Blank	SW846 8260C	N/A	

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3225646
Logged By: SJB
PM: SJB
ALS Quote #:
of

Client Name: Earth Tonics/GW888801
Address: NWIRP Bethpage, NY
400 Pem
Contact: Ernie [redacted] WW
Phone#: 757-466-4901
Project Name/#: NWIRP Bethpage
Bill To:
Purchase Order #: NWIRP Bethpage CTO WE13

TAT
- [ ] Normal-Standard TAT is 10-12 business days.
- [X] Rush-Subject to ALS approval and surcharges.

Date Required: Approved? 7day
Email? [ ] -Y

	Container Type	Container Size	Preservative
	C	P	AN
	40ml	125mL	500mL
	HCl	HNO3	Sodium Sulfite Caution

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	DoD 8260C	TAL metals	DoD EPA 537	Enter Number of Containers Per Sample or Field Results Below.
1	SP-100-20220202A	2/2/22	14:00		G	GW	X3	X1		
2	SP-201-20220202A		1405				X3			
3	SP-300-20220202A		1410				X3			
4	SP-303-20220202A		1415				X3	X1	X1	
5	SP-100-20220202B		1455				X3	X1		
6	SP-201-20220202B		1459				X3			
7	SP-300-20220202B		1505				X3			
8	SP-303-20220202B		1510				X3	X1	X1	
9	SP-100-20220202C		1552				X3	X1		
10	SP-20[redacted]-20220202C		15[redacted]				X3			

SAMPLED BY (Please Print, if MD include Sampler #):
Comments:

Receipt Information (completed by receiving Lab)
Temp Taken By: Dan Therm ID: 570
Receipt Info completed by: DJM WO Temp (°C)

Cooler Custody Seals Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	(Y)	N	NA
Coolers & Samples Intact	(Y)	N	
Correct Containers Provided	(Y)	N	
Sample Label/COC Agree	(Y)	N	
Adequate Sample Volumes	(Y)	N	03L
VOA only: Headspace Present	(Y)	N	(NA)
VOA only: Trip Blank	(Y)	N	(NA)

Deviations? NO YES
If YES, list below:
Client contact:
Date/Tech:

NJ ≤ 4 days? ~~Y~~ N
Courier/Tracking #: 775951641087

Sample(s) for Radiation testing? Y N
Reportable SDWA Sample(s)? Y N
Rad Screen (uCi)
New Source? Y N
SDWA State of Origin?
New Source Contact:
PWSID #
PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Date:	Time		Relinquished By / Company Name		Received By / Company Name
		1		2	
2/3/2022	14:30	3	Tetra Tech	4	Fed ex
2/4/2022	845	5	Fed ex	6	[redacted]
		7		8	
		9		10	

Data Deliverables: Standard Lvl 1 [ ], Standard Lvl 2 [ ], Standard Lvl 3 [ ], Standard Lvl 4 [ ]; CLP-like [ ], DOD [X], NJ RED [ ], NJ Full [ ]; HSCA [ ], Landfill [ ], NJ GW [ ], [ ]

EDD: Excel Summary [ ], Equis [ ], Custom [ ]

Sample Disposal: Lab [ ], Special [ ]

EDDS: Format Type

State Samples Collected In: NY [X], NJ [ ], PA [ ], WV [ ], FL [ ], other [ ]

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

Rev 12/21

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #:

ALS Quote #:

of

Client Name: Earth Toxics / QU88880 1

Address:

Contact: Ernie Wu

Phone#: 757-466-4901

Project Name/#: NWIRP Bethpage

Bill To:

Purchase Order #: NWIRP Bethpage CTO WE13

TAT: [ ] Normal-Standard TAT is 10-12 business days. [X] Rush-Subject to ALS approval and surcharges.

Date Required: Approved? 7day

Email? [ ]-Y

	Container Type	C	P	AN							
	Container Size	40ml	125ml	500ml							
	Preservative	HCl	HNO3	Sodium sulfite Sodium							

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	DOD 8260C	DOD TAL metals	DOD EPA 537.1	
1	SP-300-20220202C	2/2/22	1600		G	GW	X3			Enter Number of Containers Per Sample or Field Results Below.
2	SP-303-20220202C		1604				X3	X1	X1	
3	SP-100-20220202D		16:15				X3	X1		
4	SP-201-20220202D		16:18				X3			
5	SP-300-20220202D		16:20				X3			
6	SP-303-20220202D		16:22				X3	X1	X1	
7	Trip Blank						X3			
8										
9										
10										

SAMPLED BY (Please Print, if MD include Sampler #):

Comments:

Receipt Information (completed by Receiving Lab)

Temp Taken By: Dan M Therm ID: 510

Receipt Info completed by: DJM WO Temp (°C) 0

Cooler Custody Seals Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	Y	N	NA
Coolers & Samples Intact	Y	N	
Correct Containers Provided	Y	N	
Sample Label/COC Agree	Y	N	
Adequate Sample Volumes	Y	N	
VOA only: Headspace Present	Y	N	NA
VOA only: Trip Blank	Y	N	NA

Deviations? NO YES If YES, list below:

NJ ≤ 4 days? ~~Y~~ N

Courier/Tracking #: 277951647897

Client contact: Date/Tech:

Sample(s) for Radiation testing? Y N Rad Screen (uCi)

Reportable SDWA Sample(s)? Y N New Source? Y N

SDWA State of Origin? New Source Contact:

PWSID #

PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Date:	Time		Relinquished By / Company Name		Received By / Company Name
		1		2	
2/3/2022	14:30	3	Tetra Tech	4	
		5		6	
		7		8	
		9		10	

Data Deliverables: [ ] Standard Lvl 1 [ ] Standard Lvl 2 [ ] Standard Lvl 3 [ ] Standard Lvl 4 [ ] CLP-like [X] DOD [ ] NJ RED [ ] NJ Full [ ] HSCA [ ] Landfill [ ] NJ GW [ ]

EDD: [ ] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: [ ] Lab [ ] Special

EDDS: Format Type

State Samples Collected In: [X] NY [ ] NJ [ ] PA [ ] WV [ ] FL [ ] other

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-71758-1
Client Project/Site: RE137 Treatment System, NWIRP Bethpage

For:
Tetra Tech, Inc.
Foster Plaza VII
661 Anderson Drive
Foster Plaza 7 Suite 200
Pittsburgh, Pennsylvania 15220

Attn: Karen Lyons

Darlene Bandy

Authorized for release by:
2/10/2022 12:14:00 PM
Darlene Bandy, Project Mgmt. Assistant
(717)725-7342
Darlene.Bandy@Eurofinset.com

Designee for

Stephen Gordon, Senior Project Manager
(412)525-0071
Stephen.Gordon@eurofinset.com

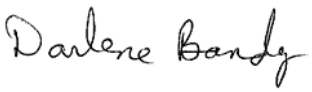
Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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

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



Darlene Bandy
Project Mgmt. Assistant
2/10/2022 12:14:00 PM

Table of Contents

Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
D	The reported value is from a dilution.
M	Manual integrated compound.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-71758-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-71758-1

Receipt
The samples were received on 2/4/2022 9:59 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.9°C

Receipt Exceptions
There was 1 HCl vial received with no label on it. - Client confirmed this is a Trip Blank.

SP-100-20220202A (410-71758-1), SP-201-20220202A (410-71758-2), SP-300-20220202A (410-71758-3), SP-303-20220202A (410-71758-4), SP-100-20220202B (410-71758-5), SP-201-20220202B (410-71758-6), SP-300-20220202B (410-71758-7), SP-303-20220202B (410-71758-8), SP-100-20220202C (410-71758-9), SP-201-20220202C (410-71758-10), SP-300-20220202C (410-71758-11), SP-303-20220202C (410-71758-12), SP-100-20220202D (410-71758-13), SP-201-20220202D (410-71758-14), SP-300-20220202D (410-71758-15), SP-303-20220202D (410-71758-16) and Trip Blank (410-71758-17)

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

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-100-20220202A — Lab Sample ID: 410-71758-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	17	D	2.0	1.7	0.85	ug/L	5		8260C SIM 14D	Total/NA

Client Sample ID: SP-201-20220202A — Lab Sample ID: 410-71758-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.6		0.40	0.34	0.17	ug/L	1		8260C SIM 14D	Total/NA

Client Sample ID: SP-300-20220202A — Lab Sample ID: 410-71758-3

No Detections.

Client Sample ID: SP-303-20220202A — Lab Sample ID: 410-71758-4

No Detections.

Client Sample ID: SP-100-20220202B — Lab Sample ID: 410-71758-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	18	D	2.0	1.7	0.85	ug/L	5		8260C SIM 14D	Total/NA

Client Sample ID: SP-201-20220202B — Lab Sample ID: 410-71758-6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	6.2		0.40	0.34	0.17	ug/L	1		8260C SIM 14D	Total/NA

Client Sample ID: SP-300-20220202B — Lab Sample ID: 410-71758-7

No Detections.

Client Sample ID: SP-303-20220202B — Lab Sample ID: 410-71758-8

No Detections.

Client Sample ID: SP-100-20220202C — Lab Sample ID: 410-71758-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	18	D	2.0	1.7	0.85	ug/L	5		8260C SIM 14D	Total/NA

Client Sample ID: SP-201-20220202C — Lab Sample ID: 410-71758-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	M	0.40	0.34	0.17	ug/L	1		8260C SIM 14D	Total/NA

Client Sample ID: SP-300-20220202C — Lab Sample ID: 410-71758-11

No Detections.

Client Sample ID: SP-303-20220202C — Lab Sample ID: 410-71758-12

No Detections.

Client Sample ID: SP-100-20220202D — Lab Sample ID: 410-71758-13

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	18	D	2.0	1.7	0.85	ug/L	5		8260C SIM 14D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-201-20220202D
Lab Sample ID: 410-71758-14

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.5		0.40	0.34	0.17	ug/L	1		8260C SIM 14D	Total/NA

Client Sample ID: SP-300-20220202D
Lab Sample ID: 410-71758-15

No Detections.

Client Sample ID: SP-303-20220202D
Lab Sample ID: 410-71758-16

No Detections.

Client Sample ID: Trip Blank
Lab Sample ID: 410-71758-17

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-100-20220202A
Lab Sample ID: 410-71758-1
Date Collected: 02/02/22 14:00
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	17	D	2.0	1.7	0.85	ug/L		02/09/22 18:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*83*		*80 - 120*		*02/09/22 18:58*	*5*

Client Sample ID: SP-201-20220202A
Lab Sample ID: 410-71758-2
Date Collected: 02/02/22 14:05
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	5.6		0.40	0.34	0.17	ug/L		02/09/22 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*84*		*80 - 120*		*02/09/22 17:36*	*1*

Client Sample ID: SP-300-20220202A
Lab Sample ID: 410-71758-3
Date Collected: 02/02/22 14:10
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*80 - 120*		*02/09/22 14:14*	*1*

Client Sample ID: SP-303-20220202A
Lab Sample ID: 410-71758-4
Date Collected: 02/02/22 14:15
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*80 - 120*		*02/09/22 14:34*	*1*

Client Sample ID: SP-100-20220202B
Lab Sample ID: 410-71758-5
Date Collected: 02/02/22 14:55
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	18	D	2.0	1.7	0.85	ug/L		02/09/22 19:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*84*		*80 - 120*		*02/09/22 19:18*	*5*

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-201-20220202B
Lab Sample ID: 410-71758-6
Date Collected: 02/02/22 14:59
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	6.2		0.40	0.34	0.17	ug/L		02/09/22 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*84*		*80 - 120*		*02/09/22 17:57*	*1*

Client Sample ID: SP-300-20220202B
Lab Sample ID: 410-71758-7
Date Collected: 02/02/22 15:05
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*80 - 120*		*02/09/22 14:54*	*1*

Client Sample ID: SP-303-20220202B
Lab Sample ID: 410-71758-8
Date Collected: 02/02/22 15:10
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 15:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*02/09/22 15:15*	*1*

Client Sample ID: SP-100-20220202C
Lab Sample ID: 410-71758-9
Date Collected: 02/02/22 15:52
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	18	D	2.0	1.7	0.85	ug/L		02/09/22 19:38	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*83*		*80 - 120*		*02/09/22 19:38*	*5*

Client Sample ID: SP-201-20220202C
Lab Sample ID: 410-71758-10
Date Collected: 02/02/22 15:55
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	1.9	M	0.40	0.34	0.17	ug/L		02/09/22 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*02/09/22 15:35*	*1*

Client Sample ID: SP-300-20220202C — Lab Sample ID: 410-71758-11

Date Collected: 02/02/22 16:00 **Matrix: Water**
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*02/09/22 15:55*	*1*

Client Sample ID: SP-303-20220202C — Lab Sample ID: 410-71758-12

Date Collected: 02/02/22 16:04 **Matrix: Water**
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*02/09/22 16:16*	*1*

Client Sample ID: SP-100-20220202D — Lab Sample ID: 410-71758-13

Date Collected: 02/02/22 16:15 **Matrix: Water**
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	**18**	**D**	2.0	1.7	0.85	ug/L		02/09/22 19:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*83*		*80 - 120*		*02/09/22 19:58*	*5*

Client Sample ID: SP-201-20220202D — Lab Sample ID: 410-71758-14

Date Collected: 02/02/22 16:18 **Matrix: Water**
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	**4.5**		0.40	0.34	0.17	ug/L		02/09/22 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*83*		*80 - 120*		*02/09/22 18:17*	*1*

Client Sample ID: SP-300-20220202D — Lab Sample ID: 410-71758-15

Date Collected: 02/02/22 16:20 **Matrix: Water**
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*84*		*80 - 120*		*02/09/22 16:36*	*1*

Client Sample ID: SP-303-20220202D

Lab Sample ID: 410-71758-16
Date Collected: 02/02/22 16:22
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*02/09/22 16:56*	*1*

Client Sample ID: Trip Blank

Lab Sample ID: 410-71758-17
Date Collected: 02/02/22 00:00
Matrix: Water
Date Received: 02/04/22 09:59

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*02/09/22 13:54*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	TOL (80-120)						
410-71758-1	SP-100-20220202A	83						
410-71758-2	SP-201-20220202A	84						
410-71758-3	SP-300-20220202A	86						
410-71758-4	SP-303-20220202A	86						
410-71758-5	SP-100-20220202B	84						
410-71758-6	SP-201-20220202B	84						
410-71758-7	SP-300-20220202B	86						
410-71758-8	SP-303-20220202B	85						
410-71758-9	SP-100-20220202C	83						
410-71758-10	SP-201-20220202C	85						
410-71758-11	SP-300-20220202C	85						
410-71758-12	SP-303-20220202C	85						
410-71758-13	SP-100-20220202D	83						
410-71758-14	SP-201-20220202D	83						
410-71758-15	SP-300-20220202D	84						
410-71758-16	SP-303-20220202D	85						
410-71758-17	Trip Blank	85						
LCS 410-222217/4	Lab Control Sample	87						
LCSD 410-222217/5	Lab Control Sample Dup	86						
MB 410-222217/7	Method Blank	88						

Surrogate Legend

TOL = Toluene-d8 (Surr)

Method: 8260C SIM 14D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-222217/7
Matrix: Water
Analysis Batch: 222217

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,4-Dioxane	<0.34		0.40	0.34	0.17	ug/L		02/09/22 11:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*80 - 120*		*02/09/22 11:12*	*1*

Lab Sample ID: LCS 410-222217/4
Matrix: Water
Analysis Batch: 222217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			4.98	5.52	M	ug/L		111	59 - 139		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*87*		*80 - 120*

Lab Sample ID: LCSD 410-222217/5
Matrix: Water
Analysis Batch: 222217

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			4.98	4.79		ug/L		96	59 - 139	14	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*86*		*80 - 120*

QC Association Summary

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

GC/MS VOA

Analysis Batch: 222217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-71758-1	SP-100-20220202A	Total/NA	Water	8260C SIM 14D	
410-71758-2	SP-201-20220202A	Total/NA	Water	8260C SIM 14D	
410-71758-3	SP-300-20220202A	Total/NA	Water	8260C SIM 14D	
410-71758-4	SP-303-20220202A	Total/NA	Water	8260C SIM 14D	
410-71758-5	SP-100-20220202B	Total/NA	Water	8260C SIM 14D	
410-71758-6	SP-201-20220202B	Total/NA	Water	8260C SIM 14D	
410-71758-7	SP-300-20220202B	Total/NA	Water	8260C SIM 14D	
410-71758-8	SP-303-20220202B	Total/NA	Water	8260C SIM 14D	
410-71758-9	SP-100-20220202C	Total/NA	Water	8260C SIM 14D	
410-71758-10	SP-201-20220202C	Total/NA	Water	8260C SIM 14D	
410-71758-11	SP-300-20220202C	Total/NA	Water	8260C SIM 14D	
410-71758-12	SP-303-20220202C	Total/NA	Water	8260C SIM 14D	
410-71758-13	SP-100-20220202D	Total/NA	Water	8260C SIM 14D	
410-71758-14	SP-201-20220202D	Total/NA	Water	8260C SIM 14D	
410-71758-15	SP-300-20220202D	Total/NA	Water	8260C SIM 14D	
410-71758-16	SP-303-20220202D	Total/NA	Water	8260C SIM 14D	
410-71758-17	Trip Blank	Total/NA	Water	8260C SIM 14D	
MB 410-222217/7	Method Blank	Total/NA	Water	8260C SIM 14D	
LCS 410-222217/4	Lab Control Sample	Total/NA	Water	8260C SIM 14D	
LCSD 410-222217/5	Lab Control Sample Dup	Total/NA	Water	8260C SIM 14D	

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-100-20220202A — Lab Sample ID: 410-71758-1
Date Collected: 02/02/22 14:00 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		5	222217	02/09/22 18:58	USEJ	ELLE

Client Sample ID: SP-201-20220202A — Lab Sample ID: 410-71758-2
Date Collected: 02/02/22 14:05 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 17:36	USEJ	ELLE

Client Sample ID: SP-300-20220202A — Lab Sample ID: 410-71758-3
Date Collected: 02/02/22 14:10 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 14:14	USEJ	ELLE

Client Sample ID: SP-303-20220202A — Lab Sample ID: 410-71758-4
Date Collected: 02/02/22 14:15 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 14:34	USEJ	ELLE

Client Sample ID: SP-100-20220202B — Lab Sample ID: 410-71758-5
Date Collected: 02/02/22 14:55 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		5	222217	02/09/22 19:18	USEJ	ELLE

Client Sample ID: SP-201-20220202B — Lab Sample ID: 410-71758-6
Date Collected: 02/02/22 14:59 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 17:57	USEJ	ELLE

Client Sample ID: SP-300-20220202B — Lab Sample ID: 410-71758-7
Date Collected: 02/02/22 15:05 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 14:54	USEJ	ELLE

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-303-20220202B — Lab Sample ID: 410-71758-8
Date Collected: 02/02/22 15:10 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 15:15	USEJ	ELLE

Client Sample ID: SP-100-20220202C — Lab Sample ID: 410-71758-9
Date Collected: 02/02/22 15:52 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		5	222217	02/09/22 19:38	USEJ	ELLE

Client Sample ID: SP-201-20220202C — Lab Sample ID: 410-71758-10
Date Collected: 02/02/22 15:55 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 15:35	USEJ	ELLE

Client Sample ID: SP-300-20220202C — Lab Sample ID: 410-71758-11
Date Collected: 02/02/22 16:00 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 15:55	USEJ	ELLE

Client Sample ID: SP-303-20220202C — Lab Sample ID: 410-71758-12
Date Collected: 02/02/22 16:04 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 16:16	USEJ	ELLE

Client Sample ID: SP-100-20220202D — Lab Sample ID: 410-71758-13
Date Collected: 02/02/22 16:15 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		5	222217	02/09/22 19:58	USEJ	ELLE

Client Sample ID: SP-201-20220202D — Lab Sample ID: 410-71758-14
Date Collected: 02/02/22 16:18 — **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 18:17	USEJ	ELLE

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Client Sample ID: SP-300-20220202D — Lab Sample ID: 410-71758-15

Date Collected: 02/02/22 16:20 **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 16:36	USEJ	ELLE

Client Sample ID: SP-303-20220202D — Lab Sample ID: 410-71758-16

Date Collected: 02/02/22 16:22 **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 16:56	USEJ	ELLE

Client Sample ID: Trip Blank — Lab Sample ID: 410-71758-17

Date Collected: 02/02/22 00:00 **Matrix: Water**
Date Received: 02/04/22 09:59

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM 14D		1	222217	02/09/22 13:54	USEJ	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22
New York	NELAP	10670	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C SIM 14D		Water	1,4-Dioxane

Method Summary

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Method	Method Description	Protocol	Laboratory
8260C SIM 14D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

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

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 410-71758-1
Project/Site: RE137 Treatment System, NWIRP Bethpage

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-71758-1	SP-100-20220202A	Water	02/02/22 14:00	02/04/22 09:59
410-71758-2	SP-201-20220202A	Water	02/02/22 14:05	02/04/22 09:59
410-71758-3	SP-300-20220202A	Water	02/02/22 14:10	02/04/22 09:59
410-71758-4	SP-303-20220202A	Water	02/02/22 14:15	02/04/22 09:59
410-71758-5	SP-100-20220202B	Water	02/02/22 14:55	02/04/22 09:59
410-71758-6	SP-201-20220202B	Water	02/02/22 14:59	02/04/22 09:59
410-71758-7	SP-300-20220202B	Water	02/02/22 15:05	02/04/22 09:59
410-71758-8	SP-303-20220202B	Water	02/02/22 15:10	02/04/22 09:59
410-71758-9	SP-100-20220202C	Water	02/02/22 15:52	02/04/22 09:59
410-71758-10	SP-201-20220202C	Water	02/02/22 15:55	02/04/22 09:59
410-71758-11	SP-300-20220202C	Water	02/02/22 16:00	02/04/22 09:59
410-71758-12	SP-303-20220202C	Water	02/02/22 16:04	02/04/22 09:59
410-71758-13	SP-100-20220202D	Water	02/02/22 16:15	02/04/22 09:59
410-71758-14	SP-201-20220202D	Water	02/02/22 16:18	02/04/22 09:59
410-71758-15	SP-300-20220202D	Water	02/02/22 16:20	02/04/22 09:59
410-71758-16	SP-303-20220202D	Water	02/02/22 16:22	02/04/22 09:59
410-71758-17	Trip Blank	Water	02/02/22 00:00	02/04/22 09:59

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone 717-656-2300 Fax 717-656-2681

Chain of Custody Record

eurofins Environment Testing America

410-71758 Chain of Custody

Client Information			
Client Contact: ~~Elizabeth Menees~~ Ernie Wu	Sampler: Paul Johnson	Lab PM: Gordon, Stephen J	COC No: 10-48483-13509 1
Company: Tetra Tech, Inc.	Phone: 904-554-0869	E-Mail: Stephen Gordon@eurofinset com	Page: Page 1 of 2
Address: ~~400 Penn Center Boulevard Suite 700~~ 661 Andersen Dr	PWSID:	State of Origin: NY	Job #:
City: Pittsburgh	Due Date Requested:		
State, Zip: PA, ~~15235~~ 15220	TAT Requested (days): 7 days		
Phone: 412-921-8893(Tel)	Compliance Project: Δ Yes ☒ No		
Email: ~~Liz.Menees@tetratech.com~~ Ernie.Wu@tetratech.com	PO #: ~~1132878-WE15~~		
Project Name: NWIRP ~~Calverton NY~~ Bethpage NY	WO #: CTO ~~ML4227~~ WE13		
Site: RE137	Project #: ~~41007527~~		
	SSOW#:		

Analysis Requested: Field Filtered Sample (Yes or No); Perform MS/MSD (Yes or No); 8260C_SIM14D_DS - 1,4-Dioxane 8260C SIM; Total Number of containers

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample	Perform MS/MSD	8260C_SIM14D_DS - 1,4-Dioxane 8260C SIM	Total Number of containers	Special Instructions/Note
			Preservation Code:		X	X	A	X	
SP-100-20220202A	2/2/22	14:00	G	Water			X		
SP-201-20220202A	2/2/22	14:05	G	Water			X		
SP-300-20220202A	2/2/22	14:10	G	Water			X		
SP-303-20220202A	2/2/22	14:15	G	Water			X		
SP-100-20220202B	2/2/22	14:55	G	Water			X		
SP-201-20220202B	2/2/22	14:59	G	Water			X		
SP-300-20220202B	2/2/22	15:05	C	Water			X		
SP-303-20220202B	|	15:10	G	Water			X		
SP-100-20220202C	|	15:52	G	Water			X		
SP-201-20220202C	|	15:55	G	Water			X		
SP-300-20220202C	|	16:00	G	Water			X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: [illegible]	Date/Time: 1-21-22 09:30	Company: ELLE	Received by:	Date/Time:	Company:
Relinquished by: [illegible]	Date/Time: 2/3/2022 14:30	Company: Tetra Tech	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by: [illegible]	Date/Time: 2/4/22 0959	Company: OFVE

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
X Yes Δ No		3.9

Ver: 06/08/2021

2/10/2022

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone 717-656-2300 Fax 717-656-2681

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Paul Johnson	Lab PM: Gordon, Stephen J	Carrier Tracking No(s):	COC No: 410-48483-13509.2
Client Contact: ~~Elizabeth Hanes~~ Ernie Wu	Phone: 904-554-0869	E-Mail: Stephen.Gordon@eurofinset.com	State of Origin: NY	Page: Page 2 of 2
Company: Tetra Tech, Inc.	PWSID:	Analysis Requested		Job #:
Address: ~~400 Penn Center Boulevard, Suite 700~~ 661 Andersen Dr	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: Pittsburgh	TAT Requested (days): 7 days			
State, Zip: PA, ~~15235~~ 15220	Compliance Project: Δ Yes X No			
Phone: 412-921-~~8084 (Tel)~~ 7090	PO #: ~~1183376 WR 13~~			
Email: ~~Liz.Hanes@tetratech.com~~ Ernie.Wu@tetratech.com	WO #: CTO ~~M4927~~ WE 13			
Project Name: NWIRP ~~Calverton NY~~ Bethpage NY	Project #: ~~41087537~~			
Site: RE137	SSOW#:			Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C_SIM14D_DS - 1,4-Dioxane 8260C SIM	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
SP-302-20220202C	2/2/22	16:04	G	Water			X		
SP-100-20220202D		16:15		Water			X		
SP-201-20220202D		16:18		Water			X		
SP-300-20220202D		16:20		Water			X		
SP-303-20220202D		16:22		Water			X		
Trip Blank				Water			X		
				Water					
				Water					
				Water					
				Water					
				Water					

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: Paul Johnson	Date/Time: 2/3/2022 14:30	Company: Tetra Tech	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 2/4/22 0959	Company: ONB	

Custody Seals Intact: ☒ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.9

Ver: 06/08/2021

2/10/2022

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-71758-1

Login Number: 71758
List Number: 1
Creator: McCaskey, Jonathan

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	