INVENTUM ENGINEERING PC

March 18, 2022

To: Benjamin McPherson (NYSDEC), Angela Martin (NYSDOH)

From: James Edwards (Inventum)

CC: Jon Williams (Riverview); John Yensan (OSC); John Black, P.E. and Todd Waldrop (Inventum)

RE: Groundwater IRM Work Plan – Addendum
West Production Area
Riverview Innovation & Technology Campus, Inc. (Riverview)
Brownfield Cleanup Program Site No. C915353
Town of Tonawanda, New York

Inventum Engineering, P.C. (Inventum), on behalf of Riverview Innovation & Technology Campus, Inc. (Riverview), is submitting this West Production Area Groundwater Interim Remedial Measure (IRM) Work Plan Addendum to outline the proposed modifications to the Groundwater IRM work plan as a result of the bench-scale testing conducted by Groundwater Treatment Technology (GWTT). The approved Groundwater IRM Work Plan was submitted to the New York State Department of Environmental conservation (NYSDEC) on December 20, 2021. This Addendum documents and present the proposed changes in the initial treatment system components that resulted from the bench-scale testing conducted on samples of groundwater from the Riverview Brownfield Cleanup Program (BCP) Site.

Background and Purpose

The primary purpose of the Groundwater IRM work plan dated December 20, 2021, is to collect and treat groundwater that had, and has the potential to, transport site-related compounds, and particularly ammonia, cyanide and mercury to the stormwater collection system and ultimately the treatment ponds.

Treatment System

The approved Groundwater IRM work plan included a treatability bench test (bench test) to be completed by GWTT prior to the final selection of the initial treatment system equipment components. The bench test was completed by GWTT in February 2022 and a summary of their findings are provided in Appendix A along with the supporting analytical data. As a result of the bench test findings, the chemical oxidation component has been removed due to the lack of free cyanide in the influent source water and the effectiveness of chemical oxidation to reduce the cyanide concentrations in the bench test effluent samples. The air stripper and the vapor phase carbon to treat the air stripper effluent vapor, have been removed from the treatment system. The bench test results showed the air stripping process produced little to no reduction of ammonia concentrations which is the primary constituent targeted by that technology. Volatile Organic Compound (VOC) reduction has been shown to be achievable using the Organoclay (OGC)/Granular Activated Carbon (GAC) filtration, although the size and contact time have been increased for the proposed system.

The bench test was designed to confirm that the metals present in the influent are both dissolved and suspended. The bench-scale testing demonstrated that a dissolved phase polishing technology in addition to the use of bag filters for mechanical filtration will be required to reduce the metals concentrations. The proposed treatment system includes a blend of adsorptive media (OGC/GAC) which were shown to reduce the dissolved metals. A final mechanical filtration step consisting of 0.5-micron cartridge filters has been added. The filtration capacity of cartridge filters may be adjusted if start up or operational testing demonstrates that adequate filtration can be achieved with a 1-micron or larger cartridge filters.

The proposed groundwater treatment system will be installed in the former maintenance shop. The proposed treatment system which is shown on Figure 3 (GWTT Drawing Q009839-M-400) is designed to handle the range of compounds and concentrations based on the expected influent quality as tested during the bench scale study in the GWTT laboratory. As multiple sources will feed the system, the water will be treated using the following treatment components:

1. A nominal 18,000-gallon influent settling or weir tank, with a dedicated secondary containment, will be located within the former maintenance shop and will be used as needed to reduce the total solids concentration directed to the oil water separator.
2. Oil/water Separator (OWS) – NAPL and passive organic compound treatment including; a oil skimmer to remove light NAPL; and a coalescing media pack and a parallel corrugated plate coalescer to collect dense NAPL
3. Chemical pH adjustment – to adjust pH if needed in an equalization tank after the (OWS)
4. Chemical Precipitation – TSS and filterable metals;
5. Bag Filtration – TSS and Particulate Metals (Polishing Phase);
6. OGC/GAC filtration/absorption – dissolved VOCs, Semi-volatile Organic Compounds (SVOCs) and dissolved metals. Two organoclay/granular activated carbon (GAC)vessels will be operated in a series. The volume of each vessel is 75 cubic feet and contains 3,000 pounds of filter media.
7. Cartridge Filtration – TSS and Colloidal Metals (polishing phase); and
8. Effluent Holding.

The weir tank has been installed inside the treatment building to reduce the likelihood of groundwater freezing within the tank during a cold weather shutdown. A photoionization detector (PID) or instrument capable of VOCs monitoring and a lower explosive limit (LEL) meter will be installed near the opening to the weir tank which will be set to alarm if action levels are detected. A separate secondary containment has been constructed around the weir tank with a storage capacity of approximately 1,600 gallons, which is in addition to the secondary storage capacity within the building. Therefore, increasing the building storage capacity above approximately 9,240 gallons.

Routine air samples will no longer be required since that the air stripper and vapor phase carbon are removed from the treatment system design.

During the proposed groundwater treatment system startup, testing, and for the trial period of operation, the effluent will be discharged to the Town of Tonawanda under Permit No. 331 with a specific approval for discharge from the treatment system received from the Pre-treatment Coordinator. Following the trial period operation and testing, application for permit equivalence under Part 375-1.12 will be submitted. If

the permit equivalence is approved by the NYSDEC, the system will discharge to the North Storm Sewer or the Box Culvert for final treatment through the North and South Settling ponds and discharge through Outfall #001.

Two piezometers will be installed north of each collection trench #4 and trench #5 and at each end of the trench opposite of the trench sump. Each piezometer will be installed to the top of clay to monitor the shallow groundwater. The location of the four piezometers will be determined in the field and will be located 10-feet to 15-feet north of the trenches in areas that will not be affected by ongoing operations. The approximate locations of the piezometers is shown on the attached Figure 5. The depth to water will be measured before March 16th startup and weekly during the trial period. Construction details of the piezometers and water level gauging results will be provided to the Department at the end of the trial operational period.

Schedule

The updated schedule consists of the following:

1. Bench-scale Testing – Complete
2. POTW Discharge Approval – Complete
3. Mobilization – Starting March 8, 2022
4. Installation, startup of collection systems and initial testing – March 16, 2022 through March 18, 2022
5. Operational testing – Starting March 21, 2022.

Certification

I John Black certify that I am currently a NYS registered professional engineer and that this Interim Remedial Measures Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10.

Respectfully Submitted,

Inventum Engineering, P.C.

Date: 3/18/2024

John P. Black, P.E.

License No: 062818-1

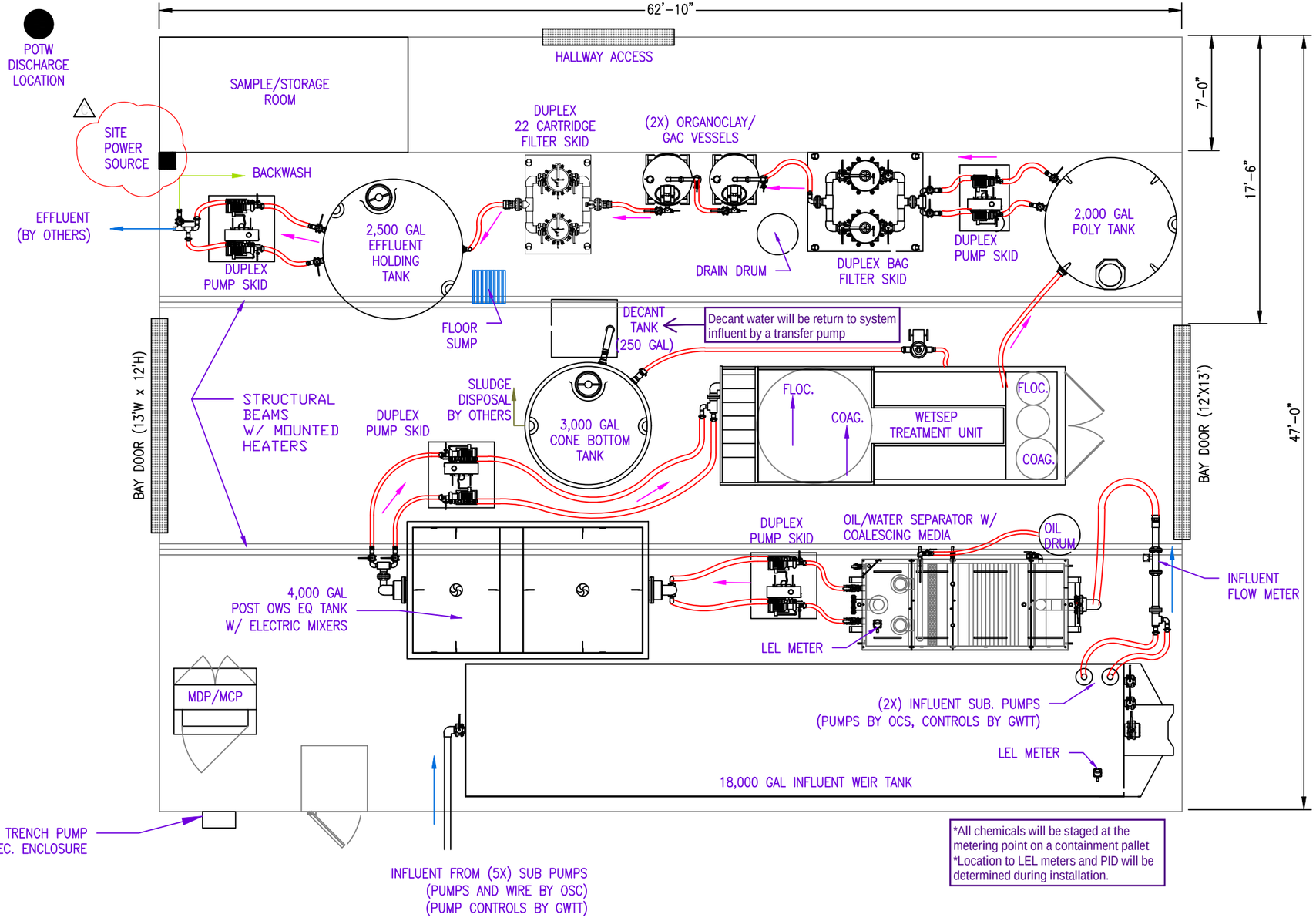
Seal:

It is a violation of the laws of New York, for any person, unless acting under the direction of a Licensed Professional Engineer, to alter any item or any portion of this document in any way. If an item bearing the seal of a Licensed Professional Engineer is altered, the altering Engineer shall affix to the item his/her seal and notation "altered by" followed by his/her signature and the date of such alternation, and a specific description of the alteration.

Figures

GROUNDWATER IRM TREATMENT SYSTEM

OVERALL PLAN VIEW (NOT FOR CONSTRUCTION)



NOTES:

1. DESIGN FLOW RATE: 35–75 GPM
2. SYSTEM FOOTPRINT APPROXIMATELY 40'x60'
3. NOT ALL VALVES, CONNECTIONS, ETC. SHOWN FOR CLARITY
4. ELECTRICAL POWER BY OTHERS
5. DRUMS ARE 55 GALLON, PLACED ON DRUM CONTAINMENT
6. PIDs AND LEL METER TO BE INSTALLED

Figure 3
Proposed Treatment System Layout

T:\JOB FILES\3800S\3865 – OSC TONAWANDA\DRAWINGS Feb. 11 2022 10:41am

REV.	DATE	BY	REMARKS
C	02/22/22	JPE	MOVE SITE POWER SOURCE LOCATION
B	02/18/22	JPE	MOVE FRAC TANK INSIDE
A	02/11/22	JPE	INITIAL ISSUE FOR REVIEW

CUSTOMER: ONTARIO SPECIALTY CONTRACTING, INC

SITE: RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS, INC – TONAWANDA, NY

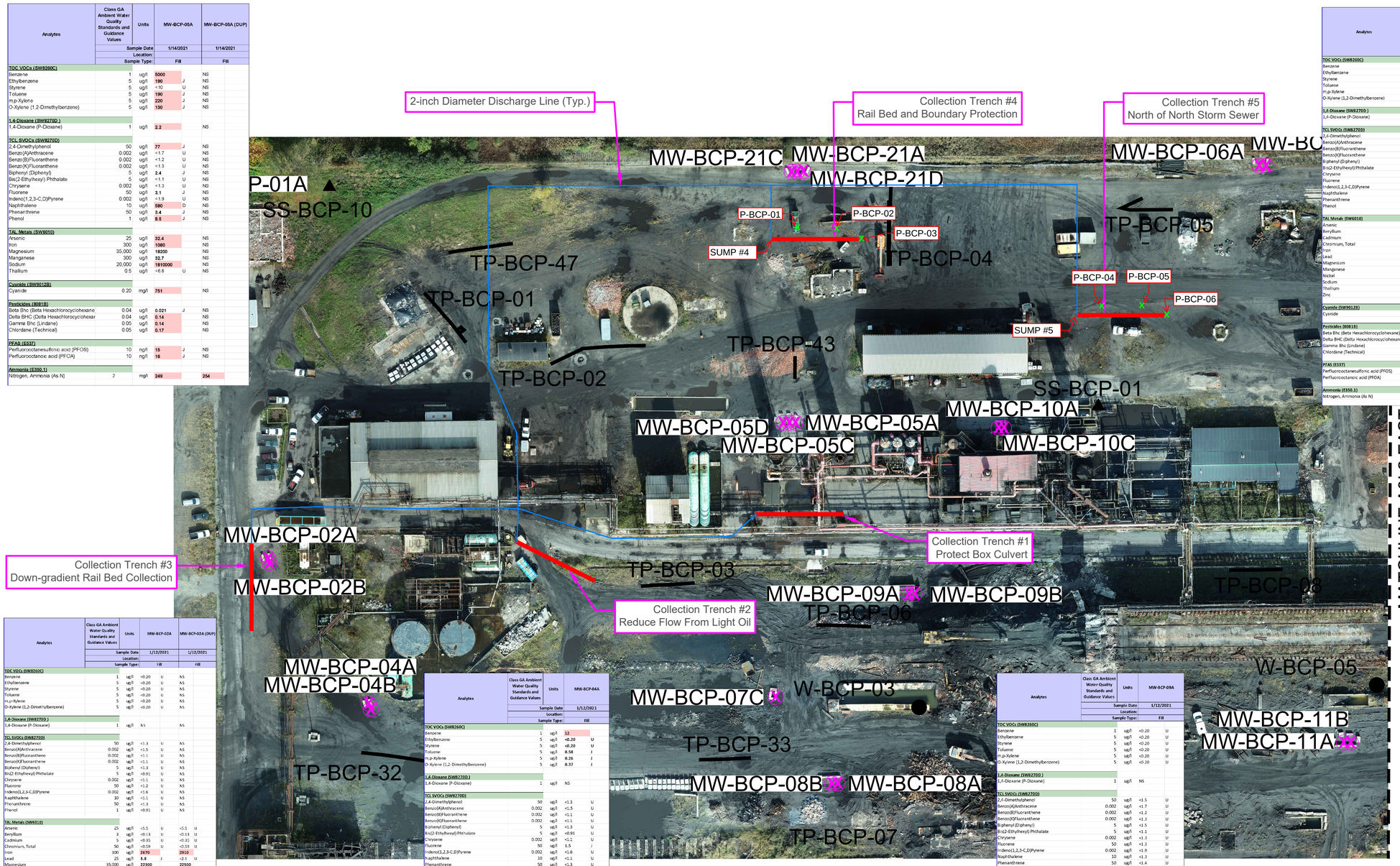
TITLE: EQUIPMENT LAYOUT 75 GPM TREATMENT SYSTEM

SCALE: NTS

	BY	DATE
DRAWN	JPE	02/11/22
APPROVALS		
MECH.	MP	08/16/21
I&C		
PROCESS		

GWTT Ground/Water Treatment & Technology, LLC
627 MOUNT HOPE ROAD WHARTON, NJ 07885
PHONE: 973-983-0901 • FAX: 973-983-0903
www.gwttllc.com

DWG SIZE: B | SHEET: 1 OF 1 | DRAWING NO.: P003865–M–400 | B



Analytes	Class GA Ambient Water Quality Standards and Guidance Values	Units	MW-BCP-05A		MW-BCP-05A (DUP)	
Sample Date			1/14/2021		1/14/2021	
Location:						
Sample Type:			Fill		Fill	
TOC VOCs (SW8260C)						
Benzene	1	ug/l	**5900**		NS	
Ethylbenzene	5	ug/l	**190**	J	NS	
Styrene	5	ug/l	<10	U	NS	
Toluene	5	ug/l	**190**	J	NS	
m,p-Xylene	5	ug/l	**220**	J	NS	
O-Xylene (1,2-Dimethylbenzene)	5	ug/l	**130**	J	NS	
1,4-Dioxane (SW8270D)						
1,4-Dioxane (P-Dioxane)	1	ug/l	**2.2**		NS	
TCL SVOCs (SW8270D)						
2,4-Dimethylphenol	50	ug/l	**77**	J	NS	
Benzo(A)Anthracene	0.002	ug/l	<1.7	U	NS	
Benzo(B)Fluoranthene	0.002	ug/l	<1.2	U	NS	
Benzo(K)Fluoranthene	0.002	ug/l	<1.3	U	NS	
Biphenyl (Diphenyl)	5	ug/l	**2.4**	J	NS	
Bis(2-Ethylhexyl) Phthalate	5	ug/l	<1.1	U	NS	
Chrysene	0.002	ug/l	<1.1	U	NS	
Fluorene	50	ug/l	<1.2	U	NS	
Indeno(1,2,3-C,D)Pyrene	0.002	ug/l	**3.1**	J	NS	
Naphthalene	10	ug/l	<1.9	U	NS	
Phenanthrene	50	ug/l	**580**	D	NS	
Phenol	1	ug/l	**3.4**	J	NS	
TAL Metals (SW6010)						
Arsenic	25	ug/l	**32.4**		NS	
Iron	300	ug/l	**1080**		NS	
Magnesium	35,000	ug/l	**18200**		NS	
Manganese	300	ug/l	**32.7**		NS	
Sodium	20,000	ug/l	**1810000**		NS	
Thallium	0.5	ug/l	<6.6	U	NS	
Cyanide (SW9012B)						
Cyanide	0.20	mg/l	**751**		NS	
Pesticides (8081B)						
Beta Bhc (Beta Hexachlorocyclohexane	0.04	ug/l	**0.021**	J	NS	
Delta BHC (Delta Hexachlorocyclohexar	0.04	ug/l	**0.14**		NS	
Gamma Bhc (Lindane)	0.05	ug/l	**0.14**		NS	
Chlordane (Technical)	0.05	ug/l	**0.17**		NS	
PFAS (ES37)						
Perfluorooctanesulfonic acid (PFOS)	10	ng/l	**15**	J	NS	
Perfluorooctanoic acid (PFOA)	10	ng/l	**16**	J	NS	
Ammonia (E350.1)						
Nitrogen, Ammonia (As N)	2	mg/l	**249**		**254**	

Analytes	Class GA Ambient Water Quality Standards and Guidance Values	Units	MW-BCP-10A
Sample Date:			1/14/2021
Location:			
Sample Type:			Fill
TOC VOCs (SW8260C)			
Benzene	1	ug/l	**2000**
Ethylbenzene	5	ug/l	**75** J
Styrene	5	ug/l	**350**
Toluene	5	ug/l	**2100**
m,p-Xylene	5	ug/l	**1100**
O-Xylene (1,2-Dimethylbenzene)	5	ug/l	**380**
1,4-Dioxane (SW8270D)			
1,4-Dioxane (P-Dioxane)	1	ug/l	**0.39**
TCL SVOCs (SW8270D)			
2,4-Dimethylphenol	50	ug/l	**2900** J
Benzo(A)Anthracene	0.002	ug/l	<7.9 U
Benzo(B)Fluoranthene	0.002	ug/l	<5.6 U
Benzo(K)Fluoranthene	0.002	ug/l	<6.1 U
Biphenyl (Diphenyl)	5	ug/l	**26** J
Bis(2-Ethylhexyl) Phthalate	5	ug/l	<5.0 U
Chrysene	0.002	ug/l	<5.0 U
Fluorene	50	ug/l	**56**
Indeno(1,2,3-C,D)Pyrene	0.002	ug/l	<8.8 U
Naphthalene	10	ug/l	**6300** D
Phenanthrene	50	ug/l	**43** J
Phenol	1	ug/l	**2300** D
TAL Metals (SW6010)			
Arsenic	25	ug/l	**22.1**
Beryllium	3	ug/l	<0.13 U
Cadmium	5	ug/l	<0.35 U
Chromium, Total	50	ug/l	**0.9** J
Iron	300	ug/l	**619**
Lead	25	ug/l	<2.1 U
Magnesium	35,000	ug/l	**609** J
Manganese	300	ug/l	**10.5**
Nickel	100	ug/l	<2.6 U
Sodium	20,000	ug/l	**115000**
Thallium	0.5	ug/l	<6.6 U
Zinc	2,000	ug/l	<9.4 U
Cyanide (SW9012B)			
Cyanide	0.20	mg/l	**1.48**
Pesticides (8081B)			
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	ug/l	**0.1** J
Delta BHC (Delta Hexachlorocyclohexane)	0.04	ug/l	<0.020 U
Gamma Bhc (Lindane)	0.05	ug/l	<0.020 U
Chlordane (Technical)	0.05	ug/l	<0.020 U
PFAS (ES37)			
Perfluorooctanesulfonic acid (PFOS)	10	ng/l	**5.2**
Perfluorooctanoic acid (PFOA)	10	ng/l	**10**
Ammonia (E350.1)			
Nitrogen, Ammonia (As N)	2	mg/l	NS

Analytes	Class GA Ambient Water Quality Standards and Guidance Values	Units	MW-BCP-02A		MW-BCP-02A (DUP)	
Sample Date			1/12/2021		1/12/2021	
Location:						
Sample Type:			Fill		Fill	
TOC VOCs (SW8260C)						
Benzene	1	ug/l	<0.20	U	NS	
Ethylbenzene	5	ug/l	<0.20	U	NS	
Styrene	5	ug/l	<0.20	U	NS	
Toluene	5	ug/l	<0.20	U	NS	
m,p-Xylene	5	ug/l	<0.20	U	NS	
O-Xylene (1,2-Dimethylbenzene)	5	ug/l	<0.20	U	NS	
1,4-Dioxane (SW8270D)						
1,4-Dioxane (P-Dioxane)	1	ug/l	NS		NS	
TCL SVOCs (SW8270D)						
2,4-Dimethylphenol	50	ug/l	<1.3	U	NS	
Benzo(A)Anthracene	0.002	ug/l	<1.5	U	NS	
Benzo(B)Fluoranthene	0.002	ug/l	<1.1	U	NS	
Benzo(K)Fluoranthene	0.002	ug/l	<1.1	U	NS	
Biphenyl (Diphenyl)	5	ug/l	<1.3	U	NS	
Bis(2-Ethylhexyl) Phthalate	5	ug/l	<0.91	U	NS	
Chrysene	0.002	ug/l	<1.1	U	NS	
Fluorene	50	ug/l	<1.2	U	NS	
Indeno(1,2,3-C,D)Pyrene	0.002	ug/l	<1.6	U	NS	
Naphthalene	10	ug/l	<1.1	U	NS	
Phenanthrene	50	ug/l	<1.3	U	NS	
Phenol	1	ug/l	<0.91	U	NS	
TAL Metals (SW6010)						
Arsenic	25	ug/l	<5.5	U	<5.5	U
Beryllium	3	ug/l	<0.13	U	<0.13	U
Cadmium	5	ug/l	<0.35	U	<0.35	U
Chromium, Total	50	ug/l	<0.59	U	<0.59	U
Iron	300	ug/l	**2670**		**2910**	
Lead	25	ug/l	**5.8**	J	<2.1	U
Magnesium	35,000	ug/l	**22300**		**22500**	
Manganese	300	ug/l	**807**		**829**	
Nickel	100	ug/l	<2.6	U	<2.6	U
Sodium	20,000	ug/l	**374000**		**364000**	
Thallium	0.5	ug/l	<6.6	U	<6.6	U
Zinc	2,000	ug/l	<9.4	U	<9.4	U
Cyanide (SW9012B)						
Cyanide	0.20	mg/l	**0.081**		NS	
Pesticides (8081B)						
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	ug/l	NS		NS	
Delta BHC (Delta Hexachlorocyclohexane)	0.04	ug/l	NS		NS	
Gamma Bhc (Lindane)	0.05	ug/l	NS		NS	
Chlordane (Technical)	0.05	ug/l	NS		NS	
PFAS (ES37)						
Perfluorooctanesulfonic acid (PFOS)	10	ng/l	NS		NS	
Perfluorooctanoic acid (PFOA)	10	ng/l	NS		NS	
Ammonia (E350.1)						
Nitrogen, Ammonia (As N)	2	mg/l	NS		NS	

Analytes	Class GA Ambient Water Quality Standards and Guidance Values	Units	MW-BCP-04A
Sample Date			1/12/2021
Location:			
Sample Type:			Fill
TOC VOCs (SW8260C)			
Benzene	1	ug/l	**12**
Ethylbenzene	5	ug/l	**<0.20** U
Styrene	5	ug/l	**<0.20** U
Toluene	5	ug/l	**0.58** J
m,p-Xylene	5	ug/l	**0.26** J
O-Xylene (1,2-Dimethylbenzene)	5	ug/l	**0.37** J
1,4-Dioxane (SW8270D)			
1,4-Dioxane (P-Dioxane)	1	ug/l	NS
TCL SVOCs (SW8270D)			
2,4-Dimethylphenol	50	ug/l	<1.3 U
Benzo(A)Anthracene	0.002	ug/l	<1.5 U
Benzo(B)Fluoranthene	0.002	ug/l	<1.1 U
Benzo(K)Fluoranthene	0.002	ug/l	<1.1 U
Biphenyl (Diphenyl)	5	ug/l	<1.3 U
Bis(2-Ethylhexyl) Phthalate	5	ug/l	<0.91 U
Chrysene	0.002	ug/l	<1.1 U
Fluorene	50	ug/l	**1.5** J
Indeno(1,2,3-C,D)Pyrene	0.002	ug/l	<1.6 U
Naphthalene	10	ug/l	<1.1 U
Phenanthrene	50	ug/l	<1.3 U
Phenol	1	ug/l	<0.91 U
TAL Metals (SW6010)			
Arsenic	25	ug/l	NS
Beryllium	3	ug/l	NS
Cadmium	5	ug/l	NS
Chromium, Total	50	ug/l	NS
Iron	300	ug/l	NS
Lead	25	ug/l	NS
Magnesium	35,000	ug/l	NS
Manganese	300	ug/l	NS
Nickel	100	ug/l	NS
Sodium	20,000	ug/l	NS
Thallium	0.5	ug/l	NS
Zinc	2,000	ug/l	NS
Cyanide (SW9012B)			
Cyanide	0.20	mg/l	**0.155**
Pesticides (8081B)			
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	ug/l	NS
Delta BHC (Delta Hexachlorocyclohexane)	0.04	ug/l	NS
Gamma Bhc (Lindane)	0.05	ug/l	NS
Chlordane (Technical)	0.05	ug/l	NS
PFAS (ES37)			
Perfluorooctanesulfonic acid (PFOS)	10	ng/l	NS
Perfluorooctanoic acid (PFOA)	10	ng/l	NS
Ammonia (E350.1)			
Nitrogen, Ammonia (As N)	2	mg/l	**5.61**

Analytes	Class GA Ambient Water Quality Standards and Guidance Values	Units	MW-BCP-09A
Sample Date			1/12/2021
Location:			
Sample Type:			Fill
TOC VOCs (SW8260C)			
Benzene	1	ug/l	<0.20 U
Ethylbenzene	5	ug/l	<0.20 U
Styrene	5	ug/l	<0.20 U
Toluene	5	ug/l	<0.20 U
m,p-Xylene	5	ug/l	<0.20 U
O-Xylene (1,2-Dimethylbenzene)	5	ug/l	<0.20 U
1,4-Dioxane (SW8270D)			
1,4-Dioxane (P-Dioxane)	1	ug/l	NS
TCL SVOCs (SW8270D)			
2,4-Dimethylphenol	50	ug/l	<1.5 U
Benzo(A)Anthracene	0.002	ug/l	<1.7 U
Benzo(B)Fluoranthene	0.002	ug/l	<1.2 U
Benzo(K)Fluoranthene	0.002	ug/l	<1.3 U
Biphenyl (Diphenyl)	5	ug/l	<1.5 U
Bis(2-Ethylhexyl) Phthalate	5	ug/l	<1.1 U
Chrysene	0.002	ug/l	<1.3 U
Fluorene	50	ug/l	<1.4 U
Indeno(1,2,3-C,D)Pyrene	0.002	ug/l	<1.9 U
Naphthalene	10	ug/l	<1.3 U
Phenanthrene	50	ug/l	<1.4 U
Phenol	1	ug/l	<1.1 U
TAL Metals (SW6010)			
Arsenic	25	ug/l	<5.5 U
Beryllium	3	ug/l	<0.13 U
Cadmium	5	ug/l	<0.35 U
Chromium, Total	50	ug/l	<0.59 U
Iron	300	ug/l	**774**
Lead	25	ug/l	<2.1 U
Magnesium	35,000	ug/l	**236000**
Manganese	300	ug/l	**757**
Nickel	100	ug/l	<2.6 U
Sodium	20,000	ug/l	**162000**
Thallium	0.5	ug/l	**10**
Zinc	2,000	ug/l	**31.8**
Cyanide (SW9012B)			
Cyanide	0.20	mg/l	**1.89**
Pesticides (8081B)			
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	ug/l	NS
Delta BHC (Delta Hexachlorocyclohexane)	0.04	ug/l	NS
Gamma Bhc (Lindane)	0.05	ug/l	NS
Chlordane (Technical)	0.05	ug/l	NS
PFAS (ES37)			
Perfluorooctanesulfonic acid (PFOS)	10	ng/l	NS
Perfluorooctanoic acid (PFOA)	10	ng/l	NS
Ammonia (E350.1)			
Nitrogen, Ammonia (As N)	2	mg/l	NS

D

50 0 25 50 100 200

1 INCH = 50 FEET (22X34)

NOTE: The as-built drawing is to be included in the CCR.

N

DRAWING BY

CHECKED

APPROVED

TRENCH DISCHARGE CONVEYANCE PIPE LOCATIONS

BROWNFIELD CLEANUP PROGRAM SITE
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS, INC.
3875 RIVER ROAD
TONAWANDA, NEW YORK 14150
BCP SITE No. C915353

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 5

DRAWING NUMBER

GWTT IRM WP

Appendix A – Treatability Bench Test

GWTT
Ground / Water Treatment & Technology

627 Mt. Hope Road
Wharton, New Jersey 07885
Tel: (800) 770-0901
(973) 983-0901
Fax: (973) 983-0903

February 16, 2022

Ontario Specialty Contracting, (OSC)
Site Location: Tonawanda, NY

Attention: Dan Flanigan
GWTT Ref: Job #3865

Dear Mr. Flanigan:

Samples were received by GWTT from the Riverview Innovation & technology Campus site on November 8, 2021. The samples were collected from four of the groundwater monitoring wells on-site which were selected to closely resemble the representative worst case source waters to the treatment system. Those wells included:

- MW-BCP-10A
- MW-BCP-5A
- MW-BCP-2A
- MW-BCP-21A

Individual Subsamples from Groundwater Monitoring Wells

Each of these wells were sampled in individual cubitainers measuring 1 gallon per well. Three gallons of each sample were collected, and GWTT consolidated 1 gallon of each well into a representative influent sample. This sample was characterized for the following analytes:

- Volatile Organic Compounds (VOCs) including TICs
- Semi-volatile Organic Compounds (SVOCs)
- Polychlorinated Biphenyls (PCBs)
- Pesticides
- Target Analyte List (TAL) Metals
- Cyanide (Total Cyanide, Free Cyanide, Cyanide Amenable to Chlorination)
- Total Suspended Solids (TSS)
- pH

- Nitrogen, Ammonia

Multiple rounds of tests were conducted to evaluate the treatment processes for the influent sample. The sample did not respond as anticipated due to interferences or dissociation of compounds in the original treatment train. Through testing and refinement, the treatment train was developed based on the final rounds of testing.

Chemical oxidation of Cyanide using Sodium Hypochlorite was tested using a new ORP probe to confirm ORP values to determine the optimal Sodium Hypochlorite dosage for complete oxidation. One liter of sample from OWS Effluent was tested, and an excess of Sodium Hypochlorite was added to raise the ORP once the pH was raised to ~10.0 s.u. The excess of Sodium Hypochlorite reduced the ORP, which means there are interfering compounds in the source water which will not allow the Sodium Hypochlorite to react with the Cyanide to produce the oxidation products. No analytical samples were taken for this testing event, due to the disproportionate requirement for addition of ~30 mL of Hypochlorite to 1 L of OWS Effluent. Based upon research this chemical demand is most likely due to the Ammonia present in the sample which needs to be reduced prior to cyanide oxidation.

Non-Oxidative Testing of Metals and Cyanide

Another batch of samples were collected using chemical precipitation without the addition of Sodium Hypochlorite. WC-500 coagulant and AP-210 polymer were added to 2 x 1-L sample jars and precipitated and filtered to 5-micron. The pH was allowed to remain ambient which for this test was ~8.6 s.u.

The chemically precipitated and filtered sample was then tested using two methods:

1. Air Stripping for 2 hours, followed by OGC/GAC adsorption (5-minute EBCT)
2. OGC/GAC Adsorption (no Air Stripping)

Sample ID		PRECIP EFF	A/S GAC	GAC
Sample Date		1/18/2022	1/18/2022	1/18/2022
Sample Time		10:00	12:30	13:30
Aluminum, Total	mg/L		0.367	0.376
Arsenic, Total	mg/L		0.01629	0.01623
Iron, Total	mg/L		0.291	0.323
Manganese, Total	mg/L		.004814 J	.002264 J
Mercury, Total	mg/L		<0.0000915	<0.0000915
Cyanide, Total	mg/L	0.963	1.160	1.420

An increase in Total Cyanide occurred during post treatment of the chemical precipitation effluent with both unit operations based upon the concentration of Total Cyanide after the chemical precipitation

unit operation (PRECIP EFF) otherwise, the air stripping provided no significant improvement in effluent water quality.

Additional samples from the four monitoring wells were collected for the Bulk final testing and sampling event. In order to determine if the effluent water quality of the proposed treatment system, a composite influent sample of approximately 8 gallons was created from bulk samples from the four monitoring wells that produced the water tested throughout the bench-scale testing.

The composited influent was sampled for all of the parameters on the IWD permit, including:

- Biochemical Oxygen Demand (5-day)
- Total Suspended Solids
- Nitrogen, Ammonia
- Total Phosphorous
- Total Petroleum Hydrocarbon (TPH)
- Total Metals
- Total Cyanide
- Volatile Organic Compounds
- Semi-volatile Organic Compounds
- Total Phenolics
- pH

Approximately 4 gallons of composited volume was consumed creating the influent characterization sample and it was determined that an elevated level of Cyanide, TSS, and Metals were in the influent.

Free NAPL was visually observed in the composite sample, so the primary unit operation for source water treatment was an Oil Water Separator (OWS). The OWS' primary function is to allow the flow to become laminar so that the LNAPL (light product) can float to the top of the OWS and the DNAPL (dense product) could settle and the clean water from the middle of the OWS can be transferred to subsequent unit operations for further treatment. After the OWS there was no visual product observed in the effluent. The OWS effluent was then collected and treated in the next unit operation, the chemical precipitation step.

An aluminum-based coagulant (WC-500 – Aluminum Chlorohydrate) was dosed at a rate of 0.1 mL of WC-500 per liter of water and allowed to rapidly mix for 5 minutes. The purpose of adding a coagulant is to destabilize any ionic forces in the particulate phase of the waste stream and begin the precipitation process. The destabilization allows the particulates to begin to settle as small "pin-sized" flocs. The second chemical addition was an anionic polymer (AP-210 – polyacrylamide) dosed at a rate of 1mL AP-210 per

liter of water. The purpose of the AP-210 polymer dosing is to agglomerate the pin flocs created in the coagulation process and create larger flocs which will ultimately settle out as sludge in the clarification process. The polymer was slow mixed with the coagulated water for 15 minutes and then the mixing was turned off and the agglomerated flocs were allowed to settle for 30 minutes.

The clarified water was then decanted from the sludge and the water was passed through a 5-micron bag filtration unit operation. The purpose of the bag filtration unit operation was to reduce the particulates that may have not settled from the clarification process, as well as to ensure any particulates in the supernatant does not impact downstream unit operations. Any suspended particulates that pass through the clarification process could hydraulically impact and blind off the media blend (OGC/GAC) and restrict the flow rate of the pressure vessels if the filtration step is omitted.

The filtered water was then passed through a column containing a blend of adsorptive media for the reduction of dissolved metals and organics/hydrocarbons. The blended media consisted of 50% Organoclay (OGC) and Granular Activated Carbon (GAC) which independently can be used to treat various organic compounds and dissolved metals. The blended media allows for a more complete reduction of organics and hydrocarbons while maximizing the throughput between changeouts of the media. Dissolved metals will also ad/absorb on the media allowing for a further polishing of the water prior to final polishing treatment. An Empty Bed Contact Time (EBCT) of 5 minutes was utilized for media treatment, which equated to a flow rate of 185 mL/min through the 2” media testing column. The media height of the column was approximately 18”.

The final unit operation tested was polishing filtration using a 0.5-micron cartridge. The cartridge filtration step was introduced to improve treatability results by reducing colloidal solids and metals by reducing the particle size of any remaining colloids in the effluent stream.

Filtered water was collected from the cartridge filter unit operation and composited in a clean container, and the composited sample was analyzed for the same contaminants of concern as the influent composite sample. The sample results were compared to the influent composite sample and percent reductions throughout the treatment system were observed and compared to the IWD permit for POTW discharge.

The results showed that except for Total Phosphorous and Total Copper, all contaminants were reduced throughout the treatment system. The below table shows the percent reduction of each compound that has numerical limitations (compliance and surcharge) as well as the percent reduction of BTEX compounds and Naphthalene, which are the organic compounds in the highest concentrations from the VOC scans performed by the analytical laboratory:

Sample ID Sample Date Sample Time	INF 1/24/2022 11:00	EFF 1/25/2022 14:00	IWD POTW LIMITS	PERCENT REDUCTION
	ug/L	**ug/L**	**ug/L**	**ug/L**
Arsenic, Total	18.36	3.87	500	79%
Cadmium, Total	ND (0.2995)	ND (0.0599)	NL	80%
Chromium, Total	5.47	0.9033 J	NL	83%
Copper, Total	2.368 J	17.9	NL	-656%
Lead, Total	4.165 J	ND (0.3430)	NL	92%
Nickel, Total	6.879 J	3.045	NL	56%
Silver, Total	ND (0.8150)	ND (0.1630)	NL	80%
Zinc, Total	ND (17.05)	8.774 J	NL	49%
Mercury, Total	0.7000 J	ND (0.0915)	1	87%
Solids, Total Suspended	74000	ND	250000	>99%
Cyanide, Total	384	163	1100	58%
Nitrogen, Ammonia	70800	30300	NL	57%
Phosphorus, Total	513	843	6000	-64%
BOD, 5 day	33000	25000	250000	24%
TPH	1440 J	1390 J	100000	3%
Phenolics	4300	55	NL	99%
Naphthalene	3300	16	NL	99.5%
BTEX Compounds	1306	16	NL	98.8%

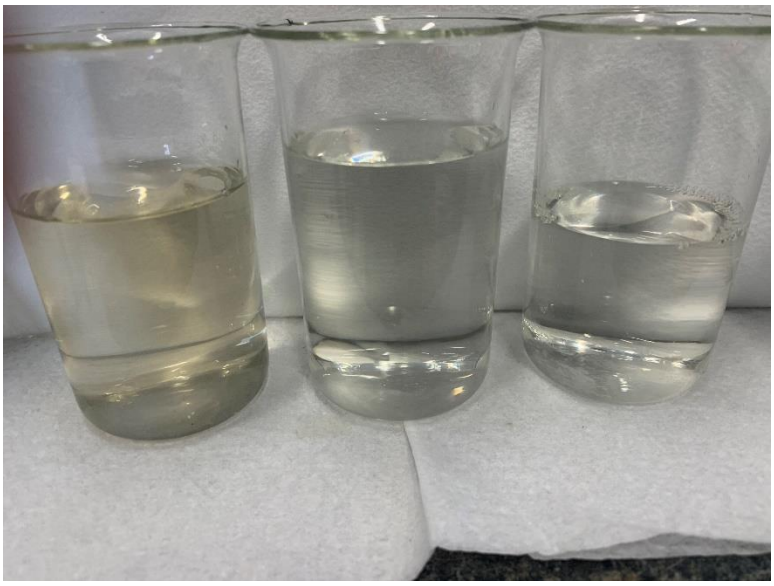
SYSTEM DESIGN

Final system process design was developed during treatability testing between November 2021 and January 2022. The results from the final batch of treatability testing (January 24-25, 2022) served as GWTT's basis for design for the treatment system. For purposes of this report, the results are compared to the IDW limits for the Site:

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
1, 6020B	**ug/L**	**ug/L**	
Arsenic, Total	18.36	13.87	500
1, 7470A	**ug/L**	**ug/L**	
Mercury, Total	0.7000 J	ND (0.0915)	1
121, 2540D	**ug/L**	**ug/L**	
Solids, Total Suspended	74000	ND	250000
1, 9010C/9012B	**ug/L**	**ug/L**	
Cyanide, Total	384	163	1100
1, 9040C	**SU**	**SU**	
pH (H)	8.7	8.5	5.0 - 9.5
121, 4500NH3-BH	**ug/L**	**ug/L**	
Nitrogen, Ammonia	70800	30300	NL
121, 4500P-E	**ug/L**	**ug/L**	
Phosphorus, Total	513	843	6000
121, 5210B	**ug/L**	**ug/L**	
BOD, 5-day	33000	25000	250000
140, 1664B	**ug/L**	**ug/L**	
TPH	1440 J	1390 J	100000
E420.4	**mg/L**	**mg/L**	
Phenolics	4.30	0.055	NL

Based on treatability studies performed to date and data provided to GWTT, the raw water is expected to contain trace amounts of Non-Aqueous Phase Liquid (NAPL), Total Suspended Solids (TSS), Total Cyanide and Total Metals as well as concentrations of Volatile and Semi-Volatile Organic Compounds (VOC /SVOC) which require treatment.

1. GWTT assumes that the total cyanide is complexed in either the particulate or with another metal, which can be reduced through chemical precipitation. This is based upon the treatability testing performed prior to final system design.
    a. The chemical oxidation unit operation has been removed from final design due to the lack of free cyanide in the source water based upon the treatability testing.
2. Ammonia was detected at high concentrations as well. As part of this revised treatment approach, Ammonia influent concentrations and reduction will be monitored in the full scale system to determine if air stripping could provide any addition ammonia reduction..



Influent **Precipitation Effluent** **Effluent**

GWTT's final system design for POTW discharge incorporates multiple unit operations for reducing the contaminants of concern in the impacted source waters. The following unit operations are included to meet or exceed permitted discharge limitations:

1. Influent Equalization *(by others) – bulk settling of TSS*
2. Oil/Water Separator – NAPL and organics (passive treatment)
3. Chemical pH adjustment – based upon influent conditions, *(mix tank to be provided, but chemical dosing pumps and chemicals/storage to be mobilized only if required)*
    a. *The pH of the impacted source waters was in the optimal pH range for metals reduction throughout the treatability study based upon multiple collections of monitoring well source waters*
4. Chemical precipitation – TSS and Filterable metals
    a. The addition of a coagulant and flocculant (polymer) will reduce the TSS and metals associated in the particulate fraction, as well as dissolved metals that are below the solubility concentration at the associated influent pH.
5. Sludge Thickening – *Disposal by owner*
6. Bag Filtration – TSS and Particulate Metals (polishing phase)
7. Organoclay (OGC)/Granular Activated Carbon (GAC) blend – dissolved NAPL, organic compounds and dissolved metals
8. Cartridge Filtration – TSS and Colloidal Metals (polishing phase)
9. Effluent Equalization and Discharge – Holding tank for backwash

Based on the raw water provided for treatability testing, GWTT's design is based on the finding that most of the metals present in the raw water stream are associated with the TSS and can be removed by gravity settling, coagulation/flocculation/clarification followed by mechanical filtration via bag filters. Testing

demonstrated that some residual dissolved metals (in particular complexed Ferrocyanide) requires polishing to reduce the metals. Therefore, the treatment system has been enhanced with a blend of adsorptive media (OGC/GAC) which will reduce the dissolved metals concentration to meet the discharge requirements as well as any NAPL and organic compounds which are not reduced in prior unit operations. A final mechanical filtration step with cartridge filters has also been added for final particle removal.

Please feel free to contact me at **973-983-0901** or at rorlando@gwttllc.com if you have any questions or if you require any additional information. We are looking forward to the additional data to provide us with recommendation on steps to move forward.

Regards,

Rob Orlando

Chief Engineer

Ground/Water Treatment & Technology, LLC

Table 1
Town of Tonawanda Aqueous Discharge Analytical Summary
Riverview Innovation and Technology Campus
Permit No. 331

Sample ID	INF	EFF
Sample Date	1/24/2022	1/25/2022
Sample Time	11:00	14:00
Method: 1, 8260C	ug/L	ug/L
Methylene chloride	ND	ND
1,1-Dichloroethane	ND	ND
Chloroform	ND	ND
Carbon tetrachloride	ND	0.26 J
1,2-Dichloropropane	ND	ND
Dibromochloromethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Tetrachloroethene	ND	ND
Chlorobenzene	ND	ND
Trichlorofluoromethane	ND	ND
1,2-Dichloroethane	ND	ND
1,1,1-Trichloroethane	ND	ND
Bromodichloromethane	ND	ND
trans-1,3-Dichloropropene	ND	ND
cis-1,3-Dichloropropene	ND	ND
1,3-Dichloropropene, Total	ND	ND
1,1-Dichloropropene	ND	ND
Bromoform	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND
Benzene	840	11
Toluene	240	3.7
Ethylbenzene	26 J	ND
Chloromethane	ND	ND
Bromomethane	ND	ND
Vinyl chloride	ND	ND
Chloroethane	ND	ND
1,1-Dichloroethene	ND	ND
trans-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	ND
1,2-Dichlorobenzene	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
Methyl tert butyl ether	ND	ND
p/m-Xylene	140	1.2 J
o-Xylene	58	ND
Xylenes, Total	200	1.2 J
cis-1,2-Dichloroethene	ND	ND
1,2-Dichloroethene, Total	ND	ND
Dibromomethane	ND	ND
1,2,3-Trichloropropane	ND	ND
Acrylonitrile	ND	ND
Styrene	40 J	ND
Dichlorodifluoromethane	ND	ND
Acetone	68 J	14
Carbon disulfide	ND	ND
2-Butanone	ND	ND
Vinyl acetate	ND	ND
4-Methyl-2-pentanone	ND	ND
2-Hexanone	ND	ND
Bromochloromethane	ND	ND
2,2-Dichloropropane	ND	ND
1,2-Dibromoethane	ND	ND
1,3-Dichloropropane	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND
Bromobenzene	ND	ND
n-Butylbenzene	ND	ND
sec-Butylbenzene	ND	ND
tert-Butylbenzene	ND	ND
o-Chlorotoluene	ND	ND
p-Chlorotoluene	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND
Hexachlorobutadiene	ND	ND
Isopropylbenzene	ND	ND
p-Isopropyltoluene	ND	ND
Naphthalene	3,300	16
n-Propylbenzene	ND	ND
1,2,3-Trichlorobenzene	ND	ND
1,2,4-Trichlorobenzene	ND	ND
1,3,5-Trimethylbenzene	14 J	ND
1,2,4-Trimethylbenzene	25 J	ND
1,4-Dioxane	ND	ND
p-Diethylbenzene	ND	ND
p-Ethyltoluene	ND	ND
1,2,4,5-Tetramethylbenzene	ND	ND
Ethyl ether	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND

Sample ID	INF	EFF
Sample Date	1/24/2022	1/25/2022
Sample Time	11:00	14:00
Total TIC Compounds	644 J	7.09 J
Unknown Aromatic	576 J	5.55 J
Unknown	67.6 J	1.54 J

J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit.
ND = Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Table 1
Town of Tonawanda Aqueous Discharge Analytical Summary
Riverview Innovation and Technology Campus
Permit No. 331

Sample ID	INF	EFF
Sample Date	1/24/2022	1/25/2022
Sample Time	11:00	14:00
Method: 1, 8270D	ug/L	ug/L
1,2,4-Trichlorobenzene	ND	ND
Bis(2-chloroethyl)ether	ND	ND
1,2-Dichlorobenzene	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
3,3'-Dichlorobenzidine	ND	ND
2,4-Dinitrotoluene	ND	ND
2,6-Dinitrotoluene	ND	ND
4-Chlorophenyl phenyl ether	ND	ND
4-Bromophenyl phenyl ether	ND	ND
Bis(2-chloroisopropyl)ether	ND	ND
Bis(2-chloroethoxy)methane	ND	ND
Hexachlorocyclopentadiene	ND	ND
Isophorone	ND	ND
Nitrobenzene	ND	ND
NDPA/DPA	ND	ND
n-Nitrosodi-n-propylamine	ND	ND
Bis(2-ethylhexyl)phthalate	ND	ND
Butyl benzyl phthalate	ND	ND
Di-n-butylphthalate	ND	1.1 J
Di-n-octylphthalate	ND	ND
Diethyl phthalate	ND	11
Dimethyl phthalate	ND	ND
Biphenyl	11 J	ND
4-Chloroaniline	ND	ND
2-Nitroaniline	ND	ND
3-Nitroaniline	ND	ND
4-Nitroaniline	ND	ND
Dibenzofuran	36 J	ND
1,2,4,5-Tetrachlorobenzene	ND	ND
Acetophenone	ND	0.75 J
2,4,6-Trichlorophenol	ND	ND
p-Chloro-m-cresol	ND	ND
2-Chlorophenol	ND	ND
2,4-Dichlorophenol	ND	ND
2,4-Dimethylphenol	560	5
2-Nitrophenol	ND	ND
4-Nitrophenol	ND	ND
2,4-Dinitrophenol	ND	ND
4,6-Dinitro-o-cresol	ND	ND
Phenol	860	5.9
2-Methylphenol	1,400	7.3
3-Methylphenol/4-Methylphe	2,000	9.4
2,4,5-Trichlorophenol	ND	ND
Benzoic Acid	60 J	19 J
Benzyl Alcohol	ND	30
Carbazole	130	ND
Acenaphthene	6.9	0.02 J
2-Chloronaphthalene	ND	ND
Fluoranthene	270	0.07 J
Hexachlorobutadiene	ND	ND
Naphthalene	2,000	7.5
Benzo(a)anthracene	160	0.06 J
Benzo(a)pyrene	110	0.06 J
Benzo(b)fluoranthene	150	0.07 J
Benzo(k)fluoranthene	46	0.02 J
Chrysene	120	0.03 J
Acenaphthylene	120	0.28
Anthracene	85	0.10 J
Benzo(ghi)perylene	55	0.06 J
Fluorene	67	0.07 J
Phenanthrene	250	0.93
Dibenzo(a,h)anthracene	23	0.02 J
Indeno(1,2,3-cd)pyrene	76	0.07 J
Pyrene	180	0.04 J
2-Methylnaphthalene	120	0.18
Pentachlorophenol	0.35 J	0.06 J
Hexachlorobenzene	ND	ND
Hexachloroethane	ND	ND

Sample ID	INF	EFF
Sample Date	1/24/2022	1/25/2022
Sample Time	11:00	14:00
Total TIC Compounds	2,970 J	491 J
Unknown Organic Acid	92.4 J	
Unknown Phenol	138 J	
Unknown	230 J	
Unknown Phenol	531 J	
Unknown Phenol	98.2 J	
Unknown	132 J	
Naphthalene, 1-methyl-	137 NJ	
Unknown	570 J	
Unknown	110 J	
Cyclic Octaatomic Sulfur	743 NJ	
Unknown	94.5 J	
Unknown	98.2 J	
Unknown		46.8 J
Unknown Organic Acid		65.1 J
Unknown		11.8 J
Unknown Organic Acid		21.9 J
Unknown		14.6 J
Unknown		20 J
Unknown		74.2 J
Unknown Organic Acid		19.9 J
Unknown		42.9 J
Unknown		12.8 J
Unknown		18.8 J
Unknown Alcohol		14.5 J
Unknown		102 J
Unknown Benzene		11.6 J
Unknown		13.6 J

J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit.
ND = Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Table 1
Town of Tonawanda Aqueous Discharge Analytical Summary
Riverview Innovation and Technology Campus
Permit No. 331

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
1, 6020B	**ug/L**	**ug/L**	**ug/L**
Arsenic, Total	18.36	13.87	500
Cadmium, Total	ND	ND	_
Chromium, Total	5.47	0.9033 J	_
Copper, Total	2.368	17.9	_
Lead, Total	4.165	ND	_
Nickel, Total	6.879	3.045	_
Silver, Total	ND	ND	_
Zinc, Total	ND	8.774 J	_

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 1, 7470A	**ug/L**	**ug/L**	**ug/L**
Mercury, Total	0.7000 J	ND (0.0915 MDL)	1

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 121, 2540D	**ug/L**	**ug/L**	**ug/L**
Solids, Total Suspended	74,000	ND	250,000

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 1, 9010C/9012B	**ug/L**	**ug/L**	**ug/L**
Cyanide, Total	384	163	1,100

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 1, 9040C	**SU**	**SU**	**SU**
pH (H)	8.7	8.5	5.0 - 9.5

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 121, 4500NH3-BH	**ug/L**	**ug/L**	**ug/L**
Nitrogen, Ammonia	70,800	30,300	NL

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 121, 4500P-E	**ug/L**	**ug/L**	**ug/L**
Phosphorus, Total	513	843	6,000

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 121, 5210B	**ug/L**	**ug/L**	**ug/L**
BOD, 5 day	33,000	25,000	250,000

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: 140, 1664B	**ug/L**	**ug/L**	**ug/L**
TPH	1,440 J	1,390 J	100,000

Sample ID	INF	EFF	POTW
Sample Date	1/24/2022	1/25/2022	IWD DISCHARGE
Sample Time	11:00	14:00	REQUIREMENTS
Method: E420.4	**mg/L**	**mg/L**	**mg/L**
Phenolics	4.30	0.055	NL

J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit.

MDL = Method Detection Limit. This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

ND = Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

ANALYTICAL REPORT

Lab Number:	L2204062
Client:	Groundwater Treatment & Technology 627 Mount Hope Road Wharton, NJ 07885
ATTN:	Rob Orlando
Phone:	(973) 983-0901
Project Name:	TONAWANDA
Project Number:	Not Specified
Report Date:	02/09/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2204062-01	INF	WATER	NY	01/24/22 11:00	01/25/22
L2204062-02	EFF	WATER	NY	01/25/22 14:00	01/25/22

Project Name:	TONAWANDA	**Lab Number:**	L2204062
Project Number:	Not Specified	**Report Date:**	02/09/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: TONAWANDA **Lab Number:** L2204062
Project Number: Not Specified **Report Date:** 02/09/22

Case Narrative (continued)

Report Revision

February 09, 2022: The Total Metals analyte list has been amended on L2204062-01 and -02.

February 02, 2022: The sample collection date was amended on L2204062-02.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analysis of Phenolics was subcontracted. A copy of the revised laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Semivolatile Organics

L2204062-01D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2204062-01D: The surrogate recoveries are below the acceptance criteria for 2-fluorophenol (0%), phenol-d6 (0%), nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), 2,4,6-tribromophenol (0%) and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

The WG1598323-1 Method Blank, associated with L2204062-01D and -02, has TIC(s) detected. The results are qualified with a "B" for any associated samples that have detections of the same TIC(s).

Total Metals

L2204062-01: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

Total Mercury

L2204062-01: The sample has an elevated detection limit for mercury, due to the prep dilution required by the sample matrix.

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Case Narrative (continued)

Solids, Total Suspended

L2204062-02: The sample has an elevated detection limit due to the dilution required by the sample matrix.

Phosphorus, Total

The Effluent (L2204062-02) result is greater than the Influent (L2204062-01) result. The sample containers were verified as being labeled correctly by the laboratory, and the reported results were confirmed.

The WG1598283-3 MS recovery, performed on L2204062-02, is outside the acceptance criteria for phosphorus, total (1%); however, the associated LCS recovery is within criteria. No further action was taken.

Nitrogen, Ammonia

WG1598311: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the results could not be reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 02/09/22

ORGANICS

VOLATILES

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D
Client ID: INF
Sample Location: NY
Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/27/22 02:13
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	50	14.	20
1,1-Dichloroethane	ND		ug/l	50	14.	20
Chloroform	ND		ug/l	50	14.	20
Carbon tetrachloride	ND		ug/l	10	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	10	3.0	20
1,1,2-Trichloroethane	ND		ug/l	30	10.	20
Tetrachloroethene	ND		ug/l	10	3.6	20
Chlorobenzene	ND		ug/l	50	14.	20
Trichlorofluoromethane	ND		ug/l	50	14.	20
1,2-Dichloroethane	ND		ug/l	10	2.6	20
1,1,1-Trichloroethane	ND		ug/l	50	14.	20
Bromodichloromethane	ND		ug/l	10	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	10	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	10	2.9	20
1,3-Dichloropropene, Total	ND		ug/l	10	2.9	20
1,1-Dichloropropene	ND		ug/l	50	14.	20
Bromoform	ND		ug/l	40	13.	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	3.3	20
Benzene	840		ug/l	10	3.2	20
Toluene	240		ug/l	50	14.	20
Ethylbenzene	26	J	ug/l	50	14.	20
Chloromethane	ND		ug/l	50	14.	20
Bromomethane	ND		ug/l	50	14.	20
Vinyl chloride	ND		ug/l	20	1.4	20
Chloroethane	ND		ug/l	50	14.	20
1,1-Dichloroethene	ND		ug/l	10	3.4	20
trans-1,2-Dichloroethene	ND		ug/l	50	14.	20

Project Name: TONAWANDA **Lab Number:** L2204062

Project Number: Not Specified **Report Date:** 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D Date Collected: 01/24/22 11:00

Client ID: INF Date Received: 01/25/22

Sample Location: NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	10	3.5	20
1,2-Dichlorobenzene	ND		ug/l	50	14.	20
1,3-Dichlorobenzene	ND		ug/l	50	14.	20
1,4-Dichlorobenzene	ND		ug/l	50	14.	20
Methyl tert butyl ether	ND		ug/l	50	14.	20
p/m-Xylene	140		ug/l	50	14.	20
o-Xylene	58		ug/l	50	14.	20
Xylenes, Total	200		ug/l	50	14.	20
cis-1,2-Dichloroethene	ND		ug/l	50	14.	20
1,2-Dichloroethene, Total	ND		ug/l	50	14.	20
Dibromomethane	ND		ug/l	100	20.	20
1,2,3-Trichloropropane	ND		ug/l	50	14.	20
Acrylonitrile	ND		ug/l	100	30.	20
Styrene	40	J	ug/l	50	14.	20
Dichlorodifluoromethane	ND		ug/l	100	20.	20
Acetone	68	J	ug/l	100	29.	20
Carbon disulfide	ND		ug/l	100	20.	20
2-Butanone	ND		ug/l	100	39.	20
Vinyl acetate	ND		ug/l	100	20.	20
4-Methyl-2-pentanone	ND		ug/l	100	20.	20
2-Hexanone	ND		ug/l	100	20.	20
Bromochloromethane	ND		ug/l	50	14.	20
2,2-Dichloropropane	ND		ug/l	50	14.	20
1,2-Dibromoethane	ND		ug/l	40	13.	20
1,3-Dichloropropane	ND		ug/l	50	14.	20
1,1,1,2-Tetrachloroethane	ND		ug/l	50	14.	20
Bromobenzene	ND		ug/l	50	14.	20
n-Butylbenzene	ND		ug/l	50	14.	20
sec-Butylbenzene	ND		ug/l	50	14.	20
tert-Butylbenzene	ND		ug/l	50	14.	20
o-Chlorotoluene	ND		ug/l	50	14.	20
p-Chlorotoluene	ND		ug/l	50	14.	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	14.	20
Hexachlorobutadiene	ND		ug/l	50	14.	20
Isopropylbenzene	ND		ug/l	50	14.	20
p-Isopropyltoluene	ND		ug/l	50	14.	20
Naphthalene	3300		ug/l	50	14.	20

Project Name: TONAWANDA **Lab Number:** L2204062

Project Number: Not Specified **Report Date:** 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D Date Collected: 01/24/22 11:00

Client ID: INF Date Received: 01/25/22

Sample Location: NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	50	14.	20
1,2,3-Trichlorobenzene	ND		ug/l	50	14.	20
1,2,4-Trichlorobenzene	ND		ug/l	50	14.	20
1,3,5-Trimethylbenzene	14	J	ug/l	50	14.	20
1,2,4-Trimethylbenzene	25	J	ug/l	50	14.	20
1,4-Dioxane	ND		ug/l	5000	1200	20
p-Diethylbenzene	ND		ug/l	40	14.	20
p-Ethyltoluene	ND		ug/l	40	14.	20
1,2,4,5-Tetramethylbenzene	ND		ug/l	40	11.	20
Ethyl ether	ND		ug/l	50	14.	20
trans-1,4-Dichloro-2-butene	ND		ug/l	50	14.	20
Tentatively Identified Compounds						
Total TIC Compounds	644	J	ug/l			20
Unknown Aromatic	576	J	ug/l			20
Unknown	67.6	J	ug/l			20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	101		70-130

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY
Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/26/22 09:55
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	0.26	J	ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	11		ug/l	0.50	0.16	1
Toluene	3.7		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: TONAWANDA **Lab Number:** L2204062

Project Number: Not Specified **Report Date:** 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02 Date Collected: 01/25/22 14:00

Client ID: EFF Date Received: 01/25/22

Sample Location: NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	1.2	J	ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	1.2	J	ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	14		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	16		ug/l	2.5	0.70	1

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY
Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1
Tentatively Identified Compounds						
Total TIC Compounds	7.09	J	ug/l			1
Unknown Aromatic	5.55	J	ug/l			1
Unknown	1.54	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 09:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1598521-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 09:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1598521-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 09:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1598521-5					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 09:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1598521-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 19:47
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1598755-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 19:47
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1598755-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 19:47
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1598755-5					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Tentatively Identified Compounds		
No Tentatively Identified Compounds	ND	ug/l

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/26/22 19:47
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1598755-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1598521-3 WG1598521-4								
Methylene chloride	90		91		70-130	1		20
1,1-Dichloroethane	93		93		70-130	0		20
Chloroform	87		86		70-130	1		20
Carbon tetrachloride	84		85		63-132	1		20
1,2-Dichloropropane	94		95		70-130	1		20
Dibromochloromethane	81		84		63-130	4		20
1,1,2-Trichloroethane	86		88		70-130	2		20
Tetrachloroethene	83		84		70-130	1		20
Chlorobenzene	83		84		75-130	1		20
Trichlorofluoromethane	84		86		62-150	2		20
1,2-Dichloroethane	88		92		70-130	4		20
1,1,1-Trichloroethane	86		86		67-130	0		20
Bromodichloromethane	85		86		67-130	1		20
trans-1,3-Dichloropropene	80		83		70-130	4		20
cis-1,3-Dichloropropene	86		89		70-130	3		20
1,1-Dichloropropene	88		89		70-130	1		20
Bromoform	80		84		54-136	5		20
1,1,2,2-Tetrachloroethane	84		90		67-130	7		20
Benzene	89		90		70-130	1		20
Toluene	83		84		70-130	1		20
Ethylbenzene	82		83		70-130	1		20
Chloromethane	92		95		64-130	3		20
Bromomethane	71		66		39-139	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1598521-3 WG1598521-4								
Vinyl chloride	94		95		55-140	1		20
Chloroethane	91		94		55-138	3		20
1,1-Dichloroethene	87		90		61-145	3		20
trans-1,2-Dichloroethene	88		91		70-130	3		20
Trichloroethene	87		88		70-130	1		20
1,2-Dichlorobenzene	80		81		70-130	1		20
1,3-Dichlorobenzene	81		82		70-130	1		20
1,4-Dichlorobenzene	80		81		70-130	1		20
Methyl tert butyl ether	88		91		63-130	3		20
p/m-Xylene	80		80		70-130	0		20
o-Xylene	80		80		70-130	0		20
cis-1,2-Dichloroethene	89		90		70-130	1		20
Dibromomethane	88		90		70-130	2		20
1,2,3-Trichloropropane	83		87		64-130	5		20
Acrylonitrile	100		110		70-130	10		20
Styrene	80		80		70-130	0		20
Dichlorodifluoromethane	85		86		36-147	1		20
Acetone	89		97		58-148	9		20
Carbon disulfide	88		87		51-130	1		20
2-Butanone	93		100		63-138	7		20
Vinyl acetate	100		100		70-130	0		20
4-Methyl-2-pentanone	94		95		59-130	1		20
2-Hexanone	87		94		57-130	8		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1598521-3 WG1598521-4								
Bromochloromethane	94		92		70-130	2		20
2,2-Dichloropropane	86		86		63-133	0		20
1,2-Dibromoethane	85		87		70-130	2		20
1,3-Dichloropropane	86		88		70-130	2		20
1,1,1,2-Tetrachloroethane	81		82		64-130	1		20
Bromobenzene	82		83		70-130	1		20
n-Butylbenzene	81		82		53-136	1		20
sec-Butylbenzene	80		81		70-130	1		20
tert-Butylbenzene	80		81		70-130	1		20
o-Chlorotoluene	81		82		70-130	1		20
p-Chlorotoluene	79		81		70-130	3		20
1,2-Dibromo-3-chloropropane	75		82		41-144	9		20
Hexachlorobutadiene	81		80		63-130	1		20
Isopropylbenzene	80		82		70-130	2		20
p-Isopropyltoluene	80		81		70-130	1		20
Naphthalene	81		87		70-130	7		20
n-Propylbenzene	82		83		69-130	1		20
1,2,3-Trichlorobenzene	82		86		70-130	5		20
1,2,4-Trichlorobenzene	81		84		70-130	4		20
1,3,5-Trimethylbenzene	80		81		64-130	1		20
1,2,4-Trimethylbenzene	79		81		70-130	3		20
1,4-Dioxane	102		104		56-162	2		20
p-Diethylbenzene	78		80		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1598521-3 WG1598521-4								
p-Ethyltoluene	80		81		70-130	1		20
1,2,4,5-Tetramethylbenzene	78		79		70-130	1		20
Ethyl ether	91		95		59-134	4		20
trans-1,4-Dichloro-2-butene	86		89		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		100		70-130
Toluene-d8	98		97		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	100		100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1598755-3 WG1598755-4								
Methylene chloride	94		93		70-130	1		20
1,1-Dichloroethane	89		90		70-130	1		20
Chloroform	87		87		70-130	0		20
Carbon tetrachloride	86		88		63-132	2		20
1,2-Dichloropropane	86		87		70-130	1		20
Dibromochloromethane	83		84		63-130	1		20
1,1,2-Trichloroethane	89		88		70-130	1		20
Tetrachloroethene	91		88		70-130	3		20
Chlorobenzene	90		87		75-130	3		20
Trichlorofluoromethane	94		90		62-150	4		20
1,2-Dichloroethane	86		86		70-130	0		20
1,1,1-Trichloroethane	87		85		67-130	2		20
Bromodichloromethane	81		83		67-130	2		20
trans-1,3-Dichloropropene	83		84		70-130	1		20
cis-1,3-Dichloropropene	83		84		70-130	1		20
1,1-Dichloropropene	88		86		70-130	2		20
Bromoform	80		77		54-136	4		20
1,1,2,2-Tetrachloroethane	88		85		67-130	3		20
Benzene	90		87		70-130	3		20
Toluene	94		90		70-130	4		20
Ethylbenzene	95		89		70-130	7		20
Chloromethane	85		80		64-130	6		20
Bromomethane	83		80		39-139	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1598755-3 WG1598755-4								
Vinyl chloride	94		91		55-140	3		20
Chloroethane	98		94		55-138	4		20
1,1-Dichloroethene	93		90		61-145	3		20
trans-1,2-Dichloroethene	89		90		70-130	1		20
Trichloroethene	90		89		70-130	1		20
1,2-Dichlorobenzene	92		86		70-130	7		20
1,3-Dichlorobenzene	91		87		70-130	4		20
1,4-Dichlorobenzene	90		85		70-130	6		20
Methyl tert butyl ether	86		87		63-130	1		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	95		90		70-130	5		20
cis-1,2-Dichloroethene	88		87		70-130	1		20
Dibromomethane	86		87		70-130	1		20
1,2,3-Trichloropropane	89		85		64-130	5		20
Acrylonitrile	90		92		70-130	2		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	90		89		36-147	1		20
Acetone	110		110		58-148	0		20
Carbon disulfide	92		90		51-130	2		20
2-Butanone	88		96		63-138	9		20
Vinyl acetate	87		88		70-130	1		20
4-Methyl-2-pentanone	85		84		59-130	1		20
2-Hexanone	81		84		57-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1598755-3 WG1598755-4								
Bromochloromethane	88		88		70-130	0		20
2,2-Dichloropropane	90		86		63-133	5		20
1,2-Dibromoethane	89		88		70-130	1		20
1,3-Dichloropropane	90		89		70-130	1		20
1,1,1,2-Tetrachloroethane	82		84		64-130	2		20
Bromobenzene	90		86		70-130	5		20
n-Butylbenzene	95		88		53-136	8		20
sec-Butylbenzene	96		89		70-130	8		20
tert-Butylbenzene	93		87		70-130	7		20
o-Chlorotoluene	93		86		70-130	8		20
p-Chlorotoluene	93		87		70-130	7		20
1,2-Dibromo-3-chloropropane	77		79		41-144	3		20
Hexachlorobutadiene	92		86		63-130	7		20
Isopropylbenzene	93		87		70-130	7		20
p-Isopropyltoluene	94		87		70-130	8		20
Naphthalene	100		88		70-130	13		20
n-Propylbenzene	96		88		69-130	9		20
1,2,3-Trichlorobenzene	86		83		70-130	4		20
1,2,4-Trichlorobenzene	88		83		70-130	6		20
1,3,5-Trimethylbenzene	91		85		64-130	7		20
1,2,4-Trimethylbenzene	90		85		70-130	6		20
1,4-Dioxane	90		92		56-162	2		20
p-Diethylbenzene	91		85		70-130	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1598755-3 WG1598755-4								
p-Ethyltoluene	95		88		70-130	8		20
1,2,4,5-Tetramethylbenzene	85		80		70-130	6		20
Ethyl ether	90		90		59-134	0		20
trans-1,4-Dichloro-2-butene	86		120		70-130	**33**	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	99		96		70-130
Dibromofluoromethane	99		100		70-130

SEMIVOLATILES

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D2
Client ID: INF
Sample Location: NY

Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 01/27/22 16:34
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	2000		ug/l	5.0	2.4	50

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D
Client ID: INF
Sample Location: NY
Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 01/27/22 14:33
Analyst: JG

Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	100	10.	20
Bis(2-chloroethyl)ether	ND		ug/l	40	10.	20
1,2-Dichlorobenzene	ND		ug/l	40	9.1	20
1,3-Dichlorobenzene	ND		ug/l	40	8.1	20
1,4-Dichlorobenzene	ND		ug/l	40	8.6	20
3,3'-Dichlorobenzidine	ND		ug/l	100	32.	20
2,4-Dinitrotoluene	ND		ug/l	100	23.	20
2,6-Dinitrotoluene	ND		ug/l	100	19.	20
4-Chlorophenyl phenyl ether	ND		ug/l	40	9.7	20
4-Bromophenyl phenyl ether	ND		ug/l	40	7.6	20
Bis(2-chloroisopropyl)ether	ND		ug/l	40	10.	20
Bis(2-chloroethoxy)methane	ND		ug/l	100	10.	20
Hexachlorocyclopentadiene	ND		ug/l	400	14.	20
Isophorone	ND		ug/l	100	24.	20
Nitrobenzene	ND		ug/l	40	15.	20
NDPA/DPA	ND		ug/l	40	8.4	20
n-Nitrosodi-n-propylamine	ND		ug/l	100	13.	20
Bis(2-ethylhexyl)phthalate	ND		ug/l	60	31.	20
Butyl benzyl phthalate	ND		ug/l	100	23.	20
Di-n-butylphthalate	ND		ug/l	100	7.8	20
Di-n-octylphthalate	ND		ug/l	100	25.	20
Diethyl phthalate	ND		ug/l	100	7.6	20
Dimethyl phthalate	ND		ug/l	100	36.	20
Biphenyl	11.	J	ug/l	40	9.2	20
4-Chloroaniline	ND		ug/l	100	21.	20
2-Nitroaniline	ND		ug/l	100	10.	20
3-Nitroaniline	ND		ug/l	100	16.	20
4-Nitroaniline	ND		ug/l	100	16.	20

Project Name: TONAWANDA
Lab Number: L2204062
Project Number: Not Specified
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D
Client ID: INF
Sample Location: NY
Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	36.	J	ug/l	40	10.	20
1,2,4,5-Tetrachlorobenzene	ND		ug/l	200	8.8	20
Acetophenone	ND		ug/l	100	10.	20
2,4,6-Trichlorophenol	ND		ug/l	100	12.	20
p-Chloro-m-cresol	ND		ug/l	40	7.0	20
2-Chlorophenol	ND		ug/l	40	9.6	20
2,4-Dichlorophenol	ND		ug/l	100	8.2	20
2,4-Dimethylphenol	560		ug/l	100	36.	20
2-Nitrophenol	ND		ug/l	200	17.	20
4-Nitrophenol	ND		ug/l	200	13.	20
2,4-Dinitrophenol	ND		ug/l	400	130	20
4,6-Dinitro-o-cresol	ND		ug/l	200	36.	20
Phenol	860		ug/l	100	11.	20
2-Methylphenol	1400		ug/l	100	9.8	20
3-Methylphenol/4-Methylphenol	2000		ug/l	100	9.6	20
2,4,5-Trichlorophenol	ND		ug/l	100	15.	20
Benzoic Acid	60.	J	ug/l	1000	53.	20
Benzyl Alcohol	ND		ug/l	40	12.	20
Carbazole	130		ug/l	40	9.8	20

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D
Client ID: INF
Sample Location: NY
Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	2970	J	ug/l			20
Unknown Phenol	138	J	ug/l			20
Unknown Organic Acid	92.4	J	ug/l			20
Unknown	230	J	ug/l			20
Unknown Phenol	98.2	J	ug/l			20
Unknown Phenol	531	J	ug/l			20
Unknown	110	J	ug/l			20
Naphthalene, 1-methyl-	137	NJ	ug/l			20
Unknown	570	J	ug/l			20
Cyclic Octaatomic Sulfur	743	NJ	ug/l			20
Unknown	132	J	ug/l			20
Unknown	94.5	J	ug/l			20
Unknown	98.2	J	ug/l			20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	21-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	15-120
2,4,6-Tribromophenol	**0**	Q	10-120
4-Terphenyl-d14	**0**	Q	41-149

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D
Client ID: INF
Sample Location: NY
Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 01/27/22 14:57
Analyst: RP

Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	6.9		ug/l	0.50	0.07	5
2-Chloronaphthalene	ND		ug/l	1.0	0.09	5
Fluoranthene	270		ug/l	0.50	0.10	5
Hexachlorobutadiene	ND		ug/l	2.5	0.23	5
Naphthalene	1600	E	ug/l	0.50	0.24	5
Benzo(a)anthracene	160		ug/l	0.50	0.10	5
Benzo(a)pyrene	110		ug/l	0.50	0.08	5
Benzo(b)fluoranthene	150		ug/l	0.50	0.06	5
Benzo(k)fluoranthene	46		ug/l	0.50	0.04	5
Chrysene	120		ug/l	0.50	0.06	5
Acenaphthylene	120		ug/l	0.50	0.06	5
Anthracene	85		ug/l	0.50	0.07	5
Benzo(ghi)perylene	55		ug/l	0.50	0.07	5
Fluorene	67		ug/l	0.50	0.07	5
Phenanthrene	250		ug/l	0.50	0.12	5
Dibenzo(a,h)anthracene	23		ug/l	0.50	0.06	5
Indeno(1,2,3-cd)pyrene	76		ug/l	0.50	0.06	5
Pyrene	180		ug/l	0.50	0.10	5
2-Methylnaphthalene	120		ug/l	0.50	0.11	5
Pentachlorophenol	0.35	J	ug/l	4.0	0.07	5
Hexachlorobenzene	ND		ug/l	4.0	0.05	5
Hexachloroethane	ND		ug/l	4.0	0.32	5

Project Name: TONAWANDA **Lab Number:** L2204062

Project Number: Not Specified **Report Date:** 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01 D
Client ID: INF
Sample Location: NY

Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	48		10-120
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	74		41-149

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY

Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 01/27/22 08:29
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	1.1	J	ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	11.		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY
Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	0.75	J	ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	5.0		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	5.9		ug/l	5.0	0.57	1
2-Methylphenol	7.3		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	9.4		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	19.	J	ug/l	50	2.6	1
Benzyl Alcohol	30.		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY
Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	491	J	ug/l			1
Unknown	46.8	J	ug/l			1
Unknown Organic Acid	65.1	J	ug/l			1
Unknown	11.8	J	ug/l			1
Unknown Organic Acid	21.9	J	ug/l			1
Unknown	14.6	J	ug/l			1
Unknown	20.0	J	ug/l			1
Unknown	74.2	J	ug/l			1
Unknown Organic Acid	19.9	J	ug/l			1
Unknown	42.9	J	ug/l			1
Unknown	12.8	J	ug/l			1
Unknown	18.8	J	ug/l			1
Unknown Alcohol	14.5	J	ug/l			1
Unknown	102	J	ug/l			1
Unknown Benzene	11.6	J	ug/l			1
Unknown	13.6	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	39		15-120
2,4,6-Tribromophenol	52		10-120
4-Terphenyl-d14	44		41-149

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY

Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 01/27/22 09:12
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.02	J	ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.07	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	7.5		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.06	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	0.06	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.07	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.02	J	ug/l	0.10	0.01	1
Chrysene	0.03	J	ug/l	0.10	0.01	1
Acenaphthylene	0.28		ug/l	0.10	0.01	1
Anthracene	0.10	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.06	J	ug/l	0.10	0.01	1
Fluorene	0.07	J	ug/l	0.10	0.01	1
Phenanthrene	0.93		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	0.02	J	ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.07	J	ug/l	0.10	0.01	1
Pyrene	0.04	J	ug/l	0.10	0.02	1
2-Methylnaphthalene	0.18		ug/l	0.10	0.02	1
Pentachlorophenol	0.06	J	ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: TONAWANDA **Lab Number:** L2204062

Project Number: Not Specified **Report Date:** 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02 Date Collected: 01/25/22 14:00

Client ID: EFF Date Received: 01/25/22

Sample Location: NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	74		10-120
4-Terphenyl-d14	63		41-149

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/26/22 23:47
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1598323-1					
Acenaphthene	ND		ug/l	2.0	0.44
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50
Hexachlorobenzene	ND		ug/l	2.0	0.46
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
2-Chloronaphthalene	ND		ug/l	2.0	0.44
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
Fluoranthene	ND		ug/l	2.0	0.26
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorobutadiene	ND		ug/l	2.0	0.66
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Hexachloroethane	ND		ug/l	2.0	0.58
Isophorone	ND		ug/l	5.0	1.2
Naphthalene	ND		ug/l	2.0	0.46
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/26/22 23:47
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1598323-1					
Dimethyl phthalate	ND		ug/l	5.0	1.8
Benzo(a)anthracene	ND		ug/l	2.0	0.32
Benzo(a)pyrene	ND		ug/l	2.0	0.41
Benzo(b)fluoranthene	ND		ug/l	2.0	0.35
Benzo(k)fluoranthene	ND		ug/l	2.0	0.37
Chrysene	ND		ug/l	2.0	0.34
Acenaphthylene	ND		ug/l	2.0	0.46
Anthracene	ND		ug/l	2.0	0.33
Benzo(ghi)perylene	ND		ug/l	2.0	0.30
Fluorene	ND		ug/l	2.0	0.41
Phenanthrene	ND		ug/l	2.0	0.33
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.32
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.40
Pyrene	ND		ug/l	2.0	0.28
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
2-Methylnaphthalene	ND		ug/l	2.0	0.45
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/26/22 23:47
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1598323-1					
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.49
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Benzoic Acid	ND		ug/l	50	2.6
Benzyl Alcohol	ND		ug/l	2.0	0.59
Carbazole	ND		ug/l	2.0	0.49

Tentatively Identified Compounds			
Total TIC Compounds	34.9	J	ug/l
Unknown Alkane	1.93	J	ug/l
Unknown Alkane	1.53	J	ug/l
Unknown Organic Acid	6.25	J	ug/l
Unknown Alkane	4.58	J	ug/l
Unknown	2.18	J	ug/l
Unknown Alkane	2.87	J	ug/l
Unknown Organic Acid	7.02	J	ug/l
Unknown Alkane	2.36	J	ug/l
Unknown Alkane	2.58	J	ug/l
Unknown Alkane	1.74	J	ug/l

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/26/22 23:47
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1598323-1					
Tentatively Identified Compounds					
Unknown	1.85	J	ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	43		15-120
2,4,6-Tribromophenol	47		10-120
4-Terphenyl-d14	47		41-149

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 01/27/22 07:55
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG1598324-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	0.02	J	ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 01/27/22 07:55
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 01/26/22 10:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG1598324-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	75		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1598323-2 WG1598323-3								
Acenaphthene	90		64		37-111	**34**	Q	30
1,2,4-Trichlorobenzene	86		57		39-98	**41**	Q	30
Hexachlorobenzene	89		67		40-140	28		30
Bis(2-chloroethyl)ether	97		66		40-140	**38**	Q	30
2-Chloronaphthalene	84		57		40-140	**38**	Q	30
1,2-Dichlorobenzene	88		61		40-140	**36**	Q	30
1,3-Dichlorobenzene	83		58		40-140	**35**	Q	30
1,4-Dichlorobenzene	85		59		36-97	**36**	Q	30
3,3'-Dichlorobenzidine	40		**24**	Q	40-140	**50**	Q	30
2,4-Dinitrotoluene	86		64		48-143	29		30
2,6-Dinitrotoluene	79		62		40-140	24		30
Fluoranthene	87		65		40-140	29		30
4-Chlorophenyl phenyl ether	82		63		40-140	26		30
4-Bromophenyl phenyl ether	81		65		40-140	22		30
Bis(2-chloroisopropyl)ether	84		59		40-140	**35**	Q	30
Bis(2-chloroethoxy)methane	93		65		40-140	**35**	Q	30
Hexachlorobutadiene	80		52		40-140	**42**	Q	30
Hexachlorocyclopentadiene	77		50		40-140	**43**	Q	30
Hexachloroethane	93		60		40-140	**43**	Q	30
Isophorone	92		66		40-140	**33**	Q	30
Naphthalene	92		64		40-140	**36**	Q	30
Nitrobenzene	95		64		40-140	**39**	Q	30
NDPA/DPA	92		68		40-140	30		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1598323-2 WG1598323-3								
n-Nitrosodi-n-propylamine	92		64		29-132	**36**	Q	30
Bis(2-ethylhexyl)phthalate	101		75		40-140	30		30
Butyl benzyl phthalate	112		80		40-140	**33**	Q	30
Di-n-butylphthalate	101		75		40-140	30		30
Di-n-octylphthalate	105		79		40-140	28		30
Diethyl phthalate	93		68		40-140	**31**	Q	30
Dimethyl phthalate	78		62		40-140	23		30
Benzo(a)anthracene	84		63		40-140	29		30
Benzo(a)pyrene	82		65		40-140	23		30
Benzo(b)fluoranthene	85		67		40-140	24		30
Benzo(k)fluoranthene	90		69		40-140	26		30
Chrysene	84		64		40-140	27		30
Acenaphthylene	81		57		45-123	**35**	Q	30
Anthracene	89		68		40-140	27		30
Benzo(ghi)perylene	84		66		40-140	24		30
Fluorene	88		68		40-140	26		30
Phenanthrene	87		65		40-140	29		30
Dibenzo(a,h)anthracene	83		68		40-140	20		30
Indeno(1,2,3-cd)pyrene	87		67		40-140	26		30
Pyrene	88		66		26-127	29		30
Biphenyl	93		66		40-140	**34**	Q	30
4-Chloroaniline	88		41		40-140	**73**	Q	30
2-Nitroaniline	92		66		52-143	**33**	Q	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1598323-2 WG1598323-3								
3-Nitroaniline	51		45		25-145	13		30
4-Nitroaniline	82		64		51-143	25		30
Dibenzofuran	86		65		40-140	28		30
2-Methylnaphthalene	88		59		40-140	**39**	Q	30
1,2,4,5-Tetrachlorobenzene	84		59		2-134	**35**	Q	30
Acetophenone	102		72		39-129	**34**	Q	30
2,4,6-Trichlorophenol	80		63		30-130	24		30
p-Chloro-m-cresol	**98**	Q	75		23-97	27		30
2-Chlorophenol	105		71		27-123	**39**	Q	30
2,4-Dichlorophenol	96		72		30-130	29		30
2,4-Dimethylphenol	91		60		30-130	**41**	Q	30
2-Nitrophenol	98		62		30-130	**45**	Q	30
4-Nitrophenol	**99**	Q	77		10-80	25		30
2,4-Dinitrophenol	94		66		20-130	**35**	Q	30
4,6-Dinitro-o-cresol	82		57		20-164	**36**	Q	30
Pentachlorophenol	94		70		9-103	29		30
Phenol	74		51		12-110	**37**	Q	30
2-Methylphenol	106		72		30-130	**38**	Q	30
3-Methylphenol/4-Methylphenol	107		70		30-130	**42**	Q	30
2,4,5-Trichlorophenol	86		64		30-130	29		30
Benzoic Acid	90		68		10-164	28		30
Benzyl Alcohol	97		68		26-116	**35**	Q	30
Carbazole	95		74		55-144	25		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: TONAWANDA

Project Number: Not Specified

Lab Number: L2204062

Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1598323-2 WG1598323-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	96		62		21-120
Phenol-d6	77		52		10-120
Nitrobenzene-d5	90		64		23-120
2-Fluorobiphenyl	77		52		15-120
2,4,6-Tribromophenol	91		72		10-120
4-Terphenyl-d14	92		67		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: TONAWANDA

Project Number: Not Specified

Lab Number: L2204062

Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG1598324-2 WG1598324-3								
Acenaphthene	70		53		40-140	28		40
2-Chloronaphthalene	74		55		40-140	29		40
Fluoranthene	78		60		40-140	26		40
Hexachlorobutadiene	66		50		40-140	28		40
Naphthalene	68		52		40-140	27		40
Benzo(a)anthracene	71		56		40-140	24		40
Benzo(a)pyrene	69		54		40-140	24		40
Benzo(b)fluoranthene	81		66		40-140	20		40
Benzo(k)fluoranthene	82		60		40-140	31		40
Chrysene	69		53		40-140	26		40
Acenaphthylene	74		54		40-140	31		40
Anthracene	74		56		40-140	28		40
Benzo(ghi)perylene	64		50		40-140	25		40
Fluorene	77		58		40-140	28		40
Phenanthrene	71		54		40-140	27		40
Dibenzo(a,h)anthracene	73		57		40-140	25		40
Indeno(1,2,3-cd)pyrene	72		57		40-140	23		40
Pyrene	78		60		40-140	26		40
2-Methylnaphthalene	76		57		40-140	29		40
Pentachlorophenol	86		64		40-140	29		40
Hexachlorobenzene	70		54		40-140	26		40
Hexachloroethane	60		46		40-140	26		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG1598324-2 WG1598324-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	57		42		21-120
Phenol-d6	49		35		10-120
Nitrobenzene-d5	61		45		23-120
2-Fluorobiphenyl	74		55		15-120
2,4,6-Tribromophenol	77		58		10-120
4-Terphenyl-d14	82		63		41-149

METALS

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01
Client ID: INF
Sample Location: NY
Sample Depth:
Matrix: Water

Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	18.36		ug/l	2.500	0.8250	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Cadmium, Total	ND		ug/l	1.000	0.2995	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Chromium, Total	5.470		ug/l	5.000	0.8900	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Copper, Total	2.368	J	ug/l	5.000	1.920	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Lead, Total	4.165	J	ug/l	5.000	1.715	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Mercury, Total	0.7000	J	ug/l	1.000	0.4575	1	01/26/22 08:55	01/26/22 15:38	EPA 7470A	1,7470A	AC
Nickel, Total	6.879	J	ug/l	10.00	2.780	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Silver, Total	ND		ug/l	2.000	0.8150	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV
Zinc, Total	ND		ug/l	50.00	17.05	5	01/26/22 06:06	01/26/22 16:32	EPA 3005A	1,6020B	SV

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY
Sample Depth:
Matrix: Water

Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.87		ug/l	0.5000	0.1650	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Cadmium, Total	ND		ug/l	0.2000	0.0599	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Chromium, Total	0.9033	J	ug/l	1.000	0.1780	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Copper, Total	17.90		ug/l	1.000	0.3840	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Lead, Total	ND		ug/l	1.000	0.3430	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Mercury, Total	ND		ug/l	0.2000	0.0915	1	01/26/22 08:55	01/26/22 15:41	EPA 7470A	1,7470A	AC
Nickel, Total	3.045		ug/l	2.000	0.5560	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Silver, Total	ND		ug/l	0.4000	0.1630	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV
Zinc, Total	8.774	J	ug/l	10.00	3.410	1	01/26/22 06:06	01/26/22 16:37	EPA 3005A	1,6020B	SV

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1598140-1										
Arsenic, Total	ND		ug/l	0.5000	0.1650	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Cadmium, Total	ND		ug/l	0.2000	0.0599	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Chromium, Total	ND		ug/l	1.000	0.1780	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Copper, Total	ND		ug/l	1.000	0.3840	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Lead, Total	ND		ug/l	1.000	0.3430	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Nickel, Total	ND		ug/l	2.000	0.5560	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Silver, Total	ND		ug/l	0.4000	0.1630	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV
Zinc, Total	ND		ug/l	10.00	3.410	1	01/26/22 06:06	01/26/22 11:53	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1598141-1										
Mercury, Total	ND		ug/l	0.2000	0.0915	1	01/26/22 08:55	01/26/22 14:41	1,7470A	AC

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1598140-2								
Arsenic, Total	100		-		80-120	-		
Cadmium, Total	99		-		80-120	-		
Chromium, Total	98		-		80-120	-		
Copper, Total	98		-		80-120	-		
Lead, Total	97		-		80-120	-		
Nickel, Total	97		-		80-120	-		
Silver, Total	104		-		80-120	-		
Zinc, Total	100		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1598141-2								
Mercury, Total	91		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1598140-3 WG1598140-4 QC Sample: L2204043-05 Client ID: MS Sample												
Arsenic, Total	1.379	120	126.5	104		129.6	107		75-125	2		20
Cadmium, Total	0.0807J	53	54.34	102		54.75	103		75-125	1		20
Chromium, Total	0.2779J	200	198.2	99		205.6	103		75-125	4		20
Copper, Total	3.566	250	264.3	104		266.3	105		75-125	1		20
Lead, Total	ND	530	533.0	100		540.4	102		75-125	1		20
Nickel, Total	6.647	500	489.9	97		508.0	100		75-125	4		20
Silver, Total	ND	50	53.87	108		53.68	107		75-125	0		20
Zinc, Total	4.901J	500	503.0	101		512.4	102		75-125	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1598141-3 WG1598141-4 QC Sample: L2204043-05 Client ID: MS Sample												
Mercury, Total	ND	5	4.808	96		4.829	96		75-125	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-01
Client ID: INF
Sample Location: NY

Date Collected: 01/24/22 11:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	74000		ug/l	12000	NA	2.5	-	01/26/22 14:50	121,2540D	MD
Cyanide, Total	384.		ug/l	5.00	1.80	1	01/26/22 10:40	01/26/22 14:19	1,9010C/9012B	CS
pH (H)	8.7		SU	-	NA	1	-	01/26/22 17:07	1,9040C	AS
Nitrogen, Ammonia	70800		ug/l	1500	480.	20	01/26/22 13:15	01/26/22 20:29	121,4500NH3-BH	AT
Phosphorus, Total	513.		ug/l	250	100.	25	01/26/22 09:45	01/26/22 15:17	121,4500P-E	SD
BOD, 5 day	33000		ug/l	20000	NA	10	01/26/22 09:15	01/31/22 12:10	121,5210B	MT
TPH	1440	J	ug/l	4000	1240	1	01/26/22 20:00	01/26/22 21:00	140,1664B	TL

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

SAMPLE RESULTS

Lab ID: L2204062-02
Client ID: EFF
Sample Location: NY

Date Collected: 01/25/22 14:00
Date Received: 01/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		ug/l	10000	NA	2	-	01/26/22 14:50	121,2540D	MD
Cyanide, Total	163.		ug/l	5.00	1.80	1	01/26/22 10:40	01/26/22 14:20	1,9010C/9012B	CS
pH (H)	8.5		SU	-	NA	1	-	01/26/22 17:07	1,9040C	AS
Nitrogen, Ammonia	30300		ug/l	750	240.	10	01/26/22 13:15	01/26/22 20:30	121,4500NH3-BH	AT
Phosphorus, Total	843.		ug/l	10.0	4.00	1	01/26/22 09:45	01/26/22 14:08	121,4500P-E	SD
BOD, 5 day	25000		ug/l	20000	NA	10	01/26/22 09:15	01/31/22 12:10	121,5210B	MT
TPH	1390	J	ug/l	4000	1240	1	01/26/22 20:00	01/26/22 21:00	140,1664B	TL

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1598258-1										
Cyanide, Total	ND		ug/l	5.00	1.80	1	01/26/22 10:40	01/26/22 13:49	1,9010C/9012B	CS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1598269-1										
BOD, 5 day	ND		ug/l	2000	NA	1	01/26/22 09:15	01/31/22 12:10	121,5210B	MT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1598283-1										
Phosphorus, Total	ND		ug/l	10.0	4.00	1	01/26/22 09:45	01/26/22 14:05	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1598311-1										
Nitrogen, Ammonia	ND		ug/l	75.0	24.0	1	01/26/22 13:15	01/26/22 20:26	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1598451-1										
Solids, Total Suspended	ND		ug/l	5000	NA	1	-	01/26/22 14:50	121,2540D	MD
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1598482-1										
TPH	ND		ug/l	4000	1240	1	01/26/22 20:00	01/26/22 21:00	140,1664B	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598258-2 WG1598258-3								
Cyanide, Total	90		93		85-115	3		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598269-2								
BOD, 5 day	106		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598283-2								
Phosphorus, Total	100		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598311-2								
Nitrogen, Ammonia	98		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598451-2								
Solids, Total Suspended	103		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598482-2								
TPH	76		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1598495-1								
pH	100		-		99-101	-		5

Matrix Spike Analysis
Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598258-4 WG1598258-5 QC Sample: L2203830-08 Client ID: MS Sample												
Cyanide, Total	3.26J	200	89.8	**45**	Q	66.5	**33**	Q	80-120	**30**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598269-4 QC Sample: L2200023-85 Client ID: MS Sample												
BOD, 5 day	10000	100000	97000	87		-	-		50-145	-		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598283-3 QC Sample: L2204062-02 Client ID: EFF												
Phosphorus, Total	843.	500	847	**1**	Q	-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598482-4 QC Sample: L2204087-02 Client ID: MS Sample												
TPH	ND	19600	16400	84		-	-		64-132	-		34

Lab Duplicate Analysis

Batch Quality Control

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598269-3 QC Sample: L2200023-85 Client ID: DUP Sample						
BOD, 5 day	10000	10000	ug/l	0		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598283-4 QC Sample: L2204062-02 Client ID: EFF						
Phosphorus, Total	843.	814	ug/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598451-3 QC Sample: L2204062-01 Client ID: INF						
Solids, Total Suspended	74000	77000	ug/l	4		29
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598482-3 QC Sample: L2204087-01 Client ID: DUP Sample						
TPH	ND	ND	ug/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1598495-2 QC Sample: L2204062-01 Client ID: INF						
pH (H)	8.7	8.7	SU	0		5

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2204062-01A	Vial HCl preserved	A	NA		3.6	Y	Absent		NYTCL-8260(14)
L2204062-01B	Vial HCl preserved	A	NA		3.6	Y	Absent		NYTCL-8260(14)
L2204062-01C	Vial HCl preserved	A	NA		3.6	Y	Absent		NYTCL-8260(14)
L2204062-01D	Amber 250ml unpreserved	A	9	9	3.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2204062-01E	Amber 250ml unpreserved	A	9	9	3.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2204062-01F	Plastic 250ml NaOH preserved	A	>12	>12	3.6	Y	Absent		TCN-9010-PPB(14)
L2204062-01G	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	Y	Absent		CD-6020T-PPB(180),CR-6020T-PPB(180),HG-T-PPB(28),CU-6020T-PPB(180),AG-6020T-PPB(180),AS-6020T-PPB(180),PB-6020T-PPB(180),NI-6020T-PPB(180),ZN-6020T-PPB(180)
L2204062-01H	Plastic 500ml H2SO4 preserved	A	<2	<2	3.6	Y	Absent		TPHOS-4500-PPB(28),NH3-4500-PPB(28)
L2204062-01I	Plastic 950ml unpreserved	A	9	9	3.6	Y	Absent		BOD-5210-PPB(2),PH-9040(1)
L2204062-01K	Plastic 950ml unpreserved	A	9	9	3.6	Y	Absent		TSS-2540-PPB(7)
L2204062-01L	Amber 1000ml H2SO4 preserved	A	<4	<4	3.6	Y	Absent		SUB-TPHENOL(28)
L2204062-01M	Amber 1000ml HCl preserved	A	NA		3.6	Y	Absent		TPH-1664-PPB(28)
L2204062-01N	Amber 1000ml HCl preserved	A	NA		3.6	Y	Absent		TPH-1664-PPB(28)
L2204062-02A	Vial HCl preserved	A	NA		3.6	Y	Absent		NYTCL-8260(14)
L2204062-02B	Vial HCl preserved	A	NA		3.6	Y	Absent		NYTCL-8260(14)
L2204062-02C	Vial HCl preserved	A	NA		3.6	Y	Absent		NYTCL-8260(14)
L2204062-02D	Amber 250ml unpreserved	A	9	9	3.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2204062-02E	Amber 250ml unpreserved	A	9	9	3.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2204062-02F	Plastic 250ml NaOH preserved	A	>12	>12	3.6	Y	Absent		TCN-9010-PPB(14)

*Values in parentheses indicate holding time in days

Project Name: TONAWANDA
Project Number: Not Specified

Lab Number: L2204062
Report Date: 02/09/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2204062-02G	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	Y	Absent		HG-T-PPB(28),CR-6020T-PPB(180),CD-6020T-PPB(180),CU-6020T-PPB(180),PB-6020T-PPB(180),AS-6020T-PPB(180),AG-6020T-PPB(180),ZN-6020T-PPB(180),NI-6020T-PPB(180)
L2204062-02H	Plastic 500ml H2SO4 preserved	A	<2	<2	3.6	Y	Absent		TPHOS-4500-PPB(28),NH3-4500-PPB(28)
L2204062-02I	Plastic 950ml unpreserved	A	9	9	3.6	Y	Absent		BOD-5210-PPB(2),PH-9040(1)
L2204062-02K	Plastic 950ml unpreserved	A	9	9	3.6	Y	Absent		TSS-2540-PPB(7)
L2204062-02L	Amber 1000ml H2SO4 preserved	A	<4	<4	3.6	Y	Absent		SUB-TPHENOL(28)
L2204062-02M	Amber 1000ml HCl preserved	A	NA		3.6	Y	Absent		TPH-1664-PPB(28)
L2204062-02N	Amber 1000ml HCl preserved	A	NA		3.6	Y	Absent		TPH-1664-PPB(28)

*Values in parentheses indicate holding time in days

Project Name:	TONAWANDA	**Lab Number:**	L2204062
Project Number:	Not Specified	**Report Date:**	02/09/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	TONAWANDA	**Lab Number:**	L2204062
Project Number:	Not Specified	**Report Date:**	02/09/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	TONAWANDA	**Lab Number:**	L2204062
Project Number:	Not Specified	**Report Date:**	02/09/22

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name: TONAWANDA
Project Number: Not Specified
Lab Number: L2204062
Report Date: 02/09/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

140 Method 1664,Revision B: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-10-001, February 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW JERSEY CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 01/25/22

ALPHA Job #: L2204062

Client Information
Client: GUTT
Address: 627 Mt. Hope RD
Wharton, NJ 07885
Phone: 973-983-0901
Fax:
Email: rostad@gsttllc.com

Project Information
Project Name: TONAWANDA
Project Location: NY
Project #
(Use Project name as Project #) ☐
Project Manager: ROB ORLANDO
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☒ # of Days: 3

These samples have been previously analyzed by Alpha ☐

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
8260 w/ TICs / 8270 w/ TICs
Please specify Metals or TAL.
As, Hg by 6020

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	SGT-HEM	TPH by GC/FID	pH/FID-5210	TSS-2540D	Total Metals-6020	NH3/TPHOS-4500	TCN	8260+TICs (TCL)	8270+TICs (TCL)	Total Bottle
04062-01	INF	1/24/2022	1100	GW	RHO	X	X	X	X	X	X	X	X	X	13
-02	EFF	1/25/2022	1400	GW	RHO	X	X	X	X	X	X	X	X	X	13

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Container Type	A	A	P	P	P	P	P	V	A
Preservative	B	D	A	A	C	D	E	B	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
GUTT	1/25/2022 1503	RIOPA	1/25/22 1503
RIOPA	1/25/22 1503	Paul Mazzella	1/25/22 16
Paul Mazzella	1/25/22		1/25/22 2315

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

PHOENIX
Environmental Laboratories, Inc.

Wednesday, February 02, 2022

Attn: Cynthia Romero
Alpha Analytical Lab
8 Walkup Drive
Westborough, MA 01581

Project ID: L2204062
SDG ID: GCK23219
Sample ID#s: CK23219 - CK23220

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

February 02, 2022

SDG I.D.: GCK23219

Any compound that is not detected above the MDL/LOD is reported as ND on the report and is reported in the electronic deliverables (EDD) as <RL or U at the RL per state and EPA guidance.
Compounds that are detected above MDL but below RL are qualified with a J flag.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Sample Id Cross Reference

February 02, 2022

SDG I.D.: GCK23219

Project ID: L2204062

Client Id	Lab Id	Matrix
INF	CK23219	WATER
EFF	CK23220	WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

February 02, 2022

FOR: Attn: Cynthia Romero
Alpha Analytical Lab
8 Walkup Drive
Westborough, MA 01581

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		01/24/22	11:00
Location Code:	ALPHA	Received by:	LB	01/26/22	10:40
Rush Request:	72 Hour	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCK23219
Phoenix ID: CK23219

Project ID: L2204062
Client ID: INF

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Phenolics	4.30	0.375	0.125	mg/L	25	01/31/22	MSF	E420.4

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
February 02, 2022
Reviewed and Released by: Sarah Bell, Project Manager

Ver 2

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

February 02, 2022

FOR: Attn: Cynthia Romero
Alpha Analytical Lab
8 Walkup Drive
Westborough, MA 01581

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		01/25/22	14:00
Location Code:	ALPHA	Received by:	LB	01/26/22	10:40
Rush Request:	72 Hour	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCK23219
Phoenix ID: CK23220

Project ID: L2204062
Client ID: EFF

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Phenolics	0.055	0.015	0.005	mg/L	1	01/31/22	MSF	E420.4

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
February 02, 2022
Reviewed and Released by: Sarah Bell, Project Manager

Ver 2

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

QA/QC Report

February 02, 2022

QA/QC Data

SDG I.D.: GCK23219

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 609763 (mg/L), QC Sample No: CK22471 (CK23219, CK23220)													
Phenolics	BRL	0.015	<0.015	<0.015	NC	109			97.5			90 - 110	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
February 02, 2022

Wednesday, February 02, 2022

Criteria: None

State: NY

Sample Criteria Exceedances Report

GCK23219 - ALPHA

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

February 02, 2022

SDG I.D.: GCK23219

The samples in this delivery group were received at 1.0°C.
(Note acceptance criteria for relevant matrices is above freezing up to 6°C)

WCICP 1.0

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040

Alpha Job Number
L2204062

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 201.812.9072
Email: cromero@alphalab.com

Project Information

Project Location: NY
Project Manager: Cynthia Romero

Turnaround & Deliverables Information

Due Date: (RUSH)
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2204062

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com 3 day TAT

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
23219	INF	01-24-22 11:00	WATER	Total Phenols	
23220	EFF	01-24-22 14:00	WATER	Total Phenols	

REC: 1X 32oz H_2SO_4 amber each

Relinquished By:	Date/Time:	Received By:	Date/Time:
[illegible] 1/26/22		[illegible] AAL	1-26-22 8:13
[illegible] DAVIS	1-26-22 7:45	[illegible]	1126 1040

Form No: AL_subcoc

GCK23219, Alpha Analytical L2204062

Ben Rao <brao@alphalab.com>
Tue 2/1/2022 4:00 PM
To: Client Services <clientservices@phoenixlabs.com>

Hi all, sorry, sample CK23220, EFF collection date needs to be revised. It was mistakenly entered as 1/24 but should be 1/25 collection date. 14:00 collection time remains the same.

Can you please change and send a revised report?

Thanks. Please copy me on the revised report.

Ben Rao
Senior Project Manager

brao@alphalab.com
Main: 201-847-9100 | Direct: 201-812-2633

www.alphalab.com | Give Us Feedback

alphalab.com
alphalab.com

Environmental laboratory solutions provided for your most demanding applications.

Mansfield & Westborough, MA | ME | NH | NJ | NY | OH | PA