C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.

12 Raymond Avenue, Poughkeepsie, New York 12603
845.454.4400 www.ctmale.com

May 3, 2019 ***Via Email***

Ms. Kiera Thompson, P.G.
Project Manager
Division of Environmental Remediation
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7014
Kiera.thompson@dec.ny.gov

RE: Emerging Contaminants Sampling Report
5 Scobie Drive Site
City of Newburgh, Orange County
BCP Site ID No.: C336085

Dear Ms. Thompson:

C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male) has prepared this Emerging Contaminants Sampling Report (Report) for the above-referenced property (the "Site"), located in the City of Newburgh, Orange County, New York. This Report has been prepared pursuant to your letter dated October 10, 2018, requesting that representative groundwater samples be collected from existing wells at the Site for laboratory analysis of emerging contaminants 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS).

Scope of Work

C.T. Male sampled three monitoring wells at the Site on April 12, 2019. Based on our initial site reconnaissance, the wells we had initially proposed to sample were destroyed, lost, or rendered inaccessible due to tree clearing activities that took place at the Site. C.T. Male was eventually able to locate four wells, MW-3, MW-5, CTM-5, and CTM-2; however, monitoring well MW-3 was determined to be dry on the day of the site visit. Therefore, C.T. Male collected samples from the three viable wells. We believe that the selected wells provide a representative example of site-wide groundwater conditions. Two of the wells are representative of upgradient water quality and the third well represents downgradient water quality. Please recall that the

former City of Newburgh Landfill is immediately adjacent and upgradient to the 5 Scobie Drive site. A Sample Location Map is included as Figure 1 in Appendix A.

Sampling Methods

Prior to sampling, each monitoring well was purged employing low flow sampling techniques. A Geotech Geopump™ Series II peristaltic pump with new, dedicated tubing was used for purging and sampling each well. The field sampling technician wore a new pair of nitrile gloves at each monitoring well location. Field measurements were recorded prior to purging and at five- minute intervals thereafter for water level, temperature, dissolved oxygen, specific conductance, pH, oxidation reduction potential, and turbidity. Purging continued until stabilization of field parameters was achieved, to ensure that the monitoring well sample was representative of groundwater conditions. Field sampling logs are attached to this letter report in Appendix B, Field Sampling Logs.

Following purging of each monitoring well, the well was allowed to recover at least 80 percent prior to sample collection. The samples were collected in laboratory-provided containers and placed in a cooler containing ice. A chain-of-custody was prepared, and the samples were picked up by a laboratory-provided courier and delivered to Alpha Analytical Laboratories (Alpha).

Laboratory Analyses

The groundwater samples were analyzed for 1,4-dioxane via U.S. EPA Method 8270 SIM and the Full PFAS Target Analyte List via Method US. EPA Method 537-Isotope Dilution. The analytical methods, detection limits, data reporting and the 21 compounds constituting the Full PFAS Target Analyte List were consistent with the NYSDEC-issued March 2019 "Groundwater Sampling for Emerging Contaminants" document.

Analytical Results

There are currently no promulgated maximum contaminant levels (MCLs) or standards for PFAS compounds. However, the U.S. Environmental Protection Agency (EPA) recommends using a limit of 70 parts per trillion (ppt) for the combined concentrations of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) and 1 part per billion (ppb) for 1,4 Dioxane. In addition, the New York State Department of Environmental Conservation (NYSDEC) has recommended using the New York State Department of Health (NYSDOH) proposed MCL of 10 ppt, individually, for each the list of 21 PFAS-related compounds. As such, C.T. Male compared the groundwater

analytical results to the values recommended or proposed by EPA, NYSDEC and NYSDOH. A summary of the analytical results is given in Table 1 in Appendix C, Analytical Summary. The laboratory report is provided in Appendix D, Lab Results.

The groundwater analytical results identified elevated concentrations of 1,4 Dioxane and PFAS compounds in each of the three monitoring wells sampled. The results are summarized as follows:

1,4 Dioxane

1,4 Dioxane was detected at a concentration of 9.81 ppb in the sample collected from monitoring well MW-5. A duplicate sample collected from MW-5 had a similar concentration of 9.82 ppb. The sample collected from CTM-MW-5 detected 1,4 Dioxane at 10.2 ppb, and CTM-MW-2 had a concentration of 1.87 ppb. All the samples exceed the EPA and NYSDEC recommended concentration of 1 ppb.

PFOA/PFOS

Combined PFOA/PFOS concentrations were: 110 parts per trillion (ppt) in monitoring well MW-5; 101 ppt in the duplicate sample collected from MW-5; 77.7 ppt in CTM-MW-5; and, 581 ppt in CTM-MW-2. All the samples exceed the EPA recommended concentration of 70 ppt.

Individual PFAS Compounds

In addition to PFOA and PFOS, eight individual PFAS compounds were detected in the monitoring wells at concentrations that exceed the NYSDOH proposed MCL and NYSDEC recommended value of 10 ppt. The highest levels were detected in CTM-MW-2 located near the southern property boundary, including Perfluoroheptanoic Acid (PFHpA) at 253 ppt and Perfluorohexanesulfonic Acid (PFHxS) at 250 ppt, which are more than an order of magnitude above the NYSDEC recommended concentration. Refer to Table 1 in Appendix C for a complete list of PFAS concentrations detected.

Conclusions

Based upon the results of the emerging contaminants sampling at the Site, it appears that groundwater beneath Site contains elevated concentrations of 1,4 Dioxane and PFAS-related compounds. Specifically, 1,4 Dioxane, total PFOA/PFOS, and several individual PFAS compounds were detected at concentrations that exceed the respective values recommended by EPA, NYSDEC and NYSDOH for evaluation of PFAS sites.

The source(s) of the PFAS contaminants found at the Site is unknown but may be related to historical use of the Site as a landfill. It is interesting to note that the highest concentrations were detected near the southern property boundary and upgradient with respect to groundwater flow. The former City of Newburgh Landfill is located immediately adjacent to the 5 Scobie Drive Site and has been identified by the NYSDEC as "P" site (Site No. 336036)

Should you require additional information regarding this report, please do not hesitate to contact the undersigned at d.lent@ctmale.com or (845) 454-4400.

Respectfully,
C.T. MALE ASSOCIATES

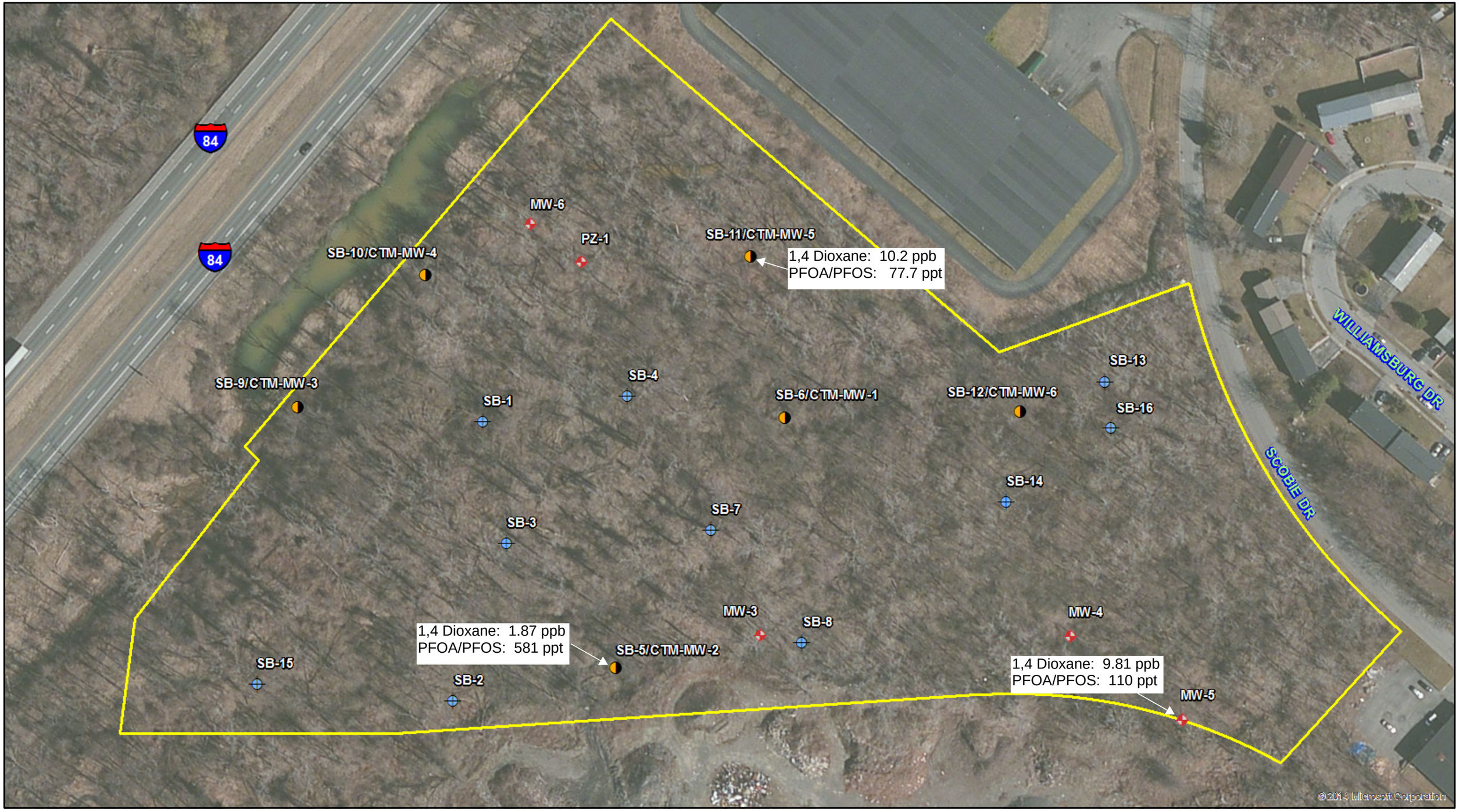
David R. Lent, P.G.
Managing Geologist

ec: Cher Vickers, City of Newburgh IDA
Jim McIver, C.T. Male

Attachments: Appendix A: Sample Location Map
Appendix B: Field Sampling Logs
Appendix C: Summary of Analytical Results
Appendix D: Laboratory Report

APPENDIX A

Figure 1 – Sample Location Map



N E S W

0 100 200 300 FT

1 inch = 100 feet

Project Number: 13.3061
Data Source: NYSGIS Clearinghouse, BING
Projection: State Plane NAD83 NYE (feet)
Date: October 3, 2014
File: Fig5_SB_MWLocations11x17.mxd
GIS: C Secor

Legend

- MW-3 — Approximate Monitoring Well Location and Number Installed by Others
- SB-3 — Approximate Soil Boring Location and Number
- SB-5/CTM-MW-2 — Approximate Soil Boring Converted to a Monitoring Well Location and Number Installed by C.T. Male
- Property Boundary (Approx)

Figure 1: Emerging Contaminants Sample Locations

5 Scobie Drive Site

City of Newburgh — **Orange County, New York**

C.T. MALE ASSOCIATES
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(518) 786-7400 * FAX (518) 786-7299 * WWW.CTMALE.COM
FOUNDED IN 1910

APPENDIX B

Field Sampling Logs

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☒ Low-Flow ☒ Sample

DATE: 4/12/19
PROJECT NO.: 11.1038
SAMPLING PERSONNEL: D. Cummings
NOTES TAKEN BY: D. Cummings

PROJECT NAME: Scobie Drive
PROJECT LOCATION: Newburgh, NY
NOTES CHECKED BY: _____

MONITORING WELL ID#: CTM-MW-2
DEPTH TO WATER (ft): 21.55 FROM: TPVC
DEPTH TO BOTTOM (ft): _____ FROM: TPVC
WATER COLUMN HEIGHT: _____ ft
WELL VOLUME: _____ GALLONS

WELL CASING DIAMETER: 2 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF
1.25" = 0.064 GAL/LF
2" = 0.16 GAL/LF
3" = 0.38 GAL/LF
4" = 0.66 GAL/LF
6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial	5	10	15	20	25	30				
Water Level (ft)	± 0.00	21.55	21.55	21.53	21.54	21.54	21.54	21.54				
Temperature (C)	± 3%	15.3	15.1	15.1	15.1	15.1	15.1	15.1				
DO (mg/L)	±10% or < 0.5	3.05	0.32	0.17	0.19	0.18	0.17	0.18				
Conductivity (uS)	± 3%	1955	2206	2242	2255	2259	2262	2262				
pH (SU)	± 0.1	6.64	6.61	6.60	6.60	6.60	6.59	6.60				
ORP (mV)	±10 mV	29.5	-59.4	-68.2	-73.9	-77.1	-79.4	-80.7				
Turbidity (NTU)	±10% or < 5	11.7	13.2	12.2	8.18	5.20	5.41	5.22				

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: 1.5 GALLONS
AVG PURGE RATE: 175 mL/min

TIME STARTED: 1610
TIME FINISHED: 1640

OBSERVATIONS: COLOR light brown
ODOR none
SHEEN none
OTHER n/a

WATER LEVEL AT 80% RECOV.: 21.55 ft
WATER RECOVERY HEIGHT: 0.01 ft

SAMPLE COLLECTION TIME: 1643
RECOVERY TIME IN MINUTES: 3

NOTES: _____

EQUIPMENT: (PERISTALTIC PUMP) NEW DISPOSABLE BAILER STAINLESS STEEL BAILER
BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: FA01466 (YSI)

Created On: 3/15/2018

Revised On: 4/1/2019

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☒ Low-Flow ☒ Sample

DATE: 4/12/19 PROJECT NAME: Scobie Drive

PROJECT NO.: 11.1038 PROJECT LOCATION: Newburgh, NY

SAMPLING PERSONNEL: D. Cummings

NOTES TAKEN BY: D. Cummings NOTES CHECKED BY: _____

MONITORING WELL ID#: ~~MW-5~~ CTM-MW-5 WELL CASING DIAMETER: 8 in.

DEPTH TO WATER (ft): 8.92 FROM: TPVC

DEPTH TO BOTTOM (ft): _____ FROM: TPVC

WATER COLUMN HEIGHT: _____ ft

WELL VOLUME: _____ GALLONS

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

(2" = 0.16 GAL/LF) 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial	5	10	15	20	25	30	35			
Water Level (ft)	± 0.00	8.92	8.96	8.96	8.96	8.96	8.96	8.96	8.96			
Temperature (C)	± 3%	13.2	13.1	13.0	13.0	13.1	13.1	13.2	13.3			
DO (mg/L)	±10% or < 0.5	3.25	0.37	0.15	0.15	0.09	0.07	0.07	0.08			
Conductivity (uS)	± 3%	1609	1665	1639	1625	1614	1598	1598	1598			
pH (SU)	± 0.1	6.65	6.49	6.48	6.48	6.48	6.49	6.48	6.49			
ORP (mV)	±10 mV	37.2	-23.3	-34.4	-40.3	-42.7	-44.3	-44.9	-44.9			
Turbidity (NTU)	±10% or < 5	14.16	4.84	4.33	4.92	8.48	4.29	5.00	4.62			

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: 1 GALLONS AVG PURGE RATE: 110 mL/min

TIME STARTED: 1425 TIME FINISHED: 1500

OBSERVATIONS: COLOR light brown ODOR none

SHEEN none OTHER none

WATER LEVEL AT 80% RECOV.: 8.92 ft WATER RECOVERY HEIGHT: .08 ft

SAMPLE COLLECTION TIME: ~~1446~~ 1508 RECOVERY TIME IN MINUTES: 8

NOTES: _____

EQUIPMENT: (PERISTALTIC PUMP) NEW DISPOSABLE BAILER STAINLESS STEEL BAILER

BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: FA04666 (YSI)

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☒ Low-Flow ☒ Sample

DATE: 4/12/19
PROJECT NO.: 11.1038
SAMPLING PERSONNEL: D. Cummings
NOTES TAKEN BY: D. Cummings

PROJECT NAME: Scobie Drive
PROJECT LOCATION: Newburgh, NY
NOTES CHECKED BY: _____

MONITORING WELL ID#: MW-5
DEPTH TO WATER (ft): 12.76 FROM: TPVC
DEPTH TO BOTTOM (ft): _____ FROM: TPVC
WATER COLUMN HEIGHT: _____ ft
WELL VOLUME: _____ GALLONS

WELL CASING DIAMETER: 2 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF
1.25" = 0.064 GAL/LF
2" = 0.16 GAL/LF
3" = 0.38 GAL/LF
4" = 0.66 GAL/LF
6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)									
Time (minutes)	-	Initial	5	10	15	20	25	30	35	40	45
Water Level (ft)	± 0.00	12.76	13.28	13.35	13.37	13.34	13.34	13.35	13.35	13.35	13.30
Temperature (C)	± 3%	10.2	9.9	9.8	9.8	9.7	9.8	9.8	9.8	9.7	9.7
DO (mg/L)	±10% or < 0.5	4.01	1.95	0.54	0.33	0.30	0.24	0.22	0.20	0.19	0.20
Conductivity (uS)	± 3%	1170	1176	1173	1170	1166	1166	1169	1168	1169	1167
pH (SU)	± 0.1	6.02	6.17	6.17	6.16	6.17	6.16	6.16	6.16	6.15	6.15
ORP (mV)	±10 mV	53.0	-14.7	-29.7	-27.6	-24.8	-22.3	-19.8	-39.5	-35.5	-40.1
Turbidity (NTU)	±10% or < 5	16.0	17.8	14.1	10.21	8.74	7.98	7.91	7.62	6.25	8.33

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: 1.5 GALLONS
AVG PURGE RATE: 125 mL/min
TIME STARTED: 1005
TIME FINISHED: 1050

OBSERVATIONS: COLOR light brown ODOR light petroleum
SHEEN light petroleum OTHER n/a

WATER LEVEL AT 80% RECOV.: 12.79 ft
WATER RECOVERY HEIGHT: 0.51 ft
SAMPLE COLLECTION TIME: 1116
RECOVERY TIME IN MINUTES: 26

NOTES: _____

EQUIPMENT: (PERISTALTIC PUMP) NEW DISPOSABLE BAILER STAINLESS STEEL BAILER
BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: FA01466 (YSI)

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☐ Low-Flow ☐ Sample

DATE: 4/12/19 PROJECT NAME: _____

PROJECT NO.: _____ PROJECT LOCATION: _____

SAMPLING PERSONNEL: D. Cummings

NOTES TAKEN BY: D. Cummings NOTES CHECKED BY: _____

MONITORING WELL ID#: MW-3 → DRY WELL CASING DIAMETER: _____ in.

DEPTH TO WATER (ft): 21.73 FROM: TPVC

DEPTH TO BOTTOM (ft): ~~21.73~~ FROM: TPVC

WATER COLUMN HEIGHT: _____ ft

WELL VOLUME: _____ GALLONS

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial										
Water Level (ft)	± 0.00											
Temperature (C)	± 3%											
DO (mg/L)	±10% or < 0.5											
Conductivity (uS)	± 3%											
pH (SU)	± 0.1											
ORP (mV)	±10 mV											
Turbidity (NTU)	±10% or < 5											

Field Parameters	Time (since start of purging)											
Time (minutes)												
Water Level (ft)												
Temperature (C)												
DO (mg/L)												
Conductivity (uS)												
pH (SU)												
ORP (mV)												
Turbidity (NTU)												

VOLUMES PURGED: _____ GALLONS AVG PURGE RATE: _____

TIME STARTED: 1345 TIME FINISHED: _____

OBSERVATIONS: COLOR _____ ODOR _____

SHEEN _____ OTHER _____

WATER LEVEL AT 80% RECOV.: _____ ft WATER RECOVERY HEIGHT: _____ ft

SAMPLE COLLECTION TIME: _____ RECOVERY TIME IN MINUTES: _____

NOTES: well was dry.

EQUIPMENT: PERISTALTIC PUMP NEW DISPOSABLE BAILER STAINLESS STEEL BAILER

BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: PA0146le (YSI)

APPENDIX C

Table 1 - Analytical Summary

Table 1
Summary of Groundwater Analytical Results
5 Scobie Drive Site
BCP Site ID No,: C336085

LOCATION			MW-5-20190412		DUP-20190412		CTM-MW-5-20190412		CTM-MW-2-20190412	
SAMPLING DATE			4/12/2019		4/12/2019		4/12/2019		4/12/2019	
LAB SAMPLE ID			L1915270-01		L1915270-02		L1915270-04		L1915270-05	
SAMPLE TYPE			WATER		WATER		WATER		WATER	
	NYSDEC Recommended or Proposed Values	Units	Results	RL	Results	RL	Results	RL	Results	RL
1,4 Dioxane by 8270D-SIM										
1,4-Dioxane	1	ppb	9.81	0.1444	9.82	0.1444	10.2	0.1444	1.87	0.1444
Perfluorinated Alkyl Acids by Isotope Dilution				0	0	0	0	0	0	0
Perfluorobutanoic Acid (PFBA)	10	ppt	18	2.13	17	2.16	10.9	2.01	85.4	2.19
Perfluoropentanoic Acid (PFPeA)	10	ppt	19.7	2.13	17.4	2.16	12.6	2.01	195	2.19
Perfluorobutanesulfonic Acid (PFBS)	10	ppt	8.19	2.13	7.83	2.16	4.71	2.01	82.4	2.19
Perfluorohexanoic Acid (PFHxA)	10	ppt	29.6	2.13	28.7	2.16	15	2.01	253	2.19
Perfluoroheptanoic Acid (PFHpA)	10	ppt	29.5	2.13	26.9	2.16	10.4	2.01	150	2.19
Perfluorohexanesulfonic Acid (PFHxS)	10	ppt	11.2	2.13	10.6	2.16	15.7	2.01	30	2.19
Perfluorooctanoic Acid (PFOA)	10	ppt	89.6	2.13	83.1	2.16	43.8	2.01	374	2.19
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10	ppt	0.00146J	2.13	0.0009J	2.16	0.00137J	2.01	6.17	2.19
Perfluoroheptanesulfonic Acid (PFHpS)	10	ppt	0.00115J	2.13	0.000857J	2.16	0.0013J	2.01	5.46	2.19
Perfluorononanoic Acid (PFNA)	10	ppt	4.2	2.13	3.64	2.16	0.00194J	2.01	73.8	2.19
Perfluorooctanesulfonic Acid (PFOS)	10	ppt	20.7	2.13	18.3	2.16	33.9	2.01	207	2.19
Perfluorodecanoic Acid (PFDA)	10	ppt	ND	2.13	ND	2.16	ND	2.01	42.6	2.19
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	10	ppt	ND	2.13	ND	2.16	ND	2.01	ND	2.19
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	10	ppt	ND	2.13	0.000346J	2.16	ND	2.01	0.00105J	2.19
Perfluoroundecanoic Acid (PFUnA)	10	ppt	ND	2.13	ND	2.16	ND	2.01	0.000917J	2.19
Perfluorodecanesulfonic Acid (PFDS)	10	ppt	ND	2.13	ND	2.16	ND	2.01	ND	2.19
Perfluorooctanesulfonamide (FOSA)	10	ppt	ND	2.13	ND	2.16	ND	2.01	ND	2.19
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	10	ppt	0.000962J	2.13	ND	2.16	ND	2.01	3.63	2.19
Perfluorododecanoic Acid (PFDoA)	10	ppt	ND	2.13	ND	2.16	ND	2.01	ND	2.19
Perfluorotridecanoic Acid (PFTrDA)	10	ppt	ND	2.13	ND	2.16	ND	2.01	ND	2.19
Perfluorotetradecanoic Acid (PFTA)	10	ppt	ND	2.13	ND	2.16	ND	2.01	ND	2.19
PFOA/PFOS, Total	70	ppt	110	2.13	101	2.16	77.7	2.01	581	2.19

1. J qualifier indicates compound was detected above Method Detection Limit but is below the Reporting Level
2. Shaded cell indicates concentration above US. EPA, NYSDOH, NYSDEC recommended or proposed value
3. Units are in parts per billion (ppb) and parts per trillion (ppt)

APPENDIX D

Laboratory Report

ANALYTICAL REPORT

Lab Number:	L1915270
Client:	C.T. Male Associates 12 Raymond Avenue Poughkeepsie, NY 12603
ATTN:	David Lent
Phone:	(845) 454-4400
Project Name:	5 SCOBIE DRIVE SITE
Project Number:	11.1038
Report Date:	04/24/19

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).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038

Lab Number: L1915270
Report Date: 04/24/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1915270-01	MW-5-20190412	WATER	NEWBURGH, NY	04/12/19 11:16	04/15/19
L1915270-02	DUP-20190412	WATER	NEWBURGH, NY	04/12/19 00:00	04/15/19
L1915270-03	FIELD BLANK-20190412	WATER	NEWBURGH, NY	04/12/19 12:37	04/15/19
L1915270-04	CTM-MW-5-20190412	WATER	NEWBURGH, NY	04/12/19 15:08	04/15/19
L1915270-05	CTM-MW-2-20190412	WATER	NEWBURGH, NY	04/12/19 16:43	04/15/19
L1915270-06	EQUIPMENT BLANK-20190412	WATER	NEWBURGH, NY	04/12/19 13:06	04/15/19

Project Name:	5 SCOBIE DRIVE SITE	**Lab Number:**	L1915270
Project Number:	11.1038	**Report Date:**	04/24/19

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: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

Case Narrative (continued)

Report Submission

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

Perfluorinated Alkyl Acids by Isotope Dilution

The WG1228108-4 MS recovery, performed on L1915270-01, are outside the acceptance criteria for perfluorodecanesulfonic acid (pfds) (163%).

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: Elizabeth Porta

Title: Technical Director/Representative Date: 04/24/19

ORGANICS

SEMIVOLATILES

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-01
Client ID: MW-5-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 11:16
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 16:34
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	9810		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	21		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-01
Client ID: MW-5-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 11:16
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 04/21/19 18:51
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	18.0		ng/l	2.13	0.397	1
Perfluoropentanoic Acid (PFPeA)	19.7		ng/l	2.13	0.494	1
Perfluorobutanesulfonic Acid (PFBS)	8.19		ng/l	2.13	0.404	1
Perfluorohexanoic Acid (PFHxA)	29.6		ng/l	2.13	0.523	1
Perfluoroheptanoic Acid (PFHpA)	29.5		ng/l	2.13	0.396	1
Perfluorohexanesulfonic Acid (PFHxS)	11.2		ng/l	2.13	0.464	1
Perfluorooctanoic Acid (PFOA)	89.6		ng/l	2.13	0.489	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.46	J	ng/l	2.13	0.206	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.15	J	ng/l	2.13	0.553	1
Perfluorononanoic Acid (PFNA)	4.20		ng/l	2.13	0.464	1
Perfluorooctanesulfonic Acid (PFOS)	20.7		ng/l	2.13	0.596	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.13	0.660	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.13	0.309	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.13	0.266	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.13	0.451	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.13	0.411	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.13	0.591	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.962	J	ng/l	2.13	0.396	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.13	0.630	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.13	0.334	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.13	1.05	1
PFOA/PFOS, Total	110		ng/l	2.13	0.489	1

Project Name: 5 SCOBIE DRIVE SITE
Lab Number: L1915270
Project Number: 11.1038
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-01
Client ID: MW-5-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 11:16
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	106		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	75		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	135		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	130		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	58		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	60		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		33-143

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-02
Client ID: DUP-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 00:00
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 17:57
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	9820		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	23		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-02
Client ID: DUP-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 00:00
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 04/21/19 19:40
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	17.0		ng/l	2.16	0.404	1
Perfluoropentanoic Acid (PFPeA)	17.4		ng/l	2.16	0.502	1
Perfluorobutanesulfonic Acid (PFBS)	7.83		ng/l	2.16	0.411	1
Perfluorohexanoic Acid (PFHxA)	28.7		ng/l	2.16	0.532	1
Perfluoroheptanoic Acid (PFHpA)	26.9		ng/l	2.16	0.402	1
Perfluorohexanesulfonic Acid (PFHxS)	10.6		ng/l	2.16	0.472	1
Perfluorooctanoic Acid (PFOA)	83.1		ng/l	2.16	0.498	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.900	J	ng/l	2.16	0.210	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.857	J	ng/l	2.16	0.563	1
Perfluorononanoic Acid (PFNA)	3.64		ng/l	2.16	0.472	1
Perfluorooctanesulfonic Acid (PFOS)	18.3		ng/l	2.16	0.606	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.16	0.671	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.16	0.315	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.346	J	ng/l	2.16	0.271	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.16	0.459	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.16	0.418	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.16	0.602	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.16	0.403	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.16	0.641	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.16	0.340	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.16	1.07	1
PFOA/PFOS, Total	101		ng/l	2.16	0.498	1

Project Name: 5 SCOBIE DRIVE SITE **Lab Number:** L1915270

Project Number: 11.1038 **Report Date:** 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-02 Date Collected: 04/12/19 00:00

Client ID: DUP-20190412 Date Received: 04/15/19

Sample Location: NEWBURGH, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	111		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	127		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	111		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	156		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	117		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	112		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	97		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	155		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	113		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	57		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		33-143

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-03
Client ID: FIELD BLANK-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 12:37
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 18:23
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	22		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-03
Client ID: FIELD BLANK-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 12:37
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 04/21/19 17:11
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.81	0.338	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.81	0.420	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	0.344	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.81	0.446	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.81	0.337	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	0.395	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.81	0.417	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.21	J	ng/l	1.81	0.176	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	0.471	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	0.395	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	0.507	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	0.562	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	0.263	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	0.227	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	0.384	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	0.350	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	0.504	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	0.338	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	0.536	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	0.284	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	0.895	1
PFOA/PFOS, Total	ND		ng/l	1.81	0.417	1

Project Name: 5 SCOBIE DRIVE SITE **Lab Number:** L1915270

Project Number: 11.1038 **Report Date:** 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-03 Date Collected: 04/12/19 12:37

Client ID: FIELD BLANK-20190412 Date Received: 04/15/19

Sample Location: NEWBURGH, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	106		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	110		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	129		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	108		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	64		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	110		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	101		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	118		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		33-143

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-04
Client ID: CTM-MW-5-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 15:08
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 18:47
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	10200		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	24		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-04
Client ID: CTM-MW-5-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 15:08
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 04/21/19 19:57
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	10.9		ng/l	2.01	0.375	1
Perfluoropentanoic Acid (PFPeA)	12.6		ng/l	2.01	0.466	1
Perfluorobutanesulfonic Acid (PFBS)	4.71		ng/l	2.01	0.382	1
Perfluorohexanoic Acid (PFHxA)	15.0		ng/l	2.01	0.494	1
Perfluoroheptanoic Acid (PFHpA)	10.4		ng/l	2.01	0.373	1
Perfluorohexanesulfonic Acid (PFHxS)	15.7		ng/l	2.01	0.438	1
Perfluorooctanoic Acid (PFOA)	43.8		ng/l	2.01	0.462	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.37	J	ng/l	2.01	0.195	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.30	J	ng/l	2.01	0.522	1
Perfluorononanoic Acid (PFNA)	1.94	J	ng/l	2.01	0.438	1
Perfluorooctanesulfonic Acid (PFOS)	33.9		ng/l	2.01	0.562	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.01	0.622	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.01	0.292	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.01	0.251	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.01	0.426	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.01	0.388	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.01	0.558	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.01	0.374	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.01	0.594	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.01	0.315	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.01	0.992	1
PFOA/PFOS, Total	77.7		ng/l	2.01	0.462	1

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-04
Client ID: CTM-MW-5-20190412
Sample Location: NEWBURGH, NY
Date Collected: 04/12/19 15:08
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	107		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	114		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	110		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	104		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	93		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	53		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	57		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		33-143

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-05
Client ID: CTM-MW-2-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 16:43
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 19:10
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	1870		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	22		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-05
Client ID: CTM-MW-2-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 16:43
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 04/21/19 20:13
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	85.4		ng/l	2.19	0.409	1
Perfluoropentanoic Acid (PFPeA)	195		ng/l	2.19	0.509	1
Perfluorobutanesulfonic Acid (PFBS)	82.4		ng/l	2.19	0.417	1
Perfluorohexanoic Acid (PFHxA)	253		ng/l	2.19	0.539	1
Perfluoroheptanoic Acid (PFHpA)	150		ng/l	2.19	0.408	1
Perfluorohexanesulfonic Acid (PFHxS)	30.0		ng/l	2.19	0.478	1
Perfluorooctanoic Acid (PFOA)	374		ng/l	2.19	0.504	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.17		ng/l	2.19	0.213	1
Perfluoroheptanesulfonic Acid (PFHpS)	5.46		ng/l	2.19	0.570	1
Perfluorononanoic Acid (PFNA)	73.8		ng/l	2.19	0.478	1
Perfluorooctanesulfonic Acid (PFOS)	207		ng/l	2.19	0.614	1
Perfluorodecanoic Acid (PFDA)	42.6		ng/l	2.19	0.680	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.19	0.319	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.05	J	ng/l	2.19	0.274	1
Perfluoroundecanoic Acid (PFUnA)	0.917	J	ng/l	2.19	0.465	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.19	0.423	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.19	0.610	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	3.63		ng/l	2.19	0.409	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.19	0.649	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.19	0.344	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.19	1.08	1
PFOA/PFOS, Total	581		ng/l	2.19	0.504	1

Project Name: 5 SCOBIE DRIVE SITE
Lab Number: L1915270
Project Number: 11.1038
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-05
Client ID: CTM-MW-2-20190412
Sample Location: NEWBURGH, NY
Date Collected: 04/12/19 16:43
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	62		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	54		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	74		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	160		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	135		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	87		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	123		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	66		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	109		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		33-143

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-06
Client ID: EQUIPMENT BLANK-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 13:06
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 19:33
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	88.9	J	ng/l	147	33.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	21		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-06
Client ID: EQUIPMENT BLANK-20190412
Sample Location: NEWBURGH, NY

Date Collected: 04/12/19 13:06
Date Received: 04/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 04/21/19 17:28
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.332	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.413	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.338	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.438	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.331	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.388	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	0.409	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.66	J	ng/l	1.78	0.172	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.463	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.388	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.498	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.552	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.259	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.223	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.377	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.343	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.495	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.332	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.527	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.279	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.879	1
PFOA/PFOS, Total	ND		ng/l	1.78	0.409	1

Project Name: 5 SCOBIE DRIVE SITE **Lab Number:** L1915270

Project Number: 11.1038 **Report Date:** 04/24/19

SAMPLE RESULTS

Lab ID: L1915270-06 Date Collected: 04/12/19 13:06

Client ID: EQUIPMENT BLANK-20190412 Date Received: 04/15/19

Sample Location: NEWBURGH, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	117		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	138		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	70		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	87		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	21		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	121		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		33-143

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 04/17/19 15:07
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/16/19 17:40

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-06 Batch: WG1226997-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	23		15-110

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 04/21/19 13:26
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-06 Batch: WG1228108-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.373
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.464
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.380
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.492
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.372
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.436
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.460
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	0.194
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.520
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.436
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.560
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.620
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	0.291
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.250
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.424
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.386
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.556
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.373
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.592
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.314
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.988
PFOA/PFOS, Total	ND		ng/l	2.00	0.460

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 04/21/19 13:26
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/19/19 08:58

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-06 Batch: WG1228108-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	116		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	114		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	117		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	116		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	127		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	114		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	110		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	122		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	77		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	50		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: 5 SCOBIE DRIVE SITE

Project Number: 11.1038

Lab Number: L1915270

Report Date: 04/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-06		Batch: WG1226997-2		WG1226997-3			
1,4-Dioxane	117		117		40-140	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	22		22		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038

Lab Number: L1915270
Report Date: 04/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-06 Batch: WG1228108-2 WG1228108-3								
Perfluorobutanoic Acid (PFBA)	102		102		67-148	0		30
Perfluoropentanoic Acid (PFPeA)	105		106		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	94		97		65-157	3		30
Perfluorohexanoic Acid (PFHxA)	116		116		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	105		108		58-159	3		30
Perfluorohexanesulfonic Acid (PFHxS)	102		99		69-177	3		30
Perfluorooctanoic Acid (PFOA)	105		109		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	108		103		49-187	5		30
Perfluoroheptanesulfonic Acid (PFHpS)	98		110		61-179	12		30
Perfluorononanoic Acid (PFNA)	112		120		68-171	7		30
Perfluorooctanesulfonic Acid (PFOS)	92		97		52-151	5		30
Perfluorodecanoic Acid (PFDA)	115		117		63-171	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	99		87		56-173	13		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		103		60-166	4		30
Perfluoroundecanoic Acid (PFUnA)	102		100		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	124		135		38-156	8		30
Perfluorooctanesulfonamide (FOSA)	101		115		46-170	13		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	116		108		45-170	7		30
Perfluorododecanoic Acid (PFDoA)	109		111		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	105		127		48-158	19		30
Perfluorotetradecanoic Acid (PFTA)	117		125		59-182	7		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038

Lab Number: L1915270
Report Date: 04/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-06 Batch: WG1228108-2 WG1228108-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	119		115		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		104		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	119		121		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	115		121		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	113		112		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	127		139		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	109		109		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	83		68		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		96		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	110		108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		100		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	103		85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		85		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		97		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	42		47		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		82		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	102		87		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	83		77		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: 5 SCOBIE DRIVE SITE

Project Number: 11.1038

Lab Number: L1915270

Report Date: 04/24/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1226997-4 WG1226997-5 QC Sample: L1915270-01 Client ID: MW-5-20190412												
1,4-Dioxane	9810	4810	15400	116		15200	112		40-140	1		30

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1,4-Dioxane-d8	25		23		15-110

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038
Lab Number: L1915270
Report Date: 04/24/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1228108-4 WG1228108-5 QC Sample: L1915270-01 Client ID: MW-5-20190412												
Perfluorobutanoic Acid (PFBA)	18.0	41.7	67.2	118		67.3	117		67-148	0		30
Perfluoropentanoic Acid (PFPeA)	19.7	41.7	69.0	118		67.2	113		63-161	3		30
Perfluorobutanesulfonic Acid (PFBS)	8.19	41.7	53.0	108		52.8	106		65-157	0		30
Perfluorohexanoic Acid (PFHxA)	29.6	41.7	87.0	138		84.8	131		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	29.5	41.7	81.0	124		81.5	123		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	11.2	41.7	55.5	106		55.8	106		69-177	1		30
Perfluorooctanoic Acid (PFOA)	89.6	41.7	142	126		148	138		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.46J	41.7	50.9	122		49.0	116		49-187	4		30
Perfluoroheptanesulfonic Acid (PFHpS)	1.15J	41.7	52.6	126		46.9	111		61-179	11		30
Perfluorononanoic Acid (PFNA)	4.20	41.7	59.5	133		56.9	125		68-171	4		30
Perfluorooctanesulfonic Acid (PFOS)	20.7	41.7	69.4	117		65.5	106		52-151	6		30
Perfluorodecanoic Acid (PFDA)	ND	41.7	52.4	126		51.7	123		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	41.7	48.3	116		51.6	122		56-173	7		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	41.7	45.1	108		45.1	107		60-166	0		30
Perfluoroundecanoic Acid (PFUnA)	ND	41.7	45.2	108		44.0	104		60-153	3		30
Perfluorodecanesulfonic Acid (PFDS)	ND	41.7	68.1	**163**	Q	59.1	140		38-156	14		30
Perfluorooctanesulfonamide (FOSA)	ND	41.7	45.4	109		46.1	109		46-170	2		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.962J	41.7	60.4	145		52.3	124		45-170	14		30
Perfluorododecanoic Acid (PFDoA)	ND	41.7	48.6	117		49.7	118		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	ND	41.7	43.8	105		44.4	105		48-158	1		30
Perfluorotetradecanoic Acid (PFTA)	ND	41.7	57.3	138		61.6	146		59-182	7		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 5 SCOBIE DRIVE SITE

Project Number: 11.1038

Lab Number: L1915270

Report Date: 04/24/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1228108-4 WG1228108-5 QC Sample: L1915270-01 Client ID: MW-5-20190412

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	138		134		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	146		136		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	61		60		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		61		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		103		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		91		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		83		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	117		112		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		90		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		57		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	103		102		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	73		73		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		53		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		99		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		95		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		104		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		80		31-159

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038

Lab Number: L1915270
Report Date: 04/24/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915270-01A	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-01A1	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-01A2	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-01B	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-01B1	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-01B2	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-01C	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-01C1	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-01C2	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-01D	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-01D1	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-01D2	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-02A	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-02B	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-02C	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-02D	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-03A	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-03C	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-03D	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-04A	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-04B	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-04C	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: 5 SCOBIE DRIVE SITE
Project Number: 11.1038

Lab Number: L1915270
Report Date: 04/24/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915270-04D	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-05A	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-05B	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-05C	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-05D	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-06A	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-06B	Plastic 250ml Trizma preserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1915270-06C	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1915270-06D	Amber 500ml unpreserved	B	8	8	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name:	5 SCOBIE DRIVE SITE	**Lab Number:**	L1915270
Project Number:	11.1038	**Report Date:**	04/24/19

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.

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.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 SCOBIE DRIVE SITE	**Lab Number:**	L1915270
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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.

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.

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. If a 'Total' result is requested, the results of its individual components will also be reported.

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 Condensation Product".

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.

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.

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.

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 SCOBIE DRIVE SITE	**Lab Number:**	L1915270
Project Number:	11.1038	**Report Date:**	04/24/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

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
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

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**
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.**

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.

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.

NEW YORK CHAIN OF CUSTODY

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

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: 4/15/19

ALPHA Job #: L1915270

Client Information
Client: CTMale Associates
Address: 12 Raymond Avenue
Poughkeepsie, NY 12603
Phone: 845-454-4400
Fax:
Email: d.lent@ctmale.com

Project Information
Project Name: 5 Scobie Drive Site
Project Location: Newburgh, NY
Project # 11.1038
(Use Project name as Project #) ☐
Project Manager: Jim McIver / David Lent
ALPHAQuote #:

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

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: A2-537	ANALYSIS: A2-1,4-Dioxane-SIM	Total Bottles	Sample Specific Comments
15270.01	MW-5-20190412	4/12/19	1116	GW	DC	X	X	4	
.01 ~~.02~~	MS-MW-5-20190412		1139	GW	DC	X	X	4	MS
.01 ~~.03~~	MSD-MW-5-20190412		1155	GW	DC	X	X	4	MSD
.02 ~~.04~~	DUP-20190412		—	GW	DC	X	X	4	
.03	Field Blank-20190412		1237	water	DC	X	X	4	empty reagent bottle included
.04	CTM-MW-5-20190412		1508	GW	DC	X	X	4	
.05	CTM-MW-~~2~~-20190412		1643	GW	DC	X	X	4	
.06	Equipment Blank-20190412	4/12/19	1306	water	DC	X	X	4	(1 amber is 1/2 full)

Container Type: P A
Preservative: A/0 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
	4/15/19 1026		4/15/19 1926
	4/15/19 1410		4/15/19 2040
	4/15/19 2040		4/15/19 2040
	4/16/19 0530		4/16/19 0530

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: 01-25 HC (rev. 30-Sept-2013)