Operations & Maintenance Inc.
Riverview Business Park
1850 Route 57
Fulton, NY 13069

Gary Mullen, Jr.
Project Manager
gmullenomi@gmail.com

January 17, 2020

Michael Belveg, Assistant Engineer (Environmental)
New York State Department of Environmental Conservation
Division of Environmental Remediation
615 Erie Boulevard West
Syracuse, NY 13204
michael.belveg@dec.ny.gov

Subject: Emerging Contaminant Sampling
Former Miller Container Site, No. 7-38-029

Dear Mr. Belveg

The Emerging Contaminant sampling requested by NYSEDC was performed on September 27, 2019. Attached please find a summary table of the analytical data from the sampling, the laboratory report from Alpha Analytical and the required DUSR prepared by Golder Associates. The analytical data was also submitted to the NYSDEC electronically by Golder Associates.

If you have any questions or need any additional information, please contact me at (315) 378-5088.

Respectfully,

Operations & Maintenance Inc.

Gary Mullen
Digitally signed by Gary Mullen
DN: cn=Gary Mullen, o=OMI, ou, email=gmullenomi@gmail.com, c=US
Date: 2020.01.17 11:22:58 -05'00'

Gary W. Mullen Jr.
Project Manager

Attachments

cc: Jay Eversman, Anhauser-Busch, St Louis, MO
Eamonn O'Neil, NYSDOH, Troy, NY
Val Murakami, DYSDEC, Syracuse, NY
Bill Buchan, OMI, Constantia, NY
Dean Merritt, OMI, Syracuse, NY
Maureen Schuck, NYSDOH

GROUNDWATER SAMPLING RESULTS-FORMER MILLER CONTAINER FACILITY

NYSDEC SITE # 7-38-029

EMERGING CONTAMINANT SAMPLING

DATE: November 27, 2019

Report #: L1945082

	MW-60D	MW-16D	MW-38S	MW-61D	Blind	EQ Blank	Field Blank
1,4-Dioxane	ND	2660	7020	14000	13900	ND	ND
Perfluorobutanoic Acid (PFBA)	5.41	3.95	5.31	2.65	2.55	ND	ND
Perfluoropentanoic Acid (PFPeA)	4.11	4.17	0.455	1.3	0.948	ND	ND
Perfluorobutanesulfonic Acid (PFBS)	0.804	0.452	0.996	ND	0.347	ND	ND
Perfluorohexanoic Acid (PFHxA)	3.79	3.39	0.798	1.18	1.15	0.396	0.432
Perfluoroheptanoic Acid (PFHpA)	3.02	1.96	ND	0.547	0.435	ND	ND
Perfluorohexanesulfonic Acid (PFHxS)	1.05	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	3.68	3.02	ND	0.814	0.72	ND	ND
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	73.1	14.9	2.91	11.1	8.01	ND	ND
Perfluorononanoic Acid (PFNA)	1.43	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonic Acid (PFOS)	3.88	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	0.345	ND	ND	ND	ND	ND	ND
PFOA/PFOS, Total	7.56	3.02	ND	0.814	0.72	ND	ND

Notes:
Results presented in ng/l
Blind duplicate collected from MW-61D
See Alpha Analytical Report # L1945082 for Method Detection Limits (MDL)

OPERATIONS AND MAINTENANCE INC.

ANALYTICAL REPORT

Lab Number:	L1945082
Client:	Operation & Maintenance, Inc. 15 Lakeshore Drive Constania, NY 13044
ATTN:	Gary Mullen
Phone:	() -
Project Name:	EMERGING CONTAMINANTS
Project Number:	Not Specified
Report Date:	10/17/19

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: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1945082-01	MW-60D	WATER	FULTON, NY	09/27/19 10:35	09/27/19
L1945082-02	MW-16D	WATER	FULTON, NY	09/27/19 13:45	09/27/19
L1945082-03	MW-38S	WATER	FULTON, NY	09/27/19 14:25	09/27/19
L1945082-04	MW-61D	WATER	FULTON, NY	09/27/19 12:25	09/27/19
L1945082-05	BLIND DUPLICATE	WATER	FULTON, NY	09/27/19 00:00	09/27/19
L1945082-06	EQUIPMENT BLANK	WATER	FULTON, NY	09/27/19 09:30	09/27/19
L1945082-07	FIELD BLANK	WATER	FULTON, NY	09/27/19 09:20	09/27/19

Project Name:	EMERGING CONTAMINANTS	**Lab Number:**	L1945082
Project Number:	Not Specified	**Report Date:**	10/17/19

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:	EMERGING CONTAMINANTS	**Lab Number:**	L1945082
Project Number:	Not Specified	**Report Date:**	10/17/19

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 WG1294981-6 MS recovery, performed on L1945082-01, is outside the acceptance criteria for 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2fts) (348%).

The WG1294981-6/-7 MS/MSD RPD, performed on L1945082-01, is outside the acceptance criteria for 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2fts) (41%).

WG1296348-1: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

WG1296348-1: The continuing calibration standard had the response for 8:2FTS is outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1296348-3: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

WG1296348-5: The continuing calibration standard had the response for PFDS is outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted..

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: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 10/17/19

ORGANICS

SEMIVOLATILES

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-01
Client ID: MW-60D
Sample Location: FULTON, NY

Date Collected: 09/27/19 10:35
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 06:00
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	42		15-110

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified
Lab Number: L1945082
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-01
Client ID: MW-60D
Sample Location: FULTON, NY

Date Collected: 09/27/19 10:35
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/16/19 09:27
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.41		ng/l	1.82	0.371	1
Perfluoropentanoic Acid (PFPeA)	4.11		ng/l	1.82	0.360	1
Perfluorobutanesulfonic Acid (PFBS)	0.804	J	ng/l	1.82	0.216	1
Perfluorohexanoic Acid (PFHxA)	3.79		ng/l	1.82	0.298	1
Perfluoroheptanoic Acid (PFHpA)	3.02		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	1.05	J	ng/l	1.82	0.342	1
Perfluorooctanoic Acid (PFOA)	3.68		ng/l	1.82	0.214	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	73.1		ng/l	1.82	1.21	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	0.625	1
Perfluorononanoic Acid (PFNA)	1.43	J	ng/l	1.82	0.284	1
Perfluorooctanesulfonic Acid (PFOS)	3.88		ng/l	1.82	0.458	1
Perfluorodecanoic Acid (PFDA)	0.345	J	ng/l	1.82	0.276	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.589	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.236	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.891	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.527	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.731	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.338	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.297	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.225	1
PFOA/PFOS, Total	7.56		ng/l	1.82	0.214	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-01 Date Collected: 09/27/19 10:35

Client ID: MW-60D Date Received: 09/27/19

Sample Location: FULTON, 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)	86		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	70		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	200		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	137		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	90		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	79		33-143

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-02
Client ID: MW-16D
Sample Location: FULTON, NY

Date Collected: 09/27/19 13:45
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 06:59
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2660		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-02
Client ID: MW-16D
Sample Location: FULTON, NY

Date Collected: 09/27/19 13:45
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/16/19 09:43
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.95		ng/l	1.79	0.366	1
Perfluoropentanoic Acid (PFPeA)	4.17		ng/l	1.79	0.355	1
Perfluorobutanesulfonic Acid (PFBS)	0.452	J	ng/l	1.79	0.213	1
Perfluorohexanoic Acid (PFHxA)	3.39		ng/l	1.79	0.294	1
Perfluoroheptanoic Acid (PFHpA)	1.96		ng/l	1.79	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.79	0.337	1
Perfluorooctanoic Acid (PFOA)	3.02		ng/l	1.79	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	14.9		ng/l	1.79	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.79	0.616	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.79	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.79	0.452	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.79	0.272	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.79	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.79	0.581	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.79	0.233	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.79	0.878	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.520	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.79	0.720	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.79	0.333	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.79	0.293	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.79	0.222	1
PFOA/PFOS, Total	3.02		ng/l	1.79	0.211	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-02 Date Collected: 09/27/19 13:45

Client ID: MW-16D Date Received: 09/27/19

Sample Location: FULTON, 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)	87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	115		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	156		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	119		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	93		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	79		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	77		33-143

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-03
Client ID: MW-38S
Sample Location: FULTON, NY

Date Collected: 09/27/19 14:25
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 07:18
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	7020		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-03
Client ID: MW-38S
Sample Location: FULTON, NY

Date Collected: 09/27/19 14:25
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/16/19 10:00
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.31		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	0.455	J	ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	0.996	J	ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	0.798	J	ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.91		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-03 Date Collected: 09/27/19 14:25

Client ID: MW-38S Date Received: 09/27/19

Sample Location: FULTON, 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)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	134		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	111		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	82		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	66		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	76		33-143

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-04
Client ID: MW-61D
Sample Location: FULTON, NY

Date Collected: 09/27/19 12:25
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 07:38
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	14000		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-04
Client ID: MW-61D
Sample Location: FULTON, NY

Date Collected: 09/27/19 12:25
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/16/19 10:17
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.65		ng/l	1.82	0.372	1
Perfluoropentanoic Acid (PFPeA)	1.30	J	ng/l	1.82	0.361	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	0.217	1
Perfluorohexanoic Acid (PFHxA)	1.18	J	ng/l	1.82	0.299	1
Perfluoroheptanoic Acid (PFHpA)	0.547	J	ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	0.343	1
Perfluorooctanoic Acid (PFOA)	0.814	J	ng/l	1.82	0.215	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	11.1		ng/l	1.82	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	0.628	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.82	0.460	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.277	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.591	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.894	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.529	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.339	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.298	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.226	1
PFOA/PFOS, Total	0.814	J	ng/l	1.82	0.215	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-04 Date Collected: 09/27/19 12:25

Client ID: MW-61D Date Received: 09/27/19

Sample Location: FULTON, 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)	79		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	130		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	121		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	93		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	77		33-143

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-05
Client ID: BLIND DUPLICATE
Sample Location: FULTON, NY

Date Collected: 09/27/19 00:00
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 07:58
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	13900		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	48		15-110

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-05
Client ID: BLIND DUPLICATE
Sample Location: FULTON, NY

Date Collected: 09/27/19 00:00
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/16/19 10:36
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.55		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	0.948	J	ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	0.347	J	ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	1.15	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	0.435	J	ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	0.720	J	ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	8.01		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	0.720	J	ng/l	1.84	0.218	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-05 Date Collected: 09/27/19 00:00

Client ID: BLIND DUPLICATE Date Received: 09/27/19

Sample Location: FULTON, 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)	76		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	139		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	72		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	121		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	79		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	10		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		33-143

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-06
Client ID: EQUIPMENT BLANK
Sample Location: FULTON, NY

Date Collected: 09/27/19 09:30
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 08:17
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-06
Client ID: EQUIPMENT BLANK
Sample Location: FULTON, NY

Date Collected: 09/27/19 09:30
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/15/19 23:47
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.82	0.371	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.82	0.360	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	0.216	1
Perfluorohexanoic Acid (PFHxA)	0.396	J	ng/l	1.82	0.298	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	0.342	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.82	0.214	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	1.21	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	0.625	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.284	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.82	0.458	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.276	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.589	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.236	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.891	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.527	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.731	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.338	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.297	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.225	1
PFOA/PFOS, Total	ND		ng/l	1.82	0.214	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-06 Date Collected: 09/27/19 09:30

Client ID: EQUIPMENT BLANK Date Received: 09/27/19

Sample Location: FULTON, 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)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	93		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	131		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	78		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	125		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	76		33-143

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-07
Client ID: FIELD BLANK
Sample Location: FULTON, NY

Date Collected: 09/27/19 09:20
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 08:37
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: EMERGING CONTAMINANTS
Lab Number: L1945082
Project Number: Not Specified
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-07
Client ID: FIELD BLANK
Sample Location: FULTON, NY

Date Collected: 09/27/19 09:20
Date Received: 09/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/16/19 00:04
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.93	0.394	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.93	0.382	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.93	0.230	1
Perfluorohexanoic Acid (PFHxA)	0.432	J	ng/l	1.93	0.317	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.93	0.217	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.93	0.363	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.93	0.228	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.93	1.28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.93	0.664	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.93	0.301	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.93	0.486	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.93	0.293	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.93	1.17	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.93	0.625	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.93	0.251	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.93	0.946	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.93	0.560	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.93	0.776	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.93	0.359	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.93	0.316	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.93	0.239	1
PFOA/PFOS, Total	ND		ng/l	1.93	0.228	1

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1945082-07 Date Collected: 09/27/19 09:20

Client ID: FIELD BLANK Date Received: 09/27/19

Sample Location: FULTON, 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)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	138		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	146		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	93		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	80		33-143

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified
Lab Number: L1945082
Report Date: 10/17/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/06/19 03:23
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/04/19 13:55

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-07 Batch: WG1292403-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 10/16/19 00:53
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07 Batch: WG1294981-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.368	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: EMERGING CONTAMINANTS **Lab Number:** L1945082

Project Number: Not Specified **Report Date:** 10/17/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 10/16/19 00:53
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 10/11/19 14:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07 Batch: WG1294981-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	122		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	106		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	128		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	106		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		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)	127		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	86		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	92		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	89		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: EMERGING CONTAMINANTS

Project Number: Not Specified

Lab Number: L1945082

Report Date: 10/17/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-07		Batch: WG1292403-2		WG1292403-3			
1,4-Dioxane	107		109		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	48		46		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07 Batch: WG1294981-2 WG1294981-3								
Perfluorobutanoic Acid (PFBA)	134		124		67-148	8		30
Perfluoropentanoic Acid (PFPeA)	128		120		63-161	6		30
Perfluorobutanesulfonic Acid (PFBS)	134		120		65-157	11		30
Perfluorohexanoic Acid (PFHxA)	135		124		69-168	8		30
Perfluoroheptanoic Acid (PFHpA)	134		125		58-159	7		30
Perfluorohexanesulfonic Acid (PFHxS)	132		123		69-177	7		30
Perfluorooctanoic Acid (PFOA)	136		129		63-159	5		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	169		136		49-187	22		30
Perfluoroheptanesulfonic Acid (PFHpS)	136		127		61-179	7		30
Perfluorononanoic Acid (PFNA)	132		130		68-171	2		30
Perfluorooctanesulfonic Acid (PFOS)	126		126		52-151	0		30
Perfluorodecanoic Acid (PFDA)	135		128		63-171	5		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	135		119		56-173	13		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	139		125		60-166	11		30
Perfluoroundecanoic Acid (PFUnA)	134		126		60-153	6		30
Perfluorodecanesulfonic Acid (PFDS)	123		127		38-156	3		30
Perfluorooctanesulfonamide (FOSA)	137		130		46-170	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	132		129		45-170	2		30
Perfluorododecanoic Acid (PFDoA)	134		129		67-153	4		30
Perfluorotridecanoic Acid (PFTrDA)	154		141		48-158	9		30
Perfluorotetradecanoic Acid (PFTA)	132		120		59-182	10		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07 Batch: WG1294981-2 WG1294981-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		107		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		93		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	78		85		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		118		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	75		73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	78		87		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		72		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		85		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		78		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: EMERGING CONTAMINANTS

Project Number: Not Specified

Lab Number: L1945082

Report Date: 10/17/19

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): 01-07		QC Batch ID: WG1292403-4			WG1292403-5			QC Sample: L1945082-01			Client ID: MW-60D
1,4-Dioxane	ND	4630	5080	110		5140	111		40-140	1		30

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1,4-Dioxane-d8	43		43		15-110

Matrix Spike Analysis
Batch Quality Control

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified
Lab Number: L1945082
Report Date: 10/17/19

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): 01-07 QC Batch ID: WG1294981-6 WG1294981-7 QC Sample: L1945082-01 Client ID: MW-60D												
Perfluorobutanoic Acid (PFBA)	5.41	36.2	52.9	131		50.4	123		67-148	5		30
Perfluoropentanoic Acid (PFPeA)	4.11	36.2	49.4	125		47.4	118		63-161	4		30
Perfluorobutanesulfonic Acid (PFBS)	0.804J	32.1	41.4	129		39.8	123		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	3.79	36.2	50.7	129		49.4	125		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	3.02	36.2	52.1	135		49.4	127		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	1.05J	33	44.8	136		43.8	131		69-177	2		30
Perfluorooctanoic Acid (PFOA)	3.68	36.2	53.7	138		51.7	131		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	73.1	34.4	193	**348**	Q	127	155		49-187	**41**	Q	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	34.4	46.0	134		45.4	130		61-179	1		30
Perfluorononanoic Acid (PFNA)	1.43J	36.2	49.7	137		47.3	129		68-171	5		30
Perfluorooctanesulfonic Acid (PFOS)	3.88	33.6	50.6	139		47.7	129		52-151	6		30
Perfluorodecanoic Acid (PFDA)	0.345J	36.2	48.5	134		48.2	132		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	34.8	46.5	134		44.5	127		56-173	4		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	36.2	45.9	127		44.9	123		60-166	2		30
Perfluoroundecanoic Acid (PFUnA)	ND	36.2	45.2	125		45.6	124		60-153	1		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35	42.7	122		43.0	122		38-156	1		30
Perfluorooctanesulfonamide (FOSA)	ND	36.2	45.2	125		45.3	124		46-170	0		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36.2	49.5	137		53.3	146		45-170	7		30
Perfluorododecanoic Acid (PFDoA)	ND	36.2	46.4	128		47.4	129		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	ND	36.2	55.5	153		55.6	152		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	ND	36.2	48.2	133		46.1	126		59-182	4		30

Matrix Spike Analysis

Batch Quality Control

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

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): 01-07 QC Batch ID: WG1294981-6 WG1294981-7 QC Sample: L1945082-01 Client ID: MW-60D												

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)	146		152		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	216		202		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80		79		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	82		85		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		80		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		76		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	60		60		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	66		67		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		101		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		82		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		77		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		81		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		98		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		10		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		89		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		82		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		86		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		94		31-159

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

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(*)
L1945082-01A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-01B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-01C	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-01D	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-01E	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-01F	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-01G	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-01H	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-01I	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-01J	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-01K	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-01L	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-02A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-02B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-02C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-02D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-03A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-03B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-03C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-03D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-04A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-04B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: EMERGING CONTAMINANTS
Project Number: Not Specified

Lab Number: L1945082
Report Date: 10/17/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1945082-04C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-04D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-05A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-05B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-05C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-05D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-06A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-06B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-06C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-06D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1945082-07A	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-07B	Amber 250ml unpreserved	B	7	7	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1945082-07C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	EMERGING CONTAMINANTS	**Lab Number:**	L1945082
Project Number:	Not Specified	**Report Date:**	10/17/19

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:	EMERGING CONTAMINANTS	**Lab Number:**	L1945082
Project Number:	Not Specified	**Report Date:**	10/17/19

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.

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 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.

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

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; 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.**

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.

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 YORK 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: 9/28/19

ALPHA Job #: L1945082

Client Information

Client: OMI
Address: 1850 County Rd Rte 57
Fulton, NY 13069
Phone: 315-378-5088
Fax:
Email: gmullenomi@gmail.com

Project Information

Project Name: Emerging Contaminants
Project Location: Fulton, NY
Project #
(Use Project name as Project #) ☐
Project Manager: Gary Mullen
ALPHAQuote #: 2019105

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.

ANALYSIS

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	1,4 Dioxane - 8270 SIM	PFOAs - 537M (21)	Total Bottle	Sample Specific Comments
1945082-01	MW-60D	9/27/19	1055	Water	ES/JA	X	X	4	
-02	MW-16D		1345	Water	ES/JA	X	X	4	
-03	MW-38S		1455	Water	ES/JA	X	X	4	
-04	MW-61D		1225	Water	ES/JA	X	X	4	
-01	MW-60D MS		1040	Water	ES/JA	X	X	4	
-01	MW-60D MSD		1045	Water	ES/JA	X	X	4	
-05	Blind Duplicate			Water	ES/JA	X	X	4	
-06	Equipment Blank		0930	Water	ES	X	X	4	
-07	Field Blank		0920	Water	ES	X	X	4	
									1 bottle PFOAs / 2 Dioxane

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

Container Type	A	P							
Preservative	A								

Relinquished By:	Date/Time	Received By:	Date/Time
	9/27/19 1800		9/28/19 0225
	9.25.19 653		9/28/19 06:53

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.

Form No: 01-25 (rev. 30-Sept-2013)

ALPHA

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

Date Rec'd in Lab: 9/28/19

ALPHA Job #: L1945082

Project Information

Project Name: Emerging Contaminants
Project Location: Fulton, NY
Project #
(Use Project name as Project #) ☐
Project Manager: Gary Mullen
ALPHAQuote #: 2019105

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Client Information

Client: OMI
Address: 1850 County Rd Rte 57
Fulton, NY 13069
Phone: 315-378-5088
Fax:
Email: gmullenomi@gmail.com

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	1, 4 Dioxane - 8270 SIM	PFOAs - 537M (21)	Sample Specific Comments	Total Bottles
945082 -01	MW-60D	9/27/19	1035	Water	ES/JA	X	X		4
-02	MW-16D		1345	Water	ES/JA	X	X		4
-03	MW-38S		1455	Water	ES/JA	X	X		4
-04	MW-61D		1225	Water	ES/JA	X	X		4
-01	MW-60D MS		1040	Water	ES/JA	X	X		4
-01	MW-60D MSD		1045	Water	ES/JA	X	X		4
-05	Blind Duplicate		—	Water	ES/JA	X	X		4
-06	Equipment Blank		0930	Water	ES	X	X		4
-07	Field Blank	↓	0920	Water	ES	X	X	1 bottle PFOAs / 2 Dioxane	3

		1, 4 Dioxane	PFOAs
Container Type		A	P
Preservative		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
[signature] AAL	9/27/19 1630	[signature]	9/28/19 0225
[signature]	9.28.19 653	[signature]	9/28/19 06:53

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.

REPORT

Former Miller Container Site, Fulton NY - Data Usability Summary Report

Emerging Contaminants Sampling Event- September 2019

Submitted to:

Mr. Gary W. Mullen Jr.
Vice President, Remedial Services
Operations & Maintenance Inc.
Fulton, NY

Submitted by:

Golder Associates Inc.
2430 North Forest Road, Suite 100, Getzville, New York, USA 14068

+1 716 204-5880

19122588.002

December 26, 2019

Table of Contents

TABLES

APPENDIX A
TABLES

1.0 BACKGROUND

This Data Usability Summary Report (DUSR) presents the results of the data quality assessment performed for the laboratory analyses of environmental groundwater samples collected from four (4) monitoring wells on September 27, 2019 at the Former Miller Container site in Fulton, New York. The data were reviewed to identify potential data quality issues which could affect the use of the sample data for decision making purposes.

2.0 PROCEDURES

Alpha Analytical Laboratories was subcontracted by Operations & Maintenance, Inc., Fulton NY to analyze a total of four (4) primary samples, one (1) field duplicate sample, one (1) field blank, and one (1) equipment blank for the analysis of 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). The PFAS Target Analyte List (TAL) is presented in Table 1. A sampling and analysis summary is provided in Table 2 which presents laboratory sample delivery group (SDG) designations, sample identification numbers, sampling dates, sample matrices, sample type, and analytical methods used.

Alpha Analytical Laboratories of Mansfield, Massachusetts was retained to analyze the samples in accordance with the following NYSDEC guidance documents:

- NYSDEC March 1991 Guidelines and Protocols (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf)
- "Groundwater Sampling for Emerging Contaminants," dated July 2018.
- "Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Well Sample Protocol," PFC Groundwater Samples from Monitoring Wells Sample Protocol Revision 1.2, dated June 29, 2016.

Samples and associated quality control (QC) data were evaluated in accordance with the following documents, as applicable to the analytical methods:

- USEPA Region II SOP No. HW-22 Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D, issued December 2010.
- USEPA Region II SOP No. HW-55 Tetra- and Octa-chlorinated Dioxins and Furans by Isotope Dilution (HRGC/HRMS), issued December 2008 and applied analogously to the PFAS results, which were obtained using isotope dilution.
- NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, issued May 3, 2010 (NYSDEC DER-10) requirements.

The validation level for the analytical data is Tier 2B, therefore the data package was reviewed to verify:

- Data package completeness following New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) Category B deliverables requirements
- Sample holding time and method compliance
- Data summary sheets supported by raw data
- Quality control (QC) parameters conform with required specifications

Additionally, the following items were evaluated to determine impact on data usability:

- Reporting limits
- Laboratory and field blanks contamination
- Laboratory control sample (LCS) recoveries
- Matrix spike (MS) / Matrix spike duplicate (MSD) recoveries and precision
- Field duplicate precision
- Initial Calibrations and Continuing Calibration Verification
- Internal standard responses
- Compound identification

Where a difference was noted between the NYSDEC guidelines and the analytical methodology, method-specific criteria and professional judgment were used.

Sample results were qualified based on outlying precision and accuracy parameters, or based on professional judgment, as necessary. The following definitions for data qualifiers were assigned during the data validation process:

J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified, but the result may be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for but was not detected above the sample reporting limit.

UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximant and may be inaccurate or imprecise.

3.0 DATA VALIDATION RESULTS

The data generated for the groundwater sampling results met the QC criteria established in the applicable USEPA and NYSDEC guidelines, except as noted below. Except where noted in Table 3, which summarizes the data qualifiers applied to the data with applicable qualifier comments, all data provided by the laboratory met NYSDEC ASP Category B deliverables requirements, the requested analytical methodologies were completed appropriately, and sample holding time requirements were observed.

The following qualifications were assigned to the data:

- The non-detect results for Perfluorodecanesulfonic Acid (PFDS) in samples MW-60D, MW-16D, MW-38S, MW-61D, and BLIND DUPLICATE were qualified as estimated (UJ) as the associated continuing calibration verification (CCV) percent recovery (%R) was below QC criteria.

- The results for Perfluorohexanoic Acid (PFHxA) in samples MW-38S, MW-61D, and BLIND DUPLICATE were qualified as non-detect (U) and reported at the reporting limit (RL) due to method, field, and equipment blank contamination. In addition, should non-detects be reported at the method detection limit (MDL), the MDL should be raised to the sample result.
- The 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2 FTS) result for sample MW-60D was qualified as estimated with a high bias (J+) as the associated MS recovery was above QC criteria.
- The Perfluorooctanesulfonamide (FOSA) non-detect results in samples MW-60D, MW-16D, MW-38S, MW-61D, and BLIND DUPLICATE were qualified as estimated (UJ) because the associated extracted internal standard recoveries were uniformly low.
- The 6:2 FTS results for samples MW-61D and BLIND DUPLICATE were qualified as estimated (J) as the relative percent difference (RPD) between the primary sample and field duplicate sample was outside QC criteria.

Based on the data validation and data quality assessment performed, the analytical data for the emerging contaminant sampling event were determined to be acceptable for the intended use. The data completeness (i.e., the ratio of the amount of valid data obtained to the amount expected, including estimated data) was 100 percent.

Signature Page

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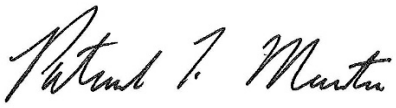

Patrick T. Martin, P.E., BCEE
Associate & Senior Consultant

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TABLES

Table 1
Former Miller Container Site
Fulton, New York
Emerging Contaminants Sampling Report
PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	PFOS	1763-23-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Notes:
1. PFAS = Per and Polyfluoroalkyl Substances

Table 2
Former Miller Container Site - Fulton, New York
Emerging Contaminants Sampling Report
Sampling and Analysis Summary

Field Sample ID	Lab Sample ID	Sample Date	Matrix	Sample Type	1,4-Dioxane (8270D-SIM)	PFAS (EPA 537 - Modified)
MW-60D	L1945082-01	9/27/2019	WG	MS/MSD	X	X
MW-16D	L1945082-02	9/27/2019	WG	--	X	X
MW-38S	L1945082-03	9/27/2019	WG	--	X	X
MW-61D	L1945082-04	9/27/2019	WG	--	X	X
BLIND DUPLICATE	L1945082-05	9/27/2019	WG	FD (MW-61D)	X	X
EQUIPMENT BLANK	L1945082-06	9/27/2019	WQ	EB	X	X
FIELD BLANK	L1945082-07	9/27/2019	WQ	FB	X	X

Abbreviations:

EB - Equipment Blank
EPA - United States Environmental Protection Agency
FB - Field Blank
FD - Field Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
PFAS - Per- and polyfluoroalkyl substances
QC - Quality Control
SIM - Selected Ion Monitoring
WG - Groundwater
WQ - Quality Control Water

Table 3
Former Miller Container Site - Fulton, New York
Emerging Contaminants Sampling Report
Sample Applied Qualifier Summary

Field Sample ID	Analyte	New Result	New MDL	New RL	Qualifier	Comments
MW-60D	Perfluorodecanesulfonic Acid (PFDS)	--	--	--	UJ	CCV %R Below QC Criteria
MW-16D	Perfluorodecanesulfonic Acid (PFDS)	--	--	--	UJ	CCV %R Below QC Criteria
MW-38S	Perfluorodecanesulfonic Acid (PFDS)	--	--	--	UJ	CCV %R Below QC Criteria
MW-61D	Perfluorodecanesulfonic Acid (PFDS)	--	--	--	UJ	CCV %R Below QC Criteria
BLIND DUPLICATE	Perfluorodecanesulfonic Acid (PFDS)	--	--	--	UJ	CCV %R Below QC Criteria
MW-38S	Perfluorohexanoic Acid (PFHxA)	1.8	0.798	--	U	Method/Field/Equipment Blank Contamination
MW-61D	Perfluorohexanoic Acid (PFHxA)	1.82	1.18	--	U	Method/Field/Equipment Blank Contamination
BLIND DUPLICATE	Perfluorohexanoic Acid (PFHxA)	1.84	1.15	--	U	Method/Field/Equipment Blank Contamination
MW-60D	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2 FTS)	--	--	--	J+	MS Recovery Above QC Criteria
MW-60D	Perfluorooctanesulfonamide (FOSA)	--	--	--	UJ	Low Extracted Internal Standard Recovery
MW-16D	Perfluorooctanesulfonamide (FOSA)	--	--	--	UJ	Low Extracted Internal Standard Recovery
MW-38S	Perfluorooctanesulfonamide (FOSA)	--	--	--	UJ	Low Extracted Internal Standard Recovery
MW-61D	Perfluorooctanesulfonamide (FOSA)	--	--	--	UJ	Low Extracted Internal Standard Recovery
BLIND DUPLICATE	Perfluorooctanesulfonamide (FOSA)	--	--	--	UJ	Low Extracted Internal Standard Recovery
MW-61D	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2 FTS)	--	--	--	J	Field Duplicate RPD Outside QC Criteria
BLIND DUPLICATE	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2 FTS)	--	--	--	J	Field Duplicate RPD Outside QC Criteria
All Samples	All Results	-	-	-	-	Laboratory applied U-qualifiers indicating non-detect results and J-qualifiers indicating results below the reporting limit are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations:
%R - Percent Recovery
CCV - Continuing Calibbration Verification
MDL - Method Detection Limit
MS - Matrix Spike
QC - Quality Control
RL - Reporting Limit
RPD - Relative Percent Difference

Qualifiers:
J : The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ : The analyte was positively identified, but the result may be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.
U : The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ : The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

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