January 19, 2022

Mr. Nathan Freeman, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

Transmitted via email

RE: Dynamic Systems, Inc. PFOS/PFOA Sampling Data Validation
DEC Site No. 442040
JMT Job No. 11-S0124N-001

Dear Mr. Freeman:

At the request of NYSDEC, JMT conducted perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) groundwater sampling of three monitoring wells at the Dynamic Systems, Inc. (DSI) Site on November 22, 2021. A letter report summarizing the groundwater sampling was submitted to the NYSDEC on December 21, 2021. On January 14, 2022, JMT received a Data Usability Summary Report (DUSR) from Alpha Geoscience, which summarized laboratory data performance. No data was rejected, and all data is considered usable with estimated (J, J+, or UJ) data associated with a higher level of quantitative certainty.

Figure 1 and Table 1 from the December 2021 report have been edited to include qualifiers added by the data validator (shown in blue) and are included as attachments. In preparing the updated map, we realized that the low-level apparent detection of PFOS (1.11 ppt) in well DSI-7 was inadvertently left off the prior map. It was, however, correctly identified on the data table and discussed in the written summary. The data validator added a not-detected (U) qualifier to this result due to a similar detection in the equipment blank. A copy of the DUSR is also attached to this letter. Should you have any questions, please contact John Ciampa (jciampa@jmt.com) or Yaicha Winters (ywinters@jmt.com) at 518-782-0882.

Very truly yours,

JMT of New York, Inc.

John D. Ciampa

John D. Ciampa, PG
Senior Associate

JDC/ydw

Enclosures

cc: D. Ferguson
J. Privitera, Whiteman, Osterman and Hanna, LLP
D. Montuori, DSI

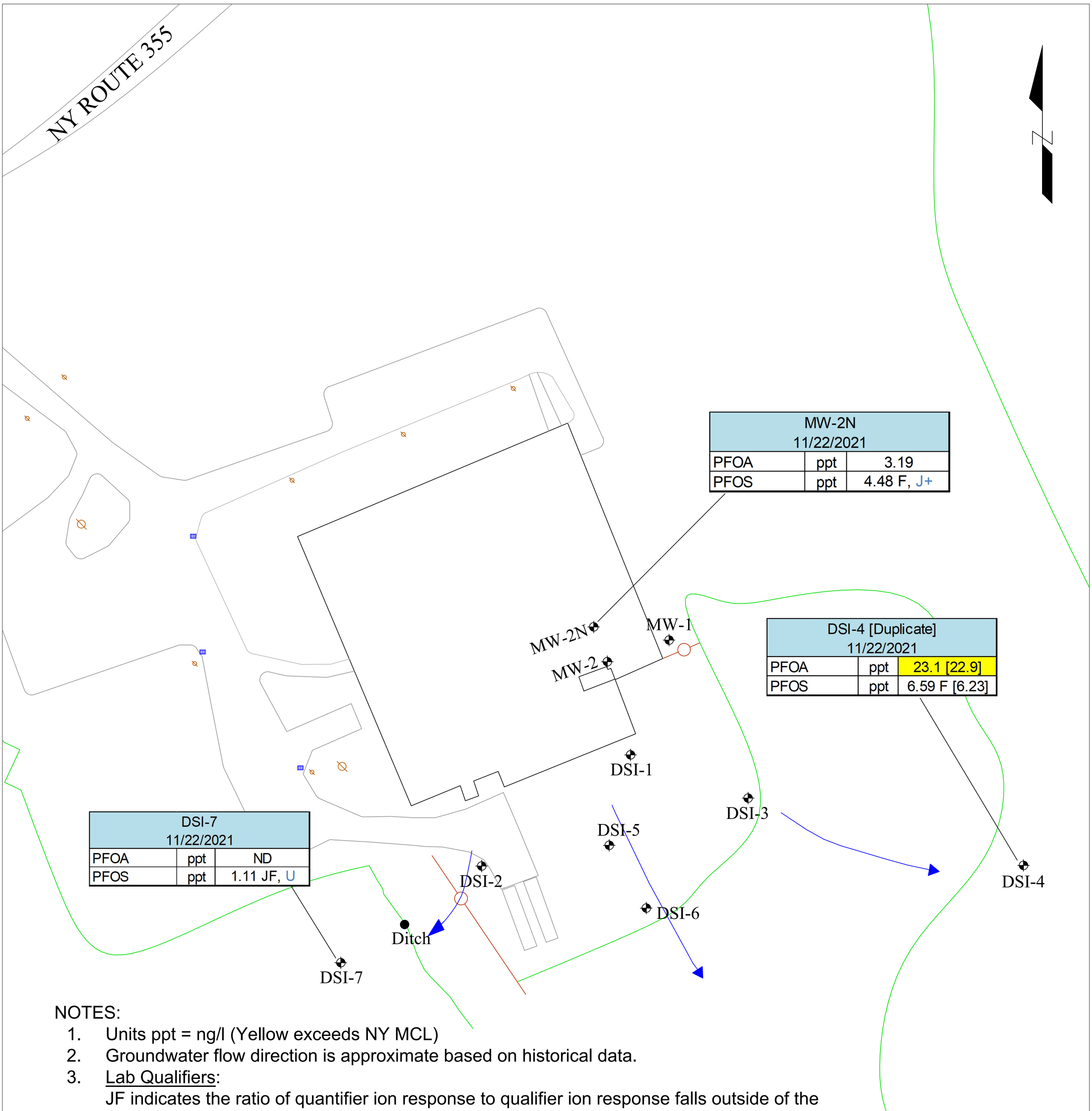
Table 1

TABLE 1: PFOA/PFOS GROUNDWATER RESULTS												
LOCATION			**DSI-4 [Duplicate]**		**MW-2N**		**DSI-7**		**FIELD BLANK**		**EQUIPMENT BLANK**	
SAMPLING DATE			**11/22/2021**									
Perfluorinated Alkyl Acids by Isotope Dilution	**NY MCL[1]**	**Units**	**Results**	**Qual**	**Results**	**Qual**	**Results**	**Qual**	**Results**	**Qual**	**Results**	**Qual**
Perfluorobutanoic Acid (PFBA)		ng/l	14.1 [14.1]		6.99		ND		ND		ND	
Perfluoropentanoic Acid (PFPeA)		ng/l	9.27 [8.78]		12.3		ND		ND		ND	
Perfluorobutanesulfonic Acid (PFBS)		ng/l	2.61 [2.34]		131		ND		ND		ND	
Perfluorohexanoic Acid (PFHxA)		ng/l	12.5 [9.61]	J [J]	9.37		ND		ND		ND	
Perfluoroheptanoic Acid (PFHpA)		ng/l	9.29 [7.93]		2.5		ND		ND		ND	
Perfluorohexanesulfonic Acid (PFHxS)		ng/l	1 [1.24]	JF [JF]	0.66	JF	ND		ND		ND	
Perfluorooctanoic Acid (PFOA)	10	ng/l	23.1 [22.9]		3.19		ND		ND		ND	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluoroheptanesulfonic Acid (PFHpS)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluorononanoic Acid (PFNA)		ng/l	1.59 [0.98]	JF [J]	ND		ND		ND		ND	
Perfluorooctanesulfonic Acid (PFOS)	10	ng/l	6.59 [6.23]	F	4.48	F, J+	1.11	JF, U	ND		1.15	JF
Perfluorodecanoic Acid (PFDA)		ng/l	ND [ND]		ND		ND		ND		ND	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)		ng/l	ND [ND]		ND		ND		ND		ND	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)		ng/l	ND [ND]	UJ [UJ]	ND	UJ	ND		ND	UJ	ND	UJ
Perfluoroundecanoic Acid (PFUnA)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluorodecanesulfonic Acid (PFDS)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluorooctanesulfonamide (FOSA)		ng/l	ND [ND]		ND		ND		ND		ND	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluorododecanoic Acid (PFDoA)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluorotridecanoic Acid (PFTrDA)		ng/l	ND [ND]		ND		ND		ND		ND	
Perfluorotetradecanoic Acid (PFTA)		ng/l	ND [ND]		ND		ND		ND		ND	
PFOA/PFOS, Total		ng/l	29.7 [29.1]		7.67		1.11	JF	ND		1.15	JF

Notes:

1. Maximum Concentration Level (MCL) based on Sampling, Analysis, and Assessment of Per- And Polyfluoroalkyl Substances (PFAS), June 2021
2. Yellow Highlight - Concentration exceeds NY MCL
3. ND - Not detected at the reported detection limit for the sample.
4. Units are ng/l = ppt
5. Lab Qualifiers:
   JF - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
   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)
   F- The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
6. Data Validator Qualifiers:
   J+ indicates that the result was above the reporting limit but not greater than 10 times the associated equipment blank level.
   U indicates that the sample was associated with an equipment blank containing that constituent below the RL and the reported concentration in the sample was also below the reporting limit.
   UJ indicates that the percentage of recovery for the constituent was below QC limits, but not below 10% in the associated continuing calibration.
   J indicates that the relative percent difference for the constituent was above the allowable maximum in the aqueous field duplicate pair.

Figure 1



NOTES:

1. Units ppt = ng/l (Yellow exceeds NY MCL)
2. Groundwater flow direction is approximate based on historical data.
3. Lab Qualifiers:
   JF indicates the ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
   F indicates the ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
4. Data Validator Qualifiers:
   J+ indicates that the result was above the reporting limit but not greater than 10 times the associated equipment blank level.
   U indicates that the sample was associated with an equipment blank containing that constituent below the RL and the reported concentration in the sample was also below the reporting limit.

MONITORING WELL
FENCE
TREELINE
APPROXIMATE GROUNDWATER FLOW

NO.	DATE	RECORD OF WORK	DRN	CKD	APPR

PROJECT

PROJ. ENGR.: FP
PROJ. NO.: 11124
PREPARED BY: JCK
DRAFTED BY: JCK
CHECKED BY: FP
APPROVED BY:
DATUM:
CONTOUR INTERVAL:

0 20' 40'

PFOA/PFOS SAMPLE MAP
DYNAMIC SYSTEMS, INC.
POESTENKILL, NEW YORK

TOWN OF POESTENKILL — RENSSELAER CO.,NY

19 British American Blvd.,Latham, New York 12110
P: (518) 782-0882 F: (518) 782-0973 www.jmt.com

DATE: 1/19/2022 | SCALE: AS SHOWN | DWG: . | FIGURE 1

Data Usability Summary Report

ALPHA
GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

January 14, 2022

Ms. Yaicha D. Winters, Ph.D.
Environmental Scientist
Natural & Cultural Resources.
JMT of New York, Inc.
19 British American Blvd.
Latham, New York 12110

Re: Data Validation Report
Dynamic Systems TCE Spill, Project 11-S0124N-001
November 2021 Ground Water Sampling Event

Dear Dr. Winters:

The data usability summary report (DUSR) and validation summary are attached to this letter for the Dynamic Systems TCE Spill, November 2021 ground water sampling event. The data for Alpha Analytical Labs, SDG Number: L2164791 were acceptable, with minor issues that are identified in the DUSRs and validation summaries. There are no data that are qualified as rejected, unusable (R) in the data pack.

A list of data validation acronyms and qualifiers is attached to assist you in interpreting the data validation reviews. If you have any questions concerning the work performed, please contact me at (518) 348-6995. Thank you for the opportunity to assist JMT of New York, Inc.

Sincerely,
Alpha Geoscience

Donald Anné
Senior Chemist

DCA/bms
attachments

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ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

Data Usability Summary Report
for Alpha Analytical Labs
SDG Number: L2164791

3 Ground Water Samples, 1 Field Duplicate,
1 Field Blank, and 1 Equipment Blank
Collected November 22-23, 2021

Prepared by: Donald Anné
January 14, 2022

The data package contained the documentation as required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appeared legible and complete. The data pack contained the results of PFAS analyses for 3 ground water samples, 1 field duplicate, 1 field blank, and 1 equipment blank.

The overall performances of the analyses are acceptable. Alpha Analytical Labs did fulfill the requirements of the analytical method.

The data are acceptable with some minor issues that are identified in the accompanying data validation review. The following data were qualified:

- The positive PFAS result for PFOS was qualified as "estimated, biased high" (J+) for sample MW-2N because the result for PFOS was above the reporting limit but not greater than 10 times the associated equipment blank level.

- The positive PFAS result for PFOS was qualified as "not detected" (U) at the reporting limits for sample DSI-7 because the sample was associated with an equipment blank containing PFOS below the RL and reported concentration for PFOS was below the reporting limit in the sample.

- The "not detected" PFAS results for NMeFOSAA were qualified as "estimated" (UJ) in samples DUP2, DSI-4, FIELD BLANK, EQUIPMENT BLANK, and MW-2N because percent recovery for br-NMeFOSAA was below QC limits, but not below 10% in the associated continuing calibration.

- The positive PFAS results for PFHxA were qualified as estimated (J) in samples DSI-4 and DUP2 because the relative percent difference for PFHxA was above the allowable maximum in the aqueous field duplicate pair DSI-4/DUP2.

All data are considered usable with estimated (J, J+, or UJ) data associated with a higher level of quantitative uncertainty. Detailed information on data quality is included in the data validation review.

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Qualified Data Section

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-08	Date Collected	: 11/23/21 12:00
Client ID	: DUP2	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:03
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42313	Analyst	: SG
Sample Amount	: 264.61 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l				
CAS NO.	Parameter	Results	RL	MDL	Qualifier	
375-22-4	Perfluorobutanoic Acid (PFBA)	14.1	1.89	0.385		
2706-90-3	Perfluoropentanoic Acid (PFPeA)	8.78	1.89	0.374		
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	2.34	1.89	0.225		
307-24-4	Perfluorohexanoic Acid (PFHxA)	9.61	1.89	0.310		J
375-85-9	Perfluoroheptanoic Acid (PFHpA)	7.93	1.89	0.213		
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	1.24	1.89	0.355	JF	
335-67-1	Perfluorooctanoic Acid (PFOA)	22.9	1.89	0.223		
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.89	1.26	U	
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.89	0.650	U	
375-95-1	Perfluorononanoic Acid (PFNA)	0.979	1.89	0.295	J	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	6.23	1.89	0.476		
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.89	0.287	U	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.89	1.14	U	
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.89	0.612	U	UJ
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.89	0.246	U	
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.89	0.926	U	
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND	1.89	0.548	U	
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.89	0.760	U	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-08	Date Collected	: 11/23/21 12:00
Client ID	: DUP2	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:03
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42313	Analyst	: SG
Sample Amount	: 264.61 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.89	0.351	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.89	0.309	U
376-06-7	Perfluorotetradecanoic Acid (PFTA)	ND	1.89	0.234	U
NONE	PFOA/PFOS, Total	29.1	1.89	0.223	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-09	Date Collected	: 11/23/21 07:45
Client ID	: DSI-4	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:20
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42314	Analyst	: SG
Sample Amount	: 263.18 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l				
CAS NO.	Parameter	Results	RL	MDL	Qualifier	
375-22-4	Perfluorobutanoic Acid (PFBA)	14.1	1.90	0.388		
2706-90-3	Perfluoropentanoic Acid (PFPeA)	9.27	1.90	0.376		
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	2.61	1.90	0.226		
307-24-4	Perfluorohexanoic Acid (PFHxA)	12.5	1.90	0.312		J
375-85-9	Perfluoroheptanoic Acid (PFHpA)	9.29	1.90	0.214		
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	1.00	1.90	0.357	JF	
335-67-1	Perfluorooctanoic Acid (PFOA)	23.1	1.90	0.224		
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.90	1.26	U	
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.90	0.654	U	
375-95-1	Perfluorononanoic Acid (PFNA)	1.59	1.90	0.296	JF	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	6.59	1.90	0.479	F	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.90	0.289	U	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.90	1.15	U	
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.90	0.616	U	UJ
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.90	0.247	U	
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.90	0.931	U	
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND	1.90	0.551	U	
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.90	0.764	U	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-09	Date Collected	: 11/23/21 07:45
Client ID	: DSI-4	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:20
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42314	Analyst	: SG
Sample Amount	: 263.18 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.90	0.353	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.90	0.311	U
376-06-7	Perfluorotetradecanoic Acid (PFTA)	ND	1.90	0.236	U
NONE	PFOA/PFOS, Total	29.7	1.90	0.224	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-10	Date Collected	: 11/23/21 08:00
Client ID	: DSI-7	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/09/21 06:58
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42199	Analyst	: HT
Sample Amount	: 262.72 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	1.90	0.388	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	1.90	0.377	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	1.90	0.226	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	1.90	0.312	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	1.90	0.214	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	1.90	0.358	U
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	1.90	0.224	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.90	1.27	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.90	0.655	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.90	0.297	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	ND	1.90	0.480	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.90	0.289	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.90	1.15	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.90	0.617	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.90	0.247	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.90	0.932	U
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND	1.90	0.552	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.90	0.765	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-10	Date Collected	: 11/23/21 08:00
Client ID	: DSI-7	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/09/21 06:58
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42199	Analyst	: HT
Sample Amount	: 262.72 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.90	0.354	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.90	0.311	U
376-06-7	Perfluorotetradecanoic Acid (PFTA)	ND	1.90	0.236	U
NONE	PFOA/PFOS, Total	1.11	1.90	0.224	J

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-12	Date Collected	: 11/23/21 09:30
Client ID	: FIELD BLANK	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:36
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42315	Analyst	: SG
Sample Amount	: 268.18 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l				
CAS NO.	Parameter	Results	RL	MDL	Qualifier	
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	1.86	0.380	U	
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	1.86	0.369	U	
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	1.86	0.222	U	
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	1.86	0.306	U	
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	1.86	0.210	U	
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	1.86	0.350	U	
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	1.86	0.220	U	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.86	1.24	U	
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.86	0.641	U	
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.86	0.291	U	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	ND	1.86	0.470	U	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.86	0.283	U	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.86	1.13	U	
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.86	0.604	U	UJ
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.86	0.242	U	
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.86	0.914	U	
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND	1.86	0.541	U	
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.86	0.749	U	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	**Lab Number**	: L2164791
Project Name	: DSI	**Project Number**	: 11-S0124N-001
Lab ID	: L2164791-12	**Date Collected**	: 11/23/21 09:30
Client ID	: FIELD BLANK	**Date Received**	: 11/23/21
Sample Location	: POESTENKILL NY	**Date Analyzed**	: 12/11/21 23:36
Sample Matrix	: WATER	**Date Extracted**	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	**Dilution Factor**	: 1
Lab File ID	: I42315	**Analyst**	: SG
Sample Amount	: 268.18 g	**Instrument ID**	: LCMS01
Extraction Method	: ALPHA 23528	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.86	0.347	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.86	0.305	U
376-06-7	Perfluorotetradecanoic Acid (PFTA)	ND	1.86	0.231	U
NONE	PFOA/PFOS, Total	ND	1.86	0.220	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-13	Date Collected	: 11/23/21 07:40
Client ID	: EQUIPMENT BLANK	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:53
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42316	Analyst	: SG
Sample Amount	: 265.4 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l				
CAS NO.	Parameter	Results	RL	MDL	Qualifier	
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	1.88	0.384	U	
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	1.88	0.373	U	
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	1.88	0.224	U	
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	1.88	0.309	U	
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	1.88	0.212	U	
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	1.88	0.354	U	
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	1.88	0.222	U	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.88	1.25	U	
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.88	0.648	U	
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.88	0.294	U	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	1.15	1.88	0.475	JF	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.88	0.286	U	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.88	1.14	U	
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.88	0.610	U	UJ
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.88	0.245	U	
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.88	0.923	U	
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND	1.88	0.546	U	
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.88	0.757	U	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-13	Date Collected	: 11/23/21 07:40
Client ID	: EQUIPMENT BLANK	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/11/21 23:53
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42316	Analyst	: SG
Sample Amount	: 265.4 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.88	0.350	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.88	0.308	U
376-06-7	Perfluorotetradecanoic Acid (PFTA)	ND	1.88	0.234	U
NONE	PFOA/PFOS, Total	1.15	1.88	0.222	J

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-14	Date Collected	: 11/23/21 08:40
Client ID	: MW-2N	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/12/21 00:09
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42317	Analyst	: SG
Sample Amount	: 284.02 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l				
CAS NO.	Parameter	Results	RL	MDL	Qualifier	
375-22-4	Perfluorobutanoic Acid (PFBA)	6.99	1.76	0.359		
2706-90-3	Perfluoropentanoic Acid (PFPeA)	12.3	1.76	0.348		
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	131	1.76	0.209		
307-24-4	Perfluorohexanoic Acid (PFHxA)	9.37	1.76	0.289		
375-85-9	Perfluoroheptanoic Acid (PFHpA)	2.50	1.76	0.198		
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.655	1.76	0.331	JF	
335-67-1	Perfluorooctanoic Acid (PFOA)	3.19	1.76	0.208		
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.76	1.17	U	
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.76	0.606	U	
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.76	0.275	U	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	4.48	1.76	0.444	F	J+
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.76	0.268	U	
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.76	1.07	U	
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.76	0.570	U	UJ
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.76	0.229	U	
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.76	0.863	U	
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND	1.76	0.510	U	
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.76	0.708	U	

Results Summary
Form 1
Perfluorinated Alkyl Acids by Isotope Dilution

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Lab ID	: L2164791-14	Date Collected	: 11/23/21 08:40
Client ID	: MW-2N	Date Received	: 11/23/21
Sample Location	: POESTENKILL NY	Date Analyzed	: 12/12/21 00:09
Sample Matrix	: WATER	Date Extracted	: 12/02/21
Analytical Method	: 134,LCMSMS-ID	Dilution Factor	: 1
Lab File ID	: I42317	Analyst	: SG
Sample Amount	: 284.02 g	Instrument ID	: LCMS01
Extraction Method	: ALPHA 23528	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.76	0.327	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.76	0.288	U
376-06-7	Perfluorotetradecanoic Acid (PFTA)	ND	1.76	0.218	U
NONE	PFOA/PFOS, Total	7.67	1.76	0.208	

PFAS

Data Section

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Method 537 (Modified) PFAS Data
for Alpha Analytical Labs SDG Number: L2164791

3 Ground Water Samples, 1 Field Duplicate,
1 Field Blank, and 1 Equipment Blank
Collected November 22-23, 2021

Prepared by: Donald Anné
January 14, 2022

Holding Times: The samples were analyzed within USEPA holding times.

Initial Calibration: The %RSDs for applicable PFASs were below the method maximum (20%) or the R or R squared were above the method minimums, as required.

Continuing Calibration: The percent recovery for br-NMeFOSAA was below QC limits (50-150%), but not below 10% on 12-11-21 (I42311). Positive and "not detected" results for NMeFOSAA should be considered estimated (J) in associated samples.

Blanks: The analysis of the method blank reported target PFAS as not detected. The equipment blank contained a trace of PFOS (1.15 ng/L) below the RL. Positive results for PFOS that are below the reporting limit (RL) should be reported as not detected (U) at the reporting limit in associated samples. Positive results for these PFOS that are above the RL and less than ten times the highest blank level should be considered estimated, biased high (J+) in associated samples.

Surrogate Recovery: Four of eighteen surrogate recoveries for samples DUP2, DSI-4, and DSI-7 were above QC limits. Three of eighteen surrogate recoveries for sample MW-2N were above QC limits. One of eighteen surrogate recoveries for sample EQUIPMENT BLANK was above QC limits. Positive results associated with the surrogates outside QC limits should be considered estimated (J) in the samples.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Matrix Spike/Matrix Spike Duplicate: The relative percent differences for target PFAS were below the allowable maximum and the percent recoveries were within QC limits for aqueous MS/MSD sample DSI-7.

Laboratory Control Sample: The percent recoveries for PFAS were within QC limits for aqueous sample WG1578134-2.

679 Plank Road ● Clifton Park, New York 12065 ● (518) 348-6995 ● Fax (518) 348-6966
www.alphageoscience.com

Field Duplicates: The relative percent difference for PFHxA was above the allowable maximum (20%) for aqueous field duplicate pair DSI-4/DUP2 (attached table). Positive results for PFHxA should be considered estimated (J) in samples DSI-4 and DUP2

Compound ID: Checked surrogate and PFAS results were within LC quantitation limits.

Surrogate (Extracted Internal Standard) Recovery Summary
Form 2
Semivolatiles

Client: JMT, Inc.
Project Name: DSI

Lab Number: L2164791
Project Number: 11-S0124N-001
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S1 ()	S2 ()	S3 ()	S4 ()	S5 ()	S6 ()	S7 ()
DUP2 (L2164791-08)	108	94	90	96	103	116	106
DSI-4 (L2164791-09)	108	93	90	100	103	119	106
DSI-7 (L2164791-10)	119	135	137*	127	123	135*	122
FIELD BLANK (L2164791-12)	107	119	120	105	108	124	107
EQUIPMENT BLANK (L2164791-13)	106	119	110	105	106	114	102
MW-2N (L2164791-14)	93	94	108	89	93	116	97
WG1578134-1BLANK	106	121	111	110	109	110	113
WG1578134-2LCS	104	121	110	108	105	108	109
DSI-7MS	102	114	116	113	111	117	106
DSI-7MSD	102	115	115	110	105	117	103

QC LIMITS

(58-132) S1 = PERFLUORO[13C4]BUTANOIC ACID (MPFBA)
(62-163) S2 = PERFLUORO[13C5]PENTANOIC ACID (M5PFPEA)
(70-131) S3 = PERFLUORO[2,3,4-13C3]BUTANESULFONIC ACID (M3PFBS)
(57-129) S4 = PERFLUORO[1,2,3,4,6-13C5]HEXANOIC ACID (M5PFHXA)
(60-129) S5 = PERFLUORO[1,2,3,4-13C4]HEPTANOIC ACID (M4PFHPA)
(71-134) S6 = PERFLUORO[1,2,3-13C3]HEXANESULFONIC ACID (M3PFHXS)
(71-134) S7 = PERFLUORO[13C8]OCTANOIC ACID (M8PFOA)

* Values outside of QC limits

Surrogate (Extracted Internal Standard) Recovery Summary
Form 2
Semivolatiles

Client: JMT, Inc.
Project Name: DSI

Lab Number: L2164791
Project Number: 11-S0124N-001
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S8 ()	S9 ()	S10 ()	S11 ()	S12 ()	S13 ()	S14 ()
DUP2 (L2164791-08)	368*	118	110	103	334*	190*	116
DSI-4 (L2164791-09)	375*	123	104	101	308*	198*	106
DSI-7 (L2164791-10)	143	122	133*	120	146	104	131
FIELD BLANK (L2164791-12)	138	110	108	98	129	111	110
EQUIPMENT BLANK (L2164791-13)	124	110	106	103	125	116	115
MW-2N (L2164791-14)	233*	96	102	96	194*	122*	105
WG1578134-1BLANK	99	109	101	101	101	95	101
WG1578134-2LCS	105	111	103	100	100	96	110
DSI-7MS	125	108	110	103	126	91	105
DSI-7MSD	125	103	110	98	125	99	106

QC LIMITS

(14-147) S8 = 1H,1H,2H,2H-PERFLUORO[1,2-13C2]OCTANESULFONIC ACID (M2-6:2FTS)
(59-139) S9 = PERFLUORO[13C9]NONANOIC ACID (M9PFNA)
(69-131) S10 = PERFLUORO[13C8]OCTANESULFONIC ACID (M8PFOS)
(62-124) S11 = PERFLUORO[1,2,3,4,5,6-13C6]DECANOIC ACID (M6PFDA)
(10-162) S12 = 1H,1H,2H,2H-PERFLUORO[1,2-13C2]DECANESULFONIC ACID (M2-8:2FTS)
(24-116) S13 = N-DEUTERIOMETHYLPERFLUORO-1-OCTANESULFONAMIDOACETIC ACID (D3-NMEFOSAA)
(24-116) S14 = PERFLUORO[1,2,3,4,5,6,7-13C7]UNDECANOIC ACID (M7-PFUDA)

* Values outside of QC limits

Surrogate (Extracted Internal Standard) Recovery Summary
Form 2
Semivolatiles

Client: JMT, Inc.
Project Name: DSI

Lab Number: L2164791
Project Number: 11-S0124N-001
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S15 ()	S16 ()	S17 ()	S18 ()	S19 ()	S20 ()	S21 ()	TOT OUT
DUP2 (L2164791-08)	49	158*	108	93	--	--	--	4
DSI-4 (L2164791-09)	45	165*	102	91	--	--	--	4
DSI-7 (L2164791-10)	49	135*	111	104	--	--	--	4
FIELD BLANK (L2164791-12)	54	119	96	90	--	--	--	0
EQUIPMENT BLANK (L2164791-13)	46	128*	97	100	--	--	--	1
MW-2N (L2164791-14)	36	110	101	93	--	--	--	3
WG1578134-1BLANK	47	95	102	88	--	--	--	0
WG1578134-2LCS	57	107	111	98	--	--	--	0
DSI-7MS	33	113	101	86	--	--	--	0
DSI-7MSD	37	123	96	93	--	--	--	0

QC LIMITS
(10-112) S15 = PERFLUORO[13C8]OCTANESULFONAMIDE (M8FOSA)
(27-126) S16 = N-DEUTERIOETHYLPERFLUORO-1-OCTANESULFONAMIDOACETIC ACID (D5-NETFOSAA)
(48-131) S17 = PERFLUORO[1,2-13C2]DODECANOIC ACID (MPFDOA)
(22-136) S18 = PERFLUORO[1,2-13C2]TETRADECANOIC ACID (M2PFTEDA)

* Values outside of QC limits

FORM II A2-NY-537-ISOTOPE (Continued)

Calibration Verification Summary
Form 7
Semivolatiles

Client	: JMT, Inc.	Lab Number	: L2164791
Project Name	: DSI	Project Number	: 11-S0124N-001
Instrument ID	: LCMS01	Calibration Date	: 12/11/21 22:30
Lab File ID	: I42311	Init. Calib. Date(s)	: 12/07/21 12/07/21
Sample No	: WG1582050-5	Init. Calib. Times	: 13:09 15:22
Channel	:		

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
Perfluorobutanoic Acid (PFBA)	0.483	0.500	96.6	50-150
Perfluoropentanoic Acid (PFPeA)	0.479	0.500	95.8	50-150
Perfluorobutanesulfonic Acid (PFBS)	0.422	0.440	95.4	50-150
Perfluorohexanoic Acid (PFHxA)	0.505	0.500	100.9	50-150
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	0.416	0.470	89	50-150
Perfluoropentanesulfonic Acid (PFPeS)	0.399	0.470	84.8	50-150
Perfluoroheptanoic Acid (PFHpA)	0.473	0.500	94.6	50-150
Perfluorohexanesulfonic Acid-Branched (br-PFHxS)	0.093	0.086	98.1	50-150
Perfluorohexanesulfonic Acid-Linear (L-PFHxS)	0.399	0.370	98.5	50-150
Perfluorohexanesulfonic Acid (PFHxS)	0.492	0.460	-	50-150
Perfluorooctanoic Acid-Branched (br-PFOA)			-	50-150
Perfluorooctanoic Acid-Linear (L-PFOA)	0.376		75.3	50-150
Perfluorooctanoic Acid (PFOA)	0.376	0.500	-	50-150
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.450	0.480	94.7	50-150
Perfluoroheptanesulfonic Acid (PFHpS)	0.547	0.480	115.2	50-150
Perfluorononanoic Acid (PFNA)	0.450	0.500	89.9	50-150
Perfluorooctanesulfonic Acid-Branched (br-PFOS)	0.129	0.098	121.8	50-150
Perfluorooctanesulfonic Acid-Linear (L-PFOS)	0.523	0.365	132.9	50-150
Perfluorooctanesulfonic Acid (PFOS)	0.652	0.460	-	50-150
Perfluorodecanoic Acid (PFDA)	0.427	0.500	85.5	50-150
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.424	0.480	88.4	50-150
Perfluorononanesulfonic Acid (PFNS)	0.598	0.480	124.5	50-150
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.386	0.500	-	50-150
N-Methyl Perfluorooctanesulfonamidoacetic Acid-Branched (br-NMeFOSAA)	0.055		45.9*	50-150
N-Methyl Perfluorooctanesulfonamidoacetic Acid-Linear (L-NMeFOSAA)	0.330	0.500	87	50-150
Perfluoroundecanoic Acid (PFUnA)	0.454	0.500	90.8	50-150
Perfluorodecanesulfonic Acid (PFDS)	0.406	0.480	84.2	50-150
Perfluorooctanesulfonamide (FOSA)	0.491	0.500	98.1	50-150
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.397	0.500	-	50-150
N-Ethyl Perfluorooctanesulfonamidoacetic Acid-Branched (br-NEtFOSAA)	0.099		88.2	50-150
N-Ethyl Perfluorooctanesulfonamidoacetic Acid-Linear (L-NEtFOSAA)	0.298	0.500	76.9	50-150
Perfluorododecanoic Acid (PFDoA)	0.537	0.500	107.4	50-150
Perfluorotridecanoic Acid (PFTrDA)	0.503	0.500	100.6	50-150
Perfluorotetradecanoic Acid (PFTA)	0.410	0.500	81.9	50-150
Perfluoro[13C4]Butanoic Acid (MPFBA)	10.004	10.000	100	50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	9.869	10.000	98.7	50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	9.040	10.000	90.4	50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	7.837	10.000	78.4	50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	9.895	10.000	98.9	50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	10.345	10.000	103.5	50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	10.236	10.000	102.4	50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	10.212	10.000	102.1	50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	8.536	10.000	85.4	50-150

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Semivolatiles

Client	: JMT, Inc.		**Lab Number**	: L2164791	
Project Name	: DSI		**Project Number**	: 11-S0124N-001	
Instrument ID	: LCMS01		**Calibration Date**	: 12/11/21 22:30	
Lab File ID	: I42311		**Init. Calib. Date(s)**	: 12/07/21	12/07/21
Sample No	: WG1582050-5		**Init. Calib. Times**	: 13:09	15:22
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	10.236	10.000	102.4	50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	8.619	10.000	86.2	50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	10.008	10.000	100.1	50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	10.080	10.000	100.8	50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	10.282	10.000	102.8	50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	9.875	10.000	98.8	50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8.918	10.000	89.2	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	10.668	10.000	106.7	50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	9.163	10.000	91.6	50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	8.479	10.000	84.8	50-150
M4PFOS	11.386		113.9	
M2PFDA	12.043		120.4	
M2PFOA	10.622		106.2	
M3PFBA	10.357		103.6	
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	5.113	0.500	102.3	50-150
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	259.948	10.000	130	50-150
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	0.462	0.500	97.6	50-150
Perfluorohexadecanoic Acid (PFHxDA)	0.597	0.500	119.4	50-150
Perfluorooctadecanoic Acid (PFODA)	0.715	0.500	143	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	13.182	10.000	131.8	50-150

* Value outside of QC limits.

Field Duplicate Calculation Section

EPA Method 537 PFC

Calculations for Field Duplicate Relative Percent Difference (RPD)

SDG No. L2164791

S1= DSI-4 **S2=** DUP2

Analyte	S1	S2	RPD (%)	
Perfluorobutanoic Acid (PFBA)	14.1	14.1	0%	
Perfluoropentanoic Acid (PFPeA)	9.27	8.78	5%	
Perfluorobutanesulfonic Acid (PFBS)	2.61	2.34	11%	
Perfluorohexanoic Acid (PFHxA)	12.5	9.61	26%	*
Perfluoroheptanoic Acid (PFHpA)	9.29	7.93	16%	
Perfluorohexanesulfonicnoic Acid (PFHxS)	**1.00**	**1.24**	NC	
Perfluorooctanoic Acid (PFOA)	23.1	22.9	1%	
Perfluorononanoic Acid (PFNA)	**1.59**	**0.979**	NC	
Perfluorooctanesulfonic Acid (PFOS)	6.59	6.23	6%	
PFOA/PFOS, Total	29.7	29.1	2%	

* RPD is above the allowable maximum (20%).

All results are in ng/L.

Bold numbers were values tha are below the CRQL or above the high standard.
ND - Not detected.
NC - Not calculated, both results must be within the linear range for valid RPDs to be calculated.

Alpha Geoscience: Acronyms and Definitions

Data Validation Acronyms

AA	Atomic absorption, flame technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene
CCB	Continuing calibration blank
CCC	Calibration check compound
CCV	Continuing calibration verification
CN	Cyanide
CRDL	Contract required detection limit
CRQL	Contract required quantitation limit
CVAA	Atomic adsorption, cold vapor technique
DCAA	2,4-Dichlophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine
ECD	Electron capture detector
FAA	Atomic absorption, furnace technique
FID	Flame ionization detector
FNP	1-Fluoronaphthalene
GC	Gas chromatography
GC/MS	Gas chromatography/mass spectrometry
GPC	Gel permeation chromatography
ICB	Initial calibration blank
ICP	Inductively coupled plasma-atomic emission spectrometer
ICV	Initial calibration verification
IDL	Instrument detection limit
IS	Internal standard
LCS	Laboratory control sample
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
MSA	Method of standard additions
MS/MSD	Matrix spike/matrix spike duplicate
PID	Photo ionization detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
QA	Quality assurance
QC	Quality control
RF	Response factor
RPD	Relative percent difference
RRF	Relative response factor
RRF(number)	Relative response factor at concentration of the number following
RT	Retention time
RRT	Relative retention time
SDG	Sample delivery group
SPCC	System performance check compound
TCX	Tetrachloro-m-xylene
%D	Percent difference
%R	Percent recovery
%RSD	Percent relative standard deviation

Data Validation Qualifiers Used in the QA/QC Reviews for USEPA Region II

U	=	Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank.
R	=	Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample. Supporting data or information is necessary to confirm the result.
N	=	Tentative identification. Analyte is considered present. Special methods may be needed to confirm its presence or absence during future sampling efforts.
J	=	Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.
J-	=	Analyte is present. Reported value may be biased low and associated with a higher level of uncertainty than is normally expected with the analytical method.
J+	=	Analyte is present. Reported value may be biased high andassociated with a higher level of uncertainty than is normally expected with the analytical method.
UJ	=	Not detected, quantitation limit may be inaccurate or imprecise.

Note: These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.

Polyfluorinated Alkyl Substances (PFAS) Acronyms

PFBA	Perfluorobutanoic acid
PFPeA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA or PFTrDA	Perfluorotridecanoic acid
PFTeA or PFTA	Perfluorotetradecanoic acid
PFBS	Perfluorobutanesulfonic acid
PFPeS	Perfluoropentanesulfonic acid
PFHxS	Perfluorohexanesulfonic acid
PFHpS	Perfluoroheptanesulfonic acid
PFOS	Perfluorooctanesulfonic acid
PFNS	Perfluorononanesulfonic acid
PFDS	Perfluorodecanesulfonic acid
FOSA	Perfluorooctane Sulfonamide
NMeFOSAA	N-methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-ethyl perfluorooctane sulfonamidoacetic acid
4:2 FTS or 4:2	1H, 1H, 2H, 2H-perfluorohexanesulfonic acid
6:2 FTS or 6:2	1H, 1H, 2H, 2H-perfluorooctanesulfonic acid or 6:2 Fluorotelomersulfonate
8:2 FTS or 8:2	1H, 1H, 2H, 2H-perfluorodecanesulfonic acid or 8:2 Fluorotelomersulfonate