February 8, 2019

Ms. Karen Cahill
Project Manager
New York State Department of Environmental Conservation
615 Erie Boulevard
West Syracuse, New York 13204-2450

Re: Destiny USA Real Estate, LLC
City of Syracuse, Onondaga County
Emerging Contaminant Groundwater Sampling Results

Dear Ms. Cahill:

In accordance with the NYSDEC Request for Sampling Emerging Contaminants (April 10, 2018), and pursuant to subsequent correspondence with NYSDEC Region 7 personnel, JMT conducted emerging contaminant groundwater sampling from monitoring wells on Site 6, 8 and 9. Attached please find the laboratory report and Data Usability Summary Report (DUSR) for the Emerging Contaminants laboratory results. Well sampling logs are also attached. The Category B deliverables package will be transmitted to you electronically due to size.

In accordance with the Department directive, and in consultation with your office, existing monitoring wells, including upgradient wells, were identified for inclusion in the sampling plan, which was prepared in accordance with the directive letter and guidance documents provided by the Department, and approved by the Department on September 5, 2018. All sampling was conducted following the sampling plan, the protocol described in the NYSDEC Emerging Contaminant Sampling Guidance (July 2018), and the Department's stipulations in the sampling plan approval notice.

On September 27, 2018 Monitoring wells were sampled using low-flow sampling techniques. The sampling activity was observed by the Department. Water was purged from each well using a peristaltic pump until three well volumes was removed, and water quality parameter stabilization was achieved. The samples were packaged separately and delivered to Alpha Analytical service center for transport to the laboratory for analysis of PFAS constituents using EPA Method 537, and 1,4-Dioxane using EPA Modified Method 8270. See Figure 1 for the monitoring well locations.

The following deviations from the workplan are noted. PFAS analysis was not completed for the sample from SP-MW-9SR due to the presence of extraneous material in the sample. The laboratory indicated that, due to the sensitivity of the analysis, the sample would require significant dilution which would elevate the reporting limit. Groundwater samples were not collected from SP-MW-52 on Site 9 due to a lack of available water in the well.

The data validation found that all results are usable as reported or usable with minor qualifications. The contaminant detections are identified on the attached 9-page data summary with validated qualifiers. Laboratory issues are identified in the attached DUSR.

The Department's directive required the owner to collect the samples following the approved work plan and provide the data and DUSR to the Department. Transmittal of the laboratory report and the Data Usability Summary Report, and identification of deviations from the work plan, noted above, meet the specific requirements identified in the emerging contaminants directive and approved work plan. If you have any questions do not hesitate to contact me at (518) 782-0882 or padel@jmt.com.

Sincerely,

JMT of New York, Inc.

Paul M. Adel, P.E.

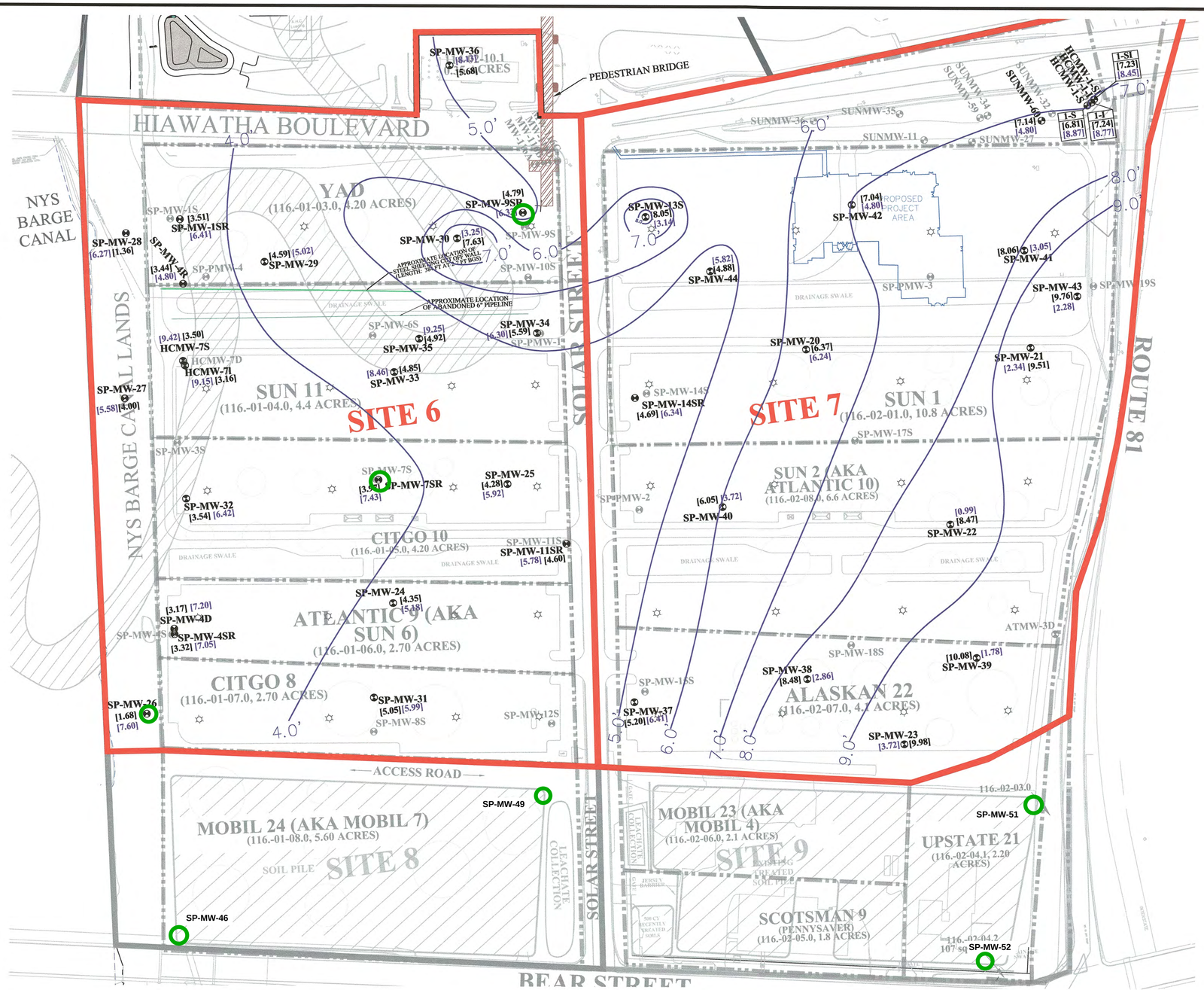
Project Manager

Attachments

Figure 1
Laboratory Data Summary
DUSR
Laboratory Report
Well Sampling Logs

cc w/ att: R. Schoeneck, Destiny

Figure 1



LEGEND

SP-MW-42 ⊗	MONITORING WELL
[4.80]	GROUND WATER ELEVATION (AS OF JUNE AND JULY 2013.)
[4.80]	DEPTH TO WATER (AS OF JUNE AND JULY 2013.)
———	GROUND WATER CONTOUR
○	WELLS TO BE SAMPLED FOR EMERGING CONTAMINANTS

NO.	DATE	RECORD OF WORK	DRN	CKD

PROJECT

PROJ. MGR:	FRP
PROJ. NO.:	15209
PREPARED BY:	JCK
DRAFTED BY:	JCK
CHECKED BY:	
APPROVED BY:	
DATUM:	
CONTOUR INTERVAL =	FEET

0 25 50 100 200

1"=100'

SITES 6 & 7

GROUNDWATER ELEVATION CONTOURS

DESTINY USA

CITY OF SYRACUSE ONONDAGA CO., NY

SPECTRA ENVIRONMENTAL GROUP, INC.
19 British American Blvd
Latham, N.Y. 12110

DATE:	2/11/16	SCALE:	1"=100'	DWG. NO.	RIR	FIGURE:	5

Laboratory Data Summary

Analyte	SP MW 9SR 9/27/2018	SP MW 7SR 9/27/2018	SP MW 46 9/27/2018	SP MW 49 9/27/2018	SP MW 49 DUP 9/27/2018	SP MW 51 9/28/2018	SP MW 26 9/27/2018	EQUIPMENT BLANK 9/27/2018	FIELD BLANK 9/28/2018	DWQC Recommended MCLs
1,4 Dioxane										
1,4-Dioxane	<0.15 U	**1.42**	<0.1 U	<0.15 U	<0.14 U	<0.1 U	<0.15 U	- -	<0.16 U	1
Perfluorinated Alkyl Acids										
Perfluorobutanoic Acid (PFBA)	- -	25.7	11.1	12.8	12.7	<50 U	26.9	<1.86 U	<1.83 U	
Perfluoropentanoic Acid (PFPeA)	- -	91.5	15.2	25.9	26.3	32.6 J	103	<1.86 U	<1.83 U	
Perfluorobutanesulfonic Acid (PFBS)	- -	<2.07 U	2.05 J	1.73 J	1.36 J	<50 U	3.14	<1.86 U	<1.83 U	
Perfluorohexanoic Acid (PFHxA)	- -	36.3	11	16.8	15.9	16.6 J	66.5	<1.86 U	0.161 J	
Perfluoroheptanoic Acid (PFHpA)	- -	19.4	15.6	20	20.4	36.2 J	51.5	<1.86 U	<1.83 U	
Perfluorohexanesulfonic Acid (PFHxS)	- -	<2.07 U	5.05	12.7	12.4	10.3 J	33.9	<1.86 U	<1.83 U	
Perfluorooctanoic Acid (PFOA)	- -	**13**	**18.1**	**22.7**	**20.6**	**41.9** J	**20.6**	0.223 J	0.19 J	10
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	- -	2.39	4.12	3.34	44.2	84	38.6	<1.86 U	141	
Perfluoroheptanesulfonic Acid (PFHpS)	- -	<2.07 U	<2.1 U	<1.84 U	<1.83 U	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluorononanoic Acid (PFNA)	- -	2.98	4.66	3.18	3.54	3.9 J	2.2	<1.86 U	<1.83 U	
Perfluorooctanesulfonic Acid (PFOS)	- -	0.668 J	7.75	7.54	**12**	<50 U	<1.85 U	<1.86 U	0.168 J	10
Perfluorodecanoic Acid (PFDA)	- -	<2.07 U	<2.1 U	0.684 J	0.744 J	<50 U	<1.85 U	<1.86 U	<1.83 U	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	- -	<2.07 U	<2.1 U	<1.84 U	0.597 J	<50 U	<1.85 U	<1.86 U	<1.83 U	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	- -	<2.07 U	<2.1 U	<1.84 U	<1.83 U	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluoroundecanoic Acid (PFUnA)	- -	<2.07 U	<2.1 U	0.588 J	0.436 J	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluorodecanesulfonic Acid (PFDS)	- -	<2.07 U	<2.1 U	<1.84 U	<1.83 U	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluorooctanesulfonamide (FOSA)	- -	<2.07 U	<2.1 U	<1.84 U	0.392 J	<50 U	<1.85 U	<1.86 U	<1.83 U	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	- -	<2.07 U	<2.1 U	2.08	2.15	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluorododecanoic Acid (PFDoA)	- -	<2.07 U	<2.1 U	<1.84 U	<1.83 U	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluorotridecanoic Acid (PFTrDA)	- -	<2.07 U	<2.1 U	0.132 J	<1.83 U	<50 U	<1.85 U	<1.86 U	<1.83 U	
Perfluorotetradecanoic Acid (PFTA)	- -	<2.07 U	<2.1 U	<1.84 U	<1.83 U	<50 U	<1.85 U	<1.86 U	<1.83 U	

Notes:

1. Samples collected by Spectra and submitted to Alpha Analytical for analysis.
2. SP-MW-9SR was not analyzed for PFAS due to the presence of oil product in the sample.
3. <0.457 U: Analyte was not detected. The number preceding the 'U' is the associated reported detection limit.
4. 1,4-Dioxane resutls in ppb. PFAS results in ppt.

Qualifiers:

J: Compound at estimated concentration below the reporting limit.

Values in Bold Type exceed DWQC Recommended MCLs

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

Data Usability Summary Report

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

JMT
19 British American Blvd
Latham, NY 12110
ATTN: Mr. Paul Adel

January 3, 2019

SUBJECT: REVISED Destiny, Syracuse, NY - Site 6, 8, and 9 Data Usability Summary Report

Dear Mr. Adel

Enclosed are the revised validation reports for the fractions listed below. This SDG was received on November 30, 2018. Attachment 1 is a summary of the samples that were reviewed for each analysis.

- Revision: Corrected the site number to 6, 8, and 9. Corrected the Validation Findings Checklist to indicate that there was a holding time violation for 1,4-Dioxane.

LDC Project #43816_RV1:

SDG #	Fraction
L1839183	1,4-Dioxane, Perfluoroalkyl & Polyfluoroalkyl substances

The data validation was performed under Category B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA Region 2 Standard Operating Procedure for Semivolatile Data Validation, SOP HW-22, Revision 5; December 2010
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA 540-R-2017-002; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Senior Chemist

Attachment 1

Category B **EDD** **LDC #43816 (JMT of New York, Latham, NY / Destiny, Syracuse, NY - Sites 6, 8, and 9)** **Project #15209**

LDC	SDG#	DATE REC'D	(3) DATE DUE	1,4-Diox (8270D -SIM)		PFAs (537)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	L1839183	11/30/18	12/21/18	8	0	8	0																																
Total	T/CR			8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16

Shaded cells indicate Category B review (all other cells are Category A review). These sample counts do not include MS/MSD, DL, RE and DUPs

Site: Destiny, Syracuse, NY – Sites 6, 8, and 9
Laboratory: Alpha Analytical, Inc.
Report No.: L1839183
Reviewer: Pei Geng and Christina Rink/Laboratory Data Consultants for JMT of New York – Latham, NY
Date: January 3, 2019

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SP-MW 9SR	L1839183-01	1,4-Dioxane, PFAS
SP-MW 7SR	L1839183-02	1,4-Dioxane, PFAS
SP-MW 46	L1839183-03	1,4-Dioxane, PFAS
SP-MW 49	L1839183-04	1,4-Dioxane, PFAS
SP-MW 51	L1839183-05	1,4-Dioxane, PFAS
FIELD BLANK	L1839183-06	1,4-Dioxane, PFAS
DUP	L1839183-07	1,4-Dioxane, PFAS
SP-MW 26	L1839183-08	1,4-Dioxane, PFAS
EQUIPMENT BLANK	L1839183-09	1,4-Dioxane, PFAS
SP-MW 7SRMS	L1839183-02MS	1,4-Dioxane, PFAS
SP-MW 7SRMSD	L1839183-02MSD	1,4-Dioxane, PFAS

Associated QC Samples(s):
Field/Trip Blanks: EQUIPMENT BLANK, FIELD BLANK
Field Duplicate pair: SP-MW 49 and DUP

The above-listed water samples were collected on September 27, 2018 and were analyzed for 1,4-dioxane by SW-846 method 8270D in selected ion monitoring (SIM) modeand perfluoroalkyl and polyfluoroalky substances (PFASs) by method 537. The data validation was performed in accordance with the USEPA Region 2 *Standard Operating Procedure for Semivolatile Data Validation,* SOP HW-22, Revision 5 (December 2010) and the USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA 540-R-2017-002 (January 2017), modified as necessary to accommodate the non-CLP methodologies used.

The organic data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Internal Standards/Labeled Compounds
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Overall Evaluation of Data and Potential Usability Issues

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP category B laboratory deliverables.

Holding Times and Sample Preservation

1,4-Dioxane

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Validation Action
FIELD BLANK	1,4-Dioxane	14	7	UJ nondetects
DUP SP-MW 26	1,4-Dioxane	15	7	UJ nondetects

The 1,4-dioxane results may be biased low due to holding time exceedances. The results can be used for project objectives as nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

PFAS

All criteria were met.

GC/MS Tunes

1,4-Dioxane

All criteria were met.

LC/MS Tunes

PFAS

All criteria were met.

Initial and Continuing Calibrations

1,4-Dioxane

All criteria were met.

PFAS

Initial calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	ICAL %RSD	Associated Samples	Affected Compound		Validation Action
10/16/18	ICAL	M2-6:2 FTS	26.3929	SP-MW 7SR	6:2 FTS	X	J detects/UJ nondetects
		M2-8:2 FTS	28.8599	SP-MW 46	8:2 FTS	X	J detects/UJ nondetects
				SP-MW 49			
				SP-MW 51			
				FIELD BLANK			
				DUP			
				SP-MW 26			
				EQUIPMENT BLANK			

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 6:2 FTS and 8:2 FTS results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Date	Instrument ID	Compound	True Value %D (Limits)	Associated Samples	Affected Compound	Validation Action
10/16/18	ICAL-150	M2-6:2 FTS M2-8:2 FTS	45.8 (≤30) 50.0 (≤30)	SP-MW 7SR SP-MW 46 SP-MW 49 SP-MW 51 FIELD BLANK DUP SP-MW 26 EQUIPMENT BLANK	6:2 FTS 8:2 FTS	J detects/UJ nondetects J detects/UJ nondetects
10/16/18	ICAL-250	M2-6:2 FTS M2-8:2 FTS	88.8 (≤30) 67.0 (≤30)	SP-MW 7SR SP-MW 46 SP-MW 49 SP-MW 51 FIELD BLANK DUP SP-MW 26 EQUIPMENT BLANK	6:2 FTS 8:2 FTS	J detects/UJ nondetects J detects/UJ nondetects
10/16/18	ICAL-500	M2-6:2 FTS PFOS M2-8:2 FTS	213 (≤30) 51.0 (≤30) 146 (≤30)	SP-MW 7SR SP-MW 46 SP-MW 49 SP-MW 51 FIELD BLANK DUP SP-MW 26 EQUIPMENT BLANK	6:2 FTS PFOS 8:2 FTS	J detects/UJ nondetects J detects/UJ nondetects J detects/UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 6:2 FTS, PFOS, and 8:2 FTS results were estimated due to true value exceedances. The bias cannot be determined. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Date	Instrument ID	Compound	ICV %D	Associated Samples	Affected Compound		Validation Action
10/17/18	CA2-5375790	M2-6:2 FTS	34.3	SP-MW 7SR SP-MW 46 SP-MW 49 SP-MW 51 FIELD BLANK DUP SP-MW 26 EQUIPMENT BLANK	6:2 FTS	SS	J detects/UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 6:2 FTS results were estimated due to second source calibration exceedance. The bias cannot be determined. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Continuing calibration:

Compounds that did not meet criteria are summarized in the following table.

Date	Instrument ID	Compound	CC %D	Associated Samples	Affected Compound		Validation Action
10/20/18	111183	M2-6:2 FTS	41.4	SP-MW 7SR	6:2 FTS	XX	J detects/UJ nondetects
		PFHpS	31.3	SP-MW 46	PFHpS	XX	J detects/UJ nondetects
		d3-NMeFOSAA	40.1	SP-MW 49	NMeFOSAA	XX	J detects/UJ nondetects
10/21/18	111205	PFOS	46.1	SP-MW 51	PFOS	XX	J detects/UJ nondetects
		NEtFOSAA	86.6	FIELD BLANK	NEtFOSAA	XX	J detects/UJ nondetects
		M2-8:2 FTS	37.7	SP-MW 26	8:2 FTS	XX	J detects/UJ nondetects
				EQUIPMENT BLANK			
10/22/18	111281	M2-6:2 FTS	41.4	DUP	6:2 FTS	XX	J detects/UJ nondetects
		d3-NMeFOSAA	78.0		NMeFOSAA	XX	J detects/UJ nondetects
		d5-NEtFOSAA	55.0		NEtFOSAA	XX	J detects/UJ nondetects

X = Initial calibration (IC) relative standard deviation (%RSD) > 20; estimate (J/UJ) positive and nondetect results.
XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ) positive and nondetect results.
SS = Second source verification percent difference (%D) > 30; estimate (J/UJ) positive and nondetect results.
+ = Response factor (RRF) < validation criteria; estimate (J/UJ) positive and nondetect results.

The 6:2 FTS, PFHpS, NMeFOSAA, PFOS, NEtFOSAA, and 8:2 FTS results were estimated due to continuing calibration exceedances. The bias cannot be determined. The results can be used for project objectives as estimated values (J) or nondetects with estimated quantitation limits (UJ) which may have a minor impact on the data usability.

Blanks

1,4-Dioxane

Contamination was not detected in the method blanks.

No positive results were found in the field blank sample FIELD BLANK for 1,4-dioxane analysis.

PFAS

Contamination was not detected in the method blanks.

Contamination was detected in the field blank sample FB0030-GW and FB026 for PFAS analysis. The presence of blank contamination indicates that false positives may exist for these compounds in the associated samples. Action Levels (ALs) were established at the reporting limit (RL) for contaminants. The following table summarizes the contamination detected.

Field Blank ID	Compound	Level Detected	Action Level	Associated Samples
EQUIPMENT BLANK	PFOA	0.223 ng/L	RL	SP-MW 7SR SP-MW 46 SP-MW 49 SP-MW 51 DUP SP-MW 26
FIELD BLANK	PFHxA PFOA 6:2 FTS PFOS	0.161 ng/L 0.191 ng/L 141 ng/L 0.168 ng/L	RL RL RL RL	SP-MW 7SR SP-MW 46 SP-MW 49 SP-MW 51 DUP SP-MW 26

Sample results were qualified as follows:

- If sample concentration was < the reporting limit (RL) and ≤ the Action Level, qualify the result as a nondetect (U) at the RL.
- If sample concentration was > the RL and ≤ the Action Level, qualify the result as not detected (U) at the reported concentration.

Qualified sample results are listed in the table below.

Sample ID	Compound	Level Detected	Validation Action
SP-MW 7SR	6:2 FTS PFOS	2.39 ng/L 0.668 ng/L	2.39U ng/L 2.07U ng/L
SP-MW 46	6:2 FTS	4.12 ng/L	4.12U ng/L
SP-MW 49	6:2 FTS	3.34 ng/L	3.34U ng/L
SP-MW 51	6:2 FTS	84.0 ng/L	84.0U ng/L
DUP	6:2 FTS	44.2 ng/L	44.2U ng/L
SP-MW 26	6:2 FTS	38.6 ng/L	38.6U ng/L

These results can be used for project objectives as nondetects (U) which may have a minor impact on the data usability.

Surrogate Recoveries

1,4-Dioxane

All criteria were met.

MS/MSD Results

MS/MSD analyses were performed on sample SP-MW 7SR for 1,4-dioxane and PFAS analyses. All criteria were met.

LCS Results

All criteria were met.

Internal Standards/Labeled Compounds

1,4-Dioxane

All criteria were met.

PFAS

The following table lists the labeled compounds recovered outside of control limits and the resulting actions.

Sample	Internal Standard	%R (Limits)	Affected Compounds	Validation actions
DUP	M2-6:2 FTS	306 (1-244)	6:2 FTS	J detects
	M2-8:2 FTS	192 (7-170)	8:2 FTS	J detects

The 6:2 FTS and 8:2 FTS results were estimated due to high labeled compound percent recoveries. The bias cannot be determined. The results can be used for project objectives as estimated values (J) which may have a minor impact on the data usability.

Field Duplicate Results

1,4-Dioxane

Samples SP-MW 49 and DUP were submitted as the field duplicate pair with this sample group. There were no detected compounds in the field duplicate pair for 1,4-dioxane.

PFAS

Samples SP-MW 49 and DUP were submitted as the field duplicate pair with this sample group. The following table summarizes the concentrations and validation actions taken.

Compound	Concentration (ng/L)		RPD
	SP-MW 49	DUP	
PFBA	12.8	12.8	0
PFPeA	25.9	26.3	2
PFBS	1.73	1.36	24
PFHxA	16.8	15.9	6
PFHpA	20.0	20.4	2
PFHxS	12.7	12.4	2
PFOA	22.7	20.6	10
6:2FTS	3.34	44.2	172
PFNA	3.18	3.54	11
PFOS	7.54	12.0	46
PFDA	0.684	0.744	8
8:2 FTS	1.84U	0.597	Not comparable
PFUnA	0.588	0.436	30
FOSA	1.84U	0.392	Not comparable
NEtFOSAA	2.08	2.15	3
PFTriDA	0.132	1.83U	Not comparable

Quantitation Limits and Data Assessment

No results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the 1,4-dioxane and PFAS analyses.

Dilutions were not required for 1,4-dioxane and PFAS analyses.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

LDC #: 43816A2b

SDG #: L1839183

Laboratory: Alpha Analytical, Inc.

VALIDATION COMPLETENESS WORKSHEET

Category B

Date: 1/14/18

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A	RSD ≤ 20%. ICV ≤ 30%
IV.	Continuing calibration	A	CCV ≤ 20%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB=6.
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	ND	D= 7+4
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	SP-MW 9SR	L1839183-01	Water	09/27/18
2	SP-MW 7SR	L1839183-02	Water	09/27/18
3	SP-MW 46	L1839183-03	Water	09/27/18
4	SP-MW 49	L1839183-04	Water	09/27/18
5	SP-MW 51	L1839183-05	Water	09/28/18
6 FB	FIELD BLANK	L1839183-06	Water	09/28/18
7 D	DUP	L1839183-07	Water	09/27/18
8	SP-MW 26	L1839183-08	Water	09/27/18
9	SP-MW 7SRMS	L1839183-02MS	Water	09/27/18
10	SP-MW 7SRMSD	L1839183-02MSD	Water	09/27/18
11				
12				
13				

LDC #: 43316A2b

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CV
2nd Reviewer: CV

Method: PAH (EPA SW 846 Method 8270D-SIM)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓	✓		
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check (Not required)				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of > 0.990?			✓	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤30%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) < 20% and relative response factors (RRF) > 0.05?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the blanks validation findings worksheet.		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VII. Surrogate Spikes				
Were all surrogate percent differences (%R) within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any percent recoveries (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VIII. Matrix Spike/Matrix Spike Duplicate				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			

LDC #: 43816A2b

VALIDATION FINDINGS CHECKLIST

Reviewer: 4
2nd Reviewer: 6

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?				
XI. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	✓		✓	
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

LDC #: 43816A2b

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: Q
2nd Reviewer: Q

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD : GC/MS BNA (EPA SW 846 Method 8270D) (HT=7)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
6	W		9-28-18	10-12-18		14	J (HT)
7	↓		9-27-18	↓		15	↓
8	↓		↓	↓		↓	↓
(ND)							

TECHNICAL HOLDING TIME CRITERIA

Water: Extracted within 7 days, analyzed within 40 days.
Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 42316A6

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: GC/MS PAHs (EPA SW846 Method 8270D-SIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (500 std)	Recalculated RRF (500 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL PAH6	9/30/18	1,4-Dioxane (1st internal standard)	1.645	1.645	1.655	1.655	6.95	6.95
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
			(5th internal standard)						
2	ICAL GMS6	10/2/18	1,4-Dioxane (1st internal standard)	1.785	1.785	1.803	1.803	2.51	2.50
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
			(5th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
			(5th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
			(5th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: ~~43816A-26~~

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer:
2nd Reviewer:

METHOD: GC/MS PAHs (EPA SW846 Method 8270D-SIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)		Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	F161004102	10/4/18	1,4-Dioxane						
	DC		~~Naphthalene~~	(1st internal standard)	1.655	1.695	1.695	2.4	2.4
	FH16		Fluorene	(2nd internal standard)					
			Phenanthrene	(3rd internal standard)					
			Chrysene	(4th internal standard)					
			Perylene	(5th internal standard)					
2	F161004102	10/4/18	1,4-Dioxane						
			~~Naphthalene~~	(1st internal standard)	1.803	1.782	1.782	1.2	1.2
			Fluorene	(2nd internal standard)					
			Phenanthrene	(3rd internal standard)					
			Chrysene	(4th internal standard)					
			Perylene	(5th internal standard)					
3	F161015102	10/15/18	1,4-Dioxane						
			~~Naphthalene~~	(1st internal standard)	1.803	1.66	1.66	7.9	7.9
			Fluorene	(2nd internal standard)					
			Phenanthrene	(3rd internal standard)					
			Chrysene	(4th internal standard)					
			Perylene	(5th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: ~~42364v~~

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: [illegible]

METHOD: GC/MS PAHs (EPA SW 846 Method 8270D-SIM)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14			→		
1,4-Dioxane-d8	500	153.628	31	31	0

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

LDC #: 45016A26

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 1
2nd Reviewer: 2

METHOD: GC/MS PAHs (EPA SW 846 Method 8270D-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD samples: 9/10

Compound	Spike Added (ng/L)		Sample Concentration (ng/L)	Spiked Sample Concentration (ng/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Acenaphthene											
Pyrene											
1,4-Dioxane	4900	4870	1420	6350	6220	101	101	100	100	2	2

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #~~45016A3D~~

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: Q
2nd Reviewer: Q

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA) Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: WF163523-2/-3

Compound	Spike Added (ng/L)		Spike Concentration (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Acenaphthene										
Pyrene										
1,4-Dioxane	5000	5000	5490	5540	110	110	111	111	1	1

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #43816A-b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: a
2nd reviewer: a

METHOD: GC/MS PAHs (EPA SW846 Method 8270D-SIM)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2, 1,4-Dioxane

Conc. = $\frac{(359)(500.0)(5000)(1)(\quad)}{(6756)(1.803)(520)(\quad)(\quad)}$

= 1417.3 ng/L

#	Sample ID	Compound	Reported Concentration (ng/L)	Calculated Concentration ( )	Qualification
	2	1,4-Dioxane	1420		

LDC #: 43816A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/14/18
SDG #: L1839183 Category B Page: 1 of 1
Laboratory: Alpha Analytical, Inc. Reviewer:
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A/N	
III.	Initial calibration/ICV	SW, SW	RSD ≤ 20%. r² True/Lin ≤ 30%.
IV.	Continuing calibration/ISC	SW	CCV/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	FB=5. EB=8
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D 1+6 3+6
X.	Labeled Compounds	SW	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	SP-MW 7SR	L1839183-02	Water	09/27/18
2	SP-MW 46	L1839183-03	Water	09/27/18
3	SP-MW 49	L1839183-04	Water	09/27/18
4	SP-MW 51	L1839183-05	Water	09/28/18
5	FIELD BLANK	L1839183-06	Water	09/28/18
6	DUP	L1839183-07	Water	09/27/18
7	SP-MW 26	L1839183-08	Water	09/27/18
8	EQUIPMENT BLANK	L1839183-09	Water	09/27/18
9	SP-MW 7SRMS	L1839183-02MS	Water	09/27/18
10	SP-MW 7SRMSD	L1839183-02MSD	Water	09/27/18
11				
12				

Notes:

	WET/16269-1						

LDC #: 43814A96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer:

Method: LCMS (EPA Method 537 Modified)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓		✓	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?		✓		
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?		✓		
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) < 30%?		✓		
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?		✓		
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check < 30%?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			

LDC #: 43816A96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
XI. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?			✓	
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutyric acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 13316A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LCMS PFCs

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A — Did the laboratory perform a 5 point calibration prior to sample analysis?
(Y) N N/A — Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?
Y (N) N/A — Were all percent relative standard deviations (%RSD) ≤ 20%?
Y (N) N/A — Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?

#	Date	Standard ID	Compound	Finding %RSD/r²	Finding %D (True Value)	Associated Samples	Qualifications
	10/16/18	ICAL	M2-6:2FTS	26.3929		All (dets+ND)	J/UJ/P (R) (5)
			M2-8:2FTS	28.8599			
	10/14/18	ICAL-150	M2-6:2FTS		15.8 (≤30%)	All (dets+ND)	J/UJ/P
		250			88.8		
		500			213		
		ICAL-500	M		51.0		
		ICAL-150	M2-8:2FTS		50.0		
		250			67.0		
		500			146		

LDC #: 43816A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Reviewer: 9
2nd Reviewer: C

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?
Y N N/A Did the initial calibration verification standards meet the %D validation criteria of ~~<25.0%?~~ 30%

#	Date	Standard ID	Compound	%D (Limit ≤ ~~25.0~~ 30%)	Associated Samples	Qualifications
	10/17/18	CA2-537-100	R	34.3	All (det + ND)	J (all det) UJ (all ND) (R)

LDC #: 43816A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed after every 10 injections for each instrument?

Y (N) N/A Were all continuing calibration percent differences (%D) ≤30 %?

#	Date	Standard ID	Compound	Finding %D (Limit: <30.0%)	Finding RRF (Limit:)	Associated Samples	Qualifications
	10/20/18	111183	R	41.4		1-3, MB (dets+ND)	J (R)
			L	31.3			J (L)
			d3-T	40.1			J (T)
			by -				
	10/21/18	111205	~~M~~	~~58.0~~ 46.1		4-5, 7-8 (dets+ND)	J (M)
			U	86.6			J (U)
			M2-8:2FTS	37.7			J (S)
							~~(S)~~
	10/22/18	111281	M2-6:2FTS	41.4		6 (dets+ND)	J (R)
			d3-T	78.0			J (T)
			d5 U	55.0			J (U)

LDC #: 43616A96

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

Blank units: ng/L **Associated sample units:** ng/L

Sampling date: 9/28/18

Field blank type: (circle one) Trip Blank/Field Blank / Rinsate / Other:_____ Associated Samples: 1-4. 6-7.

Compound	Blank ID	FB ID	Sample Identification							
	5 (FB)	8 (FB)	1	2	3	4	6	7		
A J	0.161									
C J	0.191	0.223								
R	141		2.39	4.12	3.34	84.0	44.2	38.6		
M	0.168		0.668/2.07							

Blank units:_____ **Associated sample units:**_____

Sampling date:_____

Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

LDC #: ~~13816~~ 13816A96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537M)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A   Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Internal Standard	% Recovery (Limit:)		Qualifications
		6 (det)	M2-6:2FTS	306	(1-244)	J/UJ/P (R)
			M2-8:2FTS	192	(7-170)	V (S)
					( )	
					( )	
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LDC#: 43816A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: PG
2nd Reviewer:

METHOD: LCMS PFAS (EPA Method 537M)
Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD
	3	6	
P	12.8	12.8	0
Q	25.9	26.3	2
J	1.73	1.36	24
A	16.8	15.9	6
B	20.0	20.4	2
K	12.7	12.4	2
C	22.7	20.6	10
R	3.34	44.2	172
D	3.18	3.54	11
M	7.54	12.0	46
E	0.684	0.744	8
S	1.84U	0.597	NC
F	0.588	0.436	30
O	1.84U	0.392	NC
U	2.08	2.15	3
H	0.132	1.83U	NC

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LDC: 43816A90

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewwe:
2nd Reviewer:

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
10/16/2018	PFOA	1	0.050	0.0571930
		2	0.100	0.0979939
		3	0.500	0.5067150
		4	1.000	1.0647602
		5	5.000	5.3283362
		6	12.500	12.9821161
		7	15.000	15.0580854
		8	25.000	24.6498545
		9	50.000	53.2558990

Linear through the origin

	calculated	***Reported***
Constant	*0.000000*	0.0000
X Coefficient(s)	*1.04604343*	1.03528
Correlation Coefficient	*0.999537*	0.99889
Coefficient of Determination (r^2)	*0.999074*	

Method: PFACs (EPA Method 537)

Calibration Date	Analyte	Standard	(Y) Concentration	(X) Area
10/16/2018	PFNA	1	0.050	0.0495195
		2	0.100	0.0818619
		3	0.500	0.4004516
		4	1.000	0.9460143
		5	5.000	4.2492656
		6	12.500	10.9588660
		7	15.000	13.0777511
		8	25.000	20.0136184
		9	50.000	45.2581563

Linear through the origin

	calculated	***Reported***
Constant	*0.000000*	0.0000
X Coefficient(s)	*0.88288537*	0.870687
Correlation Coefficient	*0.998995*	0.99761
Coefficient of Determination (r^2)	*0.997990*	

LDC #: 38816A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: 1
2nd Reviewer: 2

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	111183	10/30/18	~~PFOA~~ (1st internal standard)	0.500	0.531	0.531	6.3	6.3
			PFNA (2nd internal standard)	↓	0.518	0.518	3.5	3.5
			(3rd internalstandard)					
2	111205	11/2/18	(1st internal standard)	0.500	0.541	0.541	8.2	8.2
			(2nd internal standard)	↓	0.532	0.532	6.5	6.4
			(3rd internalstandard)					
3	111281	11/23/18	(1st internal standard)	1000	10.165	10.165	1.7	1.7
			(2nd internal standard)	↓	10.019	10.019	0.2	0.2
			(3rd internalstandard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internalstandard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 9/10

Compound	Spike Added (NS/L)		Sample Concentration (NS/L)	Spiked Sample Concentration (NS/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-----	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	44.2	43.5	13.0	56.9	56.0	99	99	99	99	2	2
PFOS	↓	↓	0.668	32.9	43.0	T4	T3	99	9T	2T	2T

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 471662-2/-3

Compound	Spike Added (ng/L)		Spike Concentration (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	40	40	42.5	41.3	106	106	103	103	3	3
PFOS	V	V	36.9	38.7	92	92	97	97	5	5

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 43816A96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 0

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1 , PFOA

Conc. = $\frac{(\text{ATT1})(10.0)(1)(\quad)(\quad)}{(14722)(1.03528)(0.241)(\quad)(\quad)}$

= 12.99 ng/L

#	Sample ID	Compound	Reported Concentration (ng/L)	Calculated Concentration ( )	Qualification
	1	PFOA	13.0		

LDC# 43816: Destiny, Syracuse NY - Sites 6, 8, and 9

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP	L1839183-07	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/22/2018		Y	N	U		U	1.83	0.142	ng/l
DUP	L1839183-07	PERFLUOROUNDECANOIC ACID (PFUNA)	10/22/2018	0.436	Y	Y	J		J	1.83	0.175	ng/l
DUP	L1839183-07	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/22/2018		Y	N	U		U	1.83	0.083	ng/l
DUP	L1839183-07	PERFLUOROTETRADECANOIC ACID (PFTA)	10/22/2018		Y	N	U		U	1.83	0.066	ng/l
DUP	L1839183-07	PERFLUOROOCTANOIC ACID (PFOA)	10/22/2018	20.6	Y	Y				1.83	0.046	ng/l
DUP	L1839183-07	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/22/2018	0.392	Y	Y	J		J	1.83	0.208	ng/l
DUP	L1839183-07	PERFLUORONONANOIC ACID (PFNA)	10/22/2018	3.54	Y	Y				1.83	0.092	ng/l
DUP	L1839183-07	PERFLUOROHEXANOIC ACID (PFHXA)	10/22/2018	15.9	Y	Y				1.83	0.116	ng/l
DUP	L1839183-07	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/22/2018	44.2	Y	N		UJ	UJ	1.83	0.178	ng/l
DUP	L1839183-07	PERFLUOROHEPTANOIC ACID (PFHPA)	10/22/2018	20.4	Y	Y				1.83	0.085	ng/l
DUP	L1839183-07	PERFLUOROPENTANOIC ACID (PFPEA)	10/22/2018	26.3	Y	Y				1.83	0.078	ng/l
DUP	L1839183-07	PERFLUORODODECANOIC ACID (PFDOA)	10/22/2018		Y	N	U		U	1.83	0.084	ng/l
DUP	L1839183-07	PERFLUORODECANOIC ACID (PFDA)	10/22/2018	0.744	Y	Y	J		J	1.83	0.174	ng/l
DUP	L1839183-07	PERFLUORODECANESULFONIC ACID (PFDS)	10/22/2018		Y	N	U		U	1.83	0.204	ng/l
DUP	L1839183-07	PERFLUOROBUTANOIC ACID (PFBA)	10/22/2018	12.7	Y	Y				1.83	0.120	ng/l
DUP	L1839183-07	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/22/2018	1.36	Y	Y	J		J	1.83	0.101	ng/l
DUP	L1839183-07	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/22/2018		Y	N	U	UJ	UJ	1.83	0.229	ng/l
DUP	L1839183-07	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/22/2018	2.15	Y	Y		J	J	1.83	0.341	ng/l
DUP	L1839183-07	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/22/2018	12.4	Y	Y				1.83	0.099	ng/l
DUP	L1839183-07	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/22/2018	12.0	Y	Y		J	J	1.83	0.102	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP	L1839183-07	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/22/2018	0.597	Y	Y	J	J	J	1.83	0.266	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROHEXANOIC ACID (PFHXA)	10/21/2018		Y	N	U		U	1.86	0.117	ng/l
EQUPIMENT BLANK	L1839183-09	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/21/2018		Y	N	U	UJ	UJ	1.86	0.270	ng/l
EQUPIMENT BLANK	L1839183-09	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/21/2018		Y	N	U		U	1.86	0.233	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/21/2018		Y	N	U		U	1.86	0.102	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROBUTANOIC ACID (PFBA)	10/21/2018		Y	N	U		U	1.86	0.122	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUORODECANESULFONIC ACID (PFDS)	10/21/2018		Y	N	U		U	1.86	0.207	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUORODECANOIC ACID (PFDA)	10/21/2018		Y	N	U		U	1.86	0.177	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUORODODECANOIC ACID (PFDOA)	10/21/2018		Y	N	U		U	1.86	0.085	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/21/2018		Y	N	U		U	1.86	0.144	ng/l
EQUPIMENT BLANK	L1839183-09	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/21/2018		Y	N	U	UJ	UJ	1.86	0.346	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/21/2018		Y	N	U		U	1.86	0.100	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUORONONANOIC ACID (PFNA)	10/21/2018		Y	N	U		U	1.86	0.094	ng/l
EQUPIMENT BLANK	L1839183-09	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/21/2018		Y	N	U	UJ	UJ	1.86	0.180	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROOCTANOIC ACID (PFOA)	10/21/2018	0.223	Y	Y	J		J	1.86	0.047	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROPENTANOIC ACID (PFPEA)	10/21/2018		Y	N	U		U	1.86	0.080	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROTETRADECANOIC ACID (PFTA)	10/21/2018		Y	N	U		U	1.86	0.067	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/21/2018		Y	N	U		U	1.86	0.084	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/21/2018		Y	N	U	UJ	UJ	1.86	0.104	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
EQUPIMENT BLANK	L1839183-09	PERFLUOROUNDECANOIC ACID (PFUNA)	10/21/2018		Y	N	U		U	1.86	0.178	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROHEPTANOIC ACID (PFHPA)	10/21/2018		Y	N	U		U	1.86	0.086	ng/l
EQUPIMENT BLANK	L1839183-09	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/21/2018		Y	N	U		U	1.86	0.211	ng/l
FIELD BLANK	L1839183-06	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/21/2018		Y	N	U		U	1.83	0.142	ng/l
FIELD BLANK	L1839183-06	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/21/2018	0.168	Y	Y	J	J	J	1.83	0.102	ng/l
FIELD BLANK	L1839183-06	PERFLUOROTETRADECANOIC ACID (PFTA)	10/21/2018		Y	N	U		U	1.83	0.066	ng/l
FIELD BLANK	L1839183-06	PERFLUOROOCTANOIC ACID (PFOA)	10/21/2018	0.190	Y	Y	J		J	1.83	0.046	ng/l
FIELD BLANK	L1839183-06	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/21/2018		Y	N	U		U	1.83	0.208	ng/l
FIELD BLANK	L1839183-06	PERFLUORONONANOIC ACID (PFNA)	10/21/2018		Y	N	U		U	1.83	0.092	ng/l
FIELD BLANK	L1839183-06	PERFLUOROHEXANOIC ACID (PFHXA)	10/21/2018	0.161	Y	Y	J		J	1.83	0.116	ng/l
FIELD BLANK	L1839183-06	PERFLUOROUNDECANOIC ACID (PFUNA)	10/21/2018		Y	N	U		U	1.83	0.175	ng/l
FIELD BLANK	L1839183-06	PERFLUOROHEPTANOIC ACID (PFHPA)	10/21/2018		Y	N	U		U	1.83	0.085	ng/l
FIELD BLANK	L1839183-06	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/21/2018		Y	N	U		U	1.83	0.083	ng/l
FIELD BLANK	L1839183-06	PERFLUORODODECANOIC ACID (PFDOA)	10/21/2018		Y	N	U		U	1.83	0.084	ng/l
FIELD BLANK	L1839183-06	PERFLUORODECANOIC ACID (PFDA)	10/21/2018		Y	N	U		U	1.83	0.174	ng/l
FIELD BLANK	L1839183-06	PERFLUORODECANESULFONIC ACID (PFDS)	10/21/2018		Y	N	U		U	1.83	0.204	ng/l
FIELD BLANK	L1839183-06	PERFLUOROBUTANOIC ACID (PFBA)	10/21/2018		Y	N	U		U	1.83	0.120	ng/l
FIELD BLANK	L1839183-06	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/21/2018		Y	N	U		U	1.83	0.101	ng/l
FIELD BLANK	L1839183-06	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/21/2018		Y	N	U		U	1.83	0.229	ng/l
FIELD BLANK	L1839183-06	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/21/2018		Y	N	U	UJ	UJ	1.83	0.341	ng/l
FIELD BLANK	L1839183-06	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/21/2018	141	Y	Y		J	J	1.83	0.178	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
FIELD BLANK	L1839183-06	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/21/2018		Y	N	U		U	1.83	0.099	ng/l
FIELD BLANK	L1839183-06	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/21/2018		Y	N	U	UJ	UJ	1.83	0.266	ng/l
FIELD BLANK	L1839183-06	PERFLUOROPENTANOIC ACID (PFPEA)	10/21/2018		Y	N	U		U	1.83	0.078	ng/l
SP MW 26	L1839183-08	PERFLUORODODECANOIC ACID (PFDOA)	10/21/2018		Y	N	U		U	1.85	0.085	ng/l
SP MW 26	L1839183-08	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/21/2018		Y	N	U	UJ	UJ	1.85	0.345	ng/l
SP MW 26	L1839183-08	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/21/2018	38.6	Y	N		UJ	UJ	1.85	0.180	ng/l
SP MW 26	L1839183-08	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/21/2018		Y	N	U		U	1.85	0.232	ng/l
SP MW 26	L1839183-08	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/21/2018	3.14	Y	Y				1.85	0.102	ng/l
SP MW 26	L1839183-08	PERFLUOROBUTANOIC ACID (PFBA)	10/21/2018	26.9	Y	Y				1.85	0.121	ng/l
SP MW 26	L1839183-08	PERFLUORODECANESULFONIC ACID (PFDS)	10/21/2018		Y	N	U		U	1.85	0.206	ng/l
SP MW 26	L1839183-08	PERFLUORODECANOIC ACID (PFDA)	10/21/2018		Y	N	U		U	1.85	0.176	ng/l
SP MW 26	L1839183-08	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/21/2018		Y	N	U		U	1.85	0.084	ng/l
SP MW 26	L1839183-08	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/21/2018		Y	N	U		U	1.85	0.144	ng/l
SP MW 26	L1839183-08	PERFLUOROHEPTANOIC ACID (PFHPA)	10/21/2018	51.5	Y	Y				1.85	0.086	ng/l
SP MW 26	L1839183-08	PERFLUOROHEXANOIC ACID (PFHXA)	10/21/2018	66.5	Y	Y				1.85	0.117	ng/l
SP MW 26	L1839183-08	PERFLUORONONANOIC ACID (PFNA)	10/21/2018	2.20	Y	Y				1.85	0.093	ng/l
SP MW 26	L1839183-08	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/21/2018		Y	N	U		U	1.85	0.210	ng/l
SP MW 26	L1839183-08	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/21/2018		Y	N	U	UJ	UJ	1.85	0.103	ng/l
SP MW 26	L1839183-08	PERFLUOROOCTANOIC ACID (PFOA)	10/21/2018	20.6	Y	Y				1.85	0.047	ng/l
SP MW 26	L1839183-08	PERFLUOROPENTANOIC ACID (PFPEA)	10/21/2018	103	Y	Y				1.85	0.079	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SP MW 26	L1839183-08	PERFLUOROTETRADECANOIC ACID (PFTA)	10/21/2018		Y	N	U		U	1.85	0.067	ng/l
SP MW 26	L1839183-08	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/21/2018	33.9	Y	Y				1.85	0.100	ng/l
SP MW 26	L1839183-08	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/21/2018		Y	N	U	UJ	UJ	1.85	0.269	ng/l
SP MW 26	L1839183-08	PERFLUOROUNDECANOIC ACID (PFUNA)	10/21/2018		Y	N	U		U	1.85	0.177	ng/l
SP MW 46	L1839183-03	PERFLUOROUNDECANOIC ACID (PFUNA)	10/20/2018		Y	N	U		U	2.10	0.201	ng/l
SP MW 46	L1839183-03	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/20/2018	5.05	Y	Y				2.10	0.113	ng/l
SP MW 46	L1839183-03	PERFLUOROHEXANOIC ACID (PFHXA)	10/20/2018	11.0	Y	Y				2.10	0.133	ng/l
SP MW 46	L1839183-03	PERFLUORONONANOIC ACID (PFNA)	10/20/2018	4.66	Y	Y				2.10	0.106	ng/l
SP MW 46	L1839183-03	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/20/2018		Y	N	U		U	2.10	0.238	ng/l
SP MW 46	L1839183-03	PERFLUOROOCTANOIC ACID (PFOA)	10/20/2018	18.1	Y	Y				2.10	0.053	ng/l
SP MW 46	L1839183-03	PERFLUOROHEPTANOIC ACID (PFHPA)	10/20/2018	15.6	Y	Y				2.10	0.097	ng/l
SP MW 46	L1839183-03	PERFLUOROTETRADECANOIC ACID (PFTA)	10/20/2018		Y	N	U		U	2.10	0.076	ng/l
SP MW 46	L1839183-03	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/20/2018		Y	N	U		U	2.10	0.095	ng/l
SP MW 46	L1839183-03	PERFLUOROPENTANOIC ACID (PFPEA)	10/20/2018	15.2	Y	Y				2.10	0.090	ng/l
SP MW 46	L1839183-03	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/20/2018		Y	N	U	UJ	UJ	2.10	0.305	ng/l
SP MW 46	L1839183-03	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/20/2018	7.75	Y	Y		J	J	2.10	0.117	ng/l
SP MW 46	L1839183-03	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/20/2018		Y	N	U	UJ	UJ	2.10	0.163	ng/l
SP MW 46	L1839183-03	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/20/2018	4.12	Y	N		UJ	UJ	2.10	0.204	ng/l
SP MW 46	L1839183-03	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/20/2018		Y	N	U		U	2.10	0.392	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SP MW 46	L1839183-03	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/20/2018		Y	N	U	UJ	UJ	2.10	0.263	ng/l
SP MW 46	L1839183-03	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/20/2018	2.05	Y	Y	J		J	2.10	0.116	ng/l
SP MW 46	L1839183-03	PERFLUOROBUTANOIC ACID (PFBA)	10/20/2018	11.1	Y	Y				2.10	0.138	ng/l
SP MW 46	L1839183-03	PERFLUORODECANESULFONIC ACID (PFDS)	10/20/2018		Y	N	U		U	2.10	0.234	ng/l
SP MW 46	L1839183-03	PERFLUORODECANOIC ACID (PFDA)	10/20/2018		Y	N	U		U	2.10	0.200	ng/l
SP MW 46	L1839183-03	PERFLUORODODECANOIC ACID (PFDOA)	10/20/2018		Y	N	U		U	2.10	0.096	ng/l
SP MW 49	L1839183-04	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/20/2018	12.7	Y	Y				1.84	0.099	ng/l
SP MW 49	L1839183-04	PERFLUOROHEPTANOIC ACID (PFHPA)	10/20/2018	20.0	Y	Y				1.84	0.085	ng/l
SP MW 49	L1839183-04	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/20/2018		Y	N	U	UJ	UJ	1.84	0.143	ng/l
SP MW 49	L1839183-04	PERFLUORODODECANOIC ACID (PFDOA)	10/20/2018		Y	N	U		U	1.84	0.084	ng/l
SP MW 49	L1839183-04	PERFLUOROHEXANOIC ACID (PFHXA)	10/20/2018	16.8	Y	Y				1.84	0.116	ng/l
SP MW 49	L1839183-04	PERFLUORODECANOIC ACID (PFDA)	10/20/2018	0.684	Y	Y	J		J	1.84	0.175	ng/l
SP MW 49	L1839183-04	PERFLUORONONANOIC ACID (PFNA)	10/20/2018	3.18	Y	Y				1.84	0.093	ng/l
SP MW 49	L1839183-04	PERFLUOROBUTANOIC ACID (PFBA)	10/20/2018	12.8	Y	Y				1.84	0.120	ng/l
SP MW 49	L1839183-04	PERFLUOROUNDECANOIC ACID (PFUNA)	10/20/2018	0.588	Y	Y	J		J	1.84	0.176	ng/l
SP MW 49	L1839183-04	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/20/2018	1.73	Y	Y	J		J	1.84	0.101	ng/l
SP MW 49	L1839183-04	PERFLUORODECANESULFONIC ACID (PFDS)	10/20/2018		Y	N	U		U	1.84	0.204	ng/l
SP MW 49	L1839183-04	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/20/2018		Y	N	U		U	1.84	0.208	ng/l
SP MW 49	L1839183-04	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/20/2018	2.08	Y	Y				1.84	0.343	ng/l
SP MW 49	L1839183-04	PERFLUOROOCTANOIC ACID (PFOA)	10/20/2018	22.7	Y	Y				1.84	0.046	ng/l
SP MW 49	L1839183-04	PERFLUOROPENTANOIC ACID (PFPEA)	10/20/2018	25.9	Y	Y				1.84	0.079	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SP MW 49	L1839183-04	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/20/2018	3.34	Y	N		UJ	UJ	1.84	0.178	ng/l
SP MW 49	L1839183-04	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/20/2018	0.132	Y	Y	J		J	1.84	0.083	ng/l
SP MW 49	L1839183-04	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/20/2018	7.54	Y	Y		J	J	1.84	0.102	ng/l
SP MW 49	L1839183-04	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/20/2018		Y	N	U	UJ	UJ	1.84	0.230	ng/l
SP MW 49	L1839183-04	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/20/2018		Y	N	U	UJ	UJ	1.84	0.267	ng/l
SP MW 49	L1839183-04	PERFLUOROTETRADECANOIC ACID (PFTA)	10/20/2018		Y	N	U		U	1.84	0.066	ng/l
SP MW 51	L1839183-05	PERFLUOROUNDECANOIC ACID (PFUNA)	10/21/2018		Y	N	U		U	50.0	4.78	ng/l
SP MW 51	L1839183-05	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/21/2018		Y	N	U	UJ	UJ	50.0	7.27	ng/l
SP MW 51	L1839183-05	PERFLUOROTETRADECANOIC ACID (PFTA)	10/21/2018		Y	N	U		U	50.0	1.80	ng/l
SP MW 51	L1839183-05	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/21/2018	84.0	Y	N		UJ	UJ	50.0	4.85	ng/l
SP MW 51	L1839183-05	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/21/2018		Y	N	U	UJ	UJ	50.0	2.79	ng/l
SP MW 51	L1839183-05	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/21/2018		Y	N	U		U	50.0	2.26	ng/l
SP MW 51	L1839183-05	PERFLUOROPENTANOIC ACID (PFPEA)	10/21/2018	32.6	Y	Y	J		J	50.0	2.14	ng/l
SP MW 51	L1839183-05	PERFLUOROOCTANOIC ACID (PFOA)	10/21/2018	41.9	Y	Y	J		J	50.0	1.26	ng/l
SP MW 51	L1839183-05	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/21/2018		Y	N	U		U	50.0	5.67	ng/l
SP MW 51	L1839183-05	PERFLUORONONANOIC ACID (PFNA)	10/21/2018	3.90	Y	Y	J		J	50.0	2.52	ng/l
SP MW 51	L1839183-05	PERFLUOROHEXANOIC ACID (PFHXA)	10/21/2018	16.6	Y	Y	J		J	50.0	3.16	ng/l
SP MW 51	L1839183-05	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/21/2018	10.3	Y	Y	J		J	50.0	2.69	ng/l
SP MW 51	L1839183-05	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/21/2018		Y	N	U		U	50.0	3.88	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SP MW 51	L1839183-05	PERFLUORODODECANOIC ACID (PFDOA)	10/21/2018		Y	N	U		U	50.0	2.29	ng/l
SP MW 51	L1839183-05	PERFLUORODECANOIC ACID (PFDA)	10/21/2018		Y	N	U		U	50.0	4.76	ng/l
SP MW 51	L1839183-05	PERFLUORODECANESULFONIC ACID (PFDS)	10/21/2018		Y	N	U		U	50.0	5.56	ng/l
SP MW 51	L1839183-05	PERFLUOROBUTANOIC ACID (PFBA)	10/21/2018		Y	N	U		U	50.0	3.28	ng/l
SP MW 51	L1839183-05	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/21/2018		Y	N	U		U	50.0	2.75	ng/l
SP MW 51	L1839183-05	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/21/2018		Y	N	U		U	50.0	6.26	ng/l
SP MW 51	L1839183-05	PERFLUOROHEPTANOIC ACID (PFHPA)	10/21/2018	36.2	Y	Y	J		J	50.0	2.31	ng/l
SP MW 51	L1839183-05	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/21/2018		Y	N	U	UJ	UJ	50.0	9.32	ng/l
SP MW 7SR	L1839183-02	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	10/20/2018		Y	N	U		U	2.07	0.387	ng/l
SP MW 7SR	L1839183-02	PERFLUOROHEXANESULFONIC ACID (PFHXS)	10/20/2018		Y	N	U		U	2.07	0.112	ng/l
SP MW 7SR	L1839183-02	PERFLUOROHEPTANOIC ACID (PFHPA)	10/20/2018	19.4	Y	Y				2.07	0.096	ng/l
SP MW 7SR	L1839183-02	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	10/20/2018		Y	N	U	UJ	UJ	2.07	0.161	ng/l
SP MW 7SR	L1839183-02	PERFLUORODODECANOIC ACID (PFDOA)	10/20/2018		Y	N	U		U	2.07	0.095	ng/l
SP MW 7SR	L1839183-02	PERFLUORODECANOIC ACID (PFDA)	10/20/2018		Y	N	U		U	2.07	0.198	ng/l
SP MW 7SR	L1839183-02	PERFLUORODECANESULFONIC ACID (PFDS)	10/20/2018		Y	N	U		U	2.07	0.231	ng/l
SP MW 7SR	L1839183-02	PERFLUOROBUTANOIC ACID (PFBA)	10/20/2018	25.7	Y	Y				2.07	0.136	ng/l
SP MW 7SR	L1839183-02	PERFLUOROHEXANOIC ACID (PFHXA)	10/20/2018	36.3	Y	Y				2.07	0.131	ng/l
SP MW 7SR	L1839183-02	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	10/20/2018		Y	N	U	UJ	UJ	2.07	0.260	ng/l
SP MW 7SR	L1839183-02	PERFLUOROPENTANOIC ACID (PFPEA)	10/20/2018	91.5	Y	Y				2.07	0.089	ng/l

SDG: L1839183

Analytical Method 537(M)

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
SP MW 7SR	L1839183-02	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	10/20/2018		Y	N	U	UJ	UJ	2.07	0.302	ng/l
SP MW 7SR	L1839183-02	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	10/20/2018	2.39	Y	N		UJ	UJ	2.07	0.201	ng/l
SP MW 7SR	L1839183-02	PERFLUOROBUTANESULFONIC ACID (PFBS)	10/20/2018		Y	N	U		U	2.07	0.114	ng/l
SP MW 7SR	L1839183-02	PERFLUORONONANOIC ACID (PFNA)	10/20/2018	2.98	Y	Y				2.07	0.104	ng/l
SP MW 7SR	L1839183-02	PERFLUOROOCTANESULFONAMIDE (FOSA)	10/20/2018		Y	N	U		U	2.07	0.235	ng/l
SP MW 7SR	L1839183-02	PERFLUOROOCTANOIC ACID (PFOA)	10/20/2018	13.0	Y	Y				2.07	0.052	ng/l
SP MW 7SR	L1839183-02	PERFLUOROTETRADECANOIC ACID (PFTA)	10/20/2018		Y	N	U		U	2.07	0.075	ng/l
SP MW 7SR	L1839183-02	PERFLUOROTRIDECANOIC ACID (PFTRDA)	10/20/2018		Y	N	U		U	2.07	0.094	ng/l
SP MW 7SR	L1839183-02	PERFLUOROUNDECANOIC ACID (PFUNA)	10/20/2018		Y	N	U		U	2.07	0.198	ng/l
SP MW 7SR	L1839183-02	PERFLUOROOCTANESULFONIC ACID (PFOS)	10/20/2018	0.668	Y	N	J	UJ	UJ	2.07	0.116	ng/l

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Validated	Detect	Lab Qual	Val Qual	Final qual	RL	MDL	Units
DUP	L1839183-07	1,4-DIOXANE	10/15/2018		Y	N	U	UJ	UJ	144	72.1	ng/l
FIELD BLANK	L1839183-06	1,4-DIOXANE	10/15/2018		Y	N	U	UJ	UJ	156	78.1	ng/l
SP MW 26	L1839183-08	1,4-DIOXANE	10/15/2018		Y	N	U	UJ	UJ	147	73.5	ng/l
SP MW 46	L1839183-03	1,4-DIOXANE	10/4/2018		Y	N	U		U	147	73.5	ng/l
SP MW 49	L1839183-04	1,4-DIOXANE	10/4/2018		Y	N	U		U	147	73.5	ng/l
SP MW 51	L1839183-05	1,4-DIOXANE	10/4/2018		Y	N	U		U	144	72.1	ng/l
SP MW 7SR	L1839183-02	1,4-DIOXANE	10/4/2018	1420	Y	Y				144	72.1	ng/l
SP MW 9SR	L1839183-01	1,4-DIOXANE	10/4/2018		Y	N	U		U	150	75.0	ng/l

Laboratory Report

ANALYTICAL REPORT

Lab Number:	L1839183
Client:	JMT, Inc. 19 British American Blvd. Latham, NY 12110
ATTN:	Joe Krikorian
Phone:	(518) 782-0882
Project Name:	DESTINY
Project Number:	15209
Report Date:	10/23/18

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: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1839183-01	SP MW 9SR	WATER	SYRACUSE, NY	09/27/18 12:05	09/28/18
L1839183-02	SP MW 7SR	WATER	SYRACUSE, NY	09/27/18 12:45	09/28/18
L1839183-03	SP MW 46	WATER	SYRACUSE, NY	09/27/18 16:45	09/28/18
L1839183-04	SP MW 49	WATER	SYRACUSE, NY	09/27/18 15:20	09/28/18
L1839183-05	SP MW 51	WATER	SYRACUSE, NY	09/28/18 08:20	09/28/18
L1839183-06	FIELD BLANK	WATER	SYRACUSE, NY	09/28/18 08:20	09/28/18
L1839183-07	DUP	WATER	SYRACUSE, NY	09/27/18 12:05	09/28/18
L1839183-08	SP MW 26	WATER	SYRACUSE, NY	09/27/18 14:45	09/28/18
L1839183-09	EQUPIMENT BLANK	WATER	SYRACUSE, NY	09/27/18 12:00	09/28/18
L1839183-10	FB(BLANK LABEL)	WATER	SYRACUSE, NY		09/28/18

Project Name: DESTINY **Lab Number:** L1839183
Project Number: 15209 **Report Date:** 10/23/18

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: DESTINY **Lab Number:** L1839183
Project Number: 15209 **Report Date:** 10/23/18

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.

Sample Receipt
L1839183-06 : A sample identified as "FIELD BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was analyzed.
L1839183-07 : A sample identified as "DUP" was received but not listed on the Chain of Custody. At the client's request, this sample was analyzed.
L1839183-08 : A sample identified as "SP MW 26" was received but not listed on the Chain of Custody. At the client's request, this sample was analyzed.
L1839183-09 : A sample identified as "EQUIPMENT BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was analyzed.

1,4-Dioxane by 8270-SIM
L1839183-06, -07, and -08 were extracted with the method required holding time exceeded.

Perfluorinated Alkyl Acids by Isotope Dilution
L1839183-06:The Field Blank has a concentration above the reporting limit for 6:2FTS. The results were confirmed.
WG1170397-4: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for the extracted internal standard 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS) (162.1%) and N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) (155.5%) outside the acceptance criteria for the method. The associated target analytes are within acceptance criteria, therefore no further action was taken.
WG1170397-3: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for Perfluorooctanesulfonic Acid-Linear (L-PFOS) (158.6%) above the acceptance criteria for the method. The response for Perfluorooctanesulfonic Acid-Total (PFOS) (146%) was within acceptance

Project Name: DESTINY **Lab Number:** L1839183
Project Number: 15209 **Report Date:** 10/23/18

Case Narrative (continued)

criteria, therefore no further action was taken.

WG1170768-3: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for the extracted internal standard 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS) (177.4%), N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) (156.2%) and N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) (174.1%) outside the acceptance criteria for the method. The associated target analytes are within acceptance criteria, therefore no further action was taken.

WG1170768-2: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for the extracted internal standard N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) (178%) outside the acceptance criteria for the method. The associated target analytes are within acceptance criteria, therefore no further action was taken.

WG1170397-2: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for Perfluoroheptanesulfonic Acid (PFHpS) (141.4%) above the acceptance criteria for the method. The associated samples were non-detect, therefore no further action was taken.

WG1170397-2: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for the extracted internal standard 1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS) (154.7%) and N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) (159.9%) outside the acceptance criteria for the method. The associated target analytes are within acceptance criteria, therefore no further action was taken.

WG1170397-3: The continuing calibration standard, associated with L1839183 as well as the associated QC, had the response for N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) (186.6%) above the acceptance criteria for the method. The associated samples were non-detect, therefore no further action was taken.

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 O' Neil

Title: Technical Director/Representative Date: 10/23/18

ORGANICS

SEMIVOLATILES

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-01
Client ID: SP MW 9SR
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 12:05
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/04/18 19:24
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/03/18 08:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	75.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	31		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-02
Client ID: SP MW 7SR
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 12:45
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/04/18 19:54
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/03/18 08:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	1420		ng/l	144	72.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	32		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-02
Client ID: SP MW 7SR
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 12:45
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/20/18 11:35
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	25.7		ng/l	2.07	0.136	1
Perfluoropentanoic Acid (PFPeA)	91.5		ng/l	2.07	0.089	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.07	0.114	1
Perfluorohexanoic Acid (PFHxA)	36.3		ng/l	2.07	0.131	1
Perfluoroheptanoic Acid (PFHpA)	19.4		ng/l	2.07	0.096	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.07	0.112	1
Perfluorooctanoic Acid (PFOA)	13.0		ng/l	2.07	0.052	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.39		ng/l	2.07	0.201	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.07	0.161	1
Perfluorononanoic Acid (PFNA)	2.98		ng/l	2.07	0.104	1
Perfluorooctanesulfonic Acid (PFOS)	0.668	J	ng/l	2.07	0.116	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.07	0.198	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.07	0.302	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.07	0.260	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.07	0.198	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.07	0.231	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.07	0.235	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.07	0.387	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.07	0.095	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.07	0.094	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.07	0.075	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-02 Date Collected: 09/27/18 12:45

Client ID: SP MW 7SR Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	55		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	71		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	55		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	215		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	72		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)	116		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)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	47		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	61		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		33-143

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-03
Client ID: SP MW 46
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 16:45
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/04/18 21:24
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/03/18 08:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	147	73.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	38		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-03
Client ID: SP MW 46
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 16:45
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/20/18 12:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	11.1		ng/l	2.10	0.138	1
Perfluoropentanoic Acid (PFPeA)	15.2		ng/l	2.10	0.090	1
Perfluorobutanesulfonic Acid (PFBS)	2.05	J	ng/l	2.10	0.116	1
Perfluorohexanoic Acid (PFHxA)	11.0		ng/l	2.10	0.133	1
Perfluoroheptanoic Acid (PFHpA)	15.6		ng/l	2.10	0.097	1
Perfluorohexanesulfonic Acid (PFHxS)	5.05		ng/l	2.10	0.113	1
Perfluorooctanoic Acid (PFOA)	18.1		ng/l	2.10	0.053	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.12		ng/l	2.10	0.204	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.10	0.163	1
Perfluorononanoic Acid (PFNA)	4.66		ng/l	2.10	0.106	1
Perfluorooctanesulfonic Acid (PFOS)	7.75		ng/l	2.10	0.117	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.10	0.200	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.10	0.305	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.10	0.263	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.10	0.201	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.10	0.234	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.10	0.238	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.10	0.392	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.10	0.096	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.10	0.095	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.10	0.076	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-03 Date Collected: 09/27/18 16:45

Client ID: SP MW 46 Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	68		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	121		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	228		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	143		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	121		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-04
Client ID: SP MW 49
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 15:20
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/04/18 21:54
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/03/18 08:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	147	73.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-04
Client ID: SP MW 49
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 15:20
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/20/18 12:42
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.8		ng/l	1.84	0.120	1
Perfluoropentanoic Acid (PFPeA)	25.9		ng/l	1.84	0.079	1
Perfluorobutanesulfonic Acid (PFBS)	1.73	J	ng/l	1.84	0.101	1
Perfluorohexanoic Acid (PFHxA)	16.8		ng/l	1.84	0.116	1
Perfluoroheptanoic Acid (PFHpA)	20.0		ng/l	1.84	0.085	1
Perfluorohexanesulfonic Acid (PFHxS)	12.7		ng/l	1.84	0.099	1
Perfluorooctanoic Acid (PFOA)	22.7		ng/l	1.84	0.046	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	3.34		ng/l	1.84	0.178	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.143	1
Perfluorononanoic Acid (PFNA)	3.18		ng/l	1.84	0.093	1
Perfluorooctanesulfonic Acid (PFOS)	7.54		ng/l	1.84	0.102	1
Perfluorodecanoic Acid (PFDA)	0.684	J	ng/l	1.84	0.175	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	0.267	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.230	1
Perfluoroundecanoic Acid (PFUnA)	0.588	J	ng/l	1.84	0.176	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.204	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.208	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.08		ng/l	1.84	0.343	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.084	1
Perfluorotridecanoic Acid (PFTrDA)	0.132	J	ng/l	1.84	0.083	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.066	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-04 Date Collected: 09/27/18 15:20

Client ID: SP MW 49 Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	67		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	119		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	121		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	227		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	167		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	117		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		33-143

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-05
Client ID: SP MW 51
Sample Location: SYRACUSE, NY

Date Collected: 09/28/18 08:20
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/04/18 22:24
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/03/18 08:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	72.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	39		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-05
Client ID: SP MW 51
Sample Location: SYRACUSE, NY

Date Collected: 09/28/18 08:20
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/21/18 10:45
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	50.0	3.28	1
Perfluoropentanoic Acid (PFPeA)	32.6	J	ng/l	50.0	2.14	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	50.0	2.75	1
Perfluorohexanoic Acid (PFHxA)	16.6	J	ng/l	50.0	3.16	1
Perfluoroheptanoic Acid (PFHpA)	36.2	J	ng/l	50.0	2.31	1
Perfluorohexanesulfonic Acid (PFHxS)	10.3	J	ng/l	50.0	2.69	1
Perfluorooctanoic Acid (PFOA)	41.9	J	ng/l	50.0	1.26	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	84.0		ng/l	50.0	4.85	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	50.0	3.88	1
Perfluorononanoic Acid (PFNA)	3.90	J	ng/l	50.0	2.52	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	50.0	2.79	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	50.0	4.76	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	50.0	7.27	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	50.0	6.26	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	50.0	4.78	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	50.0	5.56	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	50.0	5.67	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	50.0	9.32	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	50.0	2.29	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	50.0	2.26	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	50.0	1.80	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-05 Date Collected: 09/28/18 08:20

Client ID: SP MW 51 Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	81		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	62		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	65		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	61		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		33-143

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-06
Client ID: FIELD BLANK
Sample Location: SYRACUSE, NY

Date Collected: 09/28/18 08:20
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/15/18 13:18
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/12/18 08:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	156	78.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	29		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-06
Client ID: FIELD BLANK
Sample Location: SYRACUSE, NY

Date Collected: 09/28/18 08:20
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/21/18 11:01
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.83	0.120	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.83	0.078	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	0.101	1
Perfluorohexanoic Acid (PFHxA)	0.161	J	ng/l	1.83	0.116	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.83	0.085	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.83	0.099	1
Perfluorooctanoic Acid (PFOA)	0.190	J	ng/l	1.83	0.046	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	141		ng/l	1.83	0.178	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.142	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	0.092	1
Perfluorooctanesulfonic Acid (PFOS)	0.168	J	ng/l	1.83	0.102	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.174	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	0.266	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.229	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.175	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.204	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.208	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.341	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.084	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.083	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.066	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-06 Date Collected: 09/28/18 08:20

Client ID: FIELD BLANK Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	62		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	106		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		33-143

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-07
Client ID: DUP
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 12:05
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/15/18 14:06
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/12/18 08:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	72.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	25		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-07
Client ID: DUP
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 12:05
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/22/18 12:33
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.7		ng/l	1.83	0.120	1
Perfluoropentanoic Acid (PFPeA)	26.3		ng/l	1.83	0.078	1
Perfluorobutanesulfonic Acid (PFBS)	1.36	J	ng/l	1.83	0.101	1
Perfluorohexanoic Acid (PFHxA)	15.9		ng/l	1.83	0.116	1
Perfluoroheptanoic Acid (PFHpA)	20.4		ng/l	1.83	0.085	1
Perfluorohexanesulfonic Acid (PFHxS)	12.4		ng/l	1.83	0.099	1
Perfluorooctanoic Acid (PFOA)	20.6		ng/l	1.83	0.046	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	44.2		ng/l	1.83	0.178	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.142	1
Perfluorononanoic Acid (PFNA)	3.54		ng/l	1.83	0.092	1
Perfluorooctanesulfonic Acid (PFOS)	12.0		ng/l	1.83	0.102	1
Perfluorodecanoic Acid (PFDA)	0.744	J	ng/l	1.83	0.174	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.597	J	ng/l	1.83	0.266	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.229	1
Perfluoroundecanoic Acid (PFUnA)	0.436	J	ng/l	1.83	0.175	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.204	1
Perfluorooctanesulfonamide (FOSA)	0.392	J	ng/l	1.83	0.208	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.15		ng/l	1.83	0.341	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.084	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.083	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.066	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-07 Date Collected: 09/27/18 12:05

Client ID: DUP Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**306**	Q	1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**192**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	164		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	114		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	46		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	123		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	108		33-143

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-08
Client ID: SP MW 26
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 14:45
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/15/18 14:55
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/12/18 08:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	147	73.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	27		15-110

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-08
Client ID: SP MW 26
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 14:45
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/21/18 11:35
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	26.9		ng/l	1.85	0.121	1
Perfluoropentanoic Acid (PFPeA)	103		ng/l	1.85	0.079	1
Perfluorobutanesulfonic Acid (PFBS)	3.14		ng/l	1.85	0.102	1
Perfluorohexanoic Acid (PFHxA)	66.5		ng/l	1.85	0.117	1
Perfluoroheptanoic Acid (PFHpA)	51.5		ng/l	1.85	0.086	1
Perfluorohexanesulfonic Acid (PFHxS)	33.9		ng/l	1.85	0.100	1
Perfluorooctanoic Acid (PFOA)	20.6		ng/l	1.85	0.047	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	38.6		ng/l	1.85	0.180	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.85	0.144	1
Perfluorononanoic Acid (PFNA)	2.20		ng/l	1.85	0.093	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	0.103	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.85	0.176	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.85	0.269	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.85	0.232	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.85	0.177	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.85	0.206	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.85	0.210	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.85	0.345	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.85	0.085	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.85	0.084	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.85	0.067	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-08 Date Collected: 09/27/18 14:45

Client ID: SP MW 26 Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	65		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	212		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	145		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	104		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	50		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65		33-143

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-09
Client ID: EQUIPMENT BLANK
Sample Location: SYRACUSE, NY

Date Collected: 09/27/18 12:00
Date Received: 09/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 10/21/18 11:51
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	0.122	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	0.080	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	0.102	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.86	0.117	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.086	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.100	1
Perfluorooctanoic Acid (PFOA)	0.223	J	ng/l	1.86	0.047	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	0.180	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.144	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.094	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.86	0.104	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.177	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	0.270	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.233	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.178	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.207	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.211	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.346	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.085	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.084	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.067	1

Project Name: DESTINY **Lab Number:** L1839183

Project Number: 15209 **Report Date:** 10/23/18

SAMPLE RESULTS

Lab ID: L1839183-09 Date Collected: 09/27/18 12:00

Client ID: EQUPIMENT BLANK Date Received: 09/28/18

Sample Location: SYRACUSE, NY Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	45		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	44		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	55		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	49		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	51		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	53		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	46		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	58		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	43		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	45		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	40		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	60		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	44		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	36		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	35		33-143

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/04/18 09:26
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/03/18 08:45

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-05 Batch: WG1163523-1					
1,4-Dioxane	ND		ng/l	150	75.0

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

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 10/20/18 08:50
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-09 Batch: WG1166269-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.131
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.086
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.110
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.126
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.092
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.108
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.050
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	0.194
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.155
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.101
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.112
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.190
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	0.291
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.250
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.191
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.222
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.227
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.373
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.092
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.090
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.072

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 10/20/18 08:50
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/10/18 08:05

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-09 Batch: WG1166269-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	90		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	122		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	44		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	89		33-143

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/15/18 11:02
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/12/18 08:10

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 06-08 Batch: WG1167337-1					
1,4-Dioxane	ND		ng/l	150	75.0

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	31		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-05		Batch: WG1163523-2	WG1163523-3				
1,4-Dioxane	110		111		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	42		43		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: DESTINY

Project Number: 15209

Lab Number: L1839183

Report Date: 10/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-09 Batch: WG1166269-2 WG1166269-3								
Perfluorobutanoic Acid (PFBA)	103		101		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	106		105		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	108		107		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	109		109		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	96		96		58-159	0		30
Perfluorohexanesulfonic Acid (PFHxS)	100		104		69-177	4		30
Perfluorooctanoic Acid (PFOA)	106		103		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	116		132		49-187	13		30
Perfluoroheptanesulfonic Acid (PFHpS)	115		132		61-179	14		30
Perfluorononanoic Acid (PFNA)	112		112		68-171	0		30
Perfluorooctanesulfonic Acid (PFOS)	92		97		52-151	5		30
Perfluorodecanoic Acid (PFDA)	106		116		63-171	9		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	139		117		56-173	17		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	105		102		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	111		107		60-153	4		30
Perfluorodecanesulfonic Acid (PFDS)	96		98		38-156	2		30
Perfluorooctanesulfonamide (FOSA)	92		100		46-170	8		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		87		45-170	21		30
Perfluorododecanoic Acid (PFDoA)	107		102		67-153	5		30
Perfluorotridecanoic Acid (PFTrDA)	94		85		48-158	10		30
Perfluorotetradecanoic Acid (PFTA)	116		104		59-182	11		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: DESTINY

Project Number: 15209

Lab Number: L1839183

Report Date: 10/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-09 Batch: WG1166269-2 WG1166269-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		91		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	89		92		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		91		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	83		96		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		99		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	71		77		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	117		113		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		75		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	38		39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	92		98		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	87		104		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 06-08		Batch: WG1167337-2		WG1167337-3			
1,4-Dioxane	106		108		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	32		30		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: DESTINY

Project Number: 15209

Lab Number: L1839183

Report Date: 10/23/18

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): 01-05 QC Batch ID: WG1163523-4 WG1163523-5 QC Sample: L1839183-02 Client ID: SP MW 7SR												
1,4-Dioxane	1420	4900	6350	101		6220	100		40-140	2		30

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1,4-Dioxane-d8	30		28		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

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): 02-09 QC Batch ID: WG1166269-4 WG1166269-5 QC Sample: L1839183-02 Client ID: SP MW 7SR												
Perfluorobutanoic Acid (PFBA)	25.7	44.2	69.0	98		68.8	99		67-148	0		30
Perfluoropentanoic Acid (PFPeA)	91.5	44.2	139	107		140	112		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	ND	44.2	49.6	112		43.9	101		65-157	12		30
Perfluorohexanoic Acid (PFHxA)	36.3	44.2	88.5	118		84.0	110		69-168	5		30
Perfluoroheptanoic Acid (PFHpA)	19.4	44.2	64.0	101		59.6	92		58-159	7		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	44.2	48.4	109		48.2	111		69-177	0		30
Perfluorooctanoic Acid (PFOA)	13.0	44.2	56.9	99		56.0	99		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.39	44.2	60.5	131		62.3	138		49-187	3		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	44.2	58.0	131		59.7	137		61-179	3		30
Perfluorononanoic Acid (PFNA)	2.98	44.2	48.3	102		49.8	108		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	0.668J	44.2	32.9	74		43.0	99		52-151	27		30
Perfluorodecanoic Acid (PFDA)	ND	44.2	50.4	114		45.7	105		63-171	10		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	44.2	54.2	122		49.7	114		56-173	9		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	44.2	46.8	106		45.2	104		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	ND	44.2	49.4	112		44.7	103		60-153	10		30
Perfluorodecanesulfonic Acid (PFDS)	ND	44.2	37.6	85		37.7	87		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	ND	44.2	39.4	89		45.0	104		46-170	13		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	44.2	37.0	84		40.6	93		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	ND	44.2	46.7	106		45.8	105		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	ND	44.2	43.4	98		37.4	86		48-158	15		30
Perfluorotetradecanoic Acid (PFTA)	ND	44.2	58.8	133		51.4	118		59-182	13		30

Matrix Spike Analysis

Batch Quality Control

Project Name: DESTINY
Project Number: 15209
Lab Number: L1839183
Report Date: 10/23/18

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): 02-09 QC Batch ID: WG1166269-4 WG1166269-5 QC Sample: L1839183-02 Client ID: SP MW 7SR

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	125		148		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	242		233		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	81		76		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	90		102		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	73		80		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		77		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	57		54		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	74		73		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		105		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	56		63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		62		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		83		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	58		54		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	48		51		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		76		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		79		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		78		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		82		31-159

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1839183-01A	Amber 500ml unpreserved	C	7	7	2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-01B	Amber 500ml unpreserved	C	7	7	2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-01C	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		HOLD-537(14)
L1839183-01D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		HOLD-537(14)
L1839183-02A	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-02B	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-02C	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-02D	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-02E	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-02F	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-02G	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-02H	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-02I	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-02J	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-02K	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-02L	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-03A	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-03B	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-03C	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-03D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-04A	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: DESTINY
Project Number: 15209

Lab Number: L1839183
Report Date: 10/23/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1839183-04B	Amber 500ml unpreserved	A	7	7	3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-04C	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-04D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-05A	Amber 500ml unpreserved	C	7	7	2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-05B	Amber 500ml unpreserved	C	7	7	2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-05C	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-05D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-06A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-06A1	Amber 500ml unpreserved	A	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-06B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-06B2	Amber 500ml unpreserved	C	NA		2.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-06C	Amber 500ml unpreserved	C	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-06D	Amber 500ml unpreserved	C	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-07A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-07B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-07C	Amber 500ml unpreserved	A	NA		3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-07D	Amber 500ml unpreserved	A	NA		3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-08A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-08B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		3.1	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-08C	Amber 500ml unpreserved	A	NA		3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-08D	Amber 500ml unpreserved	A	NA		3.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1839183-09A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	C	NA		2.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-09B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	C	NA		2.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1839183-10A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	C	NA		2.8	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	DESTINY	**Lab Number:**	L1839183
Project Number:	15209	**Report Date:**	10/23/18

GLOSSARY

Acronyms

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.
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.
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

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

Terms

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

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

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

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

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.

Report Format: DU Report with 'J' Qualifiers

Project Name:	DESTINY	**Lab Number:**	L1839183
Project Number:	15209	**Report Date:**	10/23/18

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

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

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

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

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

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

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

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

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.

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).

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	DESTINY	**Lab Number:**	L1839183
Project Number:	15209	**Report Date:**	10/23/18

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

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

Mansfield Facility:

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

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

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

NEW YORK CHAIN OF CUSTODY

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

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 of

Date Rec'd in Lab: 9/29/18

ALPHA Job #: L1839183

Client Information
Client: JMT of NY
Address: 19 British American Latham NY 12110
Phone: 518 782 0882
Fax:
Email: jkokosian@jmtcom

Project Information
Project Name: Destiny
Project Location: Syracuse NY
Project #: 15209
(Use Project name as Project #)
Project Manager: Paul Adel
ALPHAQuote #:

Turn-Around Time
Standard: X
Rush (only if pre approved): ☐
Due Date:
# 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 PFAS
☐ 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
A2-1,4-D Sim Oxane
A2-537

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

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-1,4-D Sim Oxane	A2-537	Sample Specific Comments
-01	SP MW 95R	9-27-18	1205	GW		2	2	Oil product
-02	SP MW 75R	"	1245					
-02	SP MW 75R MS	"	1245					
-02	SP MW 75R MSD	"	1245					
-03	SP MW 46	"	1645					
-04	SP MW 49	"	1520					
-05	SP MW 51	9-28-18	820					Organic Solids LS filter 2
	~~SP MW 41~~ YW 9/28/18							
	~~SP MW~~ YW 9/28/18							

Container Type: A P
Preservative: A O

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
	9-28-18/12:27		9/28/18 1340
	9/28/18 1340		09/28/18 1340
	09/29/18 #15		9/29/18 11:15

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

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

Well Sampling Logs

WELL SAMPLING LOG

Well I.D.: SP-MW-7SR

Project Name:	Destiny	Personnel Onsite:	Joe Krikorian/Yaicha Winters	**Project No.:**	18-00996N-004
Client Name:	Destiny, USA	DEC:	**Yes** / No	**Date:**	9/27/18
Location:	Syracuse, NY	If yes, name:	Karen Cahill	**Logged By:**	JCK
Weather/Temp.:	Sunny ~65F			**Checked By:**	

WELL INFORMATION

Riser Diameter (I.D.):	2	**inches**
Screen Diameter (I.D.):	2	**ft**
Screened Interval:	3-13	**ft**
Reported Well Depth:	13	**ft**
Field Well Depth:	13	**ft** w/Riser

FIELD MEASUREMENTS

Sand/Silt Accumulation:	0	**ft**
Depth to Water:	8.2	**ft**
Well Water Volume:	0.78	**gallons**
3 Well Volumes:	2.3	**gallons**

Time (minutes)	Volume Removed (gallons)	DTW (ft)	Temp (C)	DO (%)	Cond (mS/cm)	ORP (mV)	pH	Turbidity (NTU)
		1 ft total	3%	10%	3%	10 mV	0-1 units	10% or 1 NTU
0	0	8.20	21.7	9.10	3.88	-79.50	6.3	259.00
5	0.5	8.50	21.1	-0.50	3.89	-111.90	6.6	190.00
10	1	8.60	20.8	-1.10	3.88	-120.60	6.6	102.00
15	1.25	8.61	20.3	-1.50	3.84	-129.20	6.7	70.80
20	1.5	8.63	19.0	-1.9	3.79	-131.6	6.67	30.9
25	2	8.70	19.3	-1.9	3.78	-146	6.67	8.6
30	2.25	8.75	19.6	-2	3.77	-153	6.67	2.41
35	2.5	8.75	19.6	-2	3.73	-152.9	6.67	0.02
40	3	8.75	19.6	-2.2	3.77	-150.2	6.67	0.02
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								
125								
130								

Sample Date: 9/27/18

Start Time: 1205 (24 hr format)

End Time: 1245 (24 hr format)

Sample Time: 1245 (24 hr format)

Equipment Used/Serial Numbers

YSI 15E100018

Turbidity Meter 16051203

GeoPump 4249

Analytical Tests Conducted

PFAS, 1,4-Dioxane

Laboratory

Alpha

Samples Delivered Via

Delivered to Syracuse service center

Total Static Water Level Drawdown

1 **ft**

At the time of sampling take note of the following:

Purge Water Disposal Method: Drum

Odor:	Sheen:	Sediment:	Color:	
Yes / **No**	Yes / **No**	Yes / **No**	Clear	Black sediment cleared as purging continued.

Additional Notes (equipment malfunctions, condition of well, etc.):

WELL SAMPLING LOG

Well I.D.: SP-MW-9SR

Project Name:	Destiny	Personnel Onsite:	Joe Krikorian/Yaicha Winters	**Project No.:**	18-00996N-004
Client Name:	Destiny, USA	DEC:	**Yes** / No	**Date:**	9/27/18
Location:	Syracuse, NY	If yes, name:	Karen Cahill	**Logged By:**	JCK/YW
Weather/Temp.:	Sunny ~65F			**Checked By:**	

WELL INFORMATION

Riser Diameter (I.D.):	2	**inches**
Screen Diameter (I.D.):	2	**ft**
Screened Interval:	2-15	**ft**
Reported Well Depth:	15	**ft**
Field Well Depth:	15.2	**ft**

FIELD MEASUREMENTS

Sand/Silt Accumulation:	0	**ft**
Depth to Water:	6.55	**ft**
Well Water Volume:	1.5	**gallons**
3 Well Volumes:	4.5	**gallons**

Time (minutes)	Volume Removed (gallons)	DTW (ft)	Temp (C)	DO (%)	Cond (uS/cm)	ORP (mV)	pH	Turbidity (NTU)
		1 ft total	3%	10%	3%	10 mV	0-1 units	10% or 1 NTU
0	**0**	6.55	20.8	2.70	18148.0	-249.00	6.9	30.10
5		7.20	20.9	2.90	18234.0	-309.50	6.9	17.10
10		7.50	21.5	2.90	17980.0	-326.00	6.9	6.06
15	1	7.50	22.0	0.60	18157.0	-328.60	6.9	3.08
20		7.8	21.6	0.3	18373	-331.2	6.93	0.02
25		8	21.4	0.3	18238	-334.2	6.95	0.02
30	2	8.1	21.3	0.3	18047	-332.9	6.88	0.02
35		8.2	21.4	0.3	17902	-333.9	6.88	0.02
40		8.25	21.7	0.4	17678	-335.6	6.88	0.02
45		8.3	22.1	0.2	17547	-337.7	6.88	0.02
50		8.3	22.2	0.2	17434	-338.7	6.88	0.02
110	4.5	8.35	21.6	0.2	17029	-340.1	6.88	0.02
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								
125								
130								

Sample Date: 9/27/18

Start Time: 10:02 (24 hr format)

End Time: 11:52 (24 hr format)

Sample Time: 12:05 (24 hr format)

Equipment Used/Serial Numbers

YSI 15E100018

Turbidity Meter 16051203

GeoPump 4249

Analytical Tests Conducted

PFAS, 1,4-Dioxane

Laboratory

Alpha

Samples Delivered Via

Delivered to Syracuse service center

Total Static Water Level Drawdown

2 **ft**

At the time of sampling take note of the following: **Purge Water Disposal Method:**

Odor:	Sheen:	Sediment:	Color:	
Yes / No	**Yes** / No	**Yes** / No		Yellow globuls of product, black sediment, petrol odor
				At 50 minutes K. Cahill gave permission to stop logging parameters until 3 volumes purged.

Additional Notes (equipment malfunctions, condition of well, etc.):

2' drawdown

Field blank and equipment blank collected at 12:00

WELL SAMPLING LOG

Well I.D.: SP-MW-26

Project Name:	Destiny	Personnel Onsite:	Joe Krikorian/Yaicha Winters	**Project No.:**	18-00996N-004
Client Name:	Destiny, USA	DEC:	**Yes** / No	**Date:**	9/27/18
Location:	Syracuse, NY	If yes, name:	Karen Cahill	**Logged By:**	JCK
Weather/Temp.:	Sunny ~65F			**Checked By:**	

WELL INFORMATION

Riser Diameter (I.D.):	2	**inches**
Screen Diameter (I.D.):	2	**ft**
Screened Interval:	2-14	**ft**
Reported Well Depth:	14	**ft**
Field Well Depth:	17	**ft** w/Riser

FIELD MEASUREMENTS

Sand/Silt Accumulation:	0	**ft**
Depth to Water:	8.35	**ft**
Well Water Volume:	0.92	**gallons**
3 Well Volumes:	4.2	**gallons**

Time (minutes)	Volume Removed (gallons)	DTW (ft)	Temp (C)	DO (%)	Cond (mS/cm)	ORP (mV)	pH	Turbidity (NTU)
		1 ft total	3%	10%	3%	10 mV	0-1 units	10% or 1 NTU
0	0	8.35	15.2	12.80	2.4	-141.80	7.0	109.00
5		9.10	14.9	2.10	2.3	-171.40	7.0	44.40
10		9.20	15.1	0.00	2.2	-177.90	7.0	40.10
15		9.35	15.1	-0.90	2.2	-191.80	7.0	37.70
20		9.35	15.1	-1.3	2.15	-213.1	7.02	31.1
25		9.35	15.1	-1.3	2.2	-215.6	7.02	30
30	2.5	9.35	15.1	-1.3	2.18	-220.5	7.02	28.6
35		9.35	15.1	-1.3	2.15	-231.6	7.02	24.5
40		9.35	15.1	-1.4	2.16	-233.5	7.02	18.6
45		9.35	15.1	-1.4	2.15	-238.8	7.02	15.2
50		9.35	15.1	-1.5	2.17	-241.6	7.02	8.6
55		9.35	15.1	-1.5	2.15	-259.8	7.02	1.25
60		9.35	14.9	-1.6	2.09	-261	7.01	2.6
65	5	9.35	14.9	-1.6	2.1	-261.4	7.01	0.02
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								
125								
130								

Sample Date: 9/27/18

Start Time: 1340 (24 hr format)

End Time: 1445 (24 hr format)

Sample Time: 1445 (24 hr format)

Equipment Used/Serial Numbers

YSI 15E100018

Turbidity Meter 16051203

GeoPump 4249

Analytical Tests Conducted

PFAS, 1,4-Dioxane

Laboratory

Alpha

Samples Delivered Via

Delivered to Syracuse service center

Total Static Water Level Drawdown

1 **ft**

At the time of sampling take note of the following:

Purge Water Disposal Method:

Odor:	Sheen:	Sediment:	Color:	
Yes / **No**	Yes / **No**	Yes / **No**	Clear	Black sediment cleared as purging continued.

Additional Notes (equipment malfunctions, condition of well, etc.):

WELL SAMPLING LOG

Well I.D.: SP-MW-46

Project Name:	Destiny	Personnel Onsite:	Joe Krikorian/Yaicha Winters	**Project No.:**	18-00996N-004
Client Name:	Destiny, USA	DEC:	Yes / **No**	**Date:**	9/27/18
Location:	Syracuse, NY	If yes, name:		**Logged By:**	JCK
Weather/Temp.:	Sunny ~65F			**Checked By:**	

WELL INFORMATION

Riser Diameter (I.D.):	2	**inches**
Screen Diameter (I.D.):	2	**ft**
Screened Interval:	2-15	**ft**
Reported Well Depth:	13	**ft**
Field Well Depth:	17	**ft** w/Riser

FIELD MEASUREMENTS

Sand/Silt Accumulation:	0	**ft**
Depth to Water:	7.4	**ft**
Well Water Volume:	1.55	**gallons**
3 Well Volumes:	4.66	**gallons**

Time (minutes)	Volume Removed (gallons)	DTW (ft)	Temp (C)	DO (%)	Cond (mS/cm)	ORP (mV)	pH	Turbidity (NTU)
		1 ft total	3%	10%	3%	10 mV	0-1 units	10% or 1 NTU
0	**0**	7.40	17.3	3.80	1.5	-59.00	6.9	96.50
5	1	7.80	17.3	0.50	1.5	-96.30	6.7	
10	1.5	7.80	17.2	-1.30	1.6	-115.70	6.7	
15	2	7.80	17.2	-1.60	1.6	-124.50	6.7	
20	2.5	7.80	17.2	-1.6	1.55	-130	6.68	
25	3	7.80	17.2	-1.8	1.56	-151.8	6.67	
30	3.5	7.80	17.2	-1.9	1.56	-160.1	6.68	
35	4	7.80	17.2	-1.9	1.57	-172.6	6.67	2.39
40	5	7.80	17.2	-1.9	1.57	-178.5	6.67	0.02
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								
125								
130								

Sample Date: 9/27/18

Start Time: 1555 (24 hr format)

End Time: 1645 (24 hr format)

Sample Time: 1645 (24 hr format)

Equipment Used/Serial Numbers

YSI 15E100018

Turbidity Meter 16051203

GeoPump 4249

Analytical Tests Conducted

PFAS, 1,4-Dioxane

Laboratory

Alpha

Samples Delivered Via

Delivered to Syracuse service center

Total Static Water Level Drawdown

0.4 **ft**

At the time of sampling take note of the following:

Purge Water Disposal Method:

Odor:	Sheen:	Sediment:	Color:	
Yes / **No**	Yes / **No**	Yes / **No**	Clear	Black sediment cleared as purging continued.

Additional Notes (equipment malfunctions, condition of well, etc.):

WELL SAMPLING LOG

Well I.D.: SP-MW-49

Project Name:	Destiny	Personnel Onsite:	Joe Krikorian/Yaicha Winters	**Project No.:**	18-00996N-004
Client Name:	Destiny, USA	DEC:	Yes / **No**	**Date:**	9/27/18
Location:	Syracuse, NY	If yes, name:		**Logged By:**	YW
Weather/Temp.:	Sunny ~65F			**Checked By:**	

WELL INFORMATION

Riser Diameter (I.D.):	2	**inches**
Screen Diameter (I.D.):	2	**ft**
Screened Interval:	4-14	**ft**
Reported Well Depth:	14	**ft**
Field Well Depth:	13.7	**ft** w/Riser

FIELD MEASUREMENTS

Sand/Silt Accumulation:	0.3	**ft**
Depth to Water:	4.85	**ft**
Well Water Volume:	1.44	**gallons**
3 Well Volumes:	4.33	**gallons**

Time (minutes)	Volume Removed (gallons)	DTW (ft)	Temp (C)	DO (%)	Cond (uS/cm)	ORP (mV)	pH	Turbidity (NTU)
		1 ft total	3%	10%	3%	10 mV	0-1 units	10% or 1 NTU
0	0	4.85	23.1	28.60	1891.0	-38.10	7.0	40.00
5		4.85	23.1	24.00	1881.0	-40.60	7.0	25.50
10		4.85	23.1	12.50	1816.0	-58.10	7.0	0.02
15	1	4.90	23.1	7.40	1777.0	-63.2	7.0	0.02
20		4.90	23.1	7.1	1768	-65.3	7.04	0.02
25		4.90	23.1	6.6	1744	-70.9	7.04	0.02
30	2	4.90	23.1	7.1	1757	-71.4	7.03	0.02
35		4.90	23.1	8.3	1768	-72.9	7.03	0.02
40		4.90	23.1	7.6	1752	-76.2	7.05	0.02
45		4.90	23.1	7	1760	-76.1	7.04	0.02
50		4.90	23.1	6.6	1763	-75.1	7.04	0.02
55	4.5	4.90	23.1	6.2	1762	-74.9	7.04	0.02
60		4.9	23.3	6.9	1769	-74.4	7.01	0.02
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								
125								
130								

Sample Date: 9/27/18

Start Time: 1408 (24 hr format)

End Time: 1518 (24 hr format)

Sample Time: 1520 (24 hr format)

Equipment Used/Serial Numbers

YSI 15E100018

Turbidity Meter 16051203

GeoPump 4249

Analytical Tests Conducted

PFAS, 1,4-Dioxane

Laboratory

Alpha

Samples Delivered Via

Delivered to Syracuse service center

Total Static Water Level Drawdown

0.1 **ft**

At the time of sampling take note of the following:

Purge Water Disposal Method: Drum

Odor:	Sheen:	Sediment:	Color:	
Yes / **No**	Yes / **No**	**Yes** / No		Tan organics/sediment
				Well is in good condition, good recharge

Additional Notes (equipment malfunctions, condition of well, etc.):

Duplicate sample collected

WELL SAMPLING LOG

Well I.D.: SP-MW-51

Project Name:	Destiny	Personnel Onsite:	Joe Krikorian/Yaicha Winters	**Project No.:**	18-00996N-004
Client Name:	Destiny, USA	DEC:	Yes / **No**	**Date:**	9/27/18
Location:	Syracuse, NY	If yes, name:		**Logged By:**	YW
Weather/Temp.:	Sunny ~65F			**Checked By:**	

WELL INFORMATION

Riser Diameter (I.D.):	2	**inches**
Screen Diameter (I.D.):	2	**ft**
Screened Interval:	4-14	**ft**
Reported Well Depth:	14	**ft**
Field Well Depth:	14.4	**ft** w/Riser

FIELD MEASUREMENTS

Sand/Silt Accumulation:	0	**ft**
Depth to Water:	11.15	**ft**
Well Water Volume:	0.53	**gallons**
3 Well Volumes:	1.59	**gallons**

Time (minutes)	Volume Removed (gallons)	DTW (ft)	Temp (C)	DO (%)	Cond (uS/cm)	ORP (mV)	pH	Turbidity (NTU)
		1 ft total	3%	10%	3%	10 mV	0-1 units	10% or 1 NTU
0	0	11.15	17.8	50.00	1665.0	-3.00	7.0	--
5		12.80	18.0	26.30	1576.0	-22.60	6.9	--
10		12.50	18.4	15.30	1691.0	-31.70	6.8	11.90
15	0.25	13.65	19.0	16.10	1625.0	-92.3	6.7	5.80
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								
125								
130								

Sample Date: 9/28/18

Start Time: 1641 9/27/18 (24 hr format)

End Time: 1656 9/27/18 (24 hr format)

Sample Time: 0820 9/28/18 (24 hr format)

Equipment Used/Serial Numbers

YSI 15E100018

Turbidity Meter 16051203

GeoPump 4249

Analytical Tests Conducted

PFAS, 1,4-Dioxane

Laboratory

Alpha

Samples Delivered Via

Delivered to Syracuse service center

Total Static Water Level Drawdown

ft

At the time of sampling take note of the following:

Purge Water Disposal Method: Drum

Odor:	Sheen:	Sediment:	Color:	
Yes / **No**	Yes / **No**	**Yes** / No		Black sediment/organics

Additional Notes (equipment malfunctions, condition of well, etc.):

Well cap rusted shut - was able to open. Only 0.5' of water in well - very turbid.

Well purged dry and allowed to recharge overnight. Collected sample of fresh groundwater on 9/28/18