



architects + engineers

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June 15, 2017

Kevin Carpenter, P.E.
Remedial Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Re: MW-9 and MW-12 PFOA and PFOS Sampling
Former Macbeth Kollmorgen Facility, New Windsor, New York, NYSDEC Site No. 3-36-037

Dear Mr. Carpenter:

At the request of the Fortive Corporation, groundwater samples were collected at the Former Macbeth Kollmorgen Facility in New Windsor, New York (NYSDEC Site No. 3-36-037) on April 27, 2017 by H2M architects + engineers (H2M). These samples were collected in response to a request by the New York State Department of Environmental Conservation to assess whether perfluoroalkyl compounds (PFCs) were present in groundwater at monitoring wells MW-9 and MW-12.

Sampling Methodology

Due to the analytical sensitivities associated with PFCs, strict sampling protocols were followed to minimize the possibility of introducing PFC contamination into samples. Samplers avoided contact with the following items prior to and during sampling: aluminum foil, blue ice, Post-It Notes, packaged food and beverages, and fluoropolymers (e.g., Teflon, Gore-tex garments, Viton, wires/cables, flame retardants, stain/fabric protectors, etc.). Only sample containers supplied by the contract laboratory were used. Samplers were required to wear clean clothing consisting only of natural fabrics that had been washed a minimum of six times, and to avoid any waterproof footwear. Samplers were also required to use nitrile gloves during all aspects of sample handling, and only non-PFC equipment and expendable supplies were used during the low-flow groundwater sample collection.

The sampling kits/coolers were shipped by TestAmerica Laboratories, Inc., West Sacramento, California to H2M's Parsippany, New Jersey office and secured in a controlled environment and kept sealed until the time of sampling. PFC-free bottleware and PFC-free laboratory-provided water were provided for the sampling event.

After collecting water levels at MW-9 and MW-12, the two monitoring wells were purged and sampled via low-flow sampling methodology using PFC-free equipment. A field reagent blank and equipment blank were also collected and analyzed for quality assurance purposes. On collection, samples were labelled and placed in a cooler with ice, and subsequently shipped via FedEx under chain-of-custody protocols to TestAmerica Laboratories, Inc., West Sacramento, California (NYSDOH laboratory certification ID #11666). The samples were analyzed for PFCs using United States Environmental Protection Agency (USEPA) Method 537 Modified.

In accordance with discussion with NYSDEC, groundwater data were compared to the USEPA 2016 drinking water Health Advisory Level of 70 nanograms per liter (ng/L). This Health Advisory Level (HAL) of 70 ng/L is for the combined concentrations of PFOA and PFOS (USEPA Fact Sheet, EPA 800-F-16-



003, November 2016). This HAL of 70 ng/L is used for both individual and combined PFCs. To date, USEPA has not established national primary drinking water regulations for PFOA and PFOS.

Sampling Results

Based on the April 27, 2017 analytical results, no PFC compounds were detected in groundwater at concentrations above the laboratory reporting limit of 1.9 ng/L. A list of the compounds analyzed and any detections are summarized on **Table A** and reported in the attached TestAmerica laboratory report.

Table A: Groundwater Analytical Results Summary for April 27, 2017					
Analyte	MW-9 (ng/L)	MW-12 (ng/L)	Field Reagent Blank (ng/L)	Equipment Blank (ng/L)	USEPA Combined Health Advisory Level (ng/L)
Perfluorobutanesulfonic acid (PFBS)	ND	ND	ND	ND	70
Perfluorohexanesulfonic acid (PFHxS)	0.98 J	ND	ND	ND	70
Perfluoroheptanoic acid (PFHpA)	ND	ND	ND	ND	70
Perfluorooctanoic acid (PFOA)	ND	ND	ND	ND	70
Perfluorooctanesulfonic acid (PFOS)	ND	ND	ND	1.2 J	70
Perfluorononanoic acid (PFNA)	ND	ND	ND	ND	70
Total Combined PFOA & PFOS	0.98 J	ND	ND	1.2 J	70
Notes: ND: Not detected above laboratory reporting limit (1.9 ng/L) ng/L: nanograms per liter J: Estimated concentration					

No quality assurance issues were identified by the field reagent blank. Perfluorooctanesulfonic acid (PFOS) was detected in the equipment blank; however, no PFOS was detected in either monitoring well sample.

Based on this sampling event, PFCs are not a compound of concern and no further investigation of PFCs at the Site are recommended.

If you have any questions, please call me at 862-702-2909.

Very truly yours,
H2M architects + engineers

A handwritten signature in blue ink, appearing to read 'J McNanna'.

Joseph McNanna

Enclosure: TestAmerica Analytical Report for MW-9 and MW-12 and QA/QC Samples

cc: David Bozaan, Fortive Corporation
Sonya Ward, CPG, CGWP, CHMM, H2M architects + engineers

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Tel: (916)373-5600

TestAmerica Job ID: 320-27825-1

Client Project/Site: PFAS, NYSDEC

For:

H2M Associates, Inc.

119 Cherry Hill Rd

Parsippany, New Jersey 07054

Attn: Joseph McNanna

Cesar C Cortes

Authorized for release by:

5/19/2017 5:41:21 PM

Cesar Cortes, Project Management Assistant I

(916)373-5600

cesar.cortes@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Job ID: 320-27825-1

Laboratory: TestAmerica Sacramento

Narrative

Receipt

The samples were received on 4/28/2017 at 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

Method 537 Modified

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-163954.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Client Sample ID: MW-9

Lab Sample ID: 320-27825-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.98	J	1.8	0.80	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-12

Lab Sample ID: 320-27825-2

No Detections.

Client Sample ID: Equipment Blank

Lab Sample ID: 320-27825-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.2	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: Field Reagent Blank

Lab Sample ID: 320-27825-4

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Client Sample ID: MW-9
Date Collected: 04/27/17 13:30
Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-1
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.84	ng/L		05/11/17 10:47	05/12/17 20:51	1
Perfluorohexanesulfonic acid (PFHxS)	0.98	J	1.8	0.80	ng/L		05/11/17 10:47	05/12/17 20:51	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.73	ng/L		05/11/17 10:47	05/12/17 20:51	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.68	ng/L		05/11/17 10:47	05/12/17 20:51	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	1.2	ng/L		05/11/17 10:47	05/12/17 20:51	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.60	ng/L		05/11/17 10:47	05/12/17 20:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	104		25 - 150				05/11/17 10:47	05/12/17 20:51	1
13C4-PFHpA	78		25 - 150				05/11/17 10:47	05/12/17 20:51	1
13C4 PFOA	69		25 - 150				05/11/17 10:47	05/12/17 20:51	1
13C4 PFOS	101		25 - 150				05/11/17 10:47	05/12/17 20:51	1
13C5 PFNA	49		25 - 150				05/11/17 10:47	05/12/17 20:51	1

Client Sample ID: MW-12
Date Collected: 04/27/17 16:00
Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-2
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.87	ng/L		05/11/17 10:47	05/12/17 20:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.82	ng/L		05/11/17 10:47	05/12/17 20:59	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		05/11/17 10:47	05/12/17 20:59	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.70	ng/L		05/11/17 10:47	05/12/17 20:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	1.2	ng/L		05/11/17 10:47	05/12/17 20:59	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		05/11/17 10:47	05/12/17 20:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	105		25 - 150				05/11/17 10:47	05/12/17 20:59	1
13C4-PFHpA	77		25 - 150				05/11/17 10:47	05/12/17 20:59	1
13C4 PFOA	70		25 - 150				05/11/17 10:47	05/12/17 20:59	1
13C4 PFOS	100		25 - 150				05/11/17 10:47	05/12/17 20:59	1
13C5 PFNA	54		25 - 150				05/11/17 10:47	05/12/17 20:59	1

Client Sample ID: Equipment Blank
Date Collected: 04/27/17 14:30
Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-3
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		05/11/17 10:47	05/12/17 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		05/11/17 10:47	05/12/17 21:06	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		05/11/17 10:47	05/12/17 21:06	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		05/11/17 10:47	05/12/17 21:06	1
Perfluorooctanesulfonic acid (PFOS)	1.2	J	1.9	1.2	ng/L		05/11/17 10:47	05/12/17 21:06	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		05/11/17 10:47	05/12/17 21:06	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	106		25 - 150				05/11/17 10:47	05/12/17 21:06	1
13C4-PFHpA	109		25 - 150				05/11/17 10:47	05/12/17 21:06	1

TestAmerica Sacramento

Client Sample Results

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Client Sample ID: Equipment Blank

Date Collected: 04/27/17 14:30

Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-3

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	114		25 - 150	05/11/17 10:47	05/12/17 21:06	1
13C4 PFOS	100		25 - 150	05/11/17 10:47	05/12/17 21:06	1
13C5 PFNA	106		25 - 150	05/11/17 10:47	05/12/17 21:06	1

Client Sample ID: Field Reagent Blank

Date Collected: 04/27/17 15:00

Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-4

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.87	ng/L		05/11/17 10:47	05/12/17 21:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.82	ng/L		05/11/17 10:47	05/12/17 21:14	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		05/11/17 10:47	05/12/17 21:14	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.71	ng/L		05/11/17 10:47	05/12/17 21:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	1.2	ng/L		05/11/17 10:47	05/12/17 21:14	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		05/11/17 10:47	05/12/17 21:14	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	102		25 - 150				05/11/17 10:47	05/12/17 21:14	1
13C4-PFHxS	116		25 - 150				05/11/17 10:47	05/12/17 21:14	1
13C4 PFOA	123		25 - 150				05/11/17 10:47	05/12/17 21:14	1
13C4 PFOS	100		25 - 150				05/11/17 10:47	05/12/17 21:14	1
13C5 PFNA	107		25 - 150				05/11/17 10:47	05/12/17 21:14	1

Isotope Dilution Summary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)				
		¹⁸ O ₂ PFHx (25-150)	¹³ C ₄ -PFHp (25-150)	¹³ C ₄ PFOA (25-150)	¹³ C ₄ PFOA (25-150)	¹³ C ₅ PFNA (25-150)
320-27825-1	MW-9	104	78	69	101	49
320-27825-2	MW-12	105	77	70	100	54
320-27825-3	Equipment Blank	106	109	114	100	106
320-27825-4	Field Reagent Blank	102	116	123	100	107
LCS 320-163954/2-A	Lab Control Sample	102	109	116	101	103
LCSD 320-163954/3-A	Lab Control Sample Dup	100	105	107	97	101
MB 320-163954/1-A	Method Blank	101	110	111	98	102

Surrogate Legend

¹⁸O₂ PFHxS = ¹⁸O₂ PFHxS
¹³C₄-PFHpA = ¹³C₄-PFHpA
¹³C₄ PFOA = ¹³C₄ PFOA
¹³C₄ PFOS = ¹³C₄ PFOS
¹³C₅ PFNA = ¹³C₅ PFNA

QC Sample Results

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-163954/1-A

Matrix: Water

Analysis Batch: 164372

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 163954

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		05/11/17 10:47	05/12/17 20:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		05/11/17 10:47	05/12/17 20:29	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		05/11/17 10:47	05/12/17 20:29	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		05/11/17 10:47	05/12/17 20:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		05/11/17 10:47	05/12/17 20:29	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		05/11/17 10:47	05/12/17 20:29	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	101		25 - 150	05/11/17 10:47	05/12/17 20:29	1
13C4-PFHpa	110		25 - 150	05/11/17 10:47	05/12/17 20:29	1
13C4 PFOA	111		25 - 150	05/11/17 10:47	05/12/17 20:29	1
13C4 PFOS	98		25 - 150	05/11/17 10:47	05/12/17 20:29	1
13C5 PFNA	102		25 - 150	05/11/17 10:47	05/12/17 20:29	1

Lab Sample ID: LCS 320-163954/2-A

Matrix: Water

Analysis Batch: 164372

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163954

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanesulfonic acid (PFBS)	35.4	38.8		ng/L		110	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.7		ng/L		98	58 - 138
Perfluoroheptanoic acid (PFHpA)	40.0	40.5		ng/L		101	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	39.8		ng/L		99	63 - 141
Perfluorooctanesulfonic acid (PFOS)	37.1	36.4		ng/L		98	47 - 162
Perfluorononanoic acid (PFNA)	40.0	40.3		ng/L		101	71 - 140

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
18O2 PFHxS	102		25 - 150
13C4-PFHpa	109		25 - 150
13C4 PFOA	116		25 - 150
13C4 PFOS	101		25 - 150
13C5 PFNA	103		25 - 150

Lab Sample ID: LCSD 320-163954/3-A

Matrix: Water

Analysis Batch: 164372

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 163954

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	35.4	37.8		ng/L		107	55 - 147	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.7		ng/L		98	58 - 138	0	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.8		ng/L		102	63 - 135	1	30
Perfluorooctanoic acid (PFOA)	40.0	39.8		ng/L		100	63 - 141	0	30
Perfluorooctanesulfonic acid (PFOS)	37.1	36.1		ng/L		97	47 - 162	1	30
Perfluorononanoic acid (PFNA)	40.0	39.2		ng/L		98	71 - 140	3	30

TestAmerica Sacramento

QC Sample Results

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

<i>Isotope Dilution</i>	<i>LCSD</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>18O2 PFHxS</i>	100		25 - 150
<i>13C4-PFHpA</i>	105		25 - 150
<i>13C4 PFOA</i>	107		25 - 150
<i>13C4 PFOS</i>	97		25 - 150
<i>13C5 PFNA</i>	101		25 - 150

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QC Association Summary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

LCMS

Prep Batch: 163954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-27825-1	MW-9	Total/NA	Water	3535	
320-27825-2	MW-12	Total/NA	Water	3535	
320-27825-3	Equipment Blank	Total/NA	Water	3535	
320-27825-4	Field Reagent Blank	Total/NA	Water	3535	
MB 320-163954/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-163954/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-163954/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 164372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-27825-1	MW-9	Total/NA	Water	537 (modified)	163954
320-27825-2	MW-12	Total/NA	Water	537 (modified)	163954
320-27825-3	Equipment Blank	Total/NA	Water	537 (modified)	163954
320-27825-4	Field Reagent Blank	Total/NA	Water	537 (modified)	163954
MB 320-163954/1-A	Method Blank	Total/NA	Water	537 (modified)	163954
LCS 320-163954/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	163954
LCSD 320-163954/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	163954

Lab Chronicle

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Client Sample ID: MW-9

Date Collected: 04/27/17 13:30

Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273.4 mL	0.5 mL	163954	05/11/17 10:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			164372	05/12/17 20:51	TTP	TAL SAC

Client Sample ID: MW-12

Date Collected: 04/27/17 16:00

Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.3 mL	0.5 mL	163954	05/11/17 10:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			164372	05/12/17 20:59	TTP	TAL SAC

Client Sample ID: Equipment Blank

Date Collected: 04/27/17 14:30

Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.4 mL	0.5 mL	163954	05/11/17 10:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			164372	05/12/17 21:06	TTP	TAL SAC

Client Sample ID: Field Reagent Blank

Date Collected: 04/27/17 15:00

Date Received: 04/28/17 09:30

Lab Sample ID: 320-27825-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.8 mL	0.5 mL	163954	05/11/17 10:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			164372	05/12/17 21:14	TTP	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Oregon	NELAP	10	4040	01-28-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)

Method Summary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: H2M Associates, Inc.
Project/Site: PFAS, NYSDEC

TestAmerica Job ID: 320-27825-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-27825-1	MW-9	Water	04/27/17 13:30	04/28/17 09:30
320-27825-2	MW-12	Water	04/27/17 16:00	04/28/17 09:30
320-27825-3	Equipment Blank	Water	04/27/17 14:30	04/28/17 09:30
320-27825-4	Field Reagent Blank	Water	04/27/17 15:00	04/28/17 09:30

Client Contact Company Name: H2M Associates Inc. Address: 119 Cherry Hill Road (suite 110) City/State/Zip: Parsippany NJ 07054 Phone: 862-207-5900 X2243 Fax: Project Name:		Project Manager: Jee McNamee Tel/Fax: 862-762-2909 Analysis Turnaround Time ☐ CALENDAR DAYS ☒ WORKING DAYS TAT if different from Below: _____ ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Site Contact: Jee McNamee Date: 4/27/17 Lab Contact: CESAR Carrier: FEDEX COC No: _____ of _____ COCs Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.: _____ Sample Specific Notes:	
Sample Identification MW-9 MW-12 Equipment Blank Field Reagent Blank		Filtered Sample (Y/N) Perform MS / MSD (Y/N) 537 (Modified) PFAS UCMR List		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months	
Preservation Used: (1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other) Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		Special Instructions/QC Requirements & Comments: 537 (Modified) UCMR List PFBS, PFHxS, PFHpA, PFDA, PFOs, PFNA 2 mg/L Reporting Limit			
Relinquished by: Jee McNamee Date/Time: 4/27/17 1345		Relinquished by: Jee McNamee Date/Time: 4/27/17 1345		Relinquished by: Jee McNamee Date/Time: 4/27/17 1345	
Relinquished by: Jee McNamee Date/Time: 4/27/17 1345		Relinquished by: Jee McNamee Date/Time: 4/27/17 1345		Relinquished by: Jee McNamee Date/Time: 4/27/17 1345	

Login Sample Receipt Checklist

Client: H2M Associates, Inc.

Job Number: 320-27825-1

Login Number: 27825

List Source: TestAmerica Sacramento

List Number: 1

Creator: Edman, Connor M

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	