Off-base Drinking Water Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Figure, SDG 1701795

Marine Corps Outlying Landing Field Atlantic
MCAS Cherry Point NC

February 2019

December 07, 2017

Vista Work Order No. 1701795

Ms. Tiffany Hill
CH2M Hill
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on November 29, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Karen J. Volpendesta for

Martha Maier
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1701795
Case Narrative

Sample Condition on Receipt:

Eighteen drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 537

Sample "CH-AT-1RW92-1117" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

Two Laboratory Fortified Blanks (LFB) and a Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank above 1/2 the LOQ. The LFB recoveries were within the method acceptance criteria.

The surrogate recoveries for all QC and field samples were within the acceptance criteria.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "". The analyte recoveries and RPDs were within the method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701795-01	CH-AT-1RW86-1117	28-Nov-17 09:06	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-02	CH-AT-1FB86-1117	28-Nov-17 09:07	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-03	CH-AT-1RW87-1117	28-Nov-17 09:32	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-04	CH-AT-1FB87-1117	28-Nov-17 09:33	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-05	CH-AT-1RW88-1117	28-Nov-17 09:54	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-06	CH-AT-1FB88-1117	28-Nov-17 09:55	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-07	CH-AT-1RW89-1117	28-Nov-17 10:18	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-08	CH-AT-1FB89-1117	28-Nov-17 10:19	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-09	CH-AT-1RW90-1117	28-Nov-17 10:41	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-10	CH-AT-1FB90-1117	28-Nov-17 10:42	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-11	CH-AT-1RW91-1117	28-Nov-17 11:30	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-12	CH-AT-1FB91-1117	28-Nov-17 11:31	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-13	CH-AT-1RW92-1117	28-Nov-17 12:08	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-14	CH-AT-1FB92-1117	28-Nov-17 12:09	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-15	CH-AT-1RW93A-1117	28-Nov-17 12:18	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-16	CH-AT-1FB93A-1117	28-Nov-17 12:19	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-17	CH-AT-1RW93B-1117	28-Nov-17 12:28	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-18	CH-AT-1FB93B-1117	28-Nov-17 12:29	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

Vista Project: 1701795

Client Project: CTO-08, MCOLF Atlantic PFAS DW Investigation

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water

Laboratory Data

Lab Sample: B7L0009-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1
PFOA	ND	1.08	5.00	10.0		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1
PFOS	ND	1.04	5.00	10.0		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.2	70 - 130		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0009-BS1/B7L0009-BSD1		
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	QC Batch:	B7L0009	Date Extracted:	04-Dec-17
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L	Column:	BEH C18

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	35.3	35.4	99.7		34.7	35.4	98.1	1.57		70-130	30	06-Dec-17 14:21	1	06-Dec-17 14:33	1
PFOA	41.9	40.0	105		48.7	40.0	122	14.9		70-130	30	06-Dec-17 14:21	1	06-Dec-17 14:33	1
PFOS	38.1	37.0	103		37.8	37.0	102	0.851		70-130	30	06-Dec-17 14:21	1	06-Dec-17 14:33	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	107		102		70-130	06-Dec-17 14:21	1	06-Dec-17 14:33	1

Sample ID: CH-AT-1RW86-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:06

Laboratory Data

Lab Sample: 1701795-01
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1
PFOA	ND	1.09	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1
PFOS	ND	1.05	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.7	70 - 130		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB86-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:07

Laboratory Data

Lab Sample: 1701795-02
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1
PFOA	ND	1.02	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1
PFOS	ND	0.986	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW87-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:32

Laboratory Data

Lab Sample: 1701795-03
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1
PFOA	ND	1.03	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1
PFOS	ND	0.996	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB87-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:33

Laboratory Data

Lab Sample: 1701795-04
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1
PFOA	ND	1.02	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1
PFOS	ND	0.985	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	115	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW88-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:54

Laboratory Data

Lab Sample: 1701795-05
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1
PFOA	ND	1.06	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1
PFOS	ND	1.02	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB88-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:55

Laboratory Data

Lab Sample: 1701795-06
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1
PFOA	ND	1.02	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1
PFOS	ND	0.987	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW89-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:18

Laboratory Data

Lab Sample: 1701795-07
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1
PFOA	ND	1.09	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1
PFOS	ND	1.05	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.8	70 - 130		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB89-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:19

Laboratory Data

Lab Sample: 1701795-08
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1
PFOA	ND	1.03	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1
PFOS	ND	0.988	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW90-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:41

Laboratory Data

Lab Sample: 1701795-09
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1
PFOA	ND	1.08	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1
PFOS	ND	1.04	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB90-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:42

Laboratory Data

Lab Sample: 1701795-10
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1
PFOA	ND	1.02	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1
PFOS	ND	0.985	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.8	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW91-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 11:30

Laboratory Data

Lab Sample: 1701795-11
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1
PFOA	ND	1.07	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1
PFOS	ND	1.03	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.6	70 - 130		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB91-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 11:31

Laboratory Data

Lab Sample: 1701795-12
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.450	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1
PFOA	ND	1.10	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1
PFOS	ND	1.06	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.0	70 - 130		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW92-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:08

Laboratory Data

Lab Sample: 1701795-13
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1
PFOA	ND	1.13	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1
PFOS	ND	1.09	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.5	70 - 130		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB92-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:09

Laboratory Data

Lab Sample: 1701795-14
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1
PFOA	ND	1.03	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1
PFOS	ND	0.993	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW93A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:18

Laboratory Data

Lab Sample: 1701795-15
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1
PFOA	ND	1.03	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1
PFOS	ND	0.995	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	106	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB93A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:19

Laboratory Data

Lab Sample: 1701795-16
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1
PFOA	ND	1.03	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1
PFOS	ND	0.995	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.8	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW93B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:28

Laboratory Data

Lab Sample: 1701795-17
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1
PFOA	ND	1.06	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1
PFOS	ND	1.02	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB93B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:29

Laboratory Data

Lab Sample: 1701795-18
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1
PFOA	ND	1.02	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1
PFOS	ND	0.983	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.2	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
M	**Estimated Maximum Possible Concentration. (CA Region 2 projects only)**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
TEQ	**Toxic Equivalency**
U	**Not Detected (specific projects only)**

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Rev. No.: 0
Rev. Date: 06/27/2017

11/28/17 COOLER # 3

CTO-08 679580.15.FI.FS

ID: LR - 537COC

CHAIN OF CUSTODY

Vista Analytical Laboratory

For Laboratory Use Only
Work Order #: 1701795 Temp: 0.4 °C
Storage ID: WR-2 Storage Secured Yes ☐ No ☐

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation
PO#: 10006-7-106051
Sampler: K. RABE / A. SEAY (name)

TAT (check one): Standard ☐ 21 days; Rush (surcharge may apply) ☐ 14 days ☒ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Tiffany Hill	CH2M	1100 NE Circle Blvd Suite #300	Corvallis	OR	541-768-3109	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
DAVID LUBELL	11/29/17	1500	B. Benedict Beth Benedict	11/29/17	1006
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Container(s) Type	Matrix	Mod EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-1RW86-1117	11/28/17	0906		2	P	DW						X			Trizma Preservative
CH-AT-1FB86-1117	11/28/17	0907		2	P	DW						X			Trizma Preservative
CH-AT-1RW87-1117	11/28/17	0932		2	P	DW						X			Trizma Preservative
CH-AT-1FB87-1117	11/28/17	0933		2	P	DW						X			Trizma Preservative
CH-AT-1RW881117	11/28/17	0954		2	P	DW						X			Trizma Preservative
CH-AT-1FB88-1117	11/28/17	0955		2	P	DW						X			Trizma Preservative
CH-AT-1RW89-1117	11/28/17	1018		2	P	DW						X			Trizma Preservative
CH-AT-1FB89-1117	11/28/17	1019		2	P	DW						X			Trizma Preservative
CH-AT-1RW90-1117	11/28/17	1041		2	P	DW						X			Trizma Preservative
CH-AT-1FB90-1117	11/28/17	1042		2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking water analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M HILL Inc.
Address: 1100 NE Circle Blvd Suite 300
City: Corvallis State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: Tiffany.Hill@ch2m.com

Container Types: P= HDPE, PJ= HDPE Jar, O = Other

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

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Rev. No.: 0
Rev. Date: 06/27/2017

11/28/17 COOLER # 3

CTO-08 679580.15.FI.FS

ID: LR - 537COC

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701795 Temp: 0.4 °C
Storage ID: WR-2 Storage Secured: Yes ☐ No ☐

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation
PO#: 10006-7-106051
Sampler: K. RABE + A. SEAY (name)

TAT (check one): Standard ☐ 21 days; Rush (surcharge may apply) ☐ 14 days ☒ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Tiffany Hill	CH2M	1100 NE Circle Blvd Suite #300	Corvallis	OR	541-768-3109	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
DAVID LIEBELL	11/28/17	1500	B. Benedict Battelle	11/29/17	1006
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 25	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List 14	Comments
CH-AT-1RW91-1117	11/28/17	1130		2		DW						X			Trizma Preservative
CH-AT-1FB91-1117	11/28/17	1131		2		DW						X			Trizma Preservative
CH-AT-1RW92-1117	11/28/17	1208		2		DW						X			Trizma Preservative
CH-AT-1FB92-1117	11/28/17	1209		2		DW						X			Trizma Preservative
CH-AT-1RW93A-1117	11/28/17	1218		2		DW						X			Trizma Preservative
CH-AT-1FB93A-1117	11/28/17	1219		2		DW						X			Trizma Preservative
CH-AT-1RW93B-117	11/28/17	1228		2		DW						X			Trizma Preservative
CH-AT-1FB93B-1117	11/28/17	1229		2		DW						X			Trizma Preservative
				2		DW						X			Trizma Preservative
				2		DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking water analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M HILL Inc.
Address: 1100 NE Circle Blvd Suite 300
City: Corvallis State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: Tiffany.Hill@ch2m.com

Container Types: P= HDPE, PJ= HDPE Jar, O = Other

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Page: 1 of 1

PAGE 2 OF 2

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701795 **TAT** 7

Samples Arrival:	**Date/Time** 11/29/17 0937	**Initials:** YBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/29/17 1132	**Initials:** YBB	**Location:** WR-2 **Shelf/Rack:** E3

Delivered By:	(FedEx)	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice)	Blue Ice		Dry Ice		None
Temp °C: 0.3 (uncorrected)	**Time:** 1005					
Temp °C: 0.4 (corrected)	**Probe used:** Yes☐ No☑	**Thermometer ID:** IR-1				

	YES	NO	NA
Adequate Sample Volume Received? A/B	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill 2 of 3 Trk # 8538 7408 0452	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓

If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓					
Preservation Documented:	$Na_2S_2O_3$	(Trizma)	None	(Yes)	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return	Dispose	

Comments:

December 07, 2017

Vista Work Order No. 1701795

Ms. Tiffany Hill
CH2M Hill
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on November 29, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic PFAS DW Investigation'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Karen J. Volpendesta for

Martha Maier
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1701795
Case Narrative

Sample Condition on Receipt:

Eighteen drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 537

Sample "CH-AT-1RW92-1117" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

Two Laboratory Fortified Blanks (LFB) and a Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank above 1/2 the LOQ. The LFB recoveries were within the method acceptance criteria.

The surrogate recoveries for all QC and field samples were within the acceptance criteria.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "". The analyte recoveries and RPDs were within the method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701795-01	CH-AT-1RW86-1117	28-Nov-17 09:06	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-02	CH-AT-1FB86-1117	28-Nov-17 09:07	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-03	CH-AT-1RW87-1117	28-Nov-17 09:32	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-04	CH-AT-1FB87-1117	28-Nov-17 09:33	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-05	CH-AT-1RW88-1117	28-Nov-17 09:54	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-06	CH-AT-1FB88-1117	28-Nov-17 09:55	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-07	CH-AT-1RW89-1117	28-Nov-17 10:18	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-08	CH-AT-1FB89-1117	28-Nov-17 10:19	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-09	CH-AT-1RW90-1117	28-Nov-17 10:41	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-10	CH-AT-1FB90-1117	28-Nov-17 10:42	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-11	CH-AT-1RW91-1117	28-Nov-17 11:30	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-12	CH-AT-1FB91-1117	28-Nov-17 11:31	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-13	CH-AT-1RW92-1117	28-Nov-17 12:08	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-14	CH-AT-1FB92-1117	28-Nov-17 12:09	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-15	CH-AT-1RW93A-1117	28-Nov-17 12:18	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-16	CH-AT-1FB93A-1117	28-Nov-17 12:19	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-17	CH-AT-1RW93B-1117	28-Nov-17 12:28	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701795-18	CH-AT-1FB93B-1117	28-Nov-17 12:29	29-Nov-17 09:37	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water

Laboratory Data

Lab Sample: B7L0009-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1
PFOA	ND	1.08	5.00	10.0		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1
PFOS	ND	1.04	5.00	10.0		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.2	70 - 130		B7L0009	04-Dec-17	0.250 L	06-Dec-17 14:46	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0009-BS1/B7L0009-BSD1
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	QC Batch:	B7L0009
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L

Date Extracted: 04-Dec-17
Column: BEH C18

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	35.3	35.4	99.7		34.7	35.4	98.1	1.57		70-130	30	06-Dec-17 14:21	1	06-Dec-17 14:33	1
PFOA	41.9	40.0	105		48.7	40.0	122	14.9		70-130	30	06-Dec-17 14:21	1	06-Dec-17 14:33	1
PFOS	38.1	37.0	103		37.8	37.0	102	0.851		70-130	30	06-Dec-17 14:21	1	06-Dec-17 14:33	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	107		102		70-130	06-Dec-17 14:21	1	06-Dec-17 14:33	1

Sample ID: CH-AT-1RW86-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:06

Laboratory Data

Lab Sample: 1701795-01
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1
PFOA	ND	1.09	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1
PFOS	ND	1.05	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.7	70 - 130		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB86-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:07

Laboratory Data

Lab Sample: 1701795-02
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1
PFOA	ND	1.02	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1
PFOS	ND	0.986	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW87-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:32

Laboratory Data

Lab Sample: 1701795-03
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1
PFOA	ND	1.03	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1
PFOS	ND	0.996	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB87-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:33

Laboratory Data

Lab Sample: 1701795-04
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1
PFOA	ND	1.02	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1
PFOS	ND	0.985	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	115	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW88-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:54

Laboratory Data

Lab Sample: 1701795-05
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1
PFOA	ND	1.06	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1
PFOS	ND	1.02	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB88-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:55

Laboratory Data

Lab Sample: 1701795-06
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1
PFOA	ND	1.02	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1
PFOS	ND	0.987	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW89-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:18

Laboratory Data

Lab Sample: 1701795-07
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1
PFOA	ND	1.09	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1
PFOS	ND	1.05	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.8	70 - 130		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB89-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:19

Laboratory Data

Lab Sample: 1701795-08
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1
PFOA	ND	1.03	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1
PFOS	ND	0.988	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW90-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:41

Laboratory Data

Lab Sample: 1701795-09
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1
PFOA	ND	1.08	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1
PFOS	ND	1.04	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB90-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:42

Laboratory Data

Lab Sample: 1701795-10
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1
PFOA	ND	1.02	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1
PFOS	ND	0.985	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.8	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW91-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 11:30

Laboratory Data

Lab Sample: 1701795-11
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1
PFOA	ND	1.07	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1
PFOS	ND	1.03	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.6	70 - 130		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB91-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 11:31

Laboratory Data

Lab Sample: 1701795-12
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.450	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1
PFOA	ND	1.10	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1
PFOS	ND	1.06	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.0	70 - 130		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW92-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:08

Laboratory Data

Lab Sample: 1701795-13
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1
PFOA	ND	1.13	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1
PFOS	ND	1.09	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.5	70 - 130		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB92-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:09

Laboratory Data

Lab Sample: 1701795-14
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1
PFOA	ND	1.03	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1
PFOS	ND	0.993	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW93A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:18

Laboratory Data

Lab Sample: 1701795-15
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1
PFOA	ND	1.03	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1
PFOS	ND	0.995	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	106	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB93A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:19

Laboratory Data

Lab Sample: 1701795-16
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1
PFOA	ND	1.03	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1
PFOS	ND	0.995	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.8	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW93B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:28

Laboratory Data

Lab Sample: 1701795-17
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1
PFOA	ND	1.06	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1
PFOS	ND	1.02	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB93B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:29

Laboratory Data

Lab Sample: 1701795-18
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1
PFOA	ND	1.02	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1
PFOS	ND	0.983	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.2	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
M	**Estimated Maximum Possible Concentration. (CA Region 2 projects only)**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
TEQ	**Toxic Equivalency**
U	**Not Detected (specific projects only)**

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Rev. No.: 0
Rev. Date: 06/27/2017

11/28/17 COOLER # 3

CTO-08 679580.15.FI.FS

ID: LR - 537COC

CHAIN OF CUSTODY

Vista Analytical Laboratory

For Laboratory Use Only
Work Order #: 1701795 Temp: 0.4 °C
Storage ID: WR-2 Storage Secured Yes ☐ No ☐

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation
PO#: 10006-7-106051
Sampler: K. RABE / A. SEAY (name)

TAT (check one): Standard ☐ 21 days; Rush (surcharge may apply) ☐ 14 days ☒ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Tiffany Hill	CH2M	1100 NE Circle Blvd Suite #300	Corvallis	OR	541-768-3109	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
DAVID LUBELL	11/29/17	1500	B. Benedict Beth Benedict	11/29/17	1006
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Container(s) Type	Matrix	Mod EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-1RW86-1117	11/28/17	0906		2	P	DW						X			Trizma Preservative
CH-AT-1FB86-1117	11/28/17	0907		2	P	DW						X			Trizma Preservative
CH-AT-1RW87-1117	11/28/17	0932		2	P	DW						X			Trizma Preservative
CH-AT-1FB87-1117	11/28/17	0933		2	P	DW						X			Trizma Preservative
CH-AT-1RW881117	11/28/17	0954		2	P	DW						X			Trizma Preservative
CH-AT-1FB88-1117	11/28/17	0955		2	P	DW						X			Trizma Preservative
CH-AT-1RW89-1117	11/28/17	1018		2	P	DW						X			Trizma Preservative
CH-AT-1FB89-1117	11/28/17	1019		2	P	DW						X			Trizma Preservative
CH-AT-1RW90-1117	11/28/17	1041		2	P	DW						X			Trizma Preservative
CH-AT-1FB90-1117	11/28/17	1042		2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking water analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M HILL Inc.
Address: 1100 NE Circle Blvd Suite 300
City: Corvallis State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: Tiffany.Hill@ch2m.com

Container Types: P= HDPE, PJ= HDPE Jar, O = Other

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

~~Page: 1 of 1~~

PAGE 1 OF 2

Rev. No.: 0
Rev. Date: 06/27/2017

11/28/17 COOLER # 3

CTO-08 679580.15.FI.FS

ID: LR - 537COC

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701795 Temp: 0.4 °C
Storage ID: WR-2 Storage Secured: Yes ☐ No ☐

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation
PO#: 10006-7-106051
Sampler: K. RABE + A. SEAY (name)

TAT (check one): Standard ☐ 21 days; Rush (surcharge may apply) ☐ 14 days ☒ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Tiffany Hill	CH2M	1100 NE Circle Blvd Suite #300	Corvallis	OR	541-768-3109	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
DAVID LUEBELL	11/28/17	1500	B. Benedict Battelle	11/29/17	1006
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Container(s) Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 25	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List 14	Comments
CH-AT-1RW91-1117	11/28/17	1130		2		DW						X			Trizma Preservative
CH-AT-1FB91-1117	11/28/17	1131		2		DW						X			Trizma Preservative
CH-AT-1RW92-1117	11/28/17	1208		2		DW						X			Trizma Preservative
CH-AT-1FB92-1117	11/28/17	1209		2		DW						X			Trizma Preservative
CH-AT-1RW93A-1117	11/28/17	1218		2		DW						X			Trizma Preservative
CH-AT-1FB93A-1117	11/28/17	1219		2		DW						X			Trizma Preservative
CH-AT-1RW93B-117	11/28/17	1228		2		DW						X			Trizma Preservative
CH-AT-1FB93B-1117	11/28/17	1229		2		DW						X			Trizma Preservative
				2		DW						X			Trizma Preservative
				2		DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking water analysis

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M HILL Inc.
Address: 1100 NE Circle Blvd Suite 300
City: Corvallis State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: Tiffany.Hill@ch2m.com

Container Types: P= HDPE, PJ= HDPE Jar, O = Other

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Page: 1 of 1

PAGE 2 OF 2

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701795 **TAT** 7

Samples Arrival:	**Date/Time** 11/29/17 0937	**Initials:** YBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/29/17 1132	**Initials:** YBB	**Location:** WR-2 **Shelf/Rack:** E3

Delivered By:	(FedEx)	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice)	Blue Ice		Dry Ice		None
Temp °C: 0.3 (uncorrected)	**Time:** 1005					
Temp °C: 0.4 (corrected)	**Probe used:** Yes☐ No☑	**Thermometer ID:** IR-1				

	YES	NO	NA
Adequate Sample Volume Received? A/B	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill 2 of 3 Trk # 8538 7408 0452	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓

If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓					
Preservation Documented:	$Na_2S_2O_3$	(Trizma)	None	(Yes)	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return	Dispose	

Comments:

EXTRACTION INFORMATION

Process Sheet

Workorder: 1701795

RUSH

Prep Expiration: 2017-Dec-12
Client: CH2M Hill

Workorder Due: 06-Dec-17 00:00

TAT: 7

Method: **537 PFAS DW DoD Unmodified**
Matrix: **Drinking Water**

Prep Batch: B7L0009

Prep Data Entered: KC 12/5/17
Date and Initials

Version: PFOA, PFOS, & PFBS
DoD: DoD QSM 5.1

Initial Sequence: _____

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701795-01	A	☑	☑	CH-AT-1RW86-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-02		☑	☑	CH-AT-1FB86-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-03		☑	☑	CH-AT-1RW87-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-04		☑	☑	CH-AT-1FB87-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-05		☑	☑	CH-AT-1RW88-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-06		☑	☑	CH-AT-1FB88-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-07		☑	☑	CH-AT-1RW89-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-08		☑	☑	CH-AT-1FB89-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-09		☑	☑	CH-AT-1RW90-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-10		☑	☑	CH-AT-1FB90-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-11		☑	☑	CH-AT-1RW91-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-12		☑	☑	CH-AT-1FB91-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-13		☑	☑	CH-AT-1RW92-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-14		☑	☑	CH-AT-1FB92-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-15		☑	☑	CH-AT-1RW93A-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-16		☑	☑	CH-AT-1FB93A-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-17		☑	☑	CH-AT-1RW93B-1117		WR-2 E-3	HDPE Bottle, 250 mL
1701795-18		☑	☑	CH-AT-1FB93B-1117		WR-2 E-3	HDPE Bottle, 250 mL

LCS/LCSD

Pre-Prep Check Out: 12/4/17 ST
Pre-Prep Check In: NA

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initals/Date: 12/4/17 ST
Spike Reconciled Initals/Date: HN 12/4/17
VialBoxID: Hubert

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

PREPARATION BENCH SHEET

B7L0009

Chemist: JTC

Prep Date/Time: 04-Dec-17 08:47 / 11:10 JTC

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: HRMS-8

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	B7L0009-BLK1 (A)	N/A	N/A	(0.250) ✓	JTC HN 12.4.17	HN 12/4/17	JTC KC 12.5.17
☐	B7L0009-BS1	↓	↓	(0.250) ✓	↓	↓	↓
☐	B7L0009-BSD1	↓	↓	(0.250) ✓	↓	↓	↓
☐	1701795-01	275.97	28.31	0.24766 ✓	↓	↓	↓
☐	1701795-02	291.24	27.66	0.26358 ✓	↓	↓	↓
☐	1701795-03	288.36	27.32	0.26104 ✓	↓	↓	↓
☐	1701795-04	291.58	27.49	0.26409 ✓	↓	↓	↓
☐	1701795-05	283.69	28.04	0.25565 ✓	↓	↓	↓
☐	1701795-06	291.05	27.54	0.26354 ✓	↓	↓	↓
☐	1701795-07	276.55	28.48	0.24807 ✓	↓	↓	↓
☐	1701795-08	290.80	27.64	0.26316 ✓	↓	↓	↓
☐	1701795-09	279.01	27.99	0.25102 ✓	↓	↓	↓
☐	1701795-10	291.68	27.69	0.26399 ✓	↓	↓	↓
☐	1701795-11	280.15	28.01	0.25214 ✓	↓	↓	↓
☐	1701795-12	273.87	27.80	0.24607 ✓	↓	↓	↓
☒	1701795-13	267.73	28.16	0.23957 ✓	↓	↓	↓

SS/IS: 17K3043, 10µL (V3)

NS: 17I2601, 10µL (JZ)

IS/RS: 17K3042, 10µL (V3)

SPE Chem: Strata-X 33µm 500mg/6mL

Lot#: S17-001561

Ele SOLV: MeOH

Lot#: D7189

Final Volume(s): 1mL

Notes: (A) 1.25g of Trizma added 12/4/17 JTC 12/4/17 ST

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0009

Chemist: HC

Prep Date/Time: 04-Dec-17 08:47 / 11:10 HC

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: HRms - 3

Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	1701795-14	295.78	26.96	0.26182 ✓	HC HN 12-4-17	HN 12/4/17	HC KC 12-5-17
☐	1701795-15	299.56	28.22	0.26134 ✓			
☐	1701795-16	288.99	27.65	0.26134 ✓			
☐	1701795-17	281.70	27.56	0.25414 ✓			
☐	1701795-18	291.42	27.04	0.26438 ✓			

SS/IS: 17K3643, 10µL (V2)

NS: 17I2601, 10µL (V2)

IS/RS: 17K3042, 10µL (V3)

SPE Chem: Strata-X 33µm 500mg 6mL
Lot#: 517-001561

Ele SOLV: MeOH
Lot#: DT189

Final Volume(s) 1mL

Notes:

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Batch: B7L0009

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701795-01	0.24766 ✓	NA	NA	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-02	0.26358 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-03	0.26104 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-04	0.26409 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-05	0.25565 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-06	0.26354 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-07	0.24807 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-08	0.26316 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-09	0.25102 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-10	0.26399 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-11	0.25214 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-12	0.24607 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-13	0.23957 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-14	0.26182 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-15	0.26134 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-16	0.26134 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-17	0.25414 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
1701795-18	0.26438 ✓	"	"	1000	04-Dec-17 11:10	HAC			Drinking Water	537 PFAS DW DoD Unmo
B7L0009-BLK1	0.25 ✓	"	"	1000	04-Dec-17 11:10	HAC				QC
B7L0009-BS1	0.25 ✓	"	"	1000	04-Dec-17 11:10	HAC	17I2601 ✓	10 ✓		QC
B7L0009-BSD1	0.25 ✓	"	"	1000	04-Dec-17 11:10	HAC	17I2601 ✓	10 ✓		QC

KC 12/5/17

SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-16.qld

Last Altered: Thursday, December 07, 2017 09:18:01 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:18:20 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_16, Date: 06-Dec-2017, Time: 14:46:01, ID: B7L0009-BLK1 LRB 0.25, Description: LRB

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.10e4		0.2500	3.04				
2	2	PFOA	413 > 368.7	6.90e1	9.87e3		0.2500	4.33	4.32	0.0699	0.361	
3	3	PFOS	499 >79.9		1.10e4		0.2500	4.74				
4	4	13C2-PFHxA	315 > 269.8	4.11e3	9.87e3	0.424	0.2500	3.39	3.38	4.16	39.3	98.2
5	5	13C2-PFDA	515.1 > 469.9	5.08e3	9.87e3	0.478	0.2500	4.96	4.97	5.15	43.0	107.6
6	6	13C2-PFOA	414.9 > 369.7	9.87e3	9.87e3	1.000	0.2500	4.41	4.33	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.10e4	1.10e4	1.000	0.2500	4.81	4.74	28.7	115	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

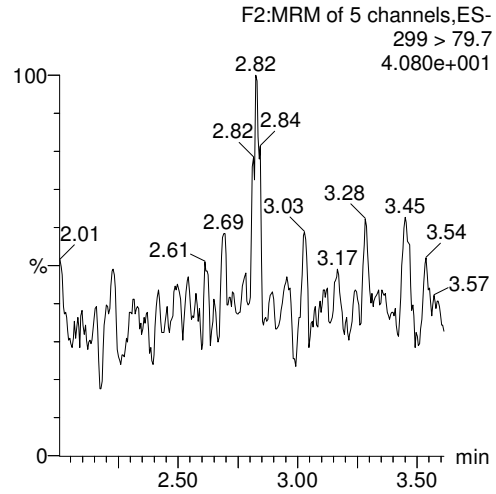
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-16.qld

Last Altered: Thursday, December 07, 2017 09:18:01 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:18:20 Pacific Standard Time

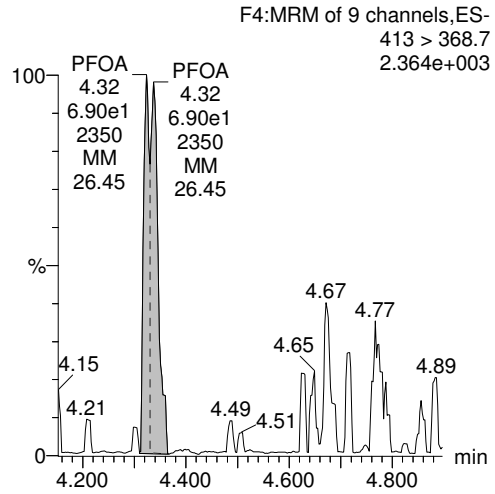
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_16, Date: 06-Dec-2017, Time: 14:46:01, ID: B7L0009-BLK1 LRB 0.25, Description: LRB

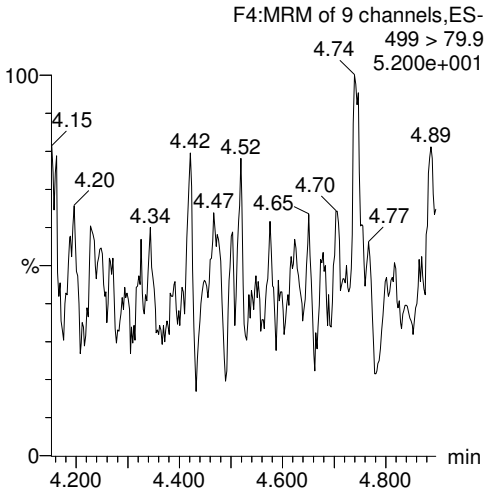
PFBS



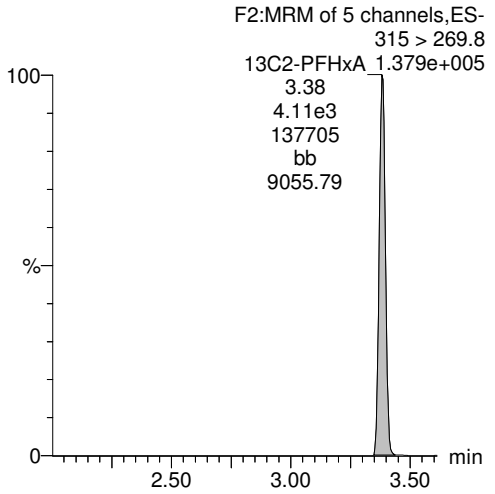
PFOA



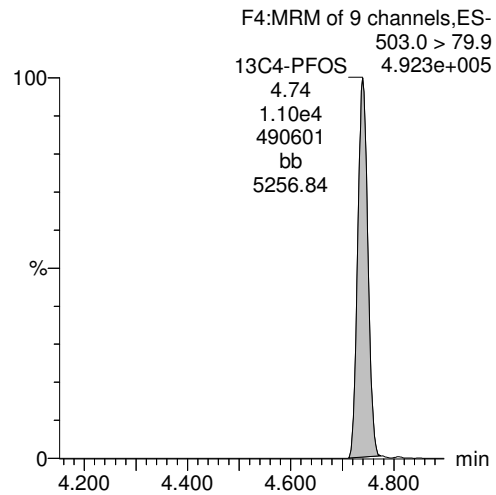
PFOS



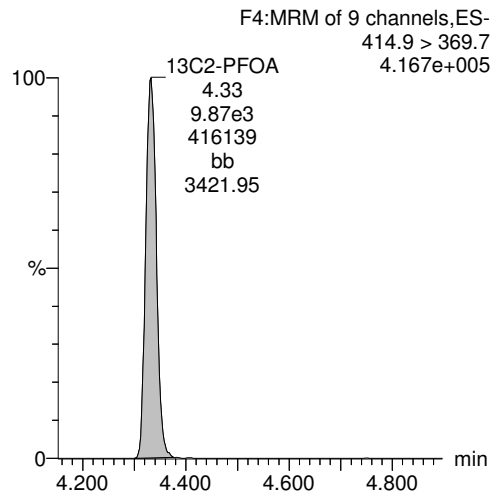
13C2-PFHxA



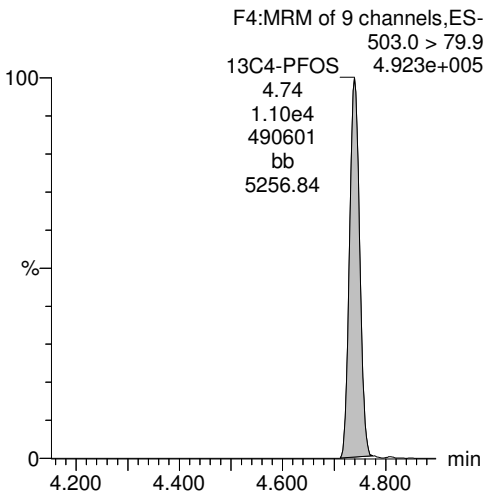
13C4-PFOS



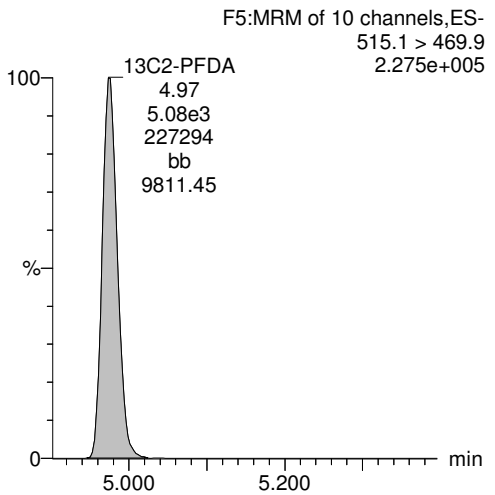
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-14.qld

Last Altered: Thursday, December 07, 2017 09:08:52 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:15:43 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_14, Date: 06-Dec-2017, Time: 14:21:10, ID: B7L0009-BS1 LFB 0.25, Description: LFB

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.26e3	1.12e4		0.2500	3.06	3.05	8.35	35.3	99.7
2	2	PFOA	413 > 368.7	8.66e3	1.07e4		0.2500	4.35	4.35	8.11	41.9	104.9
3	3	PFOS	499 >79.9	4.88e3	1.12e4		0.2500	4.76	4.76	12.5	38.1	103.0
4	4	13C2-PFHxA	315 > 269.8	4.85e3	1.07e4	0.424	0.2500	3.41	3.41	4.54	42.9	107.2
5	5	13C2-PFDA	515.1 > 469.9	6.31e3	1.07e4	0.478	0.2500	4.98	4.99	5.91	49.4	123.6
6	6	13C2-PFOA	414.9 > 369.7	1.07e4	1.07e4	1.000	0.2500	4.41	4.35	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	0.2500	4.81	4.76	28.7	115	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

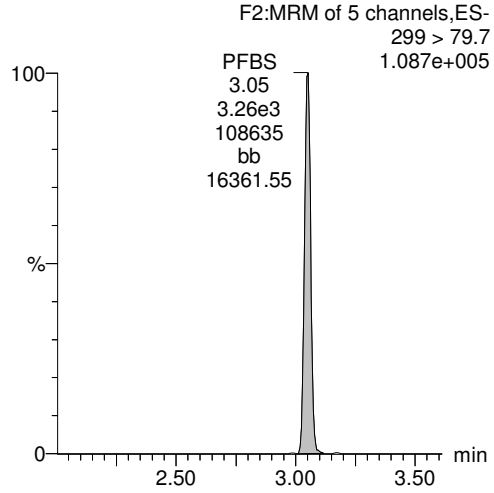
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-14.qld

Last Altered: Thursday, December 07, 2017 09:08:52 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:15:43 Pacific Standard Time

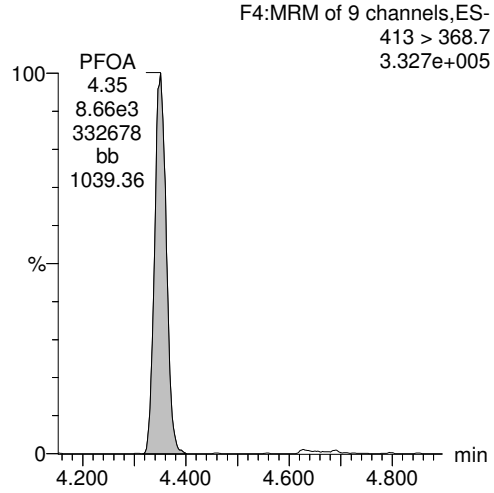
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_14, Date: 06-Dec-2017, Time: 14:21:10, ID: B7L0009-BS1 LFB 0.25, Description: LFB

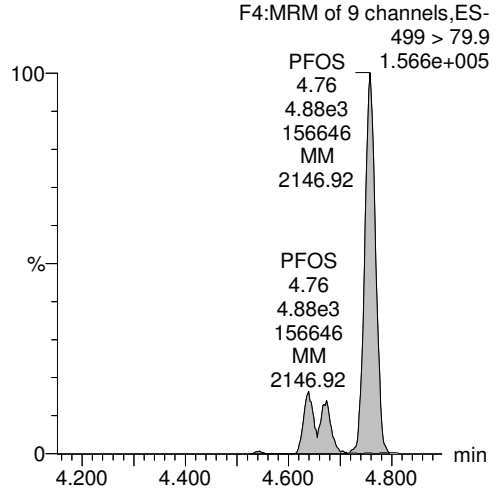
PFBS



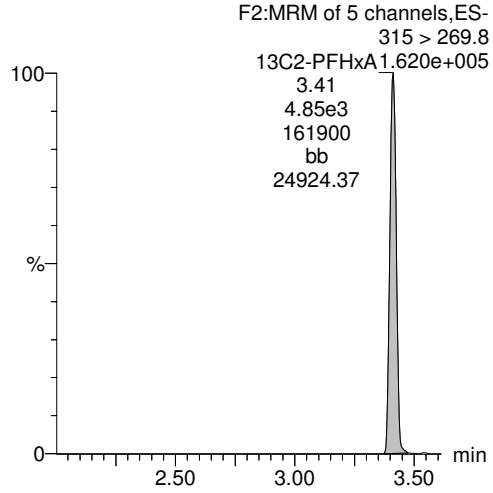
PFOA



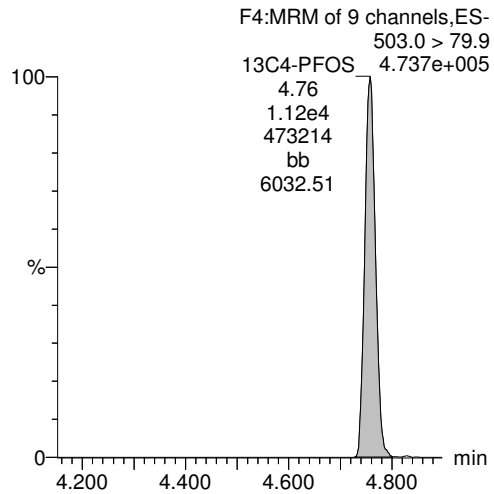
PFOS



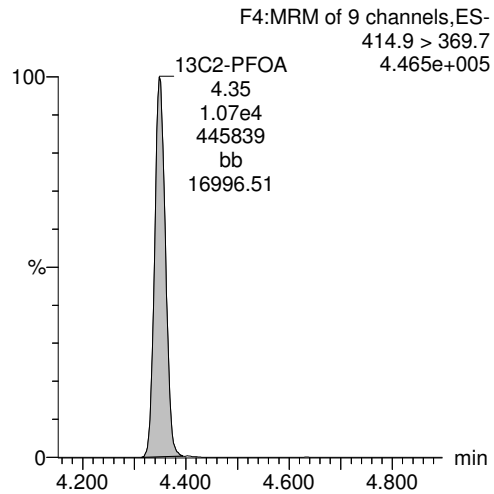
13C2-PFHxA



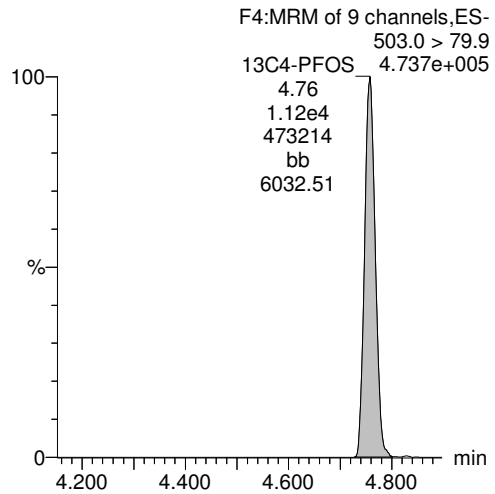
13C4-PFOS



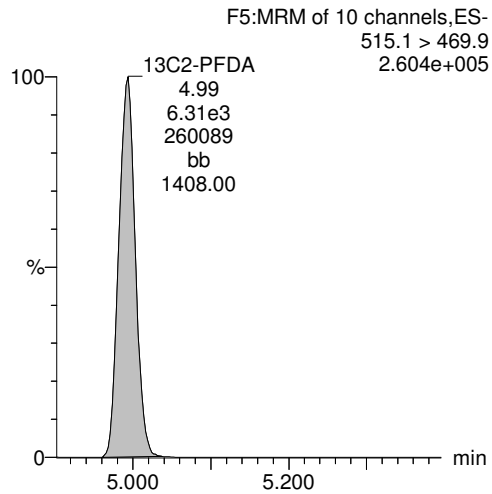
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-15.qld

Last Altered: Thursday, December 07, 2017 09:17:13 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:17:34 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_15, Date: 06-Dec-2017, Time: 14:33:35, ID: B7L0009-BSD1 LFBD 0.25, Description: LFBD

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.01e3	1.05e4		0.2500	3.04	3.02	8.22	34.7	98.1
2	2	PFOA	413 > 368.7	9.31e3	9.89e3		0.2500	4.33	4.33	9.42	48.7	121.8
3	3	PFOS	499 >79.9	4.53e3	1.05e4		0.2500	4.74	4.74	12.4	37.8	102.2
4	4	13C2-PFHxA	315 > 269.8	4.26e3	9.89e3	0.424	0.2500	3.39	3.38	4.31	40.7	101.7
5	5	13C2-PFDA	515.1 > 469.9	5.45e3	9.89e3	0.478	0.2500	4.96	4.98	5.51	46.1	115.3
6	6	13C2-PFOA	414.9 > 369.7	9.89e3	9.89e3	1.000	0.2500	4.41	4.33	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2500	4.81	4.74	28.7	115	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

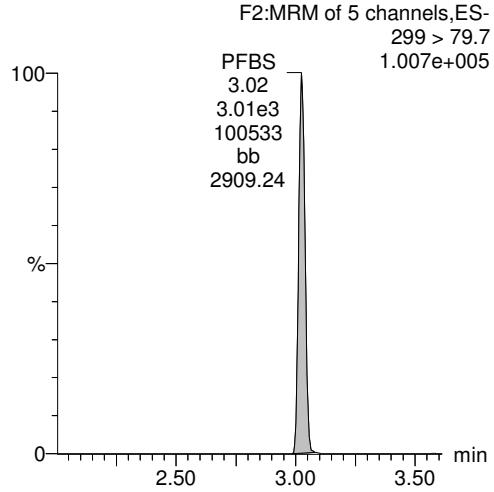
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-15.qld

Last Altered: Thursday, December 07, 2017 09:17:13 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:17:34 Pacific Standard Time

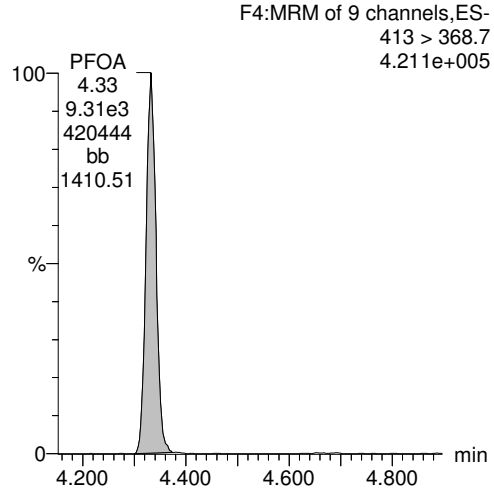
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_15, Date: 06-Dec-2017, Time: 14:33:35, ID: B7L0009-BSD1 LFBD 0.25, Description: LFBD

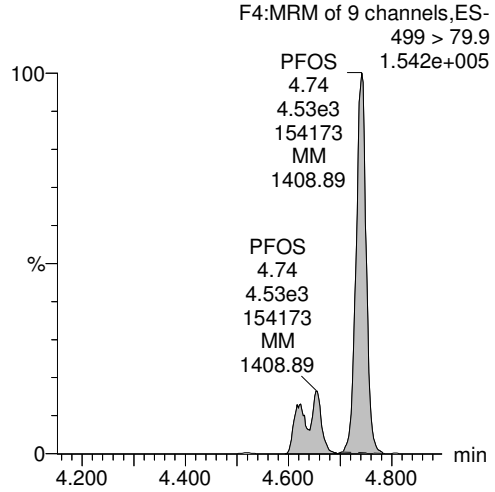
PFBS



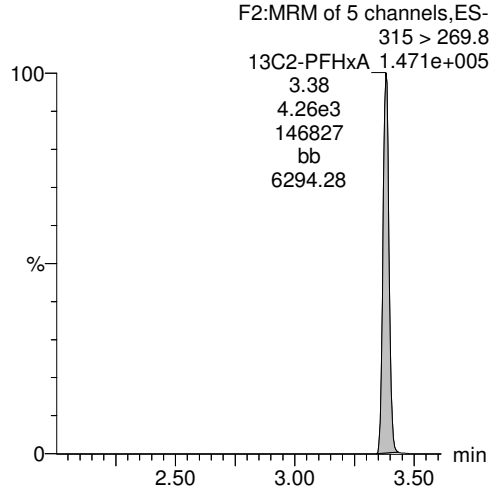
PFOA



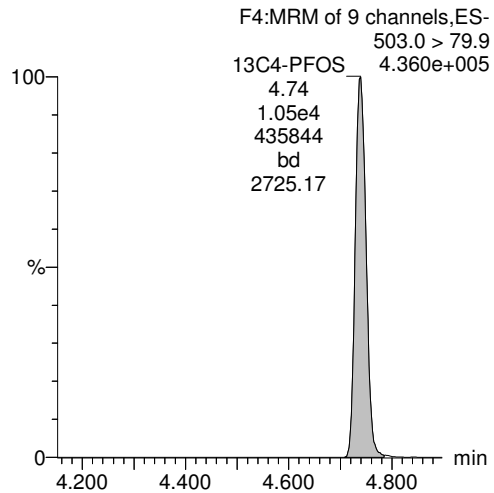
PFOS



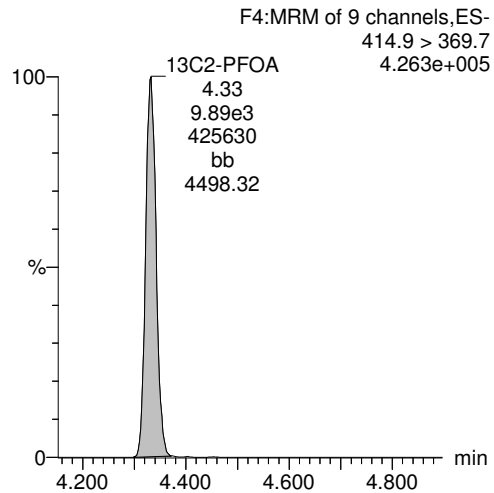
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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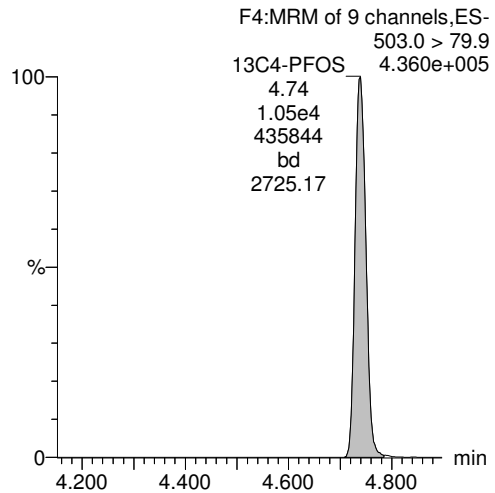
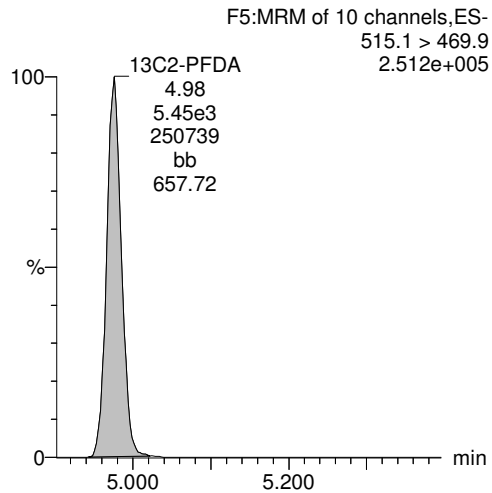


13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-17.qld

Last Altered: Thursday, December 07, 2017 09:20:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:20:44 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_17, Date: 06-Dec-2017, Time: 14:58:28, ID: 1701795-01 CH-AT-1RW86-1117 0.24766, Description: CH-AT-1RW86-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	7.58e0	1.01e4		0.2477	3.04	3.03	0.0216	0.0895	
2	2	PFOA	413 > 368.7	7.20e1	9.73e3		0.2477	4.33	4.33	0.0740	0.386	
3	3	PFOS	499 >79.9	2.12e1	1.01e4		0.2477	4.74	4.74	0.0603	0.181	
4	4	13C2-PFHxA	315 > 269.8	3.95e3	9.73e3	0.424	0.2477	3.39	3.38	4.05	38.6	95.7
5	5	13C2-PFDA	515.1 > 469.9	4.64e3	9.73e3	0.478	0.2477	4.96	4.97	4.77	40.3	99.8
6	6	13C2-PFOA	414.9 > 369.7	9.73e3	9.73e3	1.000	0.2477	4.41	4.33	10.0	40.4	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2477	4.81	4.74	28.7	116	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

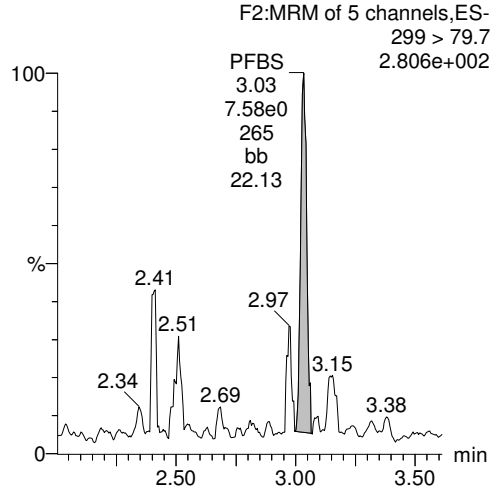
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-17.qld

Last Altered: Thursday, December 07, 2017 09:20:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:20:44 Pacific Standard Time

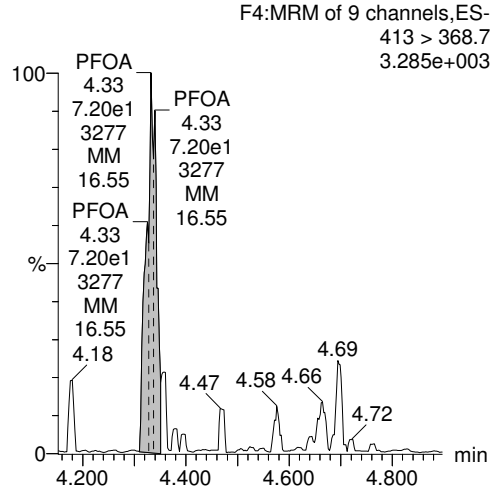
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_17, Date: 06-Dec-2017, Time: 14:58:28, ID: 1701795-01 CH-AT-1RW86-1117 0.24766, Description: CH-AT-1RW86-1117

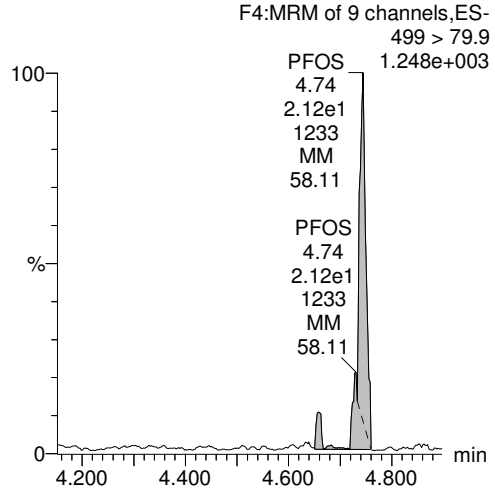
PFBS



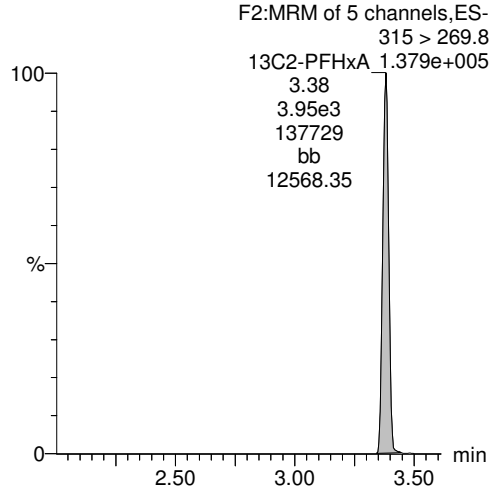
PFOA



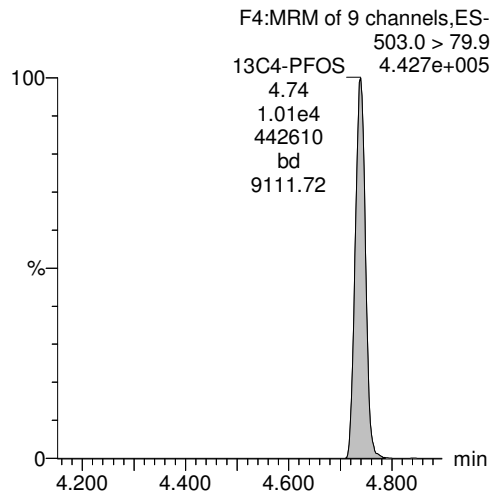
PFOS



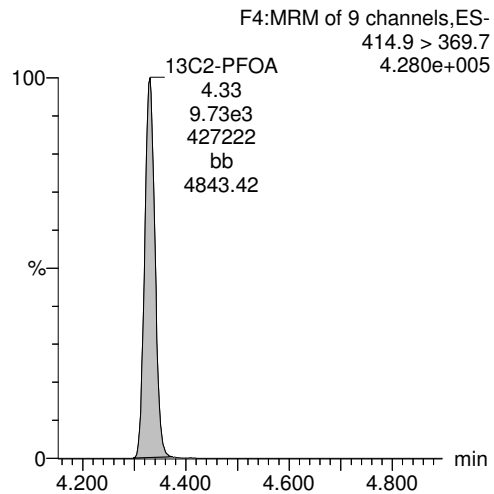
13C2-PFHxA



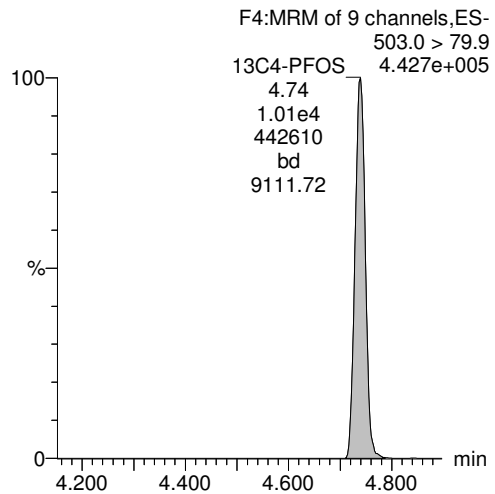
13C4-PFOS



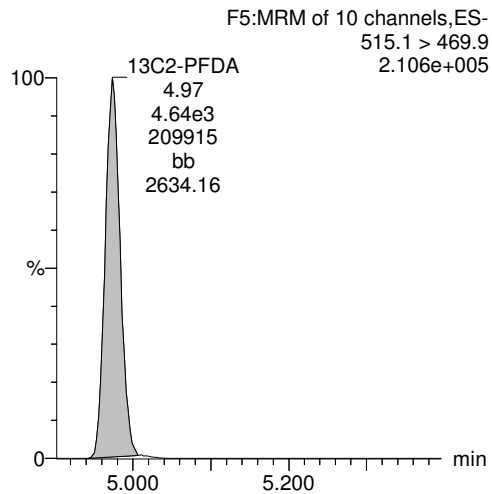
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-18.qld

Last Altered: Thursday, December 07, 2017 09:21:22 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:21:43 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_18, Date: 06-Dec-2017, Time: 15:10:54, ID: 1701795-02 CH-AT-1FB86-1117 0.26358, Description: CH-AT-1FB86-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2636	3.04				
2	2	PFOA	413 > 368.7	4.35e1	9.90e3		0.2636	4.33	4.33	0.0439	0.215	
3	3	PFOS	499 >79.9		1.05e4		0.2636	4.74				
4	4	13C2-PFHxA	315 > 269.8	4.17e3	9.90e3	0.424	0.2636	3.39	3.38	4.21	37.7	99.3
5	5	13C2-PFDA	515.1 > 469.9	4.78e3	9.90e3	0.478	0.2636	4.96	4.98	4.82	38.3	100.9
6	6	13C2-PFOA	414.9 > 369.7	9.90e3	9.90e3	1.000	0.2636	4.41	4.33	10.0	37.9	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2636	4.81	4.74	28.7	109	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

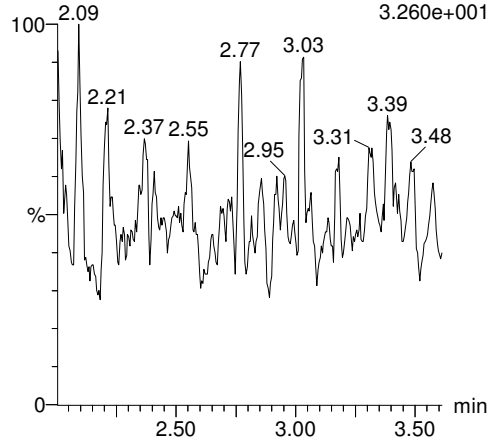
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-18.qld

Last Altered: Thursday, December 07, 2017 09:21:22 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:21:43 Pacific Standard Time

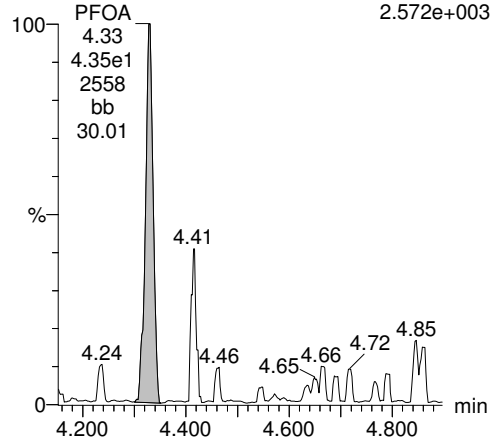
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_18, Date: 06-Dec-2017, Time: 15:10:54, ID: 1701795-02 CH-AT-1FB86-1117 0.26358, Description: CH-AT-1FB86-1117

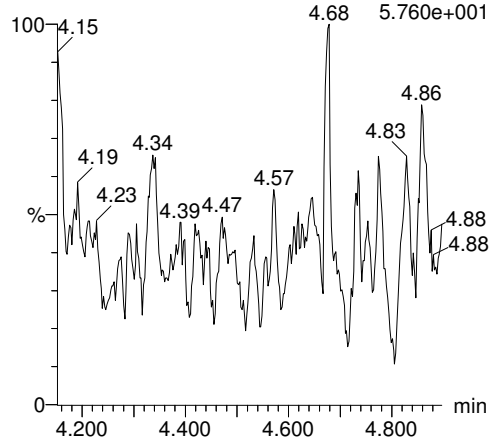
PFBS



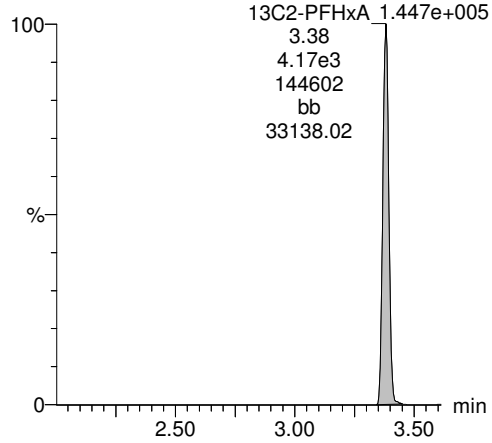
PFOA



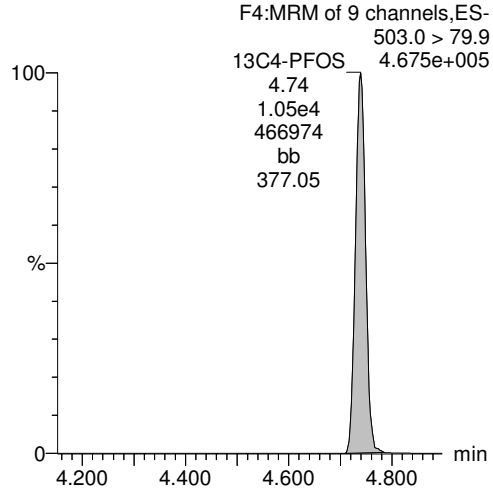
PFOS



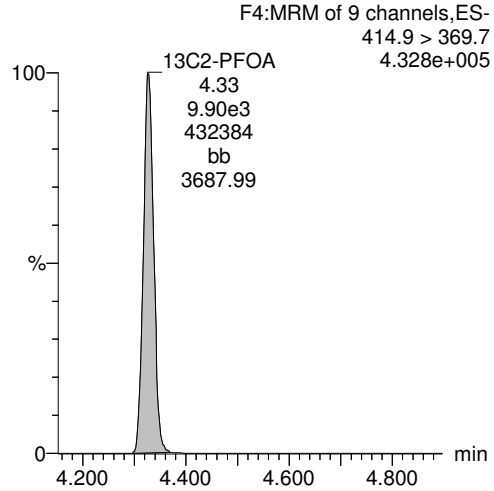
13C2-PFHxA



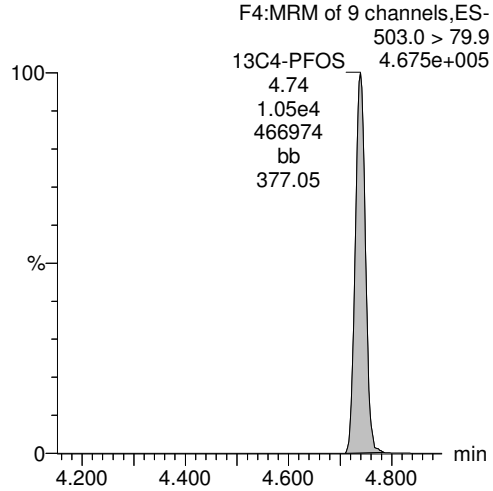
13C4-PFOS



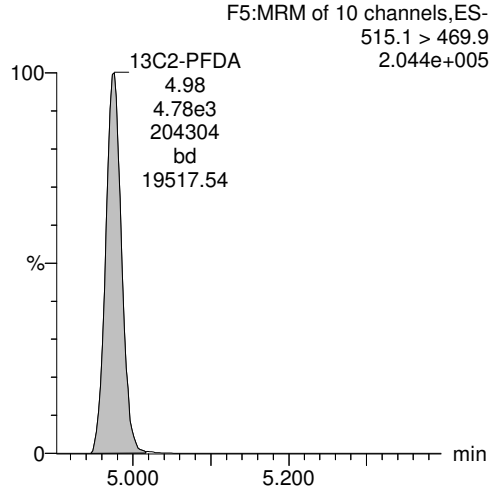
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-19.qld

Last Altered: Thursday, December 07, 2017 09:22:37 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:22:53 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_19, Date: 06-Dec-2017, Time: 15:23:22, ID: 1701795-03 CH-AT-1RW87-1117 0.26104, Description: CH-AT-1RW87-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.03e4		0.2610	3.04				
2	2	PFOA	413 > 368.7	6.04e1	9.69e3		0.2610	4.33	4.33	0.0623	0.308	
3	3	PFOS	499 >79.9	5.20e0	1.03e4		0.2610	4.74	4.74	0.0145	0.0414	
4	4	13C2-PFHxA	315 > 269.8	4.40e3	9.69e3	0.424	0.2610	3.39	3.38	4.54	41.0	107.1
5	5	13C2-PFDA	515.1 > 469.9	5.78e3	9.69e3	0.478	0.2610	4.96	4.97	5.96	47.8	124.7
6	6	13C2-PFOA	414.9 > 369.7	9.69e3	9.69e3	1.000	0.2610	4.41	4.33	10.0	38.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.03e4	1.03e4	1.000	0.2610	4.81	4.74	28.7	110	100.0

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Rev'd: MM 12/7/17

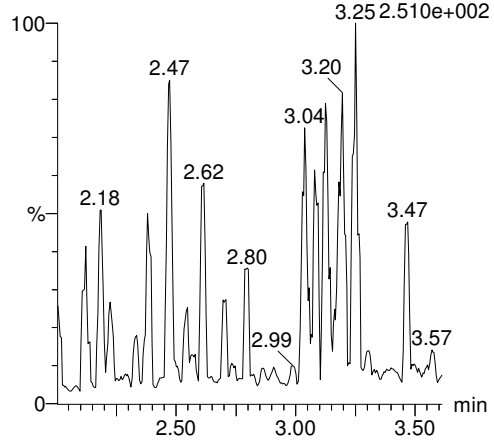
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-19.qld

Last Altered: Thursday, December 07, 2017 09:22:37 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:22:53 Pacific Standard Time

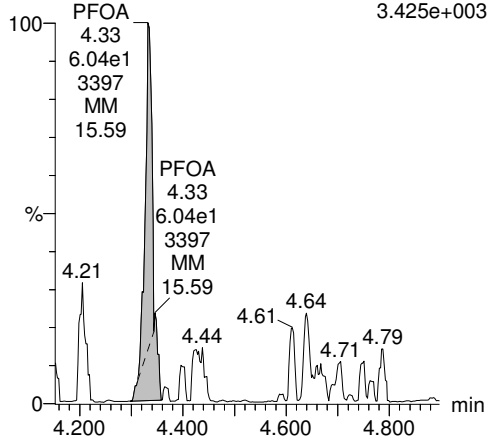
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_19, Date: 06-Dec-2017, Time: 15:23:22, ID: 1701795-03 CH-AT-1RW87-1117 0.26104, Description: CH-AT-1RW87-1117

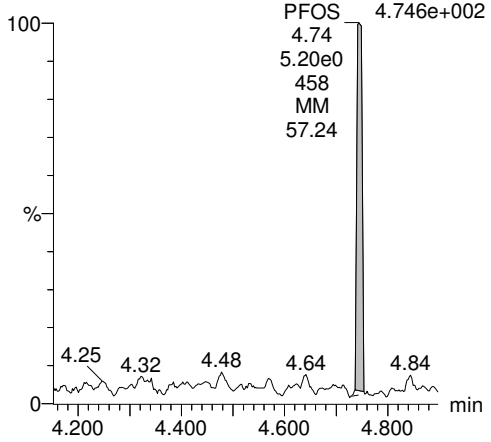
PFBS



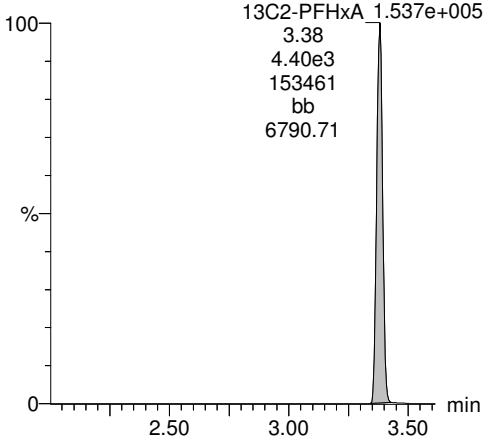
PFOA



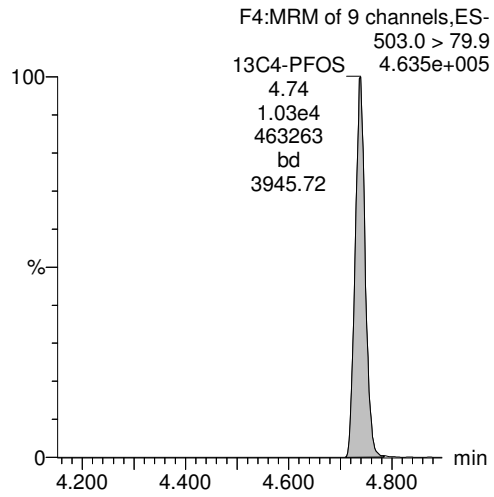
PFOS



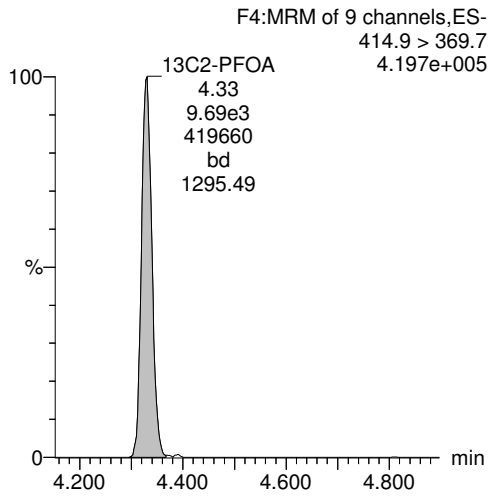
13C2-PFHxA



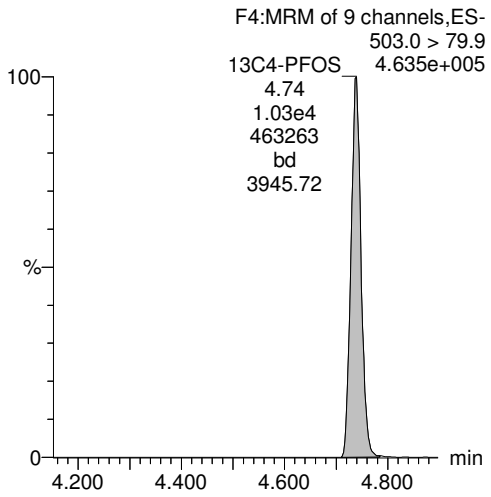
13C4-PFOS



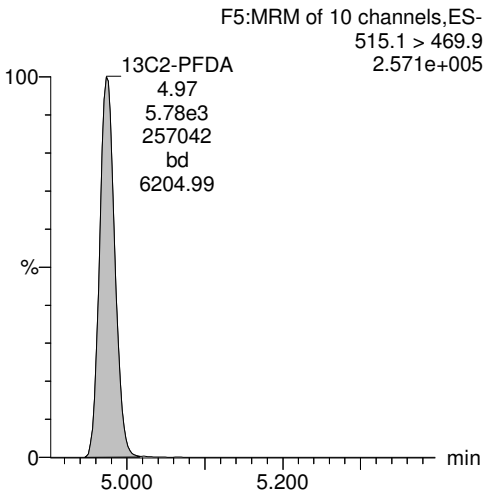
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-20.qld

Last Altered: Thursday, December 07, 2017 09:23:37 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:23:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_20, Date: 06-Dec-2017, Time: 15:35:50, ID: 1701795-04 CH-AT-1FB87-1117 0.26409, Description: CH-AT-1FB87-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.98e3		0.2641	3.04				
2	2	PFOA	413 > 368.7	5.32e1	8.20e3		0.2641	4.33	4.33	0.0649	0.318	
3	3	PFOS	499 >79.9	1.36e1	9.98e3		0.2641	4.74	4.74	0.0392	0.111	
4	4	13C2-PFHxA	315 > 269.8	3.99e3	8.20e3	0.424	0.2641	3.39	3.38	4.86	43.4	114.7
5	5	13C2-PFDA	515.1 > 469.9	4.81e3	8.20e3	0.478	0.2641	4.96	4.97	5.87	46.5	122.8
6	6	13C2-PFOA	414.9 > 369.7	8.20e3	8.20e3	1.000	0.2641	4.41	4.33	10.0	37.9	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.98e3	9.98e3	1.000	0.2641	4.81	4.74	28.7	109	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

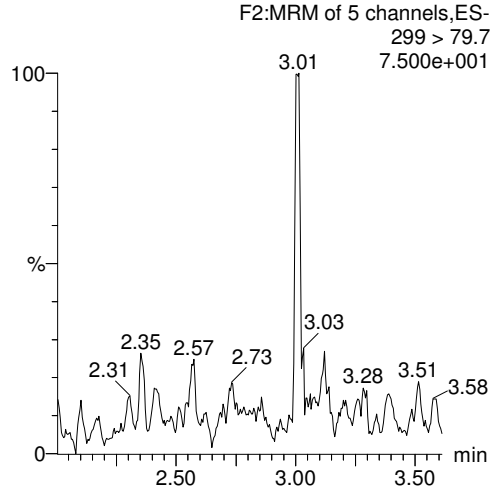
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-20.qld

Last Altered: Thursday, December 07, 2017 09:23:37 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:23:54 Pacific Standard Time

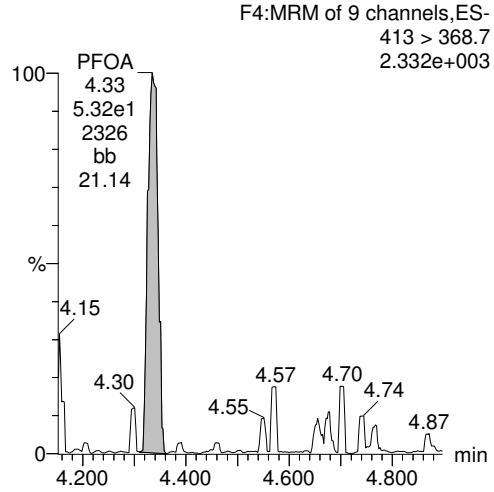
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_20, Date: 06-Dec-2017, Time: 15:35:50, ID: 1701795-04 CH-AT-1FB87-1117 0.26409, Description: CH-AT-1FB87-1117

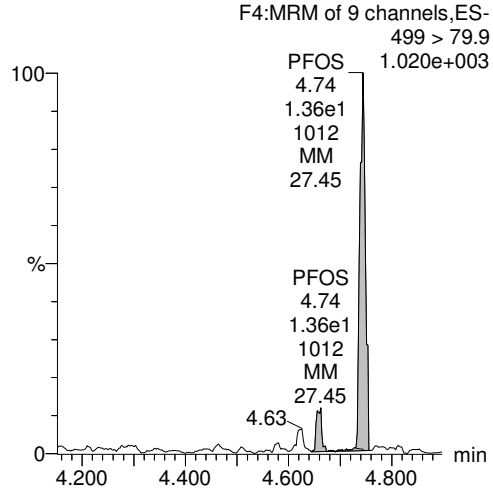
PFBS



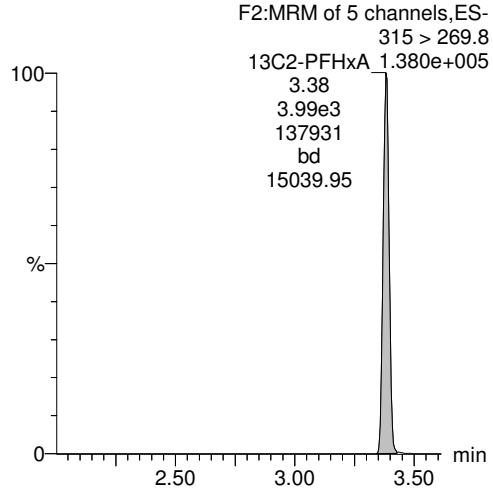
PFOA



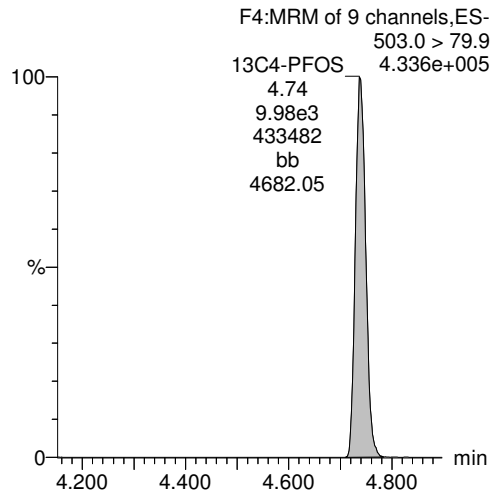
PFOS



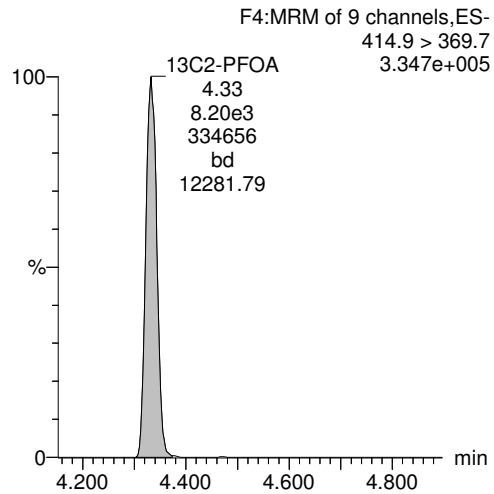
13C2-PFHxA



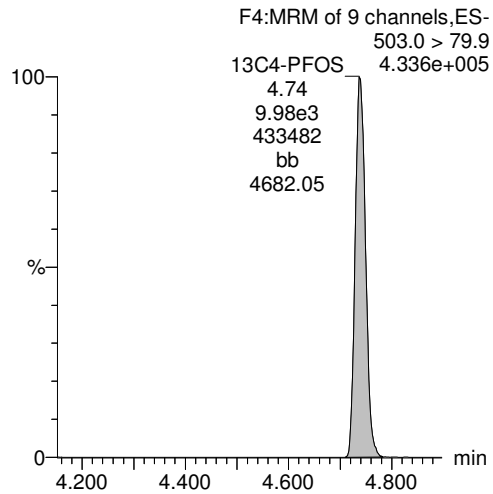
13C4-PFOS



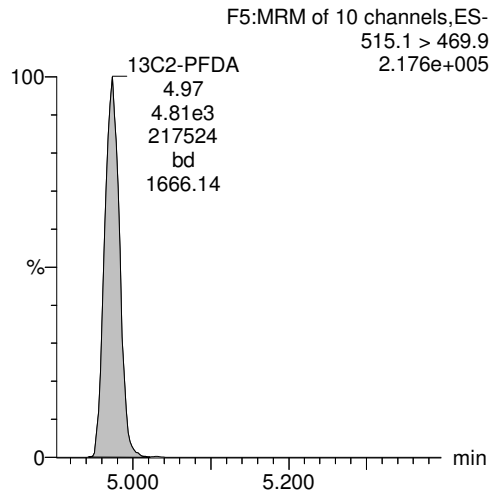
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-21.qld

Last Altered: Thursday, December 07, 2017 09:25:02 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:25:20 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_21, Date: 06-Dec-2017, Time: 15:48:14, ID: 1701795-05 CH-AT-1RW88-1117 0.25565, Description: CH-AT-1RW88-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.88e3		0.2556	3.04				
2	2	PFOA	413 > 368.7	5.72e1	8.45e3		0.2556	4.33	4.34	0.0677	0.342	
3	3	PFOS	499 >79.9	3.64e0	9.88e3		0.2556	4.74	4.74	0.0106	0.0308	
4	4	13C2-PFHxA	315 > 269.8	3.96e3	8.45e3	0.424	0.2556	3.39	3.39	4.69	43.3	110.6
5	5	13C2-PFDA	515.1 > 469.9	5.02e3	8.45e3	0.478	0.2556	4.96	4.97	5.94	48.6	124.3
6	6	13C2-PFOA	414.9 > 369.7	8.45e3	8.45e3	1.000	0.2556	4.41	4.33	10.0	39.1	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.88e3	9.88e3	1.000	0.2556	4.81	4.74	28.7	112	100.0

Vista Analytical Laboratory

Rev'd: MM 12/7/17

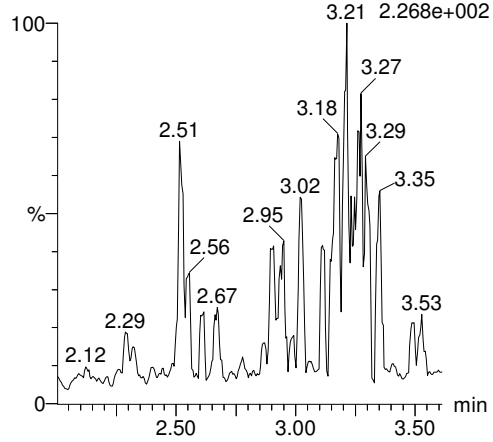
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-21.qld

Last Altered: Thursday, December 07, 2017 09:25:02 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:25:20 Pacific Standard Time

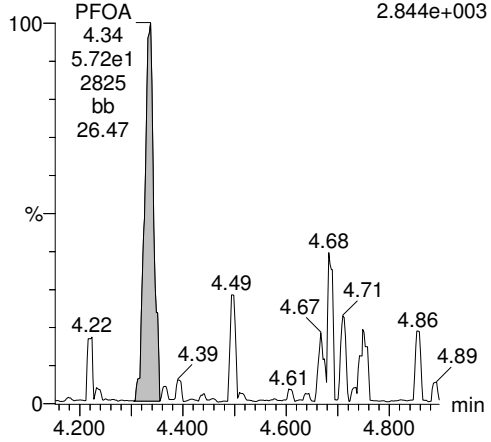
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_21, Date: 06-Dec-2017, Time: 15:48:14, ID: 1701795-05 CH-AT-1RW88-1117 0.25565, Description: CH-AT-1RW88-1117

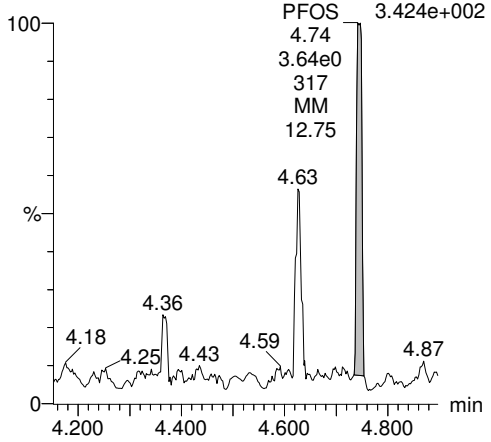
PFBS



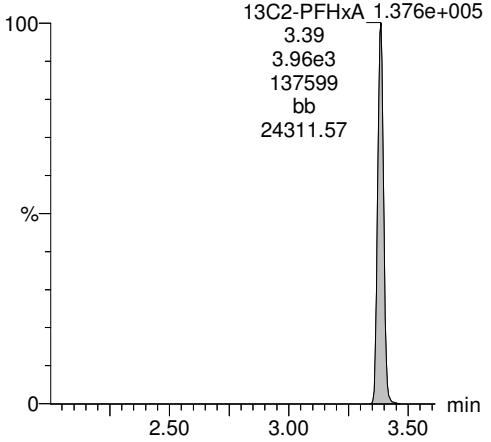
PFOA



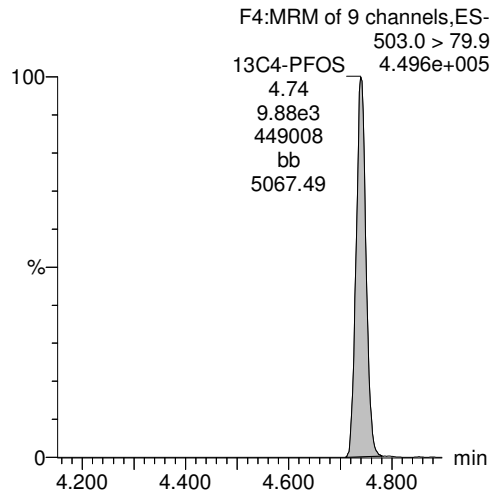
PFOS



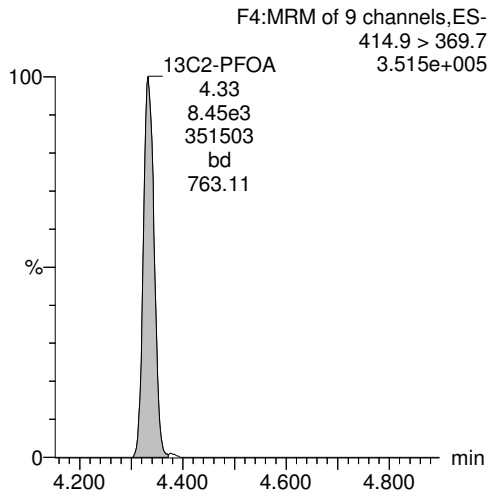
13C2-PFHxA



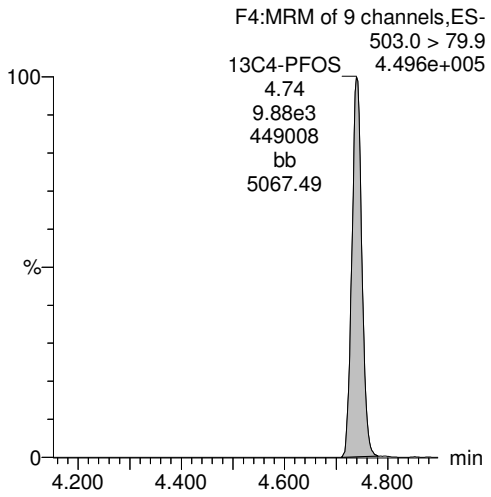
13C4-PFOS



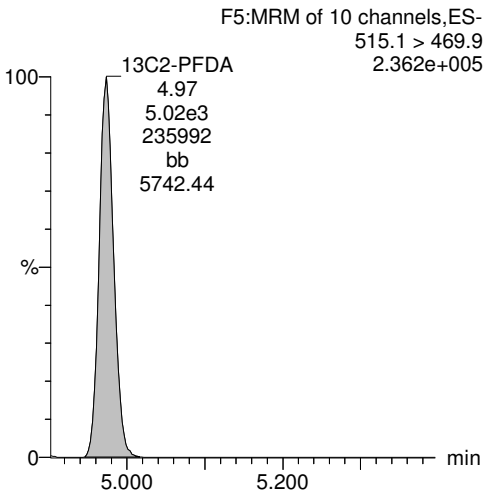
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-22.qld

Last Altered: Thursday, December 07, 2017 09:26:27 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:26:44 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_22, Date: 06-Dec-2017, Time: 16:00:39, ID: 1701795-06 CH-AT-1FB88-1117 0.26354, Description: CH-AT-1FB88-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.41e0	1.05e4		0.2635	3.04	3.02	0.00386	0.0151	
2	2	PFOA	413 > 368.7	8.57e1	9.30e3		0.2635	4.33	4.33	0.0921	0.452	
3	3	PFOS	499 >79.9	2.57e1	1.05e4		0.2635	4.74	4.74	0.0702	0.198	
4	4	13C2-PFHxA	315 > 269.8	3.97e3	9.30e3	0.424	0.2635	3.39	3.38	4.26	38.2	100.6
5	5	13C2-PFDA	515.1 > 469.9	5.17e3	9.30e3	0.478	0.2635	4.96	4.98	5.56	44.1	116.2
6	6	13C2-PFOA	414.9 > 369.7	9.30e3	9.30e3	1.000	0.2635	4.41	4.33	10.0	37.9	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2635	4.81	4.74	28.7	109	100.0

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Rev'd: MM 12/7/17

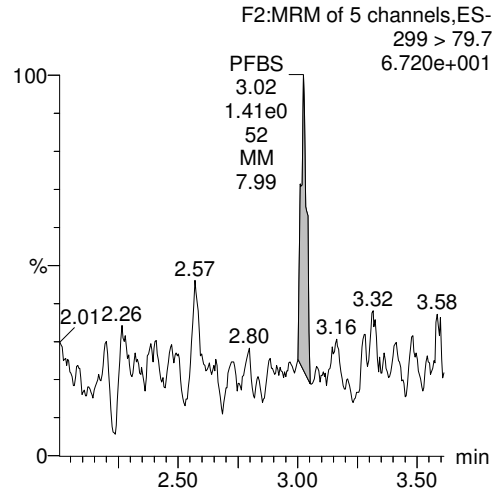
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-22.qld

Last Altered: Thursday, December 07, 2017 09:26:27 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:26:44 Pacific Standard Time

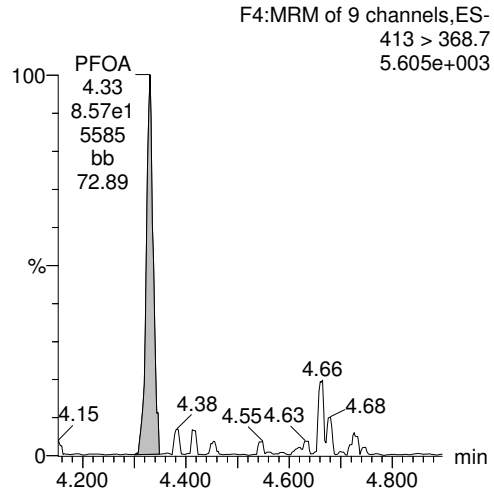
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_22, Date: 06-Dec-2017, Time: 16:00:39, ID: 1701795-06 CH-AT-1FB88-1117 0.26354, Description: CH-AT-1FB88-1117

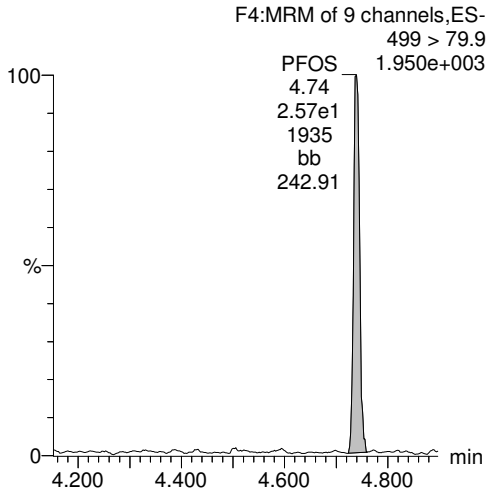
PFBS



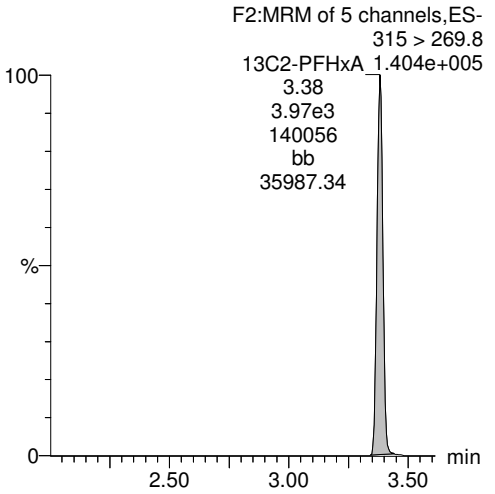
PFOA



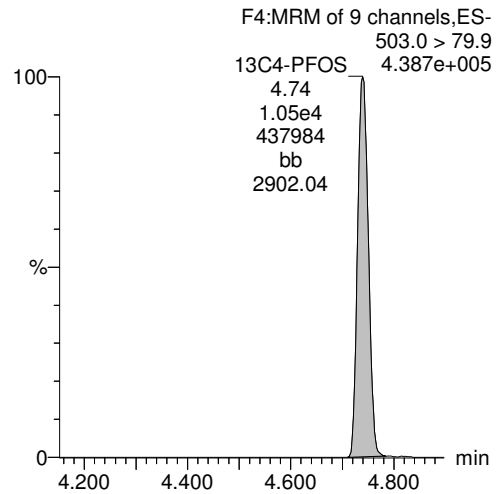
PFOS



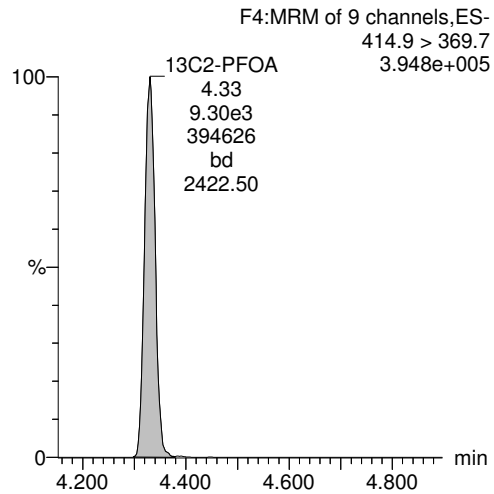
13C2-PFHxA



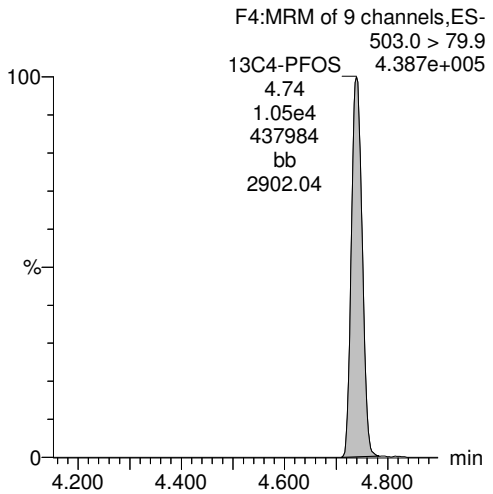
13C4-PFOS



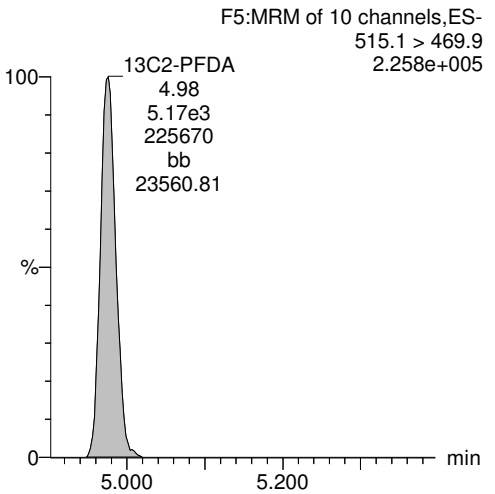
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-23.qld

Last Altered: Thursday, December 07, 2017 11:15:43 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:16:20 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_23, Date: 06-Dec-2017, Time: 16:13:04, ID: 1701795-07 CH-AT-1RW89-1117 0.24807, Description: CH-AT-1RW89-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.45e-1	1.09e4		0.2481	3.04	3.23	0.000381	0.00158	
2	2	PFOA	413 > 368.7	9.30e1	9.72e3		0.2481	4.33	4.34	0.0957	0.498	
3	3	PFOS	499 >79.9	2.17e1	1.09e4		0.2481	4.74	4.74	0.0571	0.171	
4	4	13C2-PFHxA	315 > 269.8	4.07e3	9.72e3	0.424	0.2481	3.39	3.38	4.19	39.8	98.8
5	5	13C2-PFDA	515.1 > 469.9	4.96e3	9.72e3	0.478	0.2481	4.96	4.98	5.11	43.1	106.8
6	6	13C2-PFOA	414.9 > 369.7	9.72e3	9.72e3	1.000	0.2481	4.41	4.33	10.0	40.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.09e4	1.09e4	1.000	0.2481	4.81	4.74	28.7	116	100.0

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Rev'd: MM 12/7/17

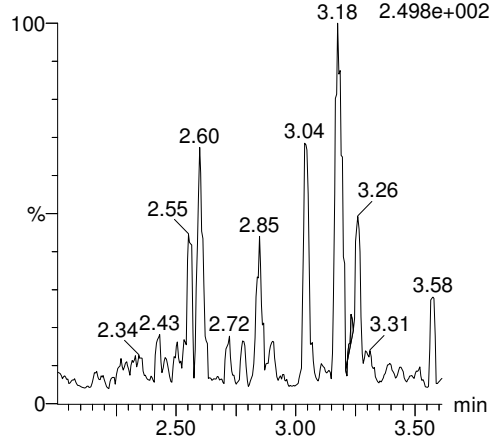
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-23.qld

Last Altered: Thursday, December 07, 2017 11:15:43 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:16:20 Pacific Standard Time

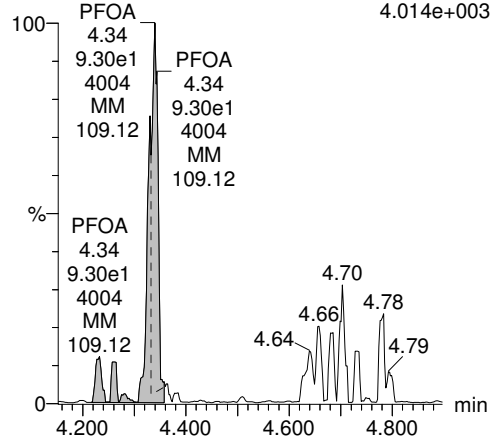
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_23, Date: 06-Dec-2017, Time: 16:13:04, ID: 1701795-07 CH-AT-1RW89-1117 0.24807, Description: CH-AT-1RW89-1117

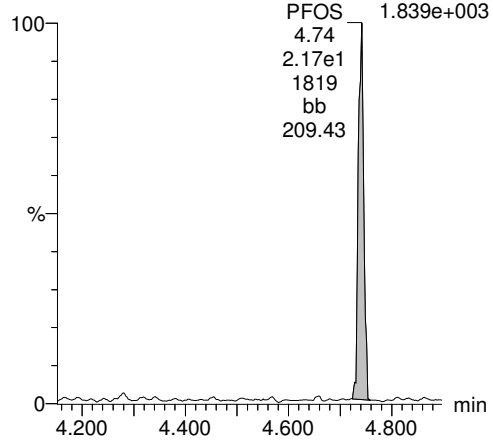
PFBS



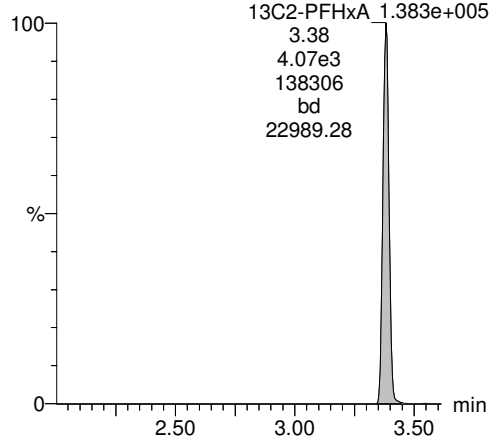
PFOA



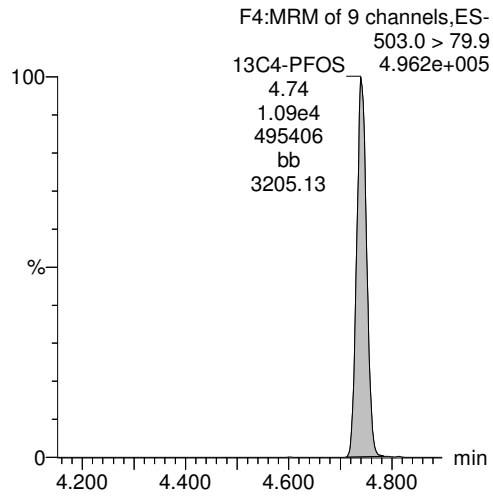
PFOS



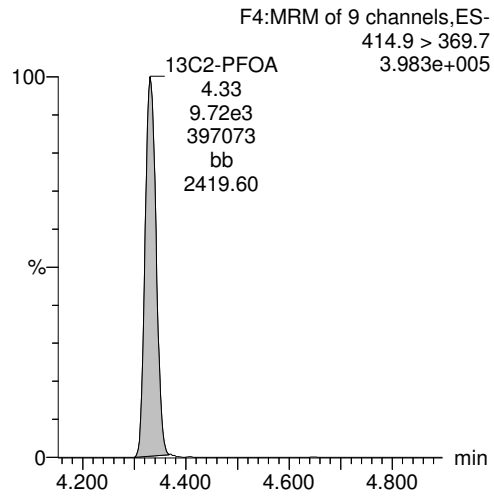
13C2-PFHxA



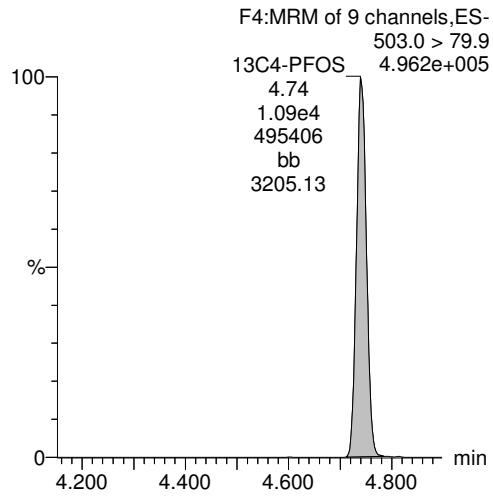
13C4-PFOS



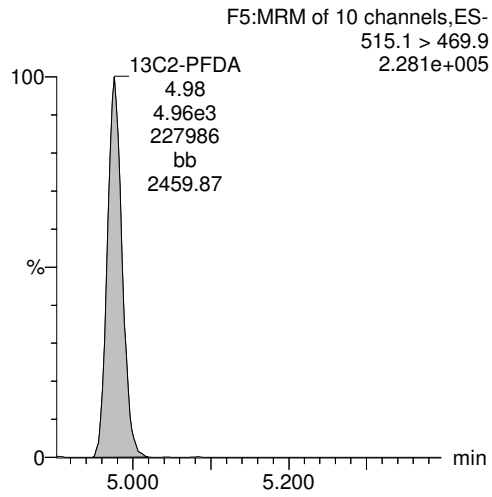
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-24.qld

Last Altered: Thursday, December 07, 2017 11:11:22 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:12:15 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_24, Date: 06-Dec-2017, Time: 16:25:30, ID: 1701795-08 CH-AT-1FB89-1117 0.26316, Description: CH-AT-1FB89-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.06e4		0.2632	3.04				
2	2	PFOA	413 > 368.7	8.80e1	9.22e3		0.2632	4.33	4.33	0.0955	0.469	
3	3	PFOS	499 >79.9	1.27e1	1.06e4		0.2632	4.74	4.62	0.0344	0.0974	
4	4	13C2-PFHxA	315 > 269.8	4.09e3	9.22e3	0.424	0.2632	3.39	3.38	4.44	39.8	104.7
5	5	13C2-PFDA	515.1 > 469.9	5.01e3	9.22e3	0.478	0.2632	4.96	4.98	5.43	43.2	113.6
6	6	13C2-PFOA	414.9 > 369.7	9.22e3	9.22e3	1.000	0.2632	4.41	4.33	10.0	38.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2632	4.81	4.74	28.7	109	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

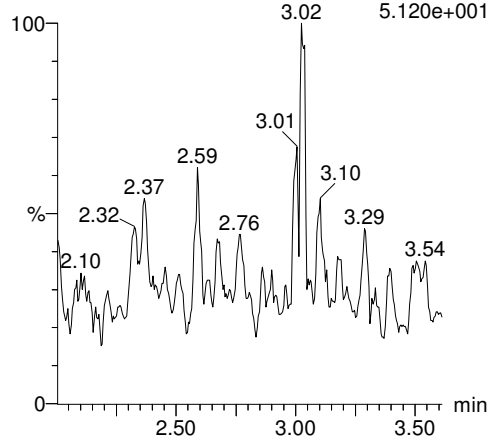
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-24.qld

Last Altered: Thursday, December 07, 2017 11:11:22 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:12:15 Pacific Standard Time

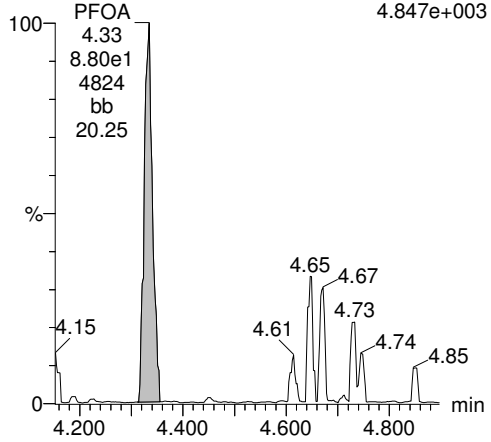
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_24, Date: 06-Dec-2017, Time: 16:25:30, ID: 1701795-08 CH-AT-1FB89-1117 0.26316, Description: CH-AT-1FB89-1117

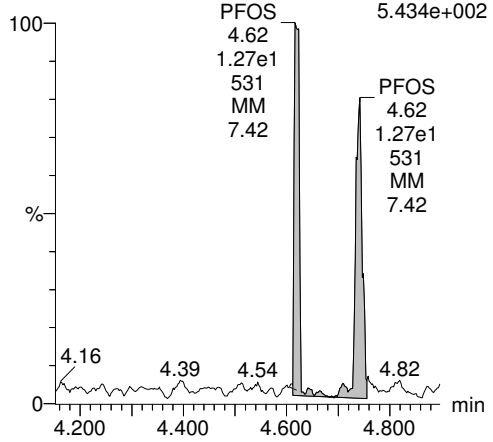
PFBS



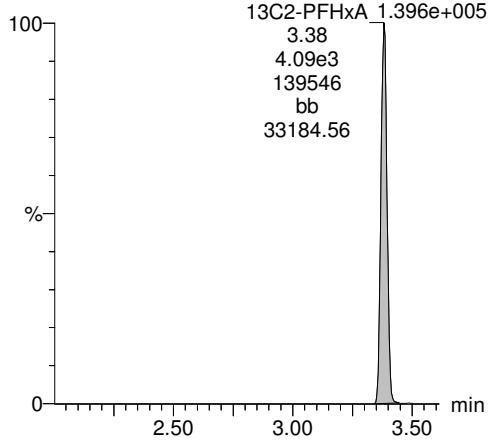
PFOA



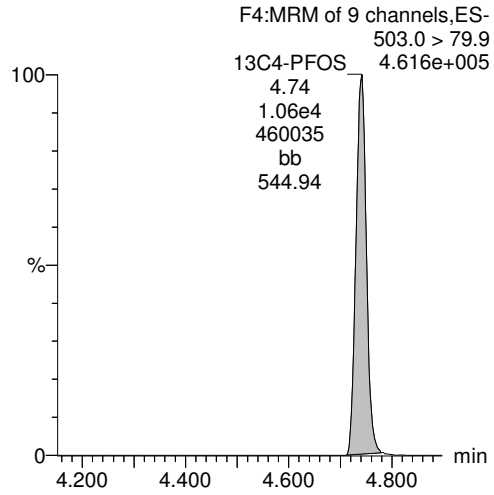
PFOS



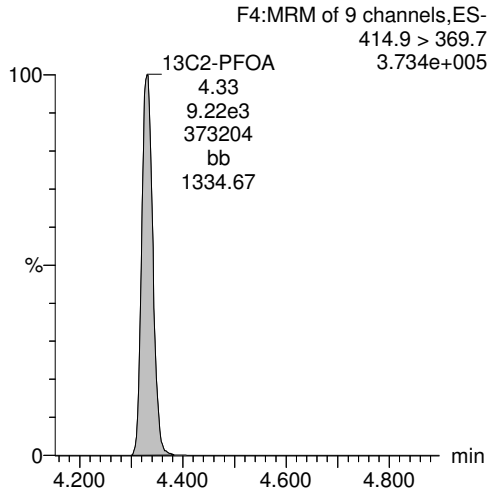
13C2-PFHxA



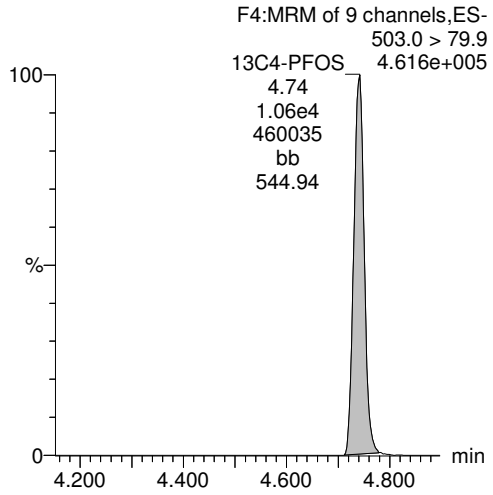
13C4-PFOS



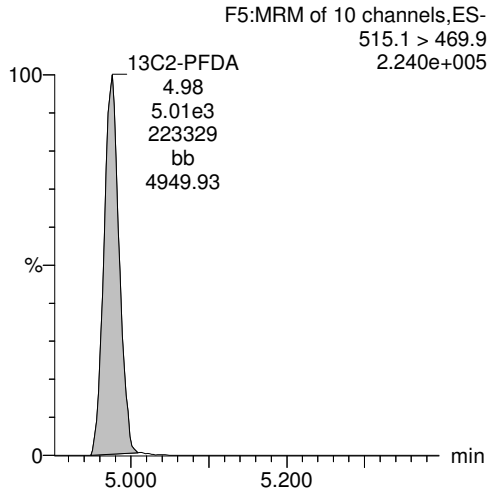
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-25.qld

Last Altered: Thursday, December 07, 2017 09:29:53 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:30:08 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_25, Date: 06-Dec-2017, Time: 16:37:56, ID: 1701795-09 CH-AT-1RW90-1117 0.25102, Description: CH-AT-1RW90-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.01e4		0.2510	3.04				
2	2	PFOA	413 > 368.7	1.04e2	1.02e4		0.2510	4.33	4.33	0.102	0.527	
3	3	PFOS	499 >79.9	3.13e0	1.01e4		0.2510	4.74	4.74	0.00891	0.0264	
4	4	13C2-PFHxA	315 > 269.8	4.16e3	1.02e4	0.424	0.2510	3.39	3.38	4.08	38.4	96.3
5	5	13C2-PFDA	515.1 > 469.9	5.15e3	1.02e4	0.478	0.2510	4.96	4.97	5.06	42.1	105.8
6	6	13C2-PFOA	414.9 > 369.7	1.02e4	1.02e4	1.000	0.2510	4.41	4.33	10.0	39.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2510	4.81	4.74	28.7	114	100.0

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Rev'd: MM 12/7/17

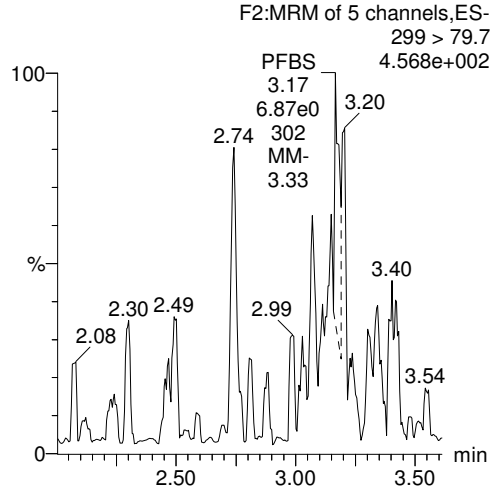
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-25.qld

Last Altered: Thursday, December 07, 2017 09:29:53 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:30:08 Pacific Standard Time

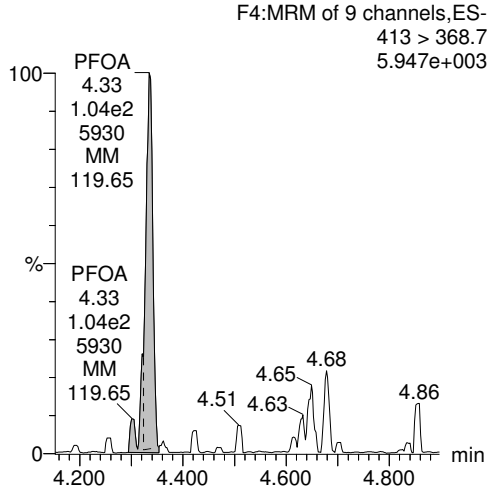
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_25, Date: 06-Dec-2017, Time: 16:37:56, ID: 1701795-09 CH-AT-1RW90-1117 0.25102, Description: CH-AT-1RW90-1117

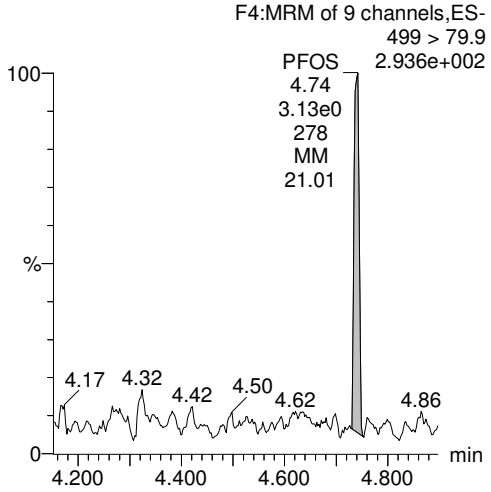
PFBS



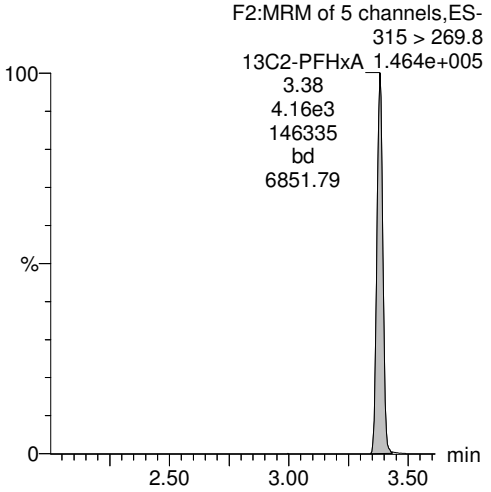
PFOA



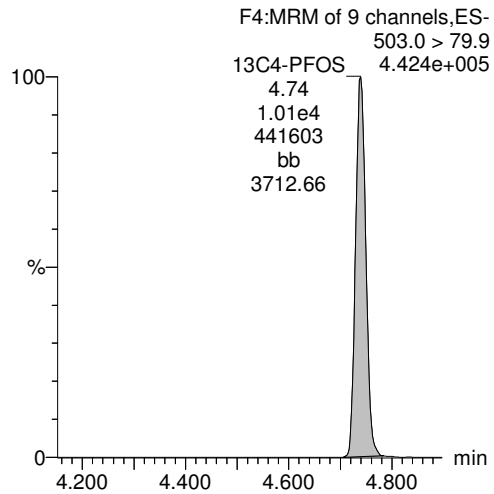
PFOS



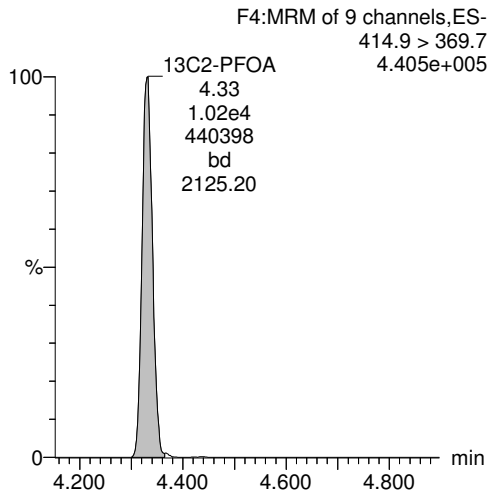
13C2-PFHxA



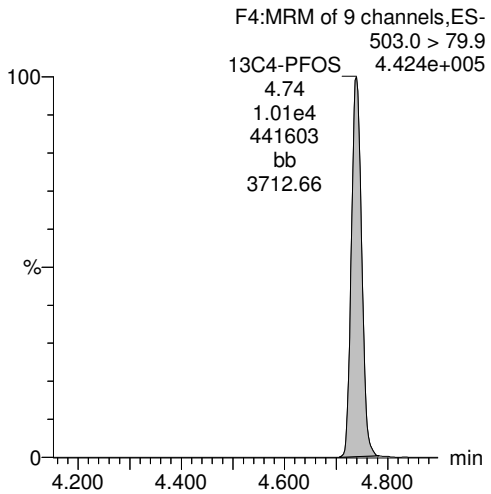
13C4-PFOS



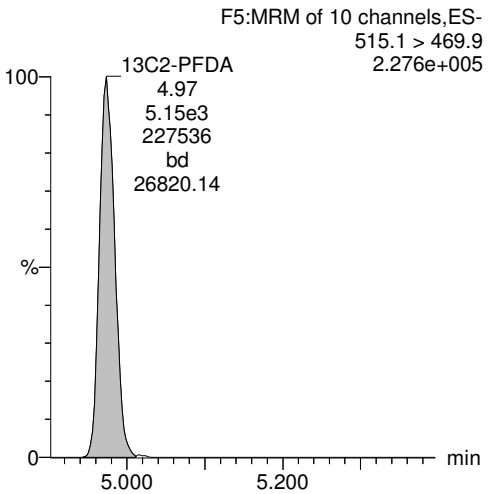
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-26.qld

Last Altered: Thursday, December 07, 2017 11:13:00 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:13:18 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_26, Date: 06-Dec-2017, Time: 16:50:22, ID: 1701795-10 CH-AT-1FB90-1117 0.26399, Description: CH-AT-1FB90-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.97e3		0.2640	3.04				
2	2	PFOA	413 > 368.7	8.38e1	9.77e3		0.2640	4.33	4.33	0.0857	0.420	
3	3	PFOS	499 >79.9	5.35e0	9.97e3		0.2640	4.74	4.62	0.0154	0.0434	
4	4	13C2-PFHxA	315 > 269.8	4.05e3	9.77e3	0.424	0.2640	3.39	3.38	4.14	37.0	97.8
5	5	13C2-PFDA	515.1 > 469.9	5.27e3	9.77e3	0.478	0.2640	4.96	4.98	5.39	42.7	112.8
6	6	13C2-PFOA	414.9 > 369.7	9.77e3	9.77e3	1.000	0.2640	4.41	4.33	10.0	37.9	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.97e3	9.97e3	1.000	0.2640	4.81	4.74	28.7	109	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

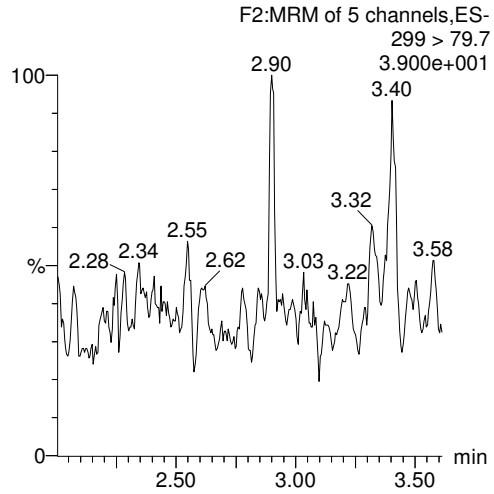
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-26.qld

Last Altered: Thursday, December 07, 2017 11:13:00 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:13:18 Pacific Standard Time

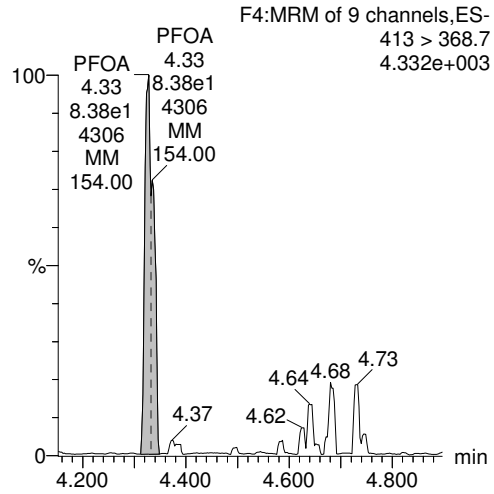
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_26, Date: 06-Dec-2017, Time: 16:50:22, ID: 1701795-10 CH-AT-1FB90-1117 0.26399, Description: CH-AT-1FB90-1117

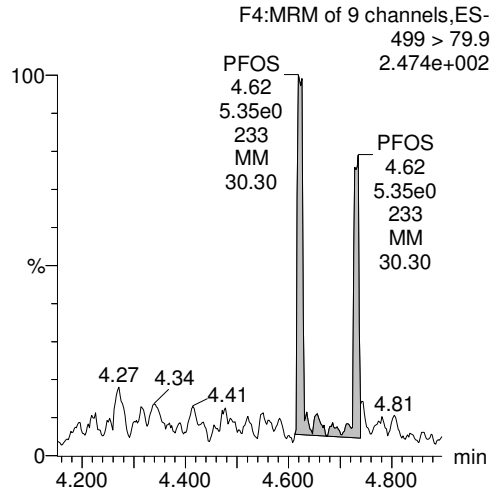
PFBS



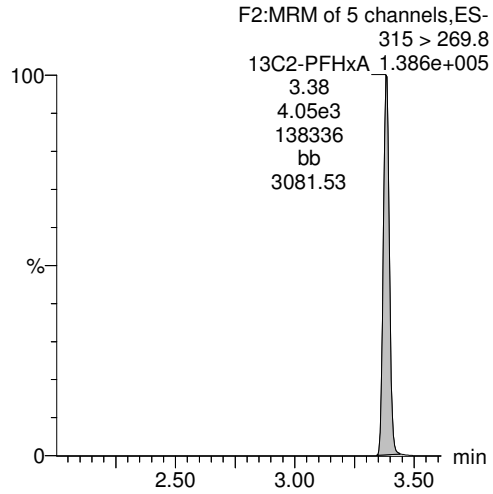
PFOA



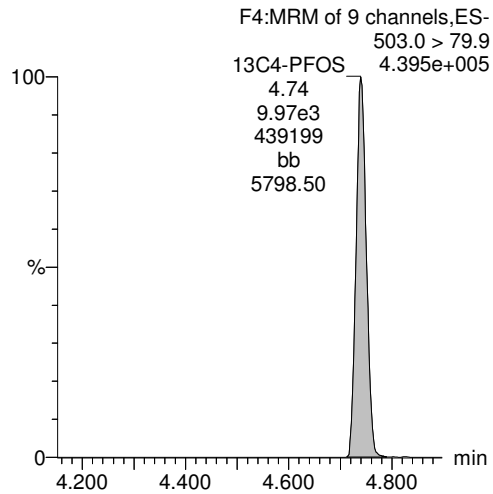
PFOS



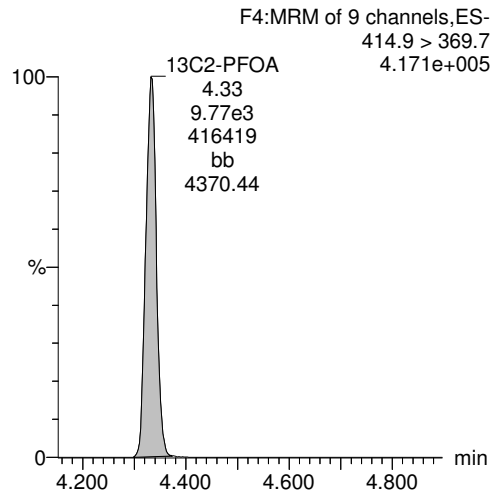
13C2-PFHxA



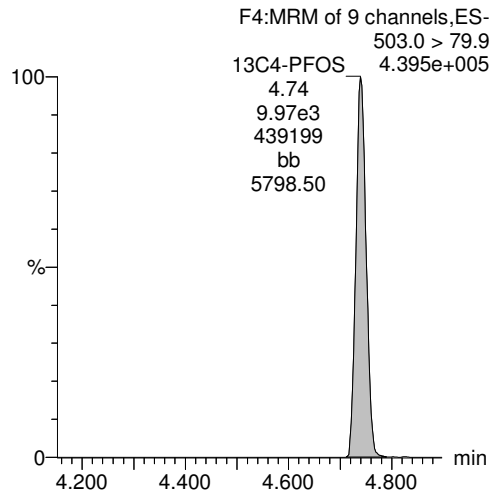
13C4-PFOS



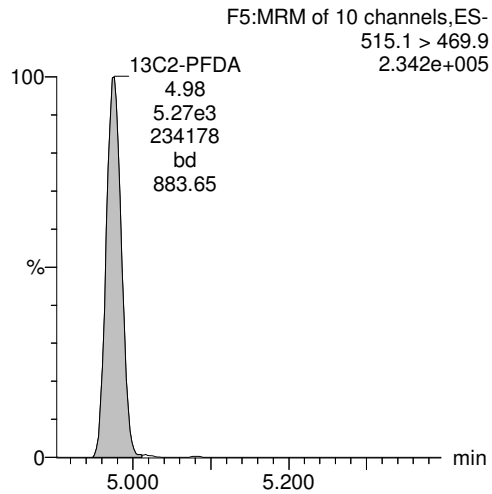
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-27.qld

Last Altered: Thursday, December 07, 2017 09:34:46 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:37:47 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_27, Date: 06-Dec-2017, Time: 17:02:49, ID: 1701795-11 CH-AT-1RW91-1117 0.25214, Description: CH-AT-1RW91-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.02e4		0.2521	3.04				
2	2	PFOA	413 > 368.7	3.51e1	9.77e3		0.2521	4.33	4.33	0.0359	0.184	
3	3	PFOS	499 >79.9		1.02e4		0.2521	4.74				
4	4	13C2-PFHxA	315 > 269.8	3.87e3	9.77e3	0.424	0.2521	3.39	3.38	3.97	37.1	93.6
5	5	13C2-PFDA	515.1 > 469.9	4.78e3	9.77e3	0.478	0.2521	4.96	4.97	4.89	40.6	102.4
6	6	13C2-PFOA	414.9 > 369.7	9.77e3	9.77e3	1.000	0.2521	4.41	4.33	10.0	39.7	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	0.2521	4.81	4.74	28.7	114	100.0

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Rev'd: MM 12/7/17

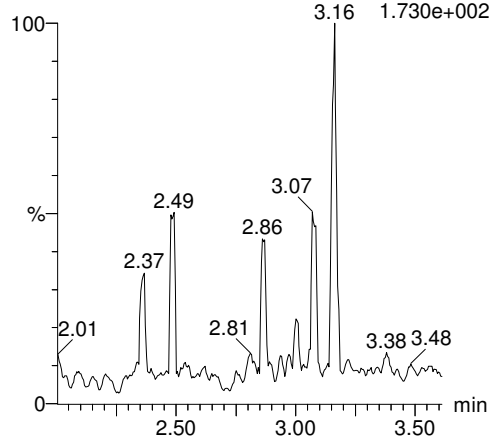
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-27.qld

Last Altered: Thursday, December 07, 2017 09:34:46 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:37:47 Pacific Standard Time

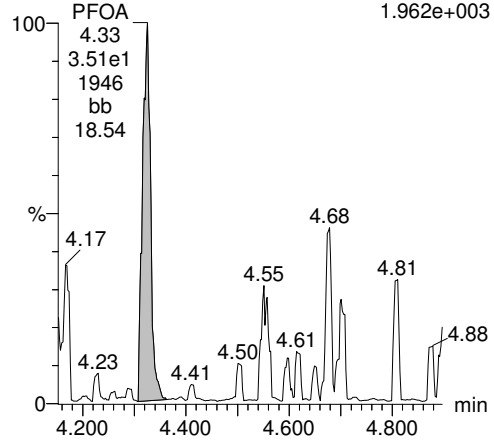
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_27, Date: 06-Dec-2017, Time: 17:02:49, ID: 1701795-11 CH-AT-1RW91-1117 0.25214, Description: CH-AT-1RW91-1117

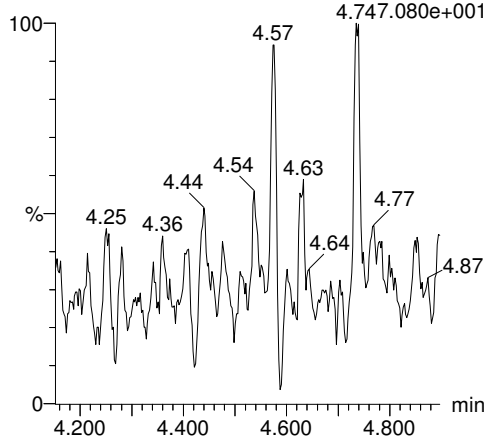
PFBS



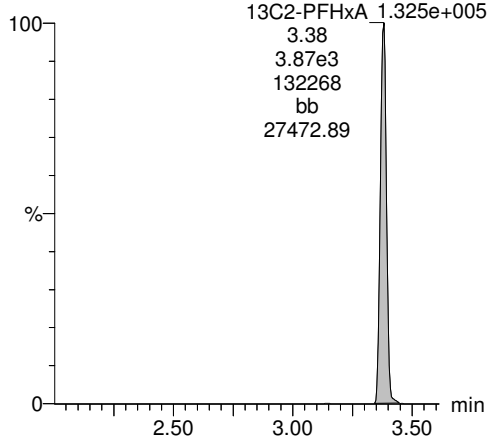
PFOA



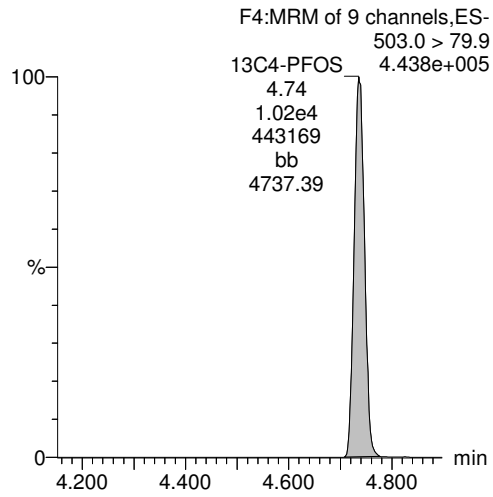
PFOS



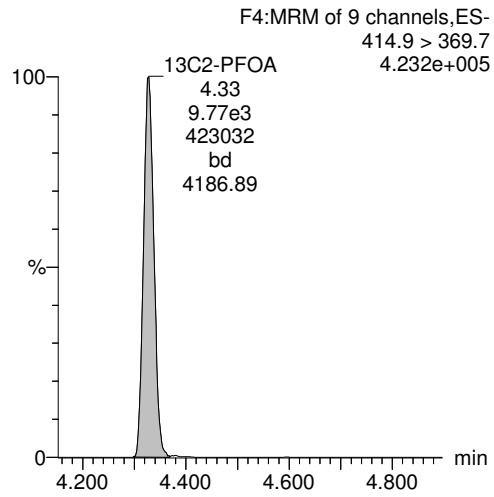
13C2-PFHxA



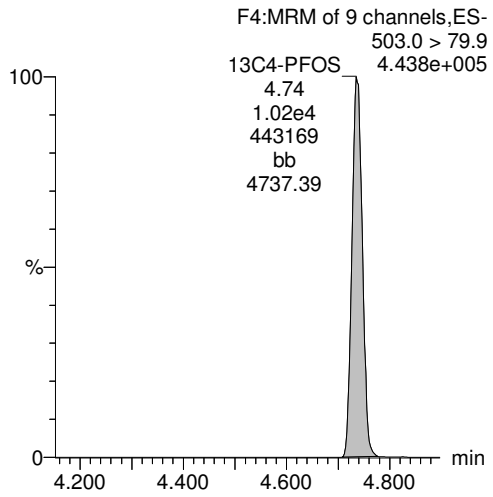
13C4-PFOS



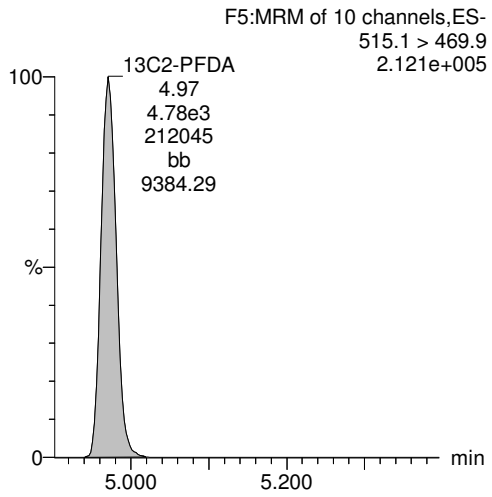
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-28.qld

Last Altered: Thursday, December 07, 2017 11:17:10 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:17:40 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_28, Date: 06-Dec-2017, Time: 17:15:16, ID: 1701795-12 CH-AT-1FB91-1117 0.24607, Description: CH-AT-1FB91-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	2.74e0	1.03e4		0.2461	3.04	3.00	0.00766	0.0320	
2	2	PFOA	413 > 368.7	5.38e1	1.03e4		0.2461	4.33	4.33	0.0521	0.274	
3	3	PFOS	499 >79.9		1.03e4		0.2461	4.74				
4	4	13C2-PFHxA	315 > 269.8	3.85e3	1.03e4	0.424	0.2461	3.39	3.38	3.73	35.7	88.0
5	5	13C2-PFDA	515.1 > 469.9	4.98e3	1.03e4	0.478	0.2461	4.96	4.97	4.82	41.0	100.8
6	6	13C2-PFOA	414.9 > 369.7	1.03e4	1.03e4	1.000	0.2461	4.41	4.33	10.0	40.6	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.03e4	1.03e4	1.000	0.2461	4.81	4.74	28.7	117	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

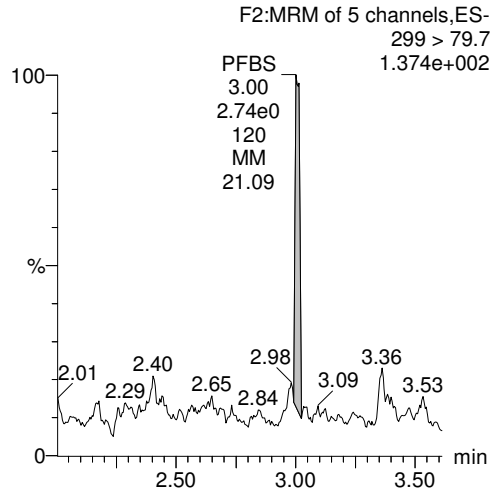
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-28.qld

Last Altered: Thursday, December 07, 2017 11:17:10 Pacific Standard Time
Printed: Thursday, December 07, 2017 11:17:40 Pacific Standard Time

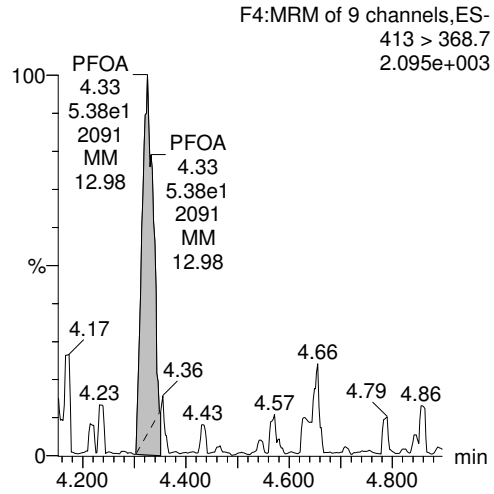
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_28, Date: 06-Dec-2017, Time: 17:15:16, ID: 1701795-12 CH-AT-1FB91-1117 0.24607, Description: CH-AT-1FB91-1117

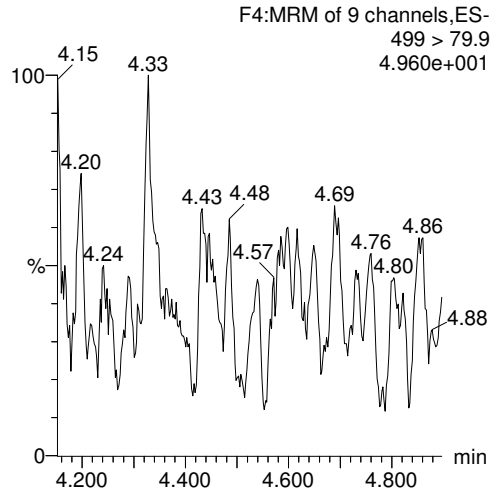
PFBS



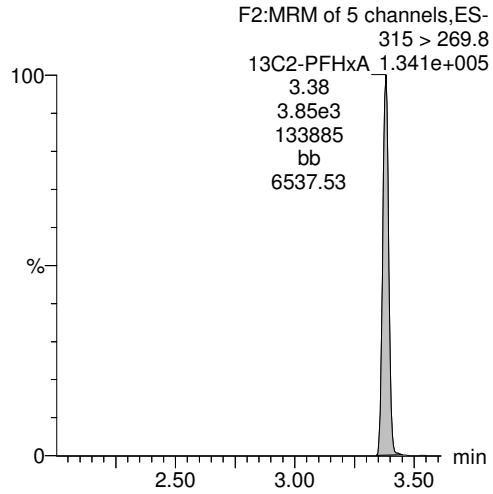
PFOA



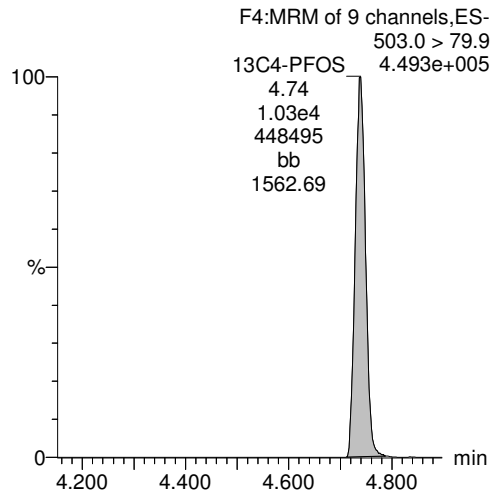
PFOS



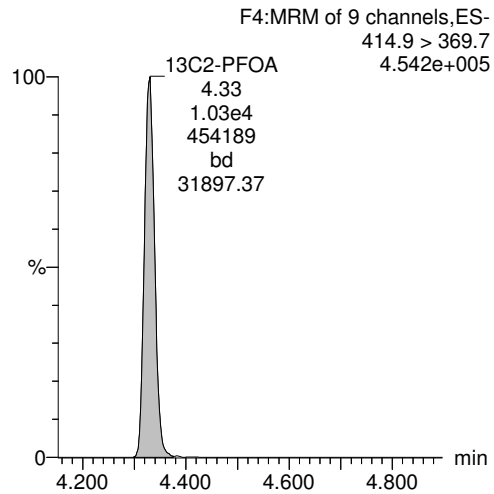
13C2-PFHxA



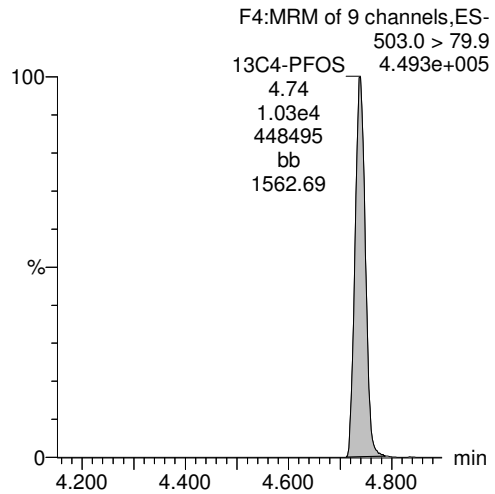
13C4-PFOS



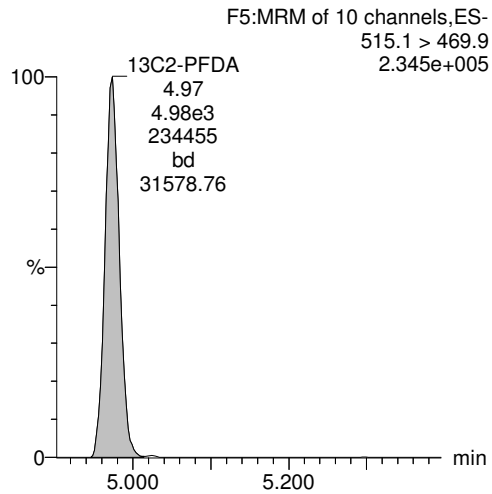
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-29.qld

Last Altered: Thursday, December 07, 2017 09:59:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:00:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_29, Date: 06-Dec-2017, Time: 17:27:39, ID: 1701795-13 CH-AT-1RW92-1117 0.23957, Description: CH-AT-1RW92-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2396	3.04				
2	2	PFOA	413 > 368.7	9.07e1	9.81e3		0.2396	4.33	4.33	0.0925	0.499	
3	3	PFOS	499 >79.9	3.68e0	1.05e4		0.2396	4.74	4.73	0.0100	0.0311	
4	4	13C2-PFHxA	315 > 269.8	3.97e3	9.81e3	0.424	0.2396	3.39	3.38	4.05	39.9	95.5
5	5	13C2-PFDA	515.1 > 469.9	5.00e3	9.81e3	0.478	0.2396	4.96	4.97	5.10	44.5	106.6
6	6	13C2-PFOA	414.9 > 369.7	9.81e3	9.81e3	1.000	0.2396	4.41	4.33	10.0	41.7	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2396	4.81	4.74	28.7	120	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

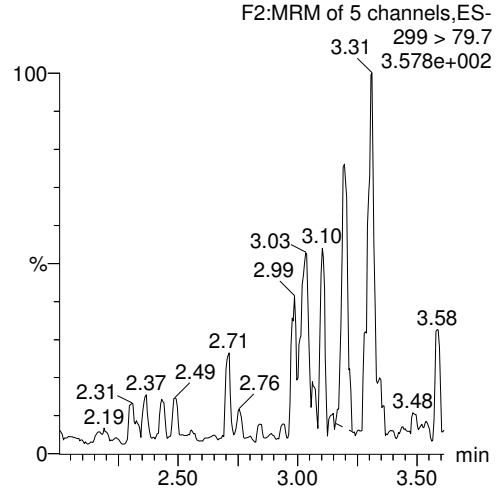
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-29.qld

Last Altered: Thursday, December 07, 2017 09:59:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:00:11 Pacific Standard Time

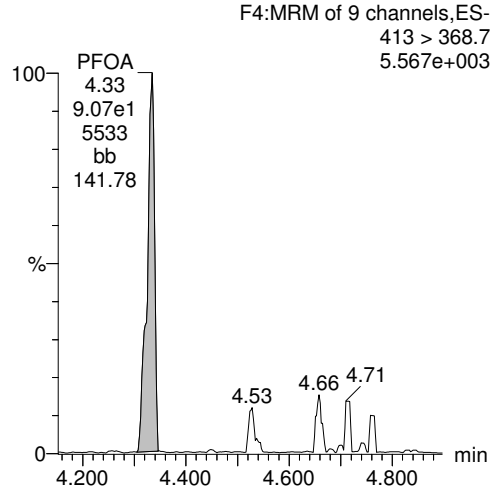
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_29, Date: 06-Dec-2017, Time: 17:27:39, ID: 1701795-13 CH-AT-1RW92-1117 0.23957, Description: CH-AT-1RW92-1117

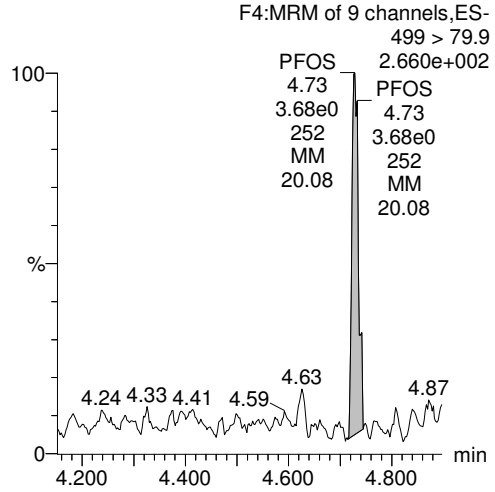
PFBS



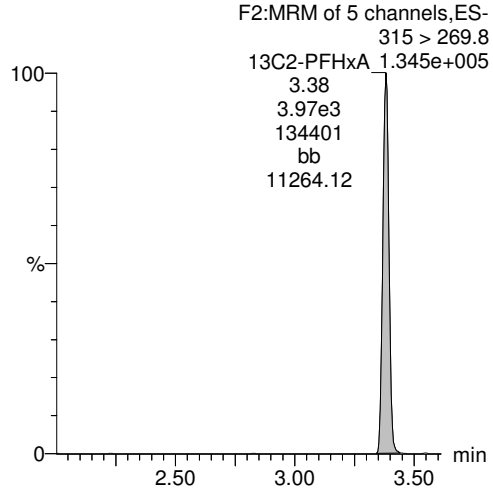
PFOA



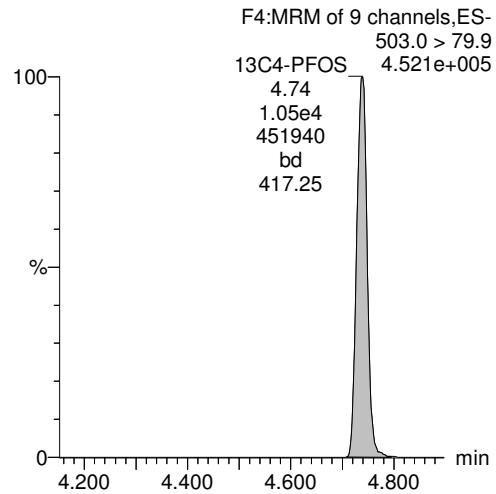
PFOS



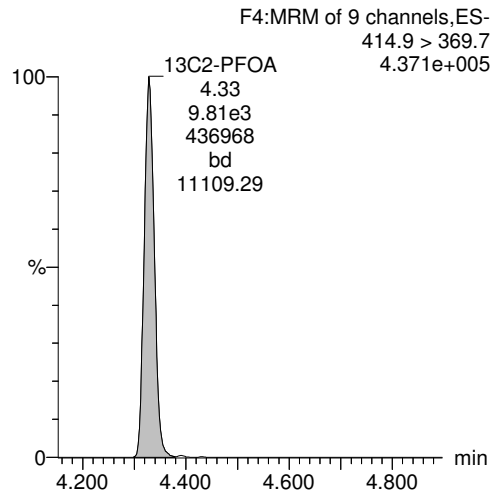
13C2-PFHxA



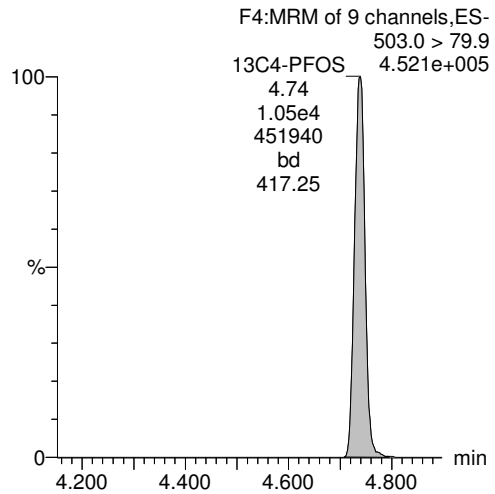
13C4-PFOS



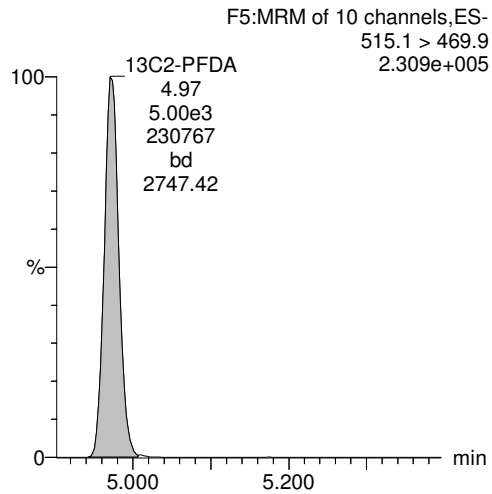
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-30.qld

Last Altered: Thursday, December 07, 2017 10:02:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:02:37 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_30, Date: 06-Dec-2017, Time: 17:40:05, ID: 1701795-14 CH-AT-1FB92-1117 0.26182, Description: CH-AT-1FB92-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.12e4		0.2618	3.04				
2	2	PFOA	413 > 368.7	6.53e1	1.00e4		0.2618	4.33	4.34	0.0650	0.321	
3	3	PFOS	499 >79.9	1.84e1	1.12e4		0.2618	4.74	4.74	0.0474	0.135	
4	4	13C2-PFHxA	315 > 269.8	3.90e3	1.00e4	0.424	0.2618	3.39	3.38	3.88	35.0	91.6
5	5	13C2-PFDA	515.1 > 469.9	4.79e3	1.00e4	0.478	0.2618	4.96	4.97	4.77	38.1	99.8
6	6	13C2-PFOA	414.9 > 369.7	1.00e4	1.00e4	1.000	0.2618	4.41	4.33	10.0	38.2	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	0.2618	4.81	4.74	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

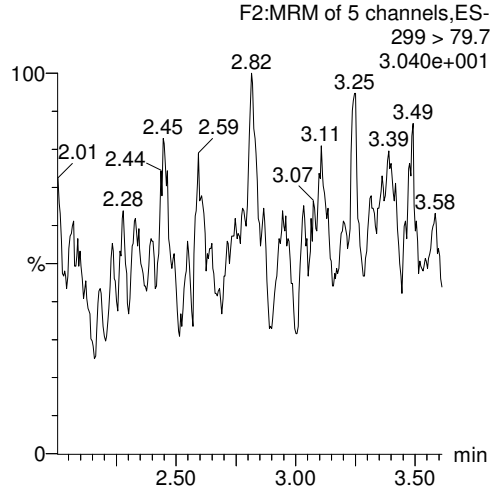
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-30.qld

Last Altered: Thursday, December 07, 2017 10:02:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:02:37 Pacific Standard Time

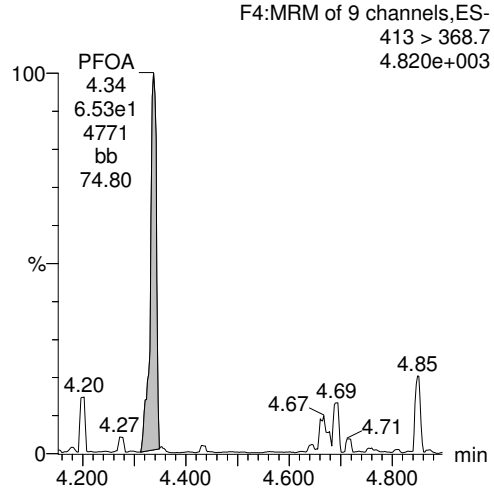
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_30, Date: 06-Dec-2017, Time: 17:40:05, ID: 1701795-14 CH-AT-1FB92-1117 0.26182, Description: CH-AT-1FB92-1117

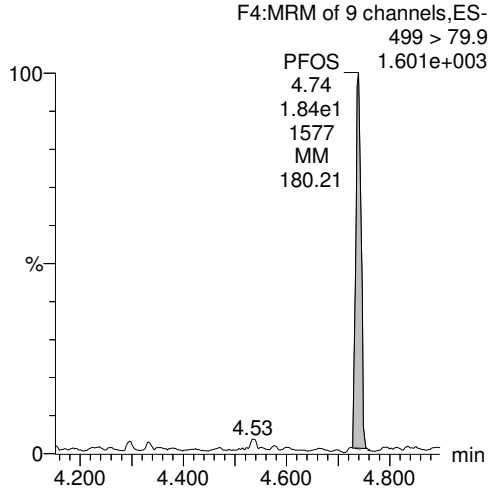
PFBS



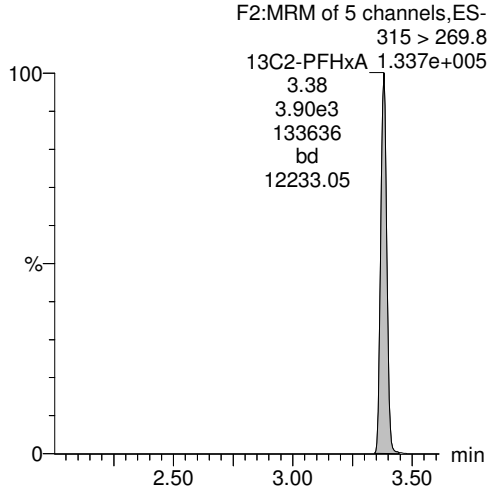
PFOA



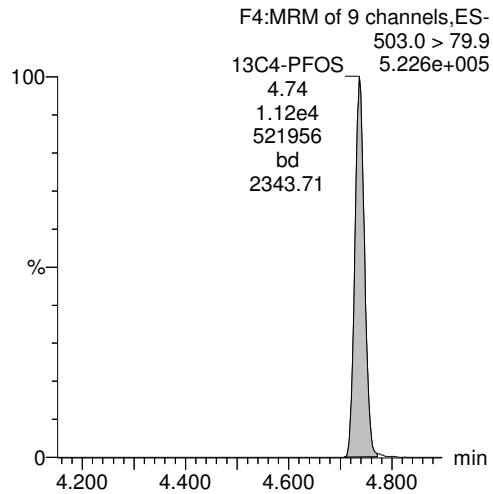
PFOS



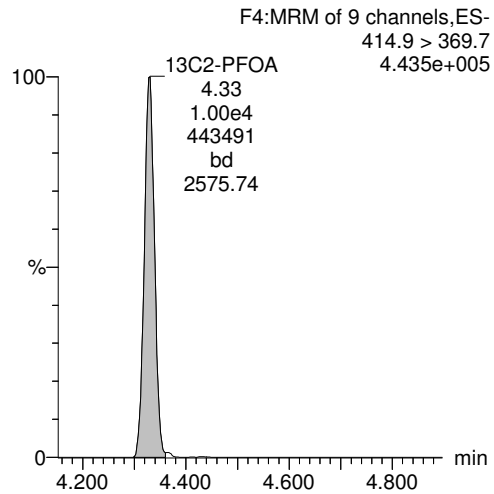
13C2-PFHxA



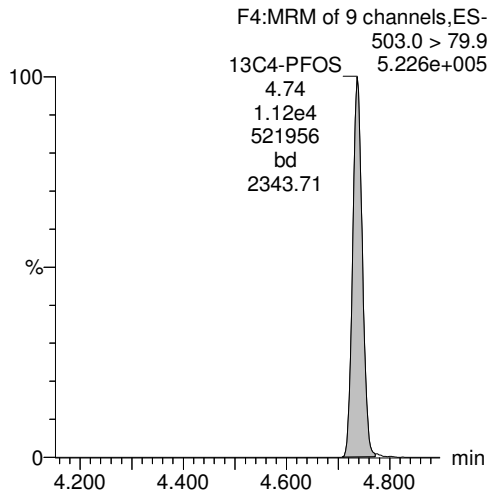
13C4-PFOS



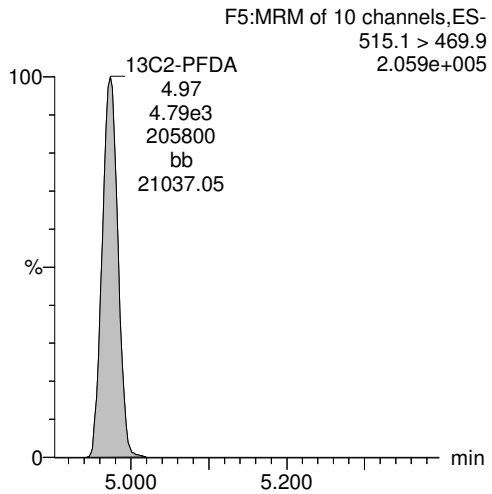
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-31.qld

Last Altered: Thursday, December 07, 2017 10:05:51 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:06:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_31, Date: 06-Dec-2017, Time: 17:52:29, ID: 1701795-15 CH-AT-1RW93A-1117 0.26134, Description: CH-AT-1RW93A-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.51e3		0.2613	3.04				
2	2	PFOA	413 > 368.7	5.71e1	8.81e3		0.2613	4.33	4.33	0.0649	0.321	
3	3	PFOS	499 >79.9	8.06e0	9.51e3		0.2613	4.74	4.73	0.0243	0.0694	
4	4	13C2-PFHxA	315 > 269.8	3.94e3	8.81e3	0.424	0.2613	3.39	3.38	4.47	40.4	105.5
5	5	13C2-PFDA	515.1 > 469.9	4.58e3	8.81e3	0.478	0.2613	4.96	4.97	5.20	41.6	108.7
6	6	13C2-PFOA	414.9 > 369.7	8.81e3	8.81e3	1.000	0.2613	4.41	4.33	10.0	38.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.51e3	9.51e3	1.000	0.2613	4.81	4.74	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

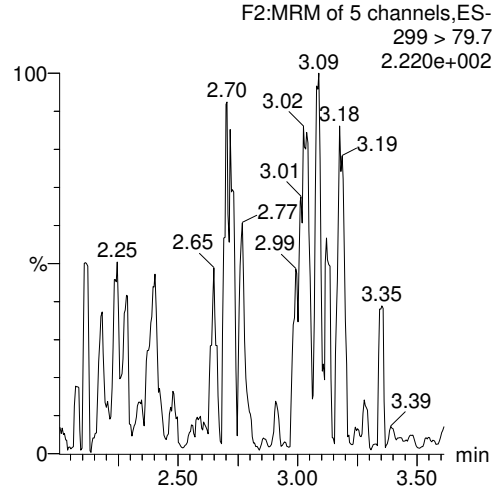
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-31.qld

Last Altered: Thursday, December 07, 2017 10:05:51 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:06:11 Pacific Standard Time

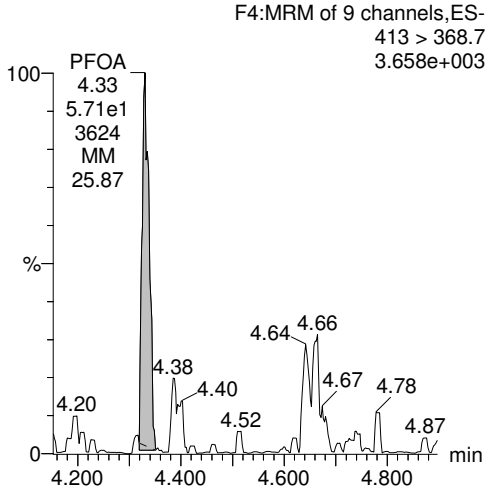
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_31, Date: 06-Dec-2017, Time: 17:52:29, ID: 1701795-15 CH-AT-1RW93A-1117 0.26134, Description: CH-AT-1RW93A-1117

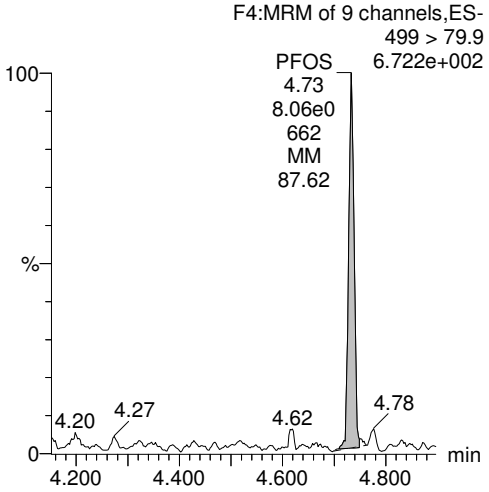
PFBS



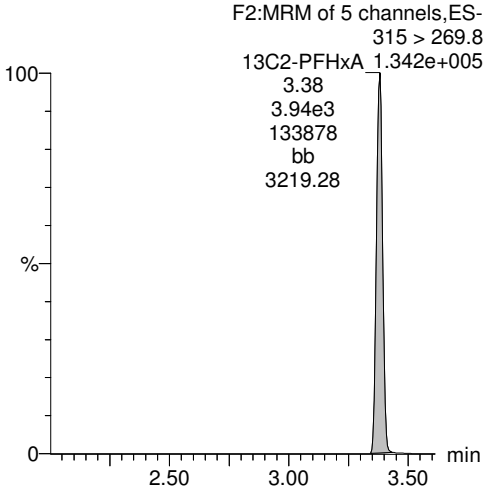
PFOA



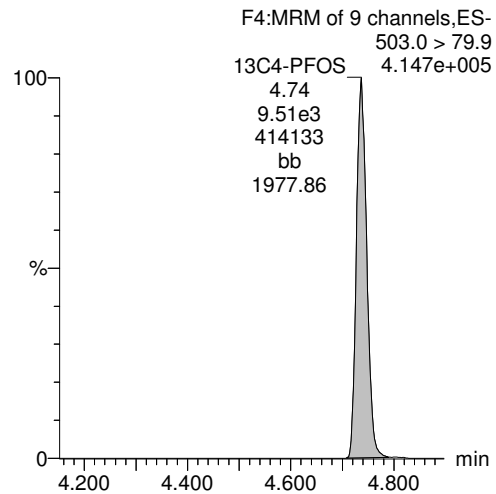
PFOS



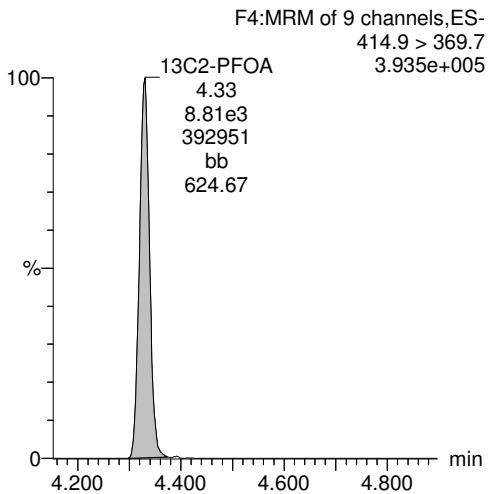
13C2-PFHxA



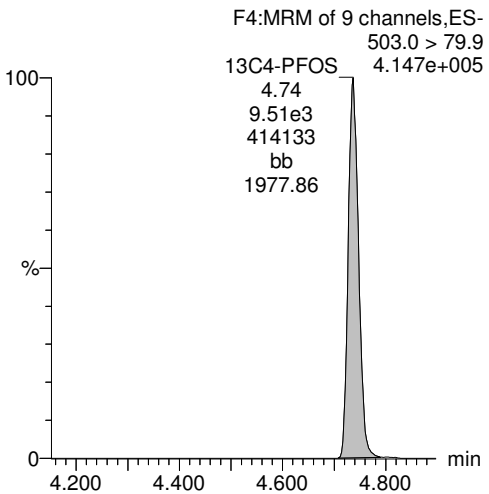
13C4-PFOS



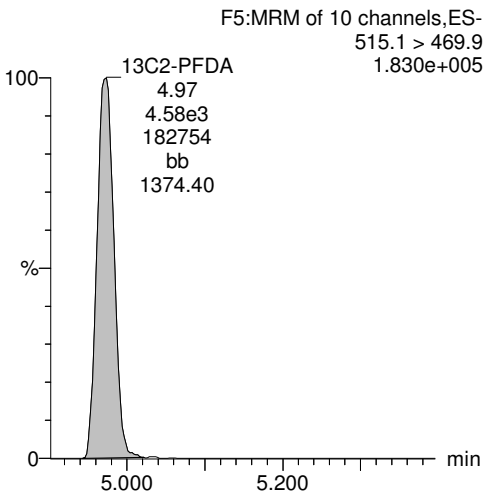
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-32.qld

Last Altered: Thursday, December 07, 2017 10:06:56 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:07:13 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_32, Date: 06-Dec-2017, Time: 18:04:54, ID: 1701795-16 CH-AT-1FB93A-1117 0.26134, Description: CH-AT-1FB93A-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.07e4		0.2613	3.04				
2	2	PFOA	413 > 368.7	5.70e1	1.06e4		0.2613	4.33	4.33	0.0535	0.265	
3	3	PFOS	499 >79.9		1.07e4		0.2613	4.74				
4	4	13C2-PFHxA	315 > 269.8	4.23e3	1.06e4	0.424	0.2613	3.39	3.38	3.98	35.9	93.8
5	5	13C2-PFDA	515.1 > 469.9	4.70e3	1.06e4	0.478	0.2613	4.96	4.97	4.41	35.3	92.3
6	6	13C2-PFOA	414.9 > 369.7	1.06e4	1.06e4	1.000	0.2613	4.41	4.33	10.0	38.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.07e4	1.07e4	1.000	0.2613	4.81	4.74	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

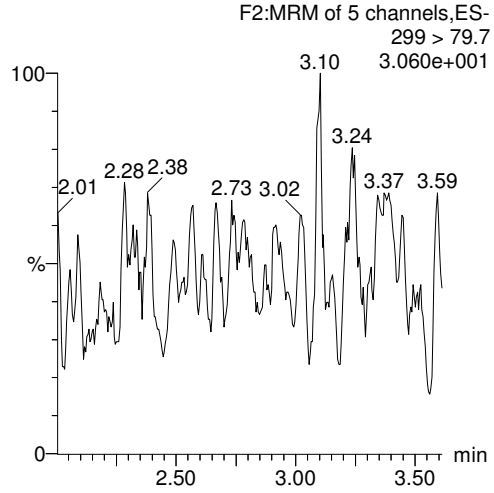
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-32.qld

Last Altered: Thursday, December 07, 2017 10:06:56 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:07:13 Pacific Standard Time

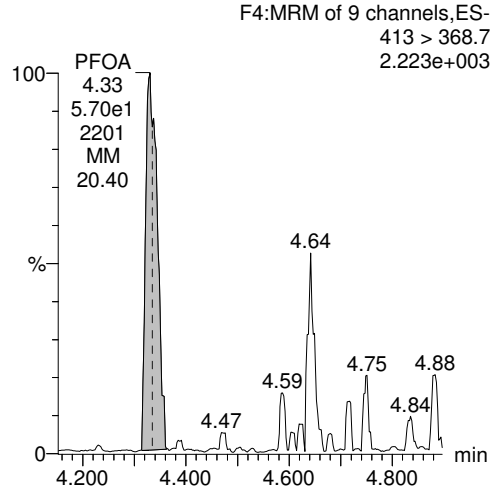
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_32, Date: 06-Dec-2017, Time: 18:04:54, ID: 1701795-16 CH-AT-1FB93A-1117 0.26134, Description: CH-AT-1FB93A-1117

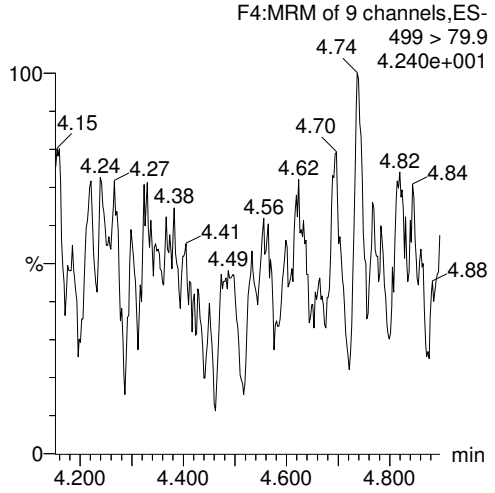
PFBS



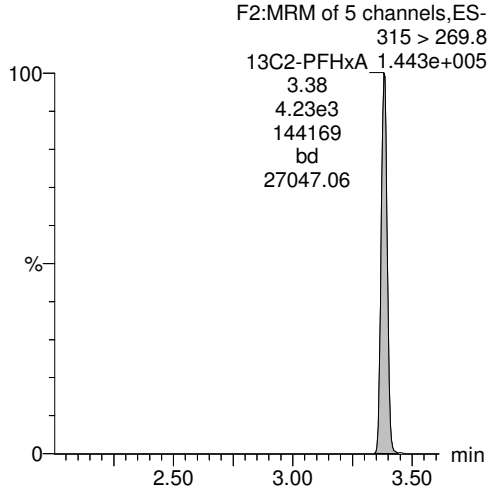
PFOA



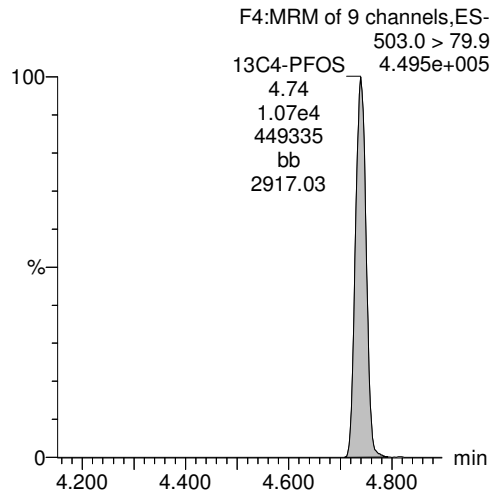
PFOS



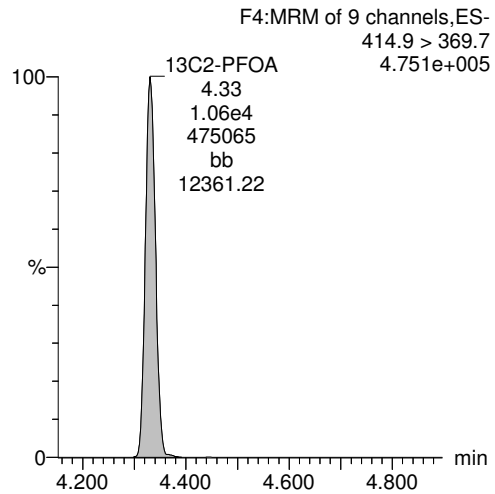
13C2-PFHxA



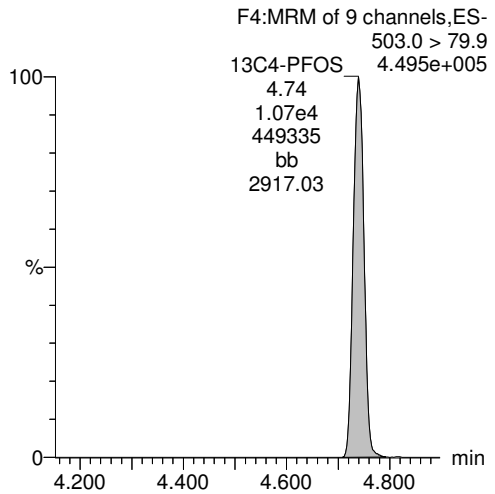
13C4-PFOS



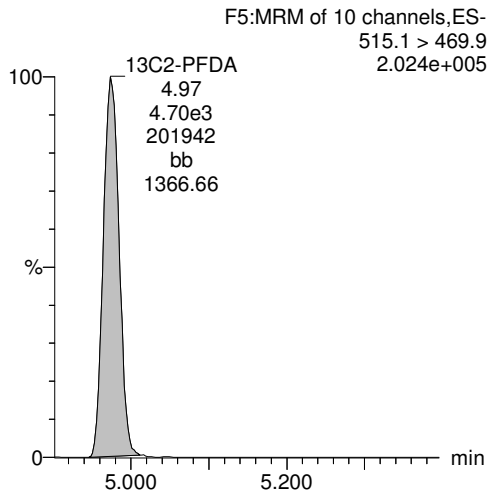
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-33.qld

Last Altered: Thursday, December 07, 2017 10:07:53 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:08:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_33, Date: 06-Dec-2017, Time: 18:17:19, ID: 1701795-17 CH-AT-1RW93B-1117 0.25414, Description: CH-AT-1RW93B-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.08e4		0.2541	3.04				
2	2	PFOA	413 > 368.7	8.13e1	9.89e3		0.2541	4.33	4.33	0.0823	0.418	
3	3	PFOS	499 >79.9	6.08e0	1.08e4		0.2541	4.74	4.74	0.0162	0.0475	
4	4	13C2-PFHxA	315 > 269.8	4.17e3	9.89e3	0.424	0.2541	3.39	3.38	4.21	39.1	99.3
5	5	13C2-PFDA	515.1 > 469.9	4.84e3	9.89e3	0.478	0.2541	4.96	4.97	4.89	40.3	102.4
6	6	13C2-PFOA	414.9 > 369.7	9.89e3	9.89e3	1.000	0.2541	4.41	4.33	10.0	39.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	0.2541	4.81	4.74	28.7	113	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

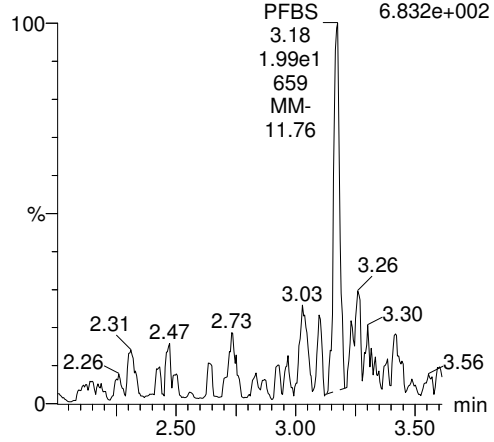
Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-33.qld

Last Altered: Thursday, December 07, 2017 10:07:53 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:08:11 Pacific Standard Time

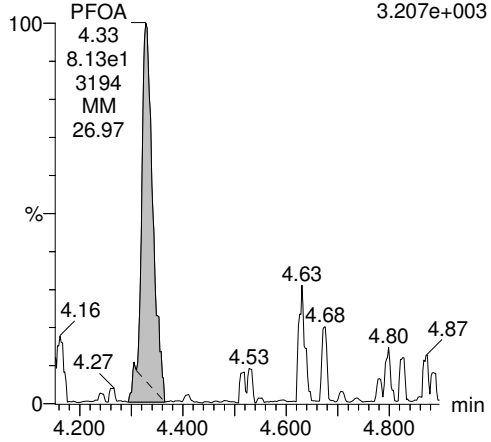
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_33, Date: 06-Dec-2017, Time: 18:17:19, ID: 1701795-17 CH-AT-1RW93B-1117 0.25414, Description: CH-AT-1RW93B-1117

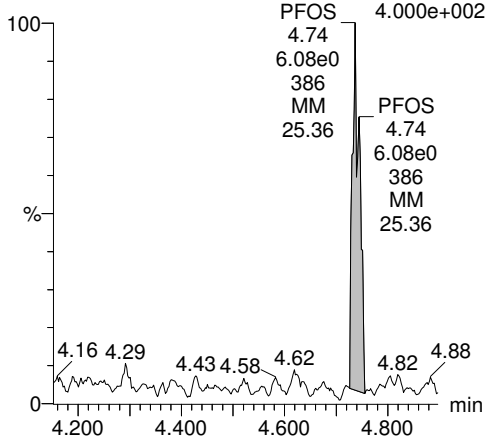
PFBS



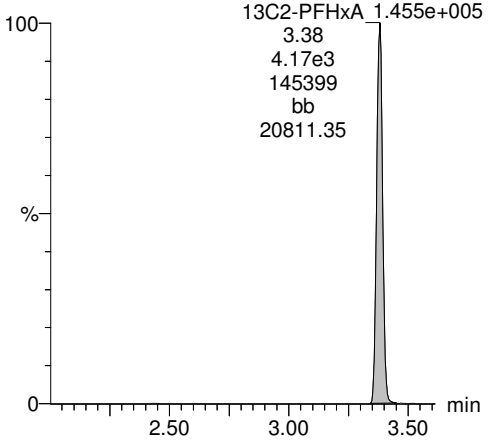
PFOA



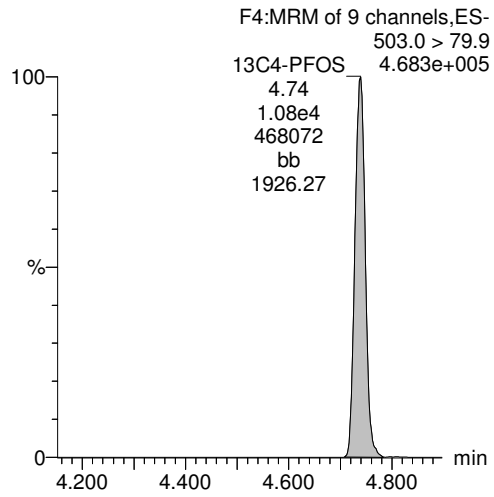
PFOS



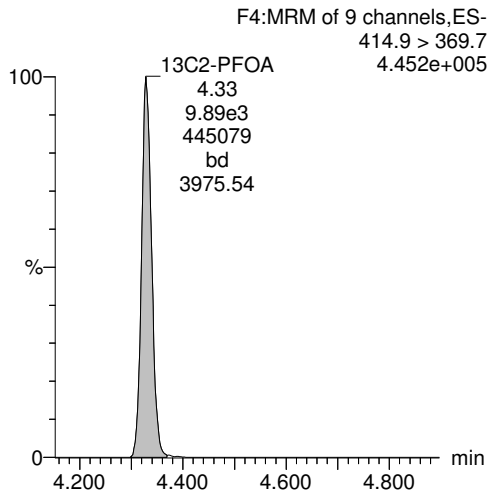
13C2-PFHxA



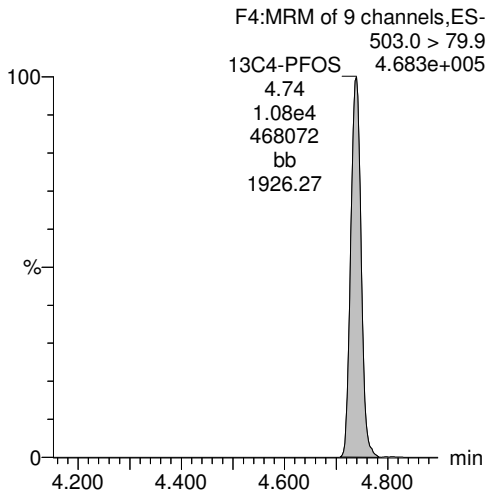
13C4-PFOS



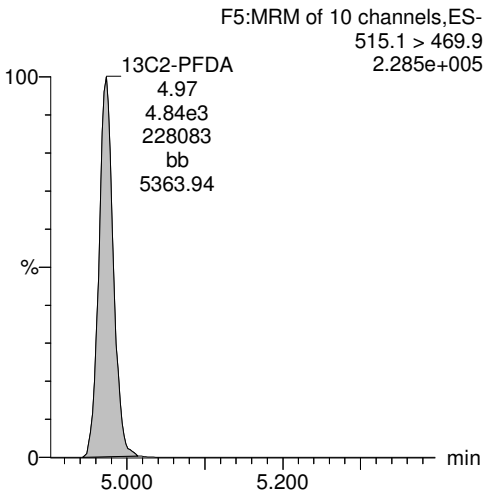
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-34.qld

Last Altered: Thursday, December 07, 2017 10:08:52 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:10:46 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_34, Date: 06-Dec-2017, Time: 18:29:45, ID: 1701795-18 CH-AT-1FB93B-1117 0.26438, Description: CH-AT-1FB93B-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2644	3.04				
2	2	PFOA	413 > 368.7	7.93e1	9.92e3		0.2644	4.33	4.33	0.0799	0.391	
3	3	PFOS	499 >79.9		1.05e4		0.2644	4.74				
4	4	13C2-PFHxA	315 > 269.8	3.92e3	9.92e3	0.424	0.2644	3.39	3.38	3.95	35.3	93.2
5	5	13C2-PFDA	515.1 > 469.9	4.77e3	9.92e3	0.478	0.2644	4.96	4.97	4.81	38.1	100.6
6	6	13C2-PFOA	414.9 > 369.7	9.92e3	9.92e3	1.000	0.2644	4.41	4.33	10.0	37.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2644	4.81	4.74	28.7	109	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/7/17

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-34.qld

Last Altered: Thursday, December 07, 2017 10:08:52 Pacific Standard Time
Printed: Thursday, December 07, 2017 10:10:46 Pacific Standard Time

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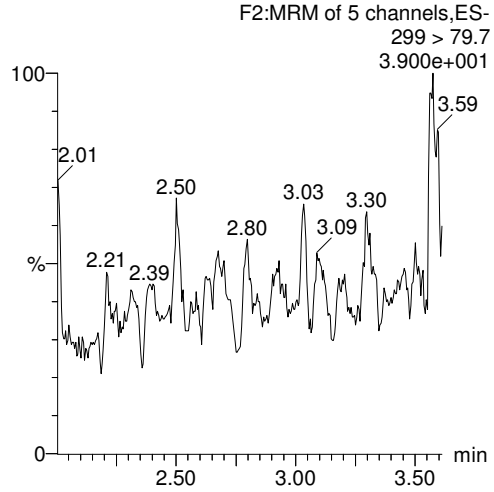

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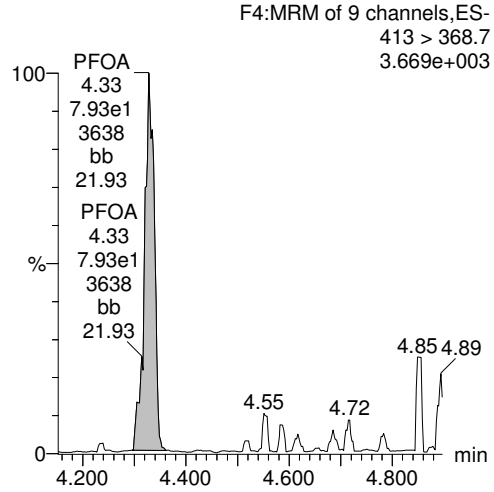

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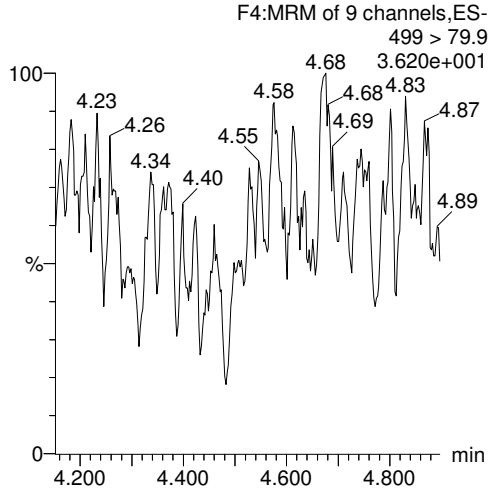

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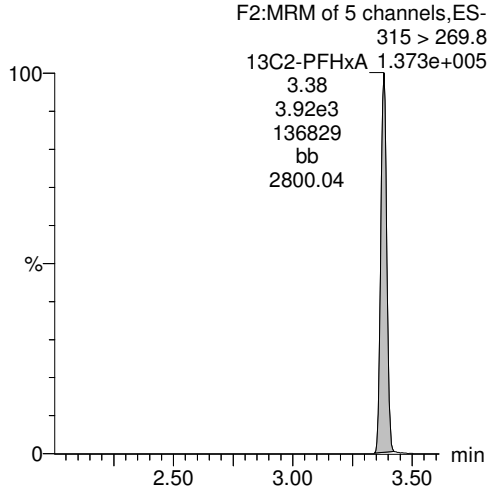

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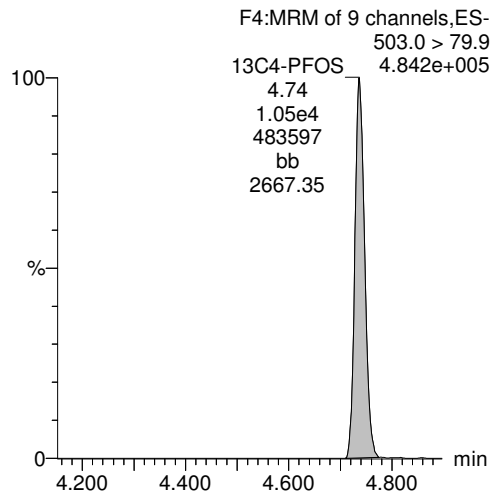

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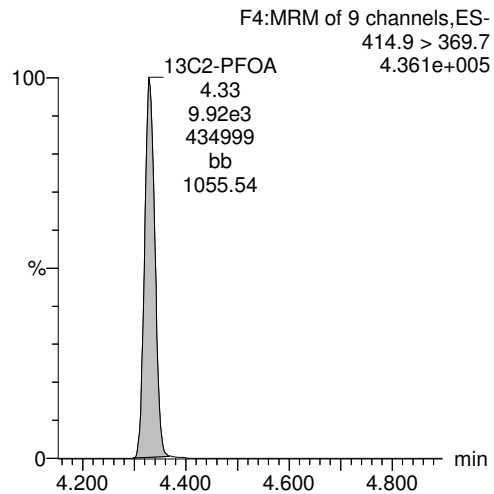

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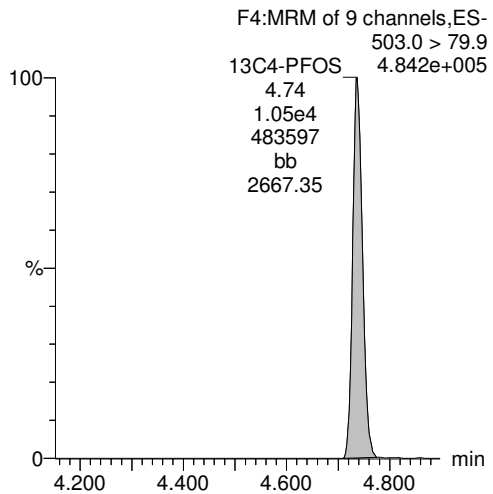

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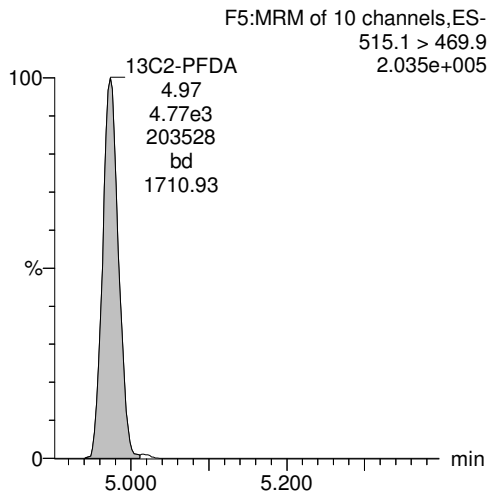

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INJECTION INTERNAL STANDARD (IIS) AREAS,

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

IS AREA

Ical

Compound 6: 13C2-PFOA

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	B7L0009-BS1 LFB 0.25	171206G1_	Analyte	10	4.35	10770.99	10770.99	11328.26	95.0807
2	B7L0009-BSD1 LFBD 0.25	171206G1_	Analyte	10	4.33	9970.557	9970.557	11328.26	88.01492
3	B7L0009-BLK1 LRB 0.25	171206G1_	Analyte	10	4.33	9938.545	9938.545	11328.26	87.73234
4	1701795-01 CH-AT-1RW86-1117 0.24766	171206G1_	Analyte	10	4.33	9820.117	9820.117	11328.26	86.68692
5	1701795-02 CH-AT-1FB86-1117 0.26358	171206G1_	Analyte	10	4.33	9951.866	9951.866	11328.26	87.84993
6	1701795-03 CH-AT-1RW87-1117 0.26104	171206G1_	Analyte	10	4.33	9751.153	9751.153	11328.26	86.07814
7	1701795-04 CH-AT-1FB87-1117 0.26409	171206G1_	Analyte	10	4.33	8211.312	8211.312	11328.26	72.48522
8	1701795-05 CH-AT-1RW88-1117 0.25565	171206G1_	Analyte	10	4.33	8506.016	8506.016	11328.26	75.08671
9	1701795-06 CH-AT-1FB88-1117 0.26354	171206G1_	Analyte	10	4.33	9345.883	9345.883	11328.26	82.50062
10	1701795-07 CH-AT-1RW89-1117 0.24807	171206G1_	Analyte	10	4.33	9848.287	9848.287	11328.26	86.93559
11	1701795-08 CH-AT-1FB89-1117 0.26316	171206G1_	Analyte	10	4.33	9225.349	9225.349	11328.26	81.43661
12	1701795-09 CH-AT-1RW90-1117 0.25102	171206G1_	Analyte	10	4.33	10039.9	10039.9	11328.26	88.62705
13	1701795-10 CH-AT-1FB90-1117 0.26399	171206G1_	Analyte	10	4.33	9846.974	9846.974	11328.26	86.92399
14	1701795-11 CH-AT-1RW91-1117 0.25214	171206G1_	Analyte	10	4.33	9790.589	9790.589	11328.26	86.42626
15	1701795-12 CH-AT-1FB91-1117 0.24607	171206G1_	Analyte	10	4.33	10343.61	10343.61	11328.26	91.30802
16	1701795-13 CH-AT-1RW92-1117 0.23957	171206G1_	Analyte	10	4.33	9849.751	9849.751	11328.26	86.94851
17	1701795-14 CH-AT-1FB92-1117 0.26182	171206G1_	Analyte	10	4.33	10121.27	10121.27	11328.26	89.34536
18	1701795-15 CH-AT-1RW93A-1117 0.26134	171206G1_	Analyte	10	4.33	8881.832	8881.832	11328.26	78.40422
19	1701795-16 CH-AT-1FB93A-1117 0.26134	171206G1_	Analyte	10	4.33	10653.99	10653.99	11328.26	94.04792
20	1701795-17 CH-AT-1RW93B-1117 0.25414	171206G1_	Analyte	10	4.33	9935.522	9935.522	11328.26	87.70565
21	1701795-18 CH-AT-1FB93B-1117 0.26438	171206G1_	Analyte	10	4.33	9932.977	9932.977	11328.26	87.68318
22	IPA	171206G1_	Analyte	10	4.33	4.833	4.833	11328.26	0.042663
23	ST171206G1-10 PFC CS3 17K3027	171206G1_	Analyte	10	4.33	11448.6	11448.6	11328.26	101.0623
24	IPA	171206G1_	Analyte	10	4.33	1.862	1.862	11328.26	0.016437
25	B7L0013-BS1 LFB 0.25	171206G1_	Analyte	10	4.33	9949.707	9949.707	11328.26	87.83087
26	B7L0013-BLK1 LRB 0.25	171206G1_	Analyte	10	4.33	9673.885	9673.885	11328.26	85.39605
27	B7L0013-MS1 LFSM 0.2472	171206G1_	Analyte	10	4.33	10286.21	10286.21	11328.26	90.80132

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28	B7L0013-MSD1 LFSMD 0.25588	171206G1_	Analyte	10	4.33	9349.701	9349.701	11328.26	82.53433
29	1701806-01 CH-AT-2RW10-1117 0.25921	171206G1_	Analyte	10	4.33	9143.762	9143.762	11328.26	80.7164
30	1701806-02 CH-AT-2RW11-1117 0.25412	171206G1_	Analyte	10	4.33	10071.42	10071.42	11328.26	88.90524
31	1701806-03 CH-AT-2RW12-1117 0.25431	171206G1_	Analyte	10	4.33	10369.32	10369.32	11328.26	91.53503
32	1701806-04 CH-AT-2RW13-1117 0.25637	171206G1_	Analyte	10	4.33	10475.11	10475.11	11328.26	92.46885
33	1701806-05 CH-AT-2RW14-1117 0.25818	171206G1_	Analyte	10	4.33	10061.54	10061.54	11328.26	88.81804
34	1701806-06 CH-AT-2RW15-1117 0.25028	171206G1_	Analyte	10	4.33	10968.62	10968.62	11328.26	96.8253
35	1701806-07 CH-AT-2RW16-1117 0.26027	171206G1_	Analyte	10	4.33	11395.17	11395.17	11328.26	100.5906
36	1701806-08 CH-AT-2RW17-1117 0.25671	171206G1_	Analyte	10	4.33	10456.68	10456.68	11328.26	92.30616
37	1701806-09 CH-AT-2RW18-1117 0.26195	171206G1_	Analyte	10	4.33	10522.79	10522.79	11328.26	92.88975
38	1701806-10 CH-AT-2RW19-1117 0.26137	171206G1_	Analyte	10	4.33	11114.11	11114.11	11328.26	98.10958
39	1701806-11 CH-AT-2FB10-1117 0.26169	171206G1_	Analyte	10	4.33	10200.18	10200.18	11328.26	90.04191
40	1701806-12 CH-AT-2FB11-1117 0.26055	171206G1_	Analyte	10	4.33	9038.462	9038.462	11328.26	79.78687
41	1701806-13 CH-AT-2FB12-1117 0.26439	171206G1_	Analyte	10	4.33	9177.931	9177.931	11328.26	81.01803
42	1701806-14 CH-AT-2FB13-1117 0.26256	171206G1_	Analyte	10	4.33	9848.132	9848.132	11328.26	86.93422
43	1701806-15 CH-AT-2FB14-1117 0.2593	171206G1_	Analyte	10	4.33	9569.229	9569.229	11328.26	84.47221
44	1701806-16 CH-AT-2FB15-1117 0.25718	171206G1_	Analyte	10	4.33	8853.425	8853.425	11328.26	78.15346
45	1701806-17 CH-AT-2FB16-1117 0.26092	171206G1_	Analyte	10	4.33	8799.954	8799.954	11328.26	77.68144
46	1701806-18 CH-AT-2FB17-1117 0.25957	171206G1_	Analyte	10	4.33	9252.757	9252.757	11328.26	81.67855
47	1701806-19 CH-AT-2FB18-1117 0.25855	171206G1_	Analyte	10	4.33	8259.082	8259.082	11328.26	72.90691
48	1701806-20 CH-AT-2FB19-1117 0.26087	171206G1_	Analyte	10	4.33	9817.469	9817.469	11328.26	86.66354
49	IPA	171206G1_	Analyte	10	4.33	0.575	0.575	11328.26	0.005076
50	ST171206G1-11 PFC CS5 537 17K3029	171206G1_	Analyte	10	4.33	11566.17	11566.17	11328.26	102.1002
51	IPA	171206G1_	Analyte	10	4.33	0.027	0.027	11328.26	0.000238

Compound 7: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	B7L0009-BS1 LFB 0.25	171206G1_	Analyte	28.7	4.76	11268.68	11268.68	11379.03	99.03019
2	B7L0009-BSD1 LFBD 0.25	171206G1_	Analyte	28.7	4.74	10503.38	10503.38	11379.03	92.30467
3	B7L0009-BLK1 LRB 0.25	171206G1_	Analyte	28.7	4.74	11182.93	11182.93	11379.03	98.27661
4	1701795-01 CH-AT-1RW86-1117 0.24766	171206G1_	Analyte	28.7	4.74	10109.48	10109.48	11379.03	88.84311
5	1701795-02 CH-AT-1FB86-1117 0.26358	171206G1_	Analyte	28.7	4.74	10539.79	10539.79	11379.03	92.62467
6	1701795-03 CH-AT-1RW87-1117 0.26104	171206G1_	Analyte	28.7	4.74	10332.57	10332.57	11379.03	90.8036

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7	1701795-04 CH-AT-1FB87-1117 0.26409	171206G1_ Analyte	28.7	4.74	10004.24	10004.24	11379.03	87.91821
8	1701795-05 CH-AT-1RW88-1117 0.25565	171206G1_ Analyte	28.7	4.74	9936.366	9936.366	11379.03	87.32173
9	1701795-06 CH-AT-1FB88-1117 0.26354	171206G1_ Analyte	28.7	4.74	10611.96	10611.96	11379.03	93.25892
10	1701795-07 CH-AT-1RW89-1117 0.24807	171206G1_ Analyte	28.7	4.74	11012.63	11012.63	11379.03	96.78
11	1701795-08 CH-AT-1FB89-1117 0.26316	171206G1_ Analyte	28.7	4.74	10764.67	10764.67	11379.03	94.60093
12	1701795-09 CH-AT-1RW90-1117 0.25102	171206G1_ Analyte	28.7	4.74	10173.56	10173.56	11379.03	89.40622
13	1701795-10 CH-AT-1FB90-1117 0.26399	171206G1_ Analyte	28.7	4.74	10003.71	10003.71	11379.03	87.91354
14	1701795-11 CH-AT-1RW91-1117 0.25214	171206G1_ Analyte	28.7	4.74	10247.63	10247.63	11379.03	90.05711
15	1701795-12 CH-AT-1FB91-1117 0.24607	171206G1_ Analyte	28.7	4.74	10150.37	10150.37	11379.03	89.20244
16	1701795-13 CH-AT-1RW92-1117 0.23957	171206G1_ Analyte	28.7	4.74	10514.37	10514.37	11379.03	92.40124
17	1701795-14 CH-AT-1FB92-1117 0.26182	171206G1_ Analyte	28.7	4.74	11283.06	11283.06	11379.03	99.15664
18	1701795-15 CH-AT-1RW93A-1117 0.26134	171206G1_ Analyte	28.7	4.74	9514.656	9514.656	11379.03	83.6157
19	1701795-16 CH-AT-1FB93A-1117 0.26134	171206G1_ Analyte	28.7	4.74	10712.65	10712.65	11379.03	94.14379
20	1701795-17 CH-AT-1RW93B-1117 0.25414	171206G1_ Analyte	28.7	4.74	10804.21	10804.21	11379.03	94.94838
21	1701795-18 CH-AT-1FB93B-1117 0.26438	171206G1_ Analyte	28.7	4.74	10514.6	10514.6	11379.03	92.40329
22	IPA	171206G1_ Analyte	28.7	4.74	5.445	5.445	11379.03	0.047851
23	ST171206G1-10 PFC CS3 17K3027	171206G1_ Analyte	28.7	4.74	10854.58	10854.58	11379.03	95.39105
24	IPA	171206G1_ Analyte	28.7	4.49	1.706	1.706	11379.03	0.014992
25	B7L0013-BS1 LFB 0.25	171206G1_ Analyte	28.7	4.74	10156.94	10156.94	11379.03	89.26014
26	B7L0013-BLK1 LRB 0.25	171206G1_ Analyte	28.7	4.74	9496.597	9496.597	11379.03	83.457
27	B7L0013-MS1 LFSM 0.2472	171206G1_ Analyte	28.7	4.74	10382.08	10382.08	11379.03	91.23874
28	B7L0013-MSD1 LFSMD 0.25588	171206G1_ Analyte	28.7	4.74	10322.41	10322.41	11379.03	90.71435
29	1701806-01 CH-AT-2RW10-1117 0.25921	171206G1_ Analyte	28.7	4.74	10322.75	10322.75	11379.03	90.71728
30	1701806-02 CH-AT-2RW11-1117 0.25412	171206G1_ Analyte	28.7	4.74	11205.31	11205.31	11379.03	98.47335
31	1701806-03 CH-AT-2RW12-1117 0.25431	171206G1_ Analyte	28.7	4.74	11134.07	11134.07	11379.03	97.84725
32	1701806-04 CH-AT-2RW13-1117 0.25637	171206G1_ Analyte	28.7	4.74	11837.47	11837.47	11379.03	104.0288
33	1701806-05 CH-AT-2RW14-1117 0.25818	171206G1_ Analyte	28.7	4.74	10862.26	10862.26	11379.03	95.45853
34	1701806-06 CH-AT-2RW15-1117 0.25028	171206G1_ Analyte	28.7	4.74	11193.08	11193.08	11379.03	98.36588
35	1701806-07 CH-AT-2RW16-1117 0.26027	171206G1_ Analyte	28.7	4.74	11606.9	11606.9	11379.03	102.0025
36	1701806-08 CH-AT-2RW17-1117 0.25671	171206G1_ Analyte	28.7	4.74	10461.3	10461.3	11379.03	91.93492
37	1701806-09 CH-AT-2RW18-1117 0.26195	171206G1_ Analyte	28.7	4.74	10820.97	10820.97	11379.03	95.09569
38	1701806-10 CH-AT-2RW19-1117 0.26137	171206G1_ Analyte	28.7	4.74	11535.37	11535.37	11379.03	101.3739
39	1701806-11 CH-AT-2FB10-1117 0.26169	171206G1_ Analyte	28.7	4.74	9851.273	9851.273	11379.03	86.57392
40	1701806-12 CH-AT-2FB11-1117 0.26055	171206G1_ Analyte	28.7	4.74	9574.67	9574.67	11379.03	84.14311

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41	1701806-13 CH-AT-2FB12-1117 0.26439	171206G1_	Analyte		28.7	4.74	7968.638	7968.638	11379.03	70.02915
42	1701806-14 CH-AT-2FB13-1117 0.26256	171206G1_	Analyte		28.7	4.74	10779.61	10779.61	11379.03	94.73225
43	1701806-15 CH-AT-2FB14-1117 0.2593	171206G1_	Analyte		28.7	4.74	9591.865	9591.865	11379.03	84.29422
44	1701806-16 CH-AT-2FB15-1117 0.25718	171206G1_	Analyte		28.7	4.74	9734.576	9734.576	11379.03	85.54838
45	1701806-17 CH-AT-2FB16-1117 0.26092	171206G1_	Analyte		28.7	4.74	9583.222	9583.222	11379.03	84.21826
46	1701806-18 CH-AT-2FB17-1117 0.25957	171206G1_	Analyte		28.7	4.74	9673.162	9673.162	11379.03	85.00867
47	1701806-19 CH-AT-2FB18-1117 0.25855	171206G1_	Analyte		28.7	4.74	9534.765	9534.765	11379.03	83.79242
48	1701806-20 CH-AT-2FB19-1117 0.26087	171206G1_	Analyte		28.7	4.74	9857.229	9857.229	11379.03	86.62626
49	IPA	171206G1_	Analyte		28.7	4.73	7.387	7.387	11379.03	0.064918
50	ST171206G1-11 PFC CS5 537 17K3029	171206G1_	Analyte		28.7	4.74	11180.22	11180.22	11379.03	98.25282
51	IPA	171206G1_	Analyte		28.7	4.68	6.296	6.296	11379.03	0.05533

Compound 6: 13C2-PFOA

Ccal ST171206G1-10 PFC CS3 17K3027

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
23	ST171206G1-10 PFC CS3 17K3027	171206G1_	Analyte	10	4.33	11448.6	11448.6	11448.6	100
24	IPA	171206G1_	Analyte	10	4.55	1.862	1.862	11448.6	0.016264
25	B7L0013-BS1 LFB 0.25	171206G1_	Analyte	10	4.33	9949.707	9949.707	11448.6	86.90765
26	B7L0013-BLK1 LRB 0.25	171206G1_	Analyte	10	4.33	9673.885	9673.885	11448.6	84.49843
27	B7L0013-MS1 LFSM 0.2472	171206G1_	Analyte	10	4.33	10286.21	10286.21	11448.6	89.84688
28	B7L0013-MSD1 LFSMD 0.25588	171206G1_	Analyte	10	4.33	9349.701	9349.701	11448.6	81.66678
29	1701806-01 CH-AT-2RW10-1117 0.25921	171206G1_	Analyte	10	4.33	9143.762	9143.762	11448.6	79.86797
30	1701806-02 CH-AT-2RW11-1117 0.25412	171206G1_	Analyte	10	4.33	10071.42	10071.42	11448.6	87.97074
31	1701806-03 CH-AT-2RW12-1117 0.25431	171206G1_	Analyte	10	4.33	10369.32	10369.32	11448.6	90.57288
32	1701806-04 CH-AT-2RW13-1117 0.25637	171206G1_	Analyte	10	4.33	10475.11	10475.11	11448.6	91.49689
33	1701806-05 CH-AT-2RW14-1117 0.25818	171206G1_	Analyte	10	4.33	10061.54	10061.54	11448.6	87.88445
34	1701806-06 CH-AT-2RW15-1117 0.25028	171206G1_	Analyte	10	4.33	10968.62	10968.62	11448.6	95.80754
35	1701806-07 CH-AT-2RW16-1117 0.26027	171206G1_	Analyte	10	4.33	11395.17	11395.17	11448.6	99.53329
36	1701806-08 CH-AT-2RW17-1117 0.25671	171206G1_	Analyte	10	4.33	10456.68	10456.68	11448.6	91.3359
37	1701806-09 CH-AT-2RW18-1117 0.26195	171206G1_	Analyte	10	4.33	10522.79	10522.79	11448.6	91.91336
38	1701806-10 CH-AT-2RW19-1117 0.26137	171206G1_	Analyte	10	4.33	11114.11	11114.11	11448.6	97.07832
39	1701806-11 CH-AT-2FB10-1117 0.26169	171206G1_	Analyte	10	4.33	10200.18	10200.18	11448.6	89.09546
40	1701806-12 CH-AT-2FB11-1117 0.26055	171206G1_	Analyte	10	4.33	9038.462	9038.462	11448.6	78.94821

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41	1701806-13 CH-AT-2FB12-1117 0.26439	171206G1_	Analyte	10	4.33	9177.931	9177.931	11448.6	80.16643
42	1701806-14 CH-AT-2FB13-1117 0.26256	171206G1_	Analyte	10	4.33	9848.132	9848.132	11448.6	86.02043
43	1701806-15 CH-AT-2FB14-1117 0.2593	171206G1_	Analyte	10	4.33	9569.229	9569.229	11448.6	83.58429
44	1701806-16 CH-AT-2FB15-1117 0.25718	171206G1_	Analyte	10	4.33	8853.425	8853.425	11448.6	77.33196
45	1701806-17 CH-AT-2FB16-1117 0.26092	171206G1_	Analyte	10	4.33	8799.954	8799.954	11448.6	76.86491
46	1701806-18 CH-AT-2FB17-1117 0.25957	171206G1_	Analyte	10	4.33	9252.757	9252.757	11448.6	80.82001
47	1701806-19 CH-AT-2FB18-1117 0.25855	171206G1_	Analyte	10	4.33	8259.082	8259.082	11448.6	72.14056
48	1701806-20 CH-AT-2FB19-1117 0.26087	171206G1_	Analyte	10	4.33	9817.469	9817.469	11448.6	85.75259
49	IPA	171206G1_	Analyte	10	4.41	0.575	0.575	11448.6	0.005022
50	ST171206G1-11 PFC CS5 537 17K3029	171206G1_	Analyte	10	4.33	11566.17	11566.17	11448.6	101.027
51	IPA	171206G1_	Analyte	10	4.44	0.027	0.027	11448.6	0.000236

Compound 7: 13C4-PFOS

ST171206G1-10 PFC CS3 17K3027

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
23	ST171206G1-10 PFC CS3 17K3027	171206G1_	Analyte	28.7	4.74	10854.58	10854.58	10854.58	100
24	IPA	171206G1_	Analyte	28.7	4.49	1.706	1.706	10854.58	0.015717
25	B7L0013-BS1 LFB 0.25	171206G1_	Analyte	28.7	4.74	10156.94	10156.94	10854.58	93.57286
26	B7L0013-BLK1 LRB 0.25	171206G1_	Analyte	28.7	4.74	9496.597	9496.597	10854.58	87.48933
27	B7L0013-MS1 LFSM 0.2472	171206G1_	Analyte	28.7	4.74	10382.08	10382.08	10854.58	95.64706
28	B7L0013-MSD1 LFSMD 0.25588	171206G1_	Analyte	28.7	4.74	10322.41	10322.41	10854.58	95.09733
29	1701806-01 CH-AT-2RW10-1117 0.25921	171206G1_	Analyte	28.7	4.74	10322.75	10322.75	10854.58	95.10041
30	1701806-02 CH-AT-2RW11-1117 0.25412	171206G1_	Analyte	28.7	4.74	11205.31	11205.31	10854.58	103.2312
31	1701806-03 CH-AT-2RW12-1117 0.25431	171206G1_	Analyte	28.7	4.74	11134.07	11134.07	10854.58	102.5749
32	1701806-04 CH-AT-2RW13-1117 0.25637	171206G1_	Analyte	28.7	4.74	11837.47	11837.47	10854.58	109.0551
33	1701806-05 CH-AT-2RW14-1117 0.25818	171206G1_	Analyte	28.7	4.74	10862.26	10862.26	10854.58	100.0707
34	1701806-06 CH-AT-2RW15-1117 0.25028	171206G1_	Analyte	28.7	4.74	11193.08	11193.08	10854.58	103.1186
35	1701806-07 CH-AT-2RW16-1117 0.26027	171206G1_	Analyte	28.7	4.74	11606.9	11606.9	10854.58	106.9309
36	1701806-08 CH-AT-2RW17-1117 0.25671	171206G1_	Analyte	28.7	4.74	10461.3	10461.3	10854.58	96.37687
37	1701806-09 CH-AT-2RW18-1117 0.26195	171206G1_	Analyte	28.7	4.74	10820.97	10820.97	10854.58	99.69037
38	1701806-10 CH-AT-2RW19-1117 0.26137	171206G1_	Analyte	28.7	4.74	11535.37	11535.37	10854.58	106.2719
39	1701806-11 CH-AT-2FB10-1117 0.26169	171206G1_	Analyte	28.7	4.74	9851.273	9851.273	10854.58	90.75686
40	1701806-12 CH-AT-2FB11-1117 0.26055	171206G1_	Analyte	28.7	4.74	9574.67	9574.67	10854.58	88.2086

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41	1701806-13 CH-AT-2FB12-1117 0.26439	171206G1_ Analyte	28.7	4.74	7968.638	7968.638	10854.58	73.4127
42	1701806-14 CH-AT-2FB13-1117 0.26256	171206G1_ Analyte	28.7	4.74	10779.61	10779.61	10854.58	99.30937
43	1701806-15 CH-AT-2FB14-1117 0.2593	171206G1_ Analyte	28.7	4.74	9591.865	9591.865	10854.58	88.36701
44	1701806-16 CH-AT-2FB15-1117 0.25718	171206G1_ Analyte	28.7	4.74	9734.576	9734.576	10854.58	89.68176
45	1701806-17 CH-AT-2FB16-1117 0.26092	171206G1_ Analyte	28.7	4.74	9583.222	9583.222	10854.58	88.28738
46	1701806-18 CH-AT-2FB17-1117 0.25957	171206G1_ Analyte	28.7	4.74	9673.162	9673.162	10854.58	89.11597
47	1701806-19 CH-AT-2FB18-1117 0.25855	171206G1_ Analyte	28.7	4.74	9534.765	9534.765	10854.58	87.84096
48	1701806-20 CH-AT-2FB19-1117 0.26087	171206G1_ Analyte	28.7	4.74	9857.229	9857.229	10854.58	90.81173
49	IPA	171206G1_ Analyte	28.7	4.73	7.387	7.387	10854.58	0.068054
50	ST171206G1-11 PFC CS5 537 17K3029	171206G1_ Analyte	28.7	4.74	11180.22	11180.22	10854.58	103
51	IPA	171206G1_ Analyte	28.7	4.68	6.296	6.296	10854.58	0.058003

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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-36.qld

Last Altered: Thursday, December 07, 2017 09:51:26 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:51:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_36, Date: 06-Dec-2017, Time: 18:54:38, ID: ST171206G1-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.32e4	1.08e4		1.0000	3.04	3.02	35.2	41.2	93.3
2	2	PFOA	413 > 368.7	4.43e4	1.14e4		1.0000	4.33	4.33	38.9	50.4	100.8
3	3	PFOS	499 >79.9	2.13e4	1.08e4		1.0000	4.74	4.74	56.6	48.0	103.9
4	4	13C2-PFHxA	315 > 269.8	4.99e3	1.14e4	0.424	1.0000	3.39	3.38	4.38	10.3	103.3
5	5	13C2-PFDA	515.1 > 469.9	5.57e3	1.14e4	0.478	1.0000	4.96	4.97	4.88	10.2	102.1
6	6	13C2-PFOA	414.9 > 369.7	1.14e4	1.14e4	1.000	1.0000	4.41	4.33	10.0	10.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	1.0000	4.81	4.74	28.7	28.7	100.0

70-130

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12/07/2017

Quantify Compound Summary Report **MassLynx MassLynx V4.1 SCN 945**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, December 07, 2017 09:54:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:55:27 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171206G1_1	IPA	06-Dec-17	10:54:31
2	171206G1_2	ST171206G1-1 PFC CS-3 537 17K3022	06-Dec-17	11:07:34
3	171206G1_3	ST171206G1-2 PFC CS-2 537 17K3023	06-Dec-17	11:28:57
4	171206G1_4	ST171206G1-3 PFC CS-1 537 17K3024	06-Dec-17	11:41:21
5	171206G1_5	ST171206G1-4 PFC CS0 537 17K3025	06-Dec-17	11:53:46
6	171206G1_6	ST171206G1-5 PFC CS1 537 17K3026	06-Dec-17	12:06:11
7	171206G1_7	ST171206G1-6 PFC CS2 537 17K3033	06-Dec-17	12:18:38
8	171206G1_8	ST171206G1-7 PFC CS3 537 17K3027	06-Dec-17	12:31:04
9	171206G1_9	ST171206G1-8 PFC CS4 537 17K3028	06-Dec-17	12:43:31
10	171206G1_10	ST171206G1-9 PFC CS5 537 17K3029	06-Dec-17	12:55:59
11	171206G1_11	IPA	06-Dec-17	13:08:23
12	171206G1_12	ICV171206G1-1 PFC ICV 537 17K3030	06-Dec-17	13:20:50
13	171206G1_13	IPA	06-Dec-17	13:33:14
14	171206G1_14	B7L0009-BS1 LFB 0.25	06-Dec-17	14:21:10
15	171206G1_15	B7L0009-BSD1 LFBD 0.25	06-Dec-17	14:33:35
16	171206G1_16	B7L0009-BLK1 LRB 0.25	06-Dec-17	14:46:01
17	171206G1_17	1701795-01 CH-AT-1RW86-1117 0.24766	06-Dec-17	14:58:28
18	171206G1_18	1701795-02 CH-AT-1FB86-1117 0.26358	06-Dec-17	15:10:54
19	171206G1_19	1701795-03 CH-AT-1RW87-1117 0.26104	06-Dec-17	15:23:22
20	171206G1_20	1701795-04 CH-AT-1FB87-1117 0.26409	06-Dec-17	15:35:50
21	171206G1_21	1701795-05 CH-AT-1RW88-1117 0.25565	06-Dec-17	15:48:14
22	171206G1_22	1701795-06 CH-AT-1FB88-1117 0.26354	06-Dec-17	16:00:39
23	171206G1_23	1701795-07 CH-AT-1RW89-1117 0.24807	06-Dec-17	16:13:04
24	171206G1_24	1701795-08 CH-AT-1FB89-1117 0.26316	06-Dec-17	16:25:30
25	171206G1_25	1701795-09 CH-AT-1RW90-1117 0.25102	06-Dec-17	16:37:56
26	171206G1_26	1701795-10 CH-AT-1FB90-1117 0.26399	06-Dec-17	16:50:22
27	171206G1_27	1701795-11 CH-AT-1RW91-1117 0.25214	06-Dec-17	17:02:49
28	171206G1_28	1701795-12 CH-AT-1FB91-1117 0.24607	06-Dec-17	17:15:16
29	171206G1_29	1701795-13 CH-AT-1RW92-1117 0.23957	06-Dec-17	17:27:39
30	171206G1_30	1701795-14 CH-AT-1FB92-1117 0.26182	06-Dec-17	17:40:05
31	171206G1_31	1701795-15 CH-AT-1RW93A-1117 0.26134	06-Dec-17	17:52:29

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, December 07, 2017 09:54:21 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:55:27 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171206G1_32	1701795-16 CH-AT-1FB93A-1117 0.26134	06-Dec-17	18:04:54
33	171206G1_33	1701795-17 CH-AT-1RW93B-1117 0.25414	06-Dec-17	18:17:19
34	171206G1_34	1701795-18 CH-AT-1FB93B-1117 0.26438	06-Dec-17	18:29:45
35	171206G1_35	IPA	06-Dec-17	18:42:11
36	171206G1_36	ST171206G1-10 PFC CS3 17K3027	06-Dec-17	18:54:38
37	171206G1_37	IPA	06-Dec-17	19:07:05
38	171206G1_38	B7L0013-BS1 LFB 0.25	06-Dec-17	19:19:35
39	171206G1_39	B7L0013-BLK1 LRB 0.25	06-Dec-17	19:32:02
40	171206G1_40	B7L0013-MS1 LFSM 0.2472	06-Dec-17	19:44:25
41	171206G1_41	B7L0013-MSD1 LFSMD 0.25588	06-Dec-17	19:56:49
42	171206G1_42	1701806-01 CH-AT-2RW10-1117 0.25921	06-Dec-17	20:09:13
43	171206G1_43	1701806-02 CH-AT-2RW11-1117 0.25412	06-Dec-17	20:21:39
44	171206G1_44	1701806-03 CH-AT-2RW12-1117 0.25431	06-Dec-17	20:34:05
45	171206G1_45	1701806-04 CH-AT-2RW13-1117 0.25637	06-Dec-17	20:46:31
46	171206G1_46	1701806-05 CH-AT-2RW14-1117 0.25818	06-Dec-17	20:58:58
47	171206G1_47	1701806-06 CH-AT-2RW15-1117 0.25028	06-Dec-17	21:11:26
48	171206G1_48	1701806-07 CH-AT-2RW16-1117 0.26027	06-Dec-17	21:23:49
49	171206G1_49	1701806-08 CH-AT-2RW17-1117 0.25671	06-Dec-17	21:36:13
50	171206G1_50	1701806-09 CH-AT-2RW18-1117 0.26195	06-Dec-17	21:48:37
51	171206G1_51	1701806-10 CH-AT-2RW19-1117 0.26137	06-Dec-17	22:01:02
52	171206G1_52	1701806-11 CH-AT-2FB10-1117 0.26169	06-Dec-17	22:13:28
53	171206G1_53	1701806-12 CH-AT-2FB11-1117 0.26055	06-Dec-17	22:25:54
54	171206G1_54	1701806-13 CH-AT-2FB12-1117 0.26439	06-Dec-17	22:38:20
55	171206G1_55	1701806-14 CH-AT-2FB13-1117 0.26256	06-Dec-17	22:50:45
56	171206G1_56	1701806-15 CH-AT-2FB14-1117 0.2593	06-Dec-17	23:03:09
57	171206G1_57	1701806-16 CH-AT-2FB15-1117 0.25718	06-Dec-17	23:15:34
58	171206G1_58	1701806-17 CH-AT-2FB16-1117 0.26092	06-Dec-17	23:27:59
59	171206G1_59	1701806-18 CH-AT-2FB17-1117 0.25957	06-Dec-17	23:40:26
60	171206G1_60	1701806-19 CH-AT-2FB18-1117 0.25855	06-Dec-17	23:52:53
61	171206G1_61	1701806-20 CH-AT-2FB19-1117 0.26087	07-Dec-17	00:05:21
62	171206G1_62	IPA	07-Dec-17	00:17:45
63	171206G1_63	ST171206G1-11 PFC CS5 537 17K3029	07-Dec-17	00:30:12
64	171206G1_64	IPA	07-Dec-17	00:42:37

LC Calibration Standards Review Checklist Q1

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NA
Calibration ID:	ST17120661-10	L (M) H	☒ NA	☑	☑	☑	☑	☑	☐
Calibration ID:	↓ -12 (an 12/7/17)	L M (H)	☐ ↓	☑	☑	☑	☑	☑	☑
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/5/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Reviewed By: JA 12/07/2017
Initials/Date

Comments: DN-23

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-36.qld

Last Altered: Thursday, December 07, 2017 09:51:26 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:51:54 Pacific Standard Time

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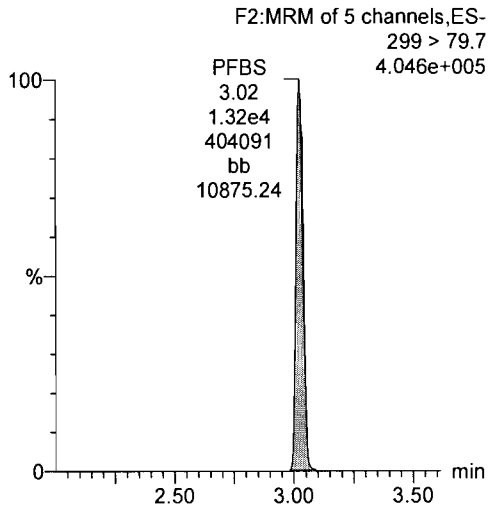
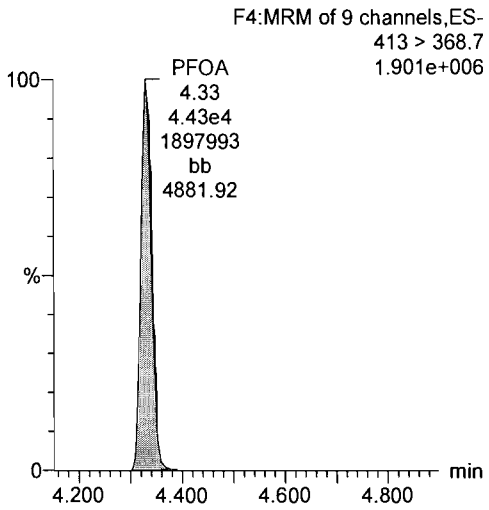
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Name: 171206G1_36, Date: 06-Dec-2017, Time: 18:54:38, ID: ST171206G1-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

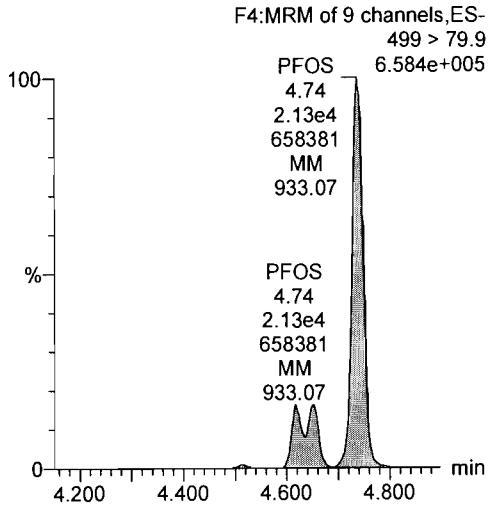
PFBS



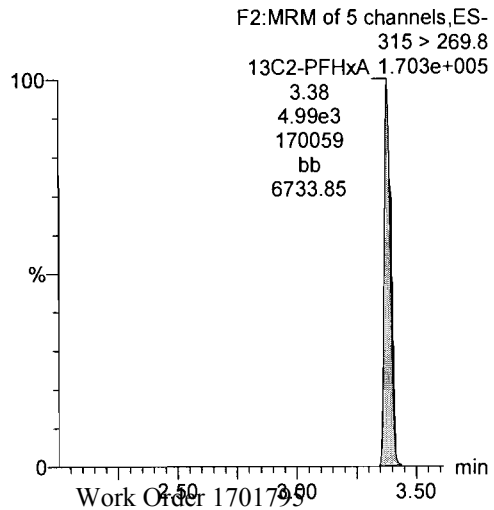
PFOA



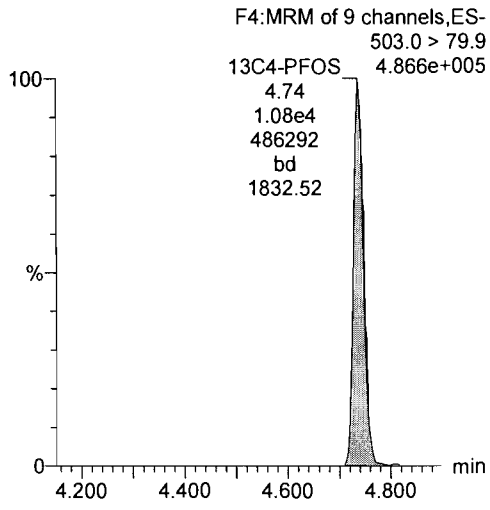
PFOS



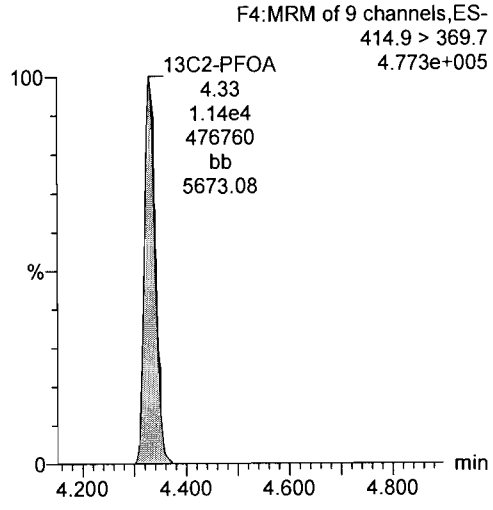
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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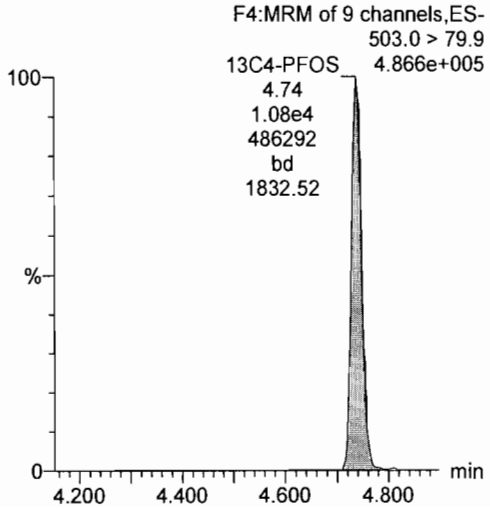
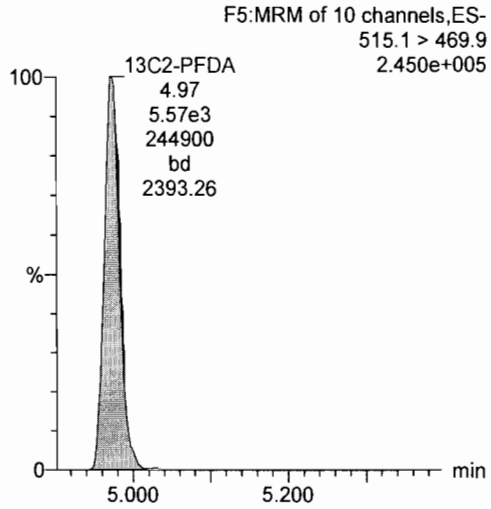
Last Altered: Thursday, December 07, 2017 09:51:26 Pacific Standard Time
Printed: Thursday, December 07, 2017 09:51:54 Pacific Standard Time

Name: 171206G1_36, Date: 06-Dec-2017, Time: 18:54:38, ID: ST171206G1-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

INITIAL CALIBRATION VERIFICATION (ICV)

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 15:37:11 Pacific Standard Time
Printed: Wednesday, December 06, 2017 15:38:06 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

Compound name: PFBS
Coefficient of Determination: R^2 = 0.996569
Calibration curve: -0.00290792 * x^2 + 0.97246 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#-Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1 171206G1_2	3.04	142.813	1.43e2	0.443	0.359	-18.9	0.997	NO	bb
2	2 171206G1_3	3.02	324.776	3.25e2	0.885	0.771	-12.8	0.997	NO	bb
3	3 171206G1_4	3.02	668.558	6.69e2	1.77	1.61	-8.8	0.997	NO	bb
4	4 171206G1_5	3.02	1556.381	1.56e3	4.42	3.93	-11.2	0.997	NO	bb
5	5 171206G1_6	3.02	2968.026	2.97e3	8.85	8.28	-6.5	0.997	NO	bb
6	6 171206G1_7	3.02	7805.369	7.81e3	22.1	21.9	-1.0	0.997	NO	bb
7	7 171206G1_8	3.02	14630.842	1.46e4	44.2	45.5	2.9	0.997	NO	bb
8	8 171206G1_9	3.02	20594.424	2.06e4	66.3	73.0	10.1	0.997	NO	bb
9	9 171206G1_10	3.02	21594.979	2.16e4	88.4	81.8	-7.5	0.997	NO	bb

Compound name: PFOA
Coefficient of Determination: R^2 = 0.999044
Calibration curve: -6.4601e-005 * x^2 + 0.773822 * x
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#-Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1 171206G1_2	4.34	510.113	5.10e2	0.500	0.593	18.7	0.999	NO	bb
2	2 171206G1_3	4.34	1012.627	1.01e3	1.00	1.15	14.6	0.999	NO	bb
3	3 171206G1_4	4.33	1899.585	1.90e3	2.00	2.02	1.1	0.999	NO	bb
4	4 171206G1_5	4.32	4658.164	4.66e3	5.00	5.18	3.6	0.999	NO	bb
5	5 171206G1_6	4.32	8324.391	8.32e3	10.0	9.32	-6.8	0.999	NO	bb
6	6 171206G1_7	4.32	22925.570	2.29e4	25.0	25.8	3.1	0.999	NO	bb
7	7 171206G1_8	4.32	42348.156	4.23e4	50.0	48.9	-2.2	0.999	NO	bb
8	8 171206G1_9	4.32	60818.074	6.08e4	75.0	75.5	0.7	0.999	NO	MM
9	9 171206G1_10	4.33	59990.504	6.00e4	100	71.7	-28.3	0.999	NO	MMX

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time
Printed: Wednesday, December 06, 2017 13:34:55 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.993252
Calibration curve: -0.00340189 * x^2 + 1.34312 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#-Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1 171206G1_2	4.75	185.864	1.86e2	0.464	0.338	-27.2	0.993	NO	MM
2	2 171206G1_3	4.74	493.782	4.94e2	0.925	0.849	-8.2	0.993	NO	MM
3	3 171206G1_4	4.73	902.641	9.03e2	1.85	1.58	-14.7	0.993	NO	MM
4	4 171206G1_5	4.74	2129.515	2.13e3	4.63	3.88	-16.1	0.993	NO	MM
5	5 171206G1_6	4.73	4523.055	4.52e3	9.25	9.12	-1.5	0.993	NO	MM
6	6 171206G1_7	4.73	10605.408	1.06e4	23.1	21.3	-8.0	0.993	NO	MM
7	7 171206G1_8	4.73	22162.412	2.22e4	46.2	49.2	6.6	0.993	NO	MM
8	8 171206G1_9	4.74	31177.727	3.12e4	69.3	77.9	12.4	0.993	NO	MM
9	9 171206G1_10	4.74	31885.908	3.19e4	92.4	83.9	-9.2	0.993	NO	MM

Compound name: 13C2-PFHxA
Response Factor: 0.423896
RRF SD: 0.0162686, Relative SD: 3.83787
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: RF

	#-Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1 171206G1_2	3.39	5073.848	5.07e3	10.0	10.8	7.8		NO	bb
2	2 171206G1_3	3.38	4944.671	4.94e3	10.0	10.2	2.2		NO	bb
3	3 171206G1_4	3.38	5235.920	5.24e3	10.0	10.2	1.7		NO	bb
4	4 171206G1_5	3.38	4811.964	4.81e3	10.0	9.76	-2.4		NO	bb
5	5 171206G1_6	3.38	4790.378	4.79e3	10.0	9.78	-2.2		NO	bb
6	6 171206G1_7	3.38	4649.628	4.65e3	10.0	9.53	-4.7		NO	bb
7	7 171206G1_8	3.38	4648.559	4.65e3	10.0	9.76	-2.4		NO	bb
8	8 171206G1_9	3.38	4333.126	4.33e3	10.0	9.76	-2.4		NO	bb
9	9 171206G1_10	3.38	4725.684	4.73e3	10.0	10.2	2.4		NO	bb

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time
Printed: Wednesday, December 06, 2017 13:34:55 Pacific Standard Time

Compound name: 13C2-PFDA
Response Factor: 0.478193
RRF SD: 0.0266017, Relative SD: 5.56297
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1	171206G1_2	4.98	5062.541	5.06e3	10.0	9.53	-4.7		NO	bb
2	2	171206G1_3	4.98	5099.221	5.10e3	10.0	9.34	-6.6		NO	bb
3	3	171206G1_4	4.97	5576.278	5.58e3	10.0	9.60	-4.0		NO	bb
4	4	171206G1_5	4.97	5965.891	5.97e3	10.0	10.7	7.3		NO	bb
5	5	171206G1_6	4.97	5899.666	5.90e3	10.0	10.7	6.8		NO	bb
6	6	171206G1_7	4.97	5690.050	5.69e3	10.0	10.3	3.3		NO	bb
7	7	171206G1_8	4.97	5207.786	5.21e3	10.0	9.70	-3.0		NO	bb
8	8	171206G1_9	4.97	5270.729	5.27e3	10.0	10.5	5.3		NO	bb
9	9	171206G1_10	4.97	4978.183	4.98e3	10.0	9.56	-4.4		NO	bb

Compound name: 13C2-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1	171206G1_2	4.34	11108.171	1.11e4	10.0	10.0	0.0		NO	bb
2	2	171206G1_3	4.33	11418.653	1.14e4	10.0	10.0	0.0		NO	bb
3	3	171206G1_4	4.33	12142.067	1.21e4	10.0	10.0	0.0		NO	bb
4	4	171206G1_5	4.32	11630.019	1.16e4	10.0	10.0	0.0		NO	bb
5	5	171206G1_6	4.32	11552.979	1.16e4	10.0	10.0	0.0		NO	bb
6	6	171206G1_7	4.33	11514.271	1.15e4	10.0	10.0	0.0		NO	bb
7	7	171206G1_8	4.32	11232.531	1.12e4	10.0	10.0	0.0		NO	bb
8	8	171206G1_9	4.32	10471.047	1.05e4	10.0	10.0	0.0		NO	bb
9	9	171206G1_10	4.32	10884.580	1.09e4	10.0	10.0	0.0		NO	bb

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time
Printed: Wednesday, December 06, 2017 13:34:55 Pacific Standard Time

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 7.85046e-017, Relative SD: 7.85046e-015
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: RF

	#-Name	RT	Area	Resp	Std. Conc	Conc.	%Dev	Coeff. Of Deter...	CD Flag	Primary Fl...
1	1 171206G1_2	4.74	11759.643	1.18e4	28.7	28.7	0.0		NO	bb
2	2 171206G1_3	4.74	12454.042	1.25e4	28.7	28.7	0.0		NO	bb
3	3 171206G1_4	4.74	12278.325	1.23e4	28.7	28.7	0.0		NO	bb
4	4 171206G1_5	4.73	11838.263	1.18e4	28.7	28.7	0.0		NO	bb
5	5 171206G1_6	4.73	10853.454	1.09e4	28.7	28.7	0.0		NO	bb
6	6 171206G1_7	4.73	11267.227	1.13e4	28.7	28.7	0.0		NO	bb
7	7 171206G1_8	4.74	10990.055	1.10e4	28.7	28.7	0.0		NO	bb
8	8 171206G1_9	4.74	10653.778	1.07e4	28.7	28.7	0.0		NO	bb
9	9 171206G1_10	4.74	10316.487	1.03e4	28.7	28.7	0.0		NO	bb

Vista Analytical Laboratory Q1

Dataset: Untitled

Last Altered: Wednesday, December 06, 2017 13:44:16 Pacific Standard Time
Printed: Wednesday, December 06, 2017 13:44:59 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 13:27:38

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171206G1_1	IPA	06-Dec-17	10:54:31
2	171206G1_2	ST171206G1-1 PFC CS-3 537 17K3022	06-Dec-17	11:07:34
3	171206G1_3	ST171206G1-2 PFC CS-2 537 17K3023	06-Dec-17	11:28:57
4	171206G1_4	ST171206G1-3 PFC CS-1 537 17K3024	06-Dec-17	11:41:21
5	171206G1_5	ST171206G1-4 PFC CS0 537 17K3025	06-Dec-17	11:53:46
6	171206G1_6	ST171206G1-5 PFC CS1 537 17K3026	06-Dec-17	12:06:11
7	171206G1_7	ST171206G1-6 PFC CS2 537 17K3033	06-Dec-17	12:18:38
8	171206G1_8	ST171206G1-7 PFC CS3 537 17K3027	06-Dec-17	12:31:04
9	171206G1_9	ST171206G1-8 PFC CS4 537 17K3028	06-Dec-17	12:43:31
10	171206G1_10	ST171206G1-9 PFC CS5 537 17K3029	06-Dec-17	12:55:59
11	171206G1_11	IPA	06-Dec-17	13:08:23
12	171206G1_12	ICV171206G1-1 PFC ICV 537 17K3030	06-Dec-17	13:20:50

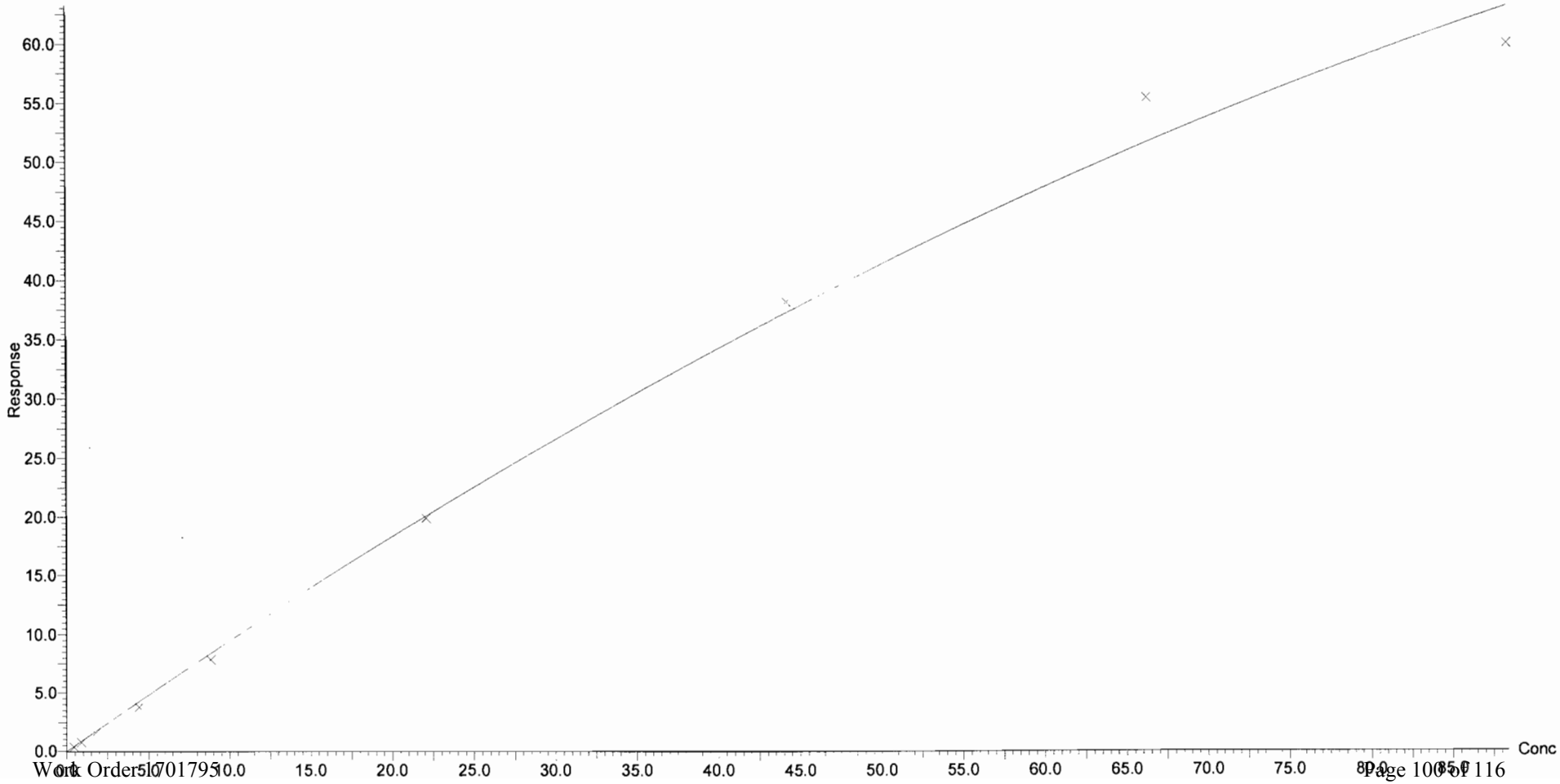
Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 15:37:11 Pacific Standard Time
Printed: Wednesday, December 06, 2017 15:37:35 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L3_DW_1206.mdb 06 Dec 2017 11:11:24
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

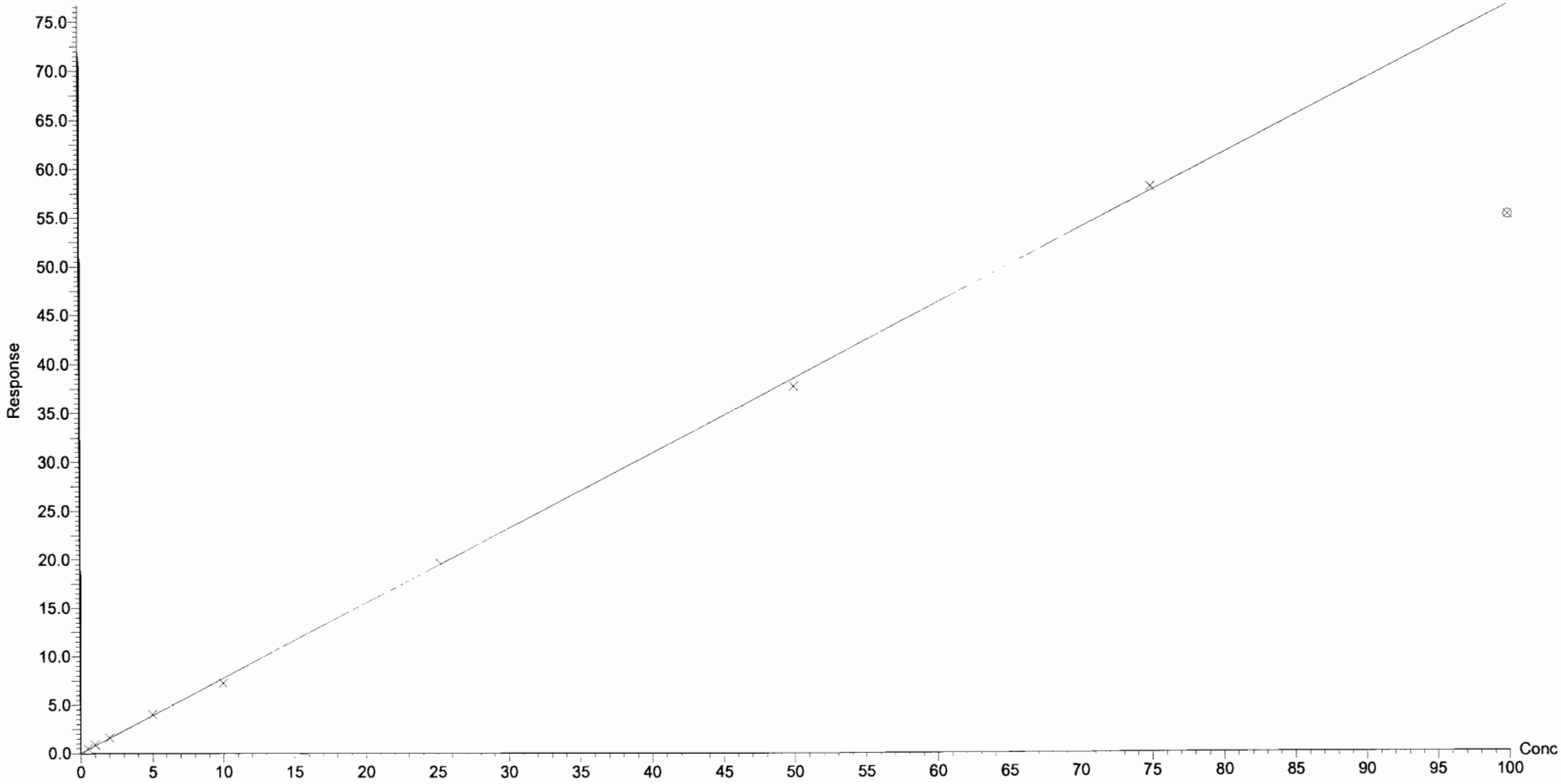
Compound name: PFBS
Coefficient of Determination: R^2 = 0.996569
Calibration curve: -0.00290792 * x^2 + 0.97246 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time
Printed: Wednesday, December 06, 2017 13:35:49 Pacific Standard Time

Compound name: PFOA
Coefficient of Determination: R^2 = 0.999044
Calibration curve: -6.4601e-005 * x^2 + 0.773822 * x
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

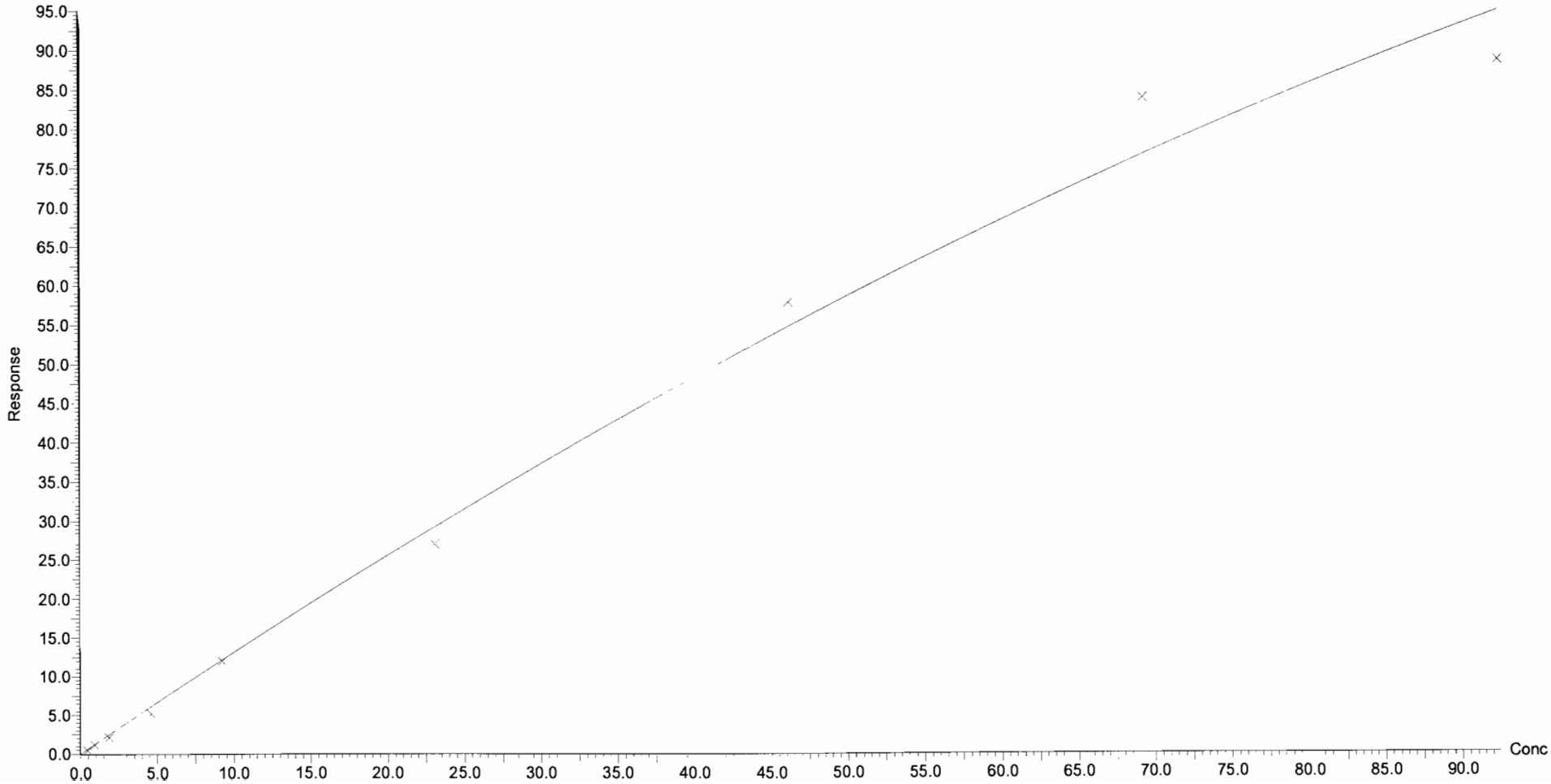


Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time
Printed: Wednesday, December 06, 2017 13:35:49 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.993252
Calibration curve: -0.00340189 * x^2 + 1.34312 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

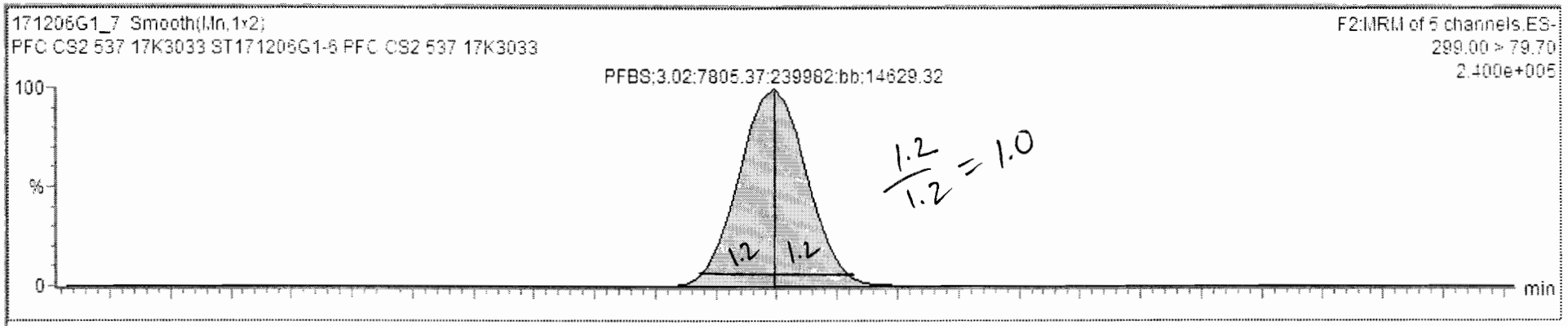


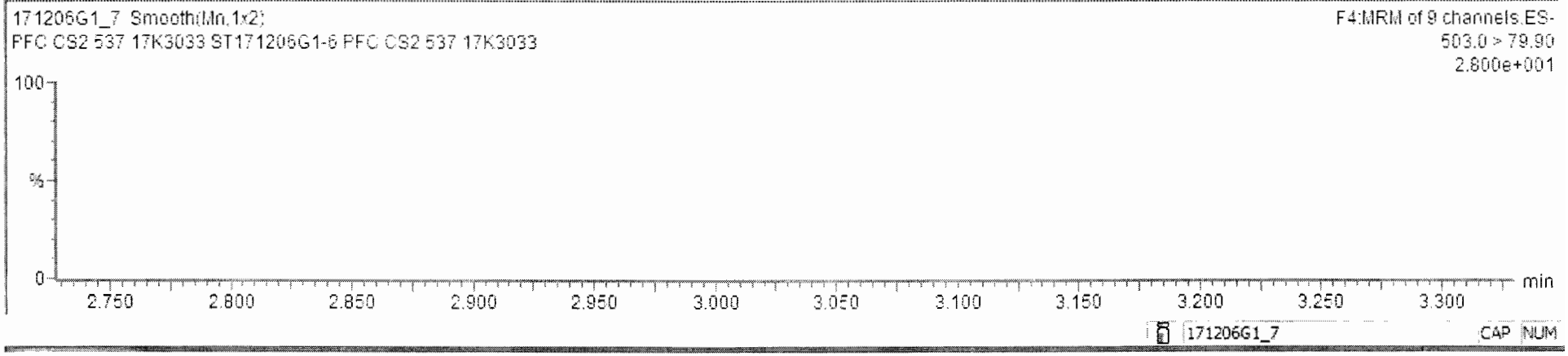
TargetLynx - 171206G1-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

171206G1_7 - ST171206G1-6 PFC CS2 537 17K3033 - PFC CS2 537 17K3033

	Name	Trace	Area	RRF	Wt/VoL	RT	RRT	Conc.	%Rec	DL	%RSD	Coeff. Of D...
1	PFBS	299.00 > 79...	7.61e3		1.0000	3.02	0.00	25.1	113.6	0.0000000		0.9866
2	PFOA	413 > 368.70	2.29e4		1.0000	4.32	0.00	25.8	103.1	0.0000000		0.9990
3	PFOS	499.00 > 79...	1.06e4		1.0000	4.73	0.00	21.3	92.0	0.0000000		0.9933
4	13C2-PFH...	315.0 > 269...	4.65e3	0.424	1.0000	3.38	0.00	9.53	95.3	0.0000000	3.84	
5	13C2-PFDA	515.10 > 46...	5.69e3	0.478	1.0000	4.97	0.00	10.3	103.3	0.0000000	5.56	
6	13C2-PFOA	414.90 > 36...	1.15e4	1.00	1.0000	4.33	0.00	10.0	100.0	0.0000000	0.000	
7	13C4-PFOS	503.0 > 79.90	1.13e4	1.00	1.0000	4.73	0.00	28.7	100.0	0.0000000	0.000000000000007...	





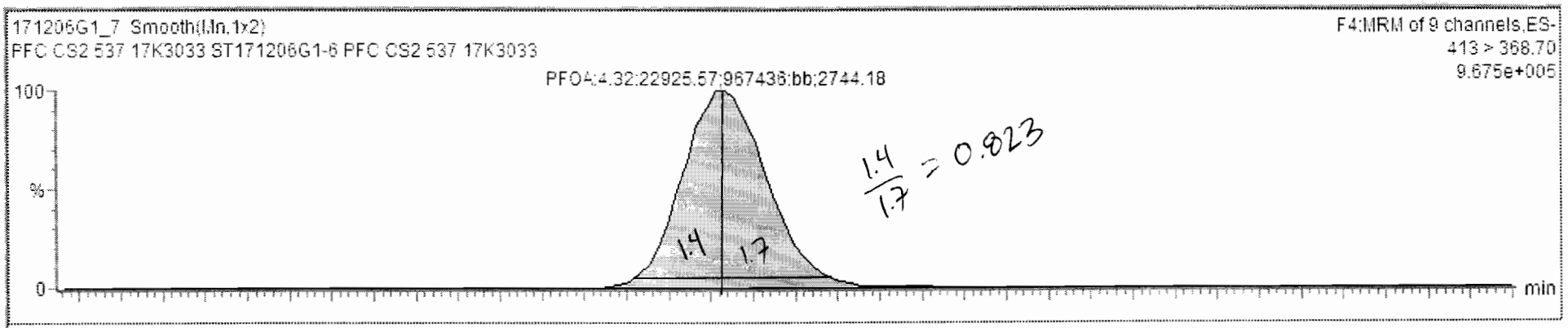
171206G1_7 CAP NUM

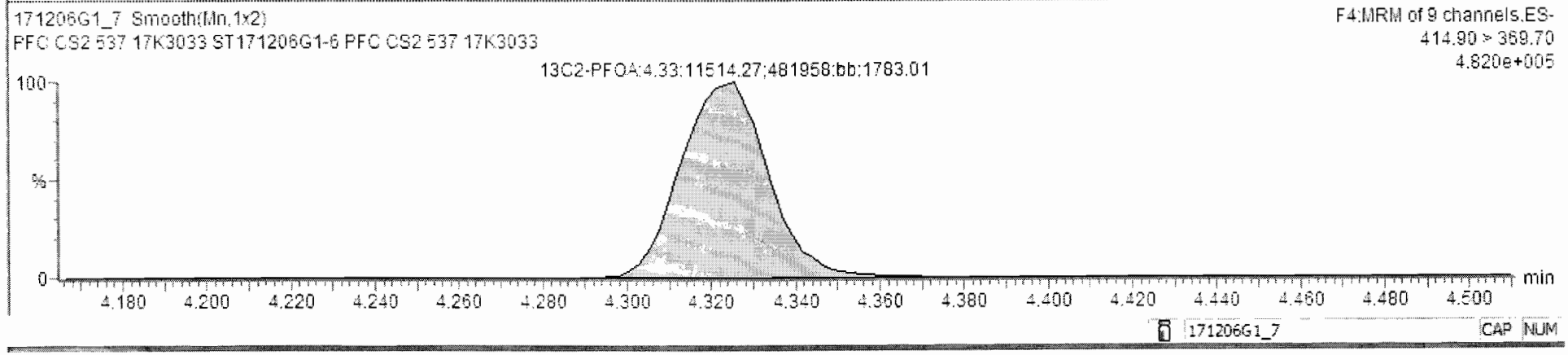
TargetLynx - 171206G1-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

171206G1_7 - ST171206G1-6 PFC CS2 537 17K3033 - PFC CS2 537 17K3033

	Name	Trace	Area	RRF	Wt/VoL	RT	RRT	Conc.	%Rec	DL	%RSD	Coeff. Of D...
1	PFBS	299.00 > 79...	7.81e3		1.0000	3.02	0.00	25.1	113.6	0.0000000		0.9866
2	PFOA	413 > 368.70	2.29e4		1.0000	4.32	0.00	25.8	103.3	0.0000000		0.9990
3	PFOS	499.00 > 79...	1.06e4		1.0000	4.73	0.00	21.3	92.0	0.0000000		0.9933
4	13C2-PFH...	315.0 > 269...	4.65e3	0.424	1.0000	3.36	0.00	9.53	95.3	0.0000000	3.84	
5	13C2-PFDA	515.10 > 46...	5.69e3	0.478	1.0000	4.97	0.00	10.3	103.3	0.0000000	5.56	
6	13C2-PFOA	414.90 > 36...	1.15e4	1.00	1.0000	4.33	0.00	10.0	100.0	0.0000000	0.000	
7	13C4-PFOS	503.0 > 79.90	1.13e4	1.00	1.0000	4.73	0.00	28.7	100.0	0.0000000	0.000000000000007...	





Compound 6: 13C2-PFOA

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171206G1-1 PFC CS-3 537 17K3022	171206G1_	Standard	10	4.34	11108.17	11108.17	bb
2	ST171206G1-2 PFC CS-2 537 17K3023	171206G1_	Standard	10	4.33	11418.65	11418.65	bb
3	ST171206G1-3 PFC CS-1 537 17K3024	171206G1_	Standard	10	4.33	12142.07	12142.07	bb
4	ST171206G1-4 PFC CS0 537 17K3025	171206G1_	Standard	10	4.32	11630.02	11630.02	bb
5	ST171206G1-5 PFC CS1 537 17K3026	171206G1_	Standard	10	4.32	11552.98	11552.98	bb
6	ST171206G1-6 PFC CS2 537 17K3033	171206G1_	Standard	10	4.33	11514.27	11514.27	bb
7	ST171206G1-7 PFC CS3 537 17K3027	171206G1_	Standard	10	4.32	11232.53	11232.53	bb
8	ST171206G1-8 PFC CS4 537 17K3028	171206G1_	Standard	10	4.32	10471.05	10471.05	bb
9	ST171206G1-9 PFC CS5 537 17K3029	171206G1_	Standard	10	4.32	10884.58	10884.58	bb
						AVERAGE		RPD
						11328.26		14.77921174

Compound 7: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171206G1-1 PFC CS-3 537 17K3022	171206G1_	Standard	28.7	4.74	11759.64	11759.64	bb
2	ST171206G1-2 PFC CS-2 537 17K3023	171206G1_	Standard	28.7	4.74	12454.04	12454.04	bb
3	ST171206G1-3 PFC CS-1 537 17K3024	171206G1_	Standard	28.7	4.74	12278.33	12278.33	bb
4	ST171206G1-4 PFC CS0 537 17K3025	171206G1_	Standard	28.7	4.73	11838.26	11838.26	bb
5	ST171206G1-5 PFC CS1 537 17K3026	171206G1_	Standard	28.7	4.73	10853.45	10853.45	bb
6	ST171206G1-6 PFC CS2 537 17K3033	171206G1_	Standard	28.7	4.73	11267.23	11267.23	bb
7	ST171206G1-7 PFC CS3 537 17K3027	171206G1_	Standard	28.7	4.74	10990.06	10990.06	bb
8	ST171206G1-8 PFC CS4 537 17K3028	171206G1_	Standard	28.7	4.74	10653.78	10653.78	bb
9	ST171206G1-9 PFC CS5 537 17K3029	171206G1_	Standard	28.7	4.74	10316.49	10316.49	bb
						AVERAGE		RPD
						11379.03		18.77475047

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

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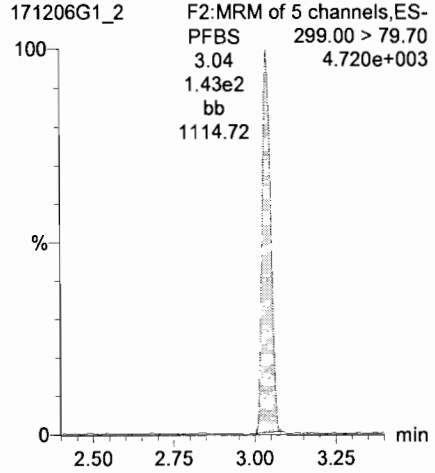

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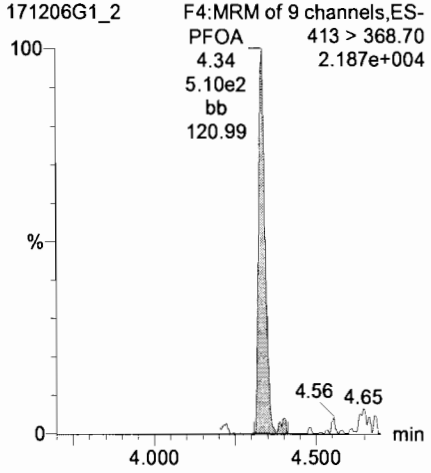

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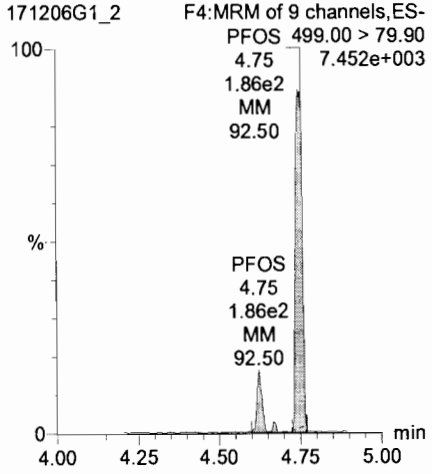

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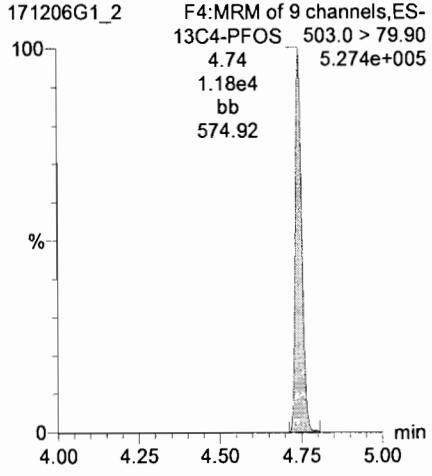

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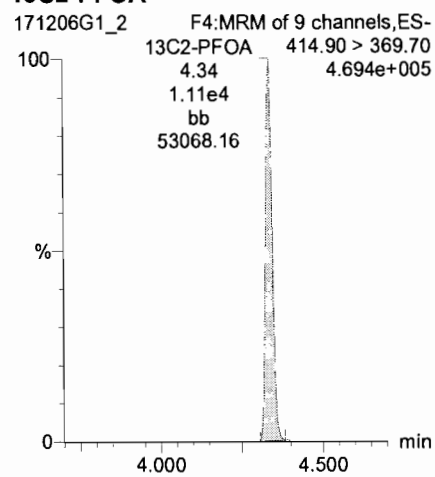

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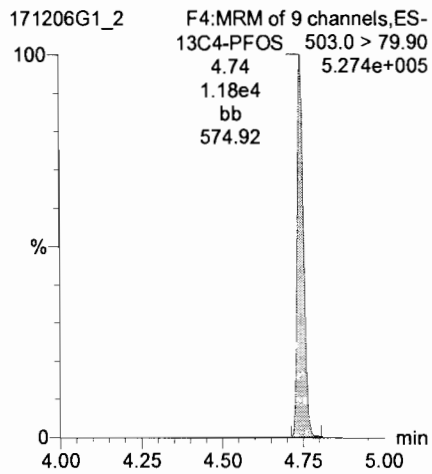

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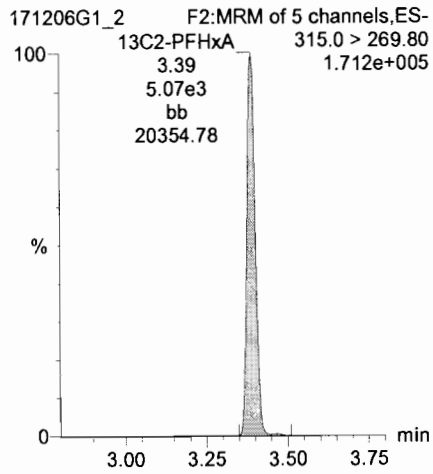

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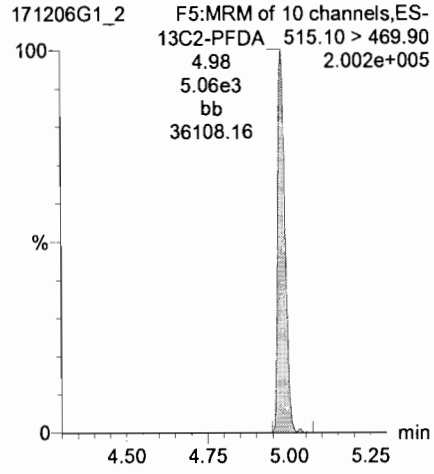

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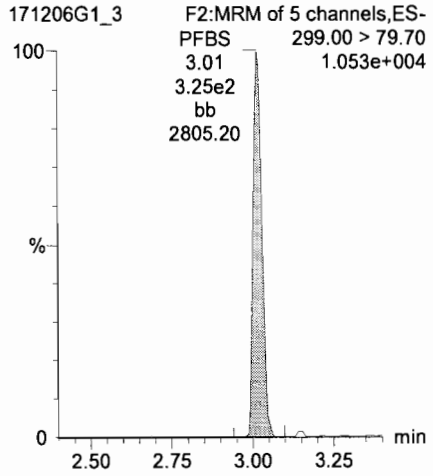

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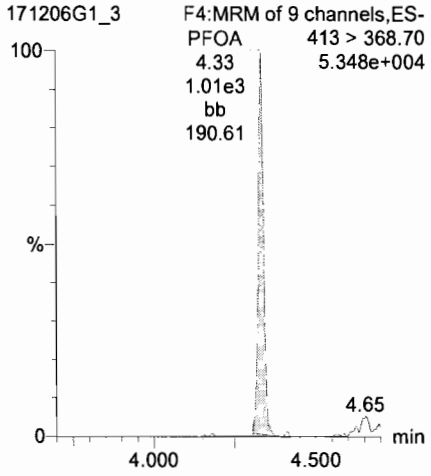

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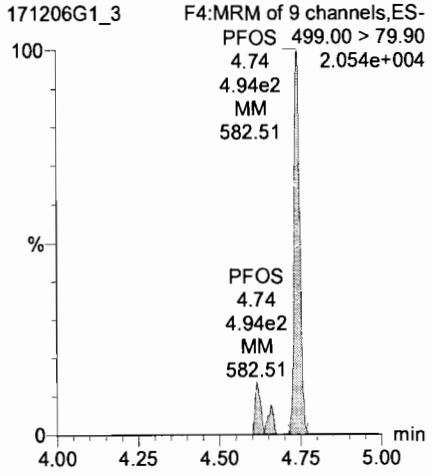

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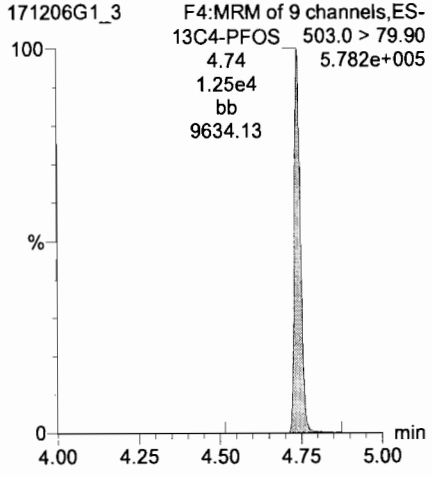

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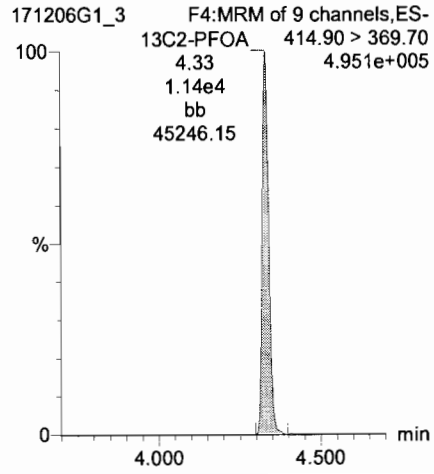

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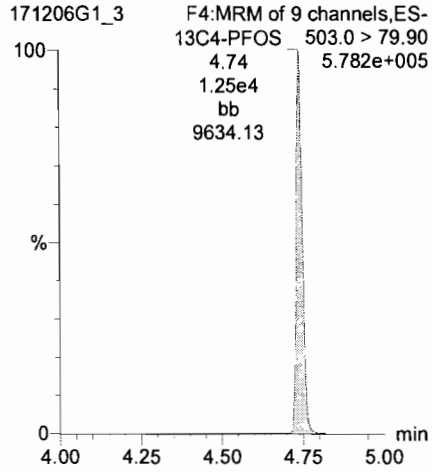

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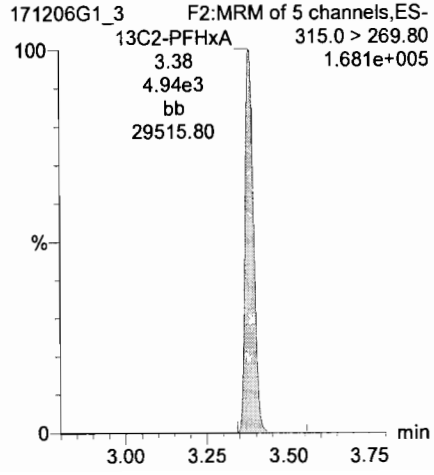

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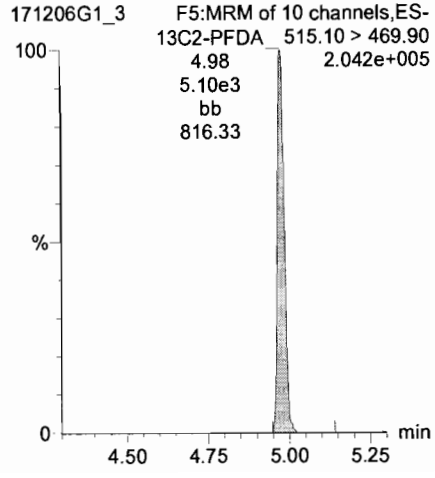

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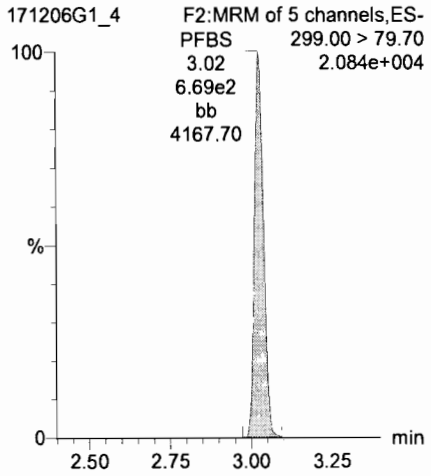

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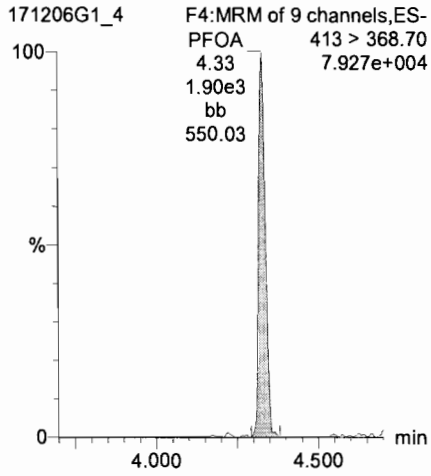

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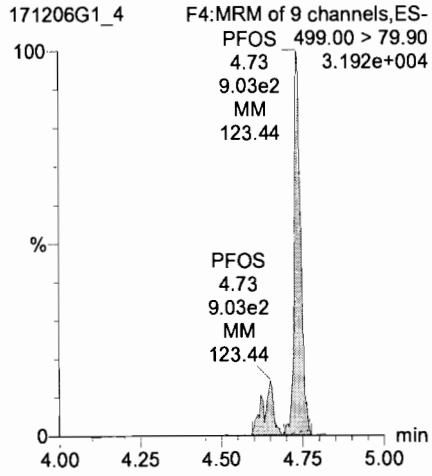

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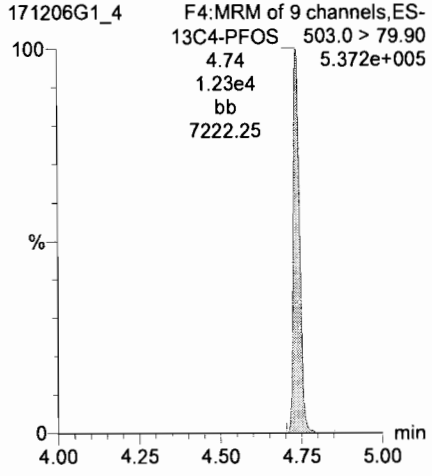

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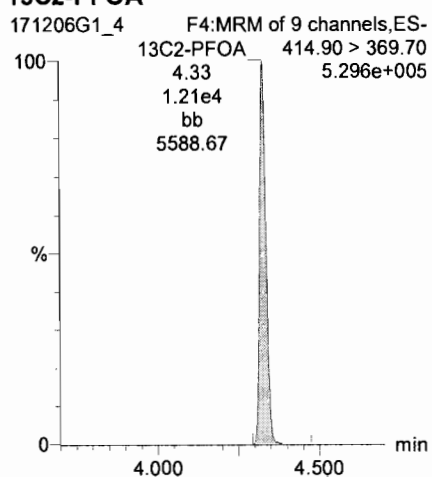

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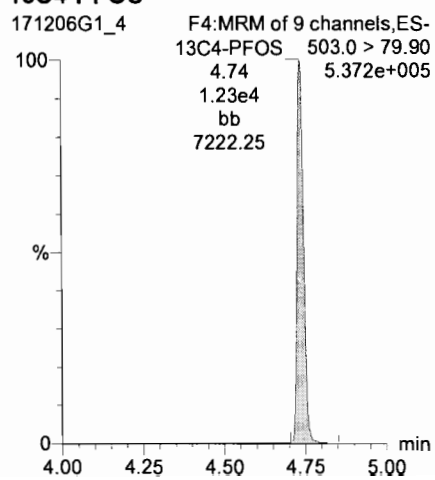

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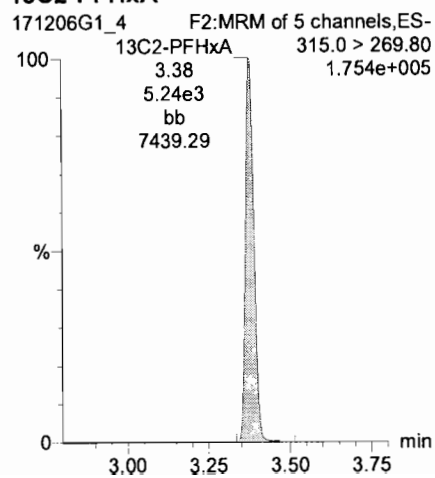

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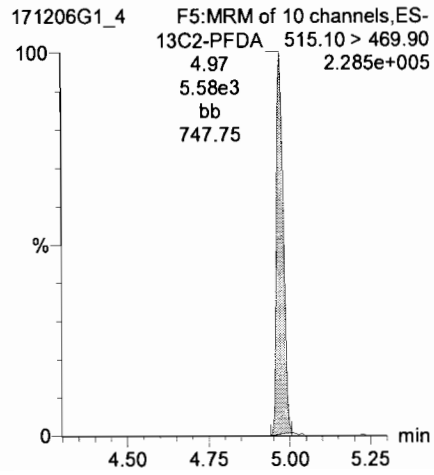

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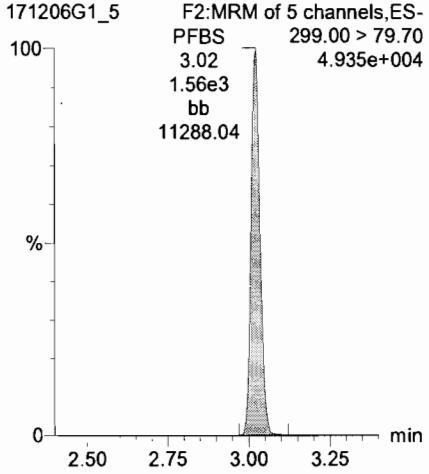

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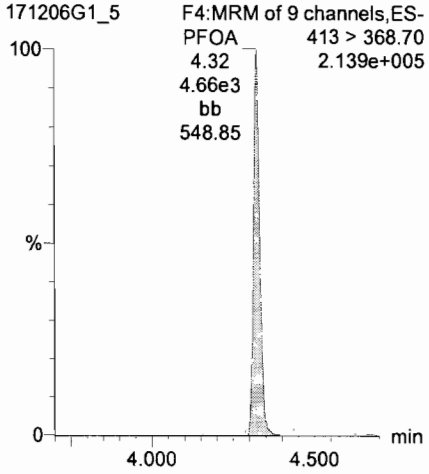

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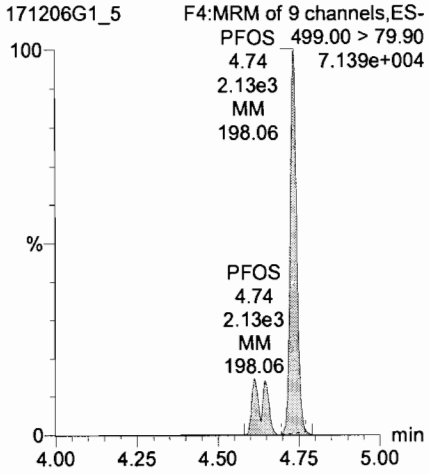

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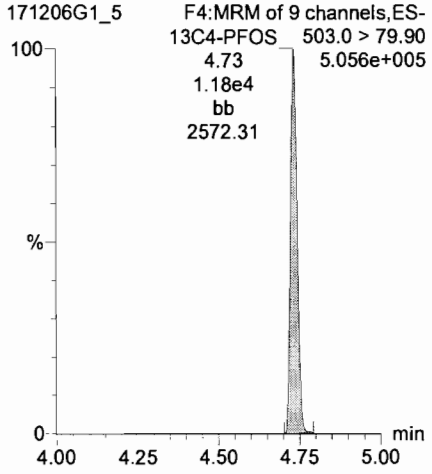

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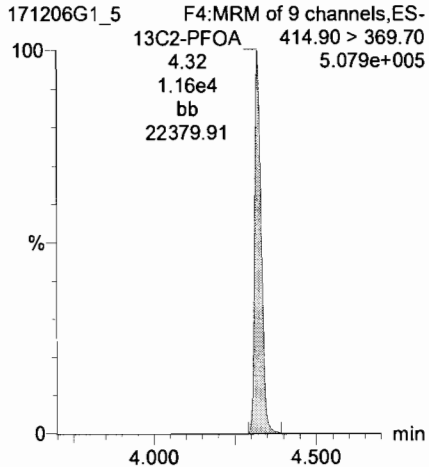

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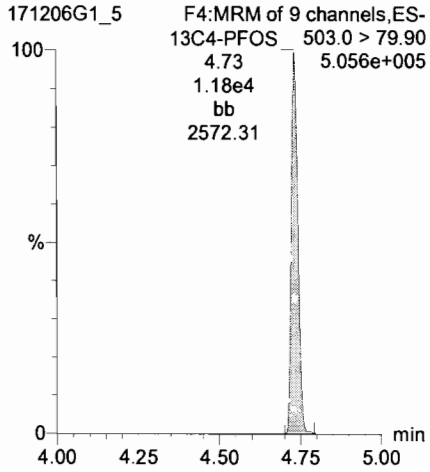

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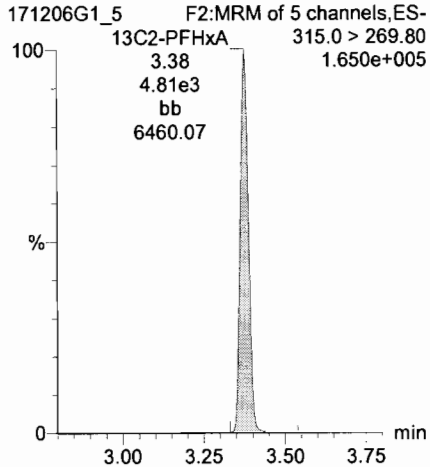

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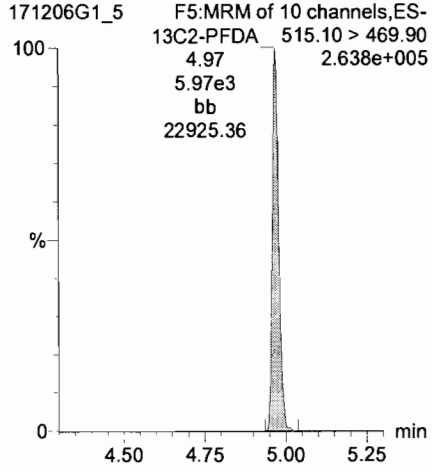

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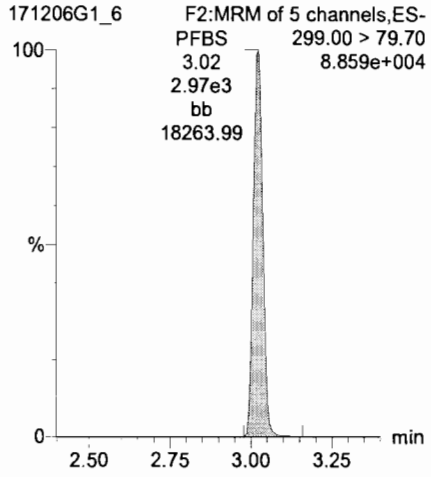

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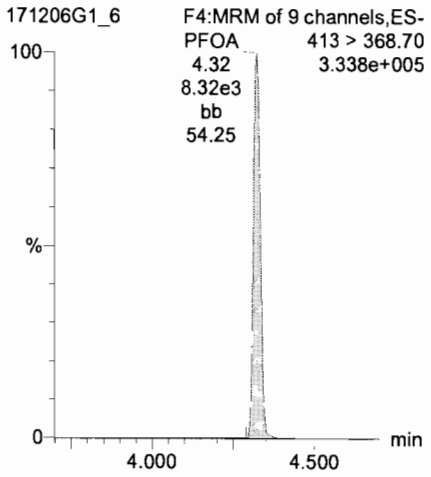

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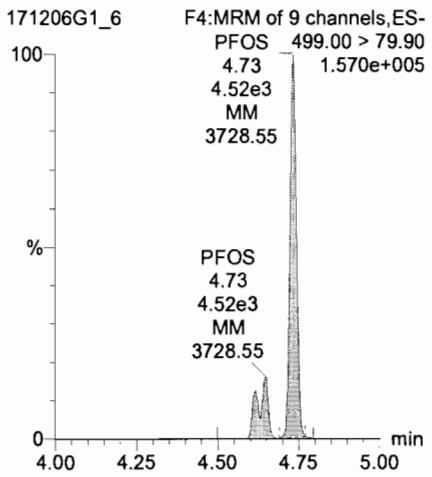

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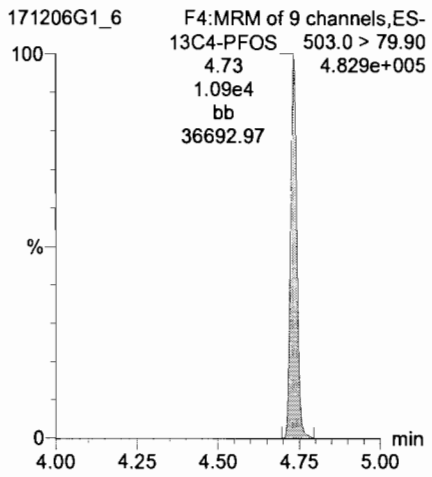

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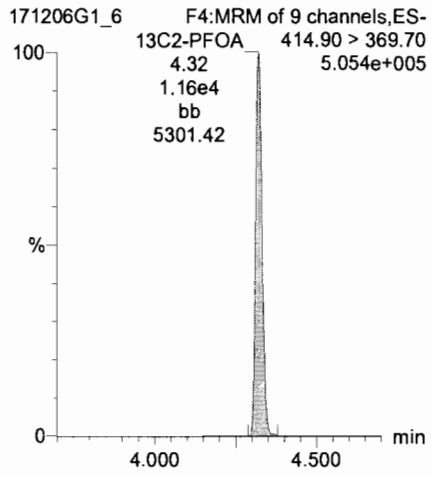

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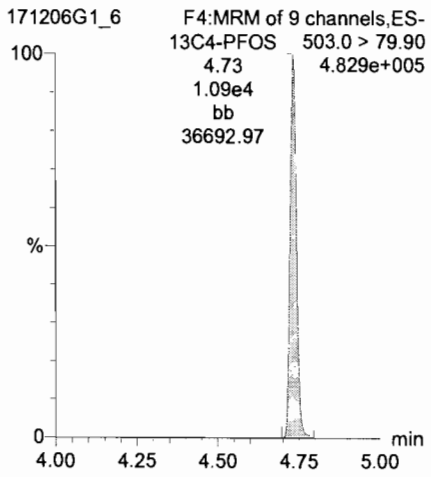

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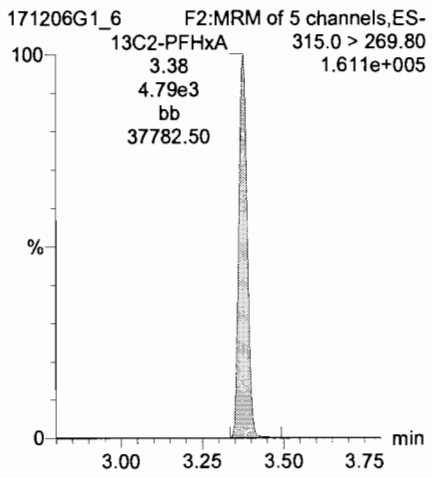

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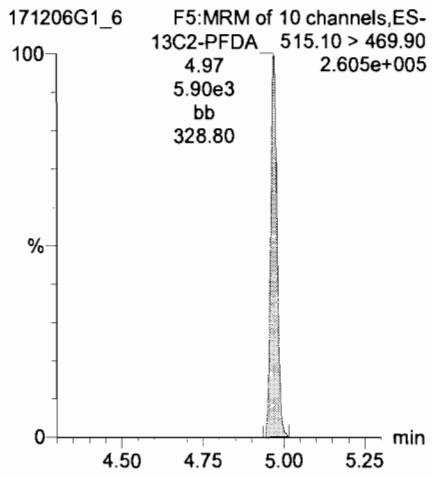

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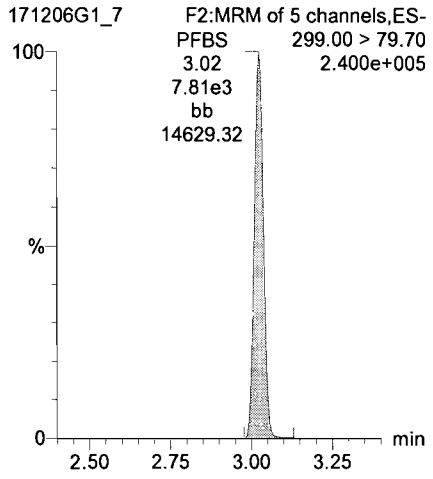

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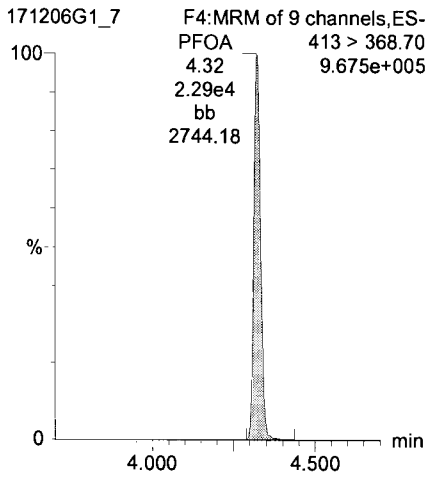

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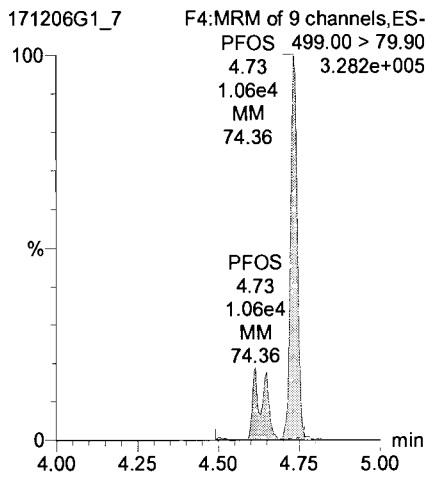

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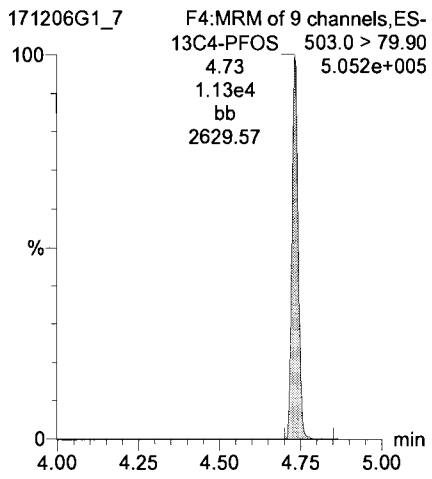

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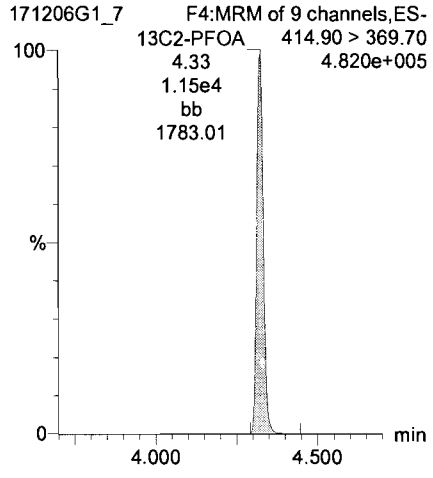

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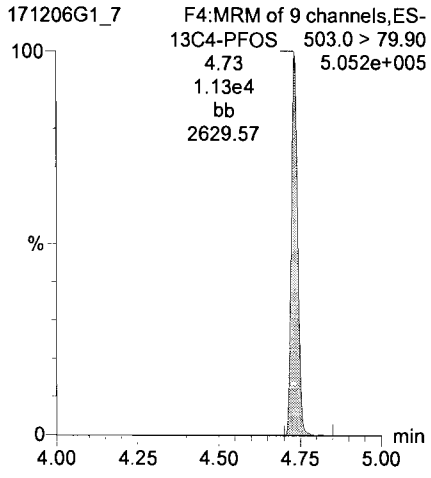

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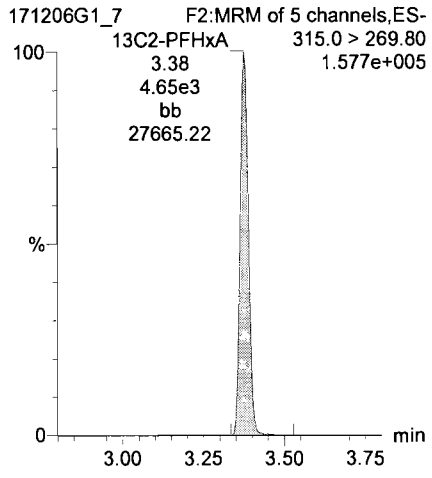

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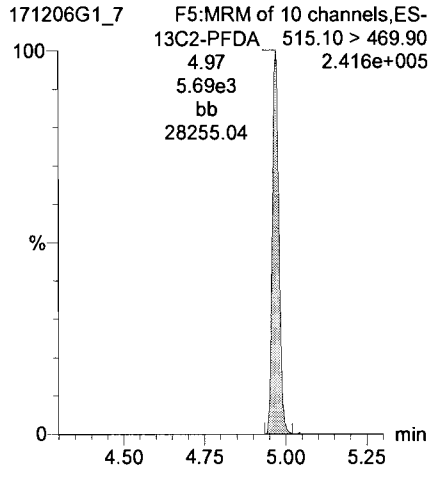

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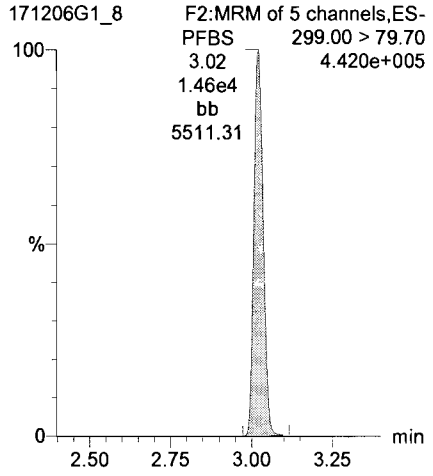

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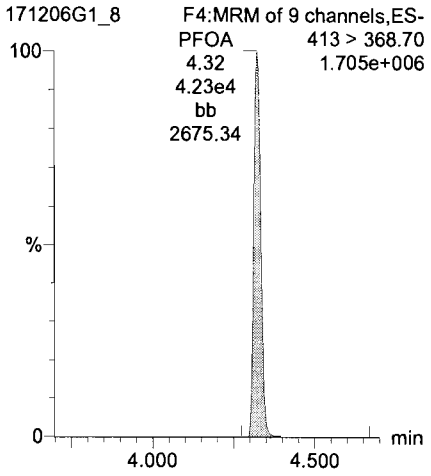

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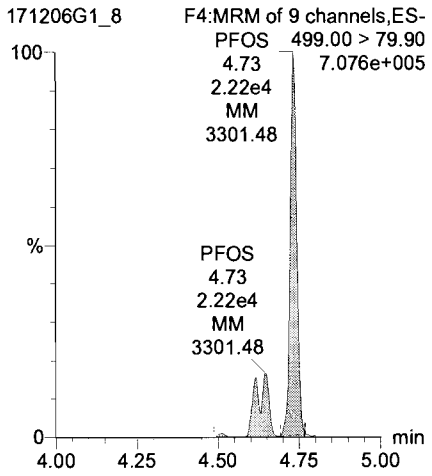

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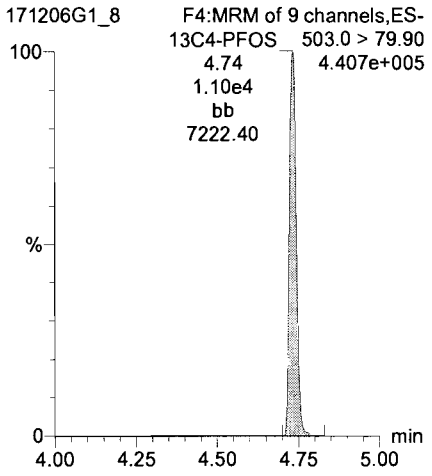

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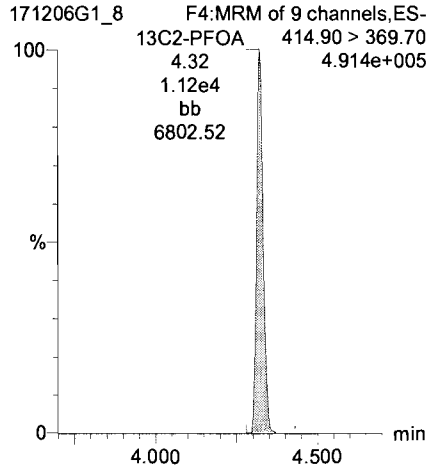

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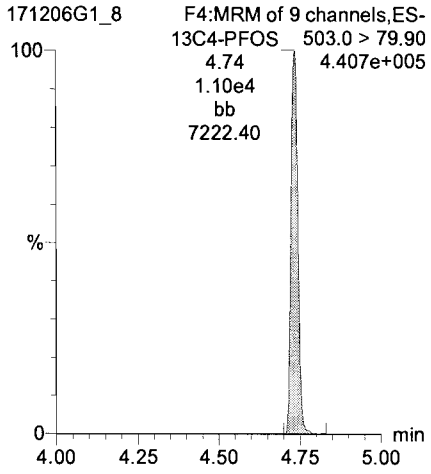

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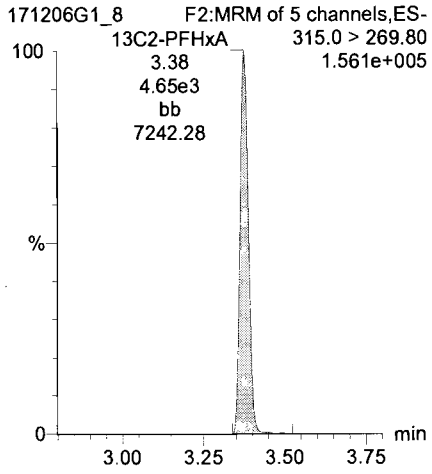

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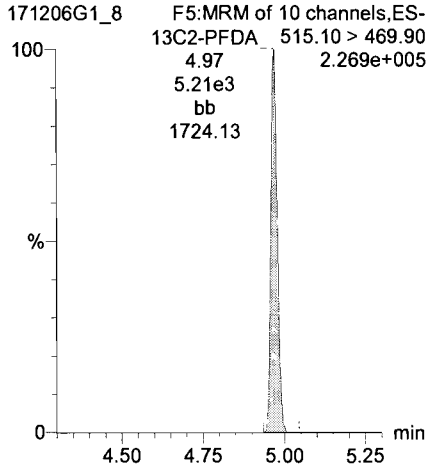

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Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

ID: ST171206G1-8 PFC CS4 537 17K3028, Description: PFC CS4 537 17K3028, Name: 171206G1_9, Date: 06-Dec-2017, Time: 12:43:31, Instrument: , Lab: , User:

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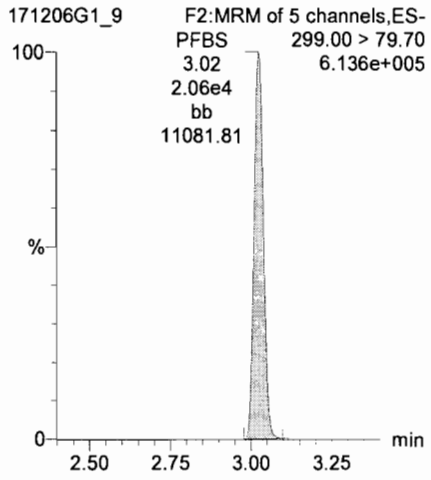

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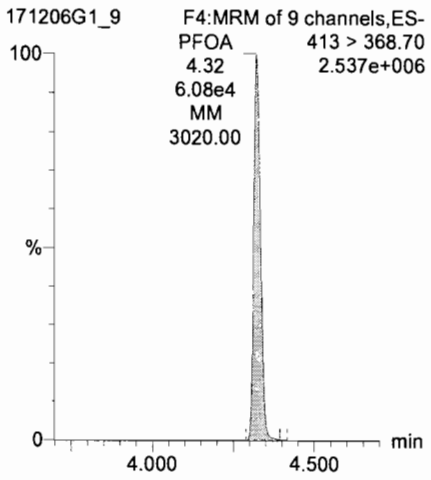

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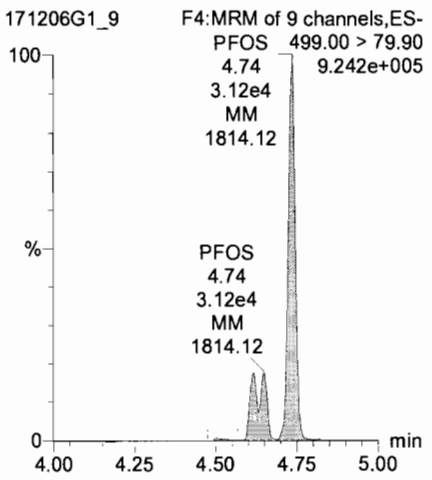

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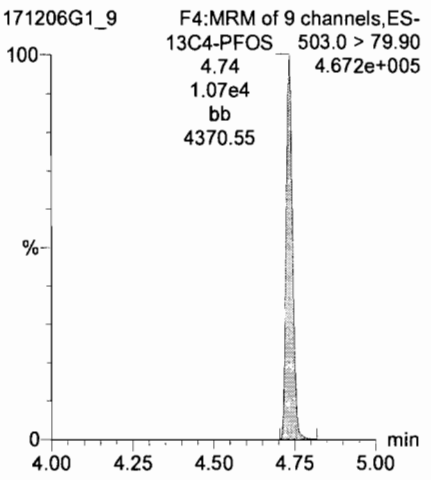

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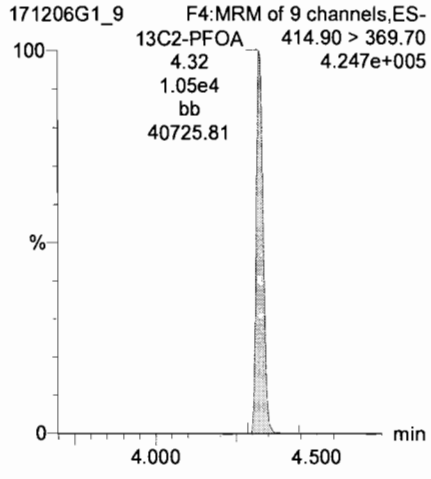

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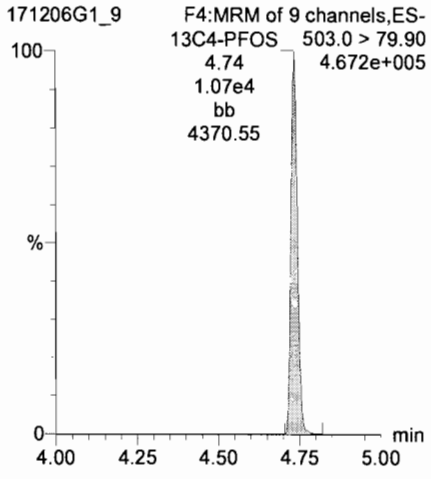

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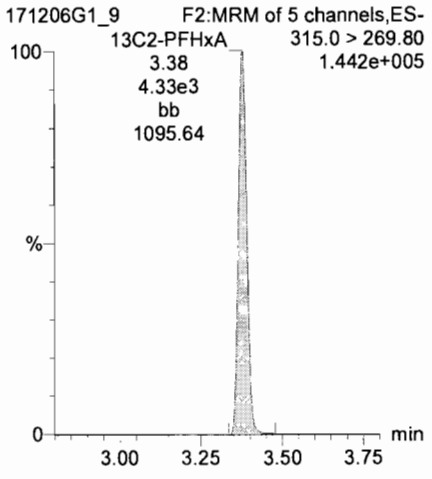

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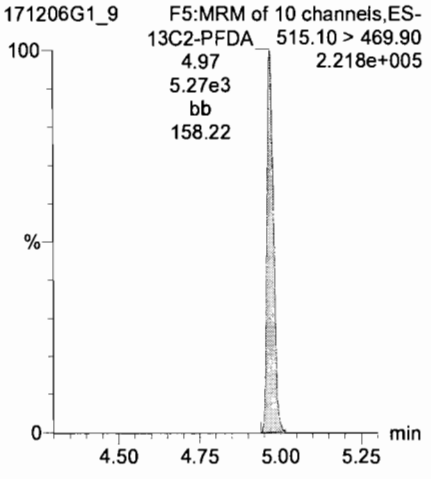

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Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

ID: ST171206G1-9 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029, Name: 171206G1_10, Date: 06-Dec-2017, Time: 12:55:59, Instrument: , Lab: , User:

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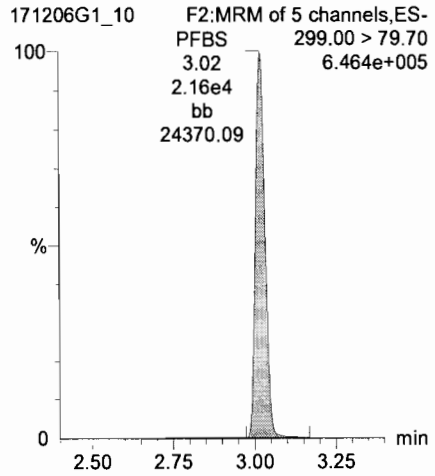

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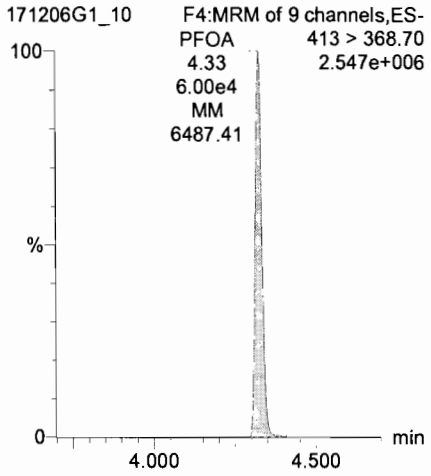

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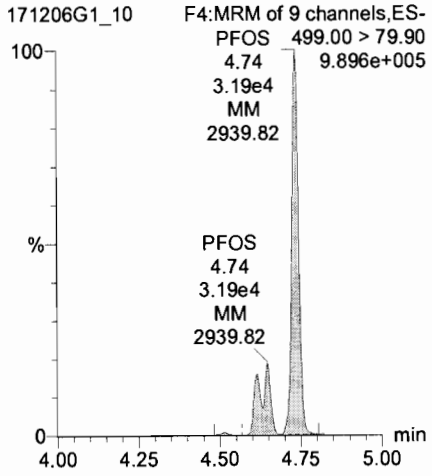

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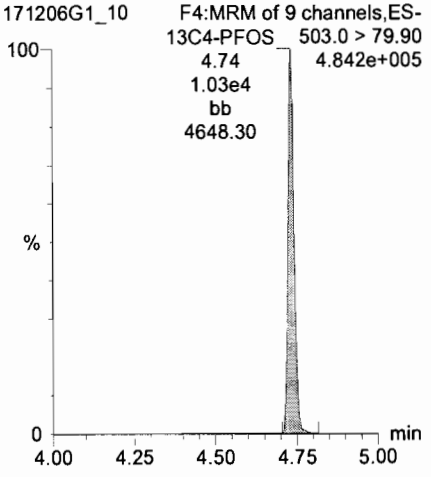

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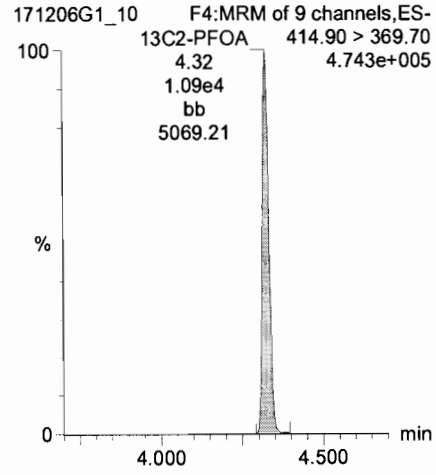

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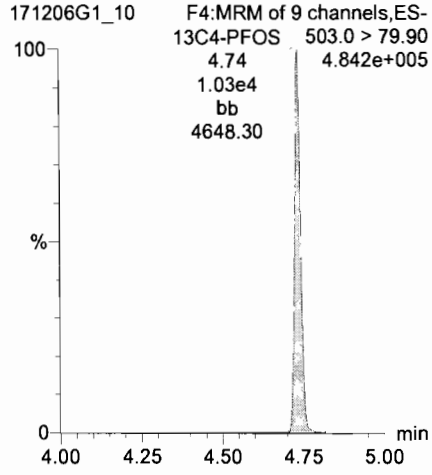

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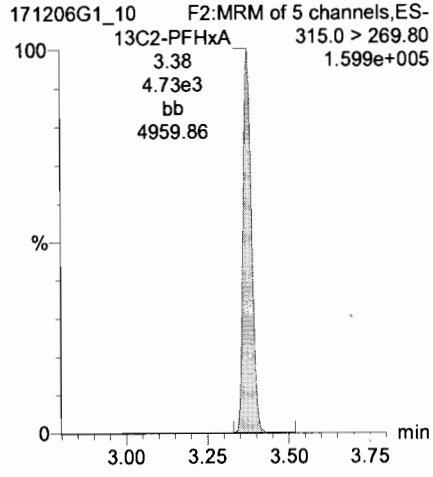

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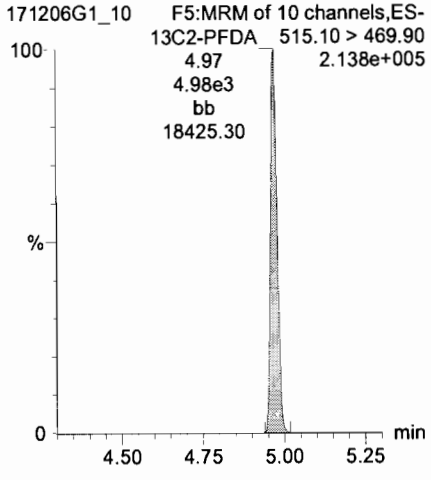

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Last Altered: Wednesday, December 06, 2017 15:38:46 Pacific Standard Time
Printed: Wednesday, December 06, 2017 15:38:59 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

ID: ICV171206G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030, Name: 171206G1_12, Date: 06-Dec-2017, Time: 13:20:50

	#-Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	3.252e3	1.050e4		1.00	3.02	9.41	94.1
2	2 PFOA	413 > 368.70	8.480e3	1.042e4		1.00	4.33	10.5	105
3	3 PFOS	499.00 > 79.90	4.681e3	1.050e4		1.00	4.74	9.77	97.7
4	4 13C2-PFHxA	315.0 > 269.80	4.418e3	1.042e4	0.424	1.00	3.38	10.0	100
5	5 13C2-PFDA	515.10 > 469.90	5.224e3	1.042e4	0.478	1.00	4.97	10.5	105
6	6 13C2-PFOA	414.90 > 369.70	1.042e4	1.042e4	1.000	1.00	4.33	10.0	100
7	7 13C4-PFOS	503.0 > 79.90	1.050e4	1.050e4	1.000	1.00	4.74	28.7	100

70-130

12/6/17

VJA. 12/06/2017

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-12.qld

Last Altered: Wednesday, December 06, 2017 15:38:46 Pacific Standard Time
Printed: Wednesday, December 06, 2017 15:38:59 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-06-17_L3.cdb 06 Dec 2017 15:37:11

ID: ICV171206G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030, Name: 171206G1_12, Date: 06-Dec-2017, Time: 13:20:50, Instrument: , Lab: , User:

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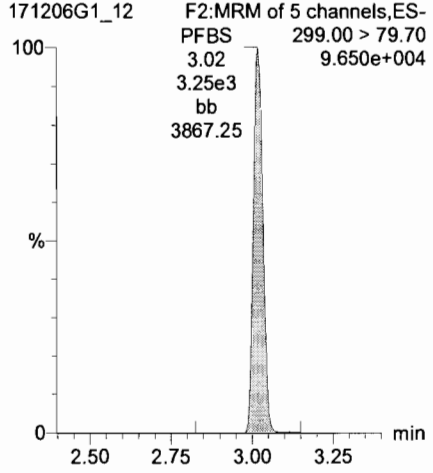

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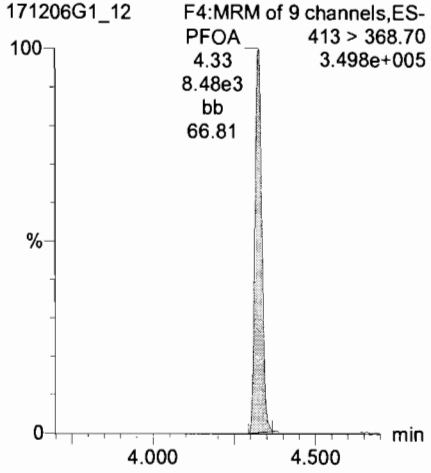

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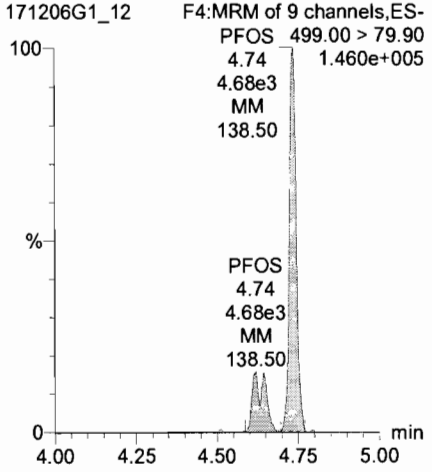

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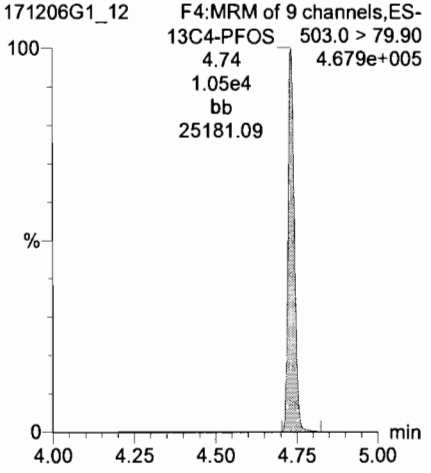

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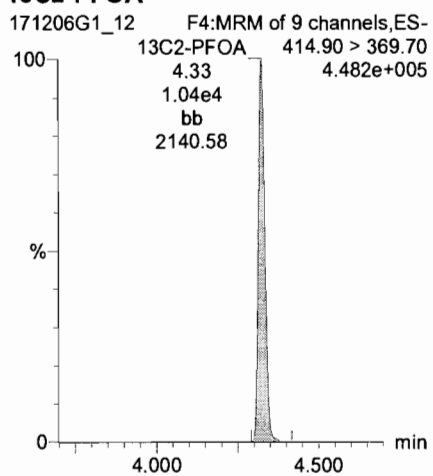

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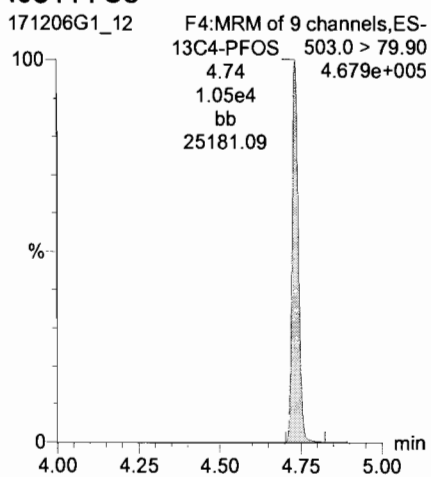

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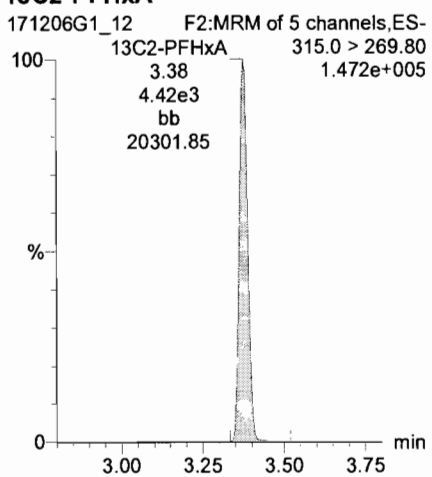

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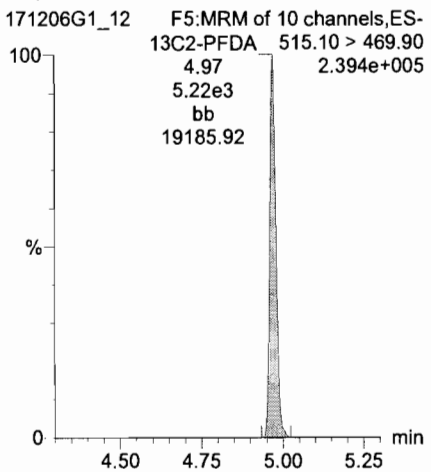

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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB88-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 09:55	11/29/2017			20171204	11:10:00	20171206	16:00:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB88-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 09:55	11/29/2017			20171204	11:10:00	20171206	16:00:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB88-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 09:55	11/29/2017			20171204	11:10:00	20171206	16:00:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB88-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 09:55	11/29/2017			20171204	11:10:00	20171206	16:00:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:18	11/29/2017			20171204	11:10:00	20171206	16:13:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:18	11/29/2017			20171204	11:10:00	20171206	16:13:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:18	11/29/2017			20171204	11:10:00	20171206	16:13:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:18	11/29/2017			20171204	11:10:00	20171206	16:13:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:19	11/29/2017			20171204	11:10:00	20171206	16:25:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:19	11/29/2017			20171204	11:10:00	20171206	16:25:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:19	11/29/2017			20171204	11:10:00	20171206	16:25:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB89-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:19	11/29/2017			20171204	11:10:00	20171206	16:25:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:41	11/29/2017			20171204	11:10:00	20171206	16:37:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:41	11/29/2017			20171204	11:10:00	20171206	16:37:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:41	11/29/2017			20171204	11:10:00	20171206	16:37:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:41	11/29/2017			20171204	11:10:00	20171206	16:37:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:42	11/29/2017			20171204	11:10:00	20171206	16:50:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:42	11/29/2017			20171204	11:10:00	20171206	16:50:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:42	11/29/2017			20171204	11:10:00	20171206	16:50:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB90-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 10:42	11/29/2017			20171204	11:10:00	20171206	16:50:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:30	11/29/2017			20171204	11:10:00	20171206	17:02:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:30	11/29/2017			20171204	11:10:00	20171206	17:02:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:30	11/29/2017			20171204	11:10:00	20171206	17:02:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:30	11/29/2017			20171204	11:10:00	20171206	17:02:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:31	11/29/2017			20171204	11:10:00	20171206	17:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:31	11/29/2017			20171204	11:10:00	20171206	17:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:31	11/29/2017			20171204	11:10:00	20171206	17:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB91-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 11:31	11/29/2017			20171204	11:10:00	20171206	17:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:08	11/29/2017			20171204	11:10:00	20171206	17:27:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:08	11/29/2017			20171204	11:10:00	20171206	17:27:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:08	11/29/2017			20171204	11:10:00	20171206	17:27:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:08	11/29/2017			20171204	11:10:00	20171206	17:27:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:09	11/29/2017			20171204	11:10:00	20171206	17:40:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:09	11/29/2017			20171204	11:10:00	20171206	17:40:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:09	11/29/2017			20171204	11:10:00	20171206	17:40:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB92-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:09	11/29/2017			20171204	11:10:00	20171206	17:40:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:18	11/29/2017			20171204	11:10:00	20171206	17:52:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:18	11/29/2017			20171204	11:10:00	20171206	17:52:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:18	11/29/2017			20171204	11:10:00	20171206	17:52:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:18	11/29/2017			20171204	11:10:00	20171206	17:52:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:19	11/29/2017			20171204	11:10:00	20171206	18:04:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:19	11/29/2017			20171204	11:10:00	20171206	18:04:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:19	11/29/2017			20171204	11:10:00	20171206	18:04:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:19	11/29/2017			20171204	11:10:00	20171206	18:04:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:28	11/29/2017			20171204	11:10:00	20171206	18:17:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:28	11/29/2017			20171204	11:10:00	20171206	18:17:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:28	11/29/2017			20171204	11:10:00	20171206	18:17:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:28	11/29/2017			20171204	11:10:00	20171206	18:17:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:29	11/29/2017			20171204	11:10:00	20171206	18:29:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:29	11/29/2017			20171204	11:10:00	20171206	18:29:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:29	11/29/2017			20171204	11:10:00	20171206	18:29:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB93B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/28/2017 12:29	11/29/2017			20171204	11:10:00	20171206	18:29:00

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Lab_Sample_ID	Dilution	Run_Nu mber	Percent_ Moisture	Percent_ Lipid	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy_ Upper	QC_ Accuracy_L ower
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-01	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.05	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-01	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.05	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-01	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.05	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-01	1	-999			13C2-PFHxA	13C2-PFHxA		95.7	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-02	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-02	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-02	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-02	1	-999			13C2-PFHxA	13C2-PFHxA		99.3	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-03	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.79	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-03	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.79	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-03	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.79	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-03	1	-999			13C2-PFHxA	13C2-PFHxA		107	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-04	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.73	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-04	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.73	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-04	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.73	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-04	1	-999			13C2-PFHxA	13C2-PFHxA		115	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-05	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.89	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-05	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.89	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-05	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.89	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-05	1	-999			13C2-PFHxA	13C2-PFHxA		111	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-06	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-06	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-06	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-06	1	-999			13C2-PFHxA	13C2-PFHxA		101	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-07	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.04	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-07	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.04	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-07	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.04	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-07	1	-999			13C2-PFHxA	13C2-PFHxA		98.8	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-08	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.75	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-08	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.75	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-08	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.75	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-08	1	-999			13C2-PFHxA	13C2-PFHxA		105	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-09	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.98	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-09	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.98	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-09	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.98	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-09	1	-999			13C2-PFHxA	13C2-PFHxA		96.3	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-10	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-10	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-10	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.74	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-10	1	-999			13C2-PFHxA	13C2-PFHxA		97.8	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-11	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.96	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-11	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.96	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-11	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.96	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-11	1	-999			13C2-PFHxA	13C2-PFHxA		93.6	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-12	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.08	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-12	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.08	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-12	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.08	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-12	1	-999			13C2-PFHxA	13C2-PFHxA		88.0	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-13	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.22	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-13	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.22	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-13	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.22	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-13	1	-999			13C2-PFHxA	13C2-PFHxA		95.5	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-14	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.77	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-14	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.77	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-14	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.77	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-14	1	-999			13C2-PFHxA	13C2-PFHxA		91.6	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-15	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.78	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-15	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.78	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-15	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.78	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-15	1	-999			13C2-PFHxA	13C2-PFHxA		106	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-16	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.78	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-16	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.78	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-16	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.78	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-16	1	-999			13C2-PFHxA	13C2-PFHxA		93.8	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-17	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.92	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-17	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.92	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-17	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.92	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-17	1	-999			13C2-PFHxA	13C2-PFHxA		99.3	PCT_REC			PR			SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-18	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.73	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-18	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.73	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-18	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.73	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701795-18	1	-999			13C2-PFHxA	13C2-PFHxA		93.2	PCT_REC			PR			SLSA	130	70

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Sample_Name	CH2M_ Code	Analysis_ Group	Analytical_ Method	PRC_ Code	Lab_ Code	Lab_Name	Leachate_ Method	Sample_ Basis	Extraction_ Method	Result_ Type	Lab_QC_ Type	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received	Leachate_ Date	Leachate_ Time	Extraction _Date	Extractio n_Time	Analysis_ Date	Analysis _Time
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:46:00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:46:00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:46:00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:46:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:21:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:21:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:21:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:21:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:33:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:33:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:33:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/04/2017 11:10	12/04/2017			20171204	11:10:00	20171206	14:33:00

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Lab_Sample_ID	Dilution	Run_Nu mber	Percent_ Moisture	Percent_ Lipid	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy_ Upper	QC_ Accuracy_L ower
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.00	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.00	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.00	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA		98.2	PCT_REC			PR	SUR		SLSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		35.3	NG_L			PR	TRG		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		41.9	NG_L			PR	TRG		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		38.1	NG_L			PR	TRG		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BS1	1	-999			13C2-PFHxA	13C2-PFHxA		107	PCT_REC			PR	SUR		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		34.7	NG_L			PR	TRG		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		48.7	NG_L			PR	TRG		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		37.8	NG_L			PR	TRG		LSA	130	70
N6247016D9000	0008		CHERRY_POINT_MCAS	B7L0009-BSD1	1	-999			13C2-PFHxA	13C2-PFHxA		102	PCT_REC			PR	SUR		LSA	130	70

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
MCOLF ATLANTC, NORTH CAROLINA

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701795
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCOLF Atlantic, North Carolina
Date: January 3, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-1RW86-1117	1701795-01	Water
2	CH-AT-1FB86-1117	1701795-02	Water
3	CH-AT-1RW87-1117	1701795-03	Water
4	CH-AT-1FB87-1117	1701795-04	Water
5	CH-AT-1RW88-1117	1701795-05	Water
6	CH-AT-1FB88-1117	1701795-06	Water
7	CH-AT-1RW89-1117	1701795-07	Water
8	CH-AT-1FB89-1117	1701795-08	Water
9	CH-AT-1RW90-1117	1701795-09	Water
10	CH-AT-1FB90-1117	1701795-10	Water
11	CH-AT-1RW91-1117	1701795-11	Water
12	CH-AT-1FB91-1117	1701795-12	Water
13	CH-AT-1RW92-1117	1701795-13	Water
14	CH-AT-1FB92-1117	1701795-14	Water
15	CH-AT-1RW93A-1117	1701795-15	Water
16	CH-AT-1FB93A-1117	1701795-16	Water
17	CH-AT-1RW93B-1117	1701795-17	Water
18	CH-AT-1FB93B-1117	1701795-18	Water

A full data validation was performed on the analytical data for nine water samples and nine aqueous field blank samples collected on November 28, 2017 by CH2M HILL at the MCOLF Atlantic site in Atlantic, North Carolina. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis	*Method References*
PFCs	USEPA Method 537

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Organic Superfund Methods Data Review," January 2017;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

Overall the data is acceptable for the intended purposes. There were no qualifications.

Perfluorinated Compounds (PFCs)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
CH-AT-1FB86-1117	None - ND	-	-	-
CH-AT-1FB87-1117	None - ND	-	-	-
CH-AT-1FB88-1117	None - ND	-	-	-
CH-AT-1FB89-1117	None - ND	-	-	-
CH-AT-1FB90-1117	None - ND	-	-	-
CH-AT-1FB91-1117	None - ND	-	-	-
CH-AT-1FB92-1117	None - ND	-	-	-
CH-AT-1FB93A-1117	None - ND	-	-	-
CH-AT-1FB93B-1117	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 1/5/18

Nancy Weaver
Senior Chemist

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

Vista Analytical Laboratory

Sample ID: CH-AT-1RW86-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:06

Laboratory Data

Lab Sample: 1701795-01
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1
PFOA	ND	1.09	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1
PFOS	ND	1.05	5.05	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.7	70 - 130		B7L0009	04-Dec-17	0.248 L	06-Dec-17 14:58	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

NW 1/31/18

Vista Analytical Laboratory

Sample ID: CH-AT-1FB86-1117 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-02	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 09:07	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1
PFOA	ND	1.02	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1
PFOS	ND	0.986	4.74	9.48		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

Vista Analytical Laboratory 3

Sample ID: CH-AT-1RW87-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-03	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 09:32	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1
PFOA	ND	1.03	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1
PFOS	ND	0.996	4.79	9.58		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 15:23	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

8.13.18

Vista Analytical Laboratory

4

Sample ID: CH-AT-1FB87-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-04	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 09:33	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1
PFOA	ND	1.02	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1
PFOS	ND	0.985	4.73	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	115	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 15:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

5

Vista Analytical Laboratory

Sample ID: CH-AT-1RW88-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 09:54

Laboratory Data

Lab Sample: 1701795-05
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1
PFOA	ND	1.06	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1
PFOS	ND	1.02	4.89	9.78		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0009	04-Dec-17	0.256 L	06-Dec-17 15:48	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

12/31/18

Vista Analytical Laboratory

Sample ID: CH-AT-1FB88-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-06	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 09:55	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1
PFOA	ND	1.02	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1
PFOS	ND	0.987	4.74	9.49		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:00	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

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7

Sample ID: CH-AT-1RW89-1117 — **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:18

Laboratory Data

Lab Sample: 1701795-07
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1
PFOA	ND	1.09	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1
PFOS	ND	1.05	5.04	10.1		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.8	70 - 130		B7L0009	04-Dec-17	0.248 L	06-Dec-17 16:13	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

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Vista Analytical Laboratory

Sample ID: CH-AT-1FB89-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 10:19

Laboratory Data

Lab Sample: 1701795-08
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1
PFOA	ND	1.03	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1
PFOS	ND	0.988	4.75	9.50		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0009	04-Dec-17	0.263 L	06-Dec-17 16:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

Vista Analytical Laboratory 9

Sample ID: CH-AT-1RW90-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-09	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 10:41	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1
PFOA	ND	1.08	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1
PFOS	ND	1.04	4.98	9.96		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B7L0009	04-Dec-17	0.251 L	06-Dec-17 16:37	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

MW 1/31/18

Vista Analytical Laboratory

10

Sample ID: CH-AT-1FB90-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-10	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 10:42	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1
PFOA	ND	1.02	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1
PFOS	ND	0.985	4.74	9.47		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.8	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 16:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

NW 1/3/18

Vista Analytical Laboratory

Sample ID: CH-AT-1RW91-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 11:30

Laboratory Data

Lab Sample: 1701795-11
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1
PFOA	ND	1.07	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1
PFOS	ND	1.03	4.96	9.92		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.6	70 - 130		B7L0009	04-Dec-17	0.252 L	06-Dec-17 17:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

12/31/18

Vista Analytical Laboratory 12

Sample ID: CH-AT-1FB91-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-12	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 11:31	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.450	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1
PFOA	ND	1.10	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1
PFOS	ND	1.06	5.08	10.2		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.0	70 - 130		B7L0009	04-Dec-17	0.246 L	06-Dec-17 17:15	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

NW 1/3/18

Vista Analytical Laboratory 13

Sample ID: CH-AT-1RW92-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:08

Laboratory Data

Lab Sample: 1701795-13
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1
PFOA	ND	1.13	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1
PFOS	ND	1.09	5.22	10.4		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.5	70 - 130		B7L0009	04-Dec-17	0.240 L	06-Dec-17 17:27	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

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Vista Analytical Laboratory 14

Sample ID: CH-AT-1FB92-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701795-14	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	28-Nov-17 12:09	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1
PFOA	ND	1.03	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1
PFOS	ND	0.993	4.77	9.55		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130		B7L0009	04-Dec-17	0.262 L	06-Dec-17 17:40	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

31.8

Vista Analytical Laboratory 15

Sample ID: CH-AT-1RW93A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:18

Laboratory Data

Lab Sample: 1701795-15
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1
PFOA	ND	1.03	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1
PFOS	ND	0.995	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	106	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 17:52	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

nw 1/3/18

Vista 16
Analytical Laboratory

Sample ID: CH-AT-1FB93A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:19

Laboratory Data

Lab Sample: 1701795-16
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1
PFOA	ND	1.03	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1
PFOS	ND	0.995	4.78	9.57		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.8	70 - 130		B7L0009	04-Dec-17	0.261 L	06-Dec-17 18:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

12/13/18

Vista Analytical Laboratory 17

Sample ID: CH-AT-1RW93B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:28

Laboratory Data

Lab Sample: 1701795-17
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1
PFOA	ND	1.06	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1
PFOS	ND	1.02	4.92	9.84		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0009	04-Dec-17	0.254 L	06-Dec-17 18:17	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

MW 1/31/18

Sample ID: CH-AT-1FB93B-1117 **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 28-Nov-17 12:29

Laboratory Data

Lab Sample: 1701795-18
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1
PFOA	ND	1.02	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1
PFOS	ND	0.983	4.73	9.46		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.2	70 - 130		B7L0009	04-Dec-17	0.264 L	06-Dec-17 18:29	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes

11/3/18

R:\N\Navy\CLEAN\MULTI_REGION\PFC_679580\MapFiles\ML\CherryPoint_MCAS\OLF Atlantic Working - 2.mxd4/25/2017bmailhes

Legend

- Proposed Sample Location
- Public Water Supply Well
- Direction of Groundwater Flow
- MCOLF Atlantic - 1-mile zone
- Base Boundary
- Site Boundary (suspected source)
- Parcels

N

0 0.2 0.4 Miles

1 inch = 0.4 mile

Imagery: Esri, 2016

Figure 3
Proposed Sampling Locations
Marine Corps Outlying Landing Field Atlantic
Atlantic Beach, North Carolina