Naval Facilities Engineering Command

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 1701815

Marine Corps Outlying Landing Field Atlantic
MCAS Cherry Point NC

February 2019

December 12, 2017

Vista Work Order No. 1701815

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 December 01, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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. 1701815
Case Narrative

Sample Condition on Receipt:

Twenty 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. The client confirmed that the sample ID on the container labels are correct for "CH-AT-1FB102-1117" and "CH-AT-1RW106-1117".

Analytical Notes:

EPA Method 537

Samples "CH-AT-1RW101-1117" and "CH-AT-1RW102-1117" contained particulate and were 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.

A Laboratory Fortified Blank (LFB) and 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.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701815-01	CH-AT-1RW98A-1117	29-Nov-17 09:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-02	CH-AT-1FB98A-1117	29-Nov-17 09:10	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-03	CH-AT-1RW98B-1117	29-Nov-17 09:16	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-04	CH-AT-1FB98B-1117	29-Nov-17 09:17	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-05	CH-AT-1RW99-1117	29-Nov-17 09:27	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-06	CH-AT-1FB99-1117	29-Nov-17 09:28	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-07	CH-AT-1RW100-1117	29-Nov-17 09:38	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-08	CH-AT-1FB100-1117	29-Nov-17 09:39	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-09	CH-AT-1RW101-1117	29-Nov-17 09:56	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-10	CH-AT-1FB101-1117	29-Nov-17 09:57	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-11	CH-AT-1RW102-1117	29-Nov-17 10:08	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-12	CH-AT-1FB102-1117	29-Nov-17 10:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-13	CH-AT-1RW103-1117	29-Nov-17 10:22	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-14	CH-AT-1FB103-1117	29-Nov-17 10:23	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-15	CH-AT-1RW104-1117	29-Nov-17 10:33	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-16	CH-AT-1FB104-1117	29-Nov-17 10:34	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-17	CH-AT-1RW105-1117	29-Nov-17 13:08	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-18	CH-AT-1FB105-1117	29-Nov-17 13:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-19	CH-AT-1RW106-1117	29-Nov-17 13:55	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-20	CH-AT-1FB106-1117	29-Nov-17 13:56	01-Dec-17 09:40	HDPE Bottle, 250 mL

Vista Project: 1701815

Client Project: CTO-08/MCOLF ATLANTIC PFAS INV.

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701815-20	CH-AT-1FB106-1117	29-Nov-17 13:56	01-Dec-17 09:40	HDPE Bottle, 250 mL

Vista Project: 1701815

Client Project: CTO-08/MCOLF ATLANTIC PFAS INV.

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water

Laboratory Data

Lab Sample: B7L0026-BLK1
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:25	1
PFOA	ND	1.08	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:25	1
PFOS	ND	1.04	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130		B7L0026	06-Dec-17	0.250 L	11-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: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0026-BS1/B7L0026-BSD1
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	QC Batch:	B7L0026
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L
		Date Extracted:	06-Dec-17
		Column:	BEH HILIC

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	18.3	17.7	103		20.1	17.7	113	9.41		70-130	30	11-Dec-17 15:46	1	11-Dec-17 16:00	1
PFOA	19.7	20.0	98.7		21.6	20.0	108	9.06		70-130	30	11-Dec-17 15:46	1	11-Dec-17 16:00	1
PFOS	19.3	18.5	104		18.7	18.5	101	3.21		70-130	30	11-Dec-17 15:46	1	11-Dec-17 16:00	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	104		105		70-130	11-Dec-17 15:46	1	11-Dec-17 16:00	1

Sample ID: CH-AT-1RW98A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:09

Laboratory Data

Lab Sample: 1701815-01
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1
PFOA	ND	1.08	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1
PFOS	ND	1.04	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0026	06-Dec-17	0.250 L	11-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-1FB98A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:10

Laboratory Data

Lab Sample: 1701815-02
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.503	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1
PFOA	ND	1.23	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1
PFOS	ND	1.18	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	117	70 - 130		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	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-1RW98B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:16

Laboratory Data

Lab Sample: 1701815-03
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1
PFOA	ND	1.07	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1
PFOS	ND	1.03	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.252 L	11-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-1FB98B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:17

Laboratory Data

Lab Sample: 1701815-04
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1
PFOA	ND	1.13	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1
PFOS	ND	1.09	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	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-1RW99-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:27

Laboratory Data

Lab Sample: 1701815-05
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.466	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1
PFOA	ND	1.14	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1
PFOS	ND	1.09	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.238 L	11-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-1FB99-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:28

Laboratory Data

Lab Sample: 1701815-06
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1
PFOA	ND	1.04	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1
PFOS	ND	1.00	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	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-1RW100-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:38

Laboratory Data

Lab Sample: 1701815-07
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.476	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1
PFOA	ND	1.16	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1
PFOS	ND	1.12	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	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-1FB100-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:39

Laboratory Data

Lab Sample: 1701815-08
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1
PFOA	ND	1.11	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1
PFOS	ND	1.07	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B7L0026	06-Dec-17	0.244 L	11-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-1RW101-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:56

Laboratory Data

Lab Sample: 1701815-09
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.463	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1
PFOA	ND	1.13	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1
PFOS	ND	1.09	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	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-1FB101-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:57

Laboratory Data

Lab Sample: 1701815-10
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1
PFOA	ND	1.08	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1
PFOS	ND	1.04	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.2	70 - 130		B7L0026	06-Dec-17	0.249 L	11-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.

Sample ID: CH-AT-1RW102-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:08

Laboratory Data

Lab Sample: 1701815-11
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.496	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1
PFOA	ND	1.21	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1
PFOS	ND	1.16	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	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-1FB102-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:09

Laboratory Data

Lab Sample: 1701815-12
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1
PFOA	ND	1.09	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1
PFOS	ND	1.05	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	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-1RW103-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:22

Laboratory Data

Lab Sample: 1701815-13
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.465	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1
PFOA	ND	1.13	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1
PFOS	ND	1.09	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	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-1FB103-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:23

Laboratory Data

Lab Sample: 1701815-14
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.470	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1
PFOA	ND	1.15	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1
PFOS	ND	1.10	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	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-1RW104-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:33

Laboratory Data

Lab Sample: 1701815-15
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1
PFOA	ND	1.13	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1
PFOS	ND	1.09	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	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-1FB104-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:34

Laboratory Data

Lab Sample: 1701815-16
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1
PFOA	ND	1.13	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1
PFOS	ND	1.08	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	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-1RW105-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:08

Laboratory Data

Lab Sample: 1701815-17
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.471	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1
PFOA	ND	1.15	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1
PFOS	ND	1.11	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	115	70 - 130		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	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-1FB105-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:09

Laboratory Data

Lab Sample: 1701815-18
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1
PFOA	ND	1.11	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1
PFOS	ND	1.07	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	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-1RW106-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:55

Laboratory Data

Lab Sample: 1701815-19
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.449	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1
PFOA	ND	1.09	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1
PFOS	ND	1.05	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	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-1FB106-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:56

Laboratory Data

Lab Sample: 1701815-20
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.460	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1
PFOA	ND	1.12	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1
PFOS	ND	1.08	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	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

Submit by Email*

Vista 11/30/17 COOLER #2

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701815 Temp 2.0 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

TAT: (Check One)
Standard ◯ 21 days
Rush (surcharge may apply)
◯ 14 days ◉ 7 days Specify:

Project I.D.: **CTO-08/MCOLF ATLANTIC PFAS INV.** P.O. #: **100006-7-106051** Sampler: **K.Rabe/A.Seay** (Name)

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

Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
David Lubell	11/30/17	1500	B. Benedict B. Benedict	12/01/17	1044
Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

See "Sample Log-in Checklist" for additional sample information

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

Method of Shipment: FEDEX

Tracking No.: 788693072559

ATTN: Martha Maier

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA1668 PCDD/PCDF	EPA1614 2378-TCDD	EPA1614 2378-TCDD/TCDF	CARB429 PCDD/PCDF	TOTALS	COPLANAR PCBs	209 CONGENERS	PBDE	PAH	WHO-29	EPA METHOD 537 DW ONLY PFOA PFOS PFBS
CH-AT-1RW98A-1117	11/29/17	0909		2	P	DW																X
CH-AT-1FB98A-1117	11/29/17	0910		2	P	DW																X
CH-AT-1RW98B-1117	11/29/17	0916		2	P	DW																X
CH-AT-1FB98B-1117	11/29/17	0917		2	P	DW																X
CH-AT-1RW99-1117	11/29/17	0927		2	P	DW																X
CH-AT-1FB99-1117	11/29/17	0928		2	P	DW																X
CH-AT-1RW100-1117	11/29/17	0938		2	P	DW																X
CH-AT-1FB100-1117	11/29/17	0939		2	P	DW																X
CH-AT-1RW101-1117	11/29/17	0956		2	P	DW																X
CH-AT-1FB101-1117	11/29/17	0957		2	P	DW																X

Special Instructions/Comments:
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: **Tiffany Hill**
Company: **CH2M HILL**
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: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

***Bottle Preservative Type:** ☐ T = Thiosulfate,
☒ O = Other Trizma

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

Submit by Email*

Vista 11/30 COOLER #2

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701815 Temp 2.0 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

TAT: (Check One)
Standard ◯ 21 days
Rush (surcharge may apply)
◯ 14 days ◉ 7 days Specify:

Project I.D.: **CTO-08/MCOLF ATLANTIC PFAS INV.** P.O. #: **100006-7-106051** Sampler: **K.Rabe/A.Seay** (Name)

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

Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
David Lubell David Lubell	**11/30/17**	**1500**			
Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

See "Sample Log-in Checklist" for additional sample information

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.: **788693072559**

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA8280 2378-TCDD	EPA1668 2378-TCDD/TCDF	EPA1668 PCDD/PCDF	EPA1614 TOTALS	CARB429 COPLANAR PCBs	CARB429 209 CONGENERS	CARB429 PBDE	CARB429 PAH	CARB429 WHO-29	EPA 537 DW ONLY PFOA/PFOS/PFBS
CH-AT-1RW102-1117	11/29/17	1008		2	P	DW																X
CH-AT-1FB1021117	11/29/17	1009		2	P	DW																X
CH-AT-1RW103-1117	11/29/17	1022		2	P	DW																X
CH-AT-1FB103-1117	11/29/17	1023		2	P	DW																X
CH-AT-1RW104-1117	11/29/17	1033		2	P	DW																X
CH-AT-1FB104-1117	11/29/17	1034		2	P	DW																X
CH-AT-1RW105-1117	11/29/17	1308		2	P	DW																X
CH-AT-1FB105-1117	11/29/17	1309		2	P	DW																X
CH-AT-1RW06-1117	11/29/17	1355		2	P	DW																X
CH-AT-1FB106-1117	11/29/17	1356		2	P	DW																X

Special Instructions/Comments:
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: **Tiffany Hill**
Company: **CH2M HILL**
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: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

***Bottle Preservative Type:** ☐ T = Thiosulfate,
☒ O = Other Trizma

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

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701815 **TAT** 7

Samples Arrival:	**Date/Time** 12/01/17 0940	**Initials:** BSB	**Location:** WR.2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 12/01/17 1154	**Initials:** BSB	**Location:** WR-2 **Shelf/Rack:** B6

Delivered By:	FedEx	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	Ice		Blue Ice		Dry Ice		None

Temp °C: 1.9 (uncorrected)	**Time:** 1043	**Thermometer ID:** IR-1
Temp °C: 2.0 (corrected)	**Probe used: Yes☐ No☑**	

	YES	NO	NA
Adequate Sample Volume Received? A/B	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill / Trk # 7884 9307 2559	✓		
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:

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

CH2M Hill
Tiffany Hill
tiffany.hill@ch2m.com
(541) 768-3109

Workorder Number: 1701815
Date Received: 01-Dec-17 09:40
Documented by/date: B.Benedict 12/06/2017

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank you,

Martha Maier
mmaier@vista-analytical.com
916-673-1520

[X] Sample IDs on Chain of Custody do not match Sample Container Labels

Chain of Custody ID	Container Label ID
CH-AT-1FB**1021117**	CH-AT-1FB**102-1117**
CH-AT-1RW**06**-1117	CH-AT-1RW**106**-1117

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date Kaney Nth 12/12/17

Client Comments/Instructions Per client email, the sample IDs on the container labels are correct.

December 12, 2017

Vista Work Order No. 1701815

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 December 01, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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,

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. 1701815
Case Narrative

Sample Condition on Receipt:

Twenty 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. The client confirmed that the sample ID on the container labels are correct for "CH-AT-1FB102-1117" and "CH-AT-1RW106-1117".

Analytical Notes:

EPA Method 537

Samples "CH-AT-1RW101-1117" and "CH-AT-1RW102-1117" contained particulate and were 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.

A Laboratory Fortified Blank (LFB) and 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.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701815-01	CH-AT-1RW98A-1117	29-Nov-17 09:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-02	CH-AT-1FB98A-1117	29-Nov-17 09:10	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-03	CH-AT-1RW98B-1117	29-Nov-17 09:16	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-04	CH-AT-1FB98B-1117	29-Nov-17 09:17	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-05	CH-AT-1RW99-1117	29-Nov-17 09:27	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-06	CH-AT-1FB99-1117	29-Nov-17 09:28	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-07	CH-AT-1RW100-1117	29-Nov-17 09:38	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-08	CH-AT-1FB100-1117	29-Nov-17 09:39	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-09	CH-AT-1RW101-1117	29-Nov-17 09:56	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-10	CH-AT-1FB101-1117	29-Nov-17 09:57	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-11	CH-AT-1RW102-1117	29-Nov-17 10:08	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-12	CH-AT-1FB102-1117	29-Nov-17 10:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-13	CH-AT-1RW103-1117	29-Nov-17 10:22	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-14	CH-AT-1FB103-1117	29-Nov-17 10:23	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-15	CH-AT-1RW104-1117	29-Nov-17 10:33	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-16	CH-AT-1FB104-1117	29-Nov-17 10:34	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-17	CH-AT-1RW105-1117	29-Nov-17 13:08	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-18	CH-AT-1FB105-1117	29-Nov-17 13:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-19	CH-AT-1RW106-1117	29-Nov-17 13:55	01-Dec-17 09:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701815-20	CH-AT-1FB106-1117	29-Nov-17 13:56	01-Dec-17 09:40	HDPE Bottle, 250 mL

Vista Project: 1701815

Client Project: CTO-08/MCOLF ATLANTIC PFAS INV.

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701815-20	CH-AT-1FB106-1117	29-Nov-17 13:56	01-Dec-17 09:40	HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water

Laboratory Data

Lab Sample: B7L0026-BLK1
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:25	1
PFOA	ND	1.08	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:25	1
PFOS	ND	1.04	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.0	70 - 130		B7L0026	06-Dec-17	0.250 L	11-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: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0026-BS1/B7L0026-BSD1
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	QC Batch:	B7L0026
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L
		Date Extracted:	06-Dec-17
		Column:	BEH HILIC

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	18.3	17.7	103		20.1	17.7	113	9.41		70-130	30	11-Dec-17 15:46	1	11-Dec-17 16:00	1
PFOA	19.7	20.0	98.7		21.6	20.0	108	9.06		70-130	30	11-Dec-17 15:46	1	11-Dec-17 16:00	1
PFOS	19.3	18.5	104		18.7	18.5	101	3.21		70-130	30	11-Dec-17 15:46	1	11-Dec-17 16:00	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	104		105		70-130	11-Dec-17 15:46	1	11-Dec-17 16:00	1

Sample ID: CH-AT-1RW98A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:09

Laboratory Data

Lab Sample: 1701815-01
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1
PFOA	ND	1.08	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1
PFOS	ND	1.04	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0026	06-Dec-17	0.250 L	11-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-1FB98A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:10

Laboratory Data

Lab Sample: 1701815-02
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.503	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1
PFOA	ND	1.23	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1
PFOS	ND	1.18	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	117	70 - 130		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	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-1RW98B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:16

Laboratory Data

Lab Sample: 1701815-03
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1
PFOA	ND	1.07	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1
PFOS	ND	1.03	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.252 L	11-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-1FB98B-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:17

Laboratory Data

Lab Sample: 1701815-04
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1
PFOA	ND	1.13	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1
PFOS	ND	1.09	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	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-1RW99-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:27

Laboratory Data

Lab Sample: 1701815-05
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.466	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1
PFOA	ND	1.14	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1
PFOS	ND	1.09	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.238 L	11-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-1FB99-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:28

Laboratory Data

Lab Sample: 1701815-06
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1
PFOA	ND	1.04	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1
PFOS	ND	1.00	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	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-1RW100-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:38

Laboratory Data

Lab Sample: 1701815-07
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.476	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1
PFOA	ND	1.16	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1
PFOS	ND	1.12	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	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-1FB100-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:39

Laboratory Data

Lab Sample: 1701815-08
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1
PFOA	ND	1.11	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1
PFOS	ND	1.07	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B7L0026	06-Dec-17	0.244 L	11-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-1RW101-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:56

Laboratory Data

Lab Sample: 1701815-09
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.463	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1
PFOA	ND	1.13	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1
PFOS	ND	1.09	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	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-1FB101-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:57

Laboratory Data

Lab Sample: 1701815-10
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1
PFOA	ND	1.08	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1
PFOS	ND	1.04	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.2	70 - 130		B7L0026	06-Dec-17	0.249 L	11-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.

Sample ID: CH-AT-1RW102-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:08

Laboratory Data

Lab Sample: 1701815-11
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.496	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1
PFOA	ND	1.21	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1
PFOS	ND	1.16	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	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-1FB102-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:09

Laboratory Data

Lab Sample: 1701815-12
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1
PFOA	ND	1.09	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1
PFOS	ND	1.05	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	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-1RW103-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:22

Laboratory Data

Lab Sample: 1701815-13
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.465	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1
PFOA	ND	1.13	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1
PFOS	ND	1.09	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	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-1FB103-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:23

Laboratory Data

Lab Sample: 1701815-14
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.470	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1
PFOA	ND	1.15	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1
PFOS	ND	1.10	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	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-1RW104-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:33

Laboratory Data

Lab Sample: 1701815-15
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1
PFOA	ND	1.13	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1
PFOS	ND	1.09	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	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-1FB104-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:34

Laboratory Data

Lab Sample: 1701815-16
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1
PFOA	ND	1.13	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1
PFOS	ND	1.08	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	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-1RW105-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:08

Laboratory Data

Lab Sample: 1701815-17
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.471	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1
PFOA	ND	1.15	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1
PFOS	ND	1.11	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	115	70 - 130		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	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-1FB105-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:09

Laboratory Data

Lab Sample: 1701815-18
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1
PFOA	ND	1.11	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1
PFOS	ND	1.07	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	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-1RW106-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:55

Laboratory Data

Lab Sample: 1701815-19
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.449	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1
PFOA	ND	1.09	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1
PFOS	ND	1.05	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	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-1FB106-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:56

Laboratory Data

Lab Sample: 1701815-20
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.460	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1
PFOA	ND	1.12	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1
PFOS	ND	1.08	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	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

Submit by Email*

Vista 11/30/17 COOLER #2

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701815 Temp 2.0 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

TAT: (Check One)
Standard ◯ 21 days
Rush (surcharge may apply)
◯ 14 days ◉ 7 days Specify:

Project I.D.: **CTO-08/MCOLF ATLANTIC PFAS INV.** P.O. #: **100006-7-106051** Sampler: **K.Rabe/A.Seay** (Name)

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

Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
David Lubell	**11/30/17**	**1500**	B. Benedict	12/01/17	1044
Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

See "Sample Log-in Checklist" for additional sample information

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.: **788693072559**

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1614 PBDE	CARB429 PAH	LIFA METHOD 537 DW ONLY WHO-29 PFOA PFOS PFBS	
CH-AT-1RW98A-1117	11/29/17	0909		2	P	DW															X	
CH-AT-1FB98A-1117	11/29/17	0910		2	P	DW															X	
CH-AT-1RW98B-1117	11/29/17	0916		2	P	DW															X	
CH-AT-1FB98B-1117	11/29/17	0917		2	P	DW															X	
CH-AT-1RW99-1117	11/29/17	0927		2	P	DW															X	
CH-AT-1FB99-1117	11/29/17	0928		2	P	DW															X	
CH-AT-1RW100-1117	11/29/17	0938		2	P	DW															X	
CH-AT-1FB100-1117	11/29/17	0939		2	P	DW															X	
CH-AT-1RW101-1117	11/29/17	0956		2	P	DW															X	
CH-AT-1FB101-1117	11/29/17	0957		2	P	DW															X	

Special Instructions/Comments:
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: **Tiffany Hill**
Company: **CH2M HILL**
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: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

***Bottle Preservative Type:** ☐ T = Thiosulfate,
☒ O = Other Trizma

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

Submit by Email*

Vista 11/30 COOLER #2

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701815 Temp 2.0 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

TAT: (Check One)
Standard ◯ 21 days
Rush (surcharge may apply)
◯ 14 days ◉ 7 days Specify:

Project I.D.: **CTO-08/MCOLF ATLANTIC PFAS INV.** P.O. #: **100006-7-106051** Sampler: **K.Rabe/A.Seay** (Name)

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

Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
David Lubell	11/30/17	1500			
Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

See "Sample Log-in Checklist" for additional sample information

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.: **788693072559**

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1614 PBDE	EPA1614 PAH	CARB429 WHO-29	EPA 537 DW ONLY PFOA/PFOS/PFBS
CH-AT-1RW102-1117	11/29/17	1008		2	P	DW																X
CH-AT-1FB1021117	11/29/17	1009		2	P	DW																X
CH-AT-1RW103-1117	11/29/17	1022		2	P	DW																X
CH-AT-1FB103-1117	11/29/17	1023		2	P	DW																X
CH-AT-1RW104-1117	11/29/17	1033		2	P	DW																X
CH-AT-1FB104-1117	11/29/17	1034		2	P	DW																X
CH-AT-1RW105-1117	11/29/17	1308		2	P	DW																X
CH-AT-1FB105-1117	11/29/17	1309		2	P	DW																X
CH-AT-1RW06-1117	11/29/17	1355		2	P	DW																X
CH-AT-1FB106-1117	11/29/17	1356		2	P	DW																X

Special Instructions/Comments:
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: **Tiffany Hill**
Company: **CH2M HILL**
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: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

***Bottle Preservative Type:** ☐ T = Thiosulfate,
☒ O = Other Trizma

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

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701815 **TAT** 7

Samples Arrival:	**Date/Time** 12/01/17 0940	**Initials:** BSB	**Location:** WR.2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 12/01/17 1154	**Initials:** BSB	**Location:** WR-2 **Shelf/Rack:** B6

Delivered By:	FedEx	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	Ice		Blue Ice		Dry Ice		None

Temp °C: 1.9 (uncorrected)	**Time:** 1043	**Thermometer ID:** IR-1
Temp °C: 2.0 (corrected)	**Probe used: Yes☐ No☑**	

	YES	NO	NA
Adequate Sample Volume Received? A/B	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill / Trk # 7884 9307 2559	✓		
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:

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

CH2M Hill
Tiffany Hill
tiffany.hill@ch2m.com
(541) 768-3109

Workorder Number: 1701815
Date Received: 01-Dec-17 09:40
Documented by/date: B.Benedict 12/06/2017

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank you,

Martha Maier
mmaier@vista-analytical.com
916-673-1520

[X] Sample IDs on Chain of Custody do not match Sample Container Labels

Chain of Custody ID	Container Label ID
CH-AT-1FB**1021117**	CH-AT-1FB**102-1117**
CH-AT-1RW**06**-1117	CH-AT-1RW**106**-1117

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date Kaney Nth 12/12/17

Client Comments/Instructions Per client email, the sample IDs on the container labels are correct.

EXTRACTION INFORMATION

Process Sheet

Workorder: 1701815

RUSH

Prep Expiration: 2017-Dec-13
Client: CH2M Hill

Workorder Due: 08-Dec-17 00:00

TAT: 7

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

Prep Batch: B7L0026

Prep Data Entered: KC 12/8/17
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
1701815-01	A	☑	☑	CH-AT-1RW98A-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-02		☑	☑	CH-AT-1FB98A-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-03		☑	☑	CH-AT-1RW98B-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-04		☑	☑	CH-AT-1FB98B-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-05		☑	☑	CH-AT-1RW99-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-06		☑	☑	CH-AT-1FB99-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-07		☑	☑	CH-AT-1RW100-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-08		☑	☑	CH-AT-1FB100-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-09		☑	☑	CH-AT-1RW101-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-10		☑	☑	CH-AT-1FB101-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-11		☑	☑	CH-AT-1RW102-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-12		☐	☐	CH-AT-1FB1021117	"CH-AT-1FB102-1117" HN 12/6/17	WR-2 B-6	HDPE Bottle, 250 mL
1701815-13		☑	☑	CH-AT-1RW103-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-14		☑	☑	CH-AT-1FB103-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-15		☑	☑	CH-AT-1RW104-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-16		☑	☑	CH-AT-1FB104-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-17		☑	☑	CH-AT-1RW105-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-18		☑	☑	CH-AT-1FB105-1117		WR-2 B-6	HDPE Bottle, 250 mL
1701815-19		☐	☐	CH-AT-1RW06-1117	"CH-AT-1RW106-1117" HN 12/6/17	WR-2 B-6	HDPE Bottle, 250 mL
1701815-20		☑	☑	CH-AT-1FB106-1117		WR-2 B-6	HDPE Bottle, 250 mL

WO Comments: **LCS/LCSD**

Pre-Prep Check Out: HN 12/6/17
Pre-Prep Check In: NA

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initals/Date: HN 12/6/17
Spike Reconciled Initals/Date: KC 12-6-17
VialBoxID: Garfield

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

PREPARATION BENCH SHEET

B7L0026

Chemist: JTC

Prep Date/Time: 05-~~Dec~~-17 18~~:19~~ 12-6-17 1050 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
☐	B7L0026-BLK1 (A)	NA	NA	(0.250) ✓	JTC HN 12-6-17	HN 12/6/17	JTC KC 12-7-17
☐	B7L0026-BS1	↓	↓	↓ ✓			
☐	B7L0026-BSD1	NA	NA	✓			
☑	1701815-01	278.36	28.32	0.25004 ✓			
☐	1701815-02	247.72	27.66	0.22006 ✓			
☐	1701815-03	279.47	27.87	0.25160 ✓			
☐	1701815-04	267.00	27.46	0.23954 ✓			
☐	1701815-05	265.34	27.61	0.23773 ✓			
☐	1701815-06	286.98	27.48	0.25950 ✓			
☐	1701815-07	259.68	27.00	0.23268 ✓			
☐	1701815-08	270.95	27.04	0.24391 ✓			
☑	1701815-09	267.35	28.31	0.23904 ✓			
☐	1701815-10	277.09	27.76	0.24933 ✓			
☑	1701815-11	250.56	27.28	0.22328 ✓			
☐	1701815-12	275.24	27.64	0.24760 ✓			
☐	1701815-13	266.20	27.92	0.23828 ✓			

SS/IS: 172051S, 20mL (V1)

NS: 1722602, 20mL

IS/RS: 17L0516, 20µL (V1)

SPE Chem: Strata-X 33µm ~~500mg~~ 6mL
Lot#: S17-001561/S17-003100

Ele SOLV: MeOH
Lot#: 10890409720

Final Volume(s) 1mL

Notes: (A) 1.25 Trizma added 12/6/17 HN

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0026

Chemist: HC

Prep Date/Time: 05/Dec-17 18:19/ 12-6-17 1050 HC

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
☐	1701815-14	262.51	27.10	~~0.23541~~ 0.235.41 KC 12/18/17	HC HN 12-6-17	HN 12/6/17	HC KC 12-7-17
☐	1701815-15	266.15	27.53	0.23862 ✓			
☐	1701815-16	267.20	27.54	0.23966 ✓			
☐	1701815-17	262.97	27.81	0.23516 ✓			
☐	1701815-18	271.74	27.80	0.24394 ✓			
☐	1701815-19	274.29	27.42	0.24687 ✓			
☐	1701815-20	268.31	27.61	0.24070 ✓			

SS/IS: 17L0515, 20µL (V1)

NS: 17I2602, 20µL

IS/RS: 17L0516, 20µL (V1)

SPE Chem: Strata-X-33µm 500mg 10mL
Lot#: S17-001506817-003100

Ele SOLV: MeOH
Lot#: 1089040972O

Final Volume(s) 1mL

Notes:

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Batch: B7L0026

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701815-01	0.25004 ✓	NA	NA	1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-02	0.22006 ✓	"	"	1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-03	0.2516 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-04	0.23954 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-05	0.23773 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-06	0.2595 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-07	0.23268 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-08	0.24391 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-09	0.23904 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-10	0.24933 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-11	0.22328 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-12	0.2476 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-13	0.23828 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-14	0.23541 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-15	0.23862 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-16	0.23966 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-17	0.23516 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-18	0.24394 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-19	0.24687 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701815-20	0.2407 ✓			1000	06-Dec-17 10:50	HAC			Drinking Water	537 PFAS DW DoD Unmoc
B7L0026-BLK1	0.25 ✓			1000	06-Dec-17 10:50	HAC				QC
B7L0026-BS1	0.25 ✓			1000	06-Dec-17 10:50	HAC	17I2602 ✓	20 ✓		QC
B7L0026-BSD1	0.25 ✓			1000	06-Dec-17 10:50	HAC	17I2602 ✓	20 ✓		QC

KC 12/8/17

SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-13.qld

Last Altered: Tuesday, December 12, 2017 10:46:34 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:47:15 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_13, Date: 11-Dec-2017, Time: 16:25:00, ID: B7L0026-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	2.81e1	1.05e4		0.2500	3.02	3.01	0.0767	0.383	
2	2	PFOA	413 > 368.7	1.28e2	9.23e3		0.2500	4.31	4.31	0.138	0.682	
3	3	PFOS	499 >79.9	2.57e1	1.05e4		0.2500	4.72	4.72	0.0702	0.233	
4	4	13C2-PFHxA	315 > 269.8	4.05e3	9.23e3	0.443	0.2500	3.37	3.37	4.39	39.6	99.0
5	5	13C2-PFDA	515.1 > 469.9	4.54e3	9.23e3	0.509	0.2500	4.94	4.96	4.92	38.6	96.6
6	6	13C2-PFOA	414.9 > 369.7	9.23e3	9.23e3	1.000	0.2500	4.41	4.31	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2500	4.81	4.72	28.7	115	100.0

MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-13.qld

Last Altered: Tuesday, December 12, 2017 10:46:34 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:47:15 Pacific Standard Time

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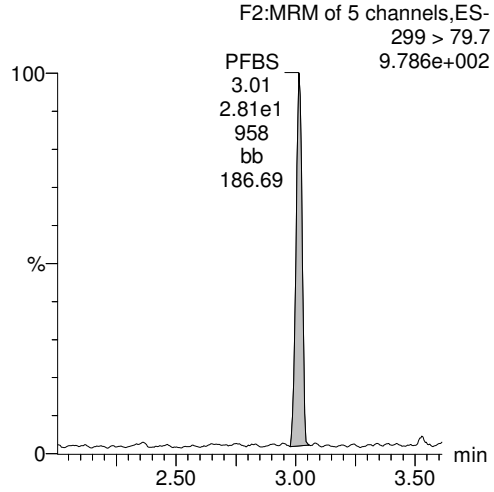
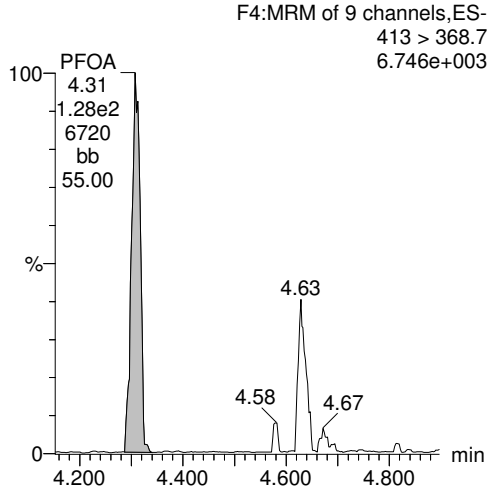
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_13, Date: 11-Dec-2017, Time: 16:25:00, ID: B7L0026-BLK1 LRB 0.25, Description: LRB

PFBS



PFOA



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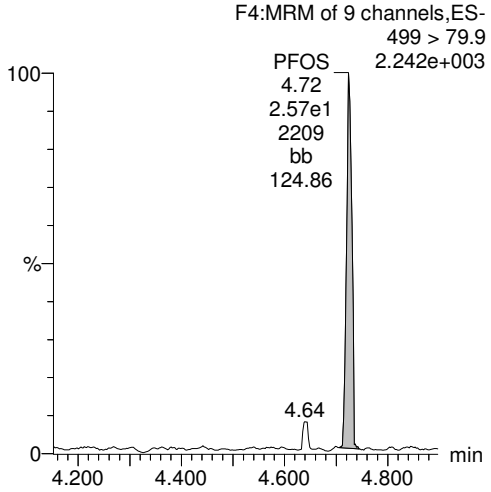
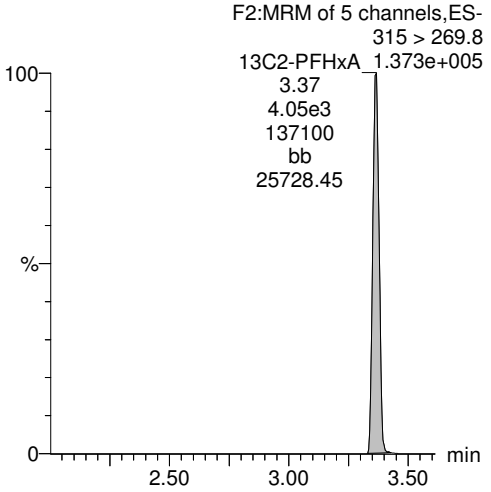
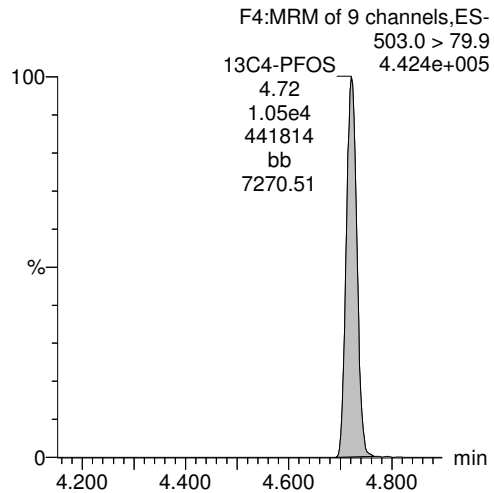


13C2-PFHxA



13C4-PFOS



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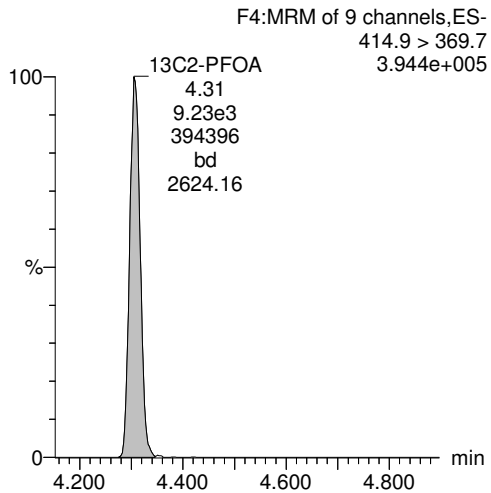

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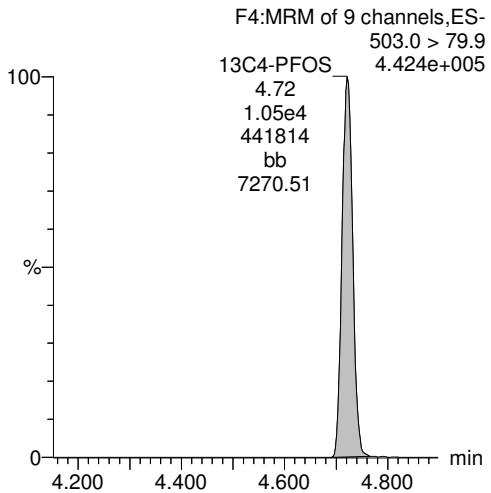

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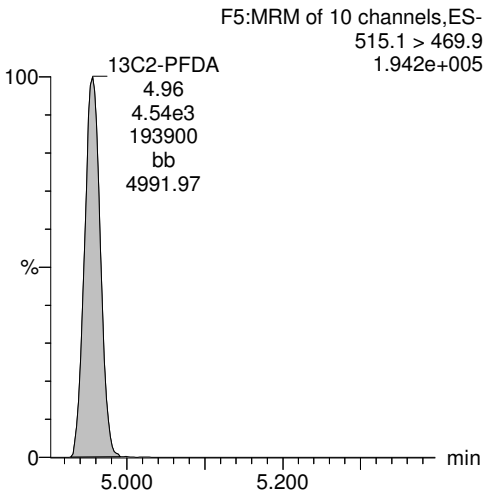

MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-10.qld

Last Altered: Tuesday, December 12, 2017 10:41:34 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:42:57 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_10, Date: 11-Dec-2017, Time: 15:46:44, ID: B7L0026-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	1.57e3	1.24e4		0.2500	3.15	3.20	3.65	18.3	103.1
2	2	PFOA	413 > 368.7	3.84e3	9.59e3		0.2500	4.45	4.45	4.00	19.7	98.7
3	3	PFOS	499 >79.9	2.50e3	1.24e4		0.2500	4.85	4.84	5.80	19.3	104.2
4	4	13C2-PFHxA	315 > 269.8	4.43e3	9.59e3	0.443	0.2500	3.51	3.53	4.62	41.7	104.3
5	5	13C2-PFDA	515.1 > 469.9	4.86e3	9.59e3	0.509	0.2500	5.08	5.07	5.07	39.8	99.5
6	6	13C2-PFOA	414.9 > 369.7	9.59e3	9.59e3	1.000	0.2500	4.41	4.45	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.24e4	1.24e4	1.000	0.2500	4.81	4.85	28.7	115	100.0

MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

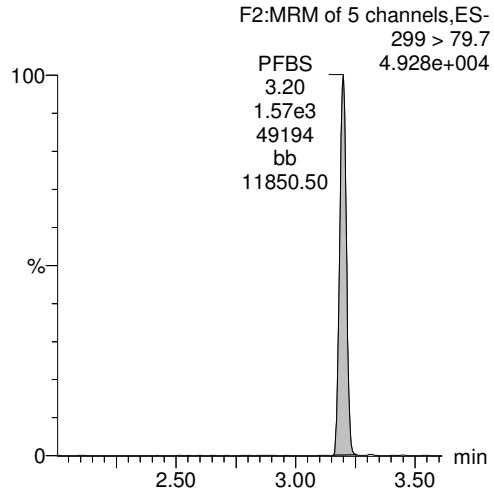
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-10.qld

Last Altered: Tuesday, December 12, 2017 10:41:34 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:42:57 Pacific Standard Time

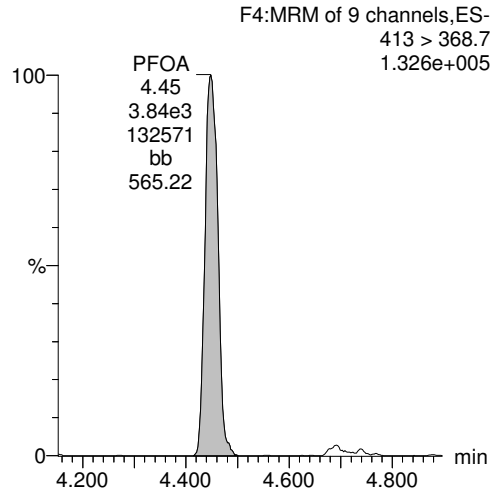
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_10, Date: 11-Dec-2017, Time: 15:46:44, ID: B7L0026-BS1 LFB 0.25, Description: LFB

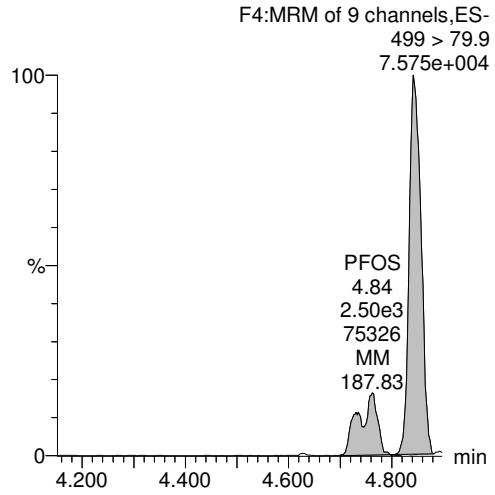
PFBS



PFOA



PFOS



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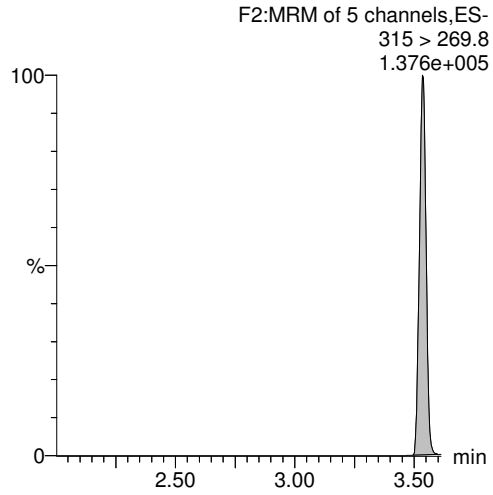
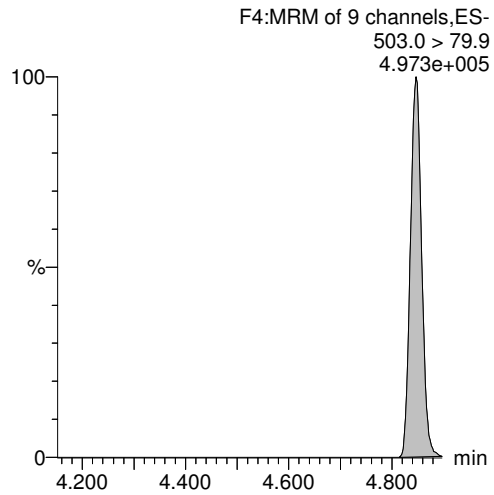


13C4-PFOS



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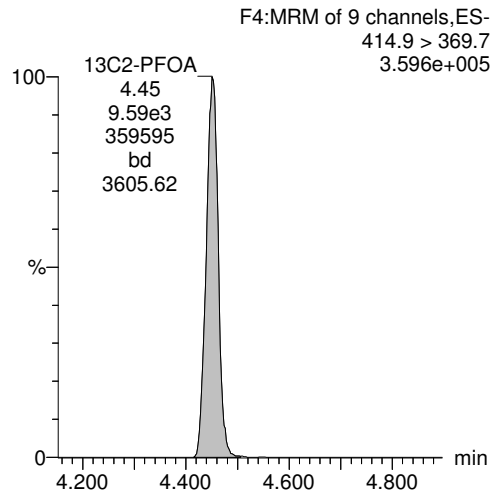

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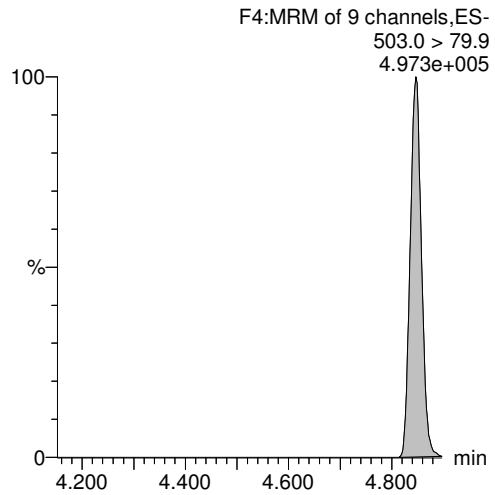
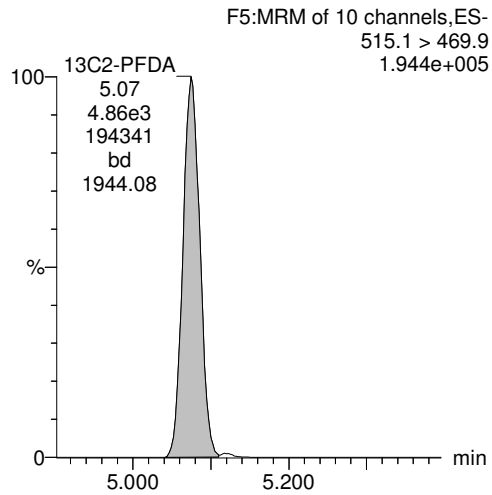


13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-11.qld

Last Altered: Tuesday, December 12, 2017 10:45:07 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:45:36 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_11, Date: 11-Dec-2017, Time: 16:00:04, ID: B7L0026-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	1.48e3	1.06e4		0.2500	3.04	3.04	4.01	20.1	113.3
2	2	PFOA	413 > 368.7	4.04e3	9.21e3		0.2500	4.33	4.33	4.38	21.6	108.0
3	3	PFOS	499 >79.9	2.07e3	1.06e4		0.2500	4.74	4.74	5.61	18.7	100.9
4	4	13C2-PFHxA	315 > 269.8	4.30e3	9.21e3	0.443	0.2500	3.39	3.39	4.67	42.1	105.4
5	5	13C2-PFDA	515.1 > 469.9	4.69e3	9.21e3	0.509	0.2500	4.96	4.97	5.09	40.0	99.9
6	6	13C2-PFOA	414.9 > 369.7	9.21e3	9.21e3	1.000	0.2500	4.41	4.33	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2500	4.81	4.74	28.7	115	100.0

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Rev'd: MM 12/12/17

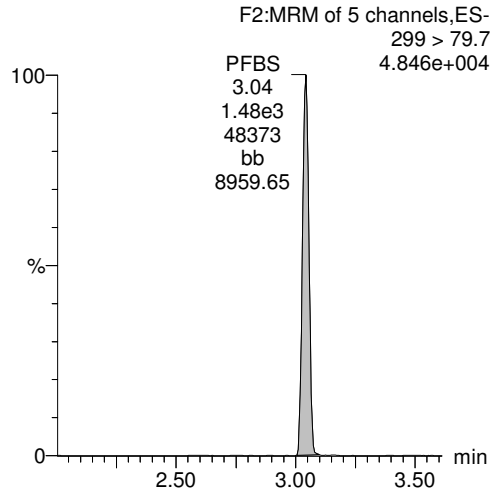
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-11.qld

Last Altered: Tuesday, December 12, 2017 10:45:07 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:45:36 Pacific Standard Time

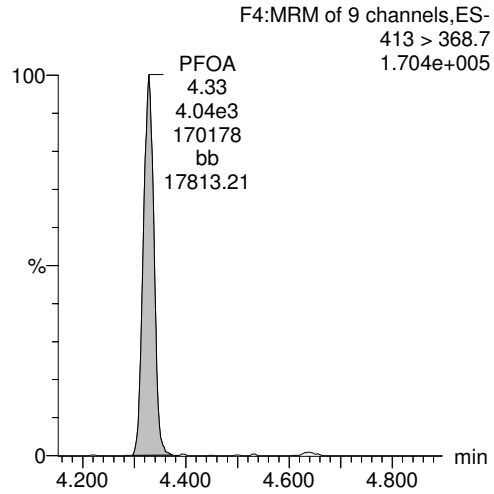
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_11, Date: 11-Dec-2017, Time: 16:00:04, ID: B7L0026-BSD1 LFBD 0.25, Description: LFBD

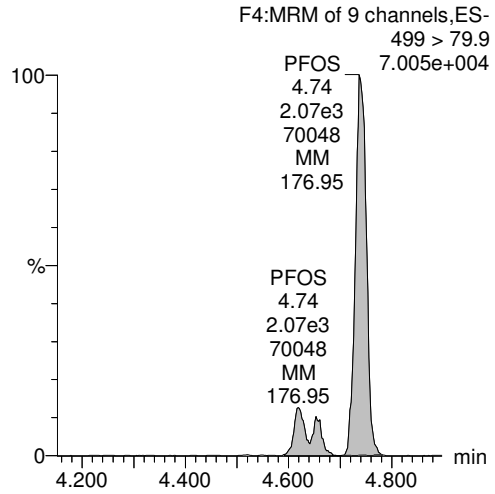
PFBS



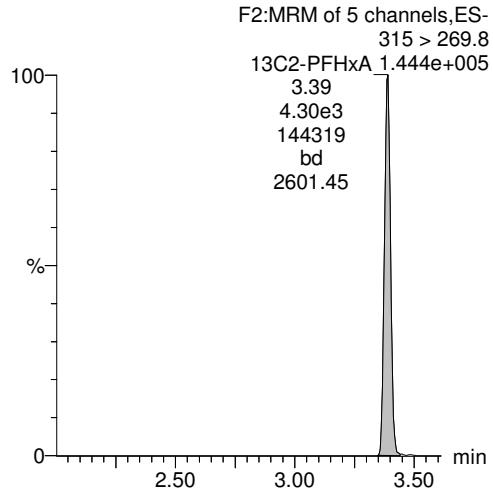
PFOA



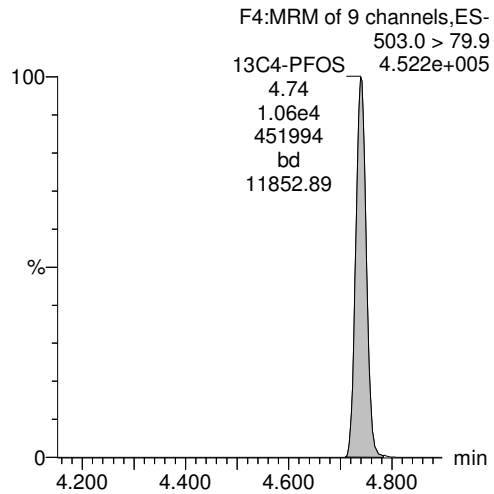
PFOS



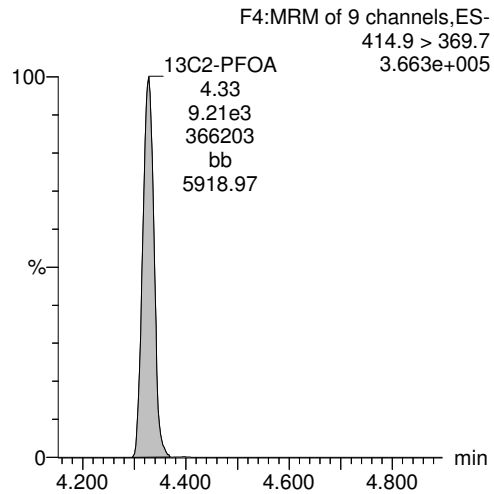
13C2-PFHxA



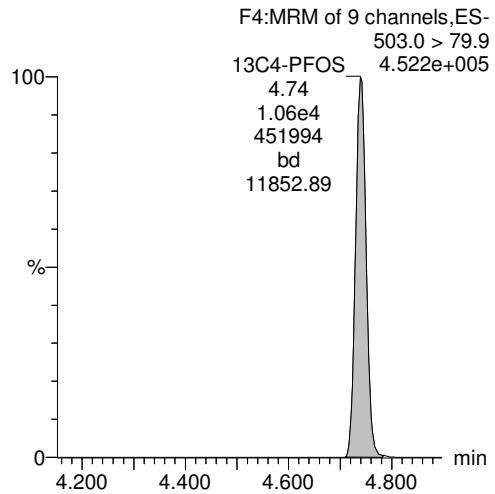
13C4-PFOS



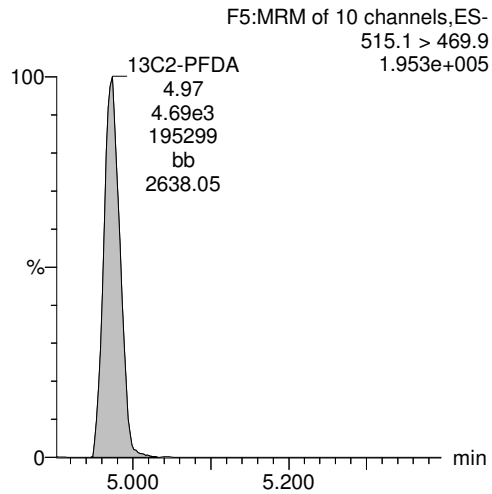
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-14.qld

Last Altered: Tuesday, December 12, 2017 10:48:50 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:49:40 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_14, Date: 11-Dec-2017, Time: 16:37:24, ID: 1701815-01 CH-AT-1RW98A-1117 0.25004, Description: CH-AT-1RW98A-1117

	#	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	3.02				
2	2	PFOA	413 > 368.7	4.65e1	8.33e3		0.2500	4.30	4.31	0.0559	0.275	
3	3	PFOS	499 >79.9		1.10e4		0.2500	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.05e3	8.33e3	0.443	0.2500	3.36	3.36	4.86	43.9	109.8
5	5	13C2-PFDA	515.1 > 469.9	4.37e3	8.33e3	0.509	0.2500	4.93	4.96	5.24	41.2	103.0
6	6	13C2-PFOA	414.9 > 369.7	8.33e3	8.33e3	1.000	0.2500	4.41	4.30	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.10e4	1.10e4	1.000	0.2500	4.81	4.72	28.7	115	100.0

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Rev'd: MM 12/12/17

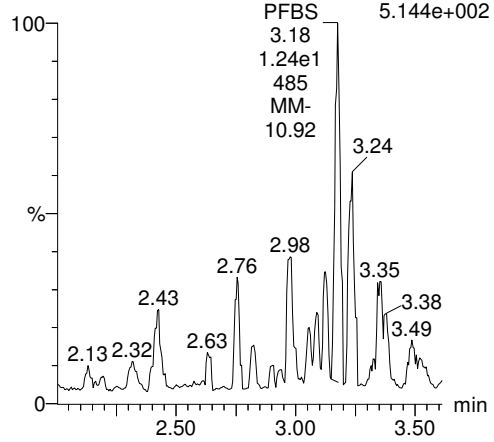
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-14.qld

Last Altered: Tuesday, December 12, 2017 10:48:50 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:49:40 Pacific Standard Time

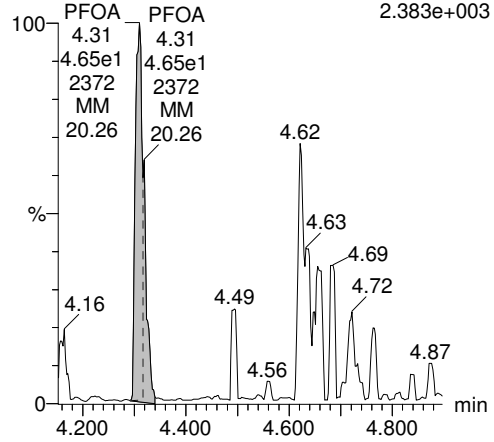
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_14, Date: 11-Dec-2017, Time: 16:37:24, ID: 1701815-01 CH-AT-1RW98A-1117 0.25004, Description: CH-AT-1RW98A-1117

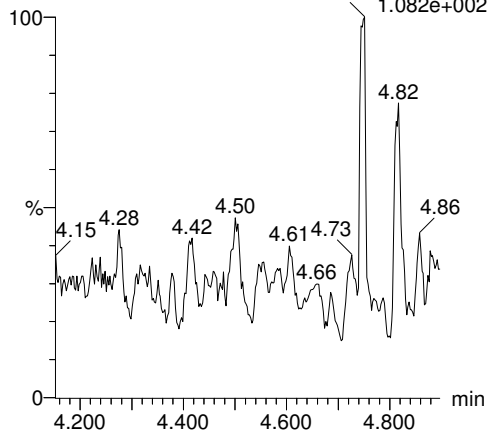
PFBS



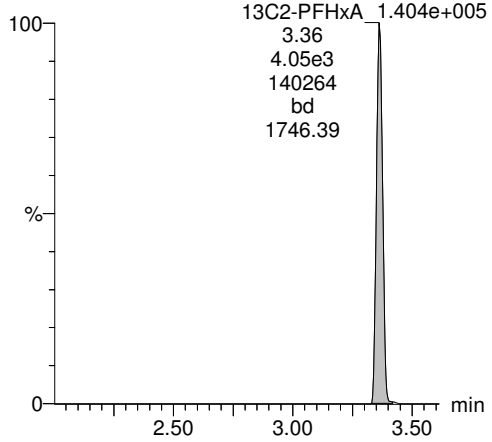
PFOA



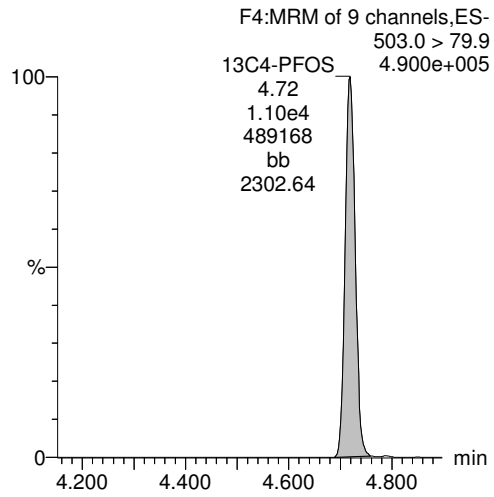
PFOS



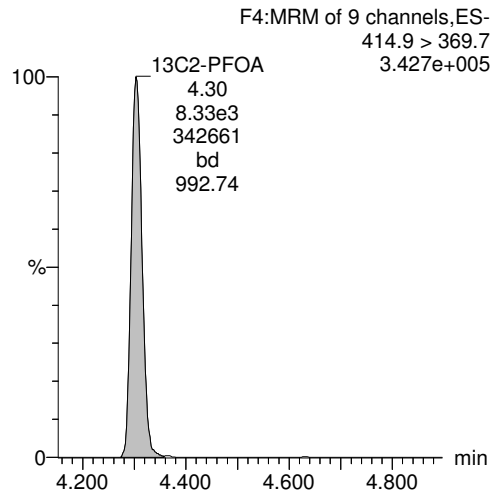
13C2-PFHxA



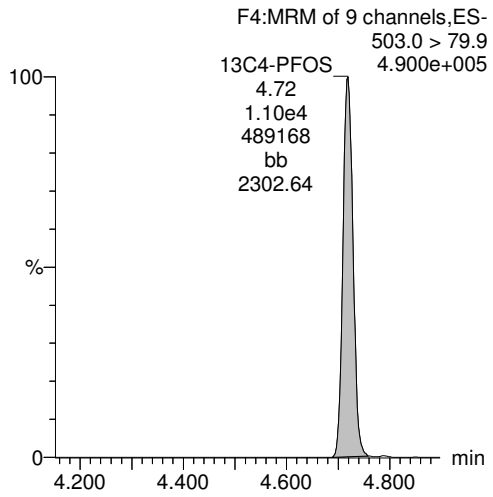
13C4-PFOS



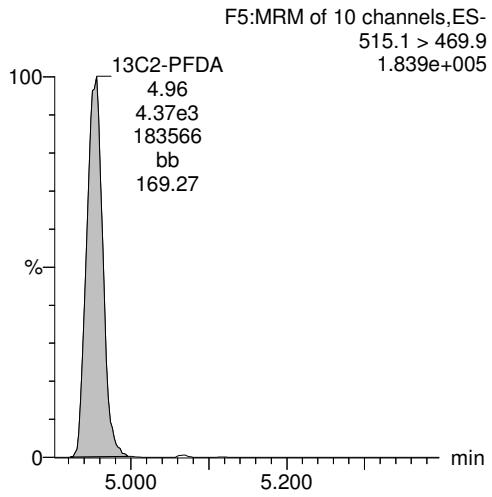
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-15.qld

Last Altered: Tuesday, December 12, 2017 10:51:33 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:52:34 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_15, Date: 11-Dec-2017, Time: 16:49:48, ID: 1701815-02 CH-AT-1FB98A-1117 0.22006, Description: CH-AT-1FB98A-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		0.2201	3.02				
2	2	PFOA	413 > 368.7	2.81e1	7.64e3		0.2201	4.31	4.30	0.0368	0.206	
3	3	PFOS	499 >79.9		1.03e4		0.2201	4.72				
4	4	13C2-PFHxA	315 > 269.8	3.96e3	7.64e3	0.443	0.2201	3.37	3.36	5.19	53.2	117.2
5	5	13C2-PFDA	515.1 > 469.9	3.55e3	7.64e3	0.509	0.2201	4.94	4.95	4.65	41.5	91.3
6	6	13C2-PFOA	414.9 > 369.7	7.64e3	7.64e3	1.000	0.2201	4.41	4.31	10.0	45.4	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.03e4	1.03e4	1.000	0.2201	4.81	4.72	28.7	130	100.0

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Rev'd: MM 12/12/17

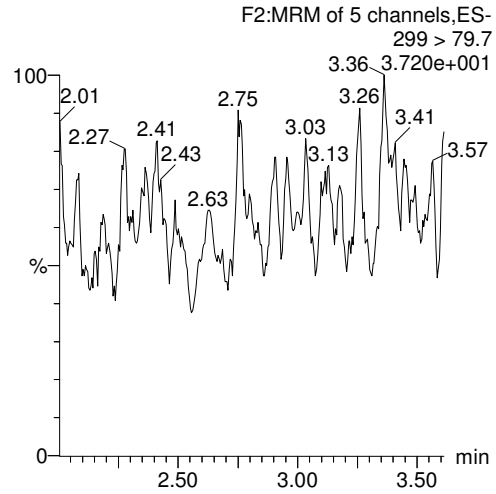
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-15.qld

Last Altered: Tuesday, December 12, 2017 10:51:33 Pacific Standard Time
Printed: Tuesday, December 12, 2017 10:52:34 Pacific Standard Time

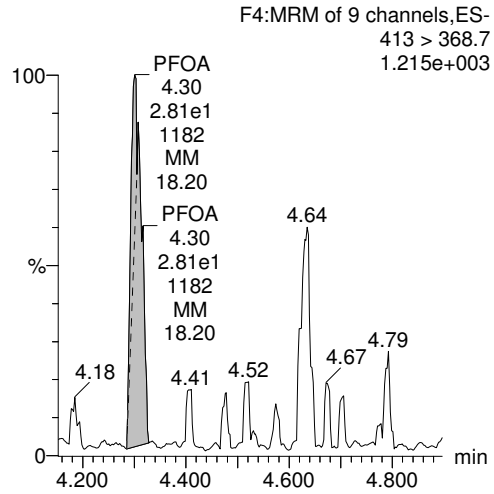
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_15, Date: 11-Dec-2017, Time: 16:49:48, ID: 1701815-02 CH-AT-1FB98A-1117 0.22006, Description: CH-AT-1FB98A-1117

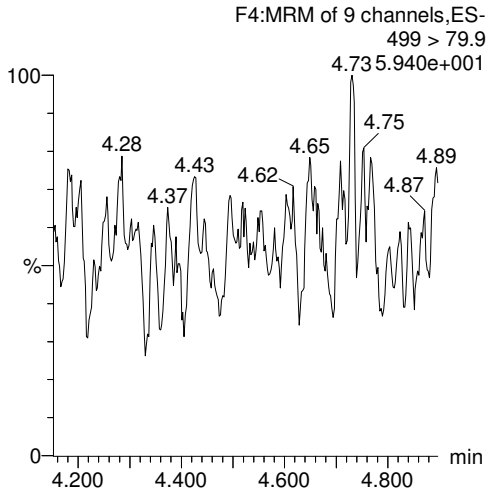
PFBS



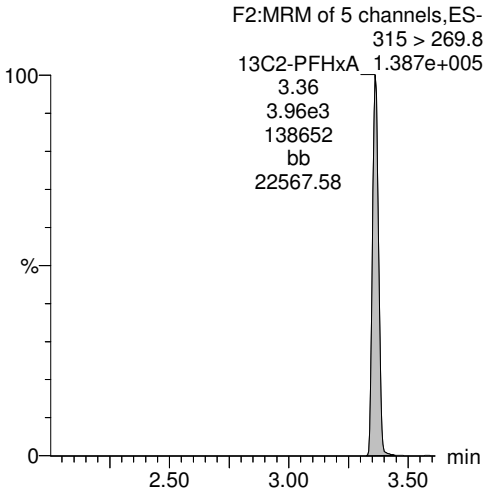
PFOA



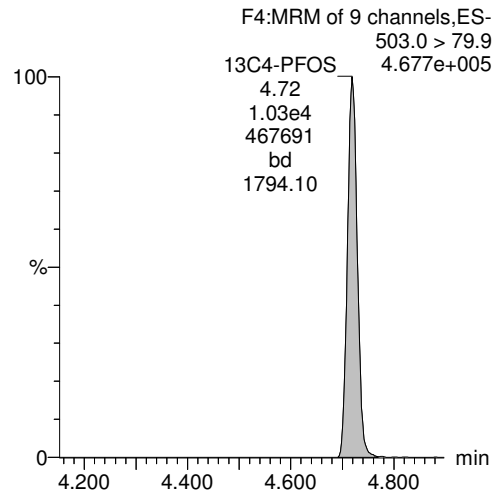
PFOS



13C2-PFHxA



13C4-PFOS



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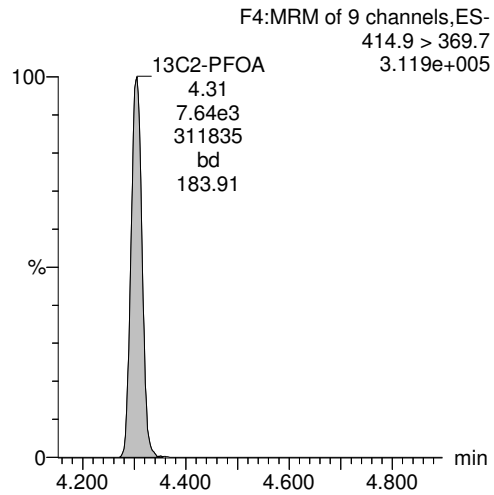

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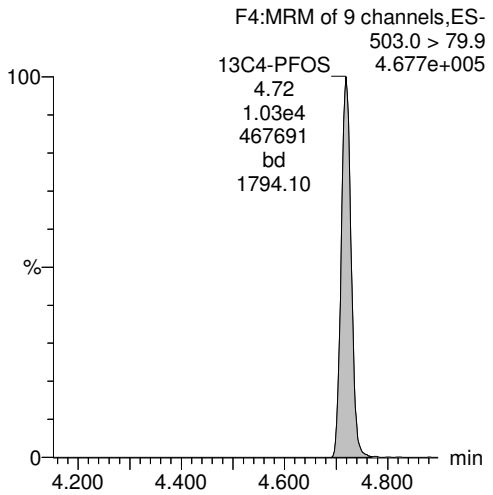
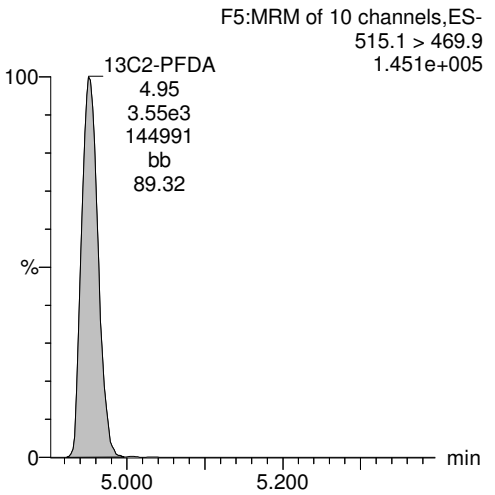


13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-16.qld

Last Altered: Tuesday, December 12, 2017 10:55:38 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:04:04 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_16, Date: 11-Dec-2017, Time: 17:02:12, ID: 1701815-03 CH-AT-1RW98B-1117 0.2516, Description: CH-AT-1RW98B-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		0.2516	3.02				
2	2	PFOA	413 > 368.7	3.42e1	8.95e3		0.2516	4.31	4.31	0.0382	0.187	
3	3	PFOS	499 >79.9		1.05e4		0.2516	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.17e3	8.95e3	0.443	0.2516	3.37	3.36	4.66	41.8	105.3
5	5	13C2-PFDA	515.1 > 469.9	3.95e3	8.95e3	0.509	0.2516	4.94	4.96	4.41	34.4	86.7
6	6	13C2-PFOA	414.9 > 369.7	8.95e3	8.95e3	1.000	0.2516	4.41	4.31	10.0	39.7	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2516	4.81	4.72	28.7	114	100.0

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Rev'd: MM 12/12/17

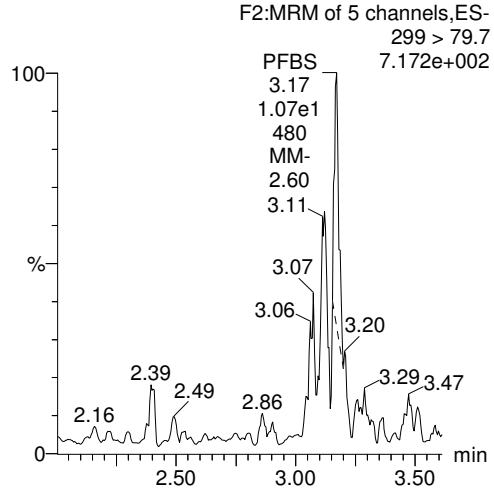
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-16.qld

Last Altered: Tuesday, December 12, 2017 10:55:38 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:04:04 Pacific Standard Time

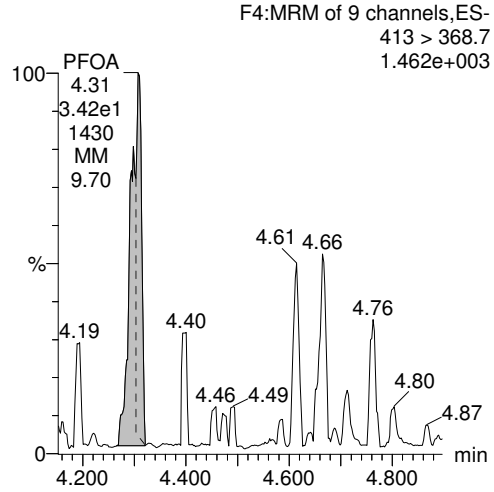
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_16, Date: 11-Dec-2017, Time: 17:02:12, ID: 1701815-03 CH-AT-1RW98B-1117 0.2516, Description: CH-AT-1RW98B-1117

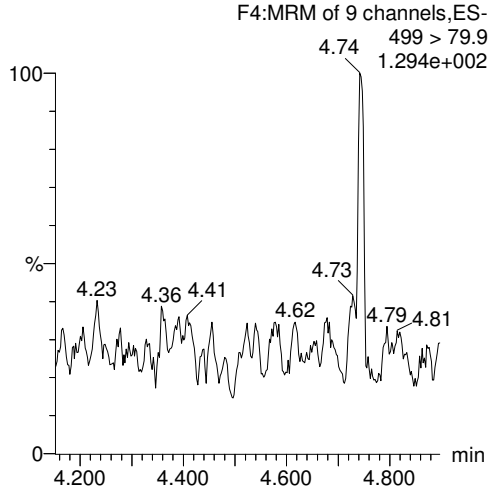
PFBS



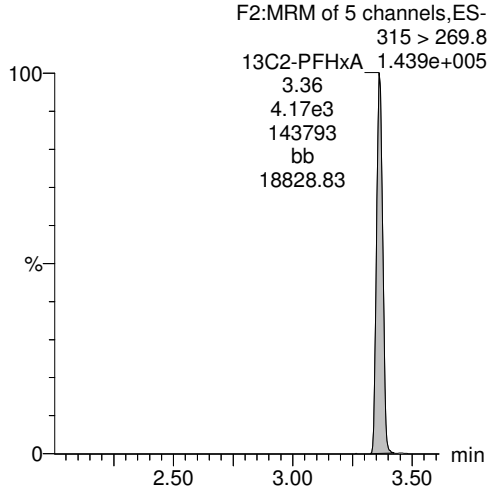
PFOA



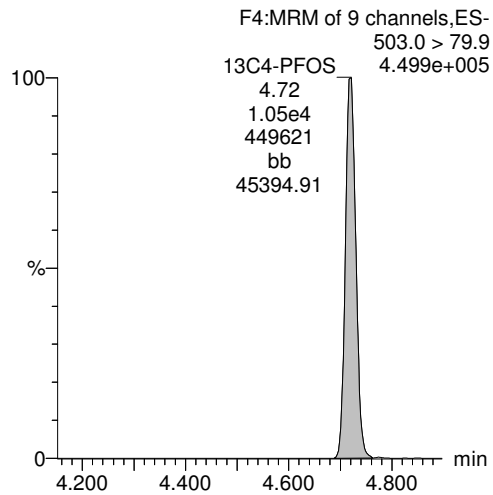
PFOS



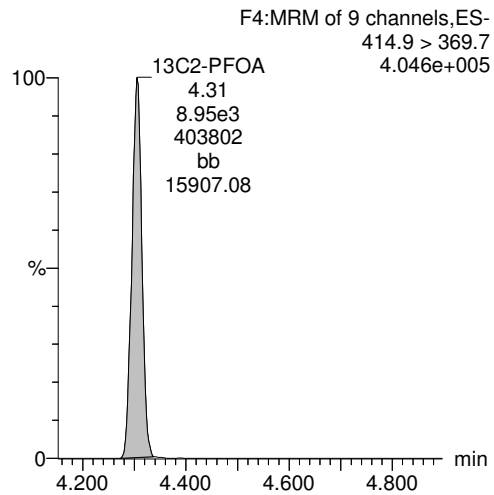
13C2-PFHxA



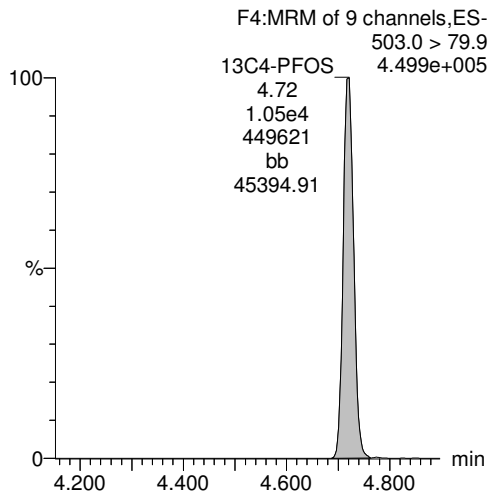
13C4-PFOS



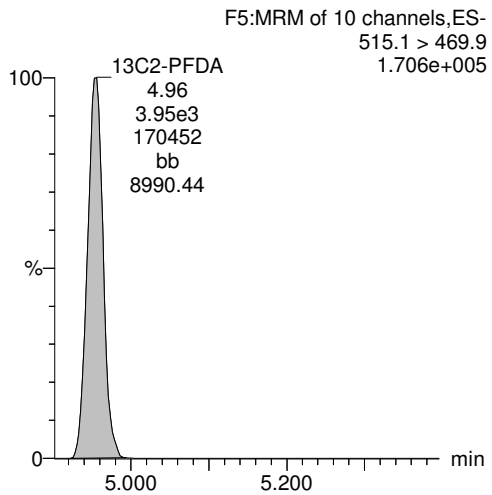
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-17.qld

Last Altered: Tuesday, December 12, 2017 11:06:56 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:07:29 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_17, Date: 11-Dec-2017, Time: 17:14:38, ID: 1701815-04 CH-AT-1FB98B-1117 0.23954, Description: CH-AT-1FB98B-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		0.2395	3.02				
2	2	PFOA	413 > 368.7	2.34e1	8.35e3		0.2395	4.31	4.31	0.0280	0.144	
3	3	PFOS	499 >79.9	1.28e0	1.08e4		0.2395	4.72	4.71	0.00341	0.0118	
4	4	13C2-PFHxA	315 > 269.8	4.10e3	8.35e3	0.443	0.2395	3.37	3.37	4.91	46.3	110.8
5	5	13C2-PFDA	515.1 > 469.9	4.79e3	8.35e3	0.509	0.2395	4.94	4.95	5.74	47.0	112.7
6	6	13C2-PFOA	414.9 > 369.7	8.35e3	8.35e3	1.000	0.2395	4.41	4.31	10.0	41.7	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	0.2395	4.81	4.72	28.7	120	100.0

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Rev'd: MM 12/12/17

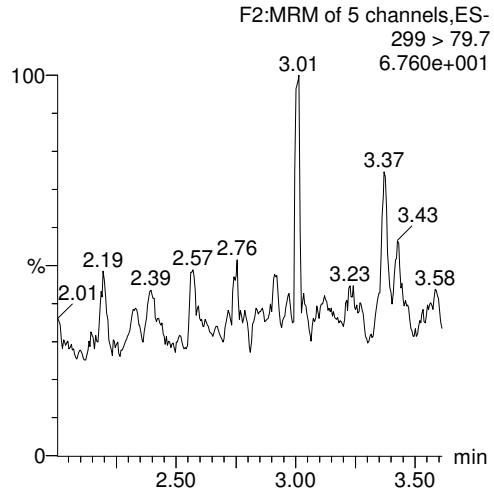
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-17.qld

Last Altered: Tuesday, December 12, 2017 11:06:56 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:07:29 Pacific Standard Time

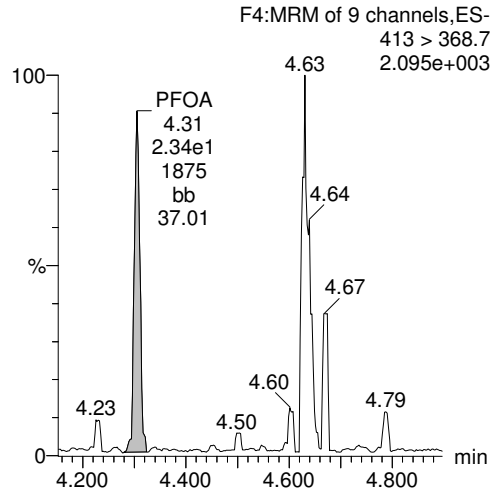
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_17, Date: 11-Dec-2017, Time: 17:14:38, ID: 1701815-04 CH-AT-1FB98B-1117 0.23954, Description: CH-AT-1FB98B-1117

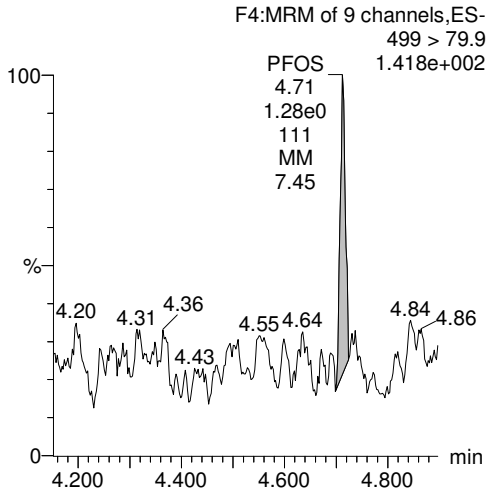
PFBS



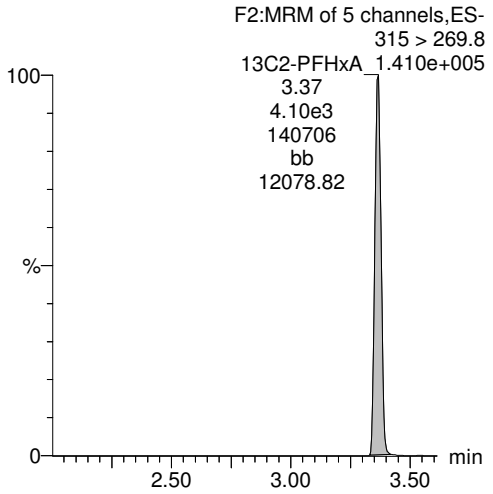
PFOA



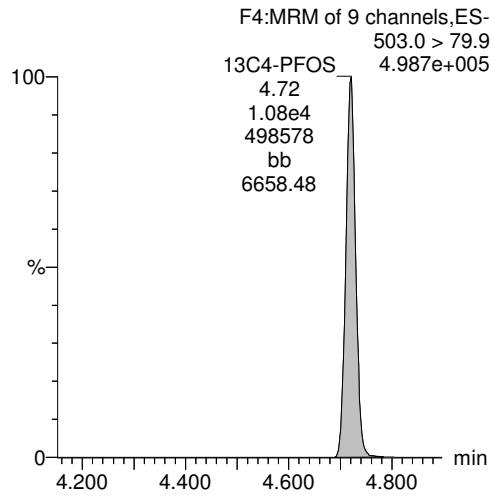
PFOS



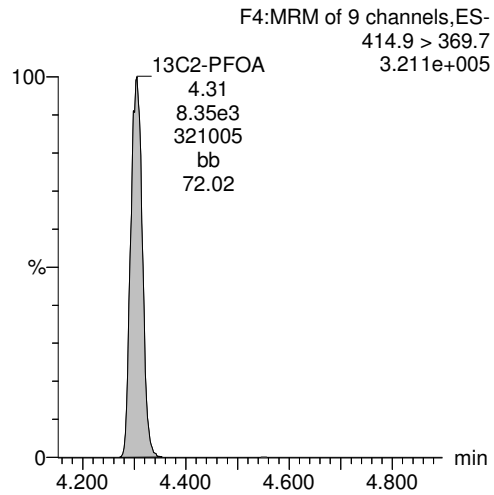
13C2-PFHxA



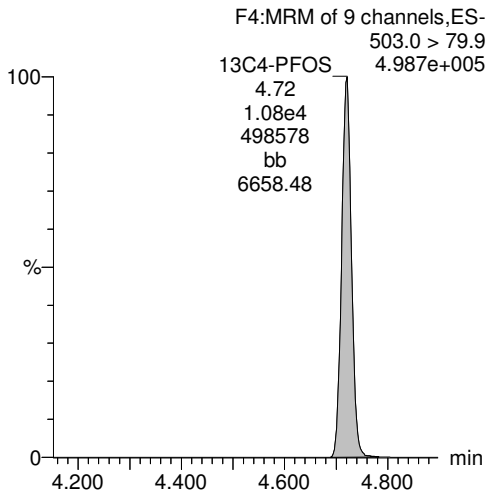
13C4-PFOS



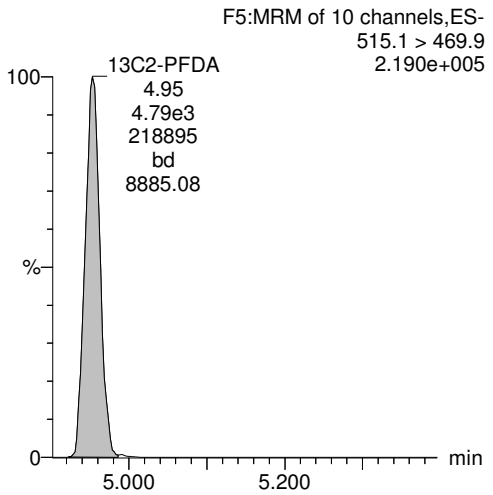
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-18.qld

Last Altered: Tuesday, December 12, 2017 11:08:40 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:09:43 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_18, Date: 11-Dec-2017, Time: 17:27:04, ID: 1701815-05 CH-AT-1RW99-1117 0.23773, Description: CH-AT-1RW99-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.00e4		0.2377	3.02				
2	2	PFOA	413 > 368.7	3.19e1	9.26e3		0.2377	4.30	4.30	0.0344	0.178	
3	3	PFOS	499 >79.9		1.00e4		0.2377	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.31e3	9.26e3	0.443	0.2377	3.36	3.36	4.66	44.2	105.1
5	5	13C2-PFDA	515.1 > 469.9	4.21e3	9.26e3	0.509	0.2377	4.93	4.95	4.55	37.6	89.3
6	6	13C2-PFOA	414.9 > 369.7	9.26e3	9.26e3	1.000	0.2377	4.41	4.30	10.0	42.1	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.00e4	1.00e4	1.000	0.2377	4.81	4.72	28.7	121	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

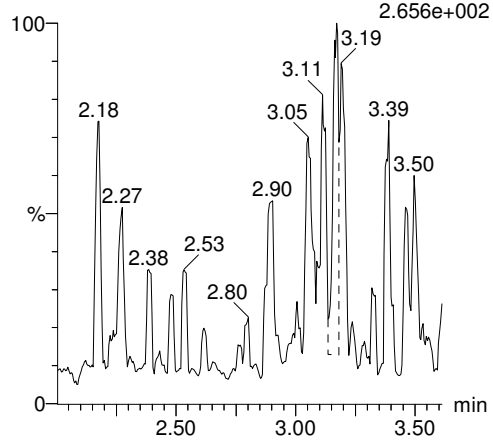
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-18.qld

Last Altered: Tuesday, December 12, 2017 11:08:40 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:09:43 Pacific Standard Time

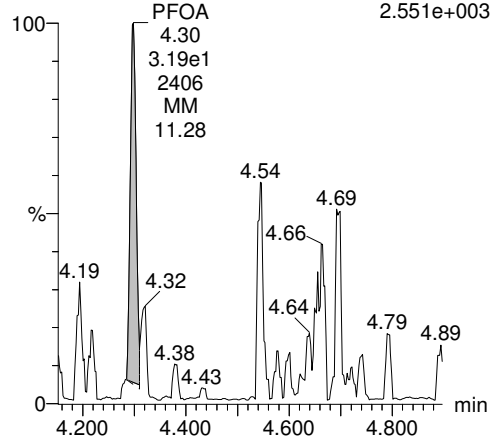
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_18, Date: 11-Dec-2017, Time: 17:27:04, ID: 1701815-05 CH-AT-1RW99-1117 0.23773, Description: CH-AT-1RW99-1117

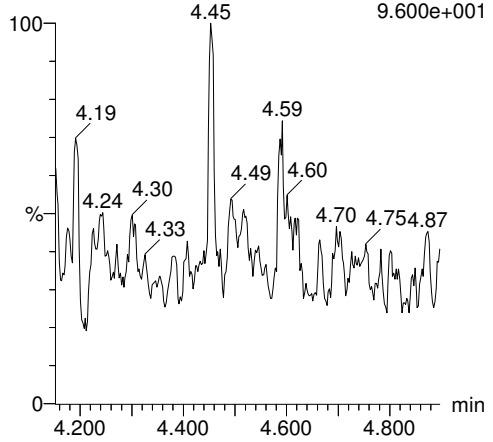
PFBS



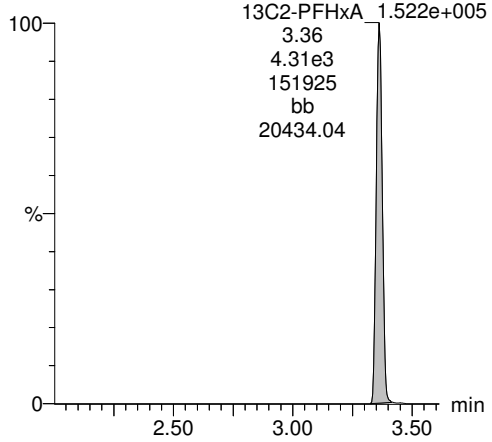
PFOA



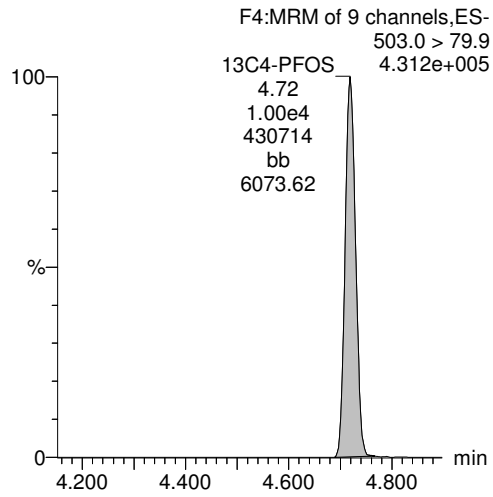
PFOS



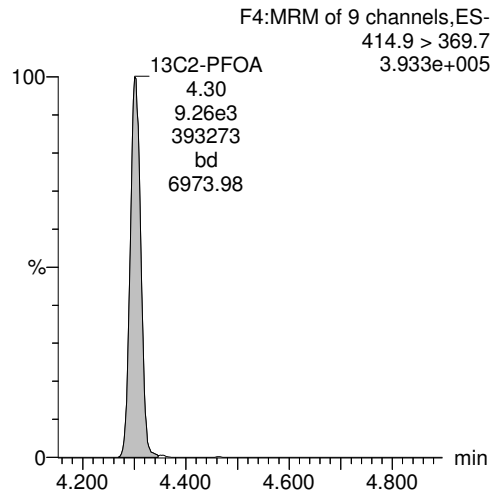
13C2-PFHxA



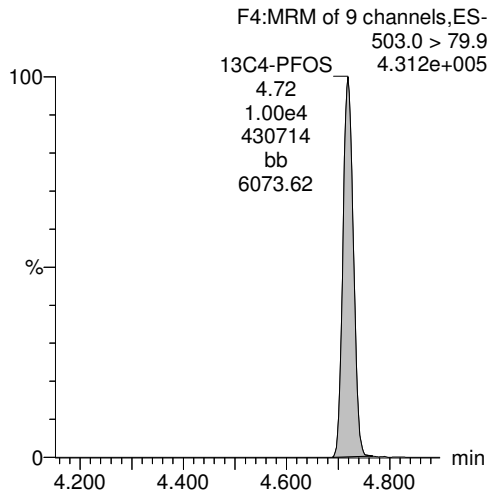
13C4-PFOS



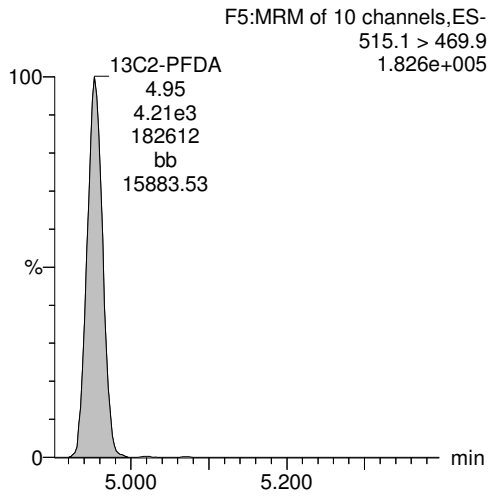
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-19.qld

Last Altered: Tuesday, December 12, 2017 11:11:09 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:11:40 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_19, Date: 11-Dec-2017, Time: 17:39:30, ID: 1701815-06 CH-AT-1FB99-1117 0.2595, Description: CH-AT-1FB99-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.93e3		0.2595	3.02				
2	2	PFOA	413 > 368.7	4.37e1	9.29e3		0.2595	4.30	4.30	0.0470	0.223	
3	3	PFOS	499 >79.9	5.86e0	9.93e3		0.2595	4.72	4.72	0.0169	0.0542	
4	4	13C2-PFHxA	315 > 269.8	4.31e3	9.29e3	0.443	0.2595	3.36	3.36	4.65	40.4	104.9
5	5	13C2-PFDA	515.1 > 469.9	4.54e3	9.29e3	0.509	0.2595	4.93	4.95	4.89	37.0	96.0
6	6	13C2-PFOA	414.9 > 369.7	9.29e3	9.29e3	1.000	0.2595	4.41	4.30	10.0	38.5	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.93e3	9.93e3	1.000	0.2595	4.81	4.72	28.7	111	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

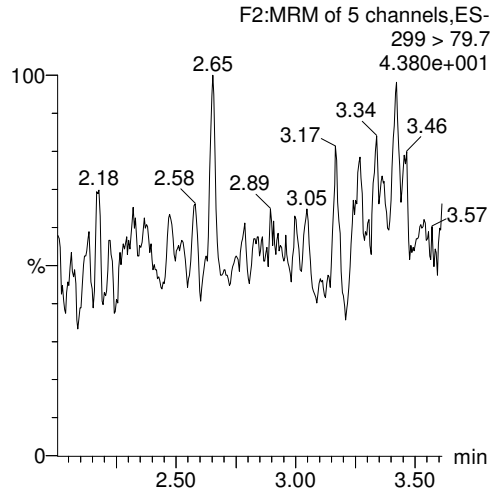
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-19.qld

Last Altered: Tuesday, December 12, 2017 11:11:09 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:11:40 Pacific Standard Time

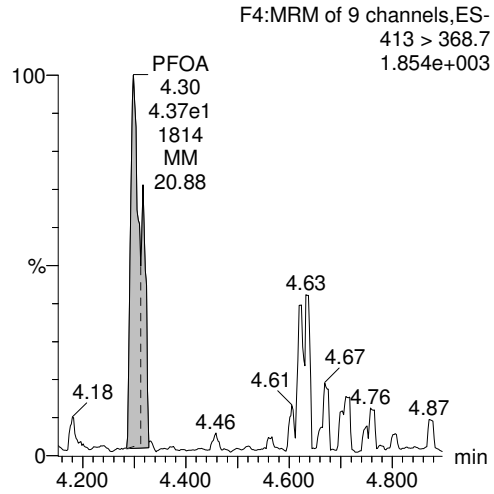
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_19, Date: 11-Dec-2017, Time: 17:39:30, ID: 1701815-06 CH-AT-1FB99-1117 0.2595, Description: CH-AT-1FB99-1117

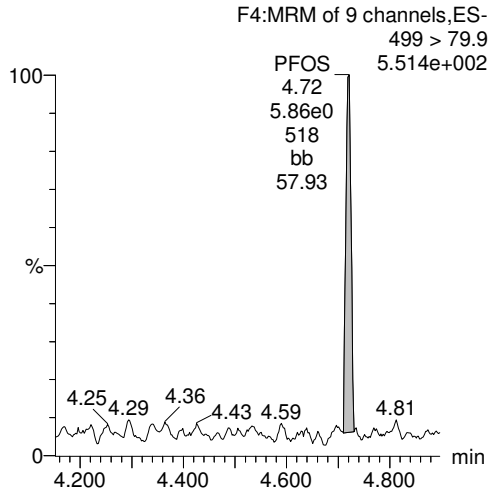
PFBS



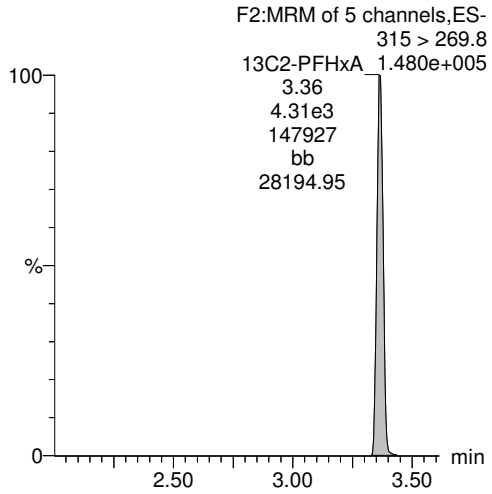
PFOA



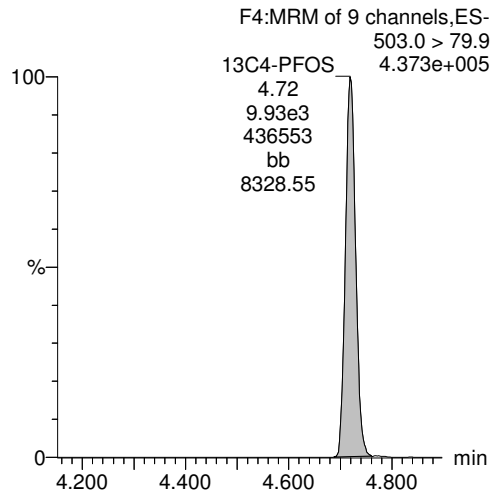
PFOS



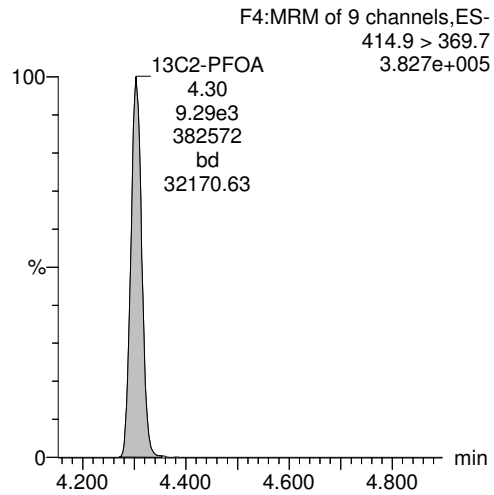
13C2-PFHxA



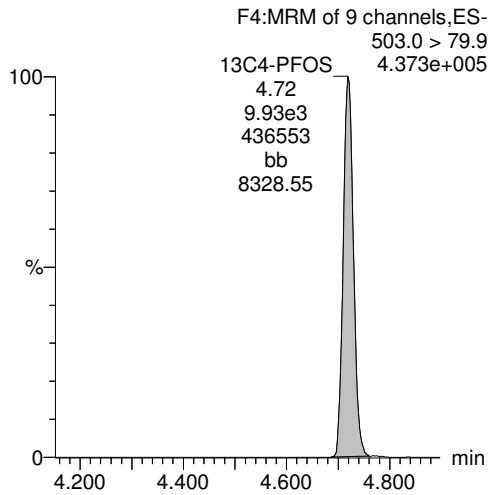
13C4-PFOS



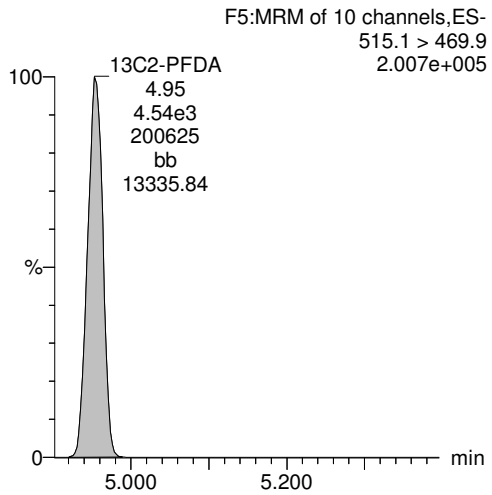
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-20.qld

Last Altered: Tuesday, December 12, 2017 11:12:59 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:13:25 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_20, Date: 11-Dec-2017, Time: 17:51:58, ID: 1701815-07 CH-AT-1RW100-1117 0.23268, Description: CH-AT-1RW100-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	9.28e0	1.04e4		0.2327	3.02	3.17	0.0257	0.138	
2	2	PFOA	413 > 368.7	6.40e1	8.32e3		0.2327	4.31	4.31	0.0769	0.407	
3	3	PFOS	499 >79.9	5.44e0	1.04e4		0.2327	4.72	4.72	0.0150	0.0538	
4	4	13C2-PFHxA	315 > 269.8	4.05e3	8.32e3	0.443	0.2327	3.37	3.37	4.87	47.3	110.0
5	5	13C2-PFDA	515.1 > 469.9	3.89e3	8.32e3	0.509	0.2327	4.94	4.96	4.68	39.5	91.8
6	6	13C2-PFOA	414.9 > 369.7	8.32e3	8.32e3	1.000	0.2327	4.41	4.31	10.0	43.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2327	4.81	4.72	28.7	123	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

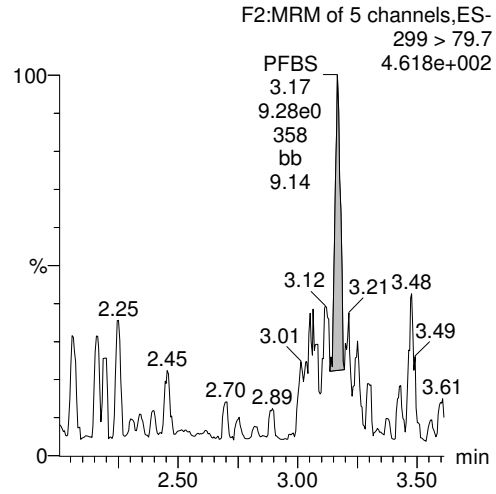
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-20.qld

Last Altered: Tuesday, December 12, 2017 11:12:59 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:13:25 Pacific Standard Time

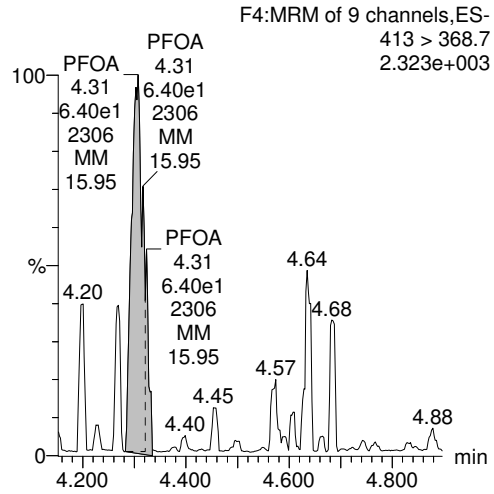
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_20, Date: 11-Dec-2017, Time: 17:51:58, ID: 1701815-07 CH-AT-1RW100-1117 0.23268, Description: CH-AT-1RW100-1117

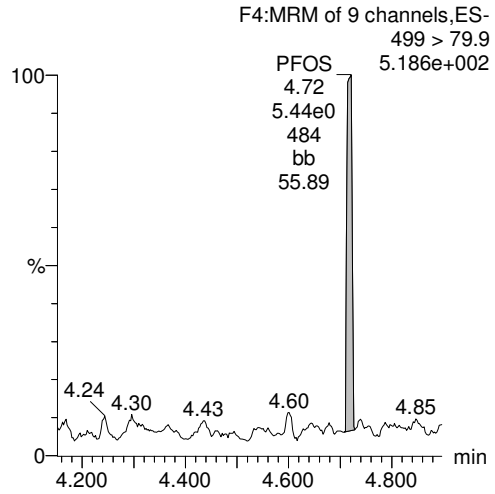
PFBS



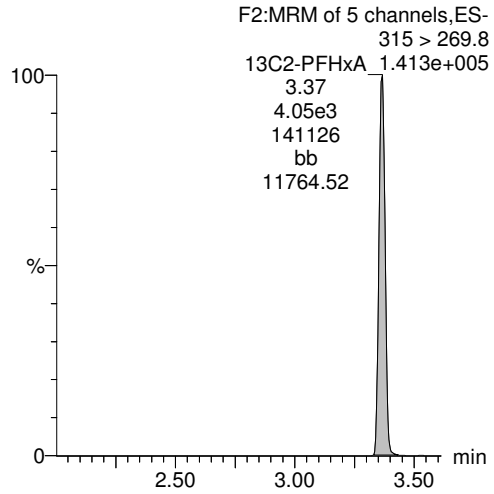
PFOA



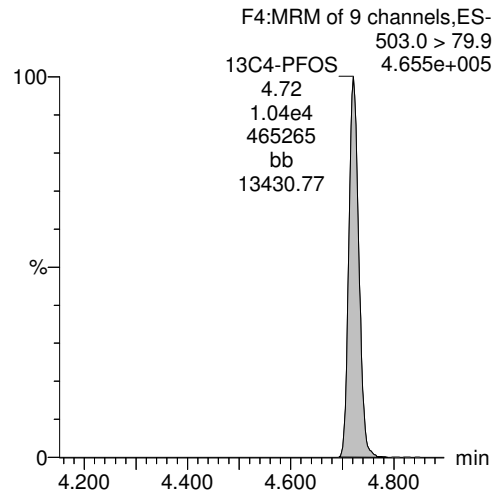
PFOS



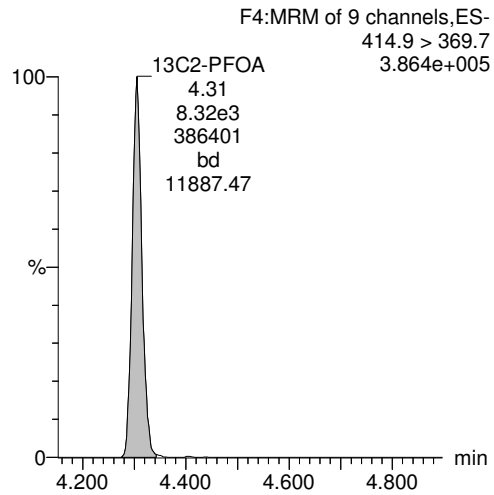
13C2-PFHxA



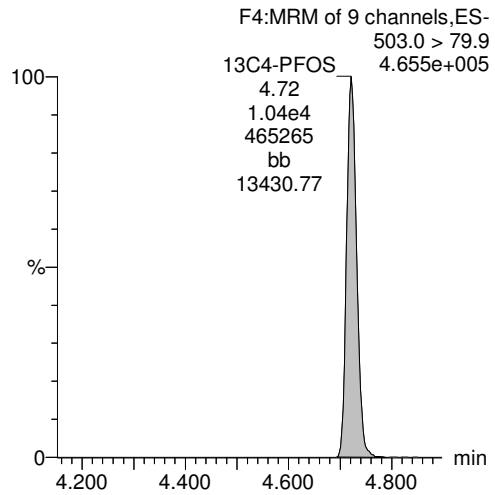
13C4-PFOS



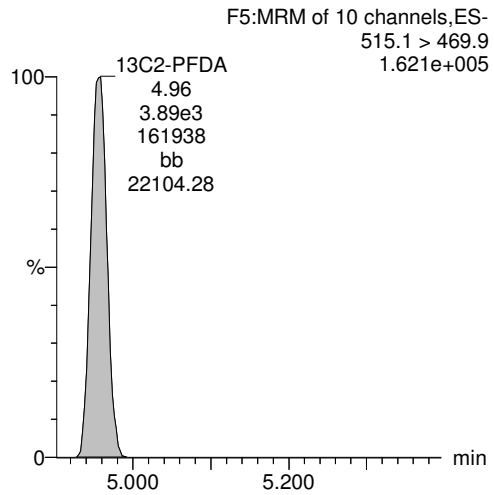
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-21.qld

Last Altered: Tuesday, December 12, 2017 11:19:19 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:19:38 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_21, Date: 11-Dec-2017, Time: 18:04:27, ID: 1701815-08 CH-AT-1FB100-1117 0.24391, Description: CH-AT-1FB100-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.03e4		0.2439	3.02				
2	2	PFOA	413 > 368.7	5.79e1	7.99e3		0.2439	4.31	4.30	0.0725	0.366	
3	3	PFOS	499 >79.9		1.03e4		0.2439	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.00e3	7.99e3	0.443	0.2439	3.37	3.37	5.00	46.3	113.0
5	5	13C2-PFDA	515.1 > 469.9	3.81e3	7.99e3	0.509	0.2439	4.94	4.96	4.77	38.4	93.6
6	6	13C2-PFOA	414.9 > 369.7	7.99e3	7.99e3	1.000	0.2439	4.41	4.31	10.0	41.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.03e4	1.03e4	1.000	0.2439	4.81	4.72	28.7	118	100.0

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Rev'd: MM 12/12/17

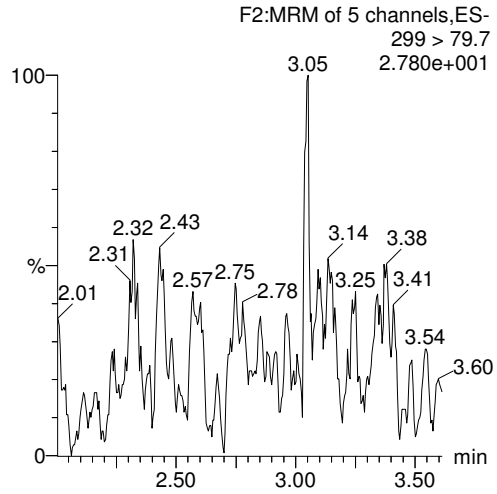
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-21.qld

Last Altered: Tuesday, December 12, 2017 11:19:19 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:19:38 Pacific Standard Time

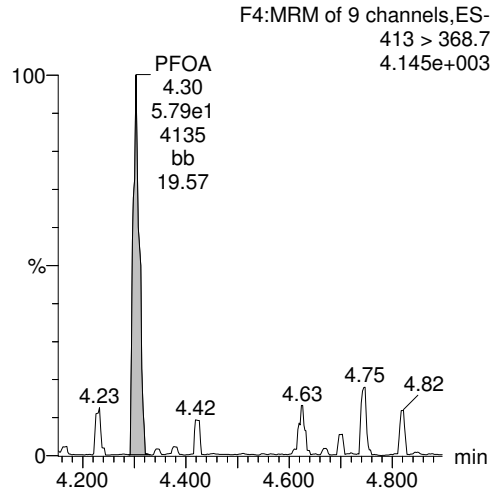
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_21, Date: 11-Dec-2017, Time: 18:04:27, ID: 1701815-08 CH-AT-1FB100-1117 0.24391, Description: CH-AT-1FB100-1117

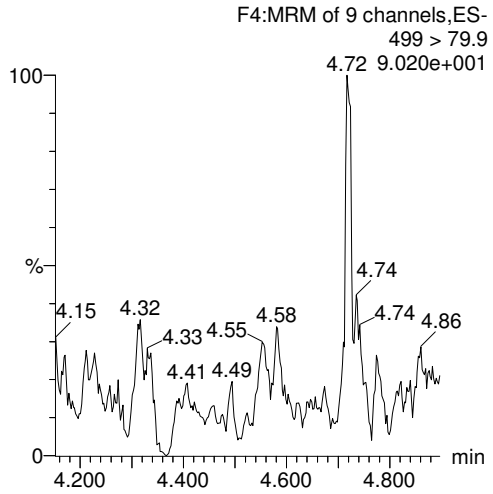
PFBS



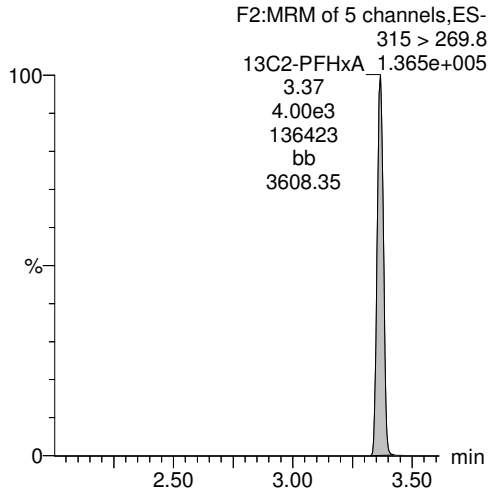
PFOA



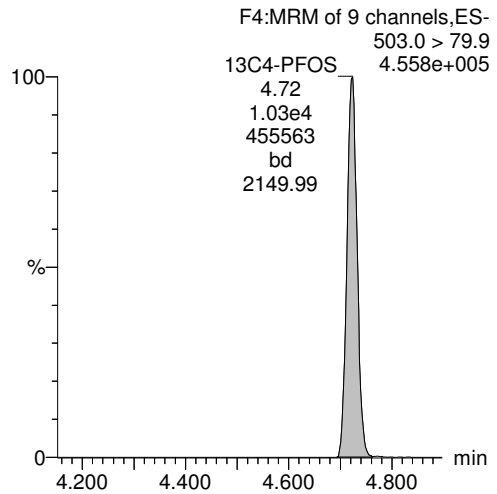
PFOS



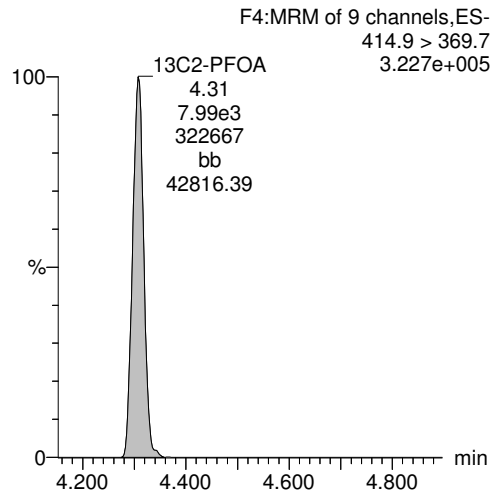
13C2-PFHxA



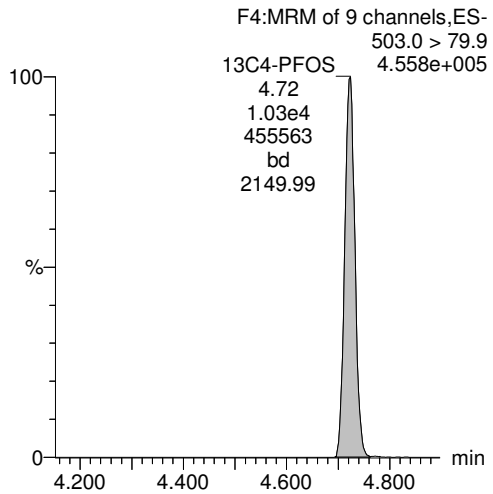
13C4-PFOS



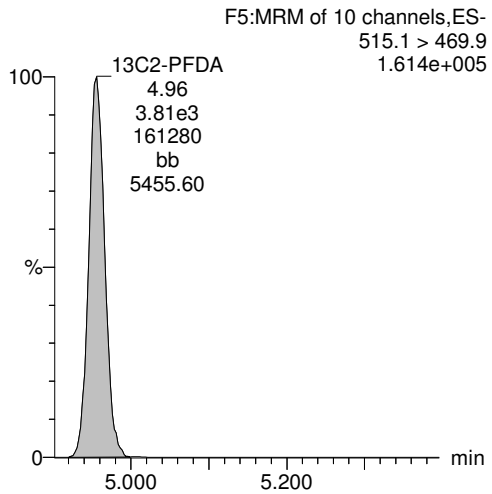
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-22.qld

Last Altered: Tuesday, December 12, 2017 11:22:46 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:24:57 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_22, Date: 11-Dec-2017, Time: 18:16:50, ID: 1701815-09 CH-AT-1RW101-1117 0.23904, Description: CH-AT-1RW101-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.01e4		0.2390	3.02				
2	2	PFOA	413 > 368.7	6.53e1	8.32e3		0.2390	4.31	4.31	0.0786	0.405	
3	3	PFOS	499 >79.9		1.01e4		0.2390	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.09e3	8.32e3	0.443	0.2390	3.37	3.37	4.92	46.5	111.1
5	5	13C2-PFDA	515.1 > 469.9	2.14e3	8.32e3	0.509	0.2390	4.94	4.96	2.57	21.1	50.4
6	6	13C2-PFOA	414.9 > 369.7	8.32e3	8.32e3	1.000	0.2390	4.41	4.31	10.0	41.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2390	4.81	4.72	28.7	120	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

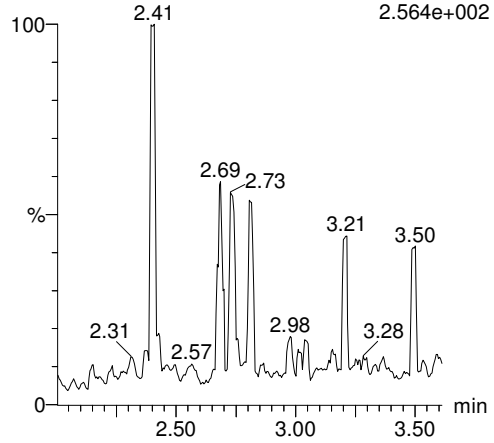
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-22.qld

Last Altered: Tuesday, December 12, 2017 11:22:46 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:24:57 Pacific Standard Time

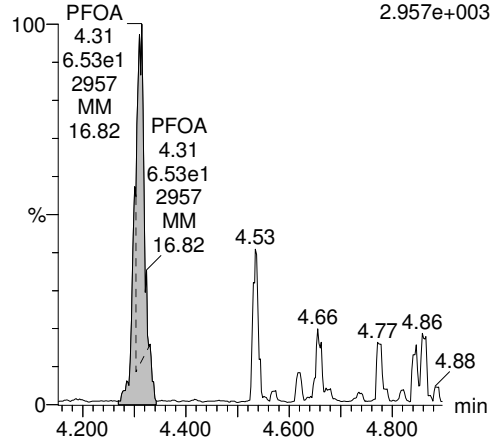
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_22, Date: 11-Dec-2017, Time: 18:16:50, ID: 1701815-09 CH-AT-1RW101-1117 0.23904, Description: CH-AT-1RW101-1117

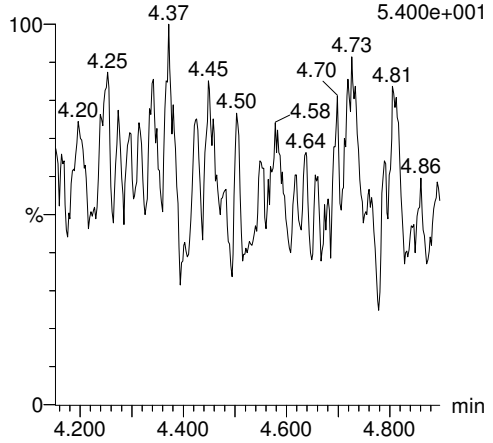
PFBS



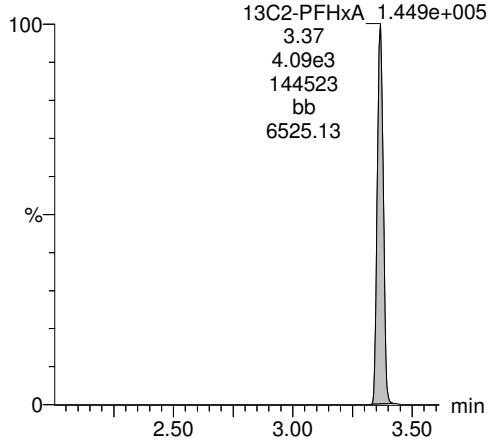
PFOA



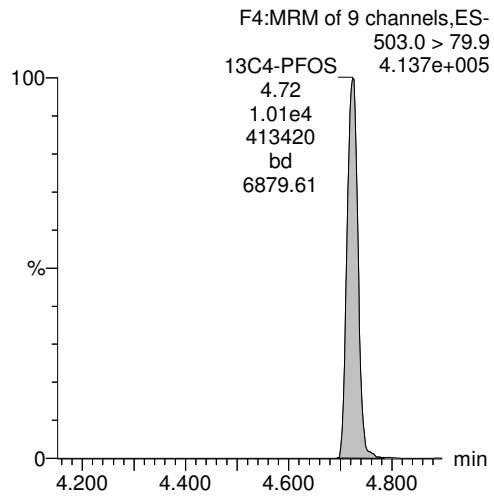
PFOS



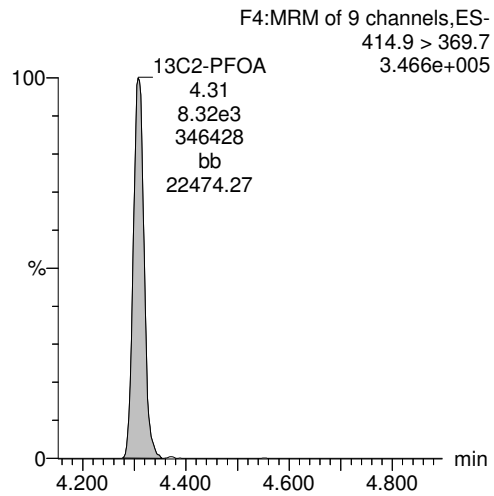
13C2-PFHxA



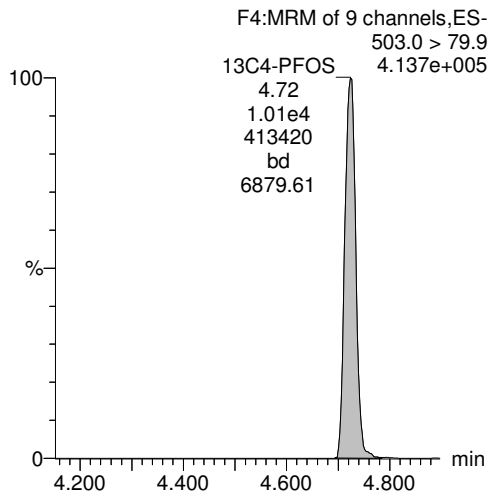
13C4-PFOS



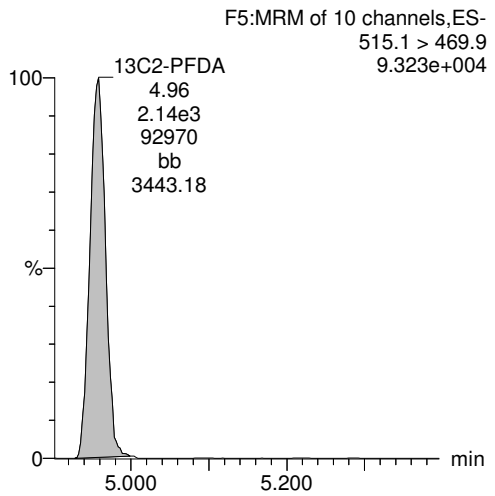
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-23.qld

Last Altered: Tuesday, December 12, 2017 11:25:56 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:26:27 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_23, Date: 11-Dec-2017, Time: 18:29:14, ID: 1701815-10 CH-AT-1FB101-1117 0.24933, Description: CH-AT-1FB101-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.00e4		0.2493	3.02				
2	2	PFOA	413 > 368.7	3.31e1	9.01e3		0.2493	4.31	4.31	0.0368	0.182	
3	3	PFOS	499 >79.9		1.00e4		0.2493	4.72				
4	4	13C2-PFHxA	315 > 269.8	3.92e3	9.01e3	0.443	0.2493	3.37	3.37	4.35	39.4	98.2
5	5	13C2-PFDA	515.1 > 469.9	3.90e3	9.01e3	0.509	0.2493	4.94	4.95	4.33	34.1	84.9
6	6	13C2-PFOA	414.9 > 369.7	9.01e3	9.01e3	1.000	0.2493	4.41	4.31	10.0	40.1	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.00e4	1.00e4	1.000	0.2493	4.81	4.72	28.7	115	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

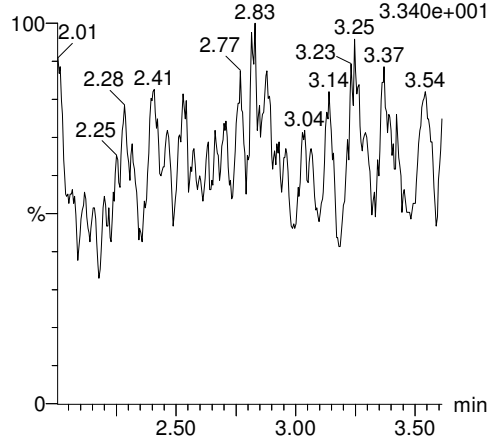
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-23.qld

Last Altered: Tuesday, December 12, 2017 11:25:56 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:26:27 Pacific Standard Time

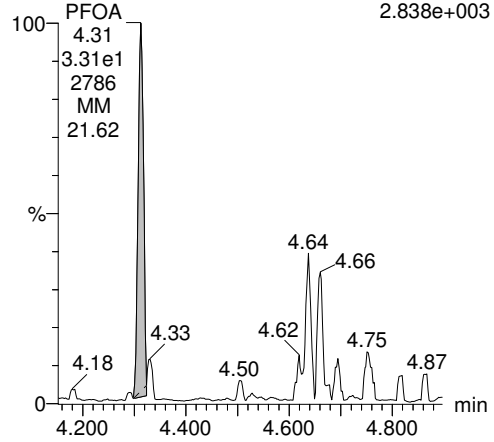
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_23, Date: 11-Dec-2017, Time: 18:29:14, ID: 1701815-10 CH-AT-1FB101-1117 0.24933, Description: CH-AT-1FB101-1117

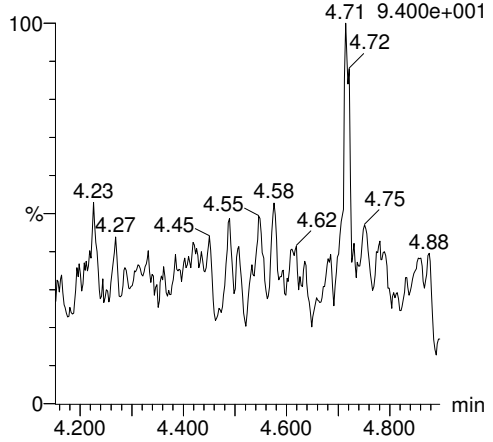
PFBS



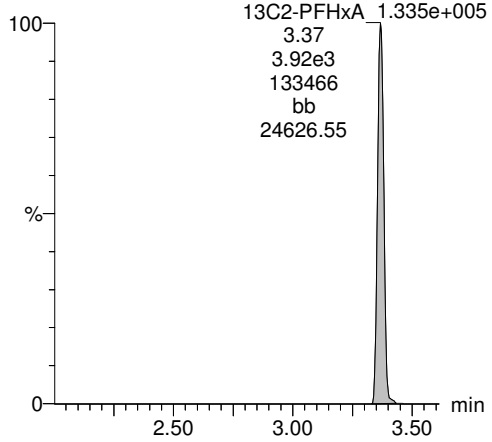
PFOA



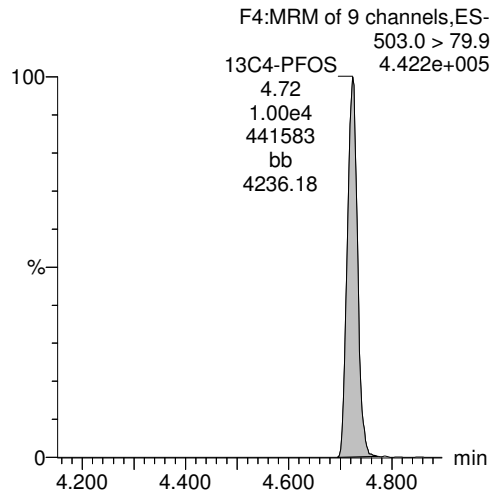
PFOS



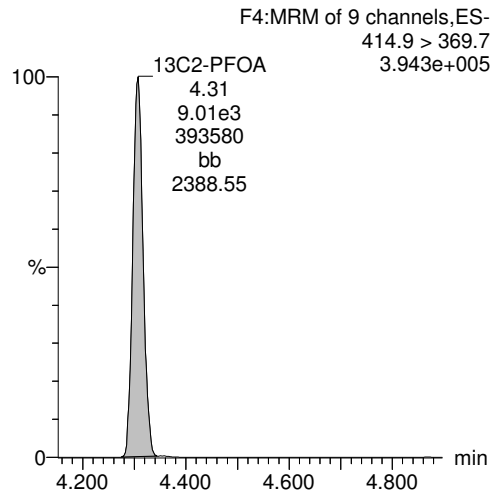
13C2-PFHxA



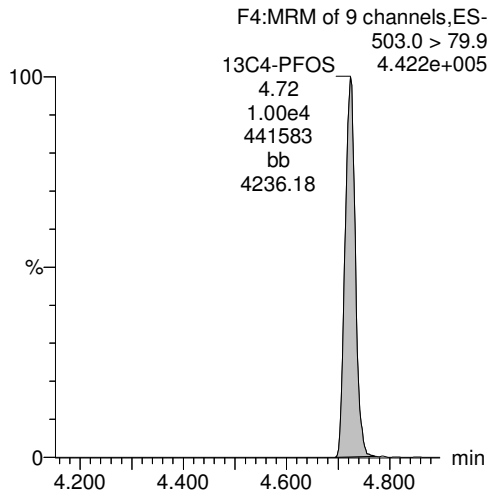
13C4-PFOS



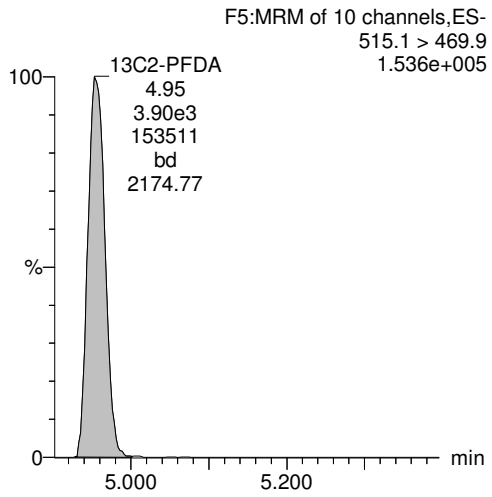
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-24.qld

Last Altered: Tuesday, December 12, 2017 11:27:17 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:28:01 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_24, Date: 11-Dec-2017, Time: 18:41:38, ID: 1701815-11 CH-AT-1RW102-1117 0.22328, Description: CH-AT-1RW102-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.16e1	9.82e3		0.2233	3.02	3.19	0.0339	0.190	
2	2	PFOA	413 > 368.7	2.36e1	8.51e3		0.2233	4.31	4.31	0.0277	0.153	
3	3	PFOS	499 >79.9		9.82e3		0.2233	4.72				
4	4	13C2-PFHxA	315 > 269.8	3.82e3	8.51e3	0.443	0.2233	3.37	3.37	4.49	45.4	101.4
5	5	13C2-PFDA	515.1 > 469.9	3.83e3	8.51e3	0.509	0.2233	4.94	4.96	4.50	39.5	88.3
6	6	13C2-PFOA	414.9 > 369.7	8.51e3	8.51e3	1.000	0.2233	4.41	4.31	10.0	44.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.82e3	9.82e3	1.000	0.2233	4.81	4.72	28.7	129	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

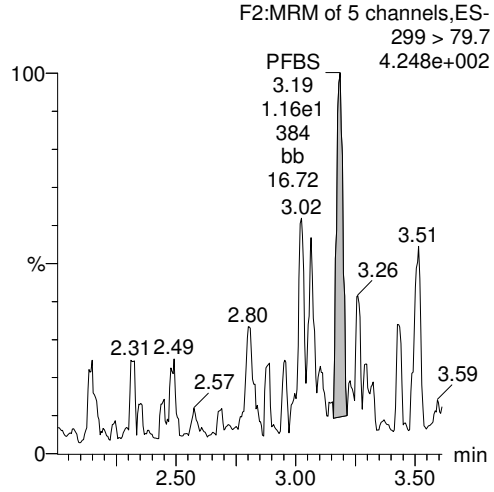
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-24.qld

Last Altered: Tuesday, December 12, 2017 11:27:17 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:28:01 Pacific Standard Time

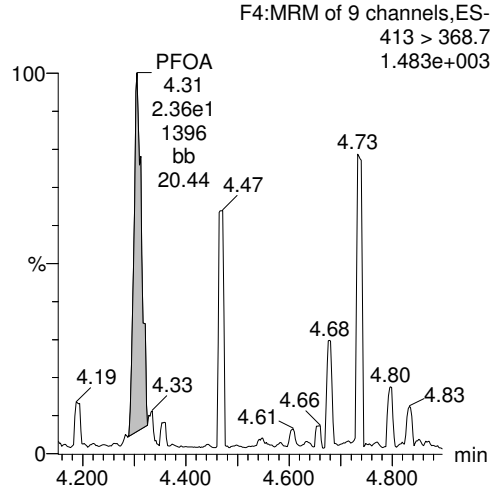
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_24, Date: 11-Dec-2017, Time: 18:41:38, ID: 1701815-11 CH-AT-1RW102-1117 0.22328, Description: CH-AT-1RW102-1117

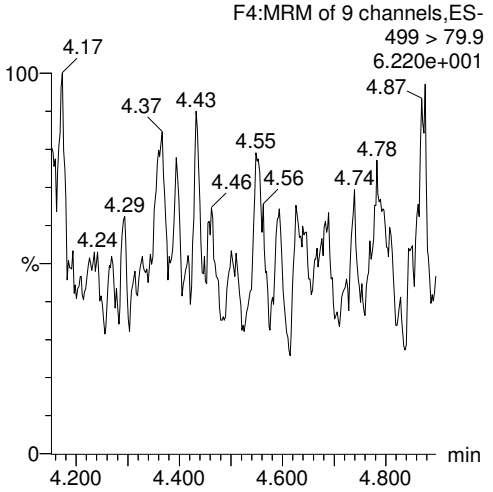
PFBS



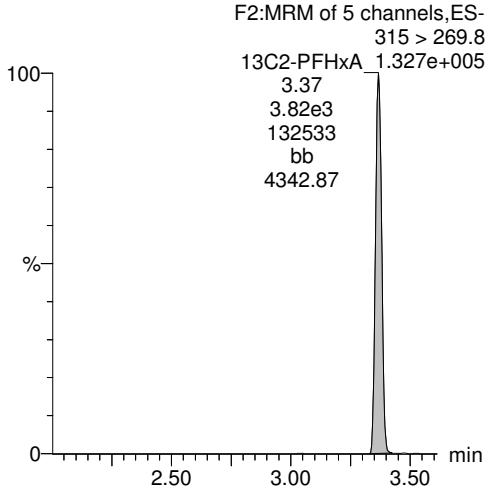
PFOA



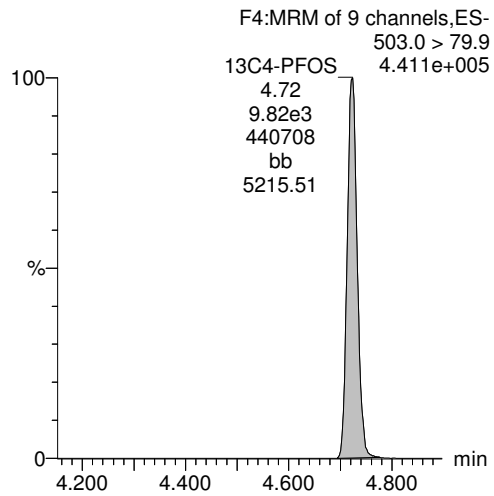
PFOS



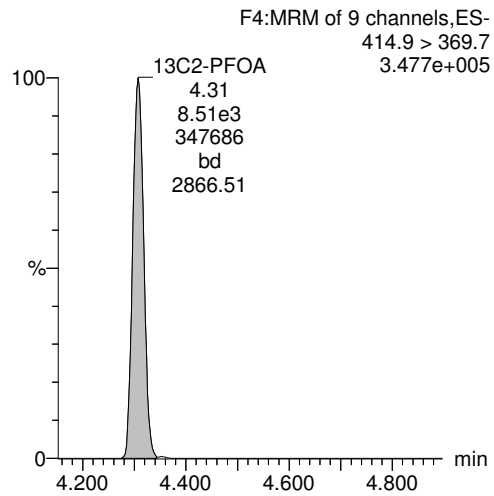
13C2-PFHxA



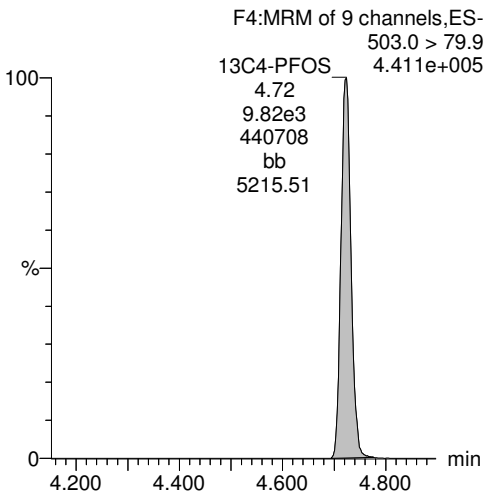
13C4-PFOS



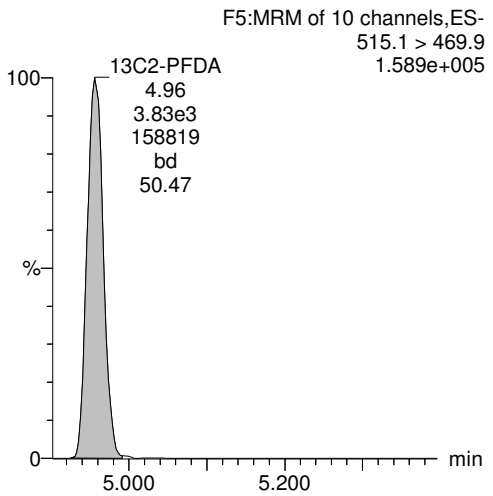
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-25.qld

Last Altered: Tuesday, December 12, 2017 11:29:22 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:29:50 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_25, Date: 11-Dec-2017, Time: 18:54:03, ID: 1701815-12 CH-AT-1FB102-1117 0.2476, Description: CH-AT-1FB102-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.08e4		0.2476	3.02				
2	2	PFOA	413 > 368.7	4.57e1	8.70e3		0.2476	4.31	4.31	0.0525	0.261	
3	3	PFOS	499 >79.9		1.08e4		0.2476	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.03e3	8.70e3	0.443	0.2476	3.37	3.37	4.64	42.3	104.6
5	5	13C2-PFDA	515.1 > 469.9	3.96e3	8.70e3	0.509	0.2476	4.94	4.96	4.55	36.1	89.4
6	6	13C2-PFOA	414.9 > 369.7	8.70e3	8.70e3	1.000	0.2476	4.41	4.31	10.0	40.4	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	0.2476	4.81	4.72	28.7	116	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

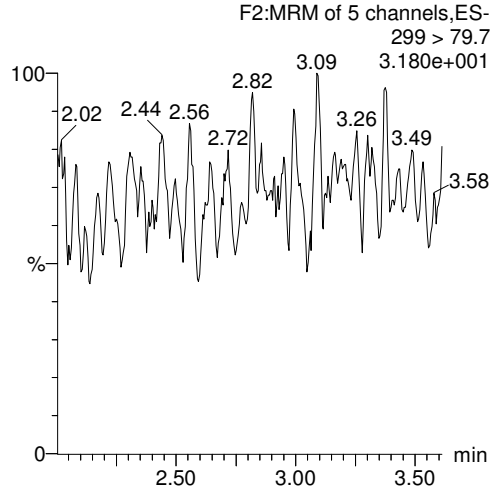
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-25.qld

Last Altered: Tuesday, December 12, 2017 11:29:22 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:29:50 Pacific Standard Time

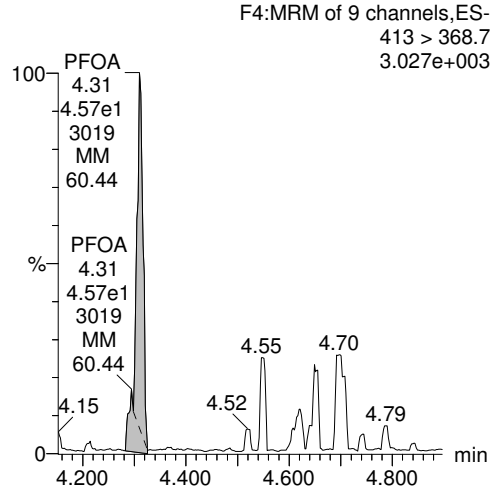
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_25, Date: 11-Dec-2017, Time: 18:54:03, ID: 1701815-12 CH-AT-1FB102-1117 0.2476, Description: CH-AT-1FB102-1117

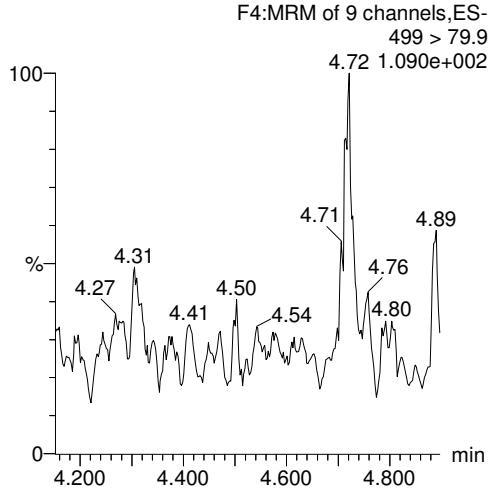
PFBS



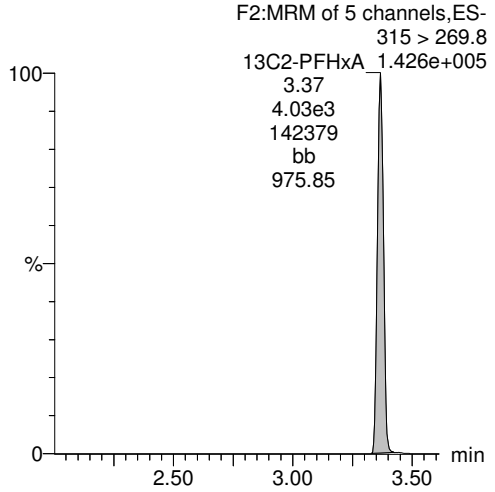
PFOA



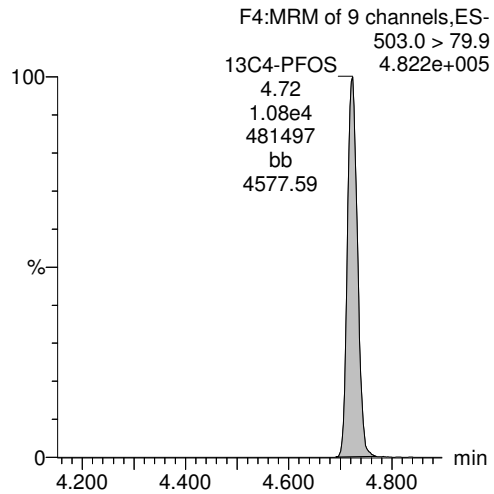
PFOS



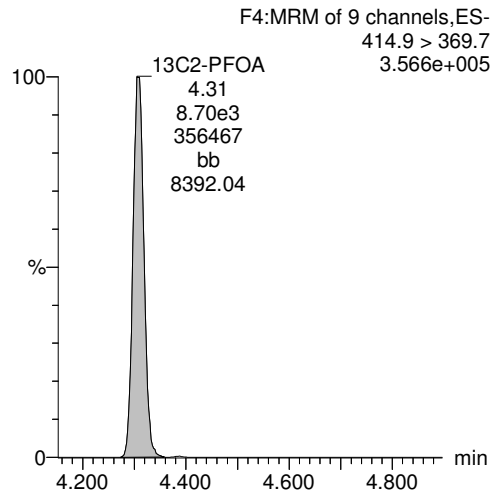
13C2-PFHxA



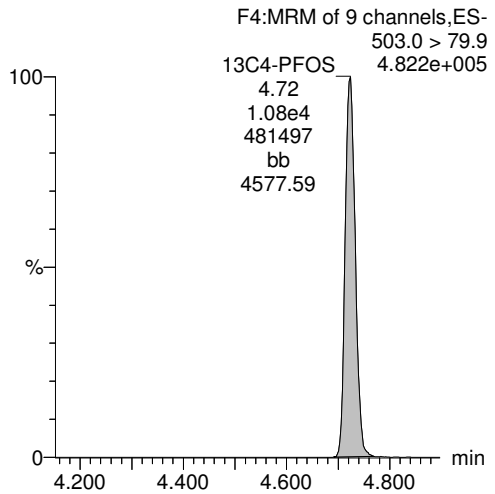
13C4-PFOS



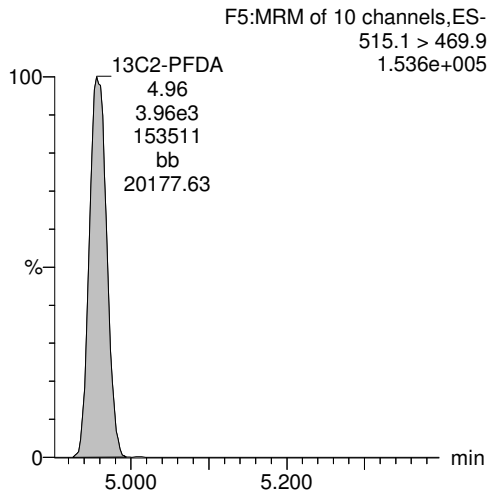
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-26.qld

Last Altered: Tuesday, December 12, 2017 11:31:06 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:32:27 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_26, Date: 11-Dec-2017, Time: 19:06:28, ID: 1701815-13 CH-AT-1RW103-1117 0.23828, Description: CH-AT-1RW103-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.08e4		0.2383	3.02				
2	2	PFOA	413 > 368.7	6.75e1	8.24e3		0.2383	4.31	4.31	0.0818	0.423	
3	3	PFOS	499 >79.9		1.08e4		0.2383	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.06e3	8.24e3	0.443	0.2383	3.37	3.37	4.93	46.7	111.2
5	5	13C2-PFDA	515.1 > 469.9	3.99e3	8.24e3	0.509	0.2383	4.94	4.96	4.83	39.8	94.9
6	6	13C2-PFOA	414.9 > 369.7	8.24e3	8.24e3	1.000	0.2383	4.41	4.31	10.0	42.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	0.2383	4.81	4.72	28.7	120	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

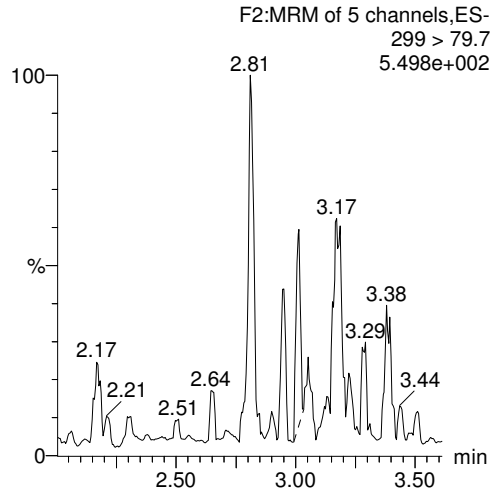
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-26.qld

Last Altered: Tuesday, December 12, 2017 11:31:06 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:32:27 Pacific Standard Time

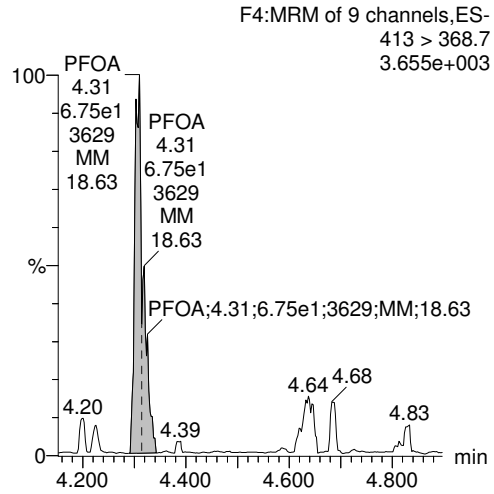
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_26, Date: 11-Dec-2017, Time: 19:06:28, ID: 1701815-13 CH-AT-1RW103-1117 0.23828, Description: CH-AT-1RW103-1117

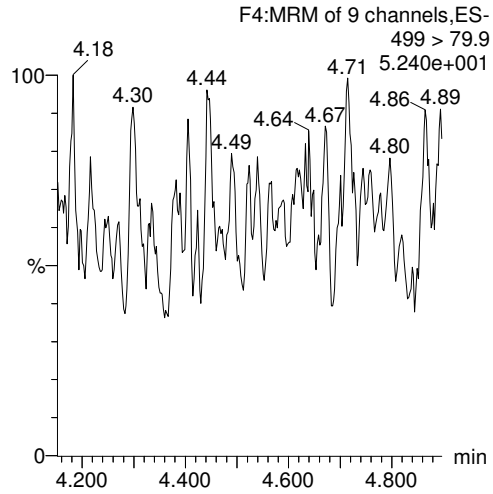
PFBS



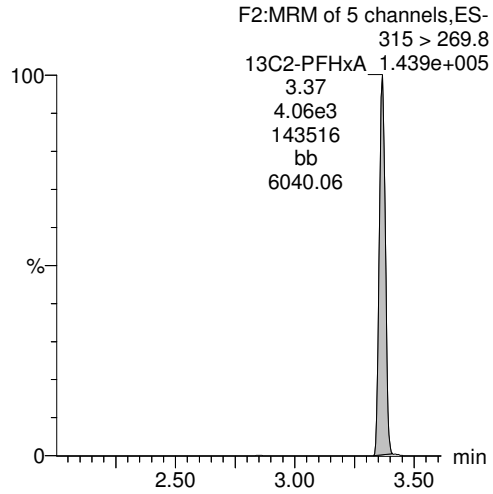
PFOA



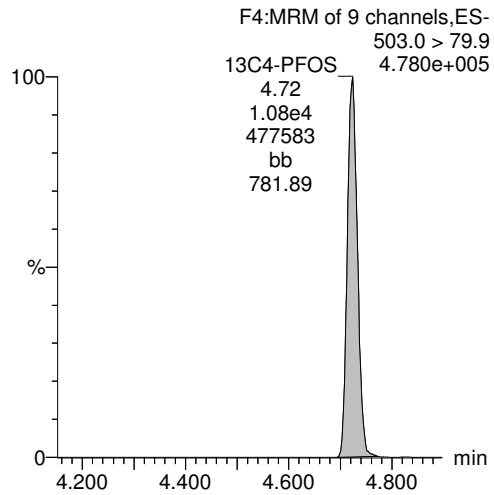
PFOS



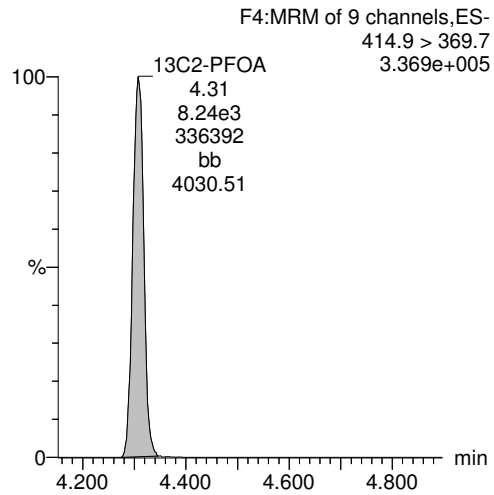
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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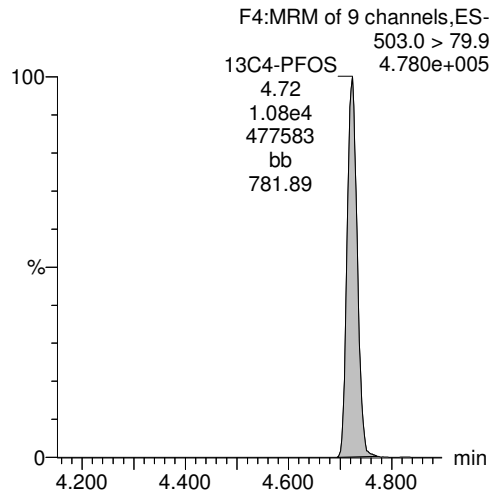
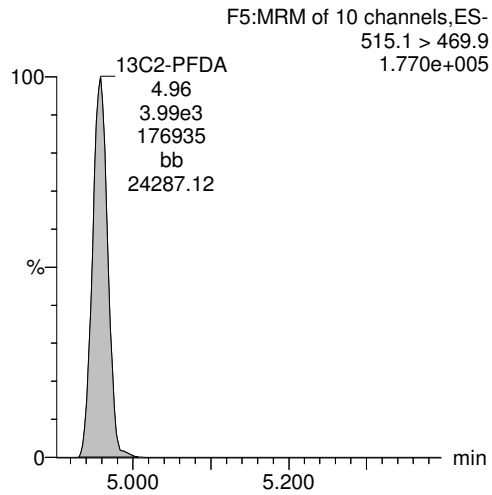


13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-27.qld

Last Altered: Tuesday, December 12, 2017 11:33:56 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:34:31 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_27, Date: 11-Dec-2017, Time: 19:18:55, ID: 1701815-14 CH-AT-1FB103-1117 0.23541, Description: CH-AT-1FB103-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.95e3		0.2354	3.02				
2	2	PFOA	413 > 368.7	3.54e1	8.89e3		0.2354	4.31	4.31	0.0399	0.209	
3	3	PFOS	499 >79.9		9.95e3		0.2354	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.06e3	8.89e3	0.443	0.2354	3.37	3.37	4.56	43.8	103.1
5	5	13C2-PFDA	515.1 > 469.9	4.19e3	8.89e3	0.509	0.2354	4.94	4.96	4.71	39.3	92.4
6	6	13C2-PFOA	414.9 > 369.7	8.89e3	8.89e3	1.000	0.2354	4.41	4.31	10.0	42.5	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.95e3	9.95e3	1.000	0.2354	4.81	4.72	28.7	122	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

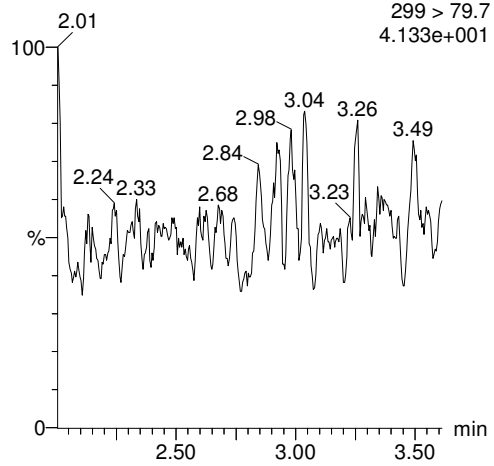
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-27.qld

Last Altered: Tuesday, December 12, 2017 11:33:56 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:34:31 Pacific Standard Time

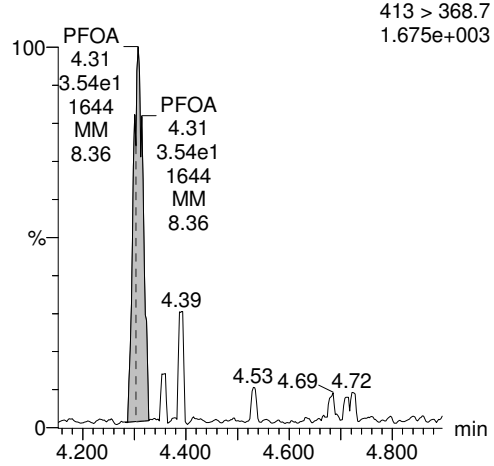
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_27, Date: 11-Dec-2017, Time: 19:18:55, ID: 1701815-14 CH-AT-1FB103-1117 0.23541, Description: CH-AT-1FB103-1117

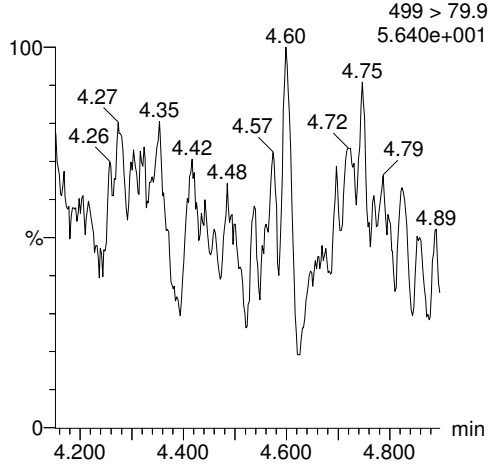
PFBS



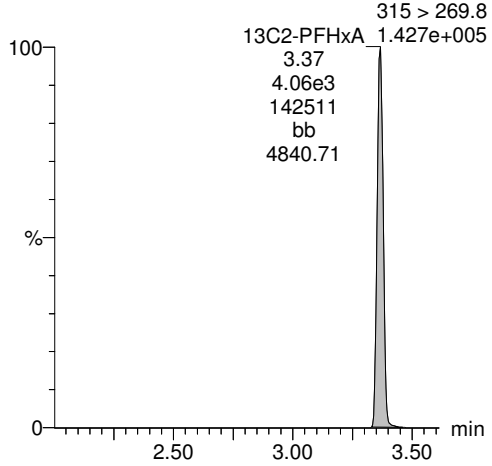
PFOA



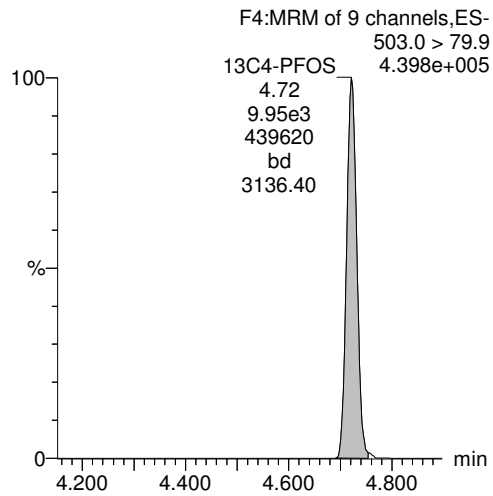
PFOS



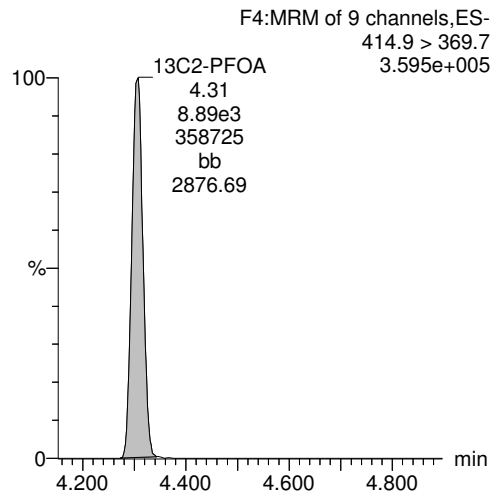
13C2-PFHxA



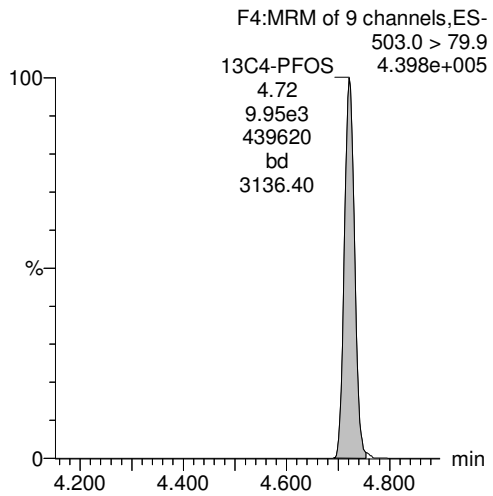
13C4-PFOS



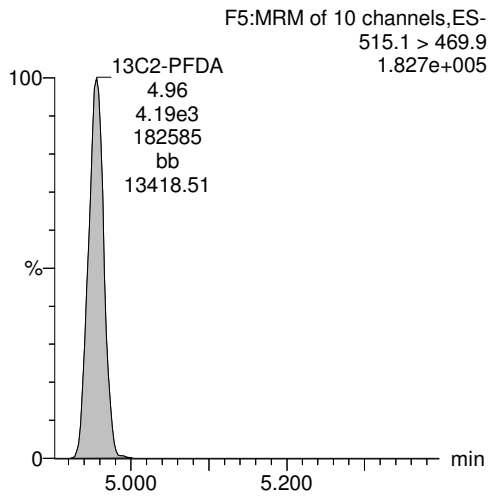
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-28.qld

Last Altered: Tuesday, December 12, 2017 11:38:08 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:38:26 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_28, Date: 11-Dec-2017, Time: 19:31:21, ID: 1701815-15 CH-AT-1RW104-1117 0.23862, Description: CH-AT-1RW104-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.71e3		0.2386	3.02				
2	2	PFOA	413 > 368.7	3.66e1	8.22e3		0.2386	4.31	4.31	0.0446	0.230	
3	3	PFOS	499 >79.9		9.71e3		0.2386	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.07e3	8.22e3	0.443	0.2386	3.37	3.37	4.95	46.8	111.8
5	5	13C2-PFDA	515.1 > 469.9	3.72e3	8.22e3	0.509	0.2386	4.94	4.96	4.53	37.3	88.9
6	6	13C2-PFOA	414.9 > 369.7	8.22e3	8.22e3	1.000	0.2386	4.41	4.31	10.0	41.9	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.71e3	9.71e3	1.000	0.2386	4.81	4.72	28.7	120	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

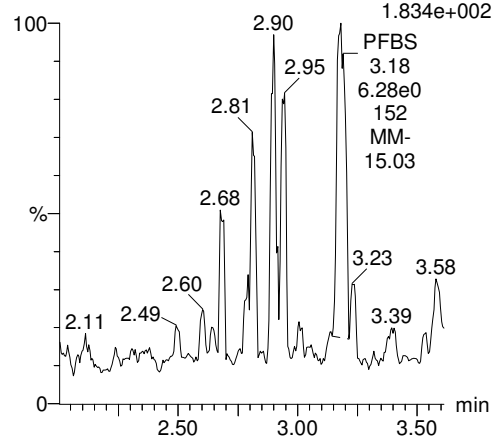
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-28.qld

Last Altered: Tuesday, December 12, 2017 11:38:08 Pacific Standard Time
Printed: Tuesday, December 12, 2017 11:38:26 Pacific Standard Time

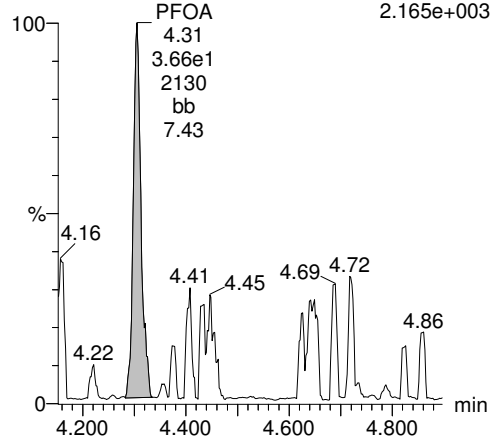
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_28, Date: 11-Dec-2017, Time: 19:31:21, ID: 1701815-15 CH-AT-1RW104-1117 0.23862, Description: CH-AT-1RW104-1117

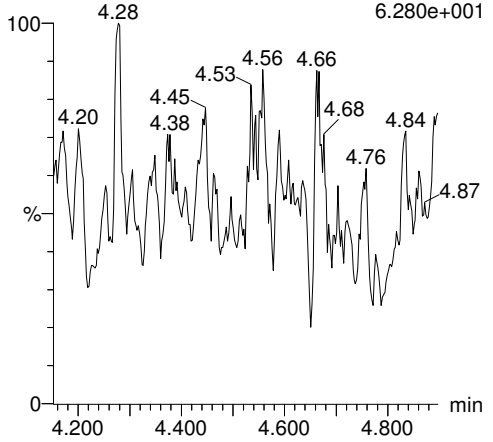
PFBS



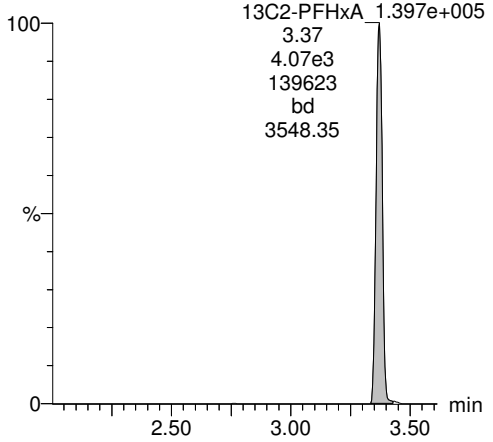
PFOA



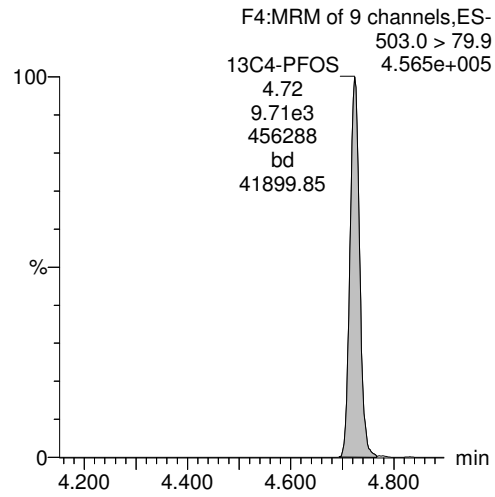
PFOS



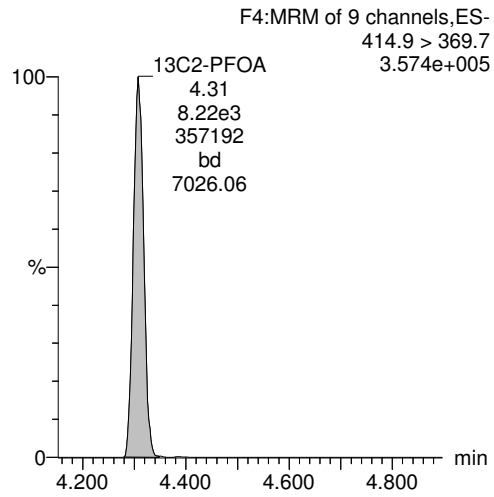
13C2-PFHxA



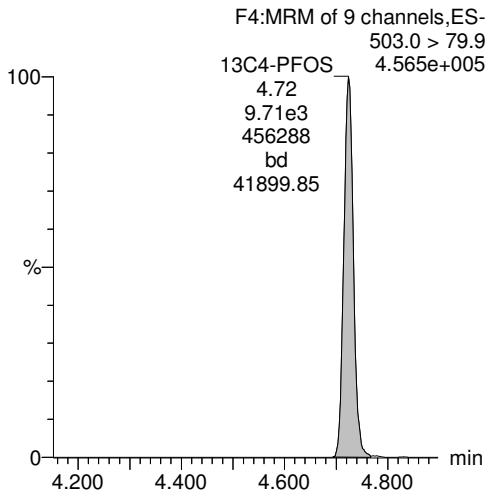
13C4-PFOS



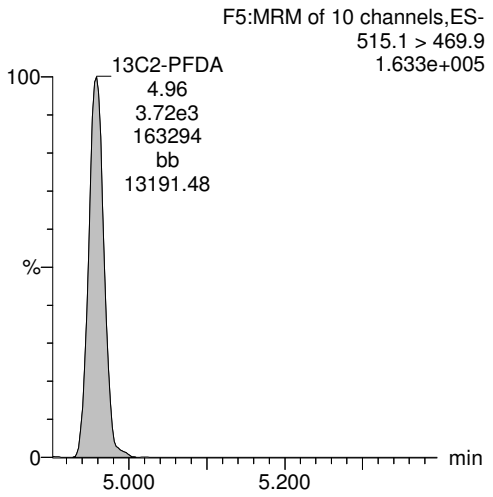
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT 12/12/17

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-29.qld

Last Altered: Tuesday, December 12, 2017 12:03:19 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:03:32 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_29, Date: 11-Dec-2017, Time: 19:43:50, ID: 1701815-16 CH-AT-1FB104-1117 0.23966, Description: CH-AT-1FB104-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	2.79e0	9.83e3		0.2397	3.02	3.01	0.00814	0.0424	
2	2	PFOA	413 > 368.7	5.69e1	8.70e3		0.2397	4.31	4.31	0.0654	0.336	
3	3	PFOS	499 >79.9	3.79e0	9.83e3		0.2397	4.72	4.72	0.0111	0.0384	
4	4	13C2-PFHxA	315 > 269.8	3.87e3	8.70e3	0.443	0.2397	3.37	3.37	4.44	41.8	100.3
5	5	13C2-PFDA	515.1 > 469.9	4.05e3	8.70e3	0.509	0.2397	4.94	4.96	4.65	38.1	91.3
6	6	13C2-PFOA	414.9 > 369.7	8.70e3	8.70e3	1.000	0.2397	4.41	4.31	10.0	41.7	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.83e3	9.83e3	1.000	0.2397	4.81	4.72	28.7	120	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

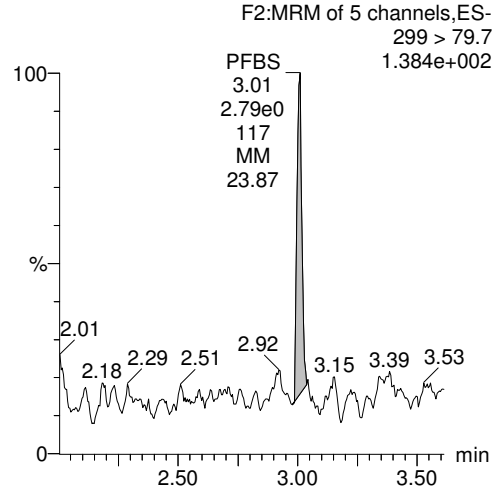
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-29.qld

Last Altered: Tuesday, December 12, 2017 12:03:19 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:03:32 Pacific Standard Time

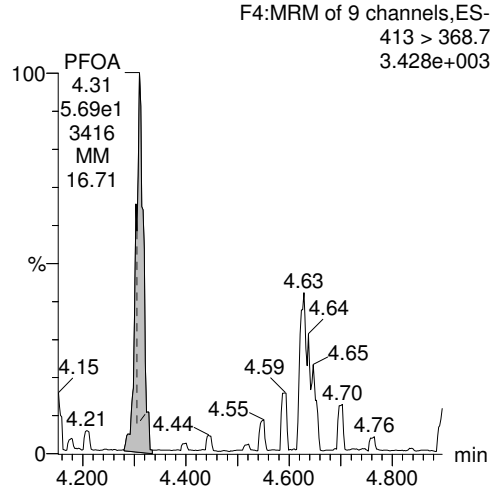
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_29, Date: 11-Dec-2017, Time: 19:43:50, ID: 1701815-16 CH-AT-1FB104-1117 0.23966, Description: CH-AT-1FB104-1117

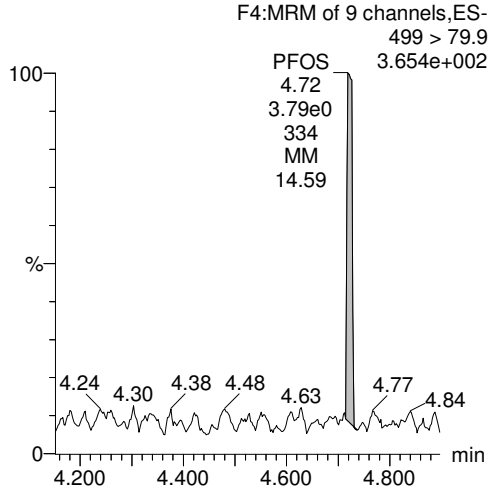
PFBS



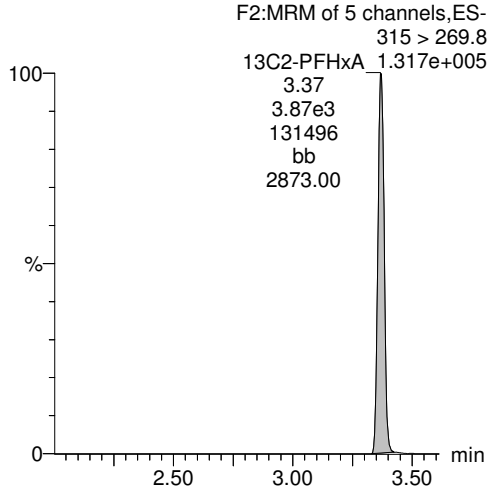
PFOA



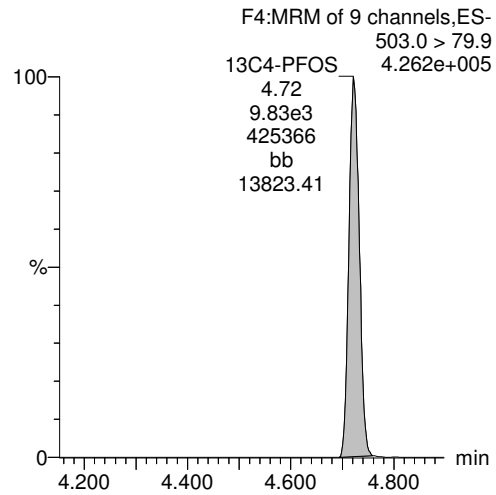
PFOS



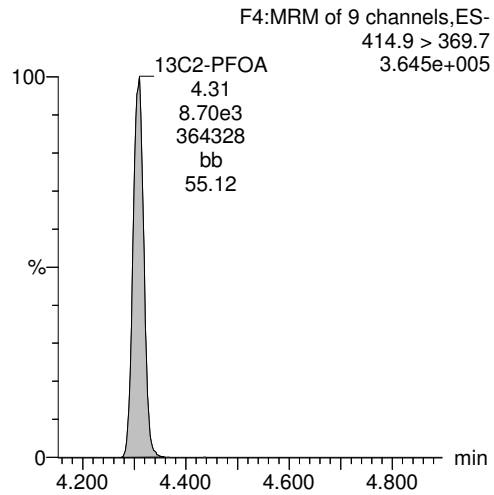
13C2-PFHxA



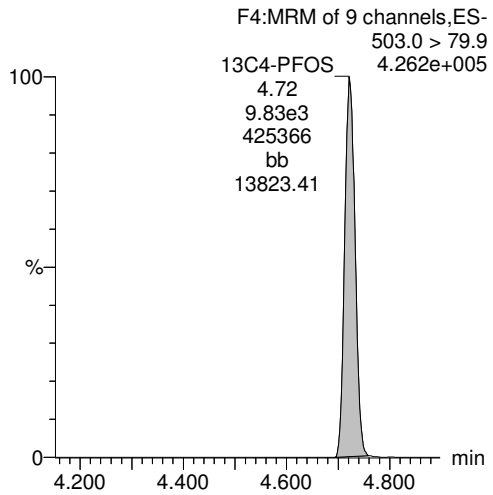
13C4-PFOS



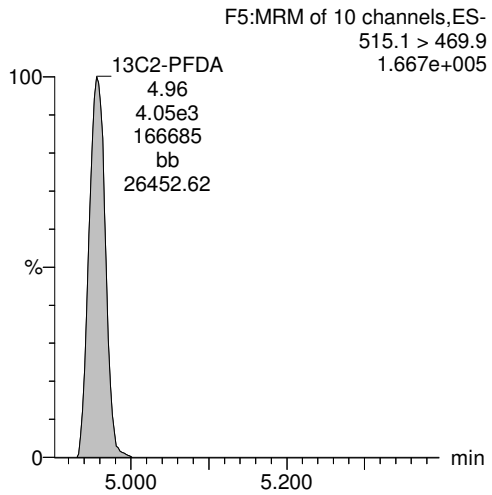
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-30.qld

Last Altered: Tuesday, December 12, 2017 12:05:05 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:06:14 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_30, Date: 11-Dec-2017, Time: 19:56:13, ID: 1701815-17 CH-AT-1RW105-1117 0.23516, Description: CH-AT-1RW105-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	5.83e0	9.63e3		0.2352	3.02	3.02	0.0174	0.0923	
2	2	PFOA	413 > 368.7	4.30e1	7.98e3		0.2352	4.31	4.31	0.0538	0.282	
3	3	PFOS	499 >79.9	3.70e0	9.63e3		0.2352	4.72	4.71	0.0110	0.0389	
4	4	13C2-PFHxA	315 > 269.8	4.05e3	7.98e3	0.443	0.2352	3.37	3.37	5.07	48.7	114.5
5	5	13C2-PFDA	515.1 > 469.9	4.08e3	7.98e3	0.509	0.2352	4.94	4.96	5.11	42.6	100.3
6	6	13C2-PFOA	414.9 > 369.7	7.98e3	7.98e3	1.000	0.2352	4.41	4.31	10.0	42.5	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.63e3	9.63e3	1.000	0.2352	4.81	4.72	28.7	122	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

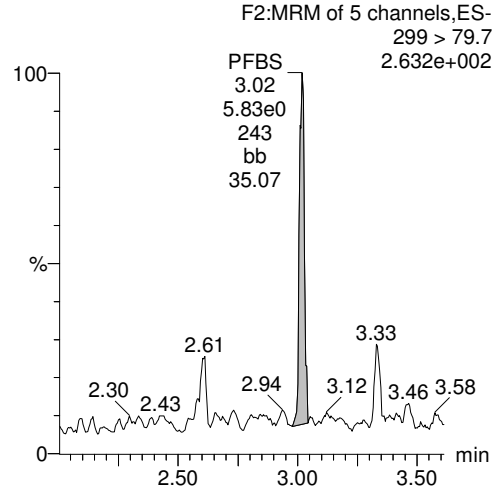
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-30.qld

Last Altered: Tuesday, December 12, 2017 12:05:05 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:06:14 Pacific Standard Time

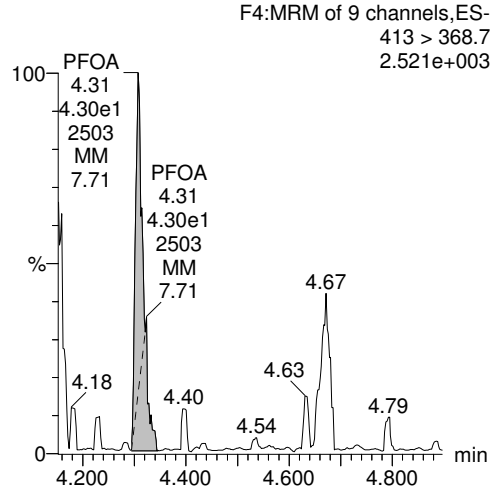
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_30, Date: 11-Dec-2017, Time: 19:56:13, ID: 1701815-17 CH-AT-1RW105-1117 0.23516, Description: CH-AT-1RW105-1117

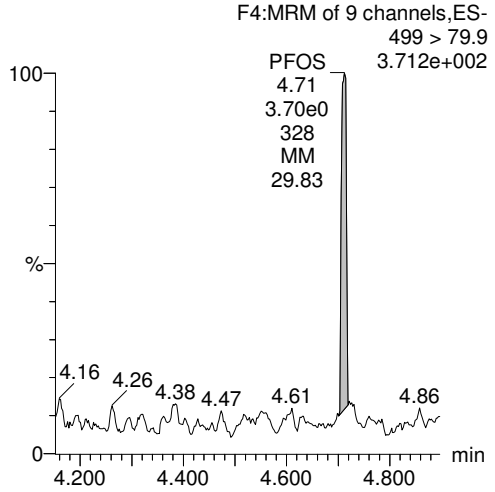
PFBS



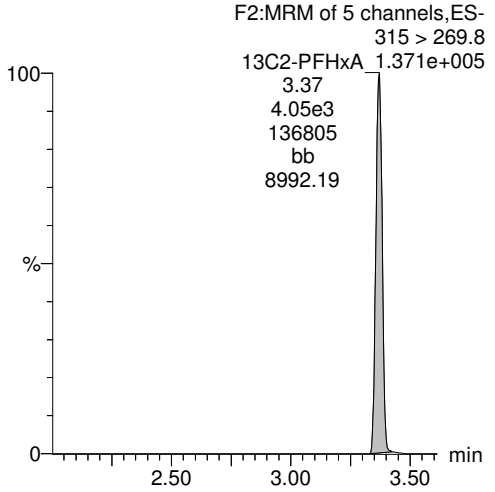
PFOA



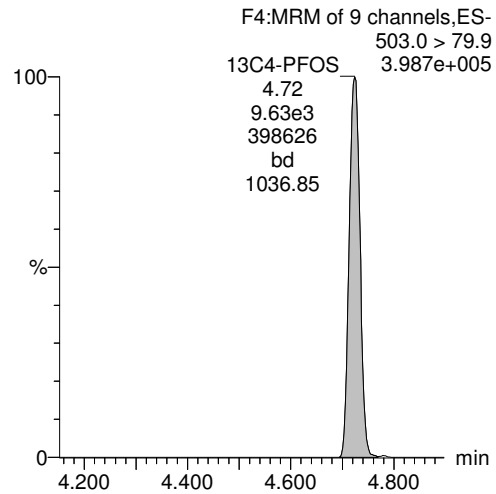
PFOS



13C2-PFHxA



13C4-PFOS



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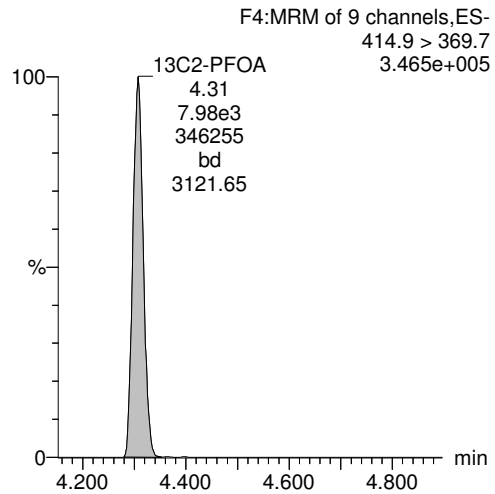

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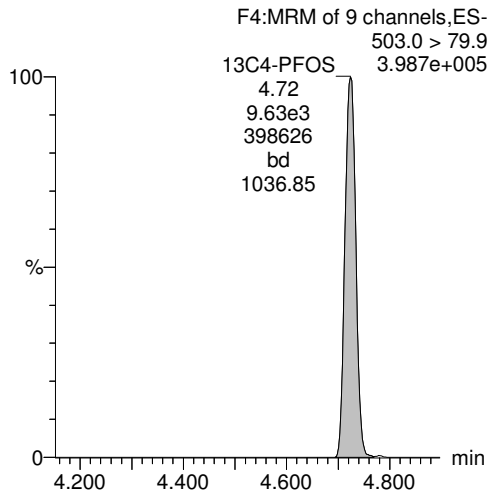
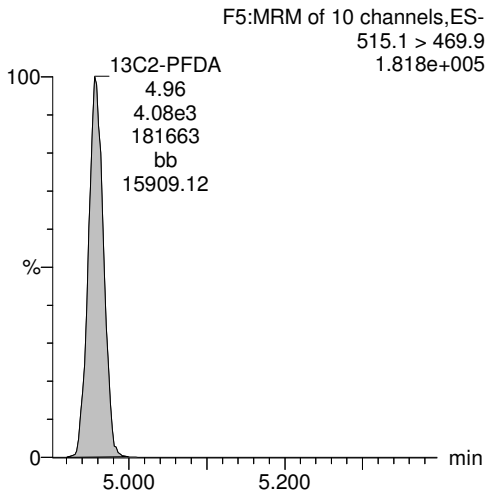


13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-31.qld

Last Altered: Tuesday, December 12, 2017 12:07:14 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:07:48 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_31, Date: 11-Dec-2017, Time: 20:08:36, ID: 1701815-18 CH-AT-1FB105-1117 0.24394, Description: CH-AT-1FB105-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.72e3		0.2439	3.02				
2	2	PFOA	413 > 368.7	5.86e1	7.88e3		0.2439	4.31	4.31	0.0744	0.376	
3	3	PFOS	499 >79.9		9.72e3		0.2439	4.72				
4	4	13C2-PFHxA	315 > 269.8	3.93e3	7.88e3	0.443	0.2439	3.37	3.37	4.98	46.1	112.5
5	5	13C2-PFDA	515.1 > 469.9	3.82e3	7.88e3	0.509	0.2439	4.94	4.96	4.84	39.0	95.1
6	6	13C2-PFOA	414.9 > 369.7	7.88e3	7.88e3	1.000	0.2439	4.41	4.31	10.0	41.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.72e3	9.72e3	1.000	0.2439	4.81	4.72	28.7	118	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

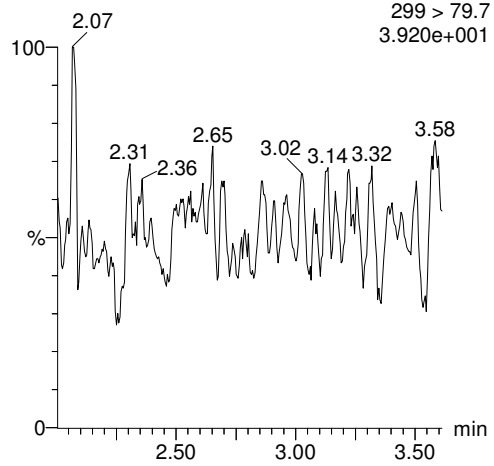
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-31.qld

Last Altered: Tuesday, December 12, 2017 12:07:14 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:07:48 Pacific Standard Time

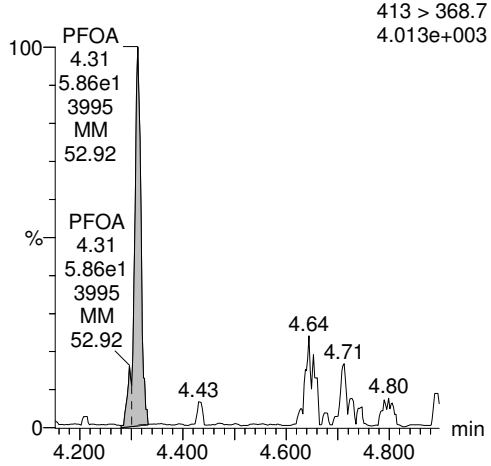
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_31, Date: 11-Dec-2017, Time: 20:08:36, ID: 1701815-18 CH-AT-1FB105-1117 0.24394, Description: CH-AT-1FB105-1117

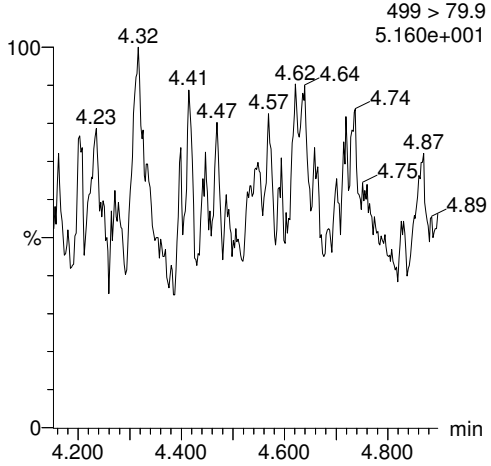
PFBS



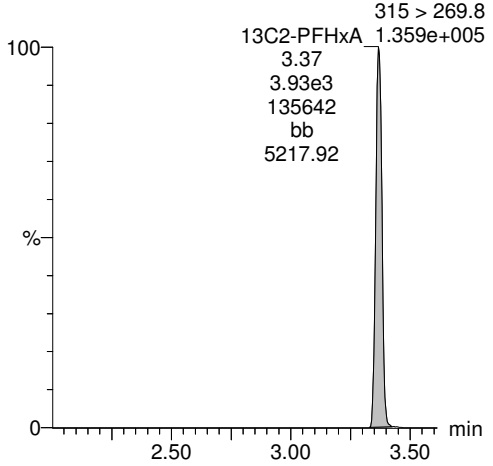
PFOA



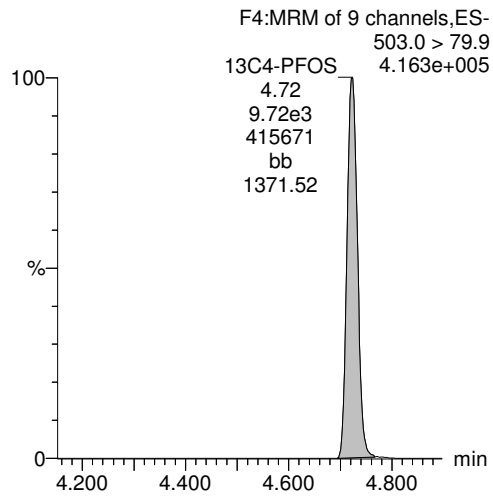
PFOS



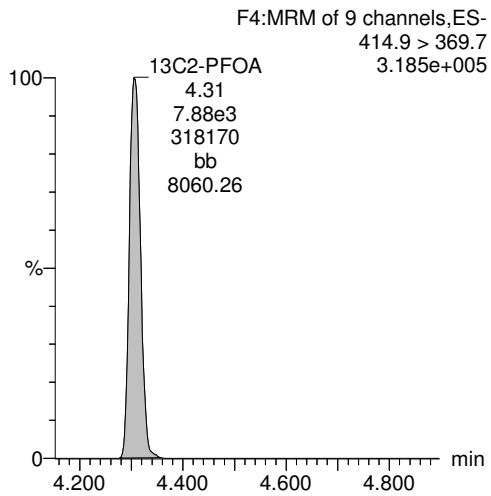
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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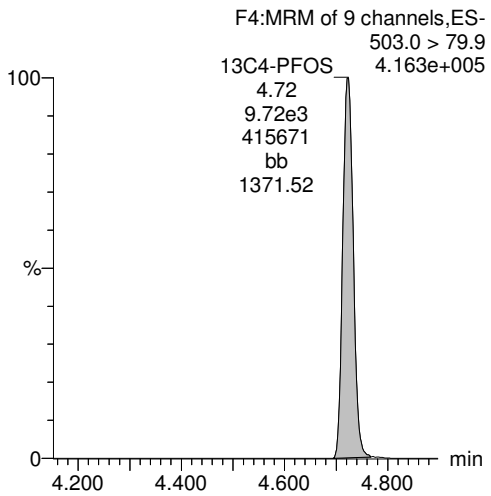
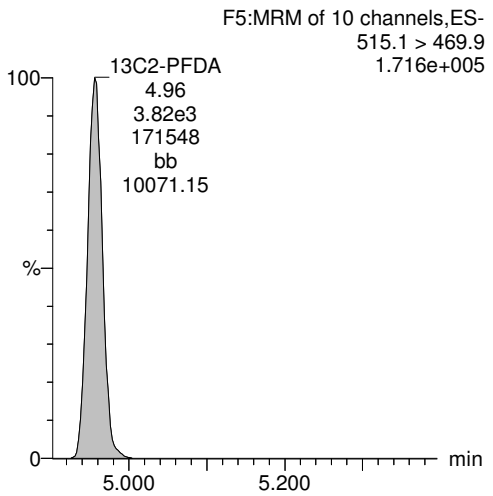


13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-32.qld

Last Altered: Tuesday, December 12, 2017 12:09:01 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:09:29 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_32, Date: 11-Dec-2017, Time: 20:21:01, ID: 1701815-19 CH-AT-1RW06-1117 0.24687, Description: CH-AT-1RW06-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.06e4		0.2469	3.02				
2	2	PFOA	413 > 368.7	5.05e1	8.77e3		0.2469	4.31	4.31	0.0576	0.287	
3	3	PFOS	499 >79.9	2.71e0	1.06e4		0.2469	4.72	4.72	0.00736	0.0248	
4	4	13C2-PFHxA	315 > 269.8	4.05e3	8.77e3	0.443	0.2469	3.37	3.37	4.62	42.2	104.2
5	5	13C2-PFDA	515.1 > 469.9	4.05e3	8.77e3	0.509	0.2469	4.94	4.96	4.62	36.8	90.8
6	6	13C2-PFOA	414.9 > 369.7	8.77e3	8.77e3	1.000	0.2469	4.41	4.31	10.0	40.5	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2469	4.81	4.72	28.7	116	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/12/17

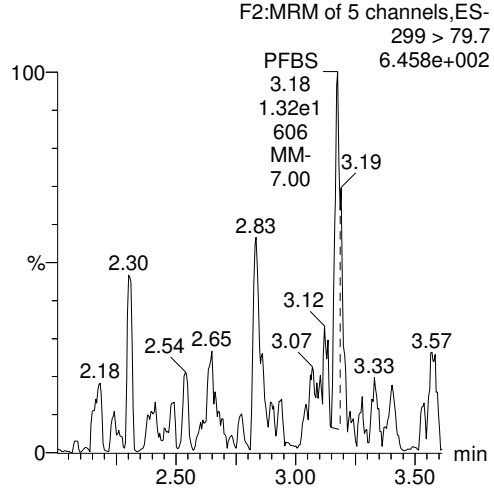
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-32.qld

Last Altered: Tuesday, December 12, 2017 12:09:01 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:09:29 Pacific Standard Time

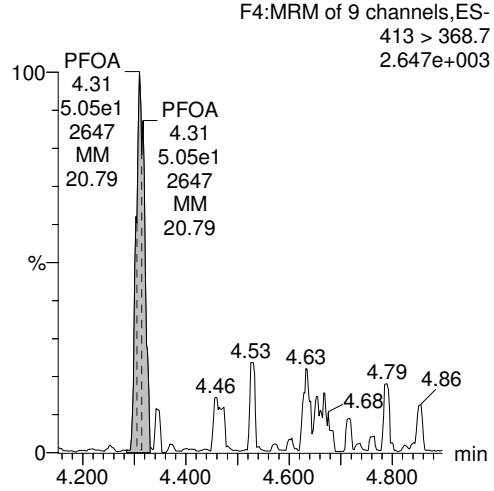
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_32, Date: 11-Dec-2017, Time: 20:21:01, ID: 1701815-19 CH-AT-1RW06-1117 0.24687, Description: CH-AT-1RW06-1117

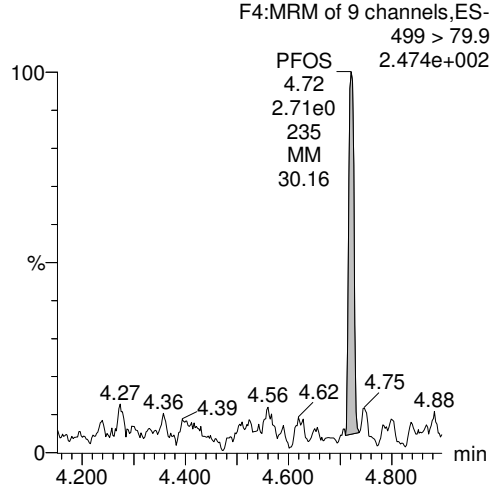
PFBS



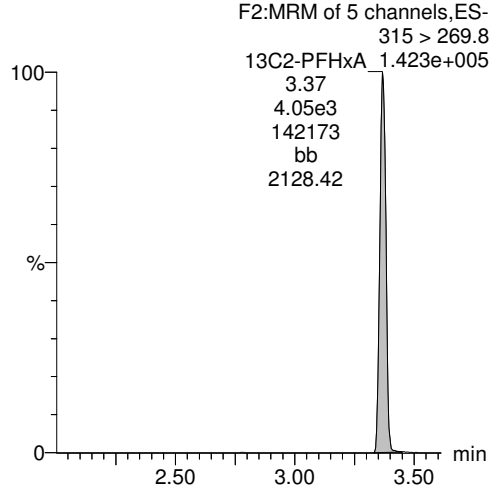
PFOA



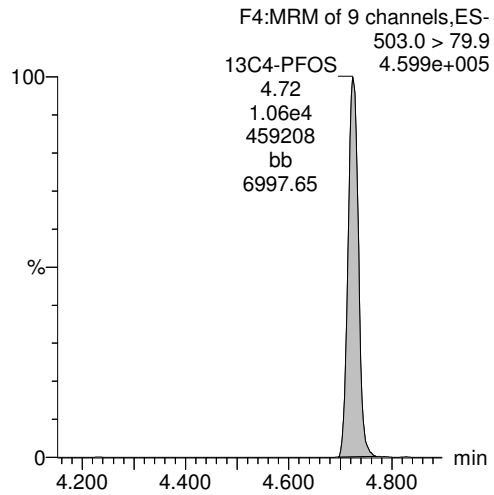
PFOS



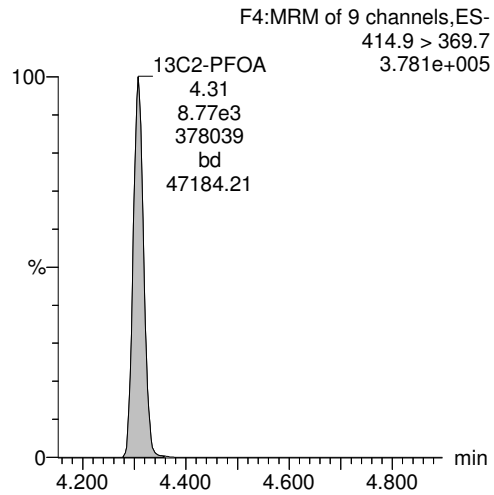
13C2-PFHxA



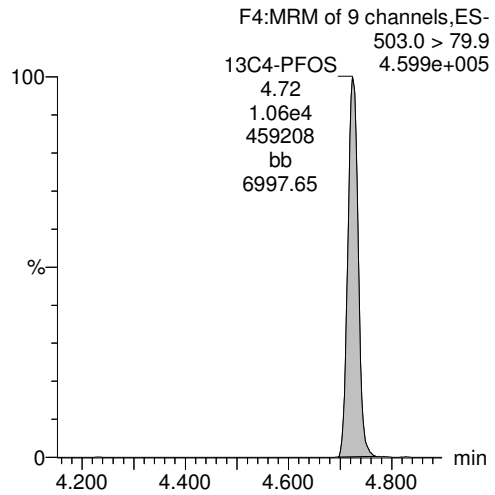
13C4-PFOS



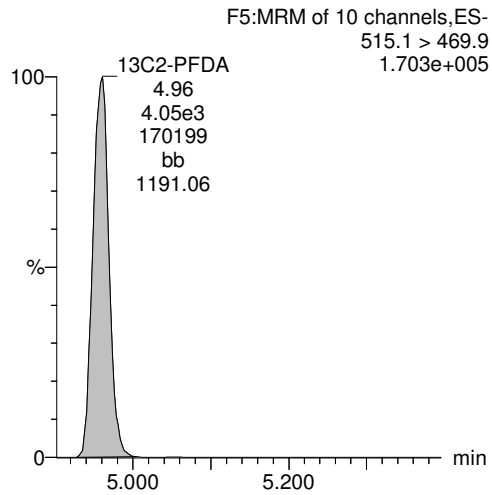
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

Vista Analytical Laboratory

Rev'd: MM 12/12/17

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-33.qld

Last Altered: Tuesday, December 12, 2017 12:10:25 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:10:56 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_33, Date: 11-Dec-2017, Time: 20:33:27, ID: 1701815-20 CH-AT-1FB106-1117 0.2407, Description: CH-AT-1FB106-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.61e3		0.2407	3.02				
2	2	PFOA	413 > 368.7	4.31e1	8.80e3		0.2407	4.31	4.31	0.0490	0.251	
3	3	PFOS	499 >79.9		9.61e3		0.2407	4.72				
4	4	13C2-PFHxA	315 > 269.8	4.22e3	8.80e3	0.443	0.2407	3.37	3.37	4.80	45.0	108.3
5	5	13C2-PFDA	515.1 > 469.9	4.12e3	8.80e3	0.509	0.2407	4.94	4.96	4.68	38.1	91.8
6	6	13C2-PFOA	414.9 > 369.7	8.80e3	8.80e3	1.000	0.2407	4.41	4.31	10.0	41.5	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.61e3	9.61e3	1.000	0.2407	4.81	4.72	28.7	119	100.0

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Rev'd: MM 12/12/17

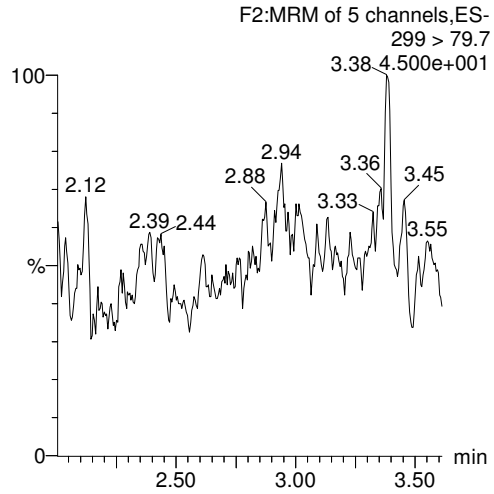
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-33.qld

Last Altered: Tuesday, December 12, 2017 12:10:25 Pacific Standard Time
Printed: Tuesday, December 12, 2017 12:10:56 Pacific Standard Time

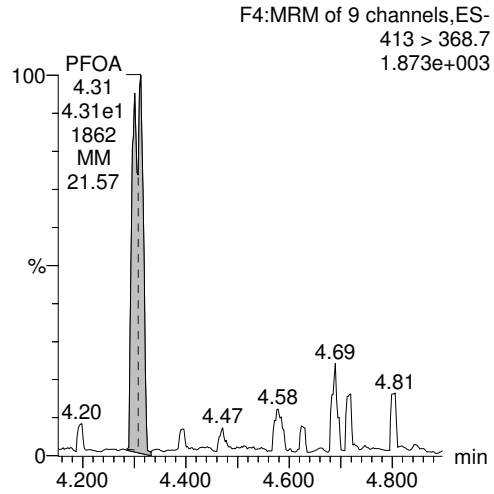
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_33, Date: 11-Dec-2017, Time: 20:33:27, ID: 1701815-20 CH-AT-1FB106-1117 0.2407, Description: CH-AT-1FB106-1117

PFBS



PFOA



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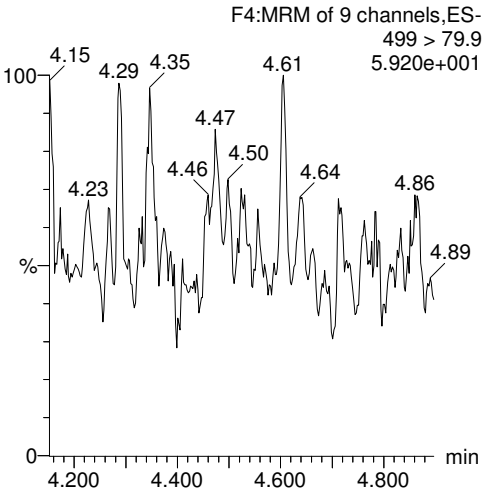
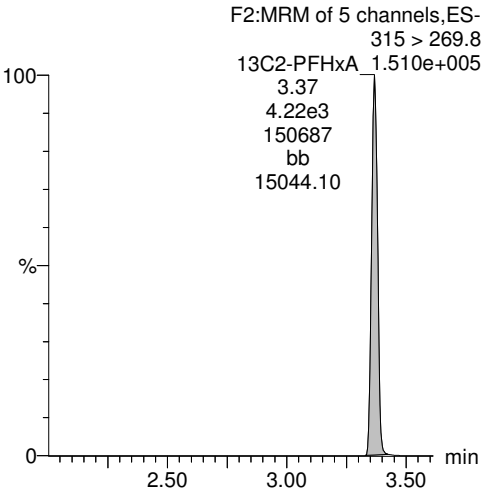
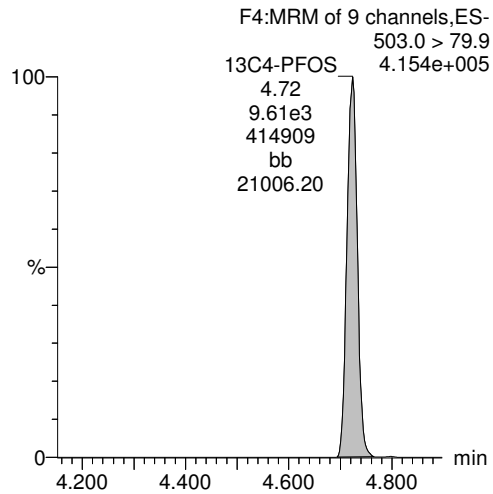


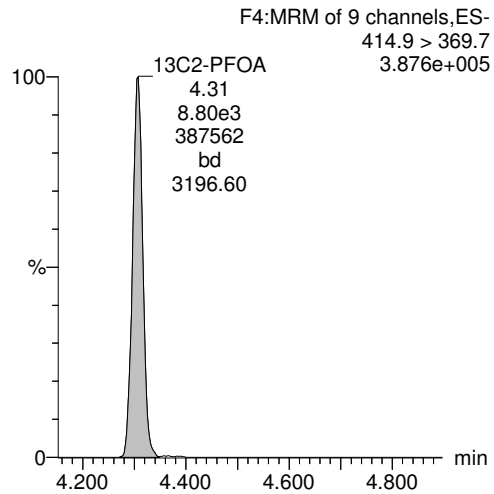
13C2-PFHxA



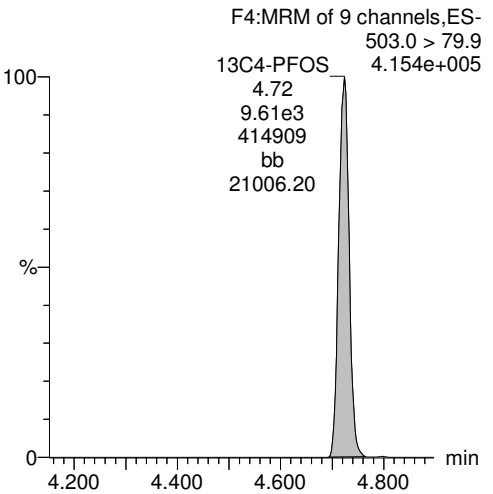
13C4-PFOS



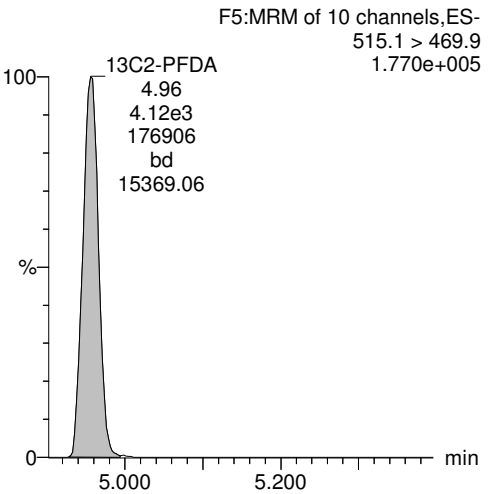
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/12/2017

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	ST171211G1-1 PFC CS-1 537 17L1106	171211G1_	Standard	10	4.31	10648.18	10648.18	12372.36	86.06425
2	IPA	171211G1_	Analyte	10				12372.36	0
3	1701813-10 CH-AT-2FB24-1117 0.26256	171211G1_	Analyte	10	4.31	8312.228	8312.228	12372.36	67.18386
4	1701813-20 CH-AT-2FB29-1117 0.26487	171211G1_	Analyte	10	4.31	7956.156	7956.156	12372.36	64.3059
5	B7L0034-BLK1 LRB 0.25	171211G1_	Analyte		4.32	9552.299	9552.299	12372.36	77.20678
6	IPA	171211G1_	Analyte	10				12372.36	0
7	ST171211G1-2 PFC CS3 17L1107	171211G1_	Analyte	10	4.32	10271.11	10271.11	12372.36	83.0166
8	IPA	171211G1_	Analyte	10				12372.36	0
9	B7L0026-BS1 LFB 0.25	171211G1_	Analyte	10	4.45	9585.333	9585.333	12372.36	77.47378
10	B7L0026-BSD1 LFBD 0.25	171211G1_	Analyte	10	4.33	9210.383	9210.383	12372.36	74.44323
11	IPA	171211G1_	Analyte	10				12372.36	0
12	B7L0026-BLK1 LRB 0.25	171211G1_	Analyte	10	4.31	9234.665	9234.665	12372.36	74.63949
13	1701815-01 CH-AT-1RW98A-1117 0.25004	171211G1_	Analyte	10	4.3	8326.052	8326.052	12372.36	67.2956
14	1701815-02 CH-AT-1FB98A-1117 0.22006	171211G1_	Analyte	10	4.31	7637.876	7637.876	12372.36	61.73339
15	1701815-03 CH-AT-1RW98B-1117 0.2516	171211G1_	Analyte	10	4.31	8947.271	8947.271	12372.36	72.31662
16	1701815-04 CH-AT-1FB98B-1117 0.23954	171211G1_	Analyte	10	4.31	8350.234	8350.234	12372.36	67.49105
17	1701815-05 CH-AT-1RW99-1117 0.23773	171211G1_	Analyte	10	4.3	9256.336	9256.336	12372.36	74.81465
18	1701815-06 CH-AT-1FB99-1117 0.2595	171211G1_	Analyte	10	4.3	9286.055	9286.055	12372.36	75.05485
19	1701815-07 CH-AT-1RW100-1117 0.23268	171211G1_	Analyte	10	4.31	8316.702	8316.702	12372.36	67.22003
20	1701815-08 CH-AT-1FB100-1117 0.24391	171211G1_	Analyte	10	4.31	7988.084	7988.084	12372.36	64.56396
21	1701815-09 CH-AT-1RW101-1117 0.23904	171211G1_	Analyte	10	4.31	8317.732	8317.732	12372.36	67.22835
22	1701815-10 CH-AT-1FB101-1117 0.24933	171211G1_	Analyte	10	4.31	9006.493	9006.493	12372.36	72.79529
23	1701815-11 CH-AT-1RW102-1117 0.22328	171211G1_	Analyte	10	4.31	8508.34	8508.34	12372.36	68.76895
24	1701815-12 CH-AT-1FB102-1117 0.2476	171211G1_	Analyte	10	4.31	8695.296	8695.296	12372.36	70.28002
25	1701815-13 CH-AT-1RW103-1117 0.23828	171211G1_	Analyte	10	4.31	8244.526	8244.526	12372.36	66.63666
26	1701815-14 CH-AT-1FB103-1117 0.23541	171211G1_	Analyte	10	4.31	8892.392	8892.392	12372.36	71.87306
27	1701815-15 CH-AT-1RW104-1117 0.23862	171211G1_	Analyte	10	4.31	8219.301	8219.301	12372.36	66.43278
28	1701815-16 CH-AT-1FB104-1117 0.23966	171211G1_	Analyte	10	4.31	8704.008	8704.008	12372.36	70.35044

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29	1701815-17 CH-AT-1RW105-1117 0.23516	171211G1_	Analyte	10	4.31	7983.67	7983.67	12372.36	64.52828
30	1701815-18 CH-AT-1FB105-1117 0.24394	171211G1_	Analyte	10	4.31	7877.485	7877.485	12372.36	63.67004
31	1701815-19 CH-AT-1RW06-1117 0.24687	171211G1_	Analyte	10	4.31	8765.659	8765.659	12372.36	70.84874
32	1701815-20 CH-AT-1FB106-1117 0.2407	171211G1_	Analyte	10	4.31	8802.219	8802.219	12372.36	71.14423
33	IPA	171211G1_	Analyte	10				12372.36	0
34	ST171211G1-3 PFC CS5 537 17K3029	171211G1_	Analyte	10	4.31	9848.277	9848.277	12372.36	79.59903
35	IPA	171211G1_	Analyte	10				12372.36	0
36	B7L0031-BS1 LFB 0.25	171211G1_	Analyte	10	4.31	8186.781	8186.781	12372.36	66.16994
37	B7L0031-BLK1 LRB 0.25	171211G1_	Analyte	10	4.31	8529.677	8529.677	12372.36	68.9414
38	B7L0031-MS1 LFSM 0.25179	171211G1_	Analyte	10	4.31	8559.043	8559.043	12372.36	69.17876
39	B7L0031-MSD1 LFSMD 0.25406	171211G1_	Analyte	10	4.31	8965.997	8965.997	12372.36	72.46797
40	1701824-01 CH-AT-2RW30-1117 0.25321	171211G1_	Analyte	10	4.31	8423.226	8423.226	12372.36	68.08101
41	1701824-02 CH-AT-2FB30-1117 0.25812	171211G1_	Analyte	10	4.31	9602.227	9602.227	12372.36	77.61033
42	1701824-03 CH-AT-2RW31-1117 0.24951	171211G1_	Analyte	10	4.31	8853.115	8853.115	12372.36	71.5556
43	1701824-04 CH-AT-2FB31-1117 0.26064	171211G1_	Analyte	10	4.31	8967.769	8967.769	12372.36	72.4823
44	1701824-05 CH-AT-2RW32-1117 0.25406	171211G1_	Analyte	10	4.31	9193.431	9193.431	12372.36	74.30622
45	1701824-06 CH-AT-2FB32-1117 0.26151	171211G1_	Analyte	10	4.31	7981.76	7981.76	12372.36	64.51285
46	1701824-07 CH-AT-2RW33-1117 0.25185	171211G1_	Analyte	10	4.31	9044.589	9044.589	12372.36	73.1032
47	1701824-08 CH-AT-2FB33-1117 0.26295	171211G1_	Analyte	10	4.31	9010.36	9010.36	12372.36	72.82654
48	1701824-09 CH-AT-2RW34-1117 0.25405	171211G1_	Analyte	10	4.31	8092.983	8092.983	12372.36	65.41181
49	1701824-10 CH-AT-2FB34-1117 0.24979	171211G1_	Analyte	10	4.31	8616.881	8616.881	12372.36	69.64623
50	1701824-11 CH-AT-2RW35-1117 0.2526	171211G1_	Analyte	10	4.31	9370.795	9370.795	12372.36	75.73977
51	IPA	171211G1_	Analyte	10	4.31	36.979	36.979	12372.36	0.298884
52	ST171211G1-4 PFC CS-1 537 17L1106	171211G1_	Analyte	10	4.31	10270.61	10270.61	12372.36	83.01254

Compound 7: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	ST171211G1-1 PFC CS-1 537 17L1106	171211G1_	Standard	28.7	4.72	11291.68	11291.68	13322.56	84.75613
2	IPA	171211G1_	Analyte	28.7				13322.56	0
3	1701813-10 CH-AT-2FB24-1117 0.26256	171211G1_	Analyte	28.7	4.73	9371.263	9371.263	13322.56	70.34133
4	1701813-20 CH-AT-2FB29-1117 0.26487	171211G1_	Analyte	28.7	4.73	9397.963	9397.963	13322.56	70.54174
5	B7L0034-BLK1 LRB 0.25	171211G1_	Analyte		4.73	10397.18	10397.18	13322.56	78.04191
6	IPA	171211G1_	Analyte	28.7				13322.56	0

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7	ST171211G1-2 PFC CS3 17L1107	171211G1_ Analyte	28.7	4.73	10907.83	10907.83	13322.56	81.87492
8	IPA	171211G1_ Analyte	28.7				13322.56	0
9	B7L0026-BS1 LFB 0.25	171211G1_ Analyte	28.7	4.85	12365.77	12365.77	13322.56	92.81828
10	B7L0026-BSD1 LFBD 0.25	171211G1_ Analyte	28.7	4.74	10586.79	10586.79	13322.56	79.46514
11	IPA	171211G1_ Analyte	28.7				13322.56	0
12	B7L0026-BLK1 LRB 0.25	171211G1_ Analyte	28.7	4.72	10500.5	10500.5	13322.56	78.81748
13	1701815-01 CH-AT-1RW98A-1117 0.25004	171211G1_ Analyte	28.7	4.72	11000.38	11000.38	13322.56	82.56956
14	1701815-02 CH-AT-1FB98A-1117 0.22006	171211G1_ Analyte	28.7	4.72	10287.23	10287.23	13322.56	77.21664
15	1701815-03 CH-AT-1RW98B-1117 0.2516	171211G1_ Analyte	28.7	4.72	10470.8	10470.8	13322.56	78.59455
16	1701815-04 CH-AT-1FB98B-1117 0.23954	171211G1_ Analyte	28.7	4.72	10804.7	10804.7	13322.56	81.10081
17	1701815-05 CH-AT-1RW99-1117 0.23773	171211G1_ Analyte	28.7	4.72	10032.33	10032.33	13322.56	75.30331
18	1701815-06 CH-AT-1FB99-1117 0.2595	171211G1_ Analyte	28.7	4.72	9927.741	9927.741	13322.56	74.51829
19	1701815-07 CH-AT-1RW100-1117 0.23268	171211G1_ Analyte	28.7	4.72	10382.62	10382.62	13322.56	77.93265
20	1701815-08 CH-AT-1FB100-1117 0.24391	171211G1_ Analyte	28.7	4.72	10305.04	10305.04	13322.56	77.35033
21	1701815-09 CH-AT-1RW101-1117 0.23904	171211G1_ Analyte	28.7	4.72	10096.49	10096.49	13322.56	75.78492
22	1701815-10 CH-AT-1FB101-1117 0.24933	171211G1_ Analyte	28.7	4.72	10040.16	10040.16	13322.56	75.36213
23	1701815-11 CH-AT-1RW102-1117 0.22328	171211G1_ Analyte	28.7	4.72	9820.836	9820.836	13322.56	73.71586
24	1701815-12 CH-AT-1FB102-1117 0.2476	171211G1_ Analyte	28.7	4.72	10801.07	10801.07	13322.56	81.07352
25	1701815-13 CH-AT-1RW103-1117 0.23828	171211G1_ Analyte	28.7	4.72	10776.49	10776.49	13322.56	80.88908
26	1701815-14 CH-AT-1FB103-1117 0.23541	171211G1_ Analyte	28.7	4.72	9948.378	9948.378	13322.56	74.6732
27	1701815-15 CH-AT-1RW104-1117 0.23862	171211G1_ Analyte	28.7	4.72	9714.996	9714.996	13322.56	72.92142
28	1701815-16 CH-AT-1FB104-1117 0.23966	171211G1_ Analyte	28.7	4.72	9831.933	9831.933	13322.56	73.79915
29	1701815-17 CH-AT-1RW105-1117 0.23516	171211G1_ Analyte	28.7	4.72	9633.847	9633.847	13322.56	72.31231
30	1701815-18 CH-AT-1FB105-1117 0.24394	171211G1_ Analyte	28.7	4.72	9718.045	9718.045	13322.56	72.9443
31	1701815-19 CH-AT-1RW06-1117 0.24687	171211G1_ Analyte	28.7	4.72	10571.5	10571.5	13322.56	79.35037
32	1701815-20 CH-AT-1FB106-1117 0.2407	171211G1_ Analyte	28.7	4.72	9607.334	9607.334	13322.56	72.1133
33	IPA	171211G1_ Analyte	28.7				13322.56	0
34	ST171211G1-3 PFC CS5 537 17K3029	171211G1_ Analyte	28.7	4.73	10803.79	10803.79	13322.56	81.09395
35	IPA	171211G1_ Analyte	28.7				13322.56	0
36	B7L0031-BS1 LFB 0.25	171211G1_ Analyte	28.7	4.72	10011.69	10011.69	13322.56	75.14841
37	B7L0031-BLK1 LRB 0.25	171211G1_ Analyte	28.7	4.72	11086.52	11086.52	13322.56	83.21614
38	B7L0031-MS1 LFSM 0.25179	171211G1_ Analyte	28.7	4.72	9989.033	9989.033	13322.56	74.97836
39	B7L0031-MSD1 LFSMD 0.25406	171211G1_ Analyte	28.7	4.72	10820.7	10820.7	13322.56	81.22087
40	1701824-01 CH-AT-2RW30-1117 0.25321	171211G1_ Analyte	28.7	4.72	10539.2	10539.2	13322.56	79.10795

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41	1701824-02 CH-AT-2FB30-1117 0.25812	171211G1_	Analyte		28.7	4.72	10809.77	10809.77	13322.56	81.13887
42	1701824-03 CH-AT-2RW31-1117 0.24951	171211G1_	Analyte		28.7	4.73	10167.68	10167.68	13322.56	76.31928
43	1701824-04 CH-AT-2FB31-1117 0.26064	171211G1_	Analyte		28.7	4.73	11046.8	11046.8	13322.56	82.918
44	1701824-05 CH-AT-2RW32-1117 0.25406	171211G1_	Analyte		28.7	4.73	10745.59	10745.59	13322.56	80.65712
45	1701824-06 CH-AT-2FB32-1117 0.26151	171211G1_	Analyte		28.7	4.72	10167	10167	13322.56	76.3142
46	1701824-07 CH-AT-2RW33-1117 0.25185	171211G1_	Analyte		28.7	4.72	10946.39	10946.39	13322.56	82.16431
47	1701824-08 CH-AT-2FB33-1117 0.26295	171211G1_	Analyte		28.7	4.72	9724.39	9724.39	13322.56	72.99193
48	1701824-09 CH-AT-2RW34-1117 0.25405	171211G1_	Analyte		28.7	4.72	9558.749	9558.749	13322.56	71.74862
49	1701824-10 CH-AT-2FB34-1117 0.24979	171211G1_	Analyte		28.7	4.72	10927.25	10927.25	13322.56	82.02067
50	1701824-11 CH-AT-2RW35-1117 0.2526	171211G1_	Analyte		28.7	4.72	11701.68	11701.68	13322.56	87.83358
51	IPA	171211G1_	Analyte		28.7	4.72	44.289	44.289	13322.56	0.332436
52	ST171211G1-4 PFC CS-1 537 17L1106	171211G1_	Analyte		28.7	4.73	12765.67	12765.67	13322.56	95.81994

Ccals

Compound 6: 13C2-PFOA ST171211G1-1 PFC CS-1 537 17L1106

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
1	ST171211G1-1 PFC CS-1 537 17L1106	171211G1_	Standard	10	4.31	10648.18	10648.18	10648.18	100
2	IPA	171211G1_	Analyte	10				10648.18	0
3	1701813-10 CH-AT-2FB24-1117 0.26256	171211G1_	Analyte	10	4.31	8312.228	8312.228	10648.18	78.06245
4	1701813-20 CH-AT-2FB29-1117 0.26487	171211G1_	Analyte	10	4.31	7956.156	7956.156	10648.18	74.71848
5	B7L0034-BLK1 LRB 0.25	171211G1_	Analyte		4.32	9552.299	9552.299	10648.18	89.7083
6	IPA	171211G1_	Analyte	10				10648.18	0
7	ST171211G1-2 PFC CS3 17L1107	171211G1_	Analyte	10	4.32	10271.11	10271.11	10648.18	96.45887

ST171211G1-2 PFC CS3 17L1107

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
7	ST171211G1-2 PFC CS3 17L1107	171211G1_	Analyte	10	4.32	10271.11	10271.11	10271.11	100
8	IPA	171211G1_	Analyte	10				10271.11	0
9	B7L0026-BS1 LFB 0.25	171211G1_	Analyte	10	4.45	9585.333	9585.333	10271.11	93.32323
10	B7L0026-BSD1 LFBD 0.25	171211G1_	Analyte	10	4.33	9210.383	9210.383	10271.11	89.6727
11	IPA	171211G1_	Analyte	10				10271.11	0
12	B7L0026-BLK1 LRB 0.25	171211G1_	Analyte	10	4.31	9234.665	9234.665	10271.11	89.90911

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13	1701815-01 CH-AT-1RW98A-1117 0.25004	171211G1_	Analyte	10	4.3	8326.052	8326.052	10271.11	81.06282
14	1701815-02 CH-AT-1FB98A-1117 0.22006	171211G1_	Analyte	10	4.31	7637.876	7637.876	10271.11	74.36271
15	1701815-03 CH-AT-1RW98B-1117 0.2516	171211G1_	Analyte	10	4.31	8947.271	8947.271	10271.11	87.11103
16	1701815-04 CH-AT-1FB98B-1117 0.23954	171211G1_	Analyte	10	4.31	8350.234	8350.234	10271.11	81.29825
17	1701815-05 CH-AT-1RW99-1117 0.23773	171211G1_	Analyte	10	4.3	9256.336	9256.336	10271.11	90.1201
18	1701815-06 CH-AT-1FB99-1117 0.2595	171211G1_	Analyte	10	4.3	9286.055	9286.055	10271.11	90.40945
19	1701815-07 CH-AT-1RW100-1117 0.23268	171211G1_	Analyte	10	4.31	8316.702	8316.702	10271.11	80.97179
20	1701815-08 CH-AT-1FB100-1117 0.24391	171211G1_	Analyte	10	4.31	7988.084	7988.084	10271.11	77.77235
21	1701815-09 CH-AT-1RW101-1117 0.23904	171211G1_	Analyte	10	4.31	8317.732	8317.732	10271.11	80.98181
22	1701815-10 CH-AT-1FB101-1117 0.24933	171211G1_	Analyte	10	4.31	9006.493	9006.493	10271.11	87.68762
23	1701815-11 CH-AT-1RW102-1117 0.22328	171211G1_	Analyte	10	4.31	8508.34	8508.34	10271.11	82.83758
24	1701815-12 CH-AT-1FB102-1117 0.2476	171211G1_	Analyte	10	4.31	8695.296	8695.296	10271.11	84.65779
25	1701815-13 CH-AT-1RW103-1117 0.23828	171211G1_	Analyte	10	4.31	8244.526	8244.526	10271.11	80.26908
26	1701815-14 CH-AT-1FB103-1117 0.23541	171211G1_	Analyte	10	4.31	8892.392	8892.392	10271.11	86.57673
27	1701815-15 CH-AT-1RW104-1117 0.23862	171211G1_	Analyte	10	4.31	8219.301	8219.301	10271.11	80.02349
28	1701815-16 CH-AT-1FB104-1117 0.23966	171211G1_	Analyte	10	4.31	8704.008	8704.008	10271.11	84.74261
29	1701815-17 CH-AT-1RW105-1117 0.23516	171211G1_	Analyte	10	4.31	7983.67	7983.67	10271.11	77.72937
30	1701815-18 CH-AT-1FB105-1117 0.24394	171211G1_	Analyte	10	4.31	7877.485	7877.485	10271.11	76.69555
31	1701815-19 CH-AT-1RW06-1117 0.24687	171211G1_	Analyte	10	4.31	8765.659	8765.659	10271.11	85.34285
32	1701815-20 CH-AT-1FB106-1117 0.2407	171211G1_	Analyte	10	4.31	8802.219	8802.219	10271.11	85.6988
33	IPA	171211G1_	Analyte	10				10271.11	0
34	ST171211G1-3 PFC CS5 537 17K3029	171211G1_	Analyte	10	4.31	9848.277	9848.277	10271.11	95.88327

ST171211G1-3 PFC CS5 537 17K3029

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
34	ST171211G1-3 PFC CS5 537 17K3029	171211G1_	Analyte	10	4.31	9848.277	9848.277	9848.277	100
35	IPA	171211G1_	Analyte	10				9848.277	0
36	B7L0031-BS1 LFB 0.25	171211G1_	Analyte	10	4.31	8186.781	8186.781	9848.277	83.12907
37	B7L0031-BLK1 LRB 0.25	171211G1_	Analyte	10	4.31	8529.677	8529.677	9848.277	86.61086
38	B7L0031-MS1 LFSM 0.25179	171211G1_	Analyte	10	4.31	8559.043	8559.043	9848.277	86.90904
39	B7L0031-MSD1 LFSMD 0.25406	171211G1_	Analyte	10	4.31	8965.997	8965.997	9848.277	91.04128
40	1701824-01 CH-AT-2RW30-1117 0.25321	171211G1_	Analyte	10	4.31	8423.226	8423.226	9848.277	85.52995
41	1701824-02 CH-AT-2FB30-1117 0.25812	171211G1_	Analyte	10	4.31	9602.227	9602.227	9848.277	97.50159

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42	1701824-03 CH-AT-2RW31-1117 0.24951	171211G1_	Analyte	10	4.31	8853.115	8853.115	9848.277	89.89506
43	1701824-04 CH-AT-2FB31-1117 0.26064	171211G1_	Analyte	10	4.31	8967.769	8967.769	9848.277	91.05927
44	1701824-05 CH-AT-2RW32-1117 0.25406	171211G1_	Analyte	10	4.31	9193.431	9193.431	9848.277	93.35065
45	1701824-06 CH-AT-2FB32-1117 0.26151	171211G1_	Analyte	10	4.31	7981.76	7981.76	9848.277	81.04727
46	1701824-07 CH-AT-2RW33-1117 0.25185	171211G1_	Analyte	10	4.31	9044.589	9044.589	9848.277	91.8393
47	1701824-08 CH-AT-2FB33-1117 0.26295	171211G1_	Analyte	10	4.31	9010.36	9010.36	9848.277	91.49174
48	1701824-09 CH-AT-2RW34-1117 0.25405	171211G1_	Analyte	10	4.31	8092.983	8092.983	9848.277	82.17664
49	1701824-10 CH-AT-2FB34-1117 0.24979	171211G1_	Analyte	10	4.31	8616.881	8616.881	9848.277	87.49633
50	1701824-11 CH-AT-2RW35-1117 0.2526	171211G1_	Analyte	10	4.31	9370.795	9370.795	9848.277	95.15162
51	IPA	171211G1_	Analyte	10	4.31	36.979	36.979	9848.277	0.375487
52	ST171211G1-4 PFC CS-1 537 17L1106	171211G1_	Analyte	10	4.31	10270.61	10270.61	9848.277	104.2884

Compound 7: 13C4-PFOS ST171211G1-1 PFC CS-1 537 17L1106

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
1	ST171211G1-1 PFC CS-1 537 17L1106	171211G1_	Standard	28.7	4.72	11291.68	11291.68	11291.68	100
2	IPA	171211G1_	Analyte	28.7				11291.68	0
3	1701813-10 CH-AT-2FB24-1117 0.26256	171211G1_	Analyte	28.7	4.73	9371.263	9371.263	11291.68	82.99262
4	1701813-20 CH-AT-2FB29-1117 0.26487	171211G1_	Analyte	28.7	4.73	9397.963	9397.963	11291.68	83.22908
5	B7L0034-BLK1 LRB 0.25	171211G1_	Analyte		4.73	10397.18	10397.18	11291.68	92.0782
6	IPA	171211G1_	Analyte	28.7				11291.68	0
7	ST171211G1-2 PFC CS3 17L1107	171211G1_	Analyte	28.7	4.73	10907.83	10907.83	11291.68	96.6006

ST171211G1-2 PFC CS3 17L1107

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
7	ST171211G1-2 PFC CS3 17L1107	171211G1_	Analyte	28.7	4.73	10907.83	10907.83	10907.83	100
8	IPA	171211G1_	Analyte	28.7				10907.83	0
9	B7L0026-BS1 LFB 0.25	171211G1_	Analyte	28.7	4.85	12365.77	12365.77	10907.83	113.3659
10	B7L0026-BSD1 LFBD 0.25	171211G1_	Analyte	28.7	4.74	10586.79	10586.79	10907.83	97.05675
11	IPA	171211G1_	Analyte	28.7				10907.83	0
12	B7L0026-BLK1 LRB 0.25	171211G1_	Analyte	28.7	4.72	10500.5	10500.5	10907.83	96.26572
13	1701815-01 CH-AT-1RW98A-1117 0.25004	171211G1_	Analyte	28.7	4.72	11000.38	11000.38	10907.83	100.8484
14	1701815-02 CH-AT-1FB98A-1117 0.22006	171211G1_	Analyte	28.7	4.72	10287.23	10287.23	10907.83	94.31048

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15	1701815-03 CH-AT-1RW98B-1117 0.2516	171211G1_	Analyte	28.7	4.72	10470.8	10470.8	10907.83	95.99344
16	1701815-04 CH-AT-1FB98B-1117 0.23954	171211G1_	Analyte	28.7	4.72	10804.7	10804.7	10907.83	99.05451
17	1701815-05 CH-AT-1RW99-1117 0.23773	171211G1_	Analyte	28.7	4.72	10032.33	10032.33	10907.83	91.97359
18	1701815-06 CH-AT-1FB99-1117 0.2595	171211G1_	Analyte	28.7	4.72	9927.741	9927.741	10907.83	91.0148
19	1701815-07 CH-AT-1RW100-1117 0.23268	171211G1_	Analyte	28.7	4.72	10382.62	10382.62	10907.83	95.185
20	1701815-08 CH-AT-1FB100-1117 0.24391	171211G1_	Analyte	28.7	4.72	10305.04	10305.04	10907.83	94.47378
21	1701815-09 CH-AT-1RW101-1117 0.23904	171211G1_	Analyte	28.7	4.72	10096.49	10096.49	10907.83	92.56182
22	1701815-10 CH-AT-1FB101-1117 0.24933	171211G1_	Analyte	28.7	4.72	10040.16	10040.16	10907.83	92.04544
23	1701815-11 CH-AT-1RW102-1117 0.22328	171211G1_	Analyte	28.7	4.72	9820.836	9820.836	10907.83	90.03472
24	1701815-12 CH-AT-1FB102-1117 0.2476	171211G1_	Analyte	28.7	4.72	10801.07	10801.07	10907.83	99.02119
25	1701815-13 CH-AT-1RW103-1117 0.23828	171211G1_	Analyte	28.7	4.72	10776.49	10776.49	10907.83	98.79591
26	1701815-14 CH-AT-1FB103-1117 0.23541	171211G1_	Analyte	28.7	4.72	9948.378	9948.378	10907.83	91.20399
27	1701815-15 CH-AT-1RW104-1117 0.23862	171211G1_	Analyte	28.7	4.72	9714.996	9714.996	10907.83	89.06441
28	1701815-16 CH-AT-1FB104-1117 0.23966	171211G1_	Analyte	28.7	4.72	9831.933	9831.933	10907.83	90.13645
29	1701815-17 CH-AT-1RW105-1117 0.23516	171211G1_	Analyte	28.7	4.72	9633.847	9633.847	10907.83	88.32046
30	1701815-18 CH-AT-1FB105-1117 0.24394	171211G1_	Analyte	28.7	4.72	9718.045	9718.045	10907.83	89.09236
31	1701815-19 CH-AT-1RW06-1117 0.24687	171211G1_	Analyte	28.7	4.72	10571.5	10571.5	10907.83	96.91657
32	1701815-20 CH-AT-1FB106-1117 0.2407	171211G1_	Analyte	28.7	4.72	9607.334	9607.334	10907.83	88.07739
33	IPA	171211G1_	Analyte	28.7				10907.83	0
34	ST171211G1-3 PFC CS5 537 17K3029	171211G1_	Analyte	28.7	4.73	10803.79	10803.79	10907.83	99.04614

ST171211G1-3 PFC CS5 537 17K3029

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
34	ST171211G1-3 PFC CS5 537 17K3029	171211G1_	Analyte	28.7	4.73	10803.79	10803.79	10803.79	100
35	IPA	171211G1_	Analyte	28.7				10803.79	0
36	B7L0031-BS1 LFB 0.25	171211G1_	Analyte	28.7	4.72	10011.69	10011.69	10803.79	92.66832
37	B7L0031-BLK1 LRB 0.25	171211G1_	Analyte	28.7	4.72	11086.52	11086.52	10803.79	102.617
38	B7L0031-MS1 LFSM 0.25179	171211G1_	Analyte	28.7	4.72	9989.033	9989.033	10803.79	92.45863
39	B7L0031-MSD1 LFSMD 0.25406	171211G1_	Analyte	28.7	4.72	10820.7	10820.7	10803.79	100.1565
40	1701824-01 CH-AT-2RW30-1117 0.25321	171211G1_	Analyte	28.7	4.72	10539.2	10539.2	10803.79	97.55098
41	1701824-02 CH-AT-2FB30-1117 0.25812	171211G1_	Analyte	28.7	4.72	10809.77	10809.77	10803.79	100.0554
42	1701824-03 CH-AT-2RW31-1117 0.24951	171211G1_	Analyte	28.7	4.73	10167.68	10167.68	10803.79	94.11218
43	1701824-04 CH-AT-2FB31-1117 0.26064	171211G1_	Analyte	28.7	4.73	11046.8	11046.8	10803.79	102.2493

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44	1701824-05 CH-AT-2RW32-1117 0.25406	171211G1_ Analyte	28.7	4.73	10745.59	10745.59	10803.79	99.46133
45	1701824-06 CH-AT-2FB32-1117 0.26151	171211G1_ Analyte	28.7	4.72	10167	10167	10803.79	94.10591
46	1701824-07 CH-AT-2RW33-1117 0.25185	171211G1_ Analyte	28.7	4.72	10946.39	10946.39	10803.79	101.3199
47	1701824-08 CH-AT-2FB33-1117 0.26295	171211G1_ Analyte	28.7	4.72	9724.39	9724.39	10803.79	90.00909
48	1701824-09 CH-AT-2RW34-1117 0.25405	171211G1_ Analyte	28.7	4.72	9558.749	9558.749	10803.79	88.47591
49	1701824-10 CH-AT-2FB34-1117 0.24979	171211G1_ Analyte	28.7	4.72	10927.25	10927.25	10803.79	101.1428
50	1701824-11 CH-AT-2RW35-1117 0.2526	171211G1_ Analyte	28.7	4.72	11701.68	11701.68	10803.79	108.3109
51	IPA	171211G1_ Analyte	28.7	4.72	44.289	44.289	10803.79	0.40994
52	ST171211G1-4 PFC CS-1 537 17L1106	171211G1_ Analyte	28.7	4.73	12765.67	12765.67	10803.79	118.1592

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

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-2.qld

Last Altered: Monday, December 11, 2017 14:28:59 Pacific Standard Time
Printed: Monday, December 11, 2017 14:29:22 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_2, Date: 11-Dec-2017, Time: 11:51:01, ID: ST171211G1-1 PFC CS-1 537 17L1106, Description: PFC CS-1 537 17L1106

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	6.09e2	1.13e4		1.0000	3.02	3.01	1.55	1.93	109.2
2	2	PFOA	413 > 368.7	1.64e3	1.06e4		1.0000	4.31	4.31	1.54	1.89	94.6
3	3	PFOS	499 >79.9	9.32e2	1.13e4		1.0000	4.72	4.72	2.37	1.97	106.5
4	4	13C2-PFHxA	315 > 269.8	4.41e3	1.06e4	0.443	1.0000	3.37	3.37	4.14	9.34	93.4
5	5	13C2-PFDA	515.1 > 469.9	5.81e3	1.06e4	0.509	1.0000	4.94	4.95	5.46	10.7	107.2
6	6	13C2-PFOA	414.9 > 369.7	1.06e4	1.06e4	1.000	1.0000	4.41	4.31	10.0	10.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.13e4	1.13e4	1.000	1.0000	4.81	4.72	28.7	28.7	100.0

70 – 130

MJT 12/11/17

VJA. 12/11/2017

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

Dataset: Untitled

Last Altered: Monday, December 11, 2017 14:18:34 Pacific Standard Time
Printed: Monday, December 11, 2017 14:19:23 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171211G1_1	IPA	11-Dec-17	11:38:33
2	171211G1_2	ST171211G1-1 PFC CS-1 537 17L1106	11-Dec-17	11:51:01
3	171211G1_3	IPA	11-Dec-17	12:03:25
4	171211G1_4	1701813-10 CH-AT-2FB24-1117 0.26256	11-Dec-17	12:15:55
5	171211G1_5	1701813-20 CH-AT-2FB29-1117 0.26487	11-Dec-17	12:28:21
6	171211G1_6	B7L0034-BLK1 LRB 0.25	11-Dec-17	12:40:48
7	171211G1_7	IPA	11-Dec-17	12:53:17
8	171211G1_8	ST171211G1-2 PFC CS3 17L1107	11-Dec-17	13:05:44
9	171211G1_9	IPA	11-Dec-17	13:18:08
10	171211G1_10	B7L0026-BS1 LFB 0.25		
11	171211G1_11	B7L0026-BSD1 LFBD 0.25		
12	171211G1_12	IPA		
13	171211G1_13	B7L0026-BLK1 LRB 0.25		
14	171211G1_14	1701815-01 CH-AT-1RW98A-1117 0.25004		
15	171211G1_15	1701815-02 CH-AT-1FB98A-1117 0.22006		
16	171211G1_16	1701815-03 CH-AT-1RW98B-1117 0.2516		
17	171211G1_17	1701815-04 CH-AT-1FB98B-1117 0.23954		
18	171211G1_18	1701815-05 CH-AT-1RW99-1117 0.23773		
19	171211G1_19	1701815-06 CH-AT-1FB99-1117 0.2595		
20	171211G1_20	1701815-07 CH-AT-1RW100-1117 0.23268		
21	171211G1_21	1701815-08 CH-AT-1FB100-1117 0.24391		
22	171211G1_22	1701815-09 CH-AT-1RW101-1117 0.23904		
23	171211G1_23	1701815-10 CH-AT-1FB101-1117 0.24933		
24	171211G1_24	1701815-11 CH-AT-1RW102-1117 0.22328		
25	171211G1_25	1701815-12 CH-AT-1FB102-1117 0.2476		
26	171211G1_26	1701815-13 CH-AT-1RW103-1117 0.23828		
27	171211G1_27	1701815-14 CH-AT-1FB103-1117 0.23541		
28	171211G1_28	1701815-15 CH-AT-1RW104-1117 0.23862		
29	171211G1_29	1701815-16 CH-AT-1FB104-1117 0.23966		
30	171211G1_30	1701815-17 CH-AT-1RW105-1117 0.23516		
31	171211G1_31	1701815-18 CH-AT-1FB105-1117 0.24394		
32	171211G1_32	1701815-19 CH-AT-1RW06-1117 0.24687		

LC Calibration Standards Review Checklist G

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	~~NA~~
Calibration ID: ST 171211G1-1	(L) M H	☑ NA	☑	☑	☑	☑	☑	☐
Calibration ID: -2	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: 4/15/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Reviewed By: JA 12/11/2017
Initials/Date

Comments: Curve
PFBS 1.770 pg/ul — 44.2 pg/ul
PFOA 2.00 ↓ — 50.00 ↓
PFOS 1.85 ↓ — 46.20 ↓

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

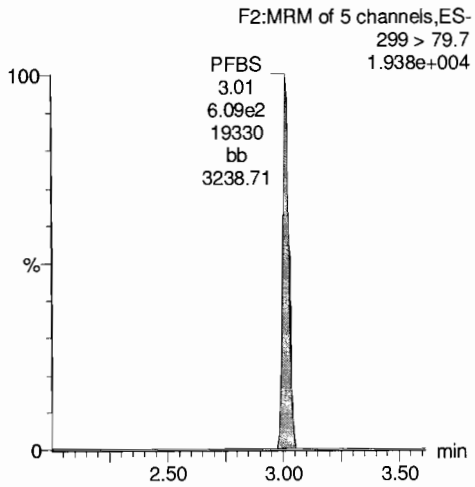
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-2.qld

Last Altered: Monday, December 11, 2017 14:28:59 Pacific Standard Time
Printed: Monday, December 11, 2017 14:29:22 Pacific Standard Time

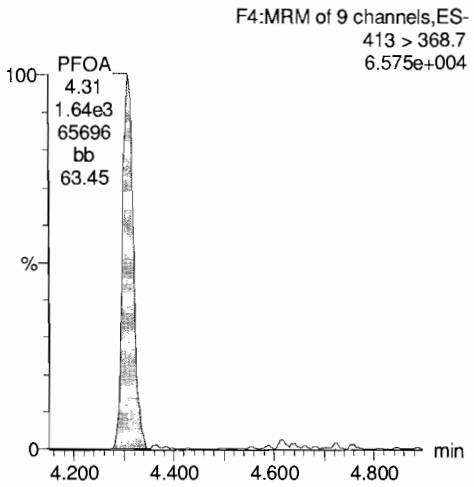
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_2, Date: 11-Dec-2017, Time: 11:51:01, ID: ST171211G1-1 PFC CS-1 537 17L1106, Description: PFC CS-1 537 17L1106

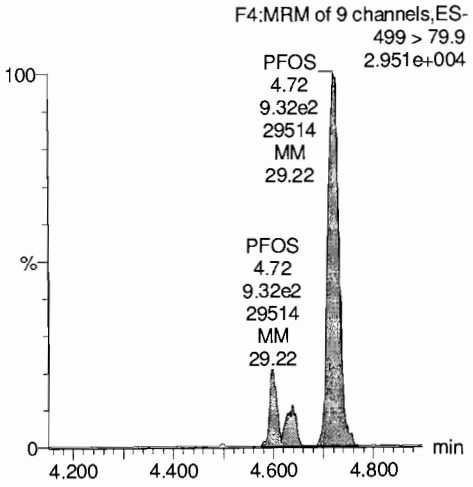
PFBS



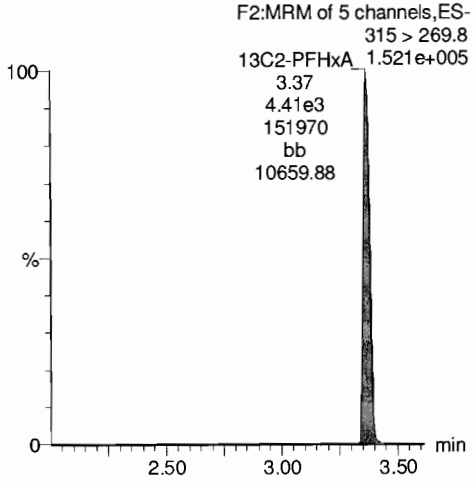
PFOA



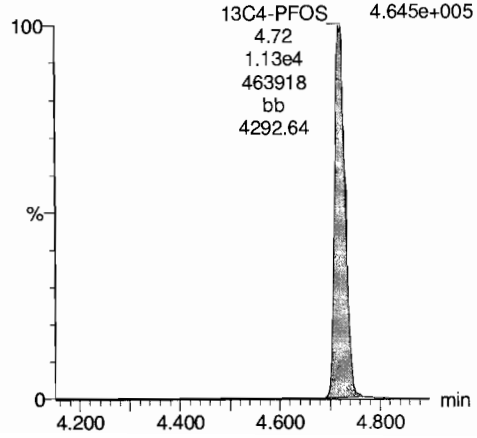
PFOS



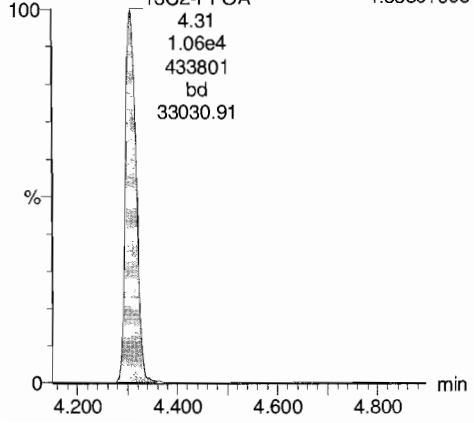
13C2-PFHxA



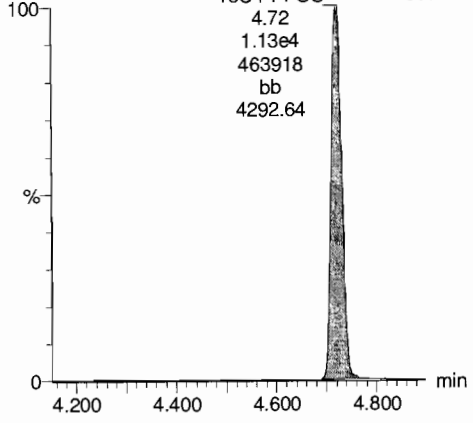
13C4-PFOS



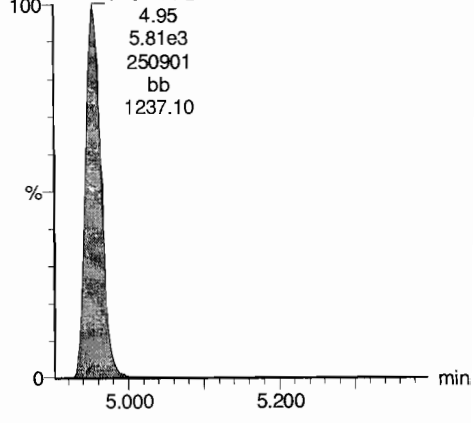
13C2-PFOA



13C4-PFOS



13C2-PFDA



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

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-8.qld

Last Altered: Monday, December 11, 2017 14:30:40 Pacific Standard Time
Printed: Monday, December 11, 2017 14:31:02 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_8, Date: 11-Dec-2017, Time: 13:05:44, ID: ST171211G1-2 PFC CS3 17L1107, Description: PFC CS3 17L1107

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.37e4	1.09e4		1.0000	3.03	3.02	36.1	45.1	102.0
2	2	PFOA	413 > 368.7	4.20e4	1.03e4		1.0000	4.32	4.32	40.8	50.3	100.6
3	3	PFOS	499 >79.9	2.05e4	1.09e4		1.0000	4.73	4.73	54.0	44.9	97.2
4	4	13C2-PFHxA	315 > 269.8	4.53e3	1.03e4	0.443	1.0000	3.38	3.38	4.41	9.95	99.5
5	5	13C2-PFDA	515.1 > 469.9	4.87e3	1.03e4	0.509	1.0000	4.95	4.96	4.74	9.32	93.2
6	6	13C2-PFOA	414.9 > 369.7	1.03e4	1.03e4	1.000	1.0000	4.41	4.32	10.0	10.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.09e4	1.09e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

70-130%

MJT 12/11/17

VJA 12/4/2017

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

Dataset: Untitled

Last Altered: Monday, December 11, 2017 14:18:34 Pacific Standard Time
Printed: Monday, December 11, 2017 14:19:23 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171211G1_1	IPA	11-Dec-17	11:38:33
2	171211G1_2	ST171211G1-1 PFC CS-1 537 17L1106	11-Dec-17	11:51:01
3	171211G1_3	IPA	11-Dec-17	12:03:25
4	171211G1_4	1701813-10 CH-AT-2FB24-1117 0.26256	11-Dec-17	12:15:55
5	171211G1_5	1701813-20 CH-AT-2FB29-1117 0.26487	11-Dec-17	12:28:21
6	171211G1_6	B7L0034-BLK1 LRB 0.25	11-Dec-17	12:40:48
7	171211G1_7	IPA	11-Dec-17	12:53:17
8	171211G1_8	ST171211G1-2 PFC CS3 17L1107	11-Dec-17	13:05:44
9	171211G1_9	IPA	11-Dec-17	13:18:08
10	171211G1_10	B7L0026-BS1 LFB 0.25		
11	171211G1_11	B7L0026-BSD1 LFBD 0.25		
12	171211G1_12	IPA		
13	171211G1_13	B7L0026-BLK1 LRB 0.25		
14	171211G1_14	1701815-01 CH-AT-1RW98A-1117 0.25004		
15	171211G1_15	1701815-02 CH-AT-1FB98A-1117 0.22006		
16	171211G1_16	1701815-03 CH-AT-1RW98B-1117 0.2516		
17	171211G1_17	1701815-04 CH-AT-1FB98B-1117 0.23954		
18	171211G1_18	1701815-05 CH-AT-1RW99-1117 0.23773		
19	171211G1_19	1701815-06 CH-AT-1FB99-1117 0.2595		
20	171211G1_20	1701815-07 CH-AT-1RW100-1117 0.23268		
21	171211G1_21	1701815-08 CH-AT-1FB100-1117 0.24391		
22	171211G1_22	1701815-09 CH-AT-1RW101-1117 0.23904		
23	171211G1_23	1701815-10 CH-AT-1FB101-1117 0.24933		
24	171211G1_24	1701815-11 CH-AT-1RW102-1117 0.22328		
25	171211G1_25	1701815-12 CH-AT-1FB102-1117 0.2476		
26	171211G1_26	1701815-13 CH-AT-1RW103-1117 0.23828		
27	171211G1_27	1701815-14 CH-AT-1FB103-1117 0.23541		
28	171211G1_28	1701815-15 CH-AT-1RW104-1117 0.23862		
29	171211G1_29	1701815-16 CH-AT-1FB104-1117 0.23966		
30	171211G1_30	1701815-17 CH-AT-1RW105-1117 0.23516		
31	171211G1_31	1701815-18 CH-AT-1FB105-1117 0.24394		
32	171211G1_32	1701815-19 CH-AT-1RW06-1117 0.24687		

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

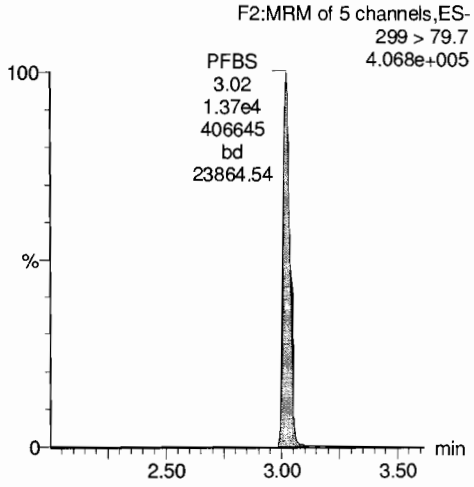
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-8.qld

Last Altered: Monday, December 11, 2017 14:30:40 Pacific Standard Time
Printed: Monday, December 11, 2017 14:31:02 Pacific Standard Time

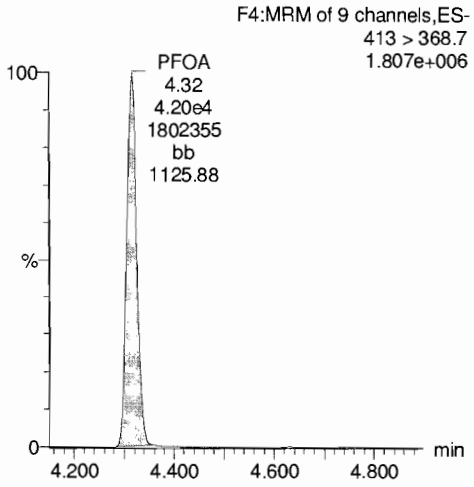
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_8, Date: 11-Dec-2017, Time: 13:05:44, ID: ST171211G1-2 PFC CS3 17L1107, Description: PFC CS3 17L1107

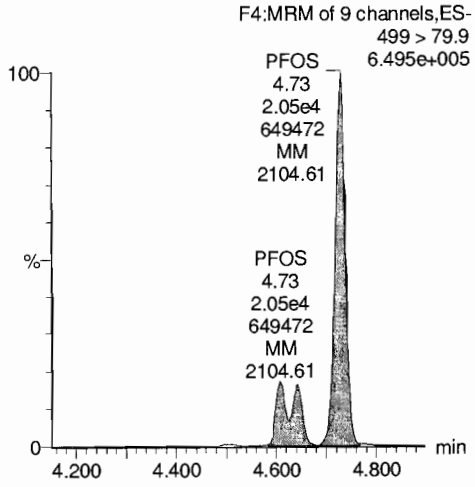
PFBS



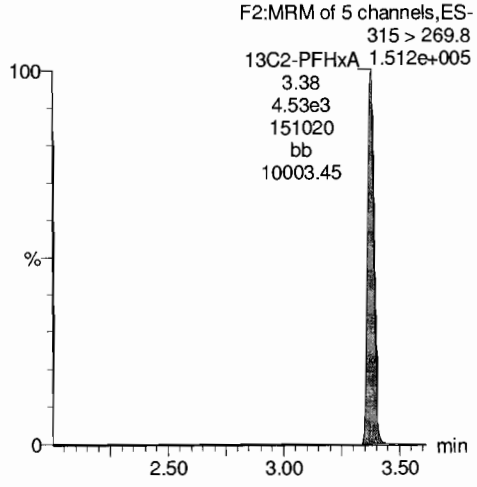
PFOA



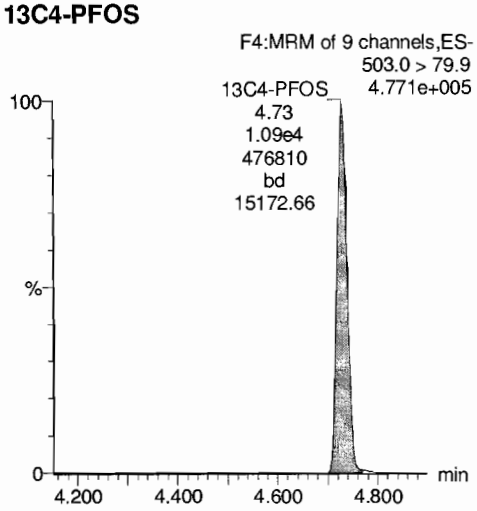
PFOS



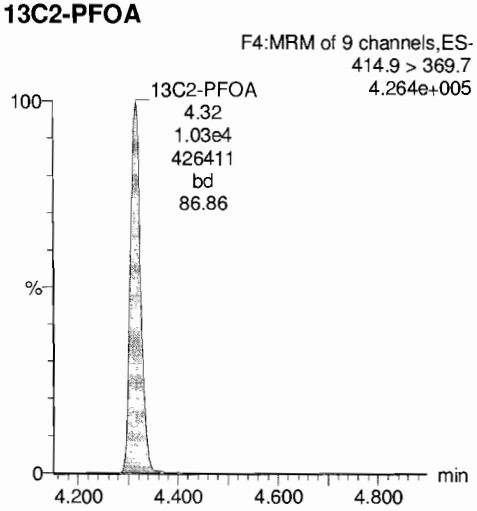
13C2-PFHxA



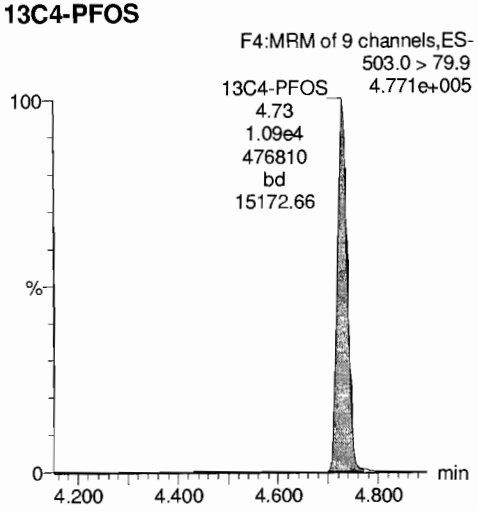
13C4-PFOS



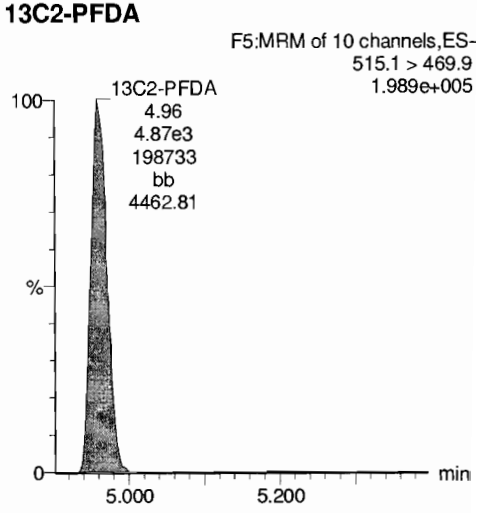
13C2-PFOA



13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-35.qld

Last Altered: Tuesday, December 12, 2017 09:17:47 Pacific Standard Time
Printed: Tuesday, December 12, 2017 09:18:03 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_35, Date: 11-Dec-2017, Time: 20:58:19, ID: ST171211G1-3 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	2.66e4	1.08e4		1.0000	3.03	3.01	70.6	88.2	99.8
2	2	PFOA	413 > 368.7	7.23e4	9.85e3		1.0000	4.31	4.31	73.4	90.4	90.4
3	3	PFOS	499 >79.9	4.19e4	1.08e4		1.0000	4.73	4.73	111	92.6	100.2
4	4	13C2-PFHxA	315 > 269.8	4.68e3	9.85e3	0.443	1.0000	3.37	3.37	4.75	10.7	107.2
5	5	13C2-PFDA	515.1 > 469.9	4.46e3	9.85e3	0.509	1.0000	4.94	4.96	4.52	8.89	88.9
6	6	13C2-PFOA	414.9 > 369.7	9.85e3	9.85e3	1.000	1.0000	4.41	4.31	10.0	10.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

70-130

AM 12/12/17

VJA. 12/12/2017

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 12, 2017 09:25:15 Pacific Standard Time
Printed: Tuesday, December 12, 2017 09:26:40 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171211G1_1	IPA	11-Dec-17	11:38:33
2	171211G1_2	ST171211G1-1 PFC CS-1 537 17L1106	11-Dec-17	11:51:01
3	171211G1_3	IPA	11-Dec-17	12:03:25
4	171211G1_4	1701813-10 CH-AT-2FB24-1117 0.26256	11-Dec-17	12:15:55
5	171211G1_5	1701813-20 CH-AT-2FB29-1117 0.26487	11-Dec-17	12:28:21
6	171211G1_6	B7L0034-BLK1 LRB 0.25	11-Dec-17	12:40:48
7	171211G1_7	IPA	11-Dec-17	12:53:17
8	171211G1_8	ST171211G1-2 PFC CS3 17L1107	11-Dec-17	13:05:44
9	171211G1_9	IPA	11-Dec-17	13:18:08
10	171211G1_10	B7L0026-BS1 LFB 0.25	11-Dec-17	15:46:44
11	171211G1_11	B7L0026-BSD1 LFBD 0.25	11-Dec-17	16:00:04
12	171211G1_12	IPA	11-Dec-17	16:12:32
13	171211G1_13	B7L0026-BLK1 LRB 0.25	11-Dec-17	16:25:00
14	171211G1_14	1701815-01 CH-AT-1RW98A-1117 0.25004	11-Dec-17	16:37:24
15	171211G1_15	1701815-02 CH-AT-1FB98A-1117 0.22006	11-Dec-17	16:49:48
16	171211G1_16	1701815-03 CH-AT-1RW98B-1117 0.2516	11-Dec-17	17:02:12
17	171211G1_17	1701815-04 CH-AT-1FB98B-1117 0.23954	11-Dec-17	17:14:38
18	171211G1_18	1701815-05 CH-AT-1RW99-1117 0.23773	11-Dec-17	17:27:04
19	171211G1_19	1701815-06 CH-AT-1FB99-1117 0.2595	11-Dec-17	17:39:30
20	171211G1_20	1701815-07 CH-AT-1RW100-1117 0.23268	11-Dec-17	17:51:58
21	171211G1_21	1701815-08 CH-AT-1FB100-1117 0.24391	11-Dec-17	18:04:27
22	171211G1_22	1701815-09 CH-AT-1RW101-1117 0.23904	11-Dec-17	18:16:50
23	171211G1_23	1701815-10 CH-AT-1FB101-1117 0.24933	11-Dec-17	18:29:14
24	171211G1_24	1701815-11 CH-AT-1RW102-1117 0.22328	11-Dec-17	18:41:38
25	171211G1_25	1701815-12 CH-AT-1FB102-1117 0.2476	11-Dec-17	18:54:03
26	171211G1_26	1701815-13 CH-AT-1RW103-1117 0.23828	11-Dec-17	19:06:28
27	171211G1_27	1701815-14 CH-AT-1FB103-1117 0.23541	11-Dec-17	19:18:55
28	171211G1_28	1701815-15 CH-AT-1RW104-1117 0.23862	11-Dec-17	19:31:21
29	171211G1_29	1701815-16 CH-AT-1FB104-1117 0.23966	11-Dec-17	19:43:50
30	171211G1_30	1701815-17 CH-AT-1RW105-1117 0.23516	11-Dec-17	19:56:13
31	171211G1_31	1701815-18 CH-AT-1FB105-1117 0.24394	11-Dec-17	20:08:36

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 12, 2017 09:25:15 Pacific Standard Time
Printed: Tuesday, December 12, 2017 09:26:40 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171211G1_32	1701815-19 CH-AT-1RW06-1117 0.24687	11-Dec-17	20:21:01
33	171211G1_33	1701815-20 CH-AT-1FB106-1117 0.2407	11-Dec-17	20:33:27
34	171211G1_34	IPA	11-Dec-17	20:45:52
35	171211G1_35	ST171211G1-3 PFC CS5 537 17K3029	11-Dec-17	20:58:19
36	171211G1_36	IPA	11-Dec-17	21:10:45
37	171211G1_37	B7L0031-BS1 LFB 0.25	11-Dec-17	21:23:12
38	171211G1_38	B7L0031-BLK1 LRB 0.25	11-Dec-17	21:35:39
39	171211G1_39	B7L0031-MS1 LFSM 0.25179	11-Dec-17	21:48:05
40	171211G1_40	B7L0031-MSD1 LFSMD 0.25406	11-Dec-17	22:00:32
41	171211G1_41	1701824-01 CH-AT-2RW30-1117 0.25321	11-Dec-17	22:12:55
42	171211G1_42	1701824-02 CH-AT-2FB30-1117 0.25812	11-Dec-17	22:25:20
43	171211G1_43	1701824-03 CH-AT-2RW31-1117 0.24951	11-Dec-17	22:37:44
44	171211G1_44	1701824-04 CH-AT-2FB31-1117 0.26064	11-Dec-17	22:50:09
45	171211G1_45	1701824-05 CH-AT-2RW32-1117 0.25406	11-Dec-17	23:02:34
46	171211G1_46	1701824-06 CH-AT-2FB32-1117 0.26151	11-Dec-17	23:15:00
47	171211G1_47	1701824-07 CH-AT-2RW33-1117 0.25185	11-Dec-17	23:27:26
48	171211G1_48	1701824-08 CH-AT-2FB33-1117 0.26295	11-Dec-17	23:39:55
49	171211G1_49	1701824-09 CH-AT-2RW34-1117 0.25405	11-Dec-17	23:52:18
50	171211G1_50	1701824-10 CH-AT-2FB34-1117 0.24979	12-Dec-17	00:04:41
51	171211G1_51	1701824-11 CH-AT-2RW35-1117 0.2526	12-Dec-17	00:17:06
52	171211G1_52	IPA	12-Dec-17	00:29:32
53	171211G1_53	ST171211G1-4 PFC CS-1 537 17L1106	12-Dec-17	00:41:58
54	171211G1_54	IPA	12-Dec-17	00:54:22

LC Calibration Standards Review Checklist Q1

Calibration ID		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NA
Calibration ID: ST171211G1-3	(L) M (H) am 12/12/17	NA	☑	☑	☑	☑	☑	☐
Calibration ID: ↓ -4	(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: ~~[illegible]~~ am 12/12/17 4/5/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

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

Comments: DW_L3

Vista Analytical Laboratory

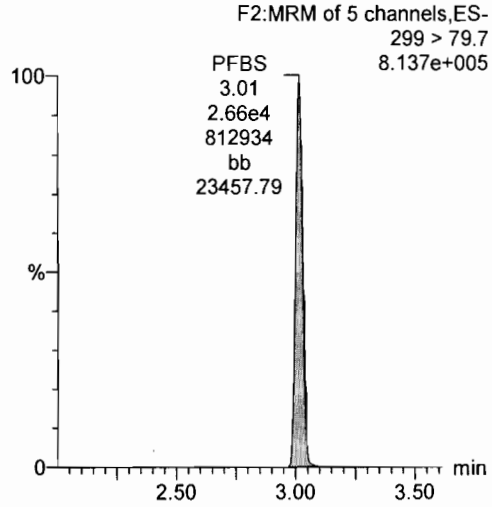
Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-35.qld

Last Altered: Tuesday, December 12, 2017 09:17:47 Pacific Standard Time
Printed: Tuesday, December 12, 2017 09:18:03 Pacific Standard Time

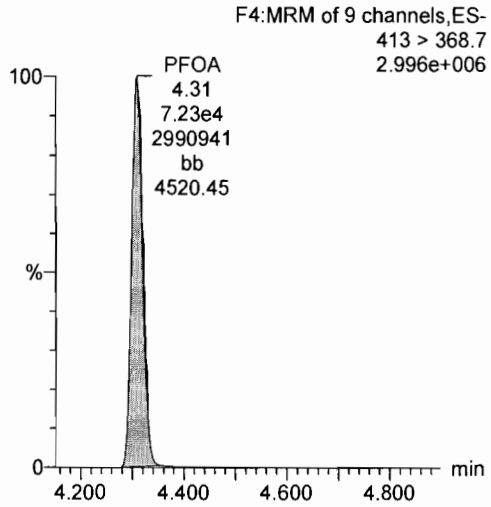
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171211G1_35, Date: 11-Dec-2017, Time: 20:58:19, ID: ST171211G1-3 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

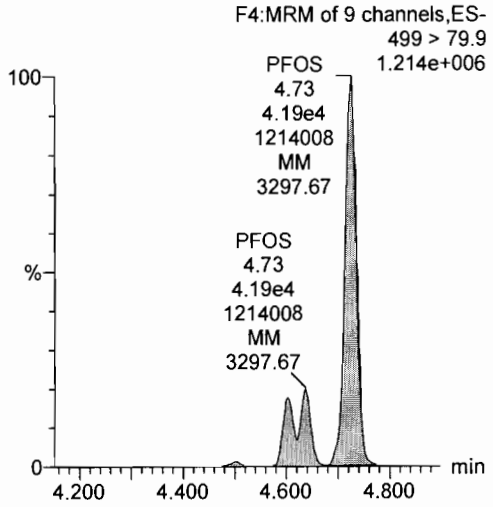
PFBS



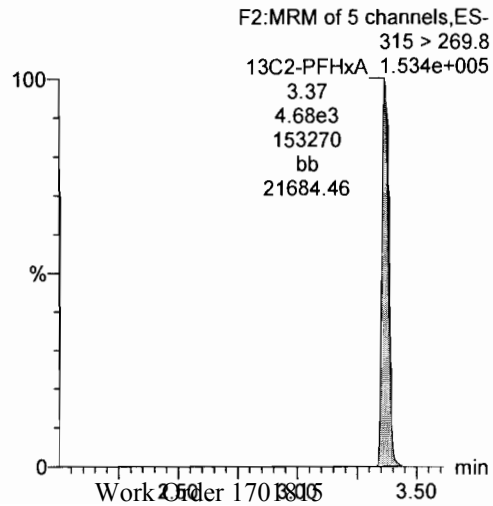
PFOA



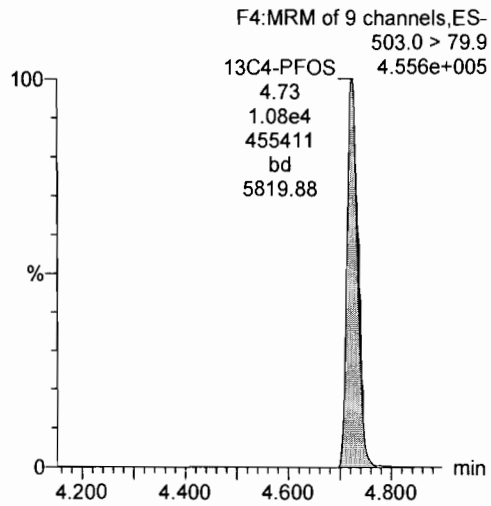
PFOS



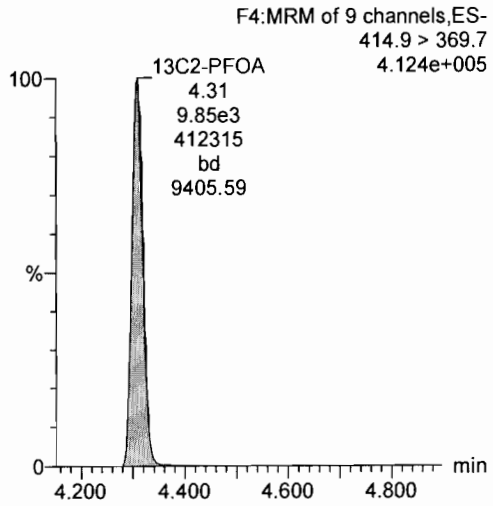
13C2-PFHxA



13C4-PFOS



13C2-PFOA



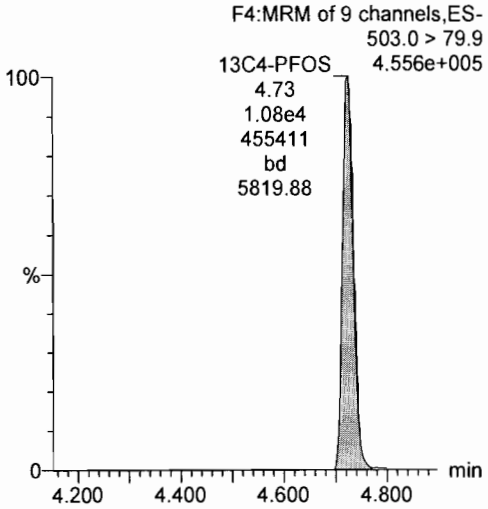
Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171211G1\171211G1-35.qld

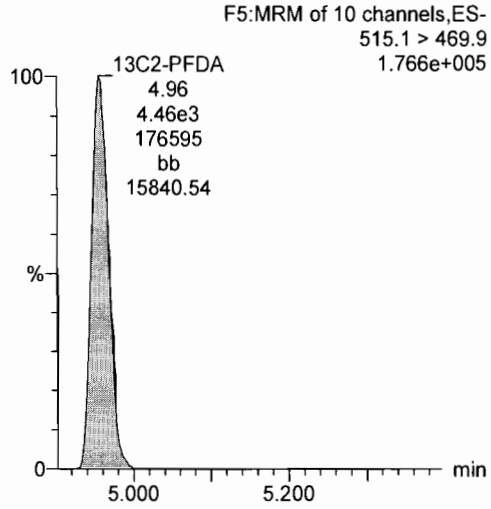
Last Altered: Tuesday, December 12, 2017 09:17:47 Pacific Standard Time
Printed: Tuesday, December 12, 2017 09:18:03 Pacific Standard Time

Name: 171211G1_35, Date: 11-Dec-2017, Time: 20:58:19, ID: ST171211G1-3 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

13C4-PFOS



13C2-PFDA



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

INITIAL CALIBRATION VERIFICATION (ICV)

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:37:29 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS
Coefficient of Determination: R^2 = 0.994837
Calibration curve: 0.800672 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

AM 12/11/17
JMA 12/11/2017

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	0.443	3.02	134.074	11857.967	0.325	0.4	-8.4	NO	0.995	NO	MMX
2	2	171208G2_3	Standard	0.885	3.01	428.832	15349.467	0.802	1.0	13.2	NO	0.995	NO	bbX
3	3	171208G2_4	Standard	1.770	3.01	759.007	14402.649	1.512	1.9	6.7	NO	0.995	NO	bb
4	4	171208G2_5	Standard	4.420	3.01	1983.680	14516.459	3.922	4.9	10.8	NO	0.995	NO	MM
5	5	171208G2_6	Standard	8.850	3.01	2903.323	11953.820	6.971	8.7	-1.6	NO	0.995	NO	bb
6	6	171208G2_7	Standard	22.100	3.01	8898.488	13445.892	18.994	23.7	7.3	NO	0.995	NO	bb
7	7	171208G2_8	Standard	44.200	3.01	14447.786	12293.957	33.728	42.1	-4.7	NO	0.995	NO	bb
8	8	171208G2_9	Standard	66.300	3.01	21148.451	10786.034	56.273	70.3	6.0	NO	0.995	NO	bbX
9	9	171208G2_10	Standard	88.400	3.01	29888.051	12003.273	71.463	89.3	1.0	NO	0.995	NO	bbX

Compound name: PFOA
Coefficient of Determination: R^2 = 0.997893
Calibration curve: 0.811837 * x
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	0.500	4.33	504.601	11571.904	0.436	0.5	7.4	NO	0.998	NO	bbX
2	2	171208G2_3	Standard	1.000	4.31	1289.415	14038.166	0.919	1.1	13.1	NO	0.998	NO	bbX
3	3	171208G2_4	Standard	2.000	4.31	2044.709	12600.569	1.623	2.0	-0.1	NO	0.998	NO	bb
4	4	171208G2_5	Standard	5.000	4.31	5935.702	13262.253	4.476	5.5	10.3	NO	0.998	NO	bd
5	5	171208G2_6	Standard	10.000	4.31	8915.754	12044.611	7.402	9.1	-8.8	NO	0.998	NO	bd
6	6	171208G2_7	Standard	25.000	4.31	25977.795	12740.901	20.389	25.1	0.5	NO	0.998	NO	bd
7	7	171208G2_8	Standard	50.000	4.31	45749.875	11213.454	40.799	50.3	0.5	NO	0.998	NO	bd
8	8	171208G2_9	Standard	75.000	4.31	60947.063	9546.963	63.839	78.6	4.8	NO	0.998	NO	bdX
9	9	171208G2_10	Standard	100.000	4.31	85445.031	11090.062	77.046	94.9	-5.1	NO	0.998	NO	bbX

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:37:29 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.998516
Calibration curve: 1.20278 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	0.464	4.73	185.089	11857.967	0.448	0.4	-19.7	NO	0.999	NO	MMX
2	2	171208G2_3	Standard	0.925	4.73	617.089	15349.467	1.154	1.0	3.7	NO	0.999	NO	MMX
3	3	171208G2_4	Standard	1.850	4.72	889.150	14402.649	1.772	1.5	-20.4	NO	0.999	NO	MM
4	4	171208G2_5	Standard	4.625	4.73	2773.974	14516.459	5.484	4.6	-1.4	NO	0.999	NO	MM
5	5	171208G2_6	Standard	9.250	4.73	4524.466	11953.820	10.863	9.0	-2.4	NO	0.999	NO	MM
6	6	171208G2_7	Standard	23.100	4.73	13079.806	13445.892	27.919	23.2	0.5	NO	0.999	NO	MM
7	7	171208G2_8	Standard	46.200	4.72	24086.246	12293.957	56.229	46.7	1.2	NO	0.999	NO	MM
8	8	171208G2_9	Standard	69.300	4.72	33750.160	10786.034	89.804	74.7	7.7	NO	0.999	NO	MMX
9	9	171208G2_10	Standard	92.400	4.72	47716.457	12003.273	114.091	94.9	2.7	NO	0.999	NO	MMX

Compound name: 13C2-PFHxA
Response Factor: 0.44294
RRF SD: 0.0227764, Relative SD: 5.14209
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	10.000	3.38	4801.410	11571.904	4.149	9.4	-6.3	NO		NO	bbX
2	2	171208G2_3	Standard	10.000	3.37	6735.231	14038.166	4.798	10.8	8.3	NO		NO	bbX
3	3	171208G2_4	Standard	10.000	3.36	5697.994	12600.569	4.522	10.2	2.1	NO		NO	bb
4	4	171208G2_5	Standard	10.000	3.37	6341.437	13262.253	4.782	10.8	8.0	NO		NO	bb
5	5	171208G2_6	Standard	10.000	3.36	5086.919	12044.611	4.223	9.5	-4.7	NO		NO	bd
6	6	171208G2_7	Standard	10.000	3.36	5434.637	12740.901	4.266	9.6	-3.7	NO		NO	bb
7	7	171208G2_8	Standard	10.000	3.36	4882.918	11213.454	4.355	9.8	-1.7	NO		NO	bb
8	8	171208G2_9	Standard	10.000	3.36	4706.410	9546.963	4.930	11.1	11.3	NO		NO	bdX
9	9	171208G2_10	Standard	10.000	3.36	4749.668	11090.062	4.283	9.7	-3.3	NO		NO	bdX

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:37:29 Pacific Standard Time

Compound name: 13C2-PFDA
Response Factor: 0.509254
RRF SD: 0.0328522, Relative SD: 6.45105
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	10.000	4.97	5579.112	11571.904	4.821	9.5	-5.3	NO		NO	bdX
2	2	171208G2_3	Standard	10.000	4.96	8625.498	14038.166	6.144	12.1	20.7	NO		NO	bbX
3	3	171208G2_4	Standard	10.000	4.96	6581.716	12600.569	5.223	10.3	2.6	NO		NO	bb
4	4	171208G2_5	Standard	10.000	4.96	7244.836	13262.253	5.463	10.7	7.3	NO		NO	bb
5	5	171208G2_6	Standard	10.000	4.96	5507.656	12044.611	4.573	9.0	-10.2	NO		NO	bb
6	6	171208G2_7	Standard	10.000	4.96	6576.478	12740.901	5.162	10.1	1.4	NO		NO	bb
7	7	171208G2_8	Standard	10.000	4.96	5654.003	11213.454	5.042	9.9	-1.0	NO		NO	bb
8	8	171208G2_9	Standard	10.000	4.96	5376.028	9546.963	5.631	11.1	10.6	NO		NO	bbX
9	9	171208G2_10	Standard	10.000	4.96	5314.285	11090.062	4.792	9.4	-5.9	NO		NO	bbX

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	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	10.000	4.33	11571.904	11571.904	10.000	10.0	0.0	NO		NO	bbX
2	2	171208G2_3	Standard	10.000	4.31	14038.166	14038.166	10.000	10.0	0.0	NO		NO	bbX
3	3	171208G2_4	Standard	10.000	4.31	12600.569	12600.569	10.000	10.0	0.0	NO		NO	bb
4	4	171208G2_5	Standard	10.000	4.31	13262.253	13262.253	10.000	10.0	0.0	NO		NO	bb
5	5	171208G2_6	Standard	10.000	4.31	12044.611	12044.611	10.000	10.0	0.0	NO		NO	bd
6	6	171208G2_7	Standard	10.000	4.31	12740.901	12740.901	10.000	10.0	0.0	NO		NO	bd
7	7	171208G2_8	Standard	10.000	4.31	11213.454	11213.454	10.000	10.0	0.0	NO		NO	bb
8	8	171208G2_9	Standard	10.000	4.31	9546.963	9546.963	10.000	10.0	0.0	NO		NO	bbX
9	9	171208G2_10	Standard	10.000	4.31	11090.062	11090.062	10.000	10.0	0.0	NO		NO	bdX

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:37:29 Pacific Standard Time

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	171208G2_2	Standard	28.700	4.74	11857.967	11857.967	28.700	28.7	0.0	NO		NO	bdX
2	2	171208G2_3	Standard	28.700	4.73	15349.467	15349.467	28.700	28.7	0.0	NO		NO	bbX
3	3	171208G2_4	Standard	28.700	4.72	14402.649	14402.649	28.700	28.7	0.0	NO		NO	bd
4	4	171208G2_5	Standard	28.700	4.73	14516.459	14516.459	28.700	28.7	0.0	NO		NO	bd
5	5	171208G2_6	Standard	28.700	4.72	11953.820	11953.820	28.700	28.7	0.0	NO		NO	MM
6	6	171208G2_7	Standard	28.700	4.72	13445.892	13445.892	28.700	28.7	0.0	NO		NO	bb
7	7	171208G2_8	Standard	28.700	4.72	12293.957	12293.957	28.700	28.7	0.0	NO		NO	bd
8	8	171208G2_9	Standard	28.700	4.72	10786.034	10786.034	28.700	28.7	0.0	NO		NO	bbX
9	9	171208G2_10	Standard	28.700	4.72	12003.273	12003.273	28.700	28.7	0.0	NO		NO	bbX

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 11, 2017 10:39:34 Pacific Standard Time
Printed: Monday, December 11, 2017 10:40:25 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171208G2_1	IPA	08-Dec-17	15:56:48
2	171208G2_2	ST171208G2-1 PFC CS-3 537 17K3022	08-Dec-17	16:09:15
3	171208G2_3	ST171208G2-2 PFC CS-2 537 17K3023	08-Dec-17	16:21:40
4	171208G2_4	ST171208G2-3 PFC CS-1 537 17K3024	08-Dec-17	16:34:04
5	171208G2_5	ST171208G2-4 PFC CS0 537 17K3025	08-Dec-17	16:46:29
6	171208G2_6	ST171208G2-5 PFC CS1 537 17K3026	08-Dec-17	16:58:55
7	171208G2_7	ST171208G2-6 PFC CS2 537 17K3033	08-Dec-17	17:11:21
8	171208G2_8	ST171208G2-7 PFC CS3 537 17K3027	08-Dec-17	17:23:47
9	171208G2_9	ST171208G2-8 PFC CS4 537 17K3028	08-Dec-17	17:36:15
10	171208G2_10	ST171208G2-9 PFC CS5 537 17K3029	08-Dec-17	17:48:42
11	171208G2_11	IPA	08-Dec-17	18:01:06
12	171208G2_12	ICV171208G2-1 PFC ICV 537 17K3030	08-Dec-17	18:13:34
13	171208G2_13	IPA	08-Dec-17	18:25:58

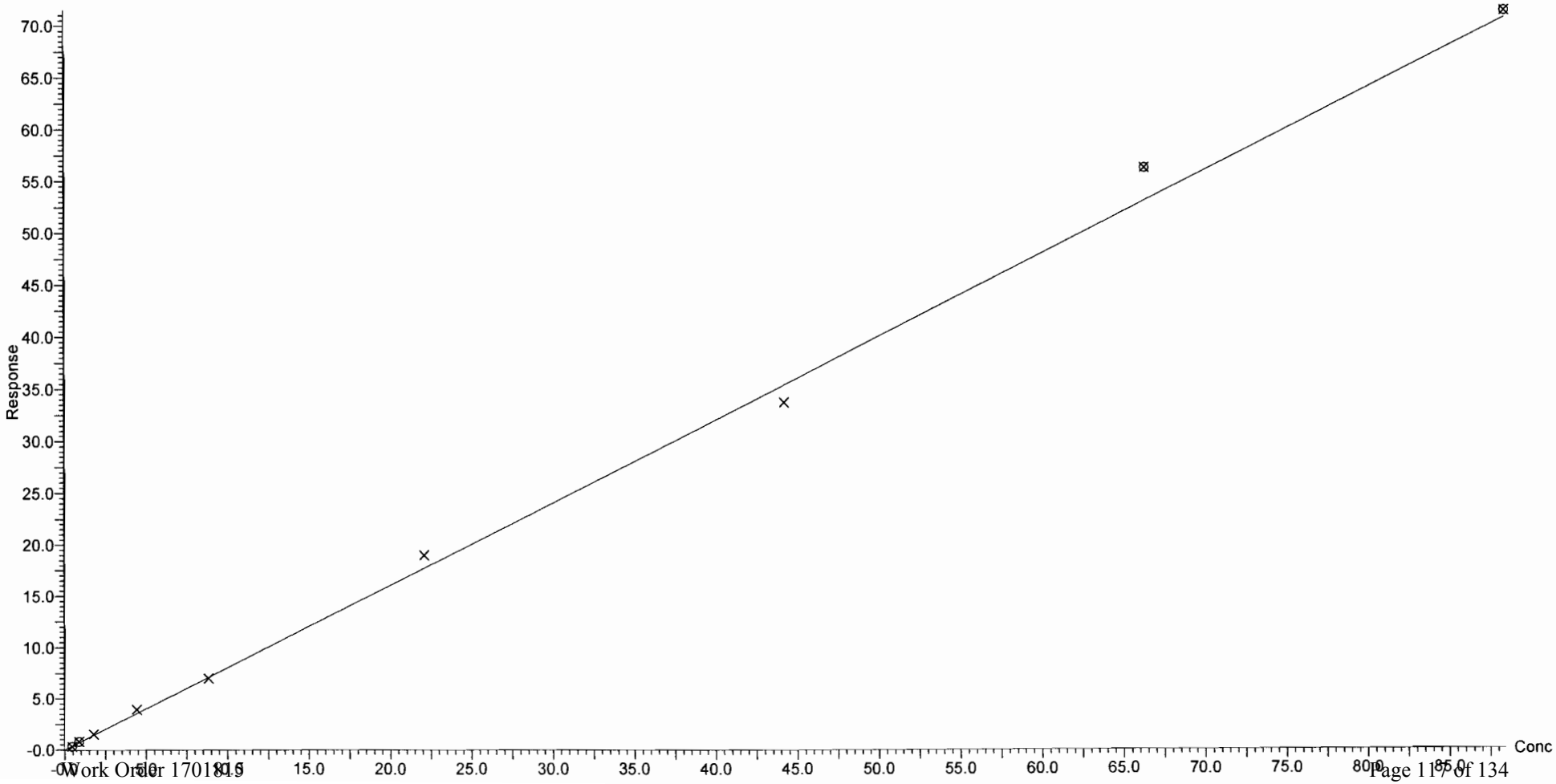
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:36:23 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

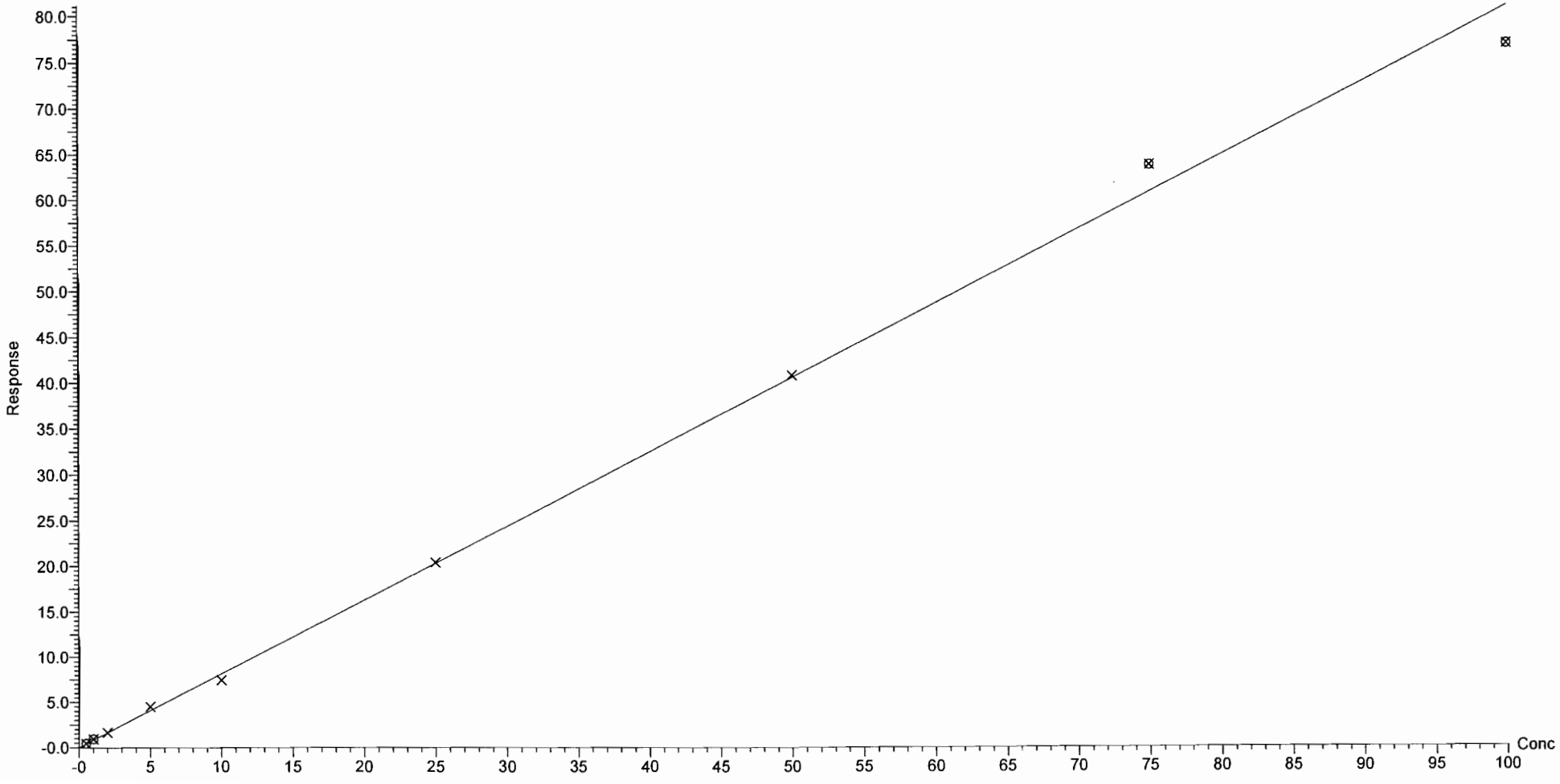
Compound name: PFBS
Coefficient of Determination: R^2 = 0.994837
Calibration curve: 0.800672 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:36:23 Pacific Standard Time

Compound name: PFOA
Coefficient of Determination: R^2 = 0.997893
Calibration curve: 0.811837 * x
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

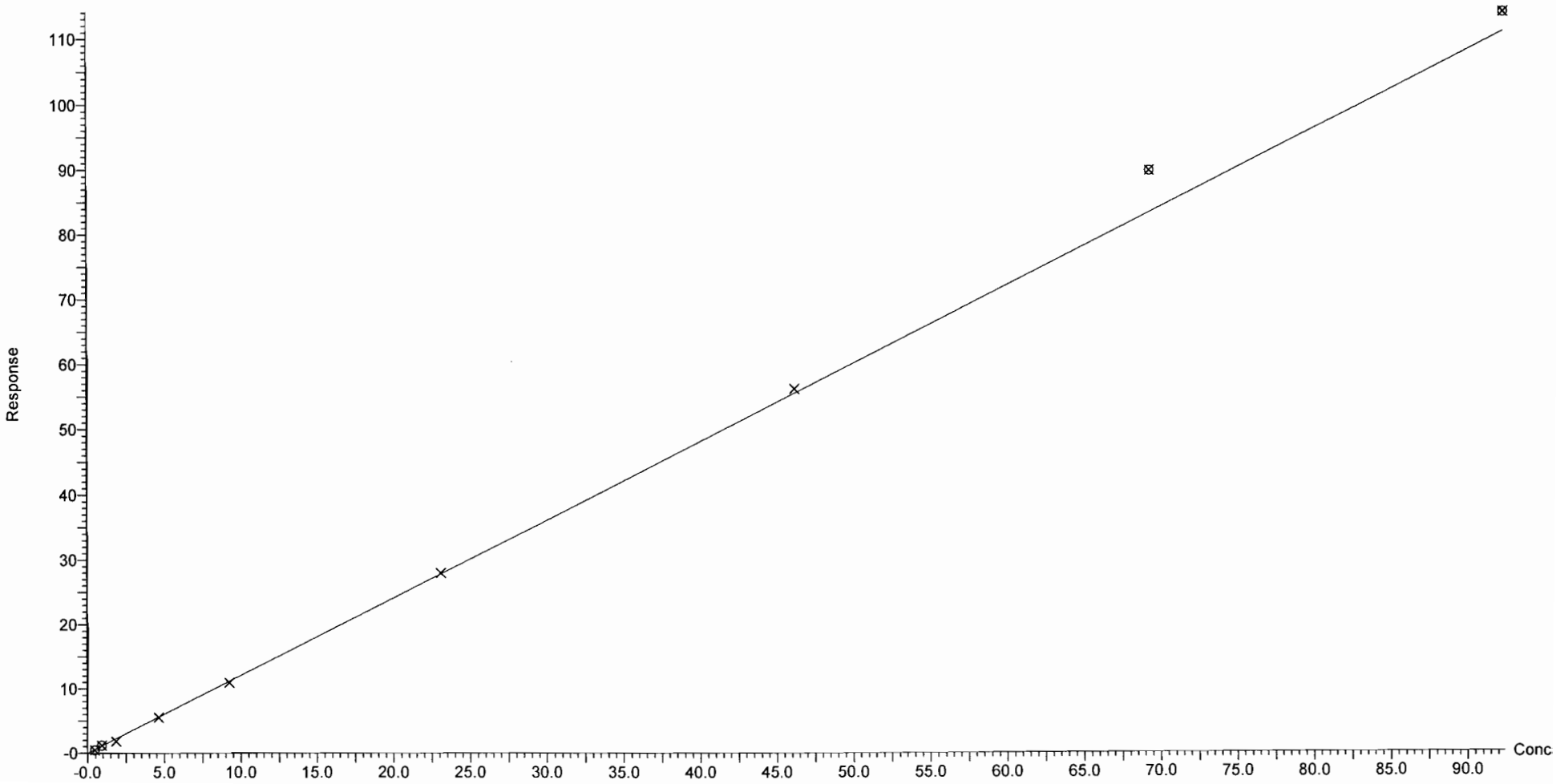


Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:36:23 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.998516
Calibration curve: 1.20278 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

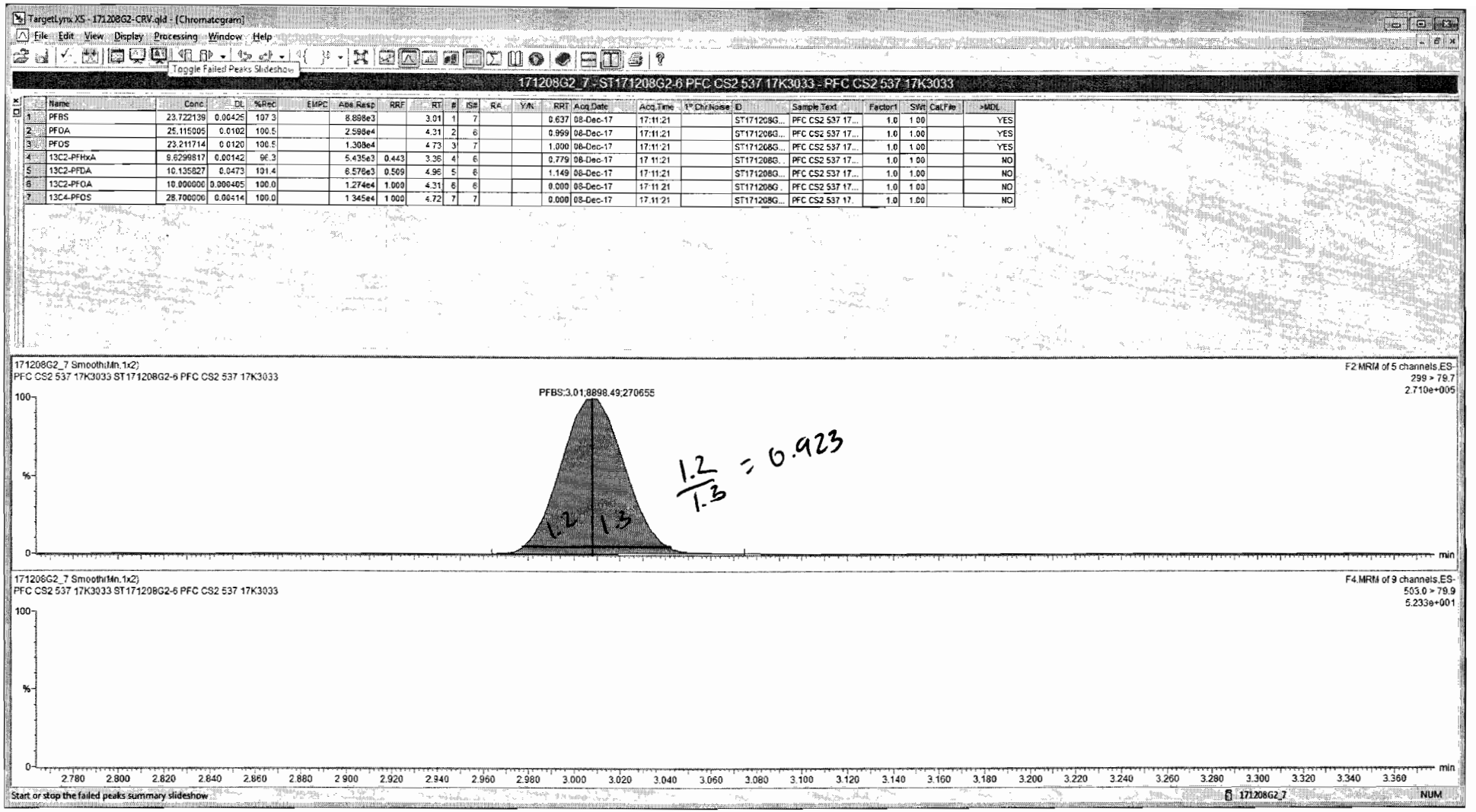


Compound 6: 13C2-PFOA

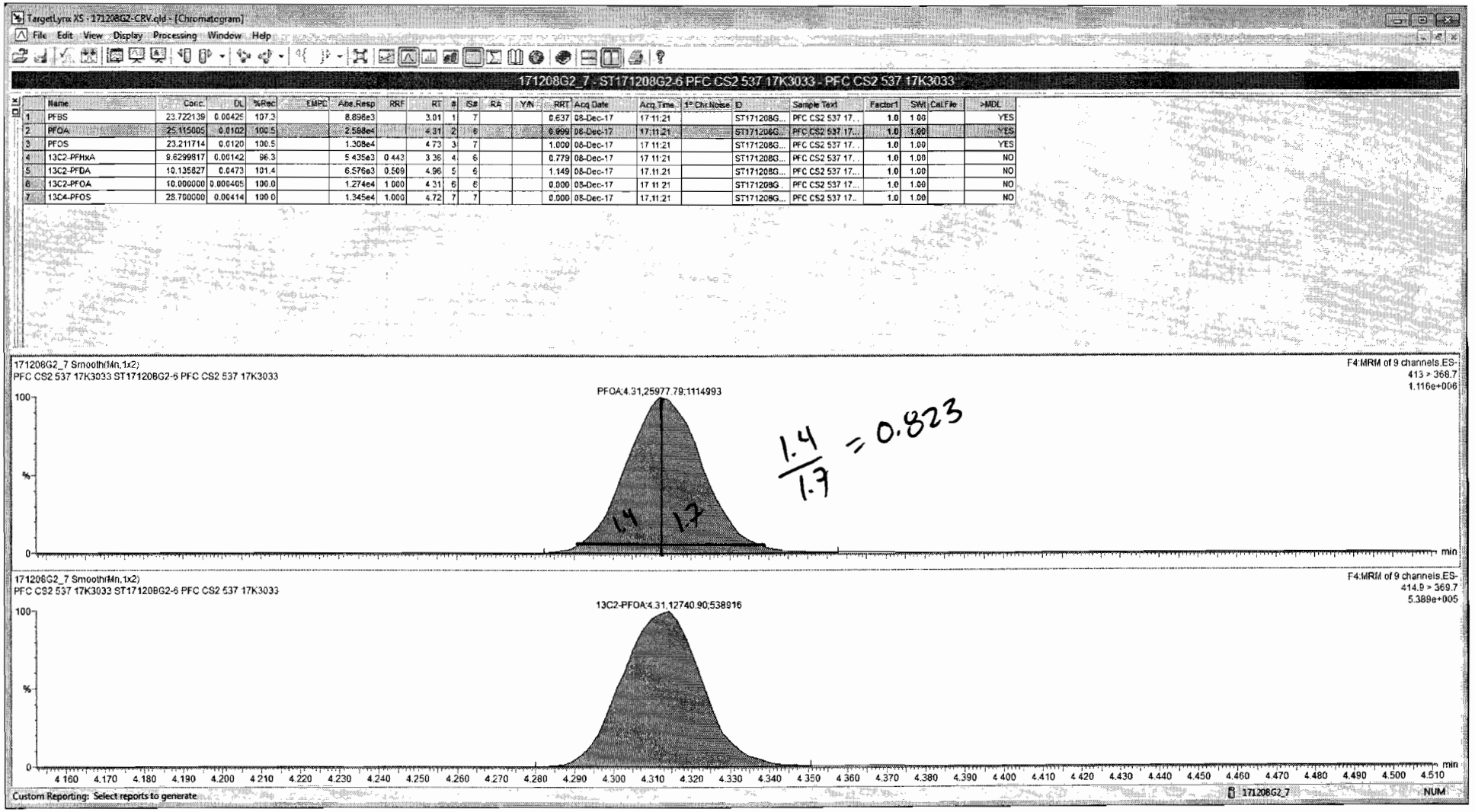
	ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171208G2-1 PFC CS-3 537 17K3022	171208G2_	Standard	10	4.33	11571.9	11571.9	bbX
2	ST171208G2-2 PFC CS-2 537 17K3023	171208G2_	Standard	10	4.31	14038.17	14038.17	bbX
3	ST171208G2-3 PFC CS-1 537 17K3024	171208G2_	Standard	10	4.31	12600.57	12600.57	bb
4	ST171208G2-4 PFC CS0 537 17K3025	171208G2_	Standard	10	4.31	13262.25	13262.25	bb
5	ST171208G2-5 PFC CS1 537 17K3026	171208G2_	Standard	10	4.31	12044.61	12044.61	bd
6	ST171208G2-6 PFC CS2 537 17K3033	171208G2_	Standard	10	4.31	12740.9	12740.9	bd
7	ST171208G2-7 PFC CS3 537 17K3027	171208G2_	Standard	10	4.31	11213.45	11213.45	bb
8	ST171208G2-8 PFC CS4 537 17K3028	171208G2_	Standard	10	4.31	9546.963	9546.963	bbX
9	ST171208G2-9 PFC CS5 537 17K3029	171208G2_	Standard	10	4.31	11090.06	11090.06	bdX
						average		RPD
						12372.36		16.74148984

Compound 7: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171208G2-1 PFC CS-3 537 17K3022	171208G2_	Standard	28.7	4.74	11857.97	11857.97	bdX
2	ST171208G2-2 PFC CS-2 537 17K3023	171208G2_	Standard	28.7	4.73	15349.47	15349.47	bbX
3	ST171208G2-3 PFC CS-1 537 17K3024	171208G2_	Standard	28.7	4.72	14402.65	14402.65	bd
4	ST171208G2-4 PFC CS0 537 17K3025	171208G2_	Standard	28.7	4.73	14516.46	14516.46	bd
5	ST171208G2-5 PFC CS1 537 17K3026	171208G2_	Standard	28.7	4.72	11953.82	11953.82	MM
6	ST171208G2-6 PFC CS2 537 17K3033	171208G2_	Standard	28.7	4.72	13445.89	13445.89	bb
7	ST171208G2-7 PFC CS3 537 17K3027	171208G2_	Standard	28.7	4.72	12293.96	12293.96	bd
8	ST171208G2-8 PFC CS4 537 17K3028	171208G2_	Standard	28.7	4.72	10786.03	10786.03	bbX
9	ST171208G2-9 PFC CS5 537 17K3029	171208G2_	Standard	28.7	4.72	12003.27	12003.27	bbX
						average		RPD
						13322.56		19.36238753



	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chl.Noise	ID	Sample Text	Factor	Wt	CalFile	>MDL
1	PFBS	23.722139	0.00425	107.3		8.898e3		3.01	1	7			0.637	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		YES
2	PFOA	25.115005	0.0102	100.5		2.598e4		4.31	2	6			0.999	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		YES
3	PFOS	23.211714	0.0120	100.5		1.308e4		4.73	3	7			1.000	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		YES
4	13C2-PFHxA	9.6299817	0.00142	96.3		5.435e3	0.443	3.36	4	6			0.779	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO
5	13C2-PFDA	10.135827	0.0473	101.4		6.578e3	0.509	4.96	5	6			1.149	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO
6	13C2-PFOA	10.000000	0.000405	100.0		1.274e4	1.000	4.31	6	6			0.000	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO
7	13C4-PFOS	28.700000	0.00414	100.0		1.345e4	1.000	4.72	7	7			0.000	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO



	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chl.Noise	ID	Sample Text	Factor1	Wt	Cal.File	>MDL
1	PFBS	23.722139	0.00425	107.3		8.898e3		3.01	1	7			0.637	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		YES
2	PFOA	25.115005	0.0102	100.5		2.588e4		4.31	2	6			0.999	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		YES
3	PFOS	23.211714	0.0120	100.5		1.308e4		4.73	3	7			1.000	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		YES
4	13C2-PFHxA	9.6299817	0.00142	96.3		5.435e3	0.443	3.36	4	6			0.779	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO
5	13C2-PFDA	10.135827	0.0473	101.4		6.576e3	0.509	4.96	5	6			1.149	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO
6	13C2-PFOA	10.000000	0.000405	100.0		1.274e4	1.000	4.31	6	6			0.000	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO
7	13C4-PFOS	28.700000	0.00414	100.0		1.345e4	1.000	4.72	7	7			0.000	08-Dec-17	17:11:21		ST171208G...	PFC CS2 537 17...	1.0	1.00		NO

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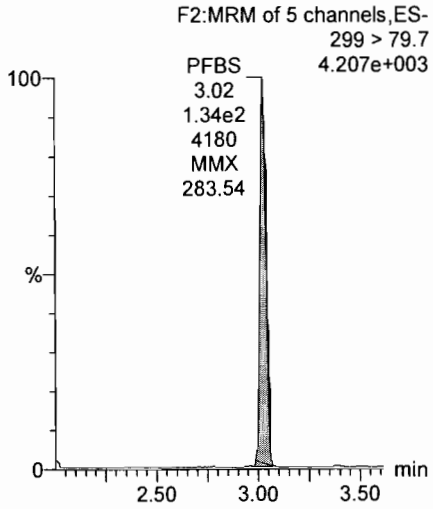
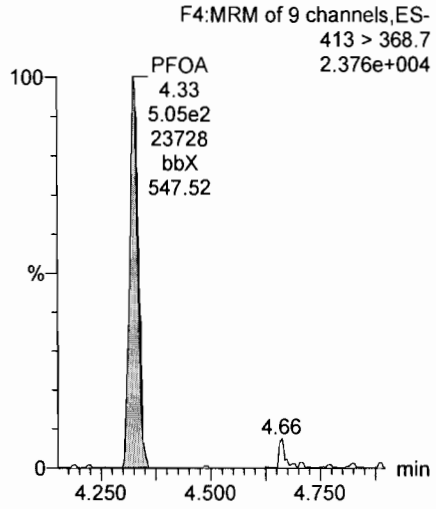
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: 10 Dec 2017 22:49:55

Name: 171208G2_2, Date: 08-Dec-2017, Time: 16:09:15, ID: ST171208G2-1 PFC CS-3 537 17K3022, Description: PFC CS-3 537 17K3022

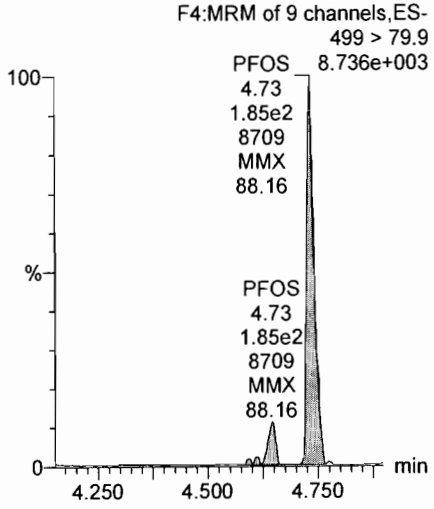
PFBS



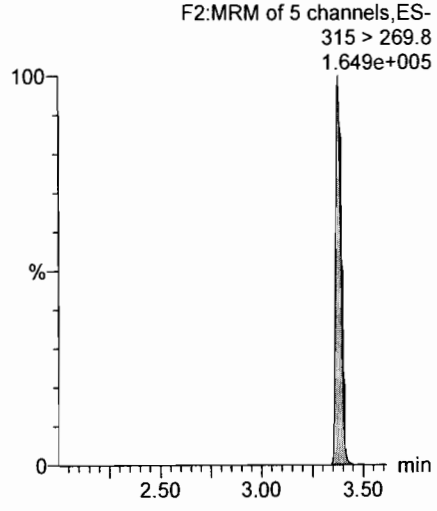
PFOA



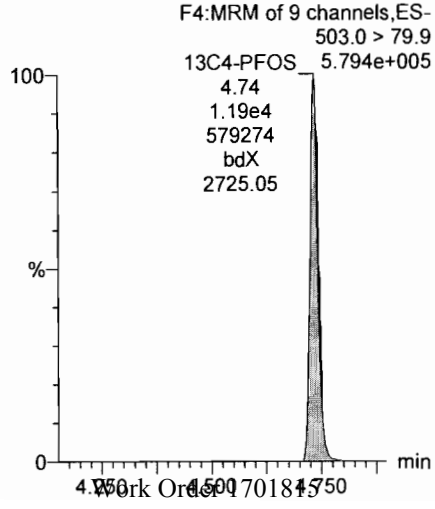
PFOS



13C2-PFHxA



13C4-PFOS



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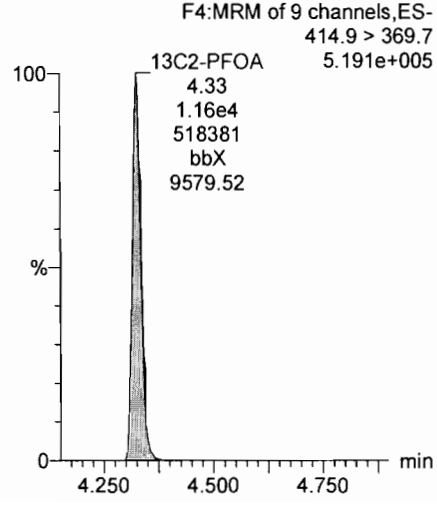

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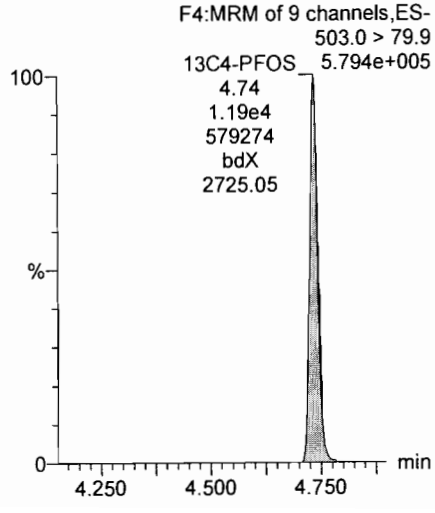
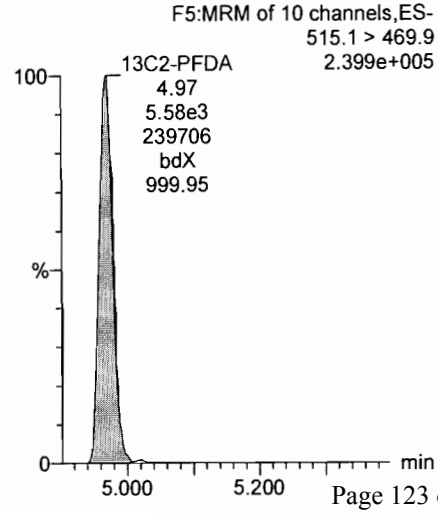


13C2-PFDA



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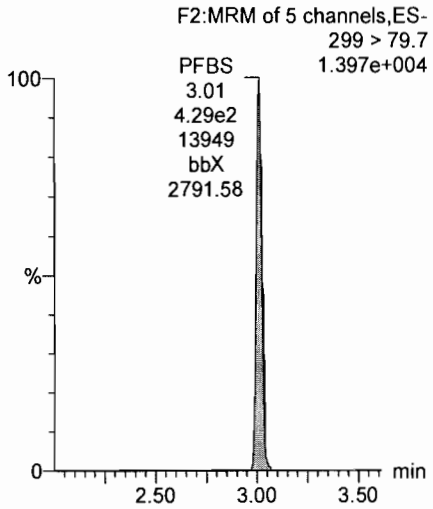
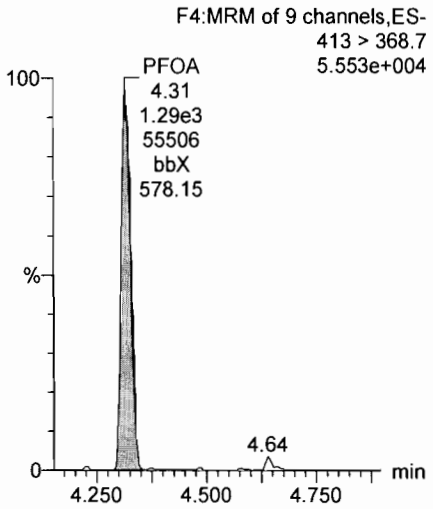
Name: 171208G2_3, Date: 08-Dec-2017, Time: 16:21:40, ID: ST171208G2-2 PFC CS-2 537 17K3023, Description: PFC CS-2 537 17K3023

PFBS



PFOA



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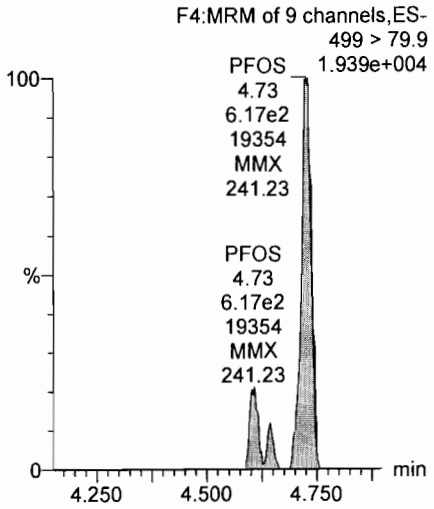

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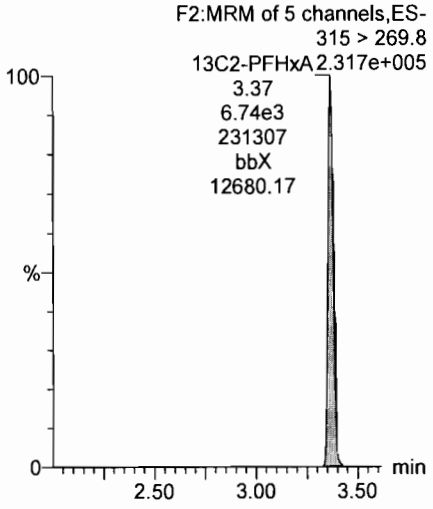

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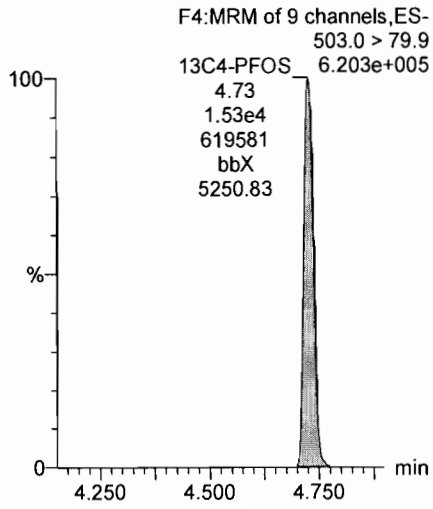

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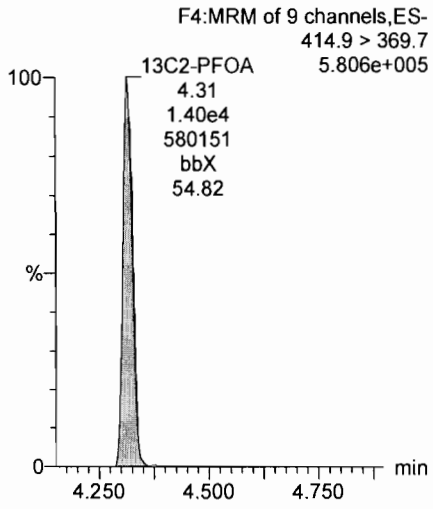

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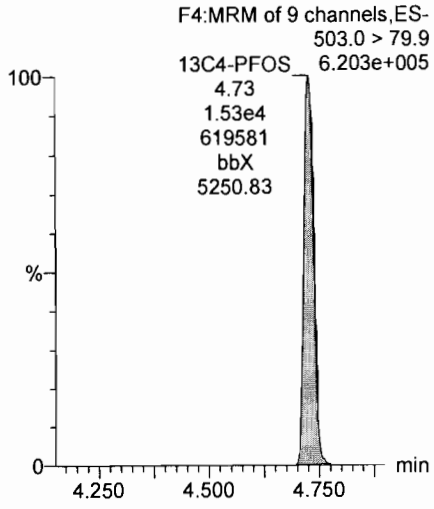

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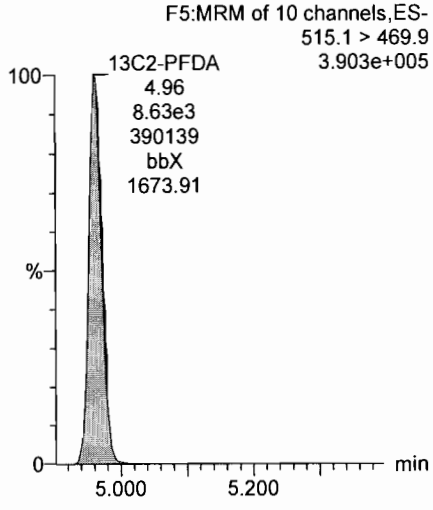

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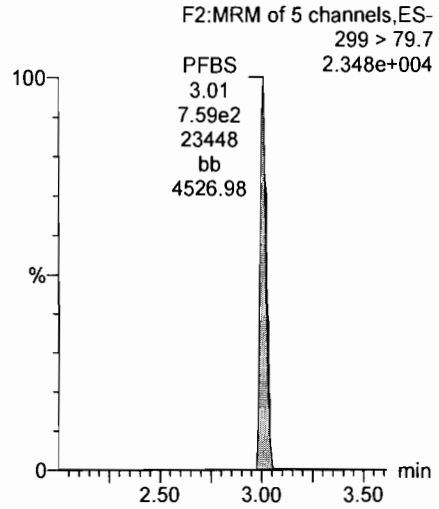
Name: 171208G2_4, Date: 08-Dec-2017, Time: 16:34:04, ID: ST171208G2-3 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

PFBS



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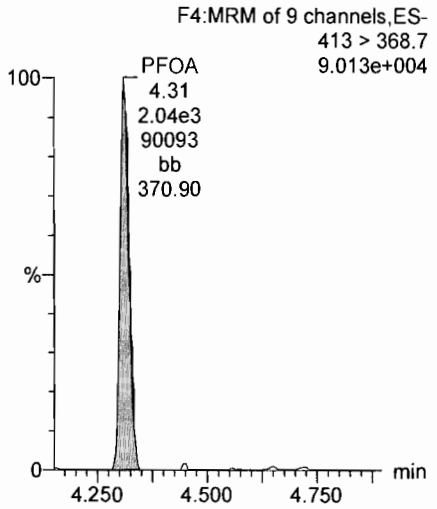
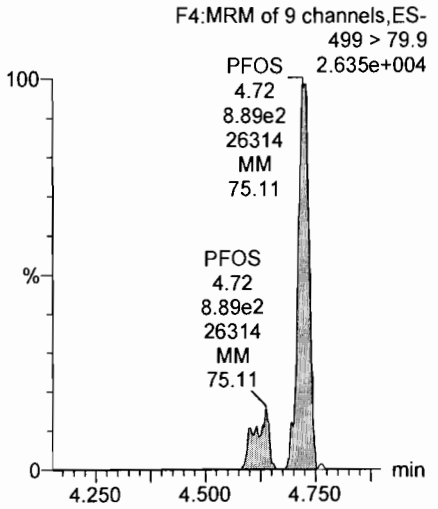


PFOS



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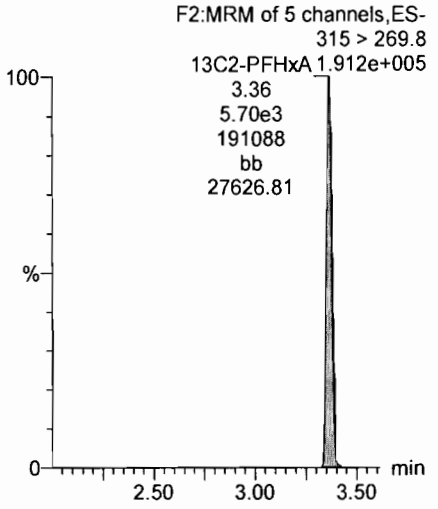

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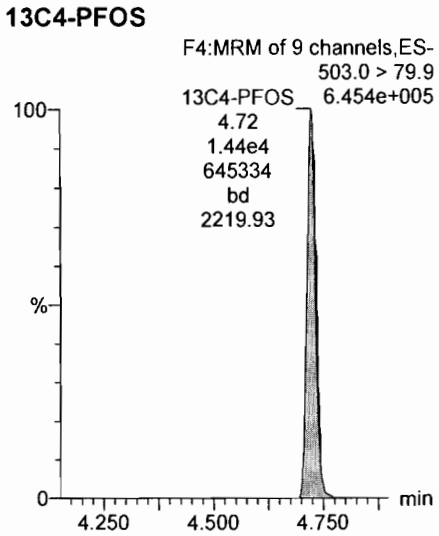

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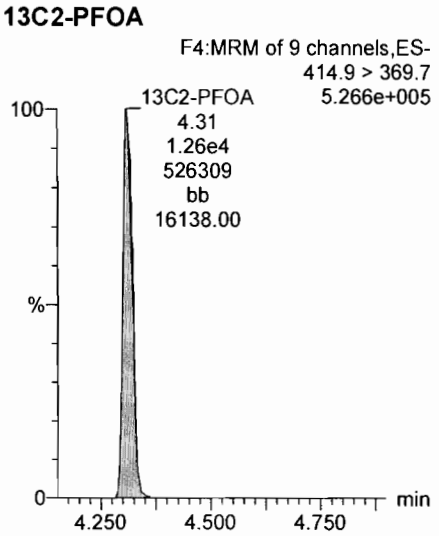

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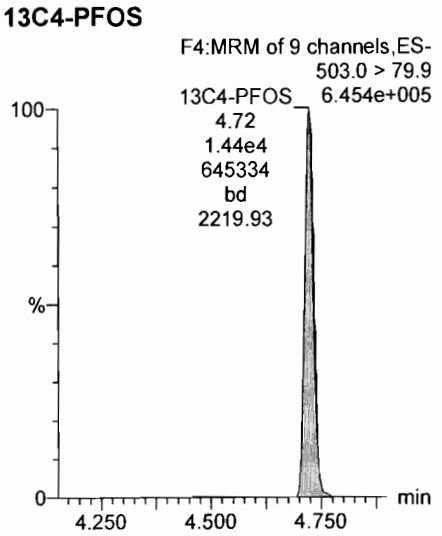

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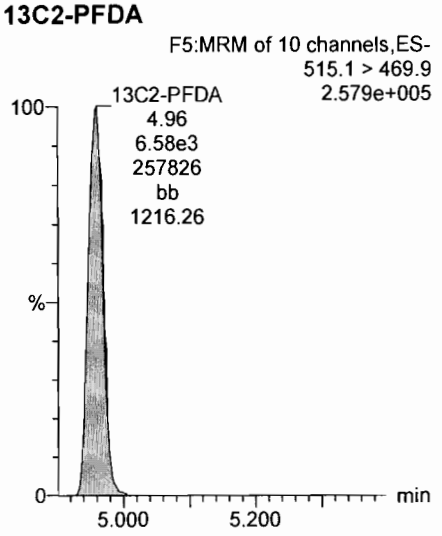

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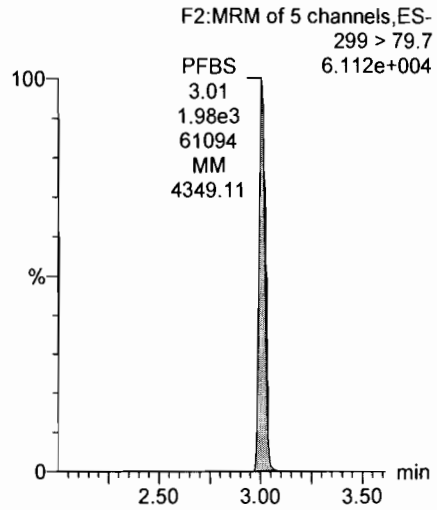
Name: 171208G2_5, Date: 08-Dec-2017, Time: 16:46:29, ID: ST171208G2-4 PFC CS0 537 17K3025, Description: PFC CS0 537 17K3025

PFBS



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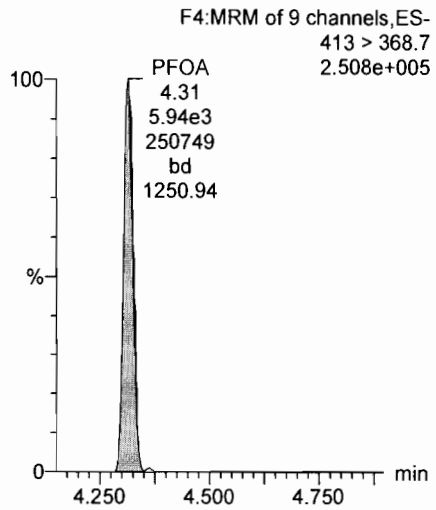

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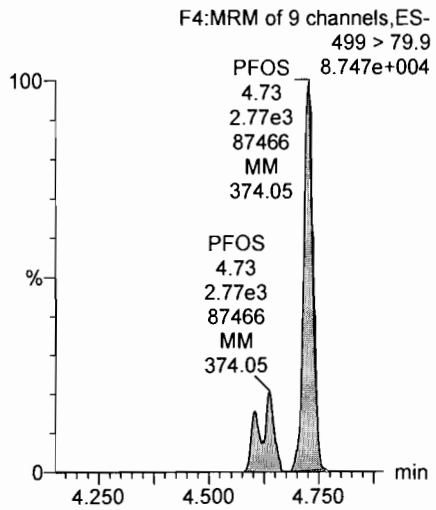

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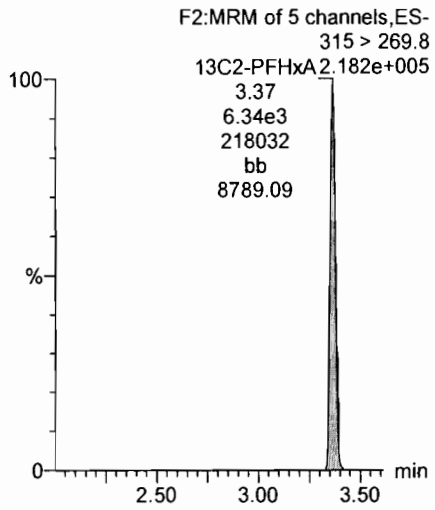

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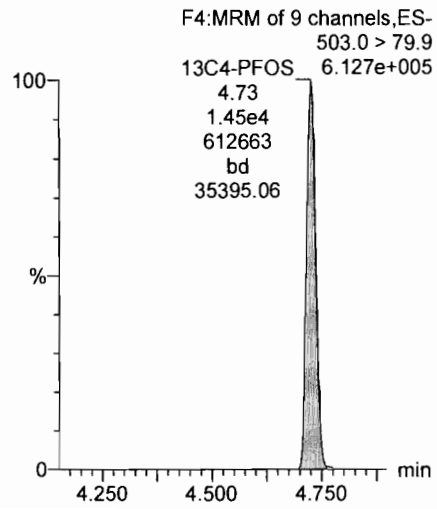

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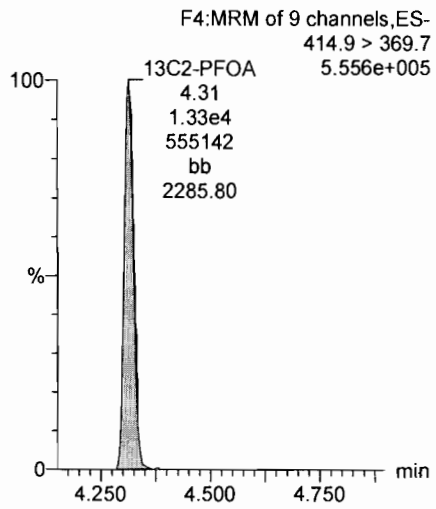

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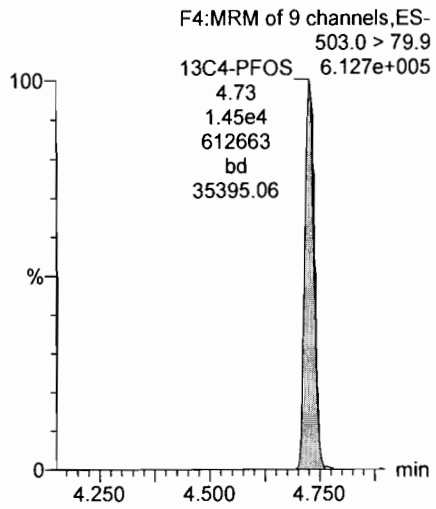

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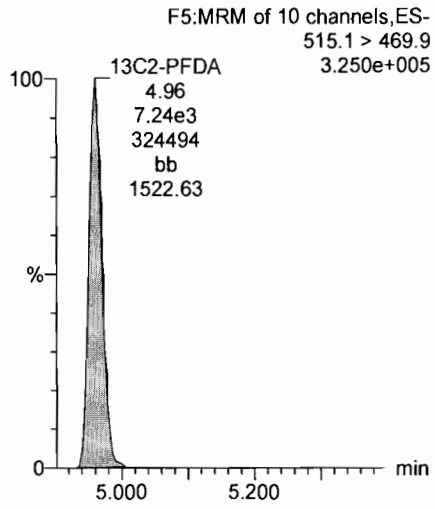

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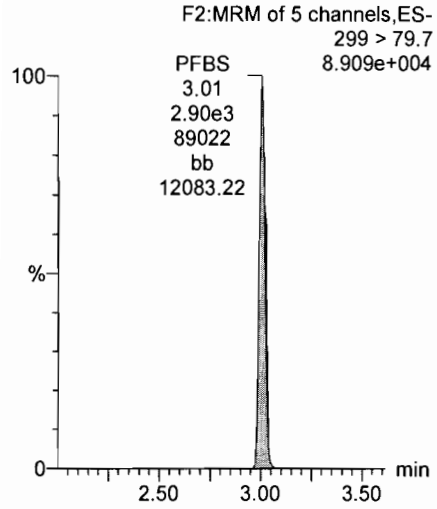
Name: 171208G2_6, Date: 08-Dec-2017, Time: 16:58:55, ID: ST171208G2-5 PFC CS1 537 17K3026, Description: PFC CS1 537 17K3026

PFBS



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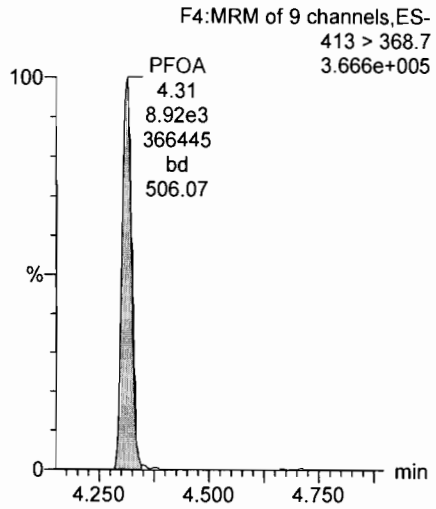

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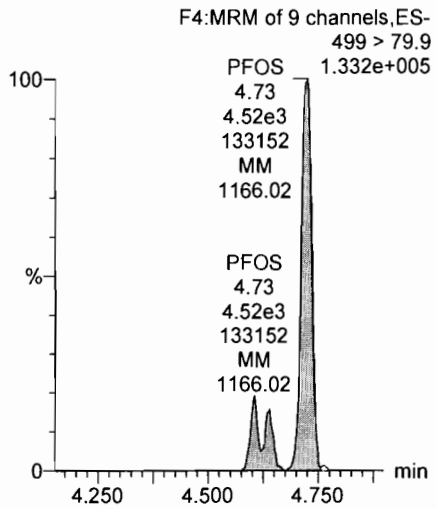

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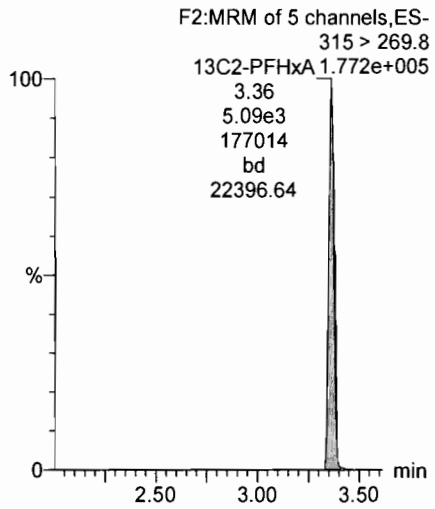

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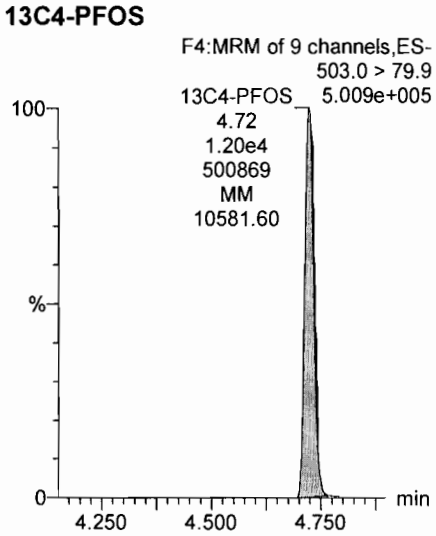

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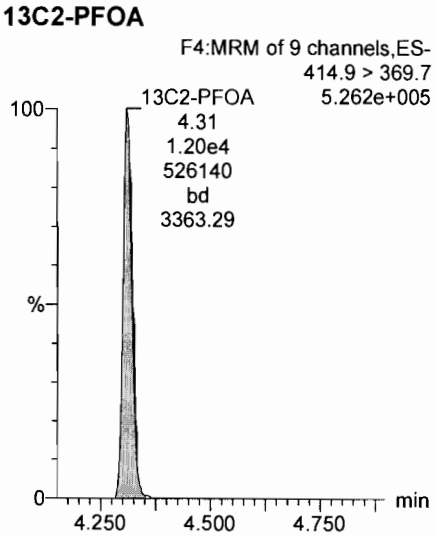

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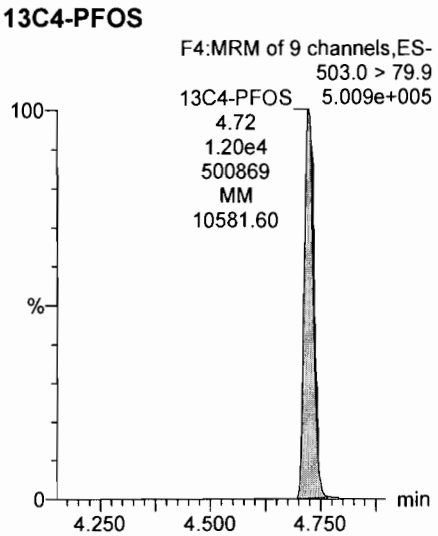
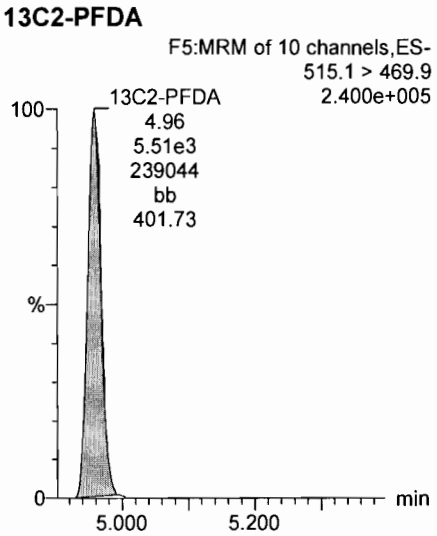


13C2-PFDA



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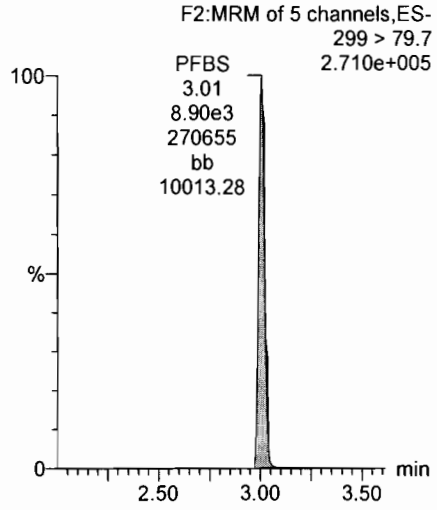
Name: 171208G2_7, Date: 08-Dec-2017, Time: 17:11:21, ID: ST171208G2-6 PFC CS2 537 17K3033, Description: PFC CS2 537 17K3033

PFBS



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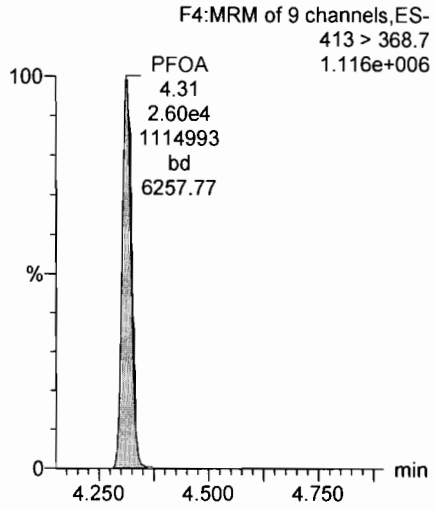
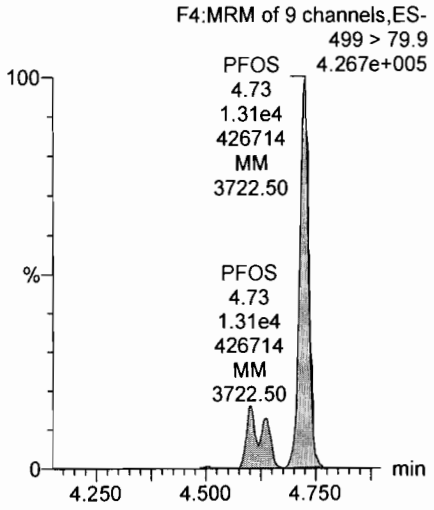
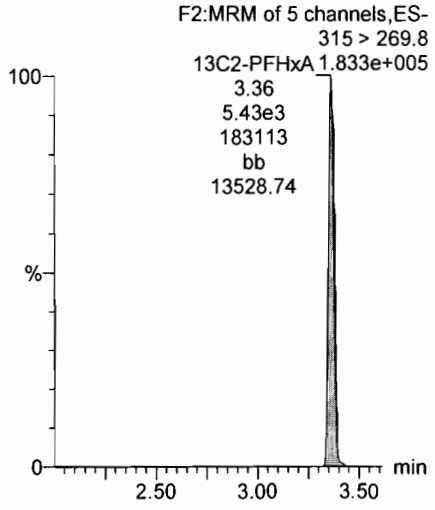


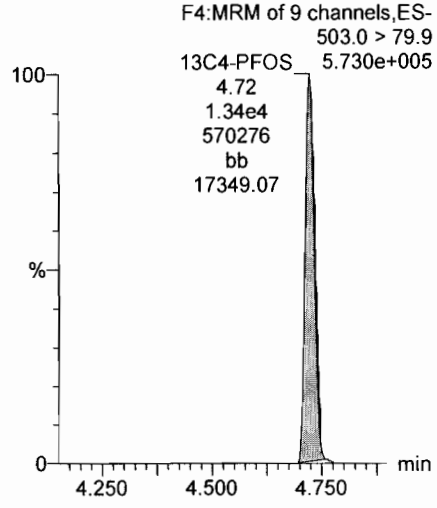
PFOS



13C2-PFHxA



13C4-PFOS



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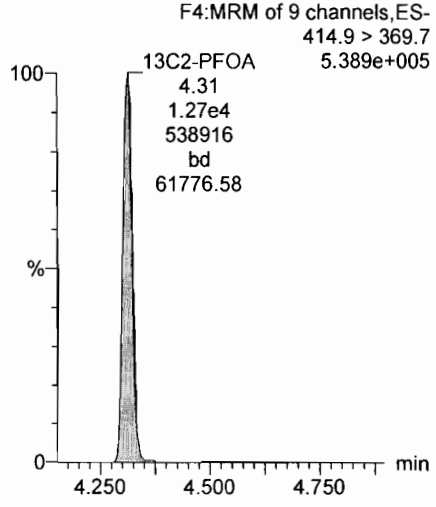

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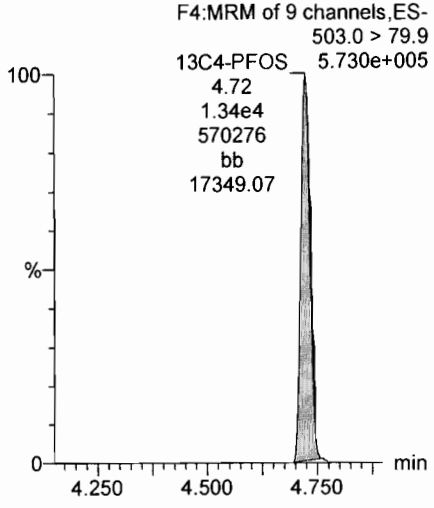
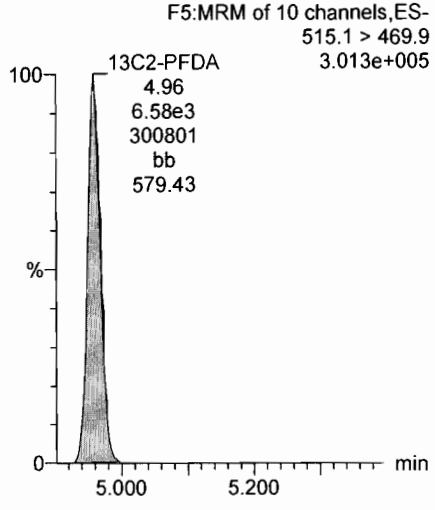


13C2-PFDA

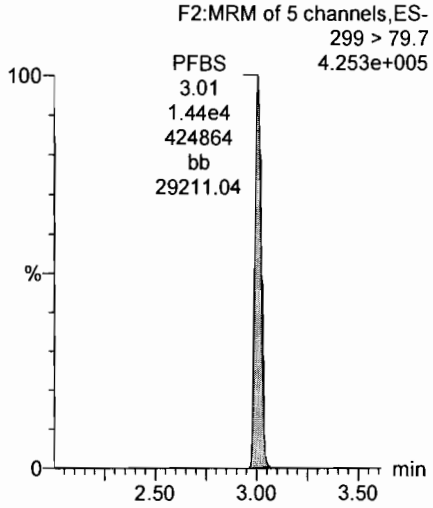


Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

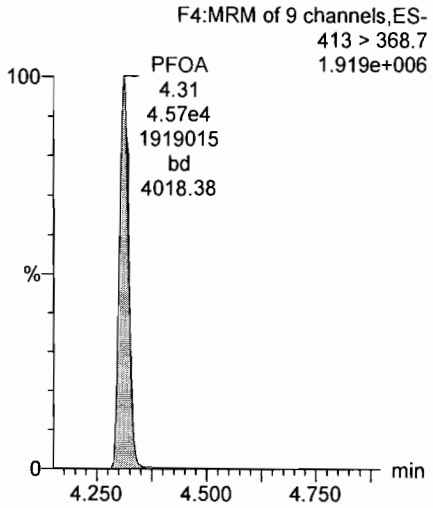
Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:34:58 Pacific Standard Time

Name: 171208G2_8, Date: 08-Dec-2017, Time: 17:23:47, ID: ST171208G2-7 PFC CS3 537 17K3027, Description: PFC CS3 537 17K3027

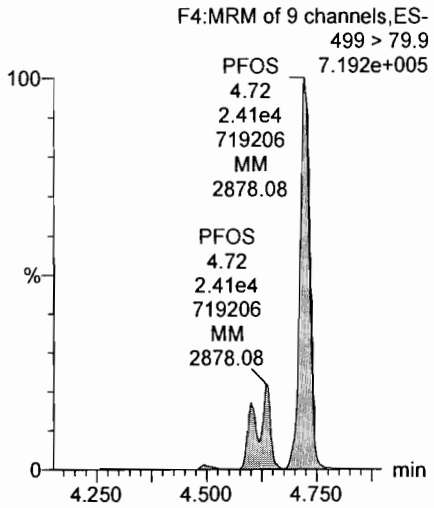
PFBS



PFOA



PFOS



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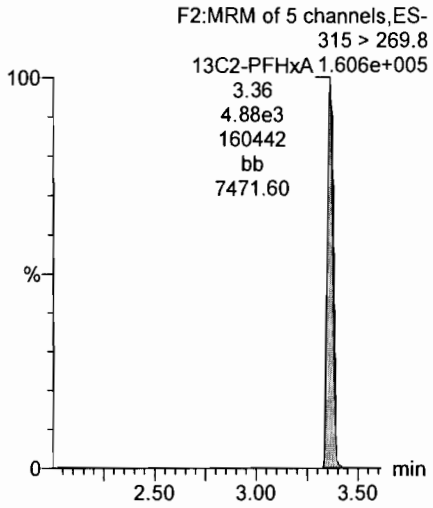

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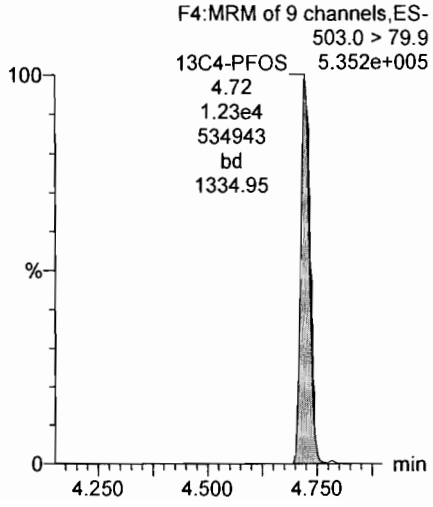

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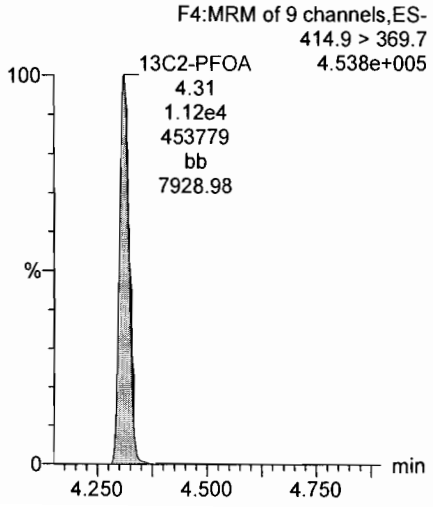

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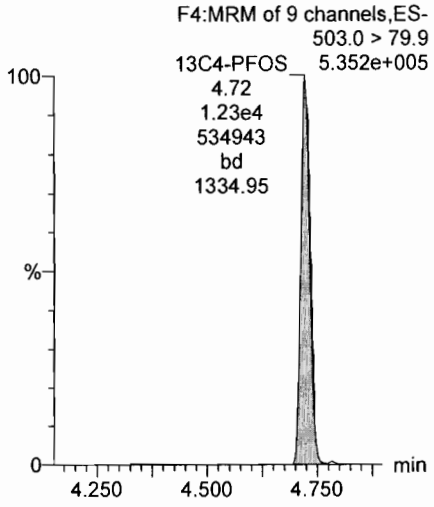
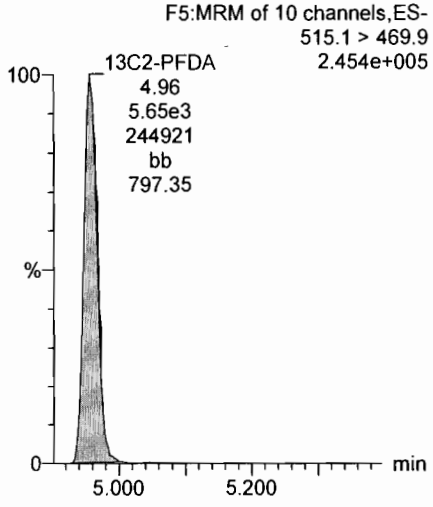


13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-CRV.qld

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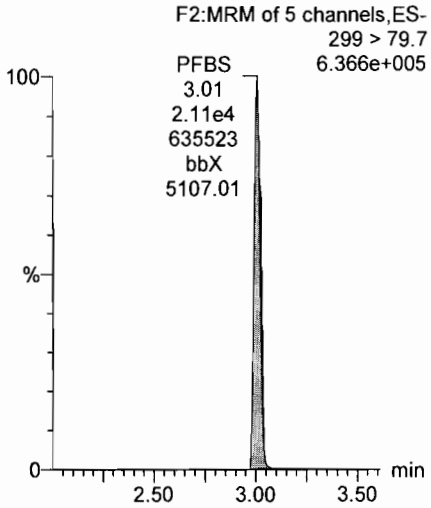
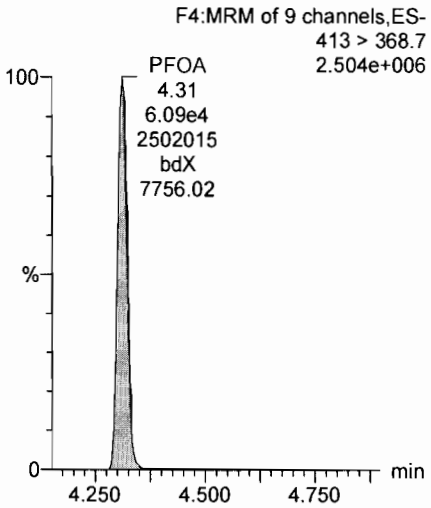
Printed: Monday, December 11, 2017 10:34:58 Pacific Standard Time

Name: 171208G2_9, Date: 08-Dec-2017, Time: 17:36:15, ID: ST171208G2-8 PFC CS4 537 17K3028, Description: PFC CS4 537 17K3028

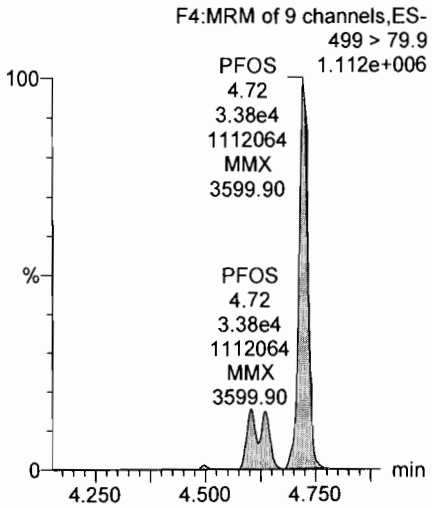
PFBS



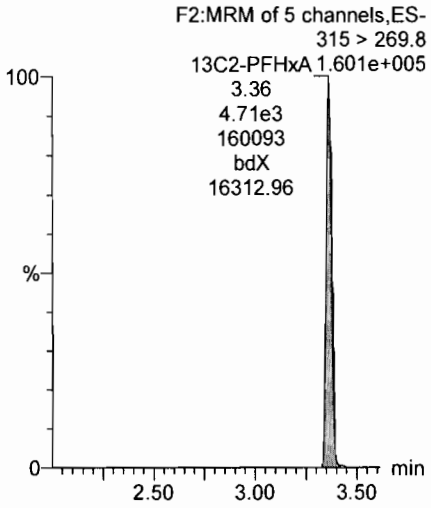
PFOA



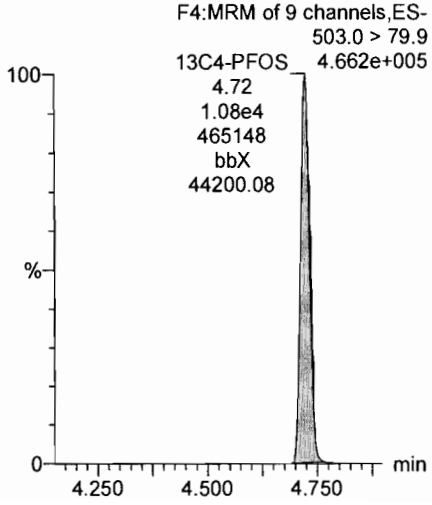
PFOS



13C2-PFHxA



13C4-PFOS



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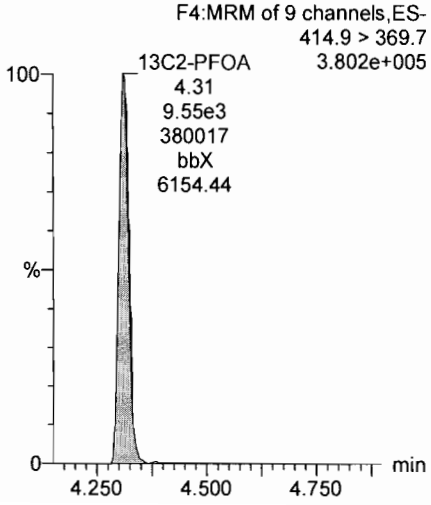

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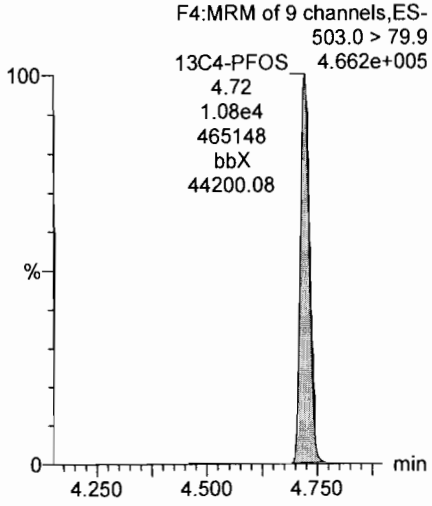

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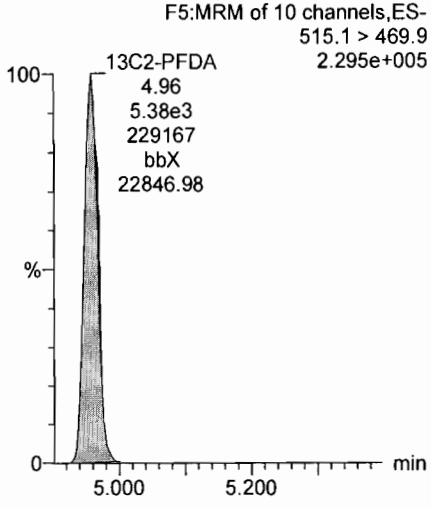

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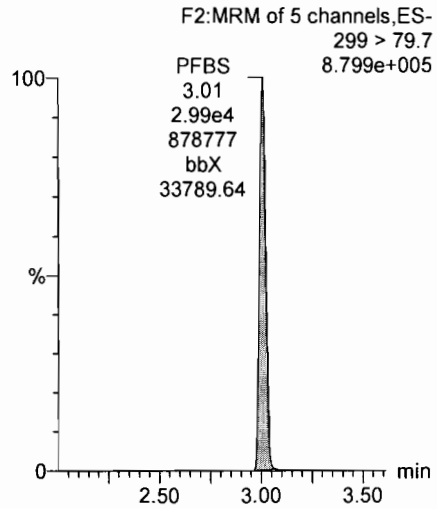
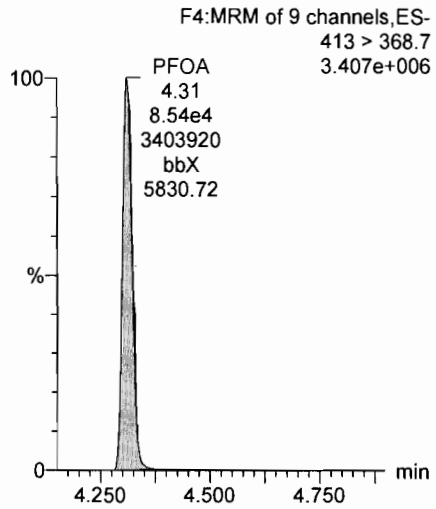
Last Altered: Sunday, December 10, 2017 22:49:55 Pacific Standard Time
Printed: Monday, December 11, 2017 10:34:58 Pacific Standard Time

Name: 171208G2_10, Date: 08-Dec-2017, Time: 17:48:42, ID: ST171208G2-9 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

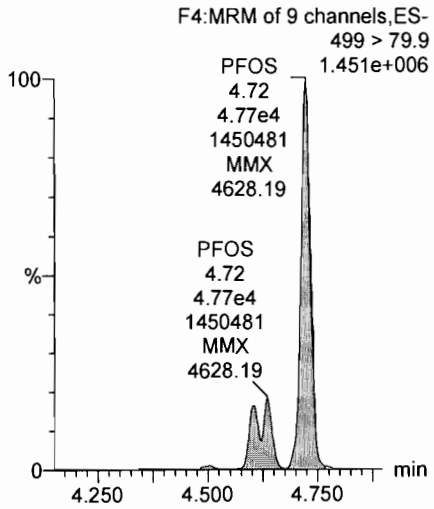
PFBS



PFOA



PFOS



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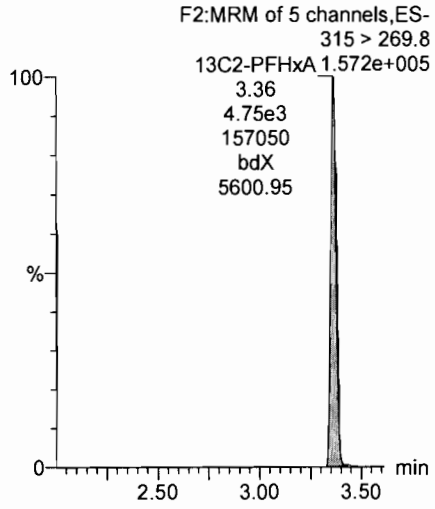

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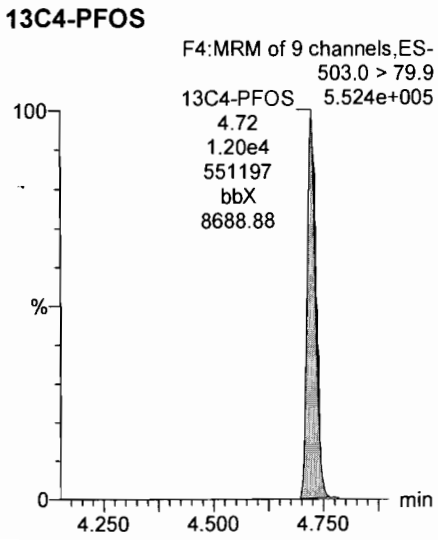

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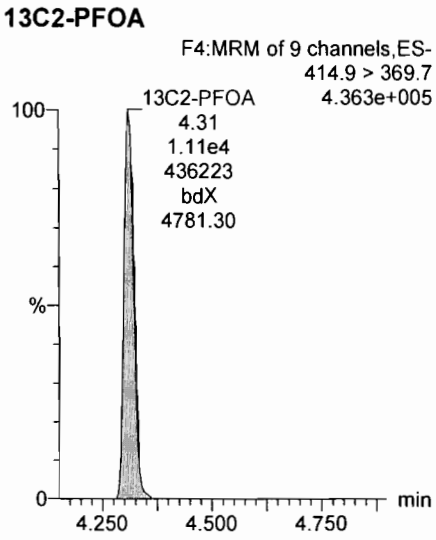

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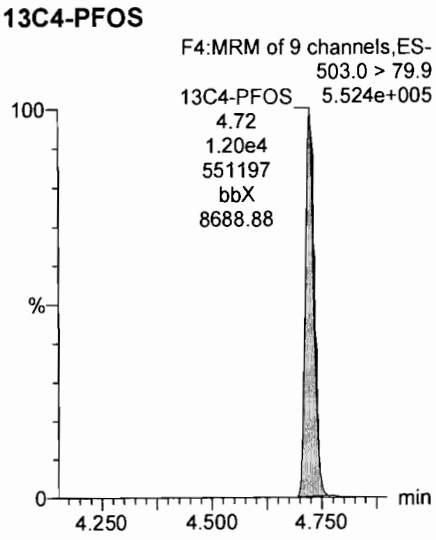

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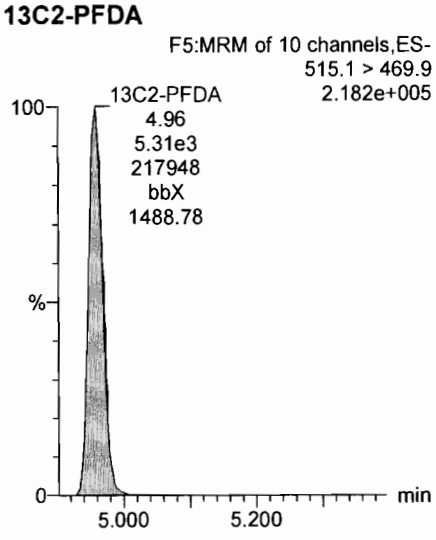


Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-12.qld

Last Altered: Monday, December 11, 2017 10:41:12 Pacific Standard Time
Printed: Monday, December 11, 2017 10:41:34 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_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171208G2_12, Date: 08-Dec-2017, Time: 18:13:34, ID: ICV171208G2-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.46e3	1.15e4		1.0000	3.03	3.01	8.65	10.8	108.1
2	2	PFOA	413 > 368.7	8.56e3	1.03e4		1.0000	4.31	4.31	8.35	10.3	102.8
3	3	PFOS	499 >79.9	5.12e3	1.15e4		1.0000	4.73	4.72	12.8	10.7	106.5
4	4	13C2-PFHxA	315 > 269.8	4.62e3	1.03e4	0.443	1.0000	3.37	3.36	4.50	10.2	101.6
5	5	13C2-PFDA	515.1 > 469.9	5.52e3	1.03e4	0.509	1.0000	4.94	4.96	5.38	10.6	105.6
6	6	13C2-PFOA	414.9 > 369.7	1.03e4	1.03e4	1.000	1.0000	4.41	4.31	10.0	10.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.15e4	1.15e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

70-130

12/11/17

12/11/2017

Vista Analytical Laboratory

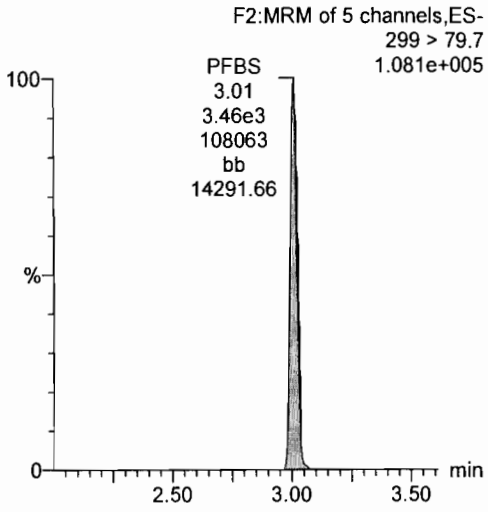
Dataset: U:\G1.PRO\Results\2017\171208G2\171208G2-12.qld

Last Altered: Monday, December 11, 2017 10:41:12 Pacific Standard Time
Printed: Monday, December 11, 2017 10:41:34 Pacific Standard Time

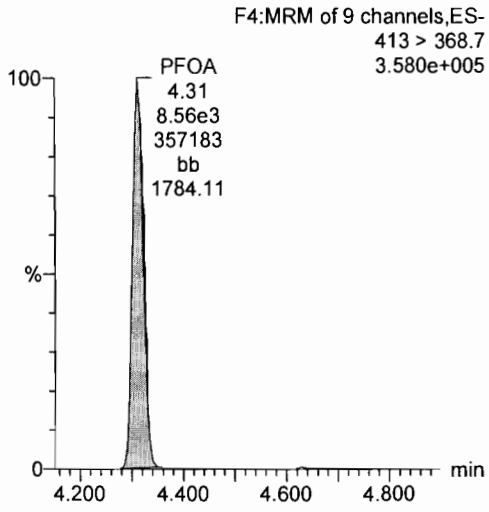
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-08-17_L3.cdb 10 Dec 2017 22:49:55

Name: 171208G2_12, Date: 08-Dec-2017, Time: 18:13:34, ID: ICV171208G2-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

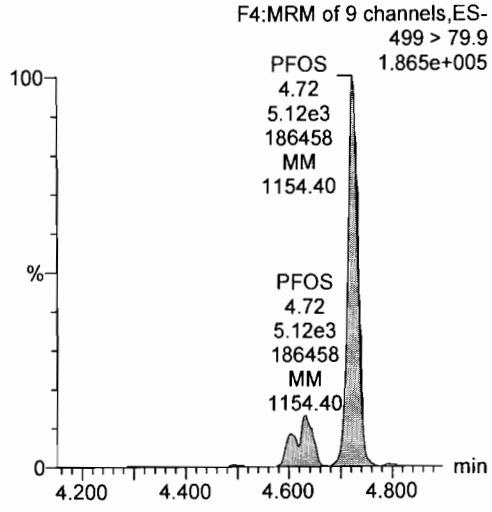
PFBS



PFOA



PFOS



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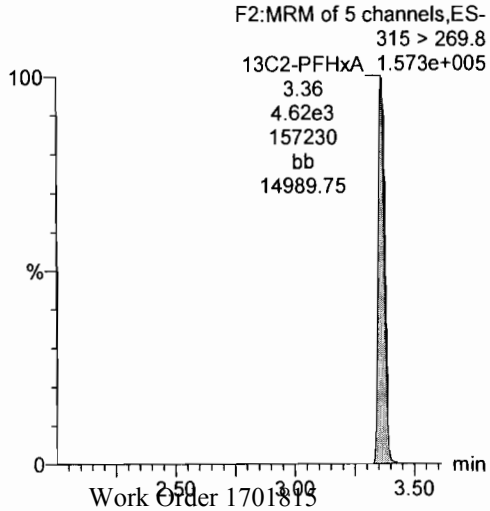

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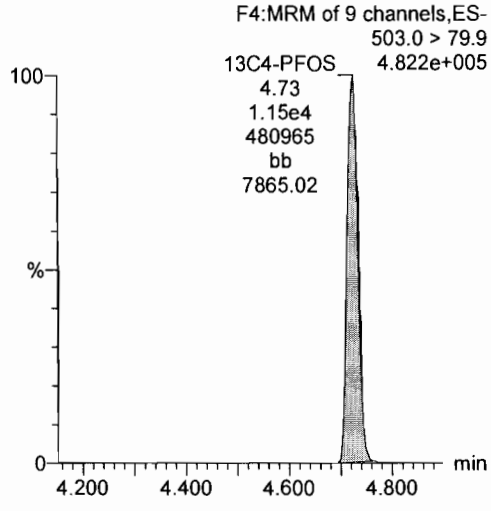

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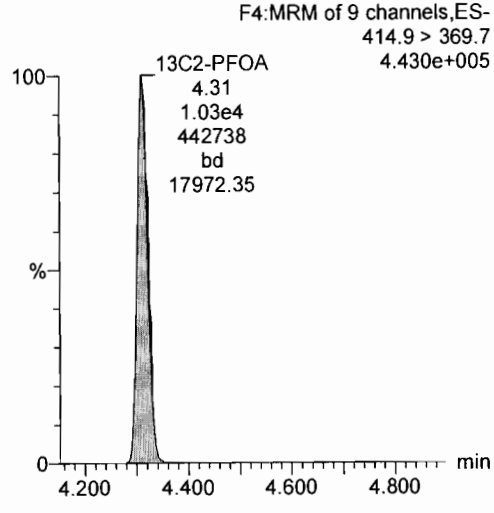

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Last Altered: Monday, December 11, 2017 10:41:12 Pacific Standard Time
Printed: Monday, December 11, 2017 10:41:34 Pacific Standard Time

Name: 171208G2_12, Date: 08-Dec-2017, Time: 18:13:34, ID: ICV171208G2-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

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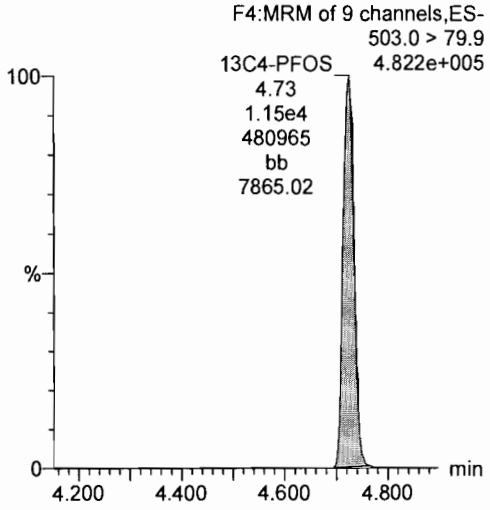
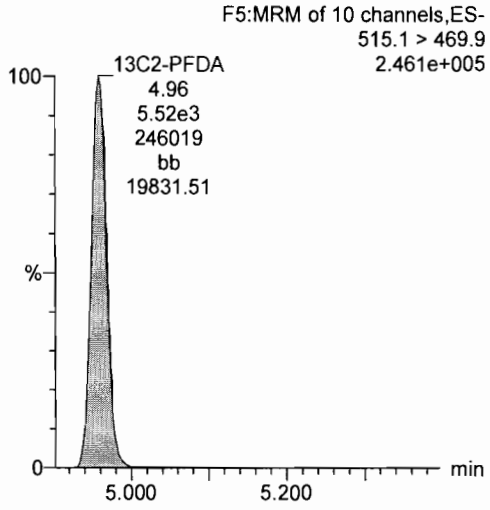


13C2-PFDA



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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:09	12/01/2017			20171206	10:50:00	20171211	16:37:00	1701815-01	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:09	12/01/2017			20171206	10:50:00	20171211	16:37:00	1701815-01	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:09	12/01/2017			20171206	10:50:00	20171211	16:37:00	1701815-01	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:09	12/01/2017			20171206	10:50:00	20171211	16:37:00	1701815-01	1	-999			13C2-PFHxA	13C2-PFHxA		110
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:10	12/01/2017			20171206	10:50:00	20171211	16:49:00	1701815-02	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.68
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:10	12/01/2017			20171206	10:50:00	20171211	16:49:00	1701815-02	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.68
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:10	12/01/2017			20171206	10:50:00	20171211	16:49:00	1701815-02	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.68
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98A-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:10	12/01/2017			20171206	10:50:00	20171211	16:49:00	1701815-02	1	-999			13C2-PFHxA	13C2-PFHxA		117
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:16	12/01/2017			20171206	10:50:00	20171211	17:02:00	1701815-03	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.97
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:16	12/01/2017			20171206	10:50:00	20171211	17:02:00	1701815-03	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.97
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:16	12/01/2017			20171206	10:50:00	20171211	17:02:00	1701815-03	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.97
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:16	12/01/2017			20171206	10:50:00	20171211	17:02:00	1701815-03	1	-999			13C2-PFHxA	13C2-PFHxA		105
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:17	12/01/2017			20171206	10:50:00	20171211	17:14:00	1701815-04	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.22
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:17	12/01/2017			20171206	10:50:00	20171211	17:14:00	1701815-04	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.22
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:17	12/01/2017			20171206	10:50:00	20171211	17:14:00	1701815-04	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.22
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB98B-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:17	12/01/2017			20171206	10:50:00	20171211	17:14:00	1701815-04	1	-999			13C2-PFHxA	13C2-PFHxA		111
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:27	12/01/2017			20171206	10:50:00	20171211	17:27:00	1701815-05	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.26
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:27	12/01/2017			20171206	10:50:00	20171211	17:27:00	1701815-05	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.26
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:27	12/01/2017			20171206	10:50:00	20171211	17:27:00	1701815-05	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.26
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:27	12/01/2017			20171206	10:50:00	20171211	17:27:00	1701815-05	1	-999			13C2-PFHxA	13C2-PFHxA		105
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:28	12/01/2017			20171206	10:50:00	20171211	17:39:00	1701815-06	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.82
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:28	12/01/2017			20171206	10:50:00	20171211	17:39:00	1701815-06	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.82
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:28	12/01/2017			20171206	10:50:00	20171211	17:39:00	1701815-06	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.82
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB99-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:28	12/01/2017			20171206	10:50:00	20171211	17:39:00	1701815-06	1	-999			13C2-PFHxA	13C2-PFHxA		105
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:38	12/01/2017			20171206	10:50:00	20171211	17:51:00	1701815-07	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.37
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:38	12/01/2017			20171206	10:50:00	20171211	17:51:00	1701815-07	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.37
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:38	12/01/2017			20171206	10:50:00	20171211	17:51:00	1701815-07	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.37
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:38	12/01/2017			20171206	10:50:00	20171211	17:51:00	1701815-07	1	-999			13C2-PFHxA	13C2-PFHxA		110
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:39	12/01/2017			20171206	10:50:00	20171211	18:04:00	1701815-08	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.12
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:39	12/01/2017			20171206	10:50:00	20171211	18:04:00	1701815-08	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.12
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:39	12/01/2017			20171206	10:50:00	20171211	18:04:00	1701815-08	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.12
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB100-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:39	12/01/2017			20171206	10:50:00	20171211	18:04:00	1701815-08	1	-999			13C2-PFHxA	13C2-PFHxA		113
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:56	12/01/2017			20171206	10:50:00	20171211	18:16:00	1701815-09	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.23
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:56	12/01/2017			20171206	10:50:00	20171211	18:16:00	1701815-09	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.23
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:56	12/01/2017			20171206	10:50:00	20171211	18:16:00	1701815-09	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.23
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:56	12/01/2017			20171206	10:50:00	20171211	18:16:00	1701815-09	1	-999			13C2-PFHxA	13C2-PFHxA		111
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:57	12/01/2017			20171206	10:50:00	20171211	18:29:00	1701815-10	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.01
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:57	12/01/2017			20171206	10:50:00	20171211	18:29:00	1701815-10	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.01
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:57	12/01/2017			20171206	10:50:00	20171211	18:29:00	1701815-10	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.01
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB101-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 09:57	12/01/2017			20171206	10:50:00	20171211	18:29:00	1701815-10	1	-999			13C2-PFHxA	13C2-PFHxA		98.2
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:08	12/01/2017			20171206	10:50:00	20171211	18:41:00	1701815-11	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.60
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:08	12/01/2017			20171206	10:50:00	20171211	18:41:00	1701815-11	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.60
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:08	12/01/2017			20171206	10:50:00	20171211	18:41:00	1701815-11	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.60
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:08	12/01/2017			20171206	10:50:00	20171211	18:41:00	1701815-11	1	-999			13C2-PFHxA	13C2-PFHxA		101
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:09	12/01/2017			20171206	10:50:00	20171211	18:54:00	1701815-12	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.05
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:09	12/01/2017			20171206	10:50:00	20171211	18:54:00	1701815-12	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.05
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:09	12/01/2017			20171206	10:50:00	20171211	18:54:00	1701815-12	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.05
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB102-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:09	12/01/2017			20171206	10:50:00	20171211	18:54:00	1701815-12	1	-999			13C2-PFHxA	13C2-PFHxA		105
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:22	12/01/2017			20171206	10:50:00	20171211	19:06:00	1701815-13	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.25
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:22	12/01/2017			20171206	10:50:00	20171211	19:06:00	1701815-13	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.25
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:22	12/01/2017			20171206	10:50:00	20171211	19:06:00	1701815-13	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.25
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:22	12/01/2017			20171206	10:50:00	20171211	19:06:00	1701815-13	1	-999			13C2-PFHxA	13C2-PFHxA		111
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:23	12/01/2017			20171206	10:50:00	20171211	19:18:00	1701815-14	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.31
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:23	12/01/2017			20171206	10:50:00	20171211	19:18:00	1701815-14	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.31
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:23	12/01/2017			20171206	10:50:00	20171211	19:18:00	1701815-14	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.31
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB103-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:23	12/01/2017			20171206	10:50:00	20171211	19:18:00	1701815-14	1	-999			13C2-PFHxA	13C2-PFHxA		103
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:33	12/01/2017			20171206	10:50:00	20171211	19:31:00	1701815-15	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.24
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:33	12/01/2017			20171206	10:50:00	20171211	19:31:00	1701815-15	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.24
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:33	12/01/2017			20171206	10:50:00	20171211	19:31:00	1701815-15	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.24
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:33	12/01/2017			20171206	10:50:00	20171211	19:31:00	1701815-15	1	-999			13C2-PFHxA	13C2-PFHxA		112
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:34	12/01/2017			20171206	10:50:00	20171211	19:43:00	1701815-16	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.22
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:34	12/01/2017			20171206	10:50:00	20171211	19:43:00	1701815-16	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.22
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:34	12/01/2017			20171206	10:50:00	20171211	19:43:00	1701815-16	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.22
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB104-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 10:34	12/01/2017			20171206	10:50:00	20171211	19:43:00	1701815-16	1	-999			13C2-PFHxA	13C2-PFHxA		100
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:08	12/01/2017			20171206	10:50:00	20171211	19:56:00	1701815-17	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.32
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:08	12/01/2017			20171206	10:50:00	20171211	19:56:00	1701815-17	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.32
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:08	12/01/2017			20171206	10:50:00	20171211	19:56:00	1701815-17	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.32
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:08	12/01/2017			20171206	10:50:00	20171211	19:56:00	1701815-17	1	-999			13C2-PFHxA	13C2-PFHxA		115
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:09	12/01/2017			20171206	10:50:00	20171211	20:08:00	1701815-18	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.12
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:09	12/01/2017			20171206	10:50:00	20171211	20:08:00	1701815-18	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.12
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:09	12/01/2017			20171206	10:50:00	20171211	20:08:00	1701815-18	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.12
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB105-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:09	12/01/2017			20171206	10:50:00	20171211	20:08:00	1701815-18	1	-999			13C2-PFHxA	13C2-PFHxA		113
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:55	12/01/2017			20171206	10:50:00	20171211	20:21:00	1701815-19	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.06
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:55	12/01/2017			20171206	10:50:00	20171211	20:21:00	1701815-19	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.06
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:55	12/01/2017			20171206	10:50:00	20171211	20:21:00	1701815-19	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.06
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:55	12/01/2017			20171206	10:50:00	20171211	20:21:00	1701815-19	1	-999			13C2-PFHxA	13C2-PFHxA		104
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:56	12/01/2017			20171206	10:50:00	20171211	20:33:00	1701815-20	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.19
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:56	12/01/2017			20171206	10:50:00	20171211	20:33:00	1701815-20	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.19
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:56	12/01/2017			20171206	10:50:00	20171211	20:33:00	1701815-20	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.19
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB106-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/29/2017 13:56	12/01/2017			20171206	10:50:00	20171211	20:33:00	1701815-20	1	-999			13C2-PFHxA	13C2-PFHxA		108
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:25:00	B7L0026-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:25:00	B7L0026-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:25:00	B7L0026-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:25:00	B7L0026-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA		99.0
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	15:46:00	B7L0026-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		18.3
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	15:46:00	B7L0026-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		19.7
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	15:46:00	B7L0026-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		19.3
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	15:46:00	B7L0026-BS1	1	-999			13C2-PFHxA	13C2-PFHxA		104
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:00:00	B7L0026-BSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		20.1
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:00:00	B7L0026-BSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		21.6
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:00:00	B7L0026-BSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		18.7
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/06/2017 10:50	12/06/2017			20171206	10:50:00	20171211	16:00:00	B7L0026-BSD1	1	-999			13C2-PFHxA	13C2-PFHxA		105

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Result_Units	Lab_Qualifier	Validator_Qualifier	GC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	QSM_Version	DL	LOD	LOQ	SDG	Analysis_Batch
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.443	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.08	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.04	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.503	5.68	11.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.23	5.68	11.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.18	5.68	11.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.440	4.97	9.94	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.07	4.97	9.94	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.03	4.97	9.94	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.462	5.22	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.13	5.22	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.22	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.466	5.26	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.14	5.26	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.26	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.427	4.82	9.63	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.04	4.82	9.63	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.00	4.82	9.63	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.476	5.37	10.7	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.16	5.37	10.7	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.12	5.37	10.7	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.454	5.12	10.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.11	5.12	10.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.07	5.12	10.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.463	5.23	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.13	5.23	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.23	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.444	5.01	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.08	5.01	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.04	5.01	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.496	5.60	11.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.21	5.60	11.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.16	5.60	11.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.447	5.05	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.05	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.05	5.05	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.447	5.05	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.05	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.05	5.05	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.465	5.25	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.13	5.25	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.25	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.470	5.31	10.6	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.15	5.31	10.6	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.10	5.31	10.6	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.464	5.24	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.13	5.24	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.24	10.5	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.462	5.22	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.13	5.22	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.08	5.22	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.471	5.32	10.6	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.15	5.32	10.6	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.11	5.32	10.6	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.454	5.12	10.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.11	5.12	10.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.07	5.12	10.2	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.449	5.06	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.09	5.06	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.05	5.06	10.1	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.460	5.19	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.12	5.19	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.08	5.19	10.4	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR			SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	0.443	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.08	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L	U		PR	TRG									5.1	1.04	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR	SUR		SLSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L			PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L			PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L			PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR	SUR		LSA	130	70					5.1				1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L			PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L			PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	NG_L			PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701815	S7L0031
N6247016D9000	0008		CHERRY_POINT_MCAS	PCT_REC			PR	SUR		LSA	130	70					5.1				1701815	S7L0031

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
MCOLF ATLANTC, NORTH CAROLINA

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701815
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCOLF Atlantic, North Carolina
Date: January 13, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-1RW98A-1117	1701815-01	Water
2	CH-AT-1FB98A-1117	1701815-02	Water
3	CH-AT-1RW98B-1117	1701815-03	Water
4	CH-AT-1FB98B-1117	1701815-04	Water
5	CH-AT-1RW99-1117	1701815-05	Water
6	CH-AT-1FB99-1117	1701815-06	Water
7	CH-AT-1RW100-1117	1701815-07	Water
8	CH-AT-1FB100-1117	1701815-08	Water
9	CH-AT-1RW101-1117	1701815-09	Water
10	CH-AT-1FB101-1117	1701815-10	Water
11	CH-AT-1RW102-1117	1701815-11	Water
12	CH-AT-1FB102-1117	1701815-12	Water
13	CH-AT-1RW103-1117	1701815-13	Water
14	CH-AT-1FB103-1117	1701815-14	Water
15	CH-AT-1RW104-1117	1701815-15	Water
16	CH-AT-1FB104-1117	1701815-16	Water
17	CH-AT-1RW105-1117	1701815-17	Water
18	CH-AT-1FB105-1117	1701815-18	Water
19	CH-AT-1RW106-1117	1701815-19	Water
20	CH-AT-1FB106-1117	1701815-20	Water

A full data validation was performed on the analytical data for ten water samples and ten aqueous field blank samples collected on November 29, 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-1FB98A-1117	None - ND	-	-	-
CH-AT-1FB98B-1117	None - ND	-	-	-
CH-AT-1FB99-1117	None - ND	-	-	-
CH-AT-1FB100-1117	None - ND	-	-	-
CH-AT-1FB101-1117	None - ND	-	-	-
CH-AT-1FB102-1117	None - ND	-	-	-
CH-AT-1FB103-1117	None - ND	-	-	-
CH-AT-1FB104-1117	None - ND	-	-	-
CH-AT-1FB105-1117	None - ND	-	-	-
CH-AT-1FB106-1117	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: 1/15/18

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-1RW98A-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:09

Laboratory Data

Lab Sample: 1701815-01
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1
PFOA	ND	1.08	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1
PFOS	ND	1.04	5.00	10.0		B7L0026	06-Dec-17	0.250 L	11-Dec-17 16:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0026	06-Dec-17	0.250 L	11-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.

NW 1/3/18

Vista Analytical Laboratory

2

Sample ID: CH-AT-1FB98A-1117 **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:10

Laboratory Data

Lab Sample: 1701815-02
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.503	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1
PFOA	ND	1.23	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1
PFOS	ND	1.18	5.68	11.4		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	117	70 - 130		B7L0026	06-Dec-17	0.220 L	11-Dec-17 16:49	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 1/13/18

Vista Analytical Laboratory 3

Sample ID: CH-AT-1RW98B-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701815-03	Column:	BEH HILIC
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 09:16	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1
PFOA	ND	1.07	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1
PFOS	ND	1.03	4.97	9.94		B7L0026	06-Dec-17	0.252 L	11-Dec-17 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.252 L	11-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.

8/1/2018

Vista Analytical Laboratory

4

Sample ID: CH-AT-1FB98B-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701815-04	Column:	BEH HILIC
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 09:17	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1
PFOA	ND	1.13	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1
PFOS	ND	1.09	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.240 L	11-Dec-17 17:14	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.

11/13/18

Vista Analytical Laboratory

5

Sample ID: CH-AT-1RW99-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:27

Laboratory Data

Lab Sample: 1701815-05
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.466	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1
PFOA	ND	1.14	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1
PFOS	ND	1.09	5.26	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.238 L	11-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.

12/13/18

Vista Analytical Laboratory

Sample ID: CH-AT-1FB99-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:28

Laboratory Data

Lab Sample: 1701815-06
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1
PFOA	ND	1.04	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1
PFOS	ND	1.00	4.82	9.63		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.260 L	11-Dec-17 17:39	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

7

Sample ID: CH-AT-1RW100-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:38

Laboratory Data

Lab Sample: 1701815-07
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.476	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1
PFOA	ND	1.16	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1
PFOS	ND	1.12	5.37	10.7		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0026	06-Dec-17	0.233 L	11-Dec-17 17:51	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

Vista Analytical Laboratory

8

Sample ID: CH-AT-1FB100-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:39

Laboratory Data

Lab Sample: 1701815-08
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1
PFOA	ND	1.11	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1
PFOS	ND	1.07	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 18:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B7L0026	06-Dec-17	0.244 L	11-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.

NW 1/13/18

Sample ID: CH-AT-1RW101-1117 — **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:56

Laboratory Data

Lab Sample: 1701815-09
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.463	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1
PFOA	ND	1.13	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1
PFOS	ND	1.09	5.23	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.239 L	11-Dec-17 18:16	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.

11/13/18

Vista Analytical Laboratory

10

Sample ID: CH-AT-1FB101-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 09:57

Laboratory Data

Lab Sample: 1701815-10
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1
PFOA	ND	1.08	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1
PFOS	ND	1.04	5.01	10.0		B7L0026	06-Dec-17	0.249 L	11-Dec-17 18:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.2	70 - 130		B7L0026	06-Dec-17	0.249 L	11-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.

11/13/18

Sample ID: CH-AT-1RW102-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701815-11	Column:	BEH HILIC
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 10:08	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.496	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1
PFOA	ND	1.21	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1
PFOS	ND	1.16	5.60	11.2		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0026	06-Dec-17	0.223 L	11-Dec-17 18:41	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

Sample ID: CH-AT-1FB102-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:09

Laboratory Data

Lab Sample: 1701815-12
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1
PFOA	ND	1.09	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1
PFOS	ND	1.05	5.05	10.1		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0026	06-Dec-17	0.248 L	11-Dec-17 18:54	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 13 Analytical Laboratory

Sample ID: CH-AT-1RW103-1117 — **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:22

Laboratory Data

Lab Sample: 1701815-13
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.465	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1
PFOA	ND	1.13	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1
PFOS	ND	1.09	5.25	10.5		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	111	70 - 130		B7L0026	06-Dec-17	0.238 L	11-Dec-17 19:06	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

11/13/18

Vista 14
Analytical Laboratory

Sample ID: CH-AT-1FB103-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701815-14	Column:	BEH HILIC
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 10:23	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.470	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1
PFOA	ND	1.15	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1
PFOS	ND	1.10	5.31	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:18	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 15

Sample ID: CH-AT-1RW104-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:33

Laboratory Data

Lab Sample: 1701815-15
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1
PFOA	ND	1.13	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1
PFOS	ND	1.09	5.24	10.5		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130		B7L0026	06-Dec-17	0.239 L	11-Dec-17 19:31	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.

1/13/18

Vista Analytical Laboratory

Sample ID: CH-AT-1FB104-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 10:34

Laboratory Data

Lab Sample: 1701815-16
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1
PFOA	ND	1.13	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1
PFOS	ND	1.08	5.22	10.4		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130		B7L0026	06-Dec-17	0.240 L	11-Dec-17 19:43	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

11/31.8

Sample ID: CH-AT-1RW105-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:08

Laboratory Data

Lab Sample: 1701815-17
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.471	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1
PFOA	ND	1.15	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1
PFOS	ND	1.11	5.32	10.6		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	115	70 - 130		B7L0026	06-Dec-17	0.235 L	11-Dec-17 19:56	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 18
Analytical Laboratory

Sample ID: CH-AT-1FB105-1117 **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:09

Laboratory Data

Lab Sample: 1701815-18
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1
PFOA	ND	1.11	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1
PFOS	ND	1.07	5.12	10.2		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130		B7L0026	06-Dec-17	0.244 L	11-Dec-17 20:08	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.

12/13/17

Vista Analytical Laboratory 19

Sample ID: CH-AT-1RW106-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701815-19	Column:	BEH HILIC
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 13:55	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.449	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1
PFOA	ND	1.09	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1
PFOS	ND	1.05	5.06	10.1		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0026	06-Dec-17	0.247 L	11-Dec-17 20:21	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

Vista 20
Analytical Laboratory

Sample ID: CH-AT-1FB106-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 29-Nov-17 13:56

Laboratory Data

Lab Sample: 1701815-20
Date Received: 01-Dec-17 09:40
Column: BEH HILIC

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.460	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1
PFOA	ND	1.12	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1
PFOS	ND	1.08	5.19	10.4		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0026	06-Dec-17	0.241 L	11-Dec-17 20:33	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 1/13/18

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

MARINE CORPS OUTLYING LANDING FIELD ATLANTIC

Atlantic, NC

ATLANTIC ELEMENTARY

CRUISE MART II

CORE SOUND

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