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 1701793

Marine Corps Outlying Landing Field Atlantic
MCAS Cherry Point NC

February 2019

December 05, 2017

Vista Work Order No. 1701793

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

Dear Ms. Hill,

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

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

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

Sincerely,

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. 1701793
Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

EPA Method 537

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.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "CH-AT-1RW80-1117". The analyte recoveries and RPDs were within the method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701793-01	CH-AT-1RW78-1117		27-Nov-17 09:41	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-02	CH-AT-1RW79-1117		27-Nov-17 11:08	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-03	CH-AT-1RW80-1117	MS/MSD	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-04	CH-AT-1RW81-1117		27-Nov-17 11:54	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-05	CH-AT-1RW82-1117		27-Nov-17 13:09	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-06	CH-AT-1RW83-1117		27-Nov-17 15:07	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-07	CH-AT-1RW84-1117		27-Nov-17 15:20	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-08	CH-AT-1RW85-1117		27-Nov-17 17:59	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-09	CH-AT-1FB78-1117		27-Nov-17 09:42	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-10	CH-AT-1FB79-1117		27-Nov-17 11:09	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-11	CH-AT-1FB80-1117		27-Nov-17 11:36	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-12	CH-AT-1FB81-1117		27-Nov-17 11:55	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-13	CH-AT-1FB82-1117		27-Nov-17 13:10	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-14	CH-AT-1FB83-1117		27-Nov-17 15:08	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-15	CH-AT-1FB84-1117		27-Nov-17 15:21	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-16	CH-AT-1FB85-1117		27-Nov-17 18:00	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: B7L0005-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	1
PFOA	ND	1.08	5.00	10.0		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	1
PFOS	ND	1.04	5.00	10.0		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.9	70 - 130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	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: LFB

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: B7L0005-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	61.2	70.8	86.4	70-130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1
PFOA	72.5	80.0	90.7	70-130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1
PFOS	71.9	74.0	97.1	70-130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1
Labeled Standards	**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C2-PFHxA	SURR		95.3	70- 130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1

Sample ID: CH-AT-1RW78-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 09:41

Laboratory Data

Lab Sample: 1701793-01
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1
PFOA	ND	1.06	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1
PFOS	ND	1.02	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.2	70 - 130		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	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-1RW79-1117

EPA Method 537

Client Data

Name: C2 HM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: H7-Nov-17 11:08

Laboratory Data

Lab Sample: 1701793-0H
Date 4 eceived: H9-Nov-17 09:37
Column: BE2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0R H5	. R1	9I51		B7L0006	0H-Dec-17	0RI50 L	03-Dec-17 01:19	1
PFOA	ND	1R0.	. R1	9I51		B7L0006	0H-Dec-17	0RI50 L	03-Dec-17 01:19	1
PFOS	ND	1R00	. R1	9I51		B7L0006	0H-Dec-17	0RI50 L	03-Dec-17 01:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CH-PF2 xA	SU4 4	9. R0	70 - 130		B7L0006	0H-Dec-17	0RI50 L	03-Dec-17 01:19	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
4 esults reported to the DLR
When reported, PF2 xS, PFOA and PFOS include both linear and branched isomersR
Only the linear isomer is reported for all other analytesR

Sample ID: CH-AT-1RW80-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:34

Laboratory Data

Lab Sample: 1701793-03
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.520	5.75	9.58		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	1
PFOA	ND	1.02	5.75	9.58		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	1
PFOS	ND	0.984	5.75	9.58		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.7	70 - 130		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	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-1RW80-1117 **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0005-MS1/B7L0005-MSD1	Source Lab Sample:	1701793-03
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	QC Batch:	B7L0005	Date Extracted:	02-Dec-17
Matrix:	Drinking Water	Samp Size:	0.260/0.264 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	63.2	68.0	92.9		71.6	67.0	107	14.1		70-130	30	03-Dec-17 00:42	1	03-Dec-17 00:54	1
PFOA	ND	70.7	76.9	91.7		75.3	75.7	99.2	7.86		70-130	30	03-Dec-17 00:42	1	03-Dec-17 00:54	1
PFOS	ND	67.3	71.1	94.6		67.9	70.0	97.0	2.51		70-130	30	03-Dec-17 00:42	1	03-Dec-17 00:54	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA	SURR	85.9		95.3		70-130	03-Dec-17 00:42	1	03-Dec-17 00:54	1

Sample ID: CH-AT-1RW71-1118

EPA Method 538

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 11:RH

Laboratory Data

Lab Sample: 1701793-0H
Date . eceived: u9-Nov-17 09:37
ColBmn: Ek2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	05-B3	H889	9578		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1
PFOA	ND	1506	H889	9578		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1
PFOS	ND	150u	H889	9578		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SU. .	108	70 - 130		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
. esBlts reported to the DL5
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers5
Only the linear isomer is reported for all other analytes5

Sample ID: CH-AT-1RW82-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 13:09

Laboratory Data

Lab Sample: 1701793-05
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1.30	0.435	4.91	9.82	J	B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1
PFOA	12.5	1.06	4.91	9.82		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1
PFOS	13.0	1.02	4.91	9.82		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.0	70 - 130		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	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-1RW78-111L **PMA h etdr5 38L**

Client Data				baoryatryE Data			
Name:	C2 uM 2 ill	Matrix:	Drin4ing Water	Lab Sample:	1701793-0H	ColBmn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 1R:07	Date . eceived:	u9-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	05uR	6580	95H0		E7L000R	0u-Dec-17	05uH1 L	03-Dec-17 0u:6H	1
PFOA	ND	1506	6580	95H0		E7L000R	0u-Dec-17	05uH1 L	03-Dec-17 0u:6H	1
PFOS	ND	0998	6580	95H0		E7L000R	0u-Dec-17	05uH1 L	03-Dec-17 0u:6H	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13Cu-PF2 xA	SU. .	10R	70 - 130		E7L000R	0u-Dec-17	05uH1 L	03-Dec-17 0u:6H	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
. esBlts reported to the DL5
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers5
Only the linear isomer is reported for all other analytes5

Sample ID: CH-AT-1RW84-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 14:20

Laboratory Data

Lab Sample: 1701793-07
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.525	5.78	9.46		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1
PFOA	ND	1.03	5.78	9.46		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1
PFOS	ND	0.995	5.78	9.46		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.5	70 - 130		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1

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

Sample ID: CH-AT-1RW78-111L **PMA h etdr5 83L**

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 17:49

baoryatryE Data

Lab Sample: 1701793-08
Date Received: 29-Nov-17 09:37
Column: BEH C18

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFBS	ND	0.530	5.86	9.71		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	1
PFOA	ND	1.04	5.86	9.71		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	1
PFOS	ND	1.01	5.86	9.71		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13C2-PFHxA	SURR	96.7	70 - 130		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	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-1FB78-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 09:42

Laboratory Data

Lab Sample: 1701793-09
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.425	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1
PFOA	ND	1.04	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1
PFOS	ND	0.997	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1

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

Sample ID: CH-AT-1FB79-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:09

Laboratory Data

Lab Sample: 1701793-10
Date 4 eceived: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0R38	. R95	9R89		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1
PFOA	ND	1R07	. R95	9R89		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1
PFOS	ND	1R03	. R95	9R89		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU4 4	96R7	70 - 130		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1

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

Sample ID: CH-AT-1FB80-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:34

Laboratory Data

Lab Sample: 1701793-11
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.550	5.94	9.93		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1
PFOA	ND	1.07	5.94	9.93		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1
PFOS	ND	1.03	5.94	9.93		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.7	70 - 130		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1

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

Sample ID: CH-AT-1FB71-1118

EPA Method 538

Client Data

Name: C2 HM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: H7-Nov-17 11:44

Laboratory Data

Lab Sample: 1701793-1H
Date Received: H9-Nov-17 09:37
Column: BE2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.5H5	5.79	9.47		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	1
PFOA	ND	1.03	5.79	9.47		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	1
PFOS	ND	0.996	5.79	9.47		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CH-PF2 xA	SURR	9H6	70 - 130		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	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, PF2 xS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB82-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 13:10

Laboratory Data

Lab Sample: 1701793-13
Date 4 eceived: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0R2.	. R78	9R57		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1
PFOA	ND	1R03	. R78	9R57		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1
PFOS	ND	0R995	. R78	9R57		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU4 4	92R	70 - 130		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1

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

Sample ID: CH-AT-1FB78-111L **PMA h etdr5 38L**

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 1R:08

baoryatryE Data

Lab Sample: 1701793-1H
Date . eceived: u9-Nov-17 09:37
ColBmn: Ek2 C18

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	05H18	H57u	95HR		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1
PFOA	ND	150u	H57u	95HR		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1
PFOS	ND	0598u	H57u	95HR		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13Cu-PF2 xA	SU. .	8HS3	70 - 130		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
. esBlts reported to the DL5
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers5
Only the linear isomer is reported for all other analytes5

Sample ID: CH-AT-1FB84-1117

EPA Method 537

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 1Hu1

Laboratory Data

Lab Sample: 1701793-1H
Date Received: u9-Nov-17 09:37
ColBmn: Ek2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	0.5u3	5.77	9.HH		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1
PFOA	ND	1.03	5.77	9.HH		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1
PFOS	ND	0.993	5.77	9.HH		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SURR	88.0	70 - 130		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
ResBlts reported to the DL.
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB78-111L **PMA h etdr5 83L**

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 18:00

baoryatryE Data

Lab Sample: 1701793-1H
Date Received: u9-Nov-17 09:37
ColBmn: Ek2 C18

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	0.5u0	5.76	9.59		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1
PFOA	ND	1.03	5.76	9.59		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1
PFOS	ND	0.987	5.76	9.59		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13Cu-PF2 xA	SURR	105	70 - 130		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
ResBlts reported to the DL.
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

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

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

NELAP Accredited Test Methods

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

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

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

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

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

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

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

11/28/17 COOLER # 2

CTO-08 679580.15.FI.FS

ID: LR - 537COC

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701793 Temp: 0.9 °C
Storage ID: WR-2 Storage Secured Yes ☑ No ☐

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation
PO#: 10006-7-106051
Sampler: K. RABE / A. SEAY G.Conover/M. Clay 11/27/17 (name)

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

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
DAVID LUSCH	11/28/17	1500	B. Benedict	11/29/17	1010
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 25	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List 14	Comments
CH-AT-1RW78-1117	11/27/17	0941		2	P	DW						X			Trizma Preservative
CH-AT-1RW79-1117	11/27/17	1108		2	P	DW						X			Trizma Preservative
CH-AT-1RW80-1117	11/27/17	1135		2	P	DW						X			Trizma Preservative
CH-AT-1RW81-1117	11/27/17	1154		2	P	DW						X			Trizma Preservative
CH-AT-1RW82-1117	11/27/17	1309		2	P	DW						X			Trizma Preservative
CH-AT-1RW83-1117	11/27/17	1507		2	P	DW						X			Trizma Preservative
CH-AT-1RW84-1117	11/27/17	1520		2	P	DW						X			Trizma Preservative
CH-AT-1RW85-1117	11/27/17	1759		2	P	DW						X			Trizma Preservative
CH-AT-1FB78-1117	11/27/17	0942		2	P	DW						X			Trizma Preservative
CH-AT-1FB79-1117	11/27/17	1109		2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking Water Analysis

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

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

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

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

Page: 1 of 2

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

11/28/17 COOLER # 2

CTO-08 679580.15.FI.FS

ID: LR - 537COC

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701793 Temp: 0.9 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

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

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

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
David Rabe	11/28/17	1500	B. Benedict	11/29/17	1011
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Container(s)

Mod. EPA Method 537: PFOA/PFOS; UCMR3 PFAS List 6; 537 List: 14; Full List of 26; Other: Please List Below

EPA Method 537(DW only): PFOA/PFOS/PFBS; UCMR3 PFAS List 6; PFAS List: 14

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other: Please List Below	PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-1FB80-1117	11/27/17	1136		2	P	DW						X			Trizma Preservative
CH-AT-1FB81-1117	11/27/17	1155		2	P	DW						X			Trizma Preservative
CH-AT-1FB82-1117	11/27/17	1310		2	P	DW						X			Trizma Preservative
CH-AT-1FB83-1117	11/27/17	1508		2	P	DW						X			Trizma Preservative
CH-AT-1FB84-1117	11/27/17	1521		2	P	DW						X			Trizma Preservative
CH-AT-1FB85-1117	11/27/17	1800		2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

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

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

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

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

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Page: ~~1 of 1~~

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701793 **TAT** 7

Samples Arrival:	**Date/Time** 11/29/17 0937	**Initials:** JBSB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/29/17 1046	**Initials:** JBSB IA	**Location:** WR-2 **Shelf/Rack:** E4

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

Temp °C: 0.8 (uncorrected)	**Time:** 1010	**Thermometer ID:** IR-1
Temp °C: 0.9 (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 1 of 3 Trk # 8106 0254 8629	✓		
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:

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: ~~1701794~~ 1701793 (BDB 11/29/17) **TAT** 7

Samples Arrival:	**Date/Time** 11/29/17 0937	**Initials:** BDB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/29/17 1110	**Initials:** BDB IA	**Location:** WR-2 **Shelf/Rack:** E4

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

Temp °C: 1.3 (uncorrected)	**Time:** 0958	**Thermometer ID:** IR-1
Temp °C: 1.4 (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 3 of 3 Trk # 8538 7408 0441	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?	BDB 11/29/17 ✓		✓
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	

Sample Label ID

Comments: CH-AT-1RW80-1117 MS A/B received not listed on COC
↓ SD ↓

December 05, 2017

Vista Work Order No. 1701793

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

Dear Ms. Hill,

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

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

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

Sincerely,

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. 1701793
Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

EPA Method 537

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.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "CH-AT-1RW80-1117". The analyte recoveries and RPDs were within the method acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701793-01	CH-AT-1RW78-1117		27-Nov-17 09:41	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-02	CH-AT-1RW79-1117		27-Nov-17 11:08	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-03	CH-AT-1RW80-1117	MS/MSD	27-Nov-17 11:35	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-04	CH-AT-1RW81-1117		27-Nov-17 11:54	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-05	CH-AT-1RW82-1117		27-Nov-17 13:09	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-06	CH-AT-1RW83-1117		27-Nov-17 15:07	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-07	CH-AT-1RW84-1117		27-Nov-17 15:20	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-08	CH-AT-1RW85-1117		27-Nov-17 17:59	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-09	CH-AT-1FB78-1117		27-Nov-17 09:42	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-10	CH-AT-1FB79-1117		27-Nov-17 11:09	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-11	CH-AT-1FB80-1117		27-Nov-17 11:36	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-12	CH-AT-1FB81-1117		27-Nov-17 11:55	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-13	CH-AT-1FB82-1117		27-Nov-17 13:10	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-14	CH-AT-1FB83-1117		27-Nov-17 15:08	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-15	CH-AT-1FB84-1117		27-Nov-17 15:21	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701793-16	CH-AT-1FB85-1117		27-Nov-17 18:00	29-Nov-17 09:37	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: B7L0005-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	1
PFOA	ND	1.08	5.00	10.0		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	1
PFOS	ND	1.04	5.00	10.0		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.9	70 - 130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:29	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: LFB

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: B7L0005-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	61.2	70.8	86.4	70-130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1
PFOA	72.5	80.0	90.7	70-130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1
PFOS	71.9	74.0	97.1	70-130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1
Labeled Standards	**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C2-PFHxA	SURR		95.3	70- 130		B7L0005	02-Dec-17	0.250 L	03-Dec-17 00:04	1

Sample ID: CH-AT-1RW78-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 09:41

Laboratory Data

Lab Sample: 1701793-01
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1
PFOA	ND	1.06	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1
PFOS	ND	1.02	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.2	70 - 130		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	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-1RW79-1117

EPA Method 537

Client Data

Name: C2 HM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: H7-Nov-17 11:08

Laboratory Data

Lab Sample: 1701793-0H
Date 4 eceived: H9-Nov-17 09:37
Column: BE2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0R H5	. R1	9R51		B7L0006	0H-Dec-17	0RR50 L	03-Dec-17 01:19	1
PFOA	ND	1R0.	. R1	9R51		B7L0006	0H-Dec-17	0RR50 L	03-Dec-17 01:19	1
PFOS	ND	1R00	. R1	9R51		B7L0006	0H-Dec-17	0RR50 L	03-Dec-17 01:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CH-PF2 xA	SU4 4	9. R0	70 - 130		B7L0006	0H-Dec-17	0RR50 L	03-Dec-17 01:19	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
4 esults reported to the DLR
When reported, PF2 xS, PFOA and PFOS include both linear and branched isomersR
Only the linear isomer is reported for all other analytesR

Sample ID: CH-AT-1RW80-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:34

Laboratory Data

Lab Sample: 1701793-03
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.520	5.75	9.58		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	1
PFOA	ND	1.02	5.75	9.58		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	1
PFOS	ND	0.984	5.75	9.58		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.7	70 - 130		B7L0004	02-Dec-17	0.265 L	03-Dec-17 01:32	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-1RW80-1117 **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0005-MS1/B7L0005-MSD1	Source Lab Sample:	1701793-03
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	QC Batch:	B7L0005	Date Extracted:	02-Dec-17
Matrix:	Drinking Water	Samp Size:	0.260/0.264 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	63.2	68.0	92.9		71.6	67.0	107	14.1		70-130	30	03-Dec-17 00:42	1	03-Dec-17 00:54	1
PFOA	ND	70.7	76.9	91.7		75.3	75.7	99.2	7.86		70-130	30	03-Dec-17 00:42	1	03-Dec-17 00:54	1
PFOS	ND	67.3	71.1	94.6		67.9	70.0	97.0	2.51		70-130	30	03-Dec-17 00:42	1	03-Dec-17 00:54	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA	SURR	85.9		95.3		70-130	03-Dec-17 00:42	1	03-Dec-17 00:54	1

Sample ID: CH-AT-1RW71-1118

EPA Method 538

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 11:RH

Laboratory Data

Lab Sample: 1701793-0H
Date . eceived: u9-Nov-17 09:37
ColBmn: Ek2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	05-B3	H889	9578		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1
PFOA	ND	1506	H889	9578		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1
PFOS	ND	150u	H889	9578		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SU. .	108	70 - 130		E7L000R	0u-Dec-17	05uR6 L	03-Dec-17 01:HH	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
. esBlts reported to the DL5
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers5
Only the linear isomer is reported for all other analytes5

Sample ID: CH-AT-1RW82-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 13:09

Laboratory Data

Lab Sample: 1701793-05
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1.30	0.435	4.91	9.82	J	B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1
PFOA	12.5	1.06	4.91	9.82		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1
PFOS	13.0	1.02	4.91	9.82		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.0	70 - 130		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	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-1RW78-111L **PMA h etdr5 38L**

Client Data				baoryatryE Data			
Name:	C2 uM 2 ill	Matrix:	Drin4ing Water	Lab Sample:	1701793-0H	ColBmn:	Ek2 C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	u7-Nov-17 1R:07	Date . eceived:	u9-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	05uR	6580	95H0		E7L000R	0u-Dec-17	05uHl L	03-Dec-17 0u:6H	1
PFOA	ND	1506	6580	95H0		E7L000R	0u-Dec-17	05uHl L	03-Dec-17 0u:6H	1
PFOS	ND	0998	6580	95H0		E7L000R	0u-Dec-17	05uHl L	03-Dec-17 0u:6H	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13Cu-PF2 xA	SU. .	10R	70 - 130		E7L000R	0u-Dec-17	05uHl L	03-Dec-17 0u:6H	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
. esBlts reported to the DL5
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers5
Only the linear isomer is reported for all other analytes5

Sample ID: CH-AT-1RW84-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 14:20

Laboratory Data

Lab Sample: 1701793-07
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.525	5.78	9.46		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1
PFOA	ND	1.03	5.78	9.46		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1
PFOS	ND	0.995	5.78	9.46		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.5	70 - 130		B7L0004	02-Dec-17	0.261 L	03-Dec-17 02:48	1

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

Sample ID: CH-AT-1RW78-111L **PMA h etdr5 83L**

Client Data				baoryatryE Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-08	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 17:49	Date Received:	29-Nov-17 09:37		

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFBS	ND	0.530	5.86	9.71		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	1
PFOA	ND	1.04	5.86	9.71		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	1
PFOS	ND	1.01	5.86	9.71		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13C2-PFHxA	SURR	96.7	70 - 130		B7L0004	02-Dec-17	0.247 L	03-Dec-17 03:11	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-1FB78-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 09:42

Laboratory Data

Lab Sample: 1701793-09
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.425	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1
PFOA	ND	1.04	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1
PFOS	ND	0.997	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1

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

Sample ID: CH-AT-1FB79-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:09

Laboratory Data

Lab Sample: 1701793-10
Date 4 eceived: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0R38	. R95	9R89		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1
PFOA	ND	1R07	. R95	9R89		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1
PFOS	ND	1R03	. R95	9R89		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU4 4	96R7	70 - 130		B7L0005	02-Dec-17	0R253 L	03-Dec-17 03:36	1

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

Sample ID: CH-AT-1FB80-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:34

Laboratory Data

Lab Sample: 1701793-11
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.550	5.94	9.93		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1
PFOA	ND	1.07	5.94	9.93		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1
PFOS	ND	1.03	5.94	9.93		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.7	70 - 130		B7L0006	02-Dec-17	0.262 L	03-Dec-17 03:58	1

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

Sample ID: CH-AT-1FB71-1118

EPA Method 538

Client Data

Name: C2 HM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: H7-Nov-17 11:44

Laboratory Data

Lab Sample: 1701793-1H
Date Received: H9-Nov-17 09:37
Column: BE2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.5H5	5.79	9.47		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	1
PFOA	ND	1.03	5.79	9.47		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	1
PFOS	ND	0.996	5.79	9.47		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13CH-PF2 xA	SURR	9H6	70 - 130		B7L0004	0H-Dec-17	0.H61 L	03-Dec-17 05:01	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, PF2 xS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB82-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 13:10

Laboratory Data

Lab Sample: 1701793-13
Date 4 eceived: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0R2.	. R78	9R57		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1
PFOA	ND	1R03	. R78	9R57		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1
PFOS	ND	0R995	. R78	9R57		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU4 4	92R	70 - 130		B7L0005	02-Dec-17	0R261 L	03-Dec-17 0. :13	1

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

Sample ID: CH-AT-1FB78-111L **PMA h etdr5 38L**

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 1R:08

baoryatryE Data

Lab Sample: 1701793-1H
Date . eceived: u9-Nov-17 09:37
ColBmn: Ek2 C18

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	05H18	H57u	95HR		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1
PFOA	ND	150u	H57u	95HR		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1
PFOS	ND	0598u	H57u	95HR		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13Cu-PF2 xA	SU. .	8HS3	70 - 130		E7L000R	0u-Dec-17	05u6RL	03-Dec-17 0HuR	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
. esBlts reported to the DL5
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers5
Only the linear isomer is reported for all other analytes5

Sample ID: CH-AT-1FB84-1117

EPA Method 537

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 1Hu1

Laboratory Data

Lab Sample: 1701793-1H
Date Received: u9-Nov-17 09:37
ColBmn: Ek2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	ND	0.5u3	5.77	9.HH		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1
PFOA	ND	1.03	5.77	9.HH		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1
PFOS	ND	0.993	5.77	9.HH		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13Cu-PF2 xA	SURR	88.0	70 - 130		E7L000H	0u-Dec-17	0.u6u L	03-Dec-17 05:38	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
ResBlts reported to the DL.
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB78-111L **PMA h etdr5 83L**

Client Data

Name: C2 uM 2 ill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drin4ing Water
Date Collected: u7-Nov-17 18:00

baoryatryE Data

Lab Sample: 1701793-1H
Date Received: u9-Nov-17 09:37
ColBmn: Ek2 C18

AnalEte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
PFES	ND	0.5u0	5.76	9.59		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1
PFOA	ND	1.03	5.76	9.59		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1
PFOS	ND	0.987	5.76	9.59		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1

baoele5 Stan5ay5s	TEpe	% RecrveyE	bimits	Qualifieys	Batcd	Pxtyacte5	Samp Size	AnalEze5	Dilutirn
13Cu-PF2 xA	SURR	105	70 - 130		E7L0006	0u-Dec-17	0.uHB L	03-Dec-17 05:60	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of qBantitation
LCL-UCL- Lower control limit - Bpper control limit
ResBlts reported to the DL.
When reported, PF2 xS, PFOA and PFOS inclBde both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

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

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

NELAP Accredited Test Methods

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

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

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

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

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

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

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

11/28/17 COOLER # 2

CTO-08 679580.15.FI.FS

ID: LR - 537COC

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701793 Temp: 0.9 °C
Storage ID: WR-2 Storage Secured Yes ☑ No ☐

Project ID: CTO-08, MCOLF Atlantic PFAS DW Investigation
PO#: 10006-7-106051
Sampler: K. RABE / A. SEAY G.Conover/M. Clay 11/27/17 (name)

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

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
DAVID LUSCH	11/28/17	1500	B. Benedict	11/29/17	1010
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 25	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List 14	Comments
CH-AT-1RW78-1117	11/27/17	0941		2	P	DW						X			Trizma Preservative
CH-AT-1RW79-1117	11/27/17	1108		2	P	DW						X			Trizma Preservative
CH-AT-1RW80-1117	11/27/17	1135		2	P	DW						X			Trizma Preservative
CH-AT-1RW81-1117	11/27/17	1154		2	P	DW						X			Trizma Preservative
CH-AT-1RW82-1117	11/27/17	1309		2	P	DW						X			Trizma Preservative
CH-AT-1RW83-1117	11/27/17	1507		2	P	DW						X			Trizma Preservative
CH-AT-1RW84-1117	11/27/17	1520		2	P	DW						X			Trizma Preservative
CH-AT-1RW85-1117	11/27/17	1759		2	P	DW						X			Trizma Preservative
CH-AT-1FB78-1117	11/27/17	0942		2	P	DW						X			Trizma Preservative
CH-AT-1FB79-1117	11/27/17	1109		2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

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

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

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

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

Page: 1 of 2

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

11/28/17 COOLER # 2

CTO-08 679580.15.FI.FS

ID: LR - 537COC

CHAIN OF CUSTODY

Vista Analytical Laboratory

For Laboratory Use Only
Work Order #: 1701793 Temp: 0.9 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

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

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

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

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
David Rabe	11/28/17	1500	B. Benedict	11/29/17	1011
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No: 8106 0254 8629

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS/PFBS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-1FB80-1117	11/27/17	1136		2	P	DW						X			Trizma Preservative
CH-AT-1FB81-1117	11/27/17	1155		2	P	DW						X			Trizma Preservative
CH-AT-1FB82-1117	11/27/17	1310		2	P	DW						X			Trizma Preservative
CH-AT-1FB83-1117	11/27/17	1508		2	P	DW						X			Trizma Preservative
CH-AT-1FB84-1117	11/27/17	1521		2	P	DW						X			Trizma Preservative
CH-AT-1FB85-1117	11/27/17	1800		2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative
				2	P	DW						X			Trizma Preservative

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS Drinking Water Analysis

SEND DOCUMENTATION AND RESULTS TO:

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

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

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

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

2 of 2
Page: ~~1 of 1~~

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701793 **TAT** 7

Samples Arrival:	**Date/Time** 11/29/17 0937	**Initials:** JBSB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/29/17 1046	**Initials:** JBSB IA	**Location:** WR-2 **Shelf/Rack:** E4

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

Temp °C: 0.8 (uncorrected)	**Time:** 1010	**Thermometer ID:** IR-1
Temp °C: 0.9 (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 1 of 3 Trk # 8106 0254 8629	✓		
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:

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: ~~1701794~~ 1701793 (BDB 11/29/17) **TAT** 7

Samples Arrival:	**Date/Time** 11/29/17 0937	**Initials:** BDB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/29/17 1110	**Initials:** BDB IA	**Location:** WR-2 **Shelf/Rack:** E4

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

Temp °C: 1.3	(uncorrected)	**Time:** 0958	**Thermometer ID:** IR-1
Temp °C: 1.4	(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 3 of 3 Trk # 8538 7408 0441	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed? BDB 11/29/17	✓		✓
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	

Sample Label ID

Comments: CH-AT-1RW80-1117 MS A/B ↓ SD ↓ received not listed on COC

EXTRACTION INFORMATION

Process Sheet

RUSH

Workorder: 1701793

Prep Expiration: 2017-Dec-11
Client: CH2M Hill

Workorder Due: 06-Dec-17 00:00

TAT: 7

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

Prep Batch: B7L0005

Prep Data Entered: 12/4/17 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
1701793-01	A	☑	☑	CH-AT-1RW78-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-02	↓	☑	☑	CH-AT-1RW79-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-03	AB	☑	☑	CH-AT-1RW80-1117	**MS/MSD**	WR-2 E-4	HDPE Bottle, 250 mL
1701793-04	A	☑	☑	CH-AT-1RW81-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-05		☑	☑	CH-AT-1RW82-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-06		☑	☑	CH-AT-1RW83-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-07		☑	☑	CH-AT-1RW84-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-08		☑	☑	CH-AT-1RW85-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-09		☑	☑	CH-AT-1FB78-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-10		☑	☑	CH-AT-1FB79-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-11		☑	☑	CH-AT-1FB80-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-12		☑	☑	CH-AT-1FB81-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-13		☑	☑	CH-AT-1FB82-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-14		☑	☑	CH-AT-1FB83-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-15		☑	☑	CH-AT-1FB84-1117		WR-2 E-4	HDPE Bottle, 250 mL
1701793-16	↓	☑	☑	CH-AT-1FB85-1117		WR-2 E-4	HDPE Bottle, 250 mL

Pre-Prep Check Out: HB 12/1/17 HB 12/1/17

Pre-Prep Check In: HB 12/1/17

Prep Check Out: KBF 12/2/17

Prep Check In: MA

Prep Reconciled Initals/Date: HB 12/1/17

Spike Reconciled Initals/Date: KBF 12/2/17

VialBoxID: Zoidberg

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0005

Chemist: KBF

Prep Date/Time: ~~01~~-Dec-17 ~~14:31~~ 2 9:32

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
☐	B7L0005-BLK1 (A)	~~283.22~~ NA	NA	(0.250) ✓	KBF KL 12/2/17	KBF 12/2/17	KBF KL 12/2/17
☐	B7L0005-BS1 (A)	HB 12/1/17 HB 12/1/17 ↓	↓	(0.250) ✓	↓	↓	↓
☐	B7L0005-MS1 1701793-03	~~28~~ 287.62	27.48	0.26014 ✓			
☐	B7L0005-MSD1 1701793-03	291.99	27.65	0.26434 ✓			
☐	1701793-01	283.22	28.40	0.25482 ✓			
☐	1701793-02	288.06	27.96	0.26010 ✓			
☐	1701793-03	292.50	28.67	0.26383 ✓			
☐	1701793-04	284.35	28.83	0.25552 ✓			
☐	1701793-05	282.61	28.00	0.25461 ✓			
☐	1701793-06	288.49	27.97	0.26052 ✓			
☐	1701793-07	289.68	28.22	0.26146 ✓			
☐	1701793-08	285.54	28.12	0.25742 ✓			
☐	1701793-09	288.41	27.63	0.26078 ✓			
☐	1701793-10	280.48	27.74	0.25274 ✓			
☐	1701793-11	278.79	26.94	0.25185 ✓			
☐	1701793-12	288.89	27.72	0.26117 ✓			

SS/IS: 17K2804, 50mL (V1+2)

NS: 17I2601, 20mL (V2)

IS/RS: 17K2805, 50mL

SPE Chem: Strata-X-33mm 500mg/6mL

Lot#: S17-001946

Ele SOLV: MeOH

Lot#: JB054409

Final Volume(s) 1mL

Notes: (A) 1.25 g trizma added to QCs. HB 12/1/17

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0005

Chemist: KBF

Prep Date/Time: ~~04~~-Dec-17 ~~14:31~~ 2 9:32

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
☐	1701793-13	288.99	27.64	0.26135 ✓	KBF KL 12/2/17	KBF 12/2/17	KBF KL 12/2/17
☐	1701793-14	291.69	27.05	0.26464 ✓	↓	↓	↓
☐	1701793-15	288.73	26.93	0.26180 ✓			
☐	1701793-16	290.82	27.43	0.26339 ✓			

SS/IS: 17K2804, 50ml (V1+2)

NS: 17I2601, 20ml (V2)

IS/RS: 17K2805, 50ml

SPE Chem: Strata-X-33um 500mg 6mL

Lot#: 517-001946

Ele SOLV: MeOH

Lot#: JB054409

Final Volume(s) 1mL

Notes:

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Batch: B7L0005

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701793-01	0.25482	NA	NA	1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-02	0.2601			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-03	0.26383			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-04	0.25552			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-05	0.25461			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-06	0.26052			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-07	0.26146			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-08	0.25742			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-09	0.26078			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-10	0.25274			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-11	0.25185			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-12	0.26117			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-13	0.26135			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-14	0.26464			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-15	0.2618			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
1701793-16	0.26339			1000	01-Dec-17 14:31	GM			Drinking Water	537 PFAS DW DoD Unmod
B7L0005-BLK1	0.25			1000	01-Dec-17 14:31	GM				QC
B7L0005-BS1	0.25			1000	01-Dec-17 14:31	GM	17I2601	10		QC
B7L0005-MS1	0.26014			1000	01-Dec-17 14:31	GM	17I2601	10		QC
B7L0005-MSD1	0.26434			1000	01-Dec-17 14:31	GM	17I2601	10		QC

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SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-33.qld

Last Altered: Monday, December 04, 2017 13:50:37 Pacific Standard Time
Printed: Monday, December 04, 2017 13:51:01 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_33, Date: 03-Dec-2017, Time: 00:29:49, ID: B7L0005-BLK1 LRB 0.25, Description: LRB

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.01e4		0.2500	3.07				
2	2	PFOA	413 > 368.7	8.50e1	9.16e3		0.2500	4.37	4.37	0.0928	0.464	
3	3	PFOS	499 >79.9	1.81e0	1.01e4		0.2500	4.77	4.77	0.00514	0.0171	
4	4	13C2-PFHxA	315 > 269.8	3.82e3	9.16e3	0.439	0.2500	3.43	3.44	4.17	38.0	94.9
5	5	13C2-PFDA	515.1 > 469.9	4.29e3	9.16e3	0.542	0.2500	5.00	5.00	4.68	34.5	86.3
6	6	13C2-PFOA	414.9 > 369.7	9.16e3	9.16e3	1.000	0.2500	4.41	4.37	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2500	4.81	4.77	28.7	115	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

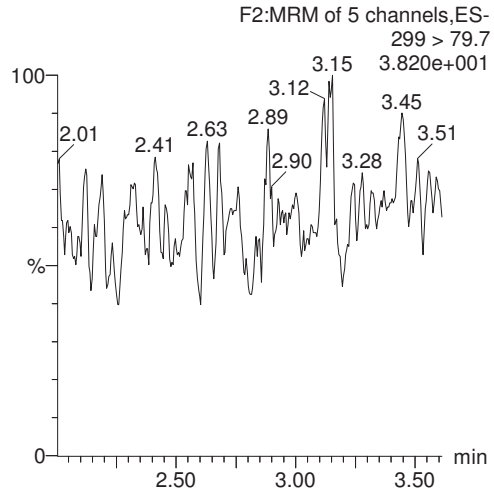
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-33.qld

Last Altered: Monday, December 04, 2017 13:50:37 Pacific Standard Time
Printed: Monday, December 04, 2017 13:51:01 Pacific Standard Time

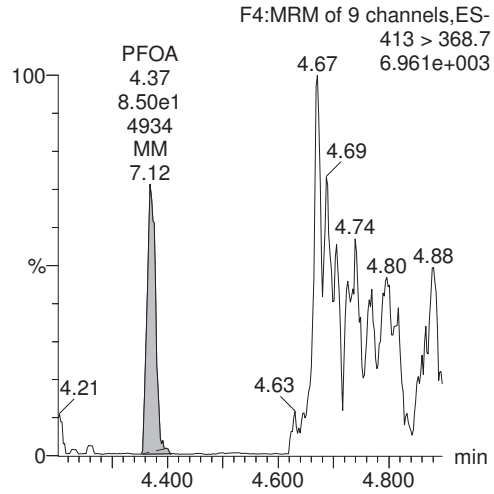
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_33, Date: 03-Dec-2017, Time: 00:29:49, ID: B7L0005-BLK1 LRB 0.25, Description: LRB

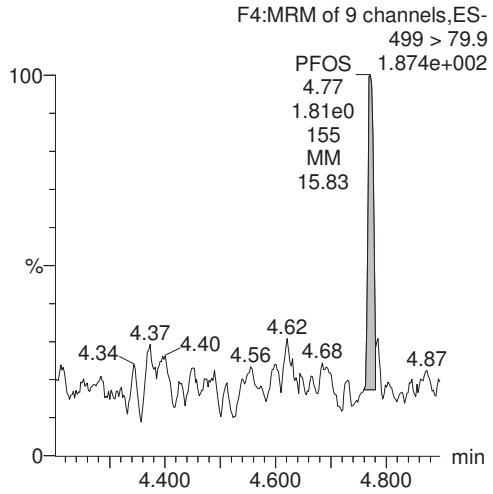
PFBS



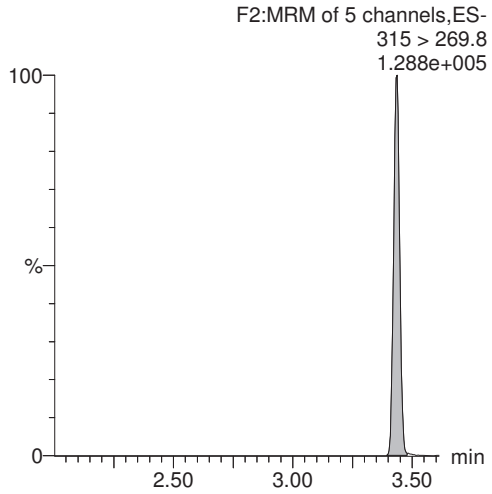
PFOA



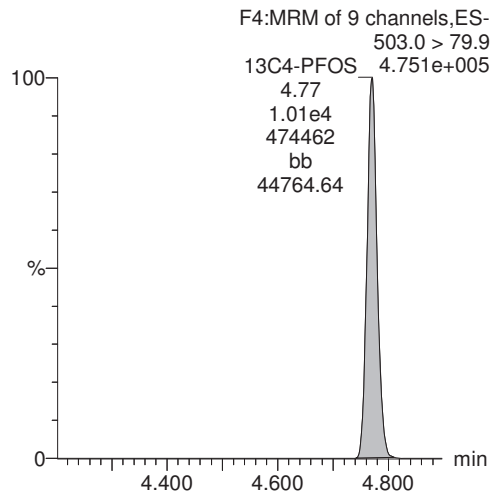
PFOS



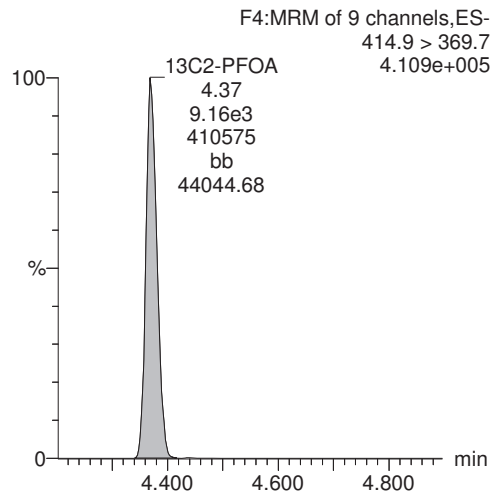
13C2-PFHxA



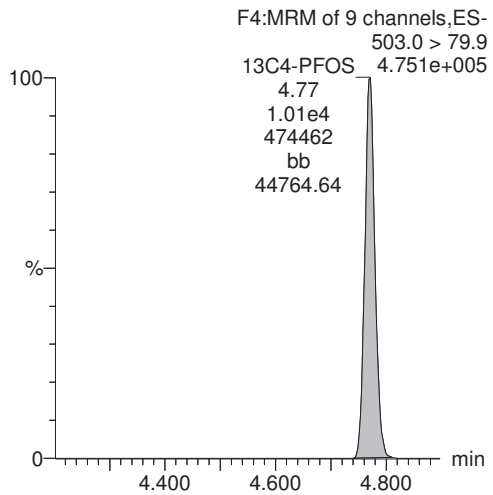
13C4-PFOS



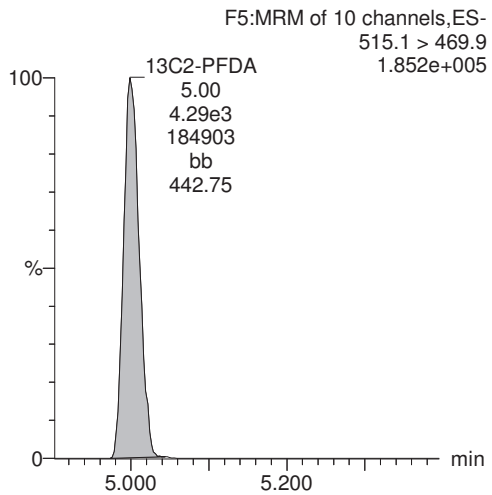
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-31.qld

Last Altered: Monday, December 04, 2017 13:47:42 Pacific Standard Time
Printed: Monday, December 04, 2017 13:48:30 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_31, Date: 03-Dec-2017, Time: 00:04:57, ID: B7L0005-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	4.41e3	1.02e4		0.2500	3.07	3.07	12.4	61.2	86.4
2	2	PFOA	413 > 368.7	1.36e4	9.38e3		0.2500	4.37	4.37	14.5	72.5	90.7
3	3	PFOS	499 >79.9	7.70e3	1.02e4		0.2500	4.77	4.77	21.6	71.9	97.1
4	4	13C2-PFHxA	315 > 269.8	3.93e3	9.38e3	0.439	0.2500	3.43	3.43	4.19	38.1	95.3
5	5	13C2-PFDA	515.1 > 469.9	4.08e3	9.38e3	0.542	0.2500	5.00	5.00	4.35	32.1	80.2
6	6	13C2-PFOA	414.9 > 369.7	9.38e3	9.38e3	1.000	0.2500	4.41	4.37	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	0.2500	4.81	4.77	28.7	115	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

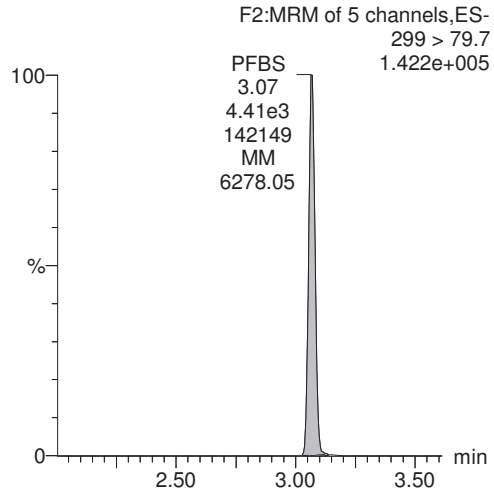
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-31.qld

Last Altered: Monday, December 04, 2017 13:47:42 Pacific Standard Time
Printed: Monday, December 04, 2017 13:48:30 Pacific Standard Time

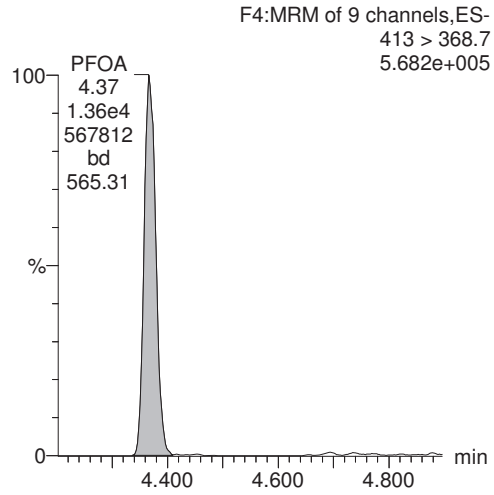
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_31, Date: 03-Dec-2017, Time: 00:04:57, ID: B7L0005-BS1 LFB 0.25, Description: LFB

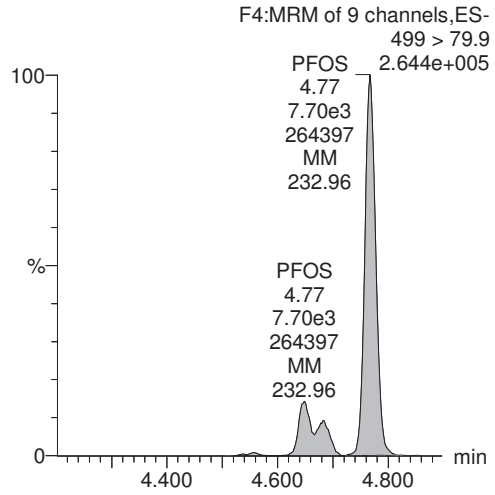
PFBS



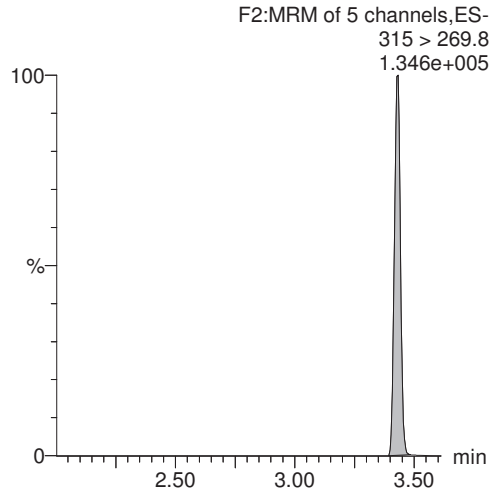
PFOA



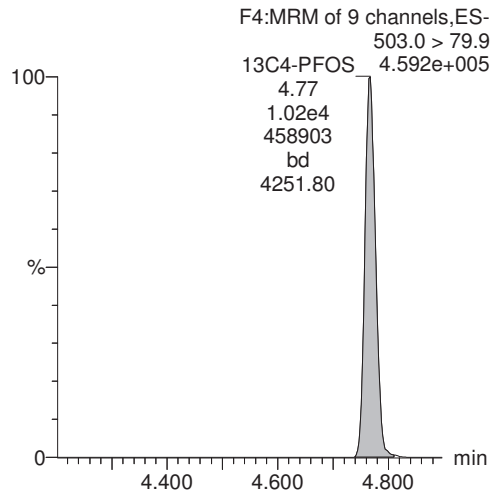
PFOS



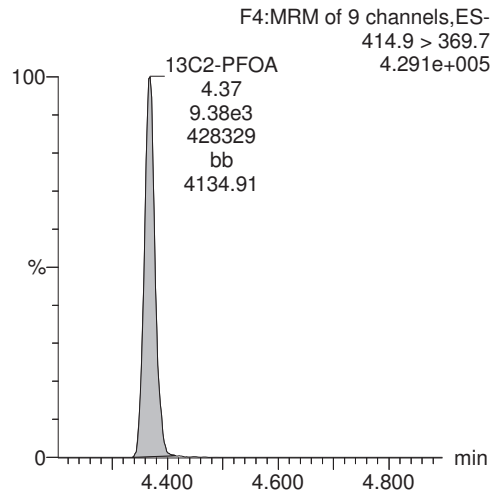
13C2-PFHxA



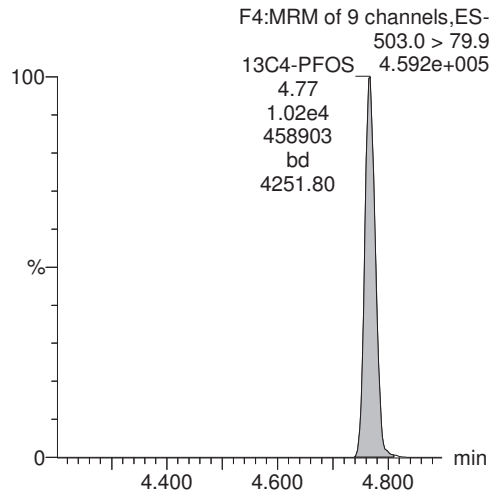
13C4-PFOS



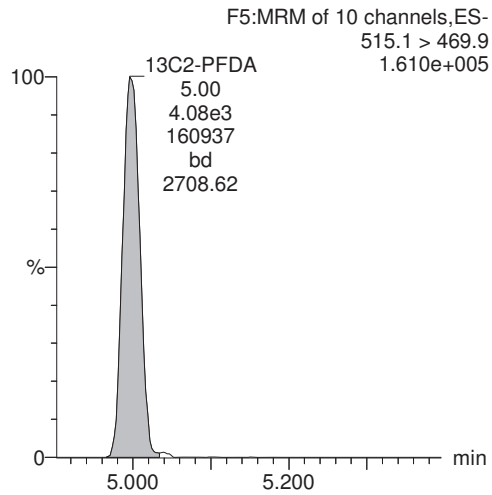
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-36.qld

Last Altered: Monday, December 04, 2017 14:04:27 Pacific Standard Time
Printed: Monday, December 04, 2017 14:04:37 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_36, Date: 03-Dec-2017, Time: 01:07:07, ID: 1701793-01 CH-AT-1RW78-1117 0.25, Description: CH-AT-1RW78-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.25e3		0.2548	3.07				
2	2	PFOA	413 > 368.7	7.15e1	9.12e3		0.2548	4.37	4.36	0.0784	0.385	
3	3	PFOS	499 >79.9	4.98e0	9.25e3		0.2548	4.77	4.76	0.0155	0.0504	
4	4	13C2-PFHxA	315 > 269.8	3.97e3	9.12e3	0.439	0.2548	3.43	3.43	4.36	38.9	99.2
5	5	13C2-PFDA	515.1 > 469.9	4.72e3	9.12e3	0.542	0.2548	5.00	5.00	5.18	37.5	95.5
6	6	13C2-PFOA	414.9 > 369.7	9.12e3	9.12e3	1.000	0.2548	4.41	4.37	10.0	39.2	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.25e3	9.25e3	1.000	0.2548	4.81	4.77	28.7	113	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

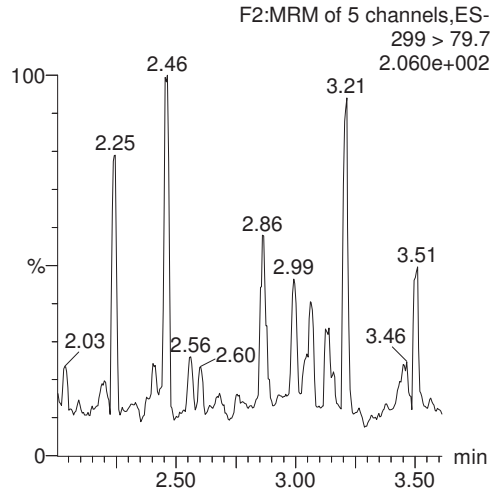
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-36.qld

Last Altered: Monday, December 04, 2017 14:04:27 Pacific Standard Time
Printed: Monday, December 04, 2017 14:04:37 Pacific Standard Time

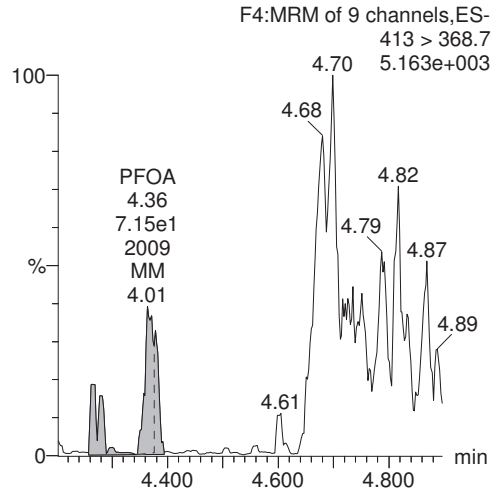
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_36, Date: 03-Dec-2017, Time: 01:07:07, ID: 1701793-01 CH-AT-1RW78-1117 0.25, Description: CH-AT-1RW78-1117

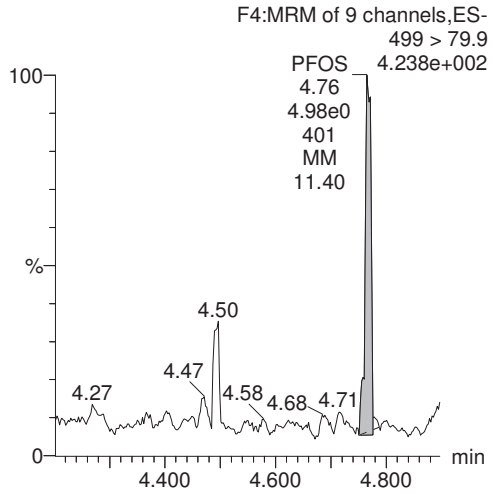
PFBS



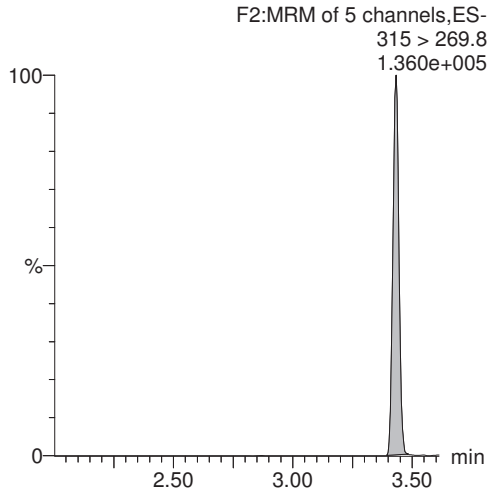
PFOA



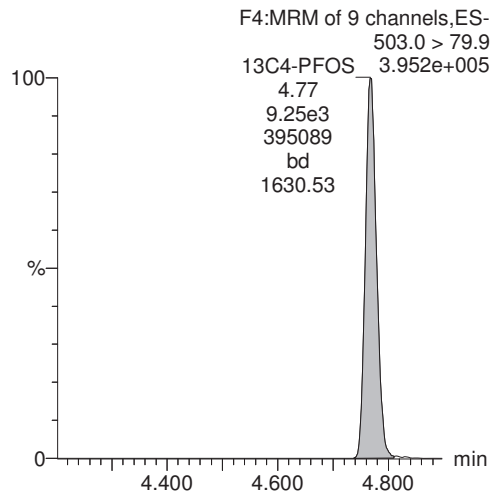
PFOS



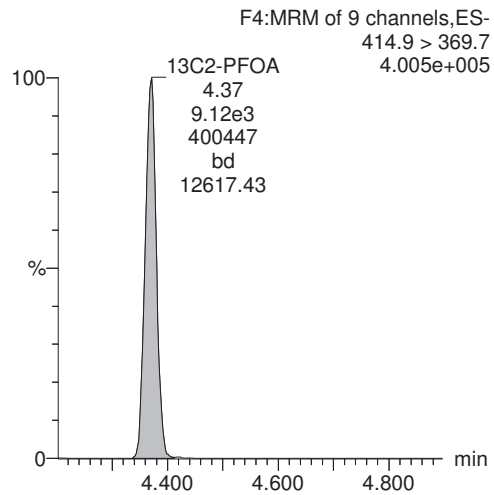
13C2-PFHxA



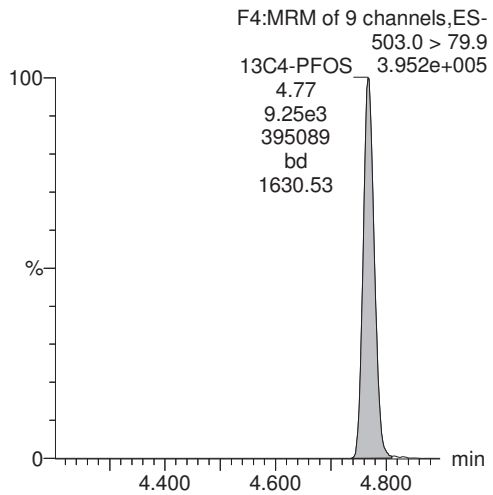
13C4-PFOS



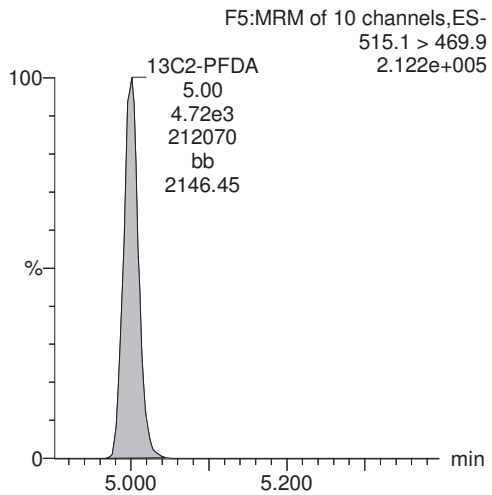
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-37.qld

Last Altered: Monday, December 04, 2017 14:05:52 Pacific Standard Time
Printed: Monday, December 04, 2017 14:06:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_37, Date: 03-Dec-2017, Time: 01:19:34, ID: 1701793-02 CH-AT-1RW79-1117 0.25, Description: CH-AT-1RW79-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.49e3		0.2601	3.07				
2	2	PFOA	413 > 368.7	4.99e1	9.55e3		0.2601	4.37	4.37	0.0523	0.251	
3	3	PFOS	499 >79.9		9.49e3		0.2601	4.77				
4	4	13C2-PFHxA	315 > 269.8	3.94e3	9.55e3	0.439	0.2601	3.43	3.43	4.13	36.1	94.0
5	5	13C2-PFDA	515.1 > 469.9	4.30e3	9.55e3	0.542	0.2601	5.00	5.00	4.50	31.9	82.9
6	6	13C2-PFOA	414.9 > 369.7	9.55e3	9.55e3	1.000	0.2601	4.41	4.37	10.0	38.4	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.49e3	9.49e3	1.000	0.2601	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

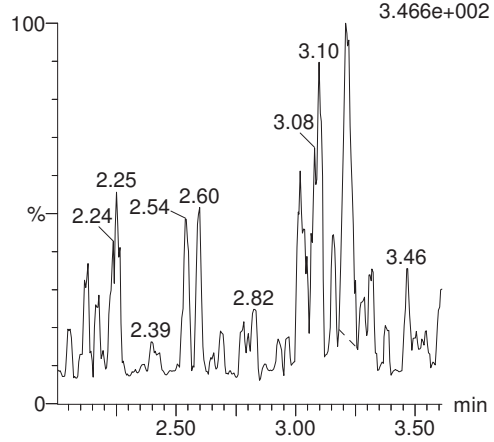
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-37.qld

Last Altered: Monday, December 04, 2017 14:05:52 Pacific Standard Time
Printed: Monday, December 04, 2017 14:06:11 Pacific Standard Time

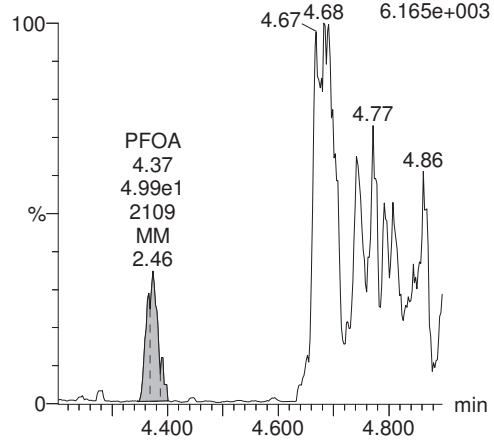
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_37, Date: 03-Dec-2017, Time: 01:19:34, ID: 1701793-02 CH-AT-1RW79-1117 0.25, Description: CH-AT-1RW79-1117

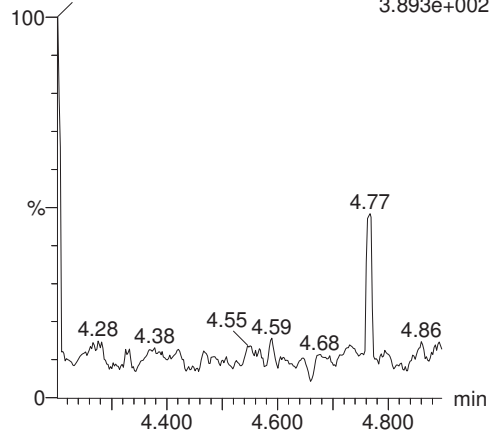
PFBS



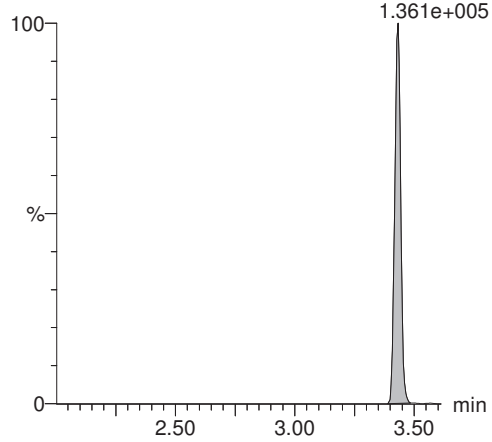
PFOA



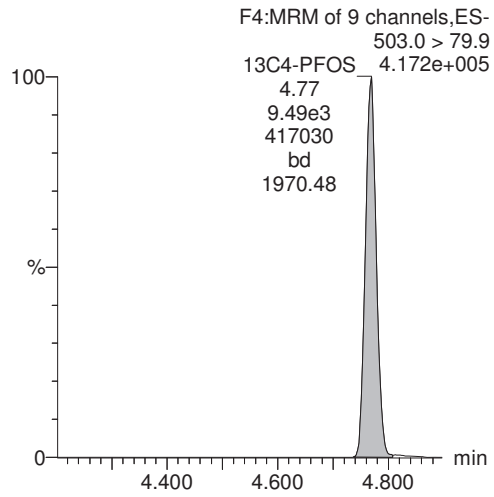
PFOS



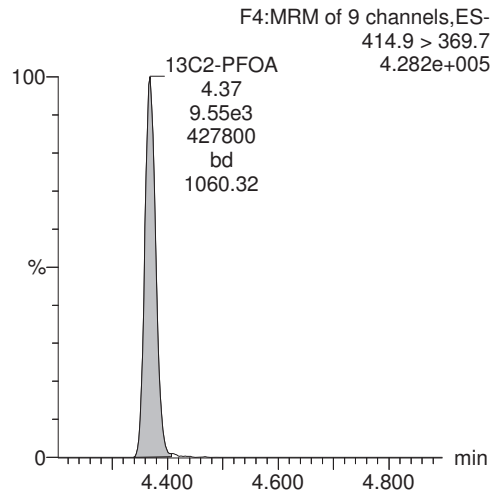
13C2-PFHxA



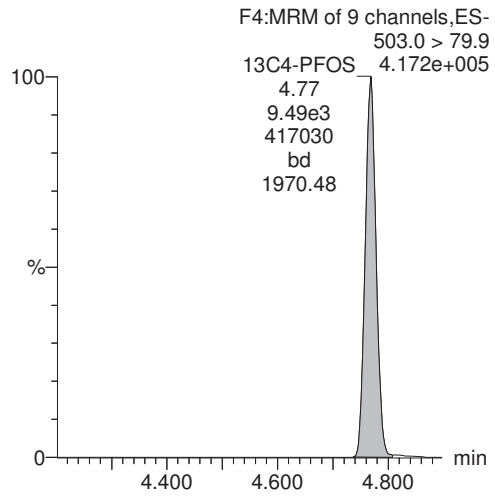
13C4-PFOS



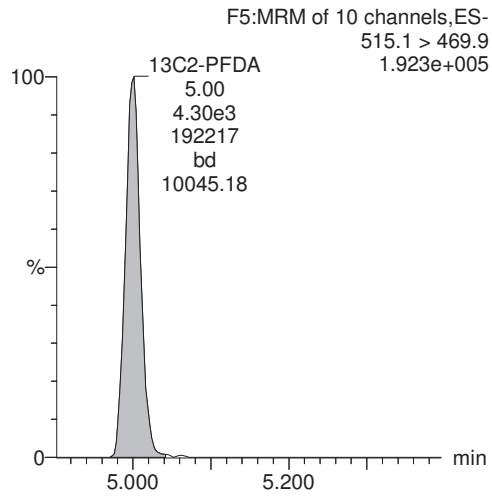
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-38.qld

Last Altered: Monday, December 04, 2017 14:06:54 Pacific Standard Time
Printed: Monday, December 04, 2017 14:07:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_38, Date: 03-Dec-2017, Time: 01:32:01, ID: 1701793-03 CH-AT-1RW80-1117 0.25, Description: CH-AT-1RW80-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.07e4		0.2638	3.07				
2	2	PFOA	413 > 368.7	4.82e1	9.88e3		0.2638	4.37	4.38	0.0488	0.231	
3	3	PFOS	499 >79.9		1.07e4		0.2638	4.77				
4	4	13C2-PFHxA	315 > 269.8	4.02e3	9.88e3	0.439	0.2638	3.43	3.43	4.07	35.2	92.7
5	5	13C2-PFDA	515.1 > 469.9	4.51e3	9.88e3	0.542	0.2638	5.00	5.00	4.57	31.9	84.3
6	6	13C2-PFOA	414.9 > 369.7	9.88e3	9.88e3	1.000	0.2638	4.41	4.37	10.0	37.9	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.07e4	1.07e4	1.000	0.2638	4.81	4.77	28.7	109	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

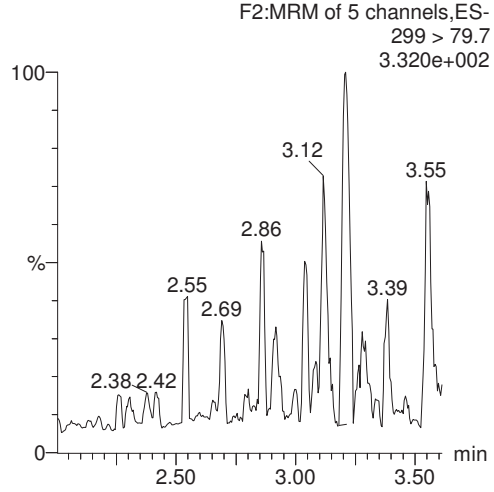
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-38.qld

Last Altered: Monday, December 04, 2017 14:06:54 Pacific Standard Time
Printed: Monday, December 04, 2017 14:07:11 Pacific Standard Time

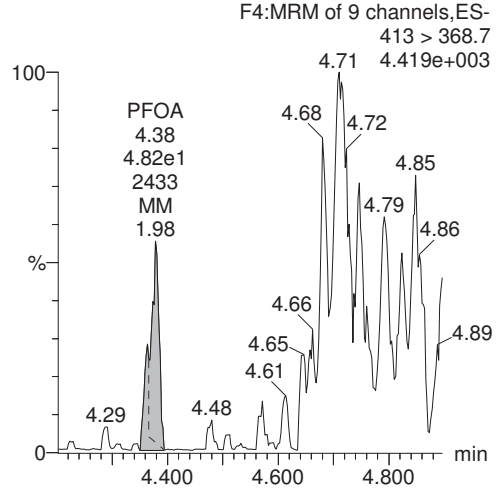
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_38, Date: 03-Dec-2017, Time: 01:32:01, ID: 1701793-03 CH-AT-1RW80-1117 0.25, Description: CH-AT-1RW80-1117

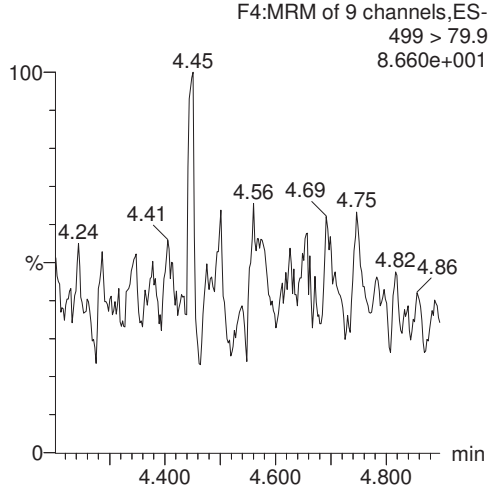
PFBS



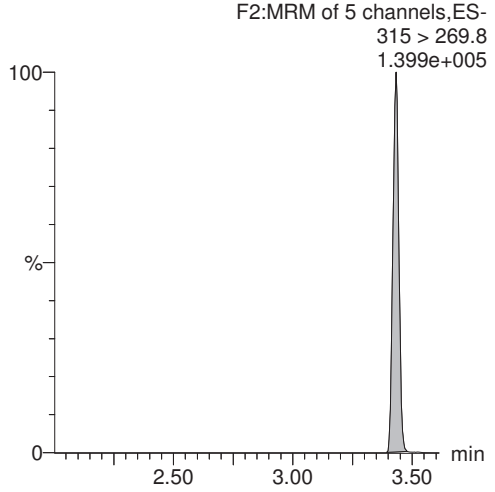
PFOA



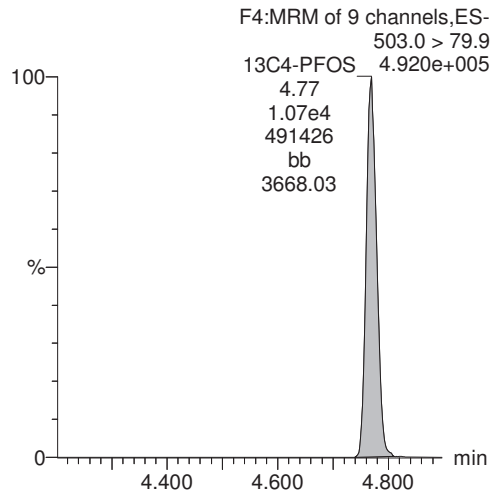
PFOS



13C2-PFHxA



13C4-PFOS



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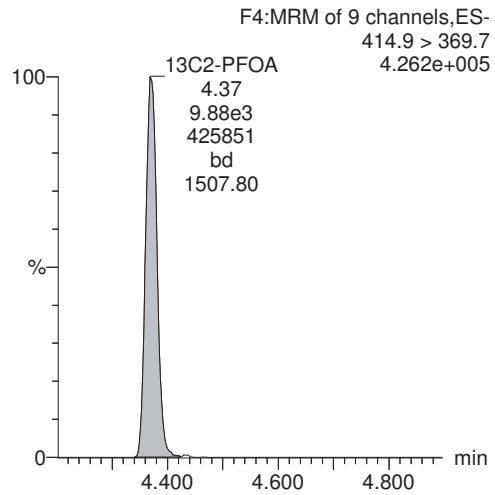
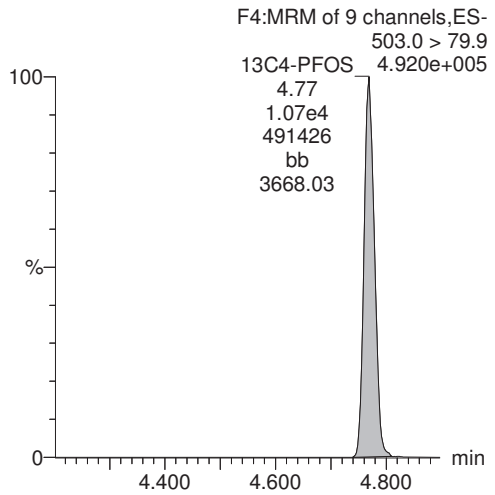
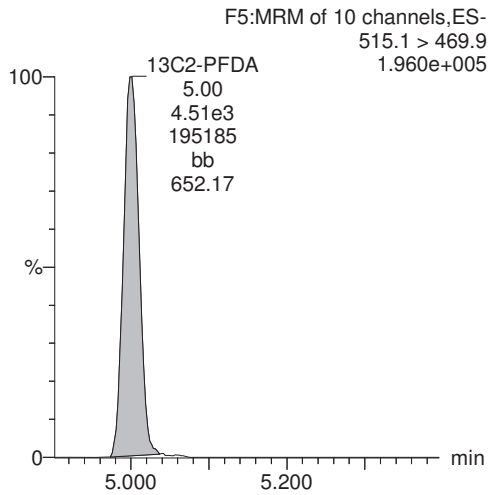


13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-34.qld

Last Altered: Monday, December 04, 2017 13:58:33 Pacific Standard Time
Printed: Monday, December 04, 2017 13:58:52 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_34, Date: 03-Dec-2017, Time: 00:42:15, ID: B7L0005-MS1 LFSM 0.25, Description: LFSM

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	4.73e3	1.02e4		0.2601	3.07	3.07	13.3	63.2	
2	2	PFOA	413 > 368.7	1.48e4	1.01e4		0.2601	4.37	4.37	14.7	70.7	
3	3	PFOS	499 >79.9	7.48e3	1.02e4		0.2601	4.77	4.77	21.0	67.3	
4	4	13C2-PFHxA	315 > 269.8	3.81e3	1.01e4	0.439	0.2601	3.43	3.43	3.77	33.0	85.9
5	5	13C2-PFDA	515.1 > 469.9	4.25e3	1.01e4	0.542	0.2601	5.00	5.00	4.21	29.8	77.6
6	6	13C2-PFOA	414.9 > 369.7	1.01e4	1.01e4	1.000	0.2601	4.41	4.37	10.0	38.4	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	0.2601	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

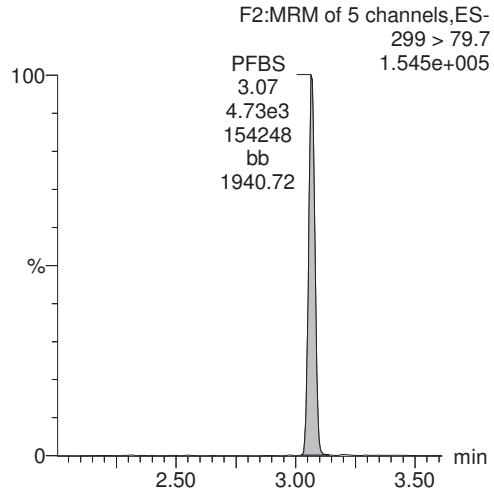
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-34.qld

Last Altered: Monday, December 04, 2017 13:58:33 Pacific Standard Time
Printed: Monday, December 04, 2017 13:58:52 Pacific Standard Time

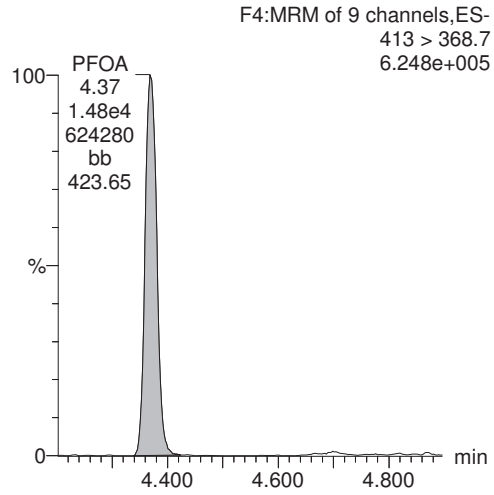
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_34, Date: 03-Dec-2017, Time: 00:42:15, ID: B7L0005-MS1 LFSM 0.25, Description: LFSM

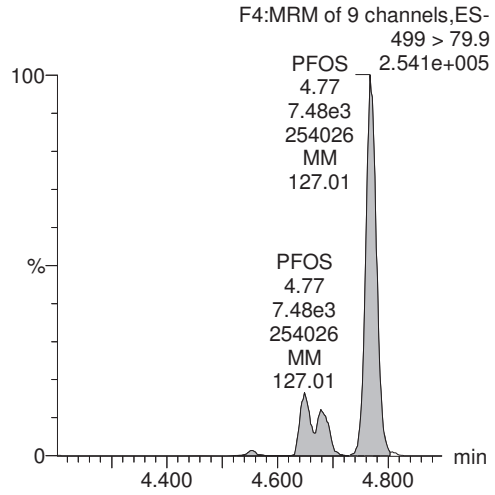
PFBS



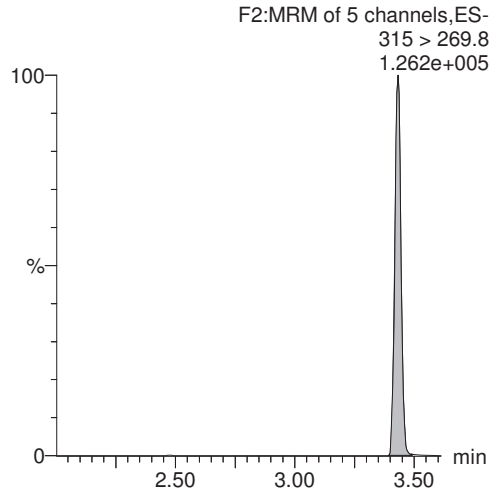
PFOA



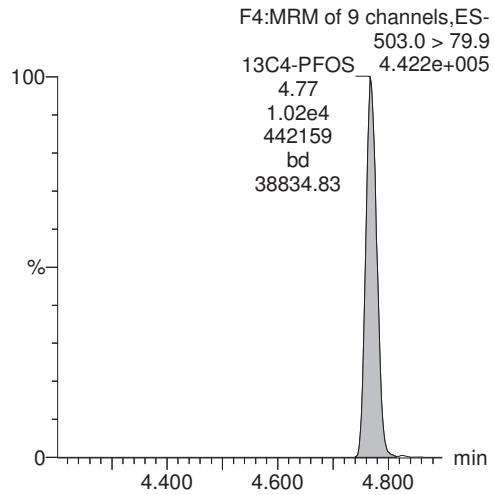
PFOS



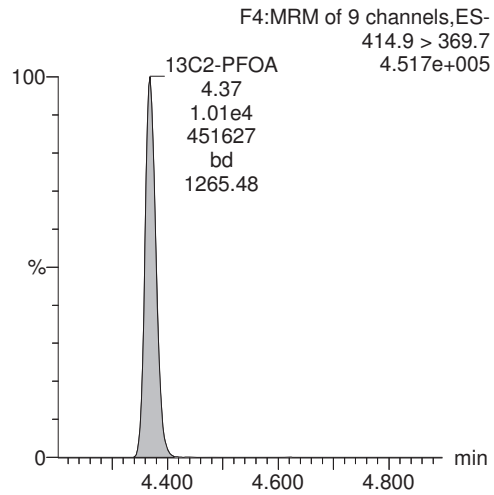
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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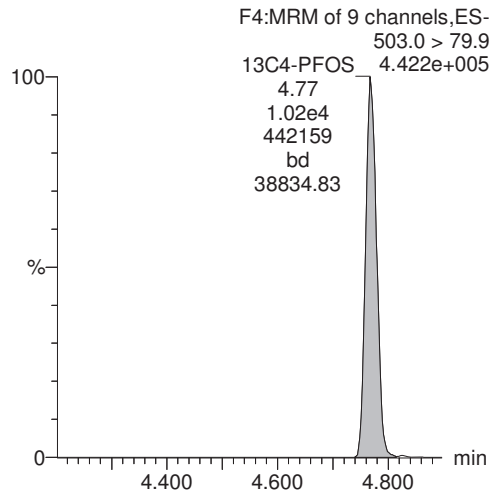
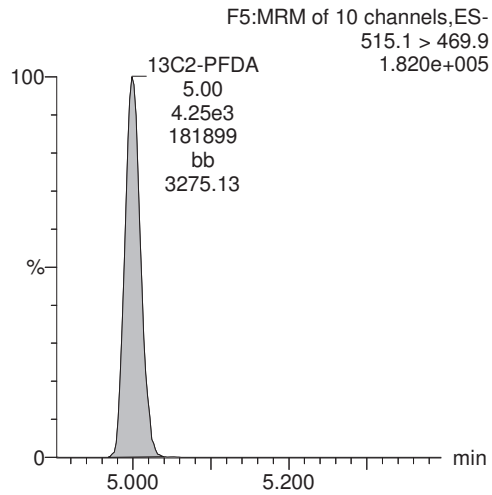


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-35.qld

Last Altered: Monday, December 04, 2017 14:02:09 Pacific Standard Time
Printed: Monday, December 04, 2017 14:02:27 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_35, Date: 03-Dec-2017, Time: 00:54:41, ID: B7L0005-MSD1 LFSMD 0.25, Description: LFSMD

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	5.01e3	9.39e3		0.2643	3.07	3.07	15.3	71.6	
2	2	PFOA	413 > 368.7	1.53e4	9.59e3		0.2643	4.37	4.37	15.9	75.3	
3	3	PFOS	499 >79.9	7.07e3	9.39e3		0.2643	4.77	4.77	21.6	67.9	
4	4	13C2-PFHxA	315 > 269.8	4.02e3	9.59e3	0.439	0.2643	3.43	3.43	4.19	36.1	95.3
5	5	13C2-PFDA	515.1 > 469.9	4.63e3	9.59e3	0.542	0.2643	5.00	5.00	4.83	33.7	89.0
6	6	13C2-PFOA	414.9 > 369.7	9.59e3	9.59e3	1.000	0.2643	4.41	4.37	10.0	37.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.39e3	9.39e3	1.000	0.2643	4.81	4.77	28.7	109	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

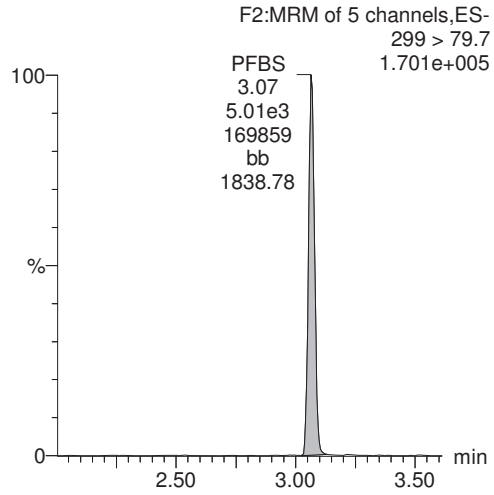
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-35.qld

Last Altered: Monday, December 04, 2017 14:02:09 Pacific Standard Time
Printed: Monday, December 04, 2017 14:02:27 Pacific Standard Time

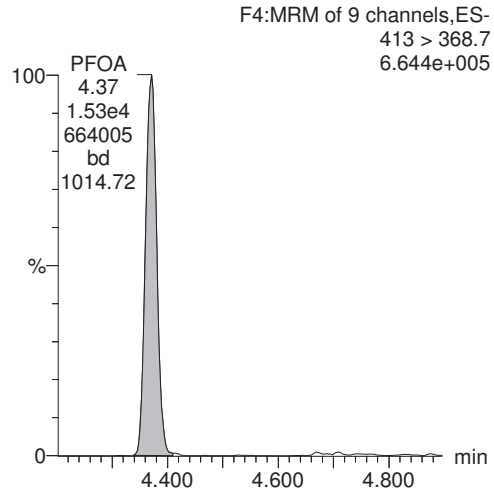
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_35, Date: 03-Dec-2017, Time: 00:54:41, ID: B7L0005-MSD1 LFSMD 0.25, Description: LFSMD

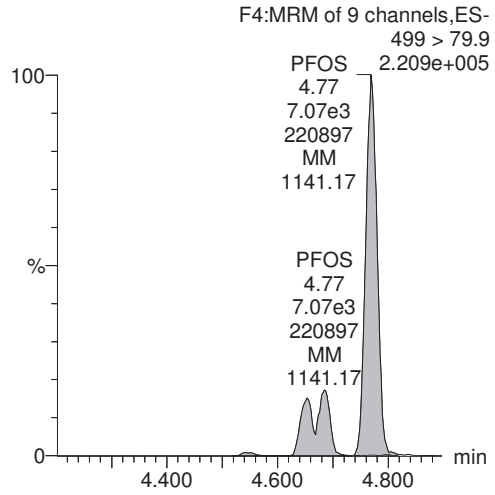
PFBS



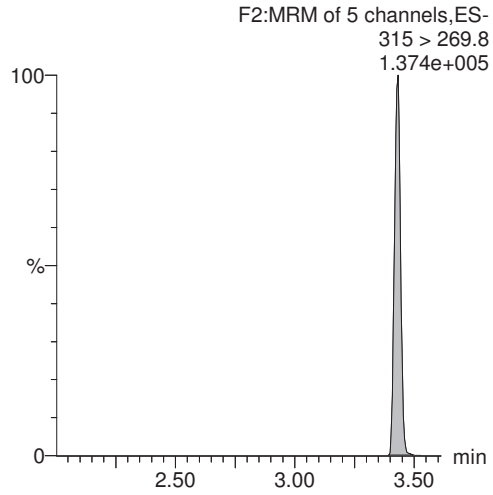
PFOA



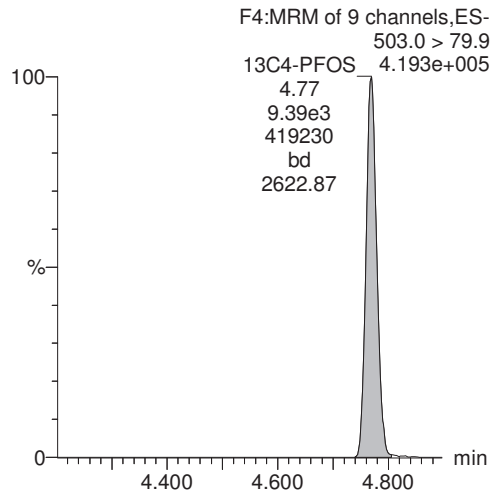
PFOS



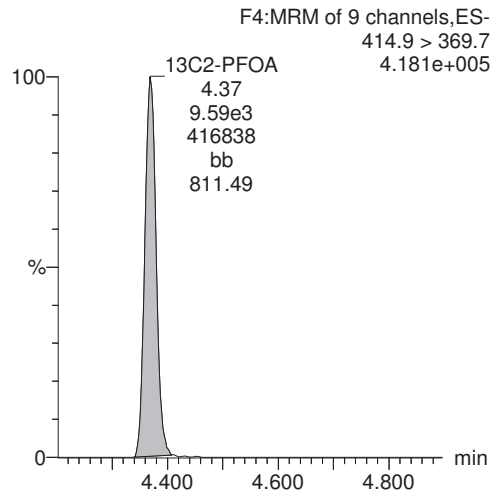
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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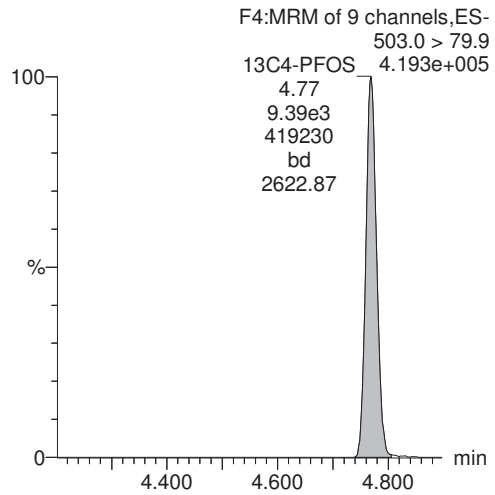
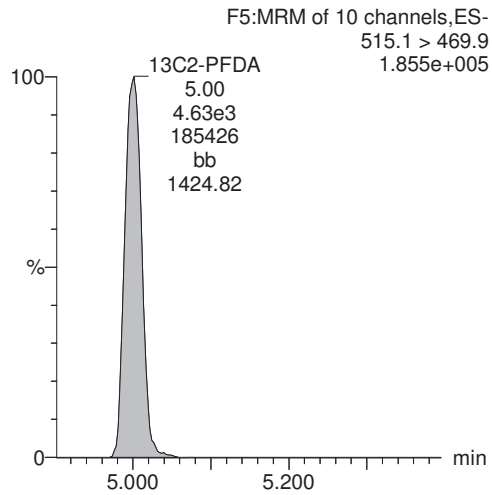


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-39.qld

Last Altered: Monday, December 04, 2017 14:07:47 Pacific Standard Time
Printed: Monday, December 04, 2017 14:08:22 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_39, Date: 03-Dec-2017, Time: 01:44:24, ID: 1701793-04 CH-AT-1RW81-1117 0.25, Description: CH-AT-1RW81-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.01e4		0.2555	3.07				
2	2	PFOA	413 > 368.7	6.12e1	8.22e3		0.2555	4.37	4.37	0.0744	0.364	
3	3	PFOS	499 >79.9		1.01e4		0.2555	4.77				
4	4	13C2-PFHxA	315 > 269.8	3.89e3	8.22e3	0.439	0.2555	3.43	3.43	4.73	42.2	107.7
5	5	13C2-PFDA	515.1 > 469.9	4.52e3	8.22e3	0.542	0.2555	5.00	5.00	5.50	39.7	101.3
6	6	13C2-PFOA	414.9 > 369.7	8.22e3	8.22e3	1.000	0.2555	4.41	4.37	10.0	39.1	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2555	4.81	4.77	28.7	112	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

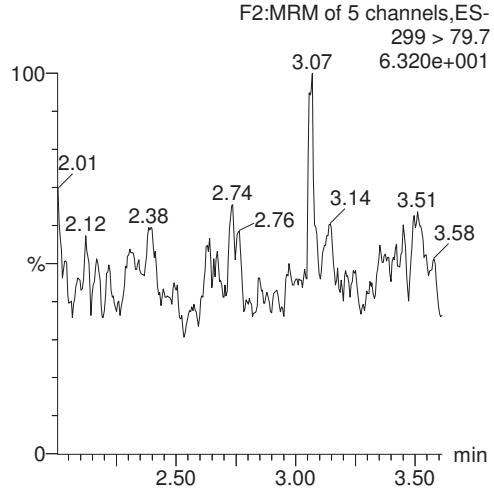
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-39.qld

Last Altered: Monday, December 04, 2017 14:07:47 Pacific Standard Time
Printed: Monday, December 04, 2017 14:08:22 Pacific Standard Time

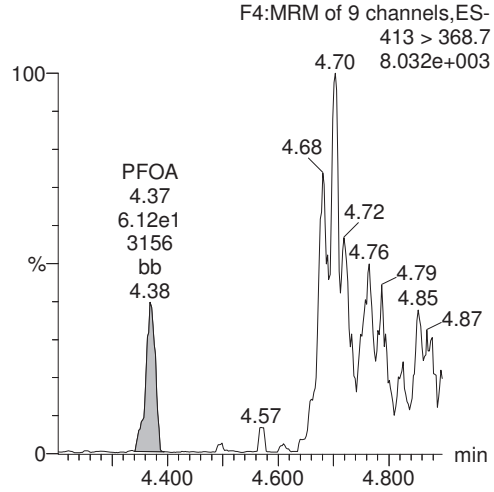
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_39, Date: 03-Dec-2017, Time: 01:44:24, ID: 1701793-04 CH-AT-1RW81-1117 0.25, Description: CH-AT-1RW81-1117

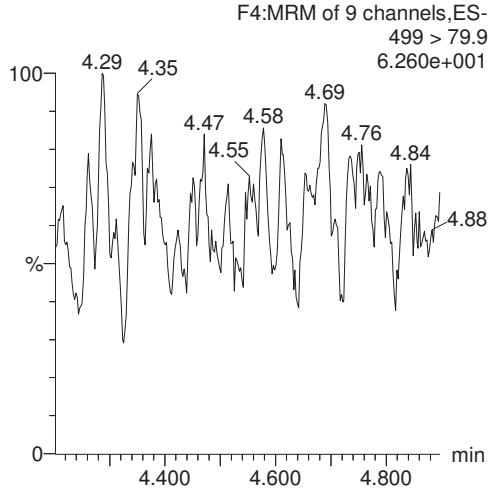
PFBS



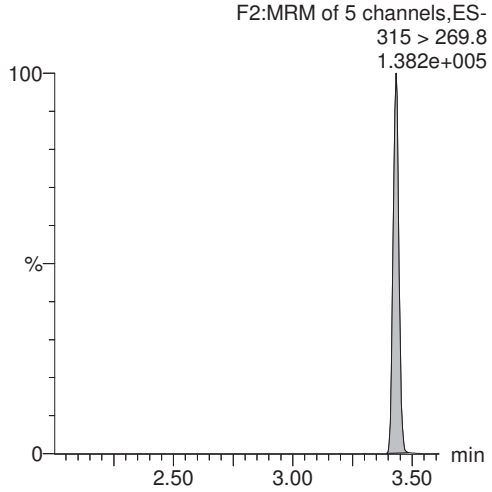
PFOA



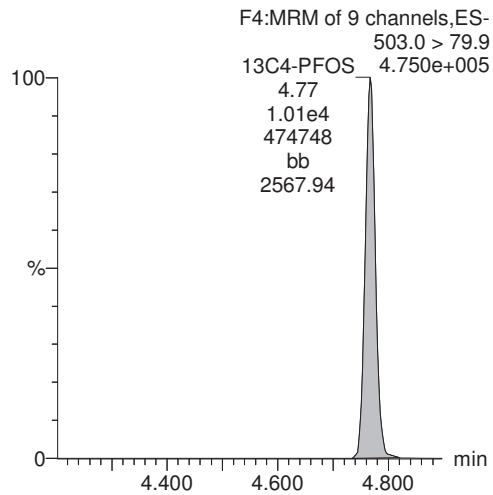
PFOS



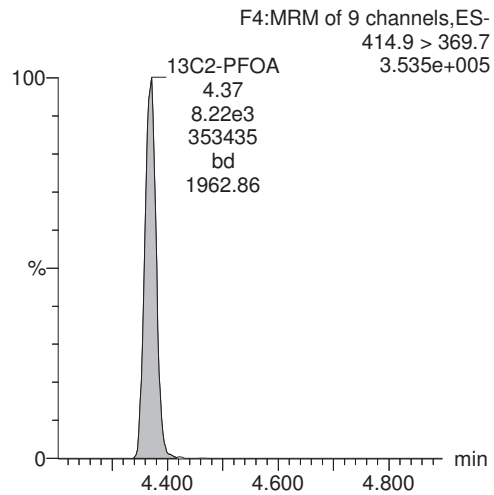
13C2-PFHxA



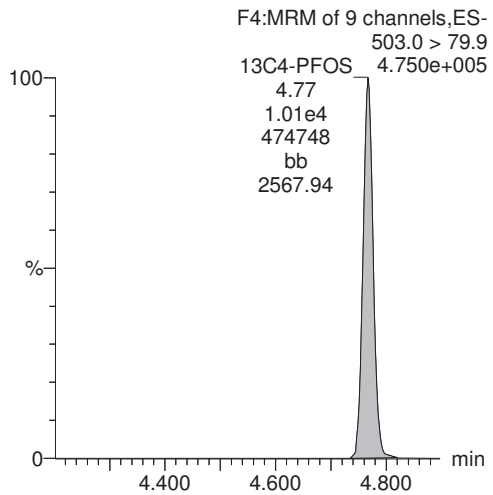
13C4-PFOS



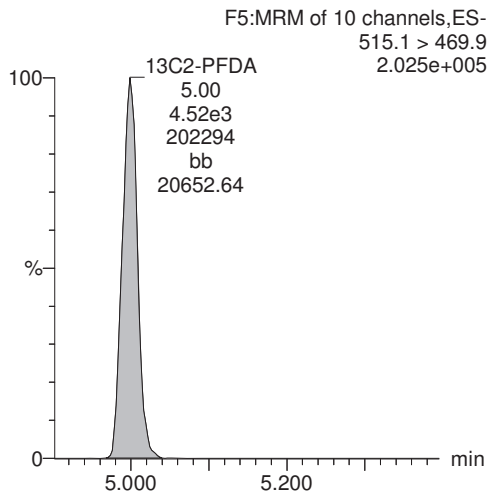
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-43.qld

Last Altered: Monday, December 04, 2017 14:09:37 Pacific Standard Time
Printed: Monday, December 04, 2017 14:09:55 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_43, Date: 03-Dec-2017, Time: 02:34:07, ID: 1701793-05 CH-AT-1RW82-1117 0.25, Description: CH-AT-1RW82-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	9.69e1	1.04e4		0.2546	3.07	3.07	0.267	1.30	
2	2	PFOA	413 > 368.7	2.40e3	9.38e3		0.2546	4.37	4.37	2.56	12.5	
3	3	PFOS	499 >79.9	1.44e3	1.04e4		0.2546	4.77	4.77	3.97	13.0	
4	4	13C2-PFHxA	315 > 269.8	3.79e3	9.38e3	0.439	0.2546	3.43	3.43	4.04	36.1	92.0
5	5	13C2-PFDA	515.1 > 469.9	4.71e3	9.38e3	0.542	0.2546	5.00	5.00	5.01	36.3	92.5
6	6	13C2-PFOA	414.9 > 369.7	9.38e3	9.38e3	1.000	0.2546	4.41	4.37	10.0	39.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2546	4.81	4.77	28.7	113	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

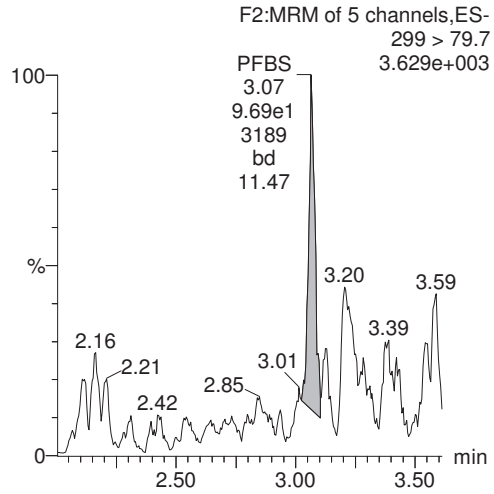
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-43.qld

Last Altered: Monday, December 04, 2017 14:09:37 Pacific Standard Time
Printed: Monday, December 04, 2017 14:09:55 Pacific Standard Time

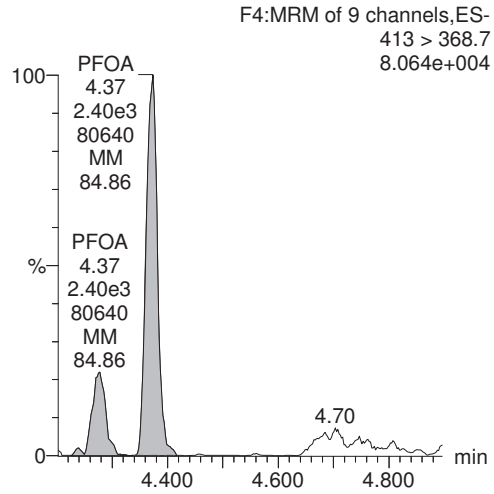
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_43, Date: 03-Dec-2017, Time: 02:34:07, ID: 1701793-05 CH-AT-1RW82-1117 0.25, Description: CH-AT-1RW82-1117

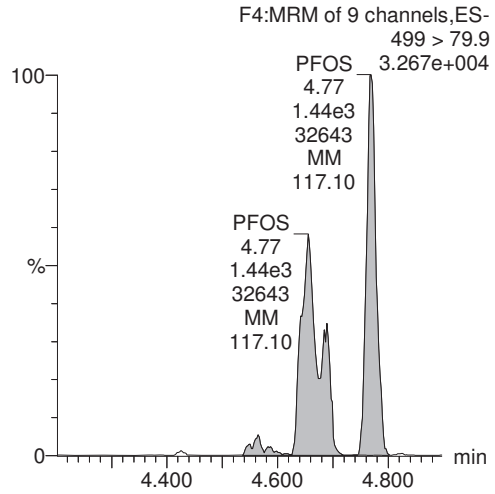
PFBS



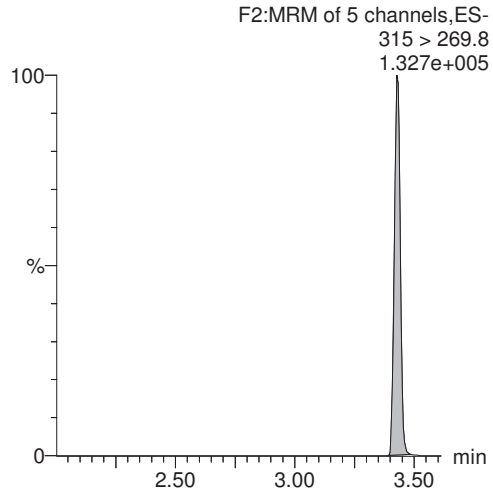
PFOA



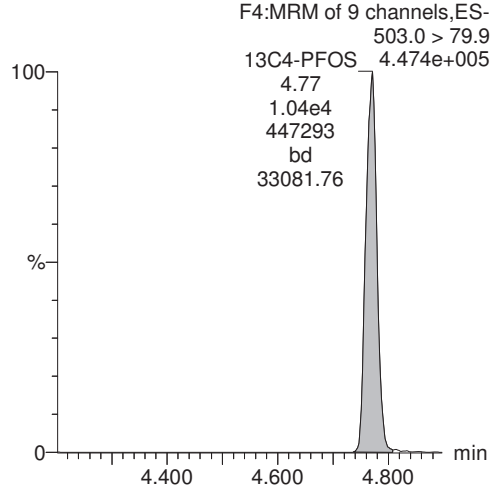
PFOS



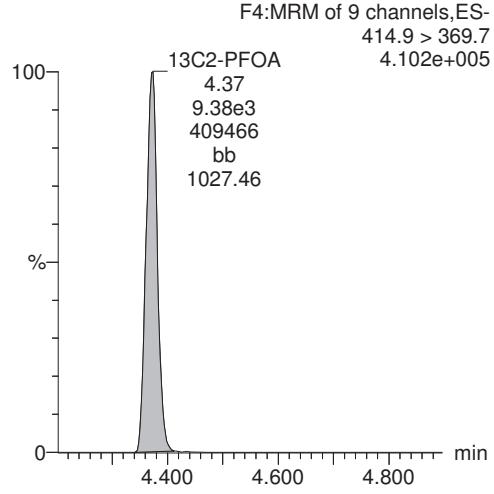
13C2-PFHxA



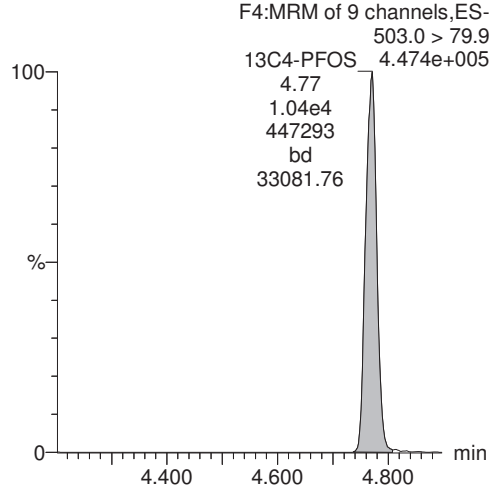
13C4-PFOS



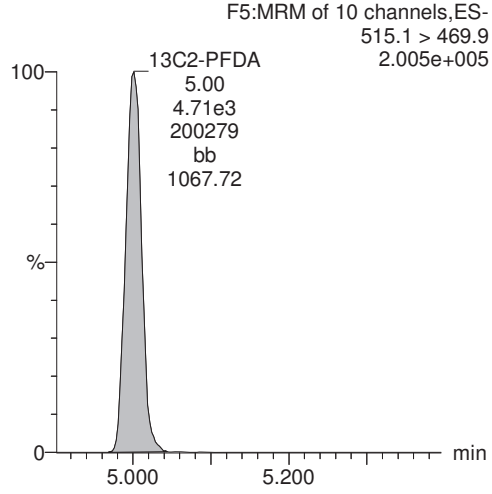
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-44.qld

Last Altered: Monday, December 04, 2017 14:17:23 Pacific Standard Time
Printed: Monday, December 04, 2017 14:17:32 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_44, Date: 03-Dec-2017, Time: 02:46:33, ID: 1701793-06 CH-AT-1RW83-1117 0.25, Description: CH-AT-1RW83-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.72e3		0.2605	3.07				
2	2	PFOA	413 > 368.7		9.37e3		0.2605	4.37				
3	3	PFOS	499 >79.9		9.72e3		0.2605	4.77				
4	4	13C2-PFHxA	315 > 269.8	4.32e3	9.37e3	0.439	0.2605	3.43	3.43	4.61	40.3	104.9
5	5	13C2-PFDA	515.1 > 469.9	4.73e3	9.37e3	0.542	0.2605	5.00	5.00	5.05	35.7	93.1
6	6	13C2-PFOA	414.9 > 369.7	9.37e3	9.37e3	1.000	0.2605	4.41	4.37	10.0	38.4	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.72e3	9.72e3	1.000	0.2605	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

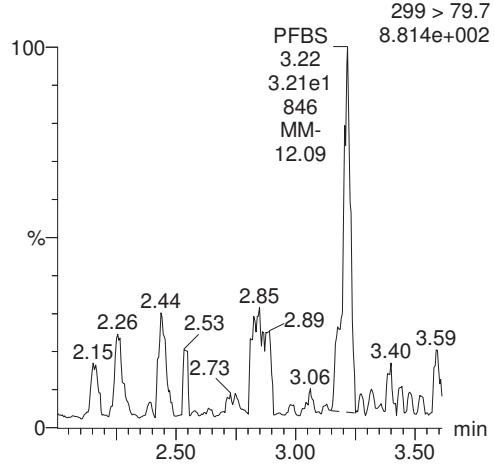
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-44.qld

Last Altered: Monday, December 04, 2017 14:17:23 Pacific Standard Time
Printed: Monday, December 04, 2017 14:17:32 Pacific Standard Time

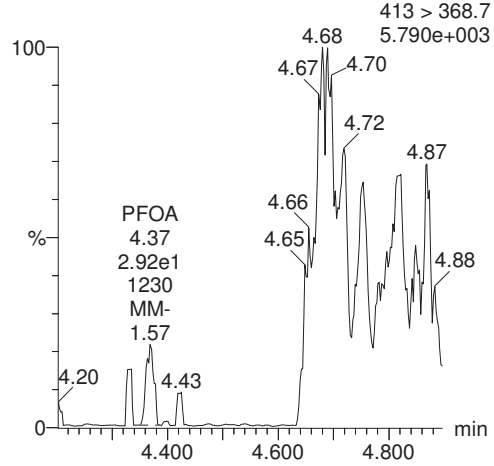
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_44, Date: 03-Dec-2017, Time: 02:46:33, ID: 1701793-06 CH-AT-1RW83-1117 0.25, Description: CH-AT-1RW83-1117

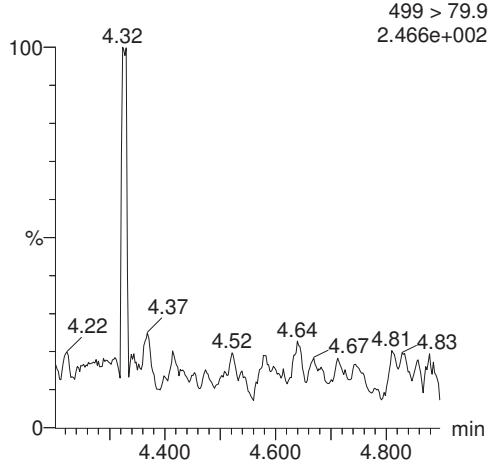
PFBS



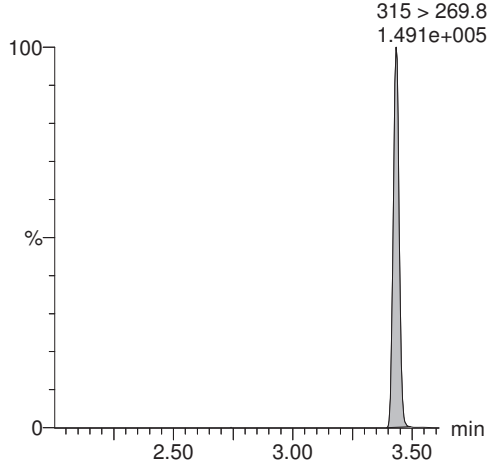
PFOA



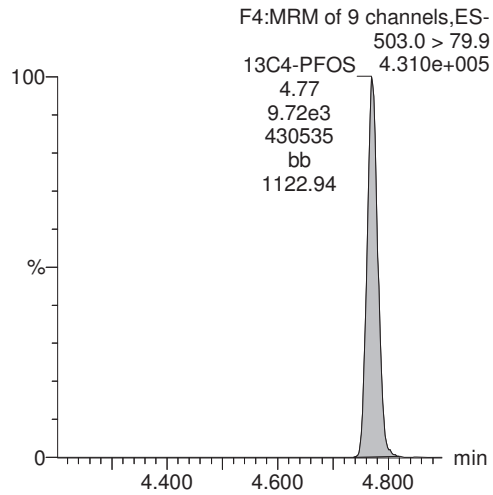
PFOS



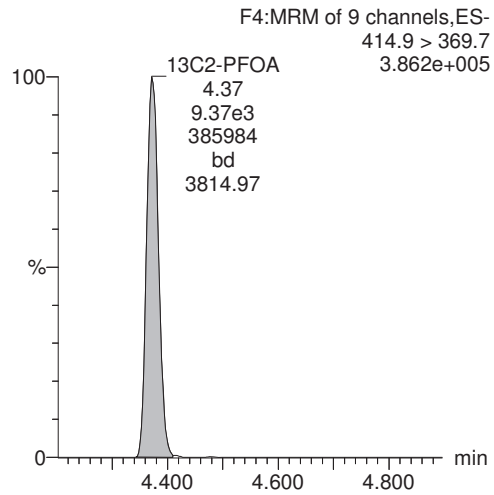
13C2-PFHxA



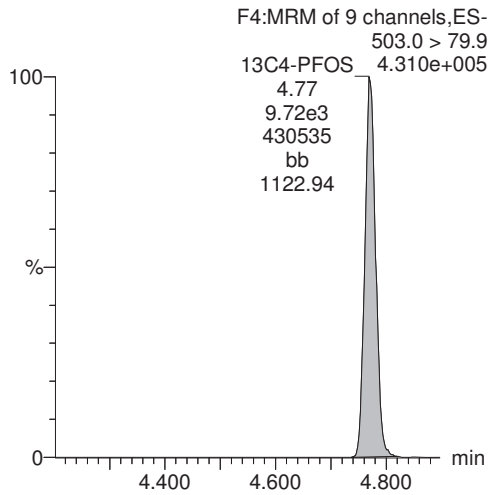
13C4-PFOS



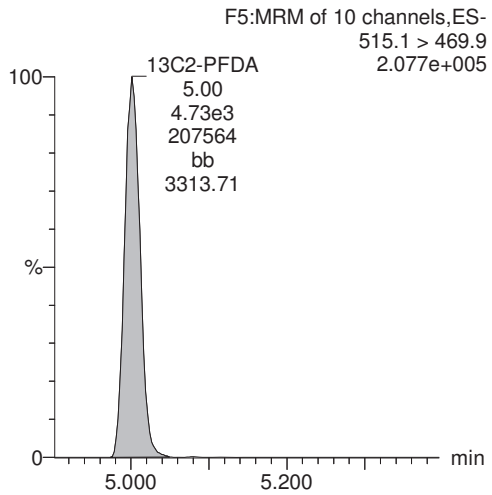
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-45.qld

Last Altered: Monday, December 04, 2017 14:20:33 Pacific Standard Time
Printed: Monday, December 04, 2017 14:21:03 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_45, Date: 03-Dec-2017, Time: 02:58:59, ID: 1701793-07 CH-AT-1RW84-1117 0.25, Description: CH-AT-1RW84-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.02e4		0.2615	3.07				
2	2	PFOA	413 > 368.7	5.44e1	8.80e3		0.2615	4.37	4.36	0.0618	0.295	
3	3	PFOS	499 >79.9		1.02e4		0.2615	4.77				
4	4	13C2-PFHxA	315 > 269.8	3.68e3	8.80e3	0.439	0.2615	3.43	3.43	4.19	36.5	95.4
5	5	13C2-PFDA	515.1 > 469.9	4.03e3	8.80e3	0.542	0.2615	5.00	5.00	4.58	32.3	84.4
6	6	13C2-PFOA	414.9 > 369.7	8.80e3	8.80e3	1.000	0.2615	4.41	4.37	10.0	38.2	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	0.2615	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

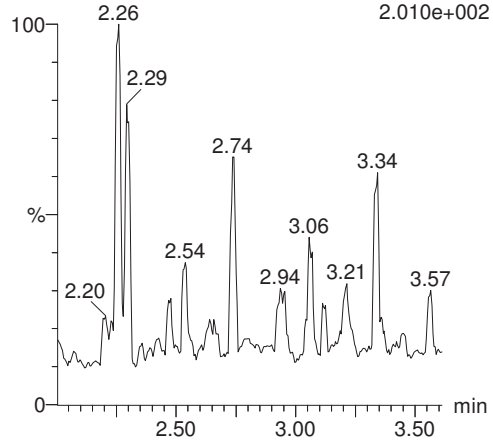
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-45.qld

Last Altered: Monday, December 04, 2017 14:20:33 Pacific Standard Time
Printed: Monday, December 04, 2017 14:21:03 Pacific Standard Time

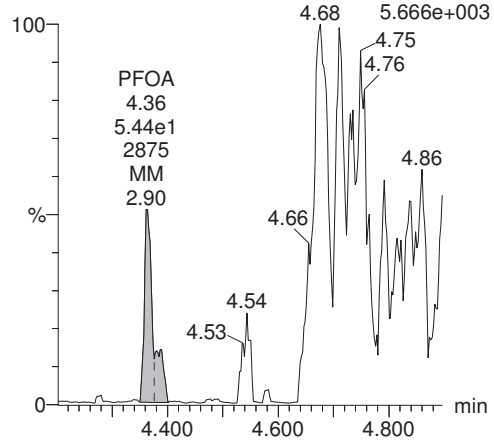
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_45, Date: 03-Dec-2017, Time: 02:58:59, ID: 1701793-07 CH-AT-1RW84-1117 0.25, Description: CH-AT-1RW84-1117

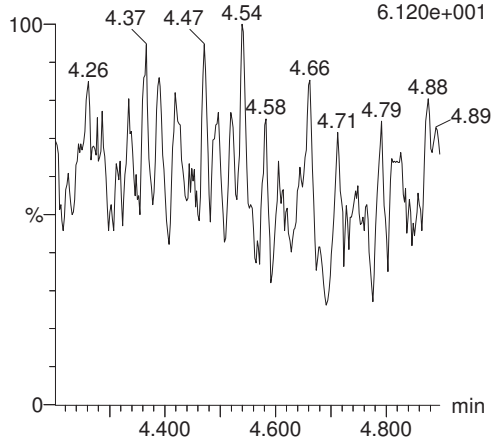
PFBS



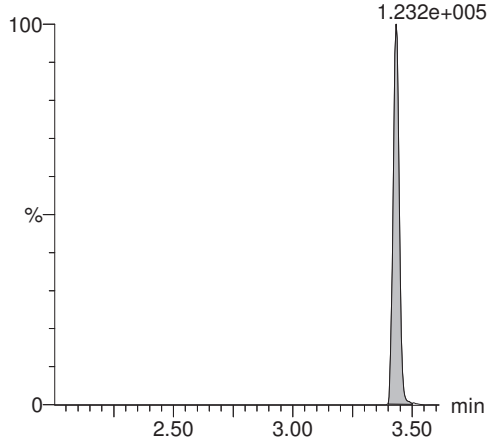
PFOA



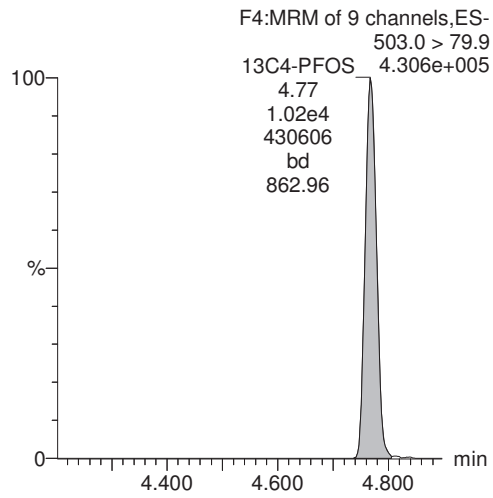
PFOS



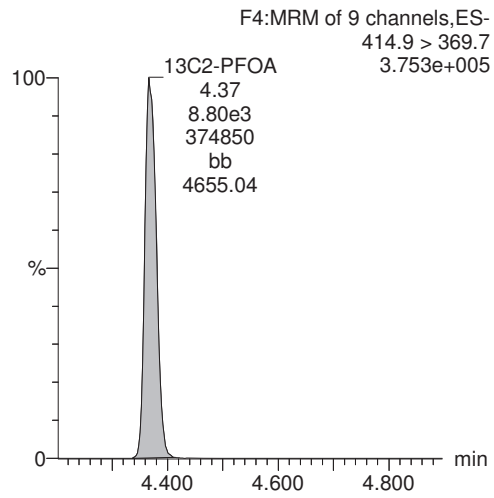
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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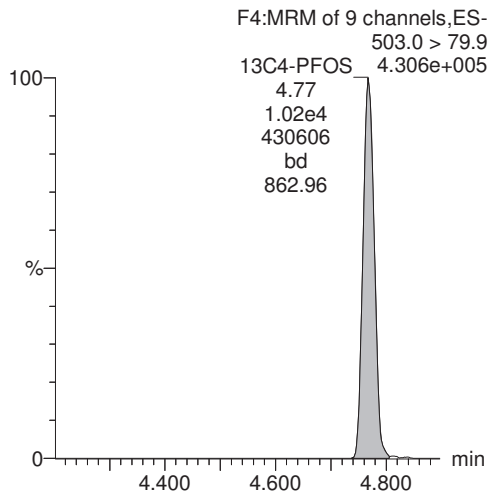
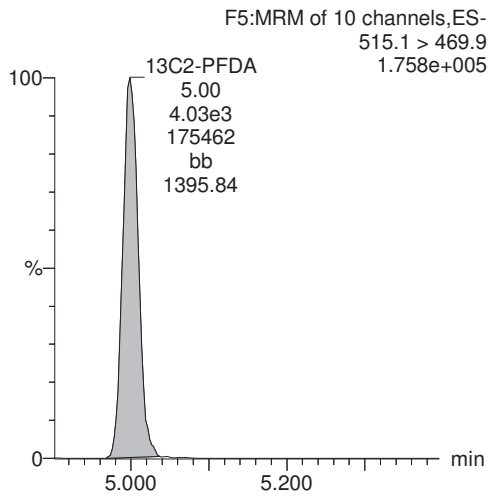


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-46.qld

Last Altered: Monday, December 04, 2017 14:25:41 Pacific Standard Time
Printed: Monday, December 04, 2017 14:25:52 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_46, Date: 03-Dec-2017, Time: 03:11:25, ID: 1701793-08 CH-AT-1RW85-1117 0.25, Description: CH-AT-1RW85-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2574	3.07				
2	2	PFOA	413 > 368.7	3.49e1	9.41e3		0.2574	4.37	4.37	0.0371	0.180	
3	3	PFOS	499 >79.9		1.05e4		0.2574	4.77				
4	4	13C2-PFHxA	315 > 269.8	4.00e3	9.41e3	0.439	0.2574	3.43	3.43	4.25	37.6	96.7
5	5	13C2-PFDA	515.1 > 469.9	4.46e3	9.41e3	0.542	0.2574	5.00	5.00	4.74	34.0	87.5
6	6	13C2-PFOA	414.9 > 369.7	9.41e3	9.41e3	1.000	0.2574	4.41	4.37	10.0	38.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2574	4.81	4.77	28.7	111	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

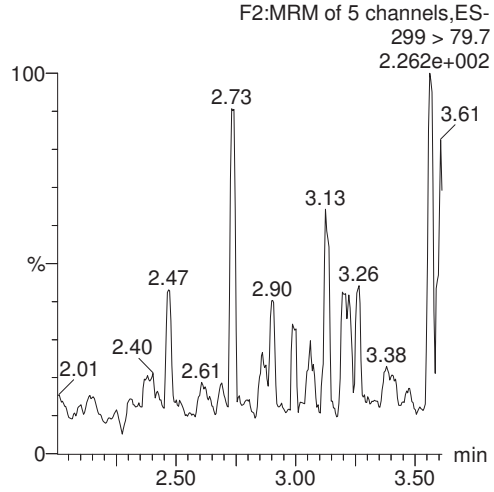
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-46.qld

Last Altered: Monday, December 04, 2017 14:25:41 Pacific Standard Time
Printed: Monday, December 04, 2017 14:25:52 Pacific Standard Time

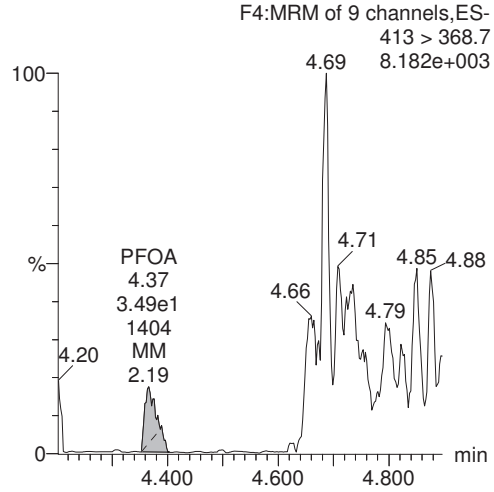
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_46, Date: 03-Dec-2017, Time: 03:11:25, ID: 1701793-08 CH-AT-1RW85-1117 0.25, Description: CH-AT-1RW85-1117

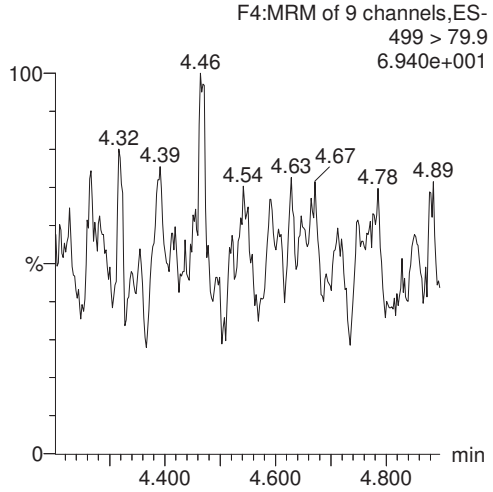
PFBS



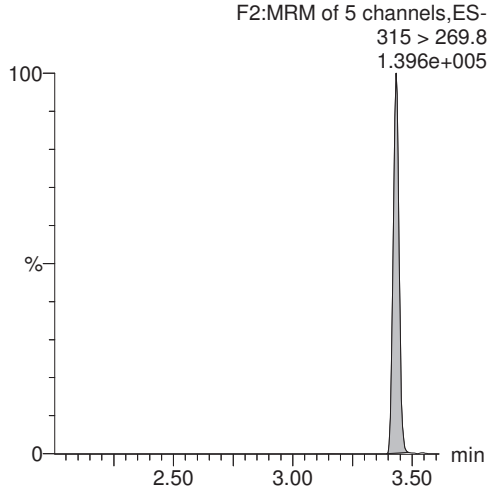
PFOA



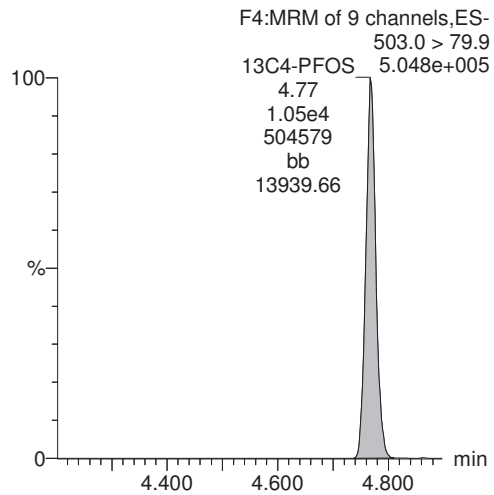
PFOS



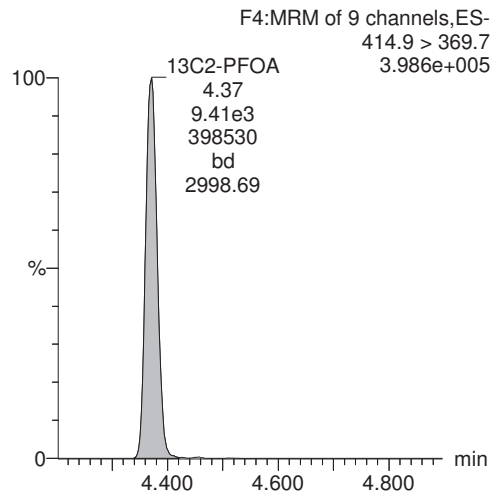
13C2-PFHxA



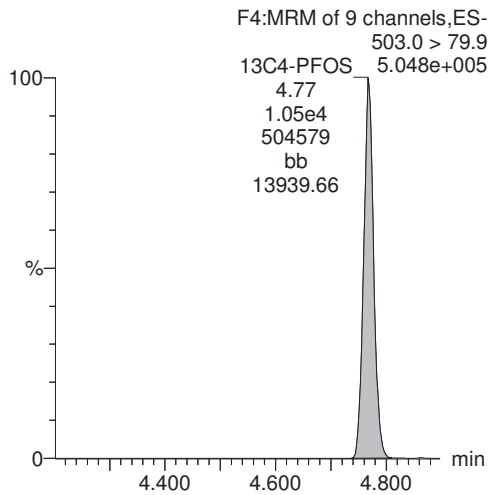
13C4-PFOS



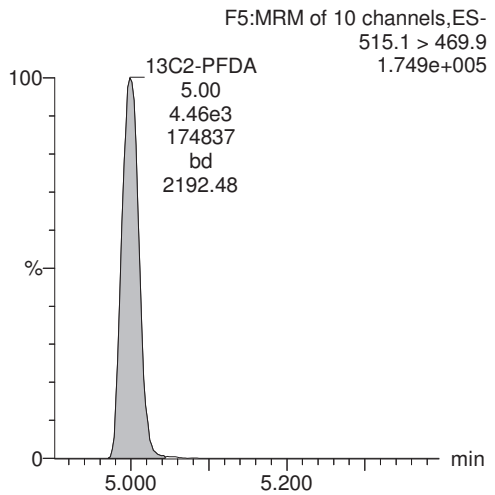
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-47.qld

Last Altered: Monday, December 04, 2017 14:24:24 Pacific Standard Time
Printed: Monday, December 04, 2017 14:24:46 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_47, Date: 03-Dec-2017, Time: 03:23:51, ID: 1701793-09 CH-AT-1FB78-1117 0.25, Description: CH-AT-1FB78-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		8.71e3		0.2608	3.06				
2	2	PFOA	413 > 368.7	1.83e1	8.45e3		0.2608	4.37	4.37	0.0217	0.104	
3	3	PFOS	499 >79.9		8.71e3		0.2608	4.76				
4	4	13C2-PFHxA	315 > 269.8	4.00e3	8.45e3	0.439	0.2608	3.43	3.44	4.73	41.3	107.8
5	5	13C2-PFDA	515.1 > 469.9	4.04e3	8.45e3	0.542	0.2608	5.00	5.00	4.78	33.8	88.1
6	6	13C2-PFOA	414.9 > 369.7	8.45e3	8.45e3	1.000	0.2608	4.41	4.37	10.0	38.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	8.71e3	8.71e3	1.000	0.2608	4.81	4.76	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

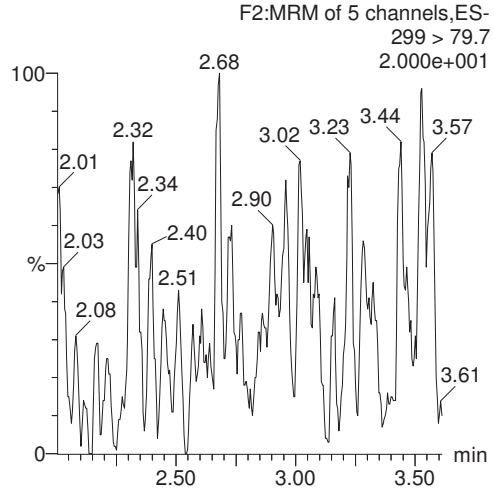
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-47.qld

Last Altered: Monday, December 04, 2017 14:24:24 Pacific Standard Time
Printed: Monday, December 04, 2017 14:24:46 Pacific Standard Time

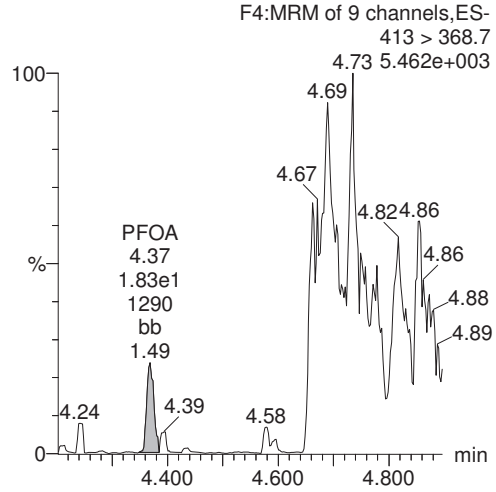
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_47, Date: 03-Dec-2017, Time: 03:23:51, ID: 1701793-09 CH-AT-1FB78-1117 0.25, Description: CH-AT-1FB78-1117

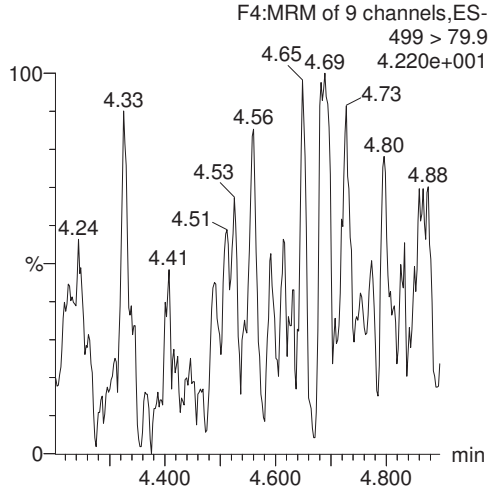
PFBS



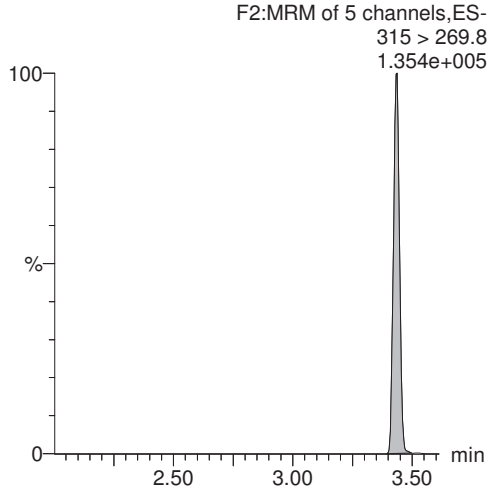
PFOA



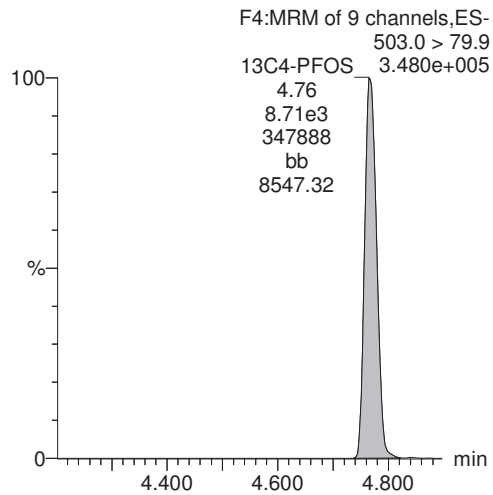
PFOS



13C2-PFHxA



13C4-PFOS



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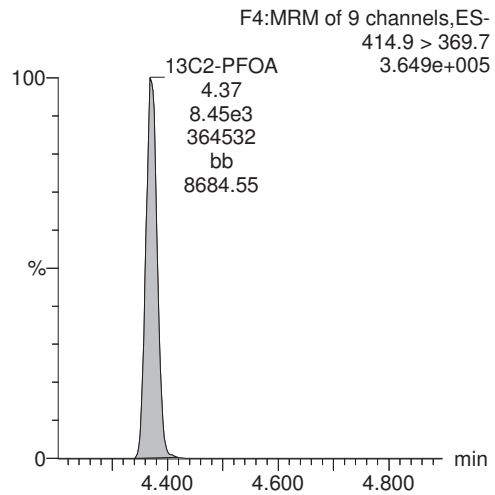
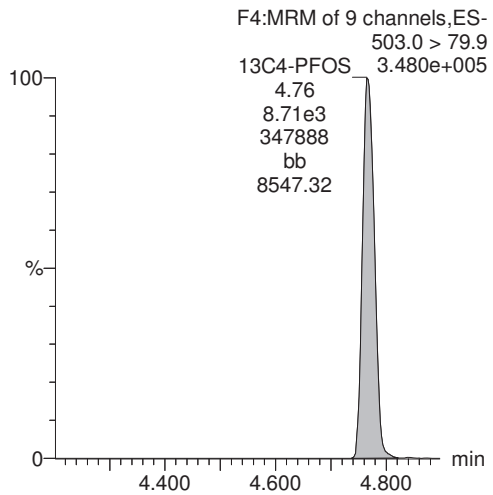
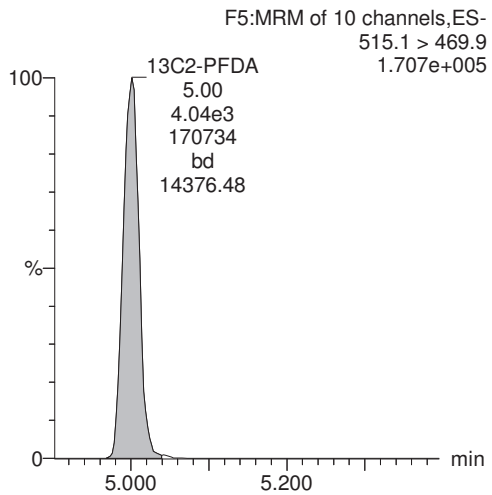


13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-48.qld

Last Altered: Monday, December 04, 2017 14:26:48 Pacific Standard Time
Printed: Monday, December 04, 2017 14:27:12 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_48, Date: 03-Dec-2017, Time: 03:36:18, ID: 1701793-10 CH-AT-1FB79-1117 0.25, Description: CH-AT-1FB79-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.01e4		0.2527	3.07				
2	2	PFOA	413 > 368.7	3.70e1	9.31e3		0.2527	4.37	4.37	0.0397	0.196	
3	3	PFOS	499 >79.9		1.01e4		0.2527	4.77				
4	4	13C2-PFHxA	315 > 269.8	3.95e3	9.31e3	0.439	0.2527	3.43	3.43	4.25	38.2	96.7
5	5	13C2-PFDA	515.1 > 469.9	4.63e3	9.31e3	0.542	0.2527	5.00	5.00	4.98	36.3	91.8
6	6	13C2-PFOA	414.9 > 369.7	9.31e3	9.31e3	1.000	0.2527	4.41	4.37	10.0	39.6	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2527	4.81	4.77	28.7	114	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

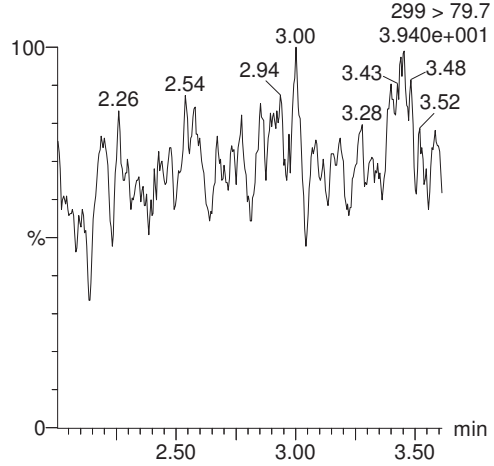
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-48.qld

Last Altered: Monday, December 04, 2017 14:26:48 Pacific Standard Time
Printed: Monday, December 04, 2017 14:27:12 Pacific Standard Time

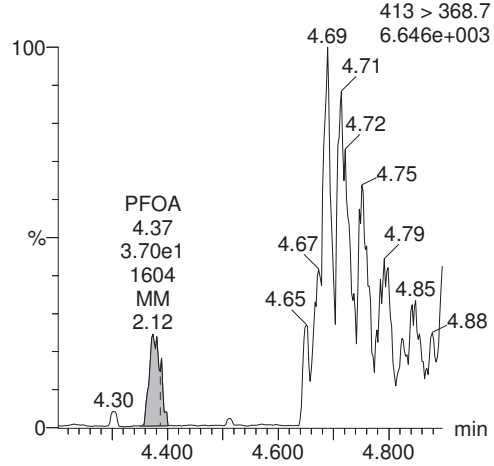
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_48, Date: 03-Dec-2017, Time: 03:36:18, ID: 1701793-10 CH-AT-1FB79-1117 0.25, Description: CH-AT-1FB79-1117

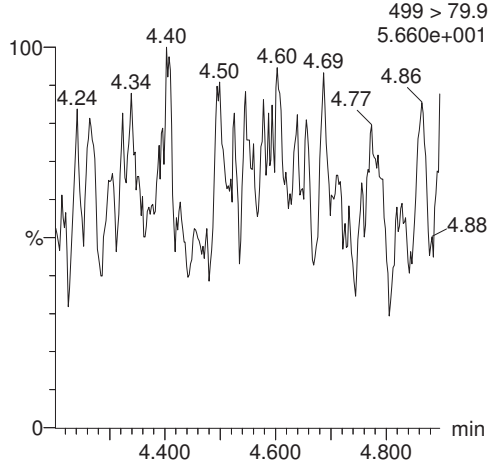
PFBS



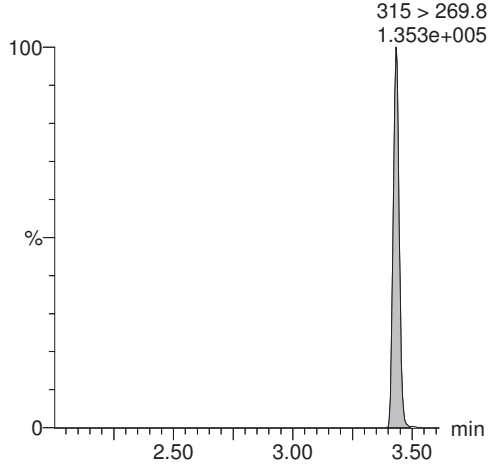
PFOA



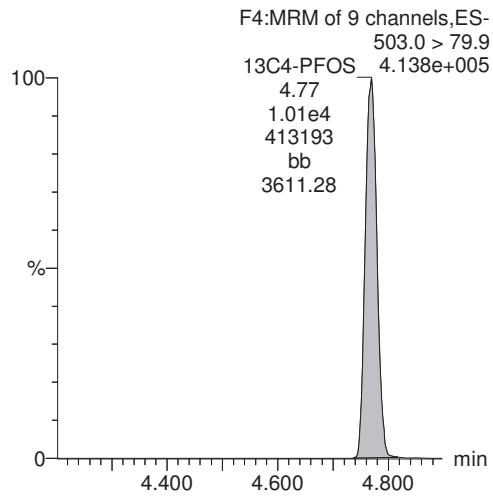
PFOS



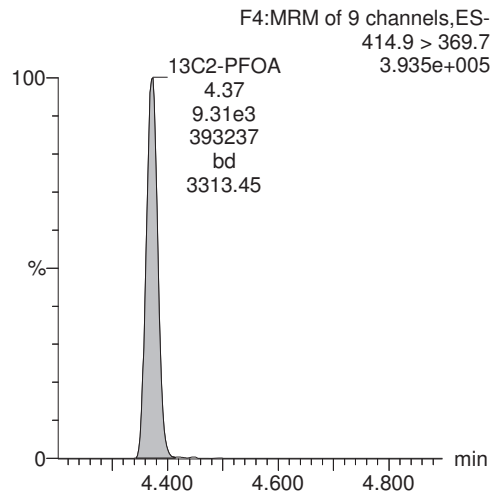
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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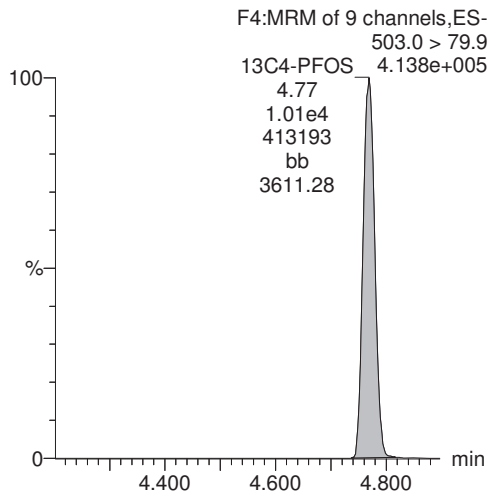
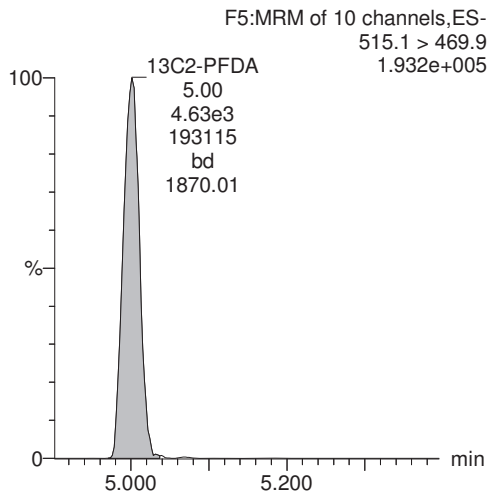


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-49.qld

Last Altered: Monday, December 04, 2017 14:30:02 Pacific Standard Time
Printed: Monday, December 04, 2017 14:30:34 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_49, Date: 03-Dec-2017, Time: 03:48:45, ID: 1701793-11 CH-AT-1FB80-1117 0.25, Description: CH-AT-1FB80-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.31e3		0.2519	3.07				
2	2	PFOA	413 > 368.7	7.05e1	8.89e3		0.2519	4.37	4.37	0.0793	0.394	
3	3	PFOS	499 >79.9		9.31e3		0.2519	4.77				
4	4	13C2-PFHxA	315 > 269.8	3.46e3	8.89e3	0.439	0.2519	3.43	3.44	3.90	35.2	88.7
5	5	13C2-PFDA	515.1 > 469.9	4.23e3	8.89e3	0.542	0.2519	5.00	5.00	4.76	34.8	87.7
6	6	13C2-PFOA	414.9 > 369.7	8.89e3	8.89e3	1.000	0.2519	4.41	4.37	10.0	39.7	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.31e3	9.31e3	1.000	0.2519	4.81	4.77	28.7	114	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

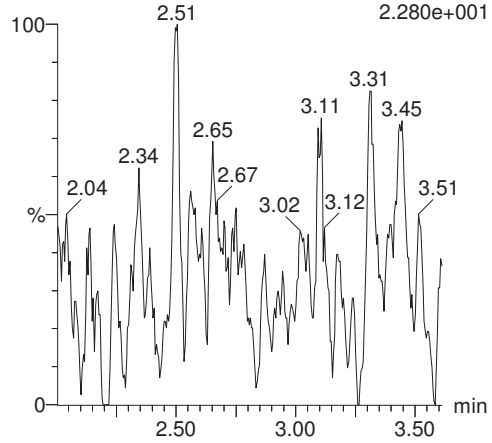
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-49.qld

Last Altered: Monday, December 04, 2017 14:30:02 Pacific Standard Time
Printed: Monday, December 04, 2017 14:30:34 Pacific Standard Time

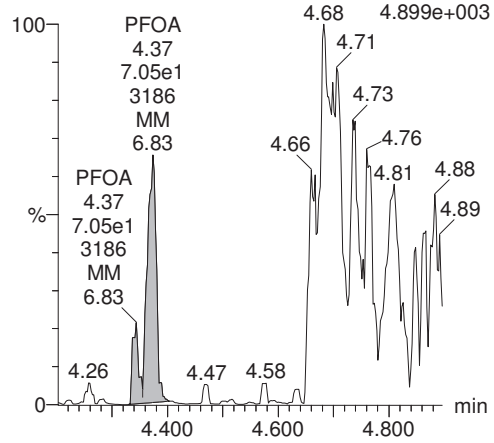
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_49, Date: 03-Dec-2017, Time: 03:48:45, ID: 1701793-11 CH-AT-1FB80-1117 0.25, Description: CH-AT-1FB80-1117

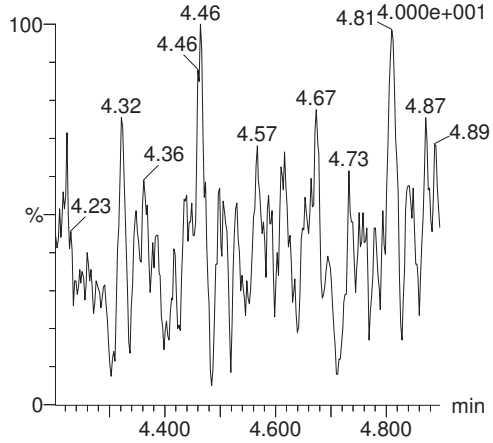
PFBS



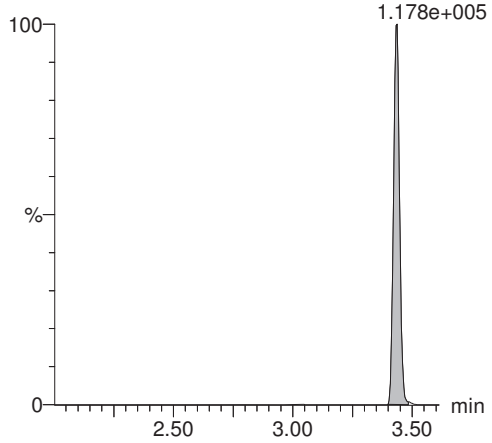
PFOA



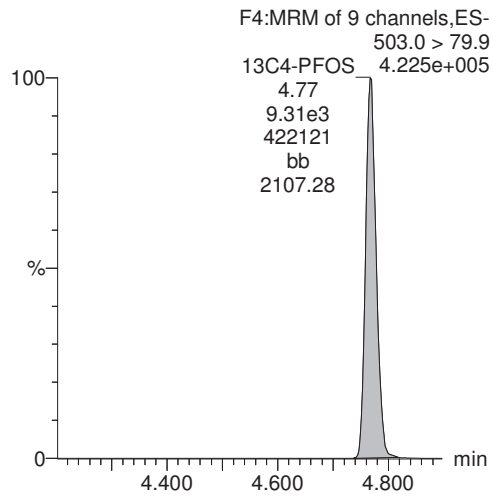
PFOS



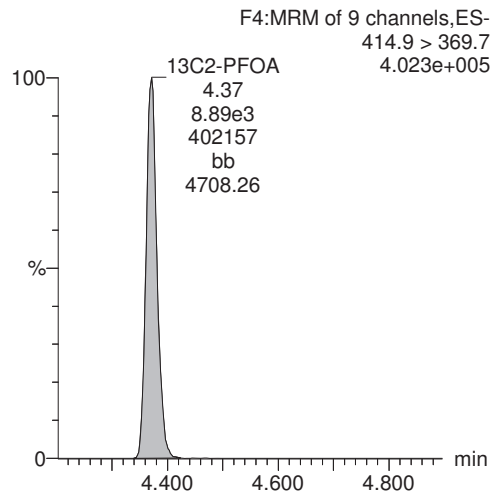
13C2-PFHxA



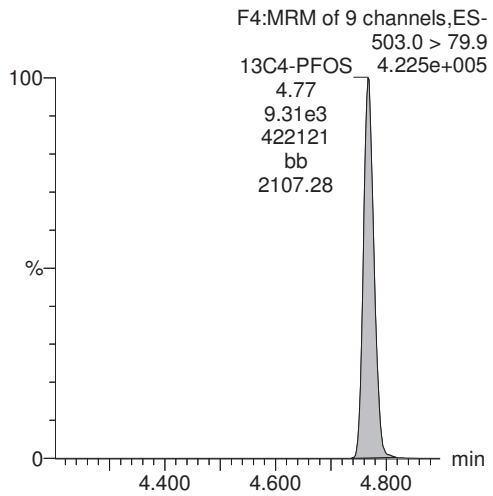
13C4-PFOS



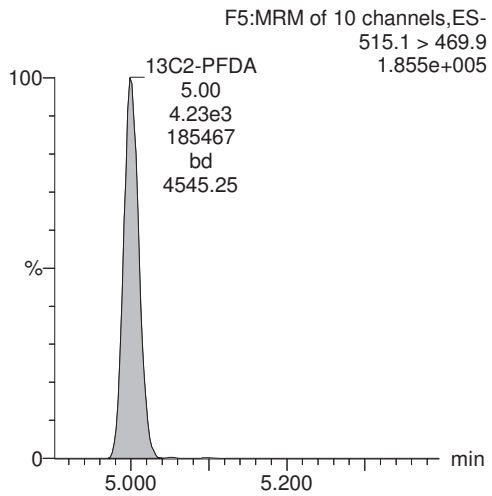
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-50.qld

Last Altered: Monday, December 04, 2017 14:32:00 Pacific Standard Time
Printed: Monday, December 04, 2017 14:32:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_50, Date: 03-Dec-2017, Time: 04:01:09, ID: 1701793-12 CH-AT-1FB81-1117 0.25, Description: CH-AT-1FB81-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.44e3		0.2612	3.07				
2	2	PFOA	413 > 368.7	5.58e1	9.02e3		0.2612	4.37	4.38	0.0619	0.296	
3	3	PFOS	499 >79.9	9.13e-1	9.44e3		0.2612	4.77	4.76	0.00278	0.00884	
4	4	13C2-PFHxA	315 > 269.8	3.67e3	9.02e3	0.439	0.2612	3.43	3.44	4.07	35.5	92.6
5	5	13C2-PFDA	515.1 > 469.9	4.81e3	9.02e3	0.542	0.2612	5.00	5.00	5.33	37.6	98.3
6	6	13C2-PFOA	414.9 > 369.7	9.02e3	9.02e3	1.000	0.2612	4.41	4.37	10.0	38.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.44e3	9.44e3	1.000	0.2612	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

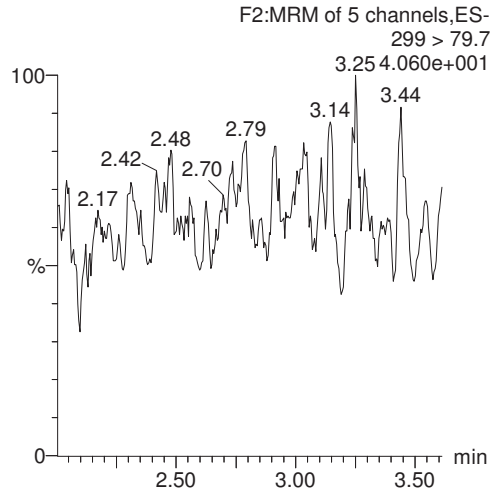
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-50.qld

Last Altered: Monday, December 04, 2017 14:32:00 Pacific Standard Time
Printed: Monday, December 04, 2017 14:32:11 Pacific Standard Time

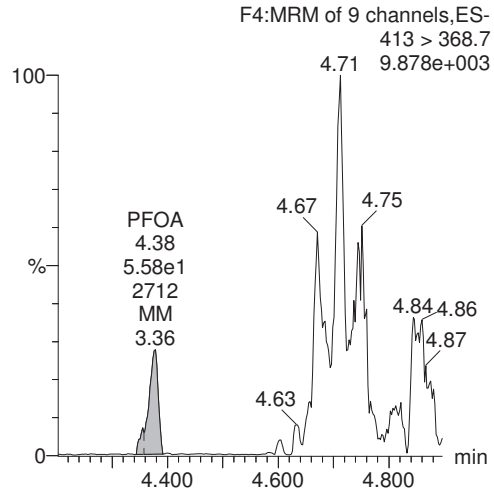
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_50, Date: 03-Dec-2017, Time: 04:01:09, ID: 1701793-12 CH-AT-1FB81-1117 0.25, Description: CH-AT-1FB81-1117

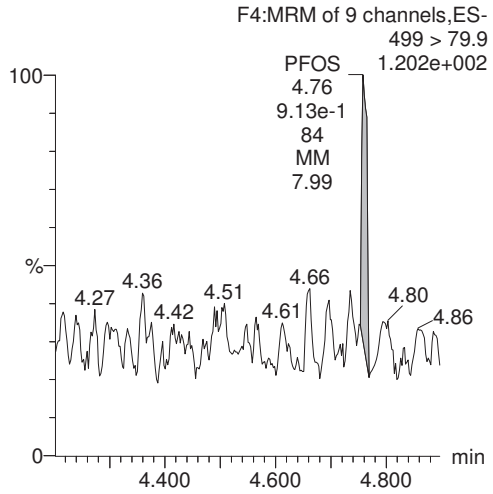
PFBS



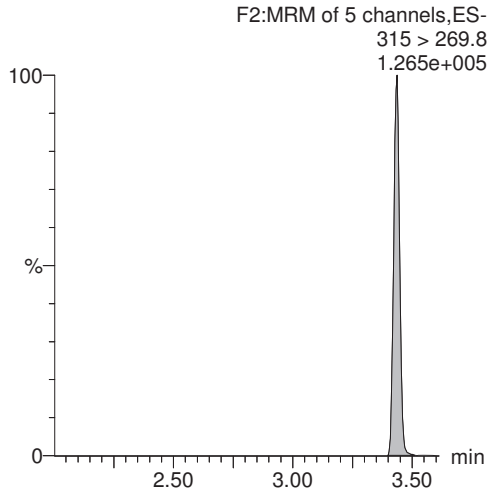
PFOA



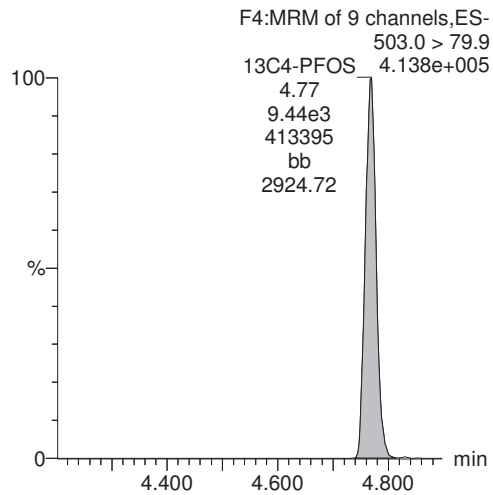
PFOS



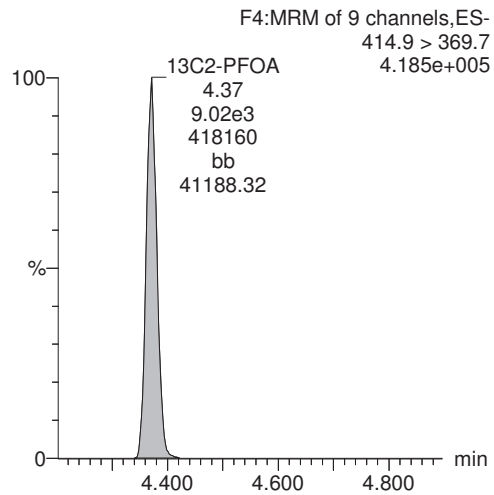
13C2-PFHxA



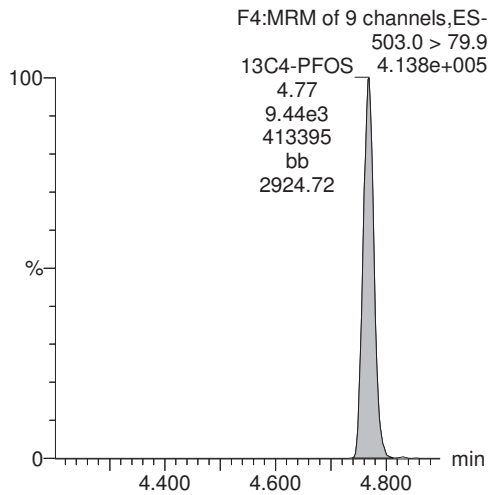
13C4-PFOS



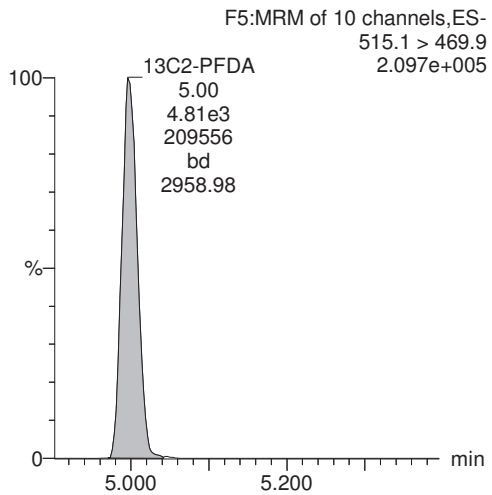
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-51.qld

Last Altered: Monday, December 04, 2017 14:34:26 Pacific Standard Time
Printed: Monday, December 04, 2017 14:34:56 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_51, Date: 03-Dec-2017, Time: 04:13:33, ID: 1701793-13 CH-AT-1FB82-1117 0.25, Description: CH-AT-1FB82-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.04e4		0.2614	3.07				
2	2	PFOA	413 > 368.7	7.44e1	9.72e3		0.2614	4.37	4.37	0.0766	0.366	
3	3	PFOS	499 >79.9	1.68e0	1.04e4		0.2614	4.77	4.76	0.00463	0.0147	
4	4	13C2-PFHxA	315 > 269.8	3.94e3	9.72e3	0.439	0.2614	3.43	3.44	4.06	35.3	92.4
5	5	13C2-PFDA	515.1 > 469.9	4.70e3	9.72e3	0.542	0.2614	5.00	5.00	4.84	34.1	89.2
6	6	13C2-PFOA	414.9 > 369.7	9.72e3	9.72e3	1.000	0.2614	4.41	4.37	10.0	38.3	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2614	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

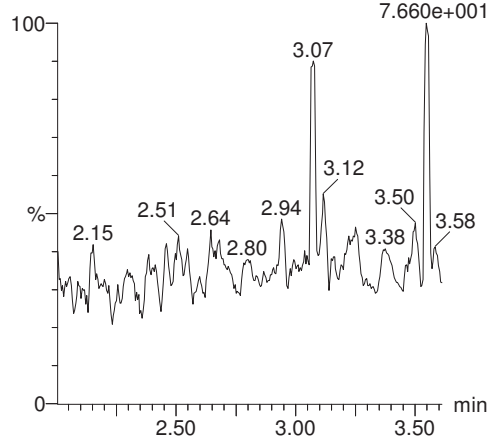
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-51.qld

Last Altered: Monday, December 04, 2017 14:34:26 Pacific Standard Time
Printed: Monday, December 04, 2017 14:34:56 Pacific Standard Time

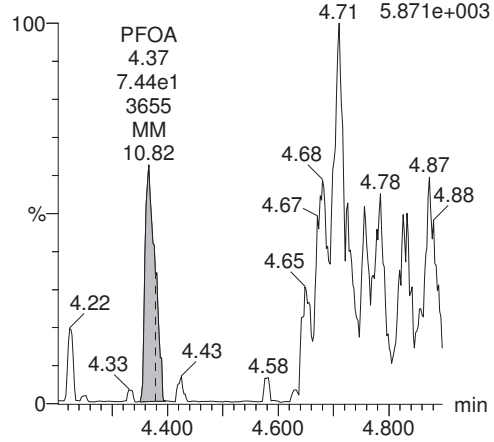
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_51, Date: 03-Dec-2017, Time: 04:13:33, ID: 1701793-13 CH-AT-1FB82-1117 0.25, Description: CH-AT-1FB82-1117

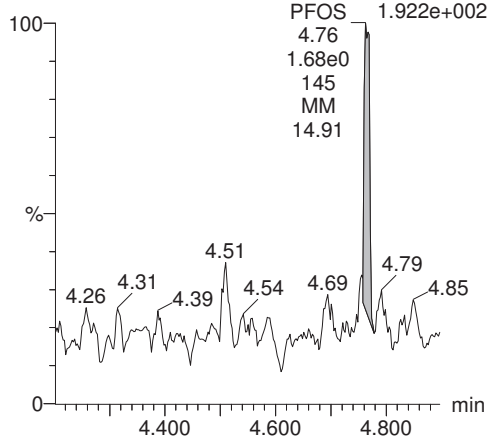
PFBS



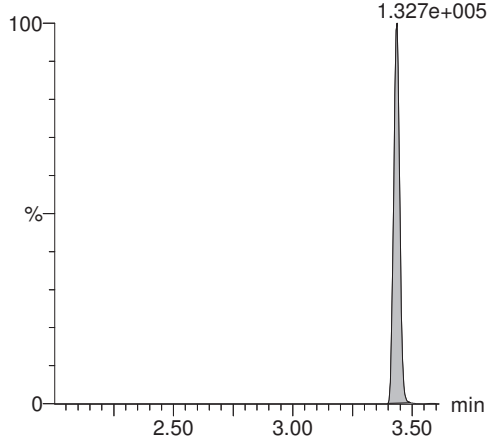
PFOA



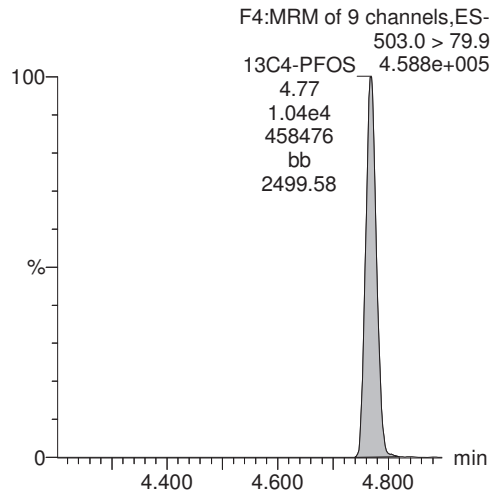
PFOS



13C2-PFHxA



13C4-PFOS



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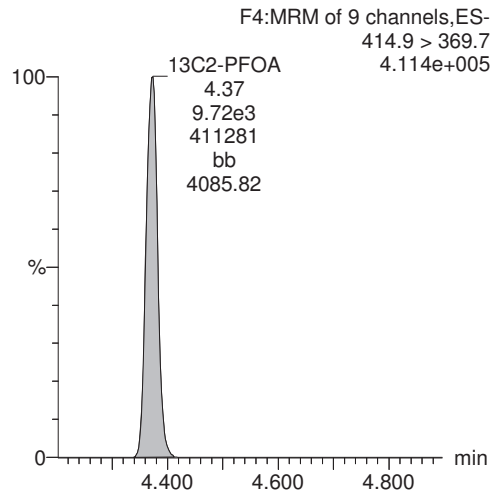
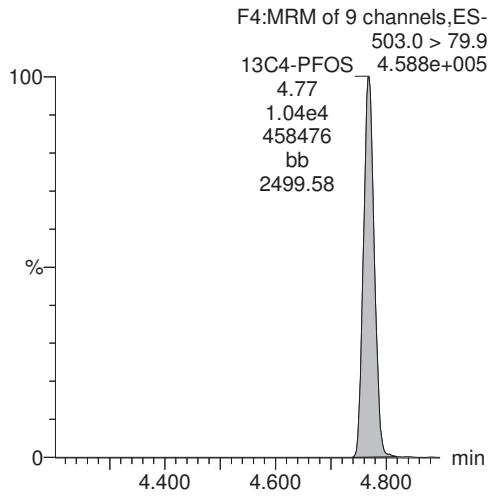
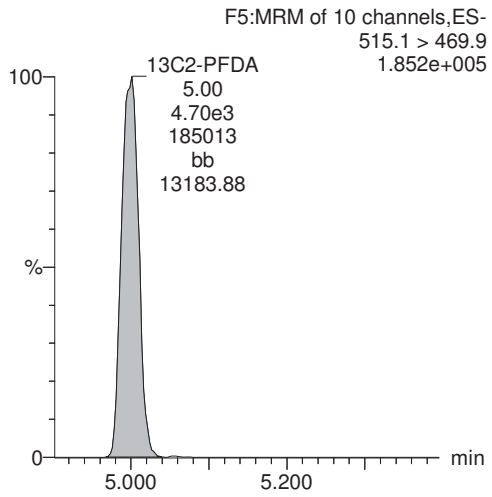


13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-52.qld

Last Altered: Monday, December 04, 2017 14:35:38 Pacific Standard Time
Printed: Monday, December 04, 2017 14:35:55 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_52, Date: 03-Dec-2017, Time: 04:25:58, ID: 1701793-14 CH-AT-1FB83-1117 0.25, Description: CH-AT-1FB83-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.38e3		0.2646	3.07				
2	2	PFOA	413 > 368.7	3.73e1	9.16e3		0.2646	4.37	4.37	0.0407	0.192	
3	3	PFOS	499 >79.9		9.38e3		0.2646	4.77				
4	4	13C2-PFHxA	315 > 269.8	3.39e3	9.16e3	0.439	0.2646	3.43	3.44	3.70	31.9	84.3
5	5	13C2-PFDA	515.1 > 469.9	4.34e3	9.16e3	0.542	0.2646	5.00	5.00	4.74	33.0	87.4
6	6	13C2-PFOA	414.9 > 369.7	9.16e3	9.16e3	1.000	0.2646	4.41	4.37	10.0	37.8	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.38e3	9.38e3	1.000	0.2646	4.81	4.77	28.7	108	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

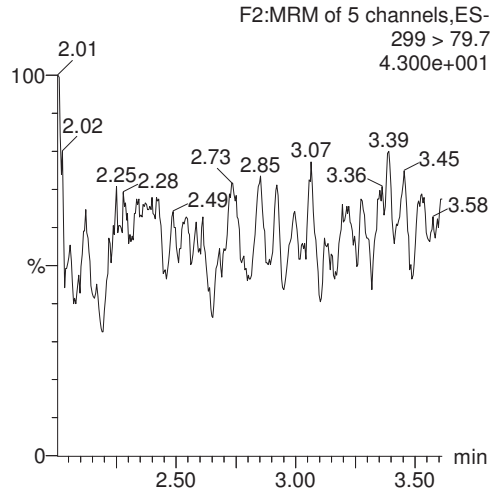
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-52.qld

Last Altered: Monday, December 04, 2017 14:35:38 Pacific Standard Time
Printed: Monday, December 04, 2017 14:35:55 Pacific Standard Time

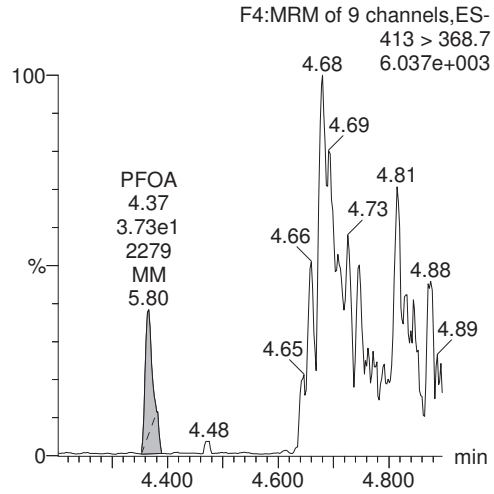
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_52, Date: 03-Dec-2017, Time: 04:25:58, ID: 1701793-14 CH-AT-1FB83-1117 0.25, Description: CH-AT-1FB83-1117

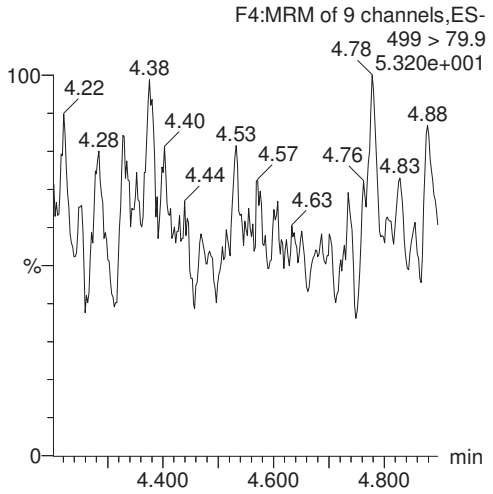
PFBS



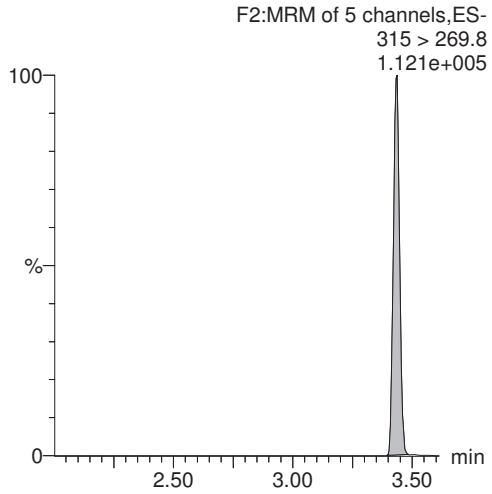
PFOA



PFOS



13C2-PFHxA



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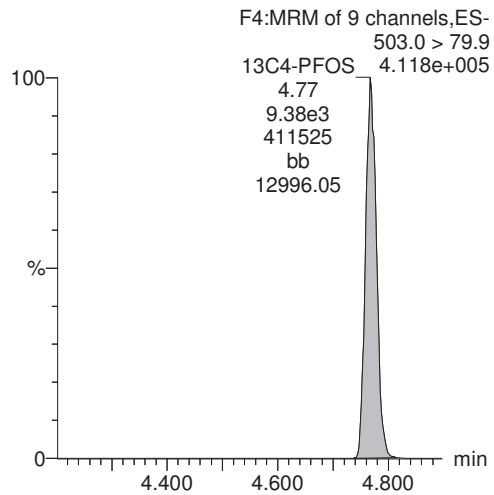

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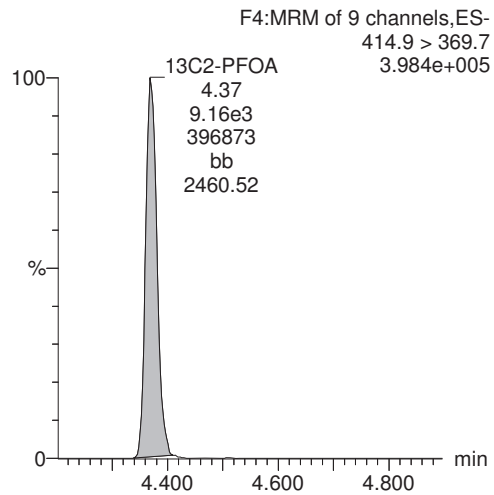

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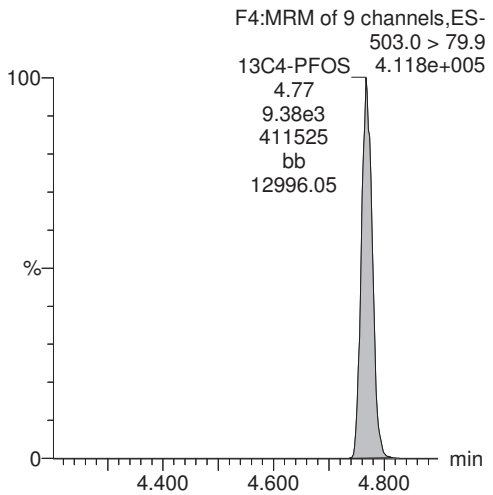
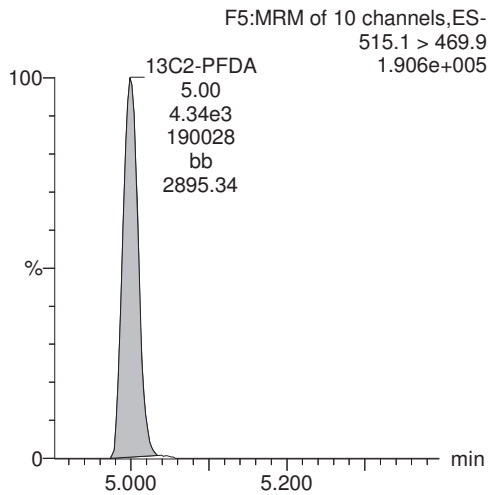


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-53.qld

Last Altered: Monday, December 04, 2017 14:36:44 Pacific Standard Time
Printed: Monday, December 04, 2017 14:37:03 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_53, Date: 03-Dec-2017, Time: 04:38:23, ID: 1701793-15 CH-AT-1FB84-1117 0.25, Description: CH-AT-1FB84-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2618	3.07				
2	2	PFOA	413 > 368.7	3.88e1	9.58e3		0.2618	4.37	4.38	0.0405	0.193	
3	3	PFOS	499 >79.9	2.54e0	1.05e4		0.2618	4.77	4.77	0.00691	0.0219	
4	4	13C2-PFHxA	315 > 269.8	3.70e3	9.58e3	0.439	0.2618	3.43	3.44	3.86	33.6	88.0
5	5	13C2-PFDA	515.1 > 469.9	4.15e3	9.58e3	0.542	0.2618	5.00	5.00	4.33	30.5	79.8
6	6	13C2-PFOA	414.9 > 369.7	9.58e3	9.58e3	1.000	0.2618	4.41	4.37	10.0	38.2	100.0
7	7	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2618	4.81	4.77	28.7	110	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

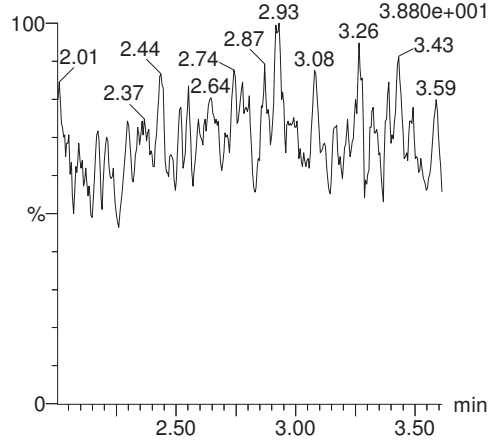
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-53.qld

Last Altered: Monday, December 04, 2017 14:36:44 Pacific Standard Time
Printed: Monday, December 04, 2017 14:37:03 Pacific Standard Time

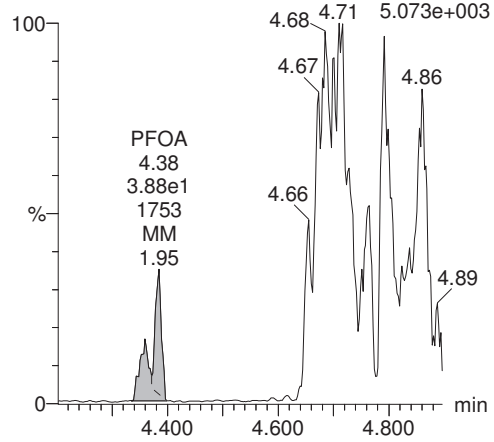
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_53, Date: 03-Dec-2017, Time: 04:38:23, ID: 1701793-15 CH-AT-1FB84-1117 0.25, Description: CH-AT-1FB84-1117

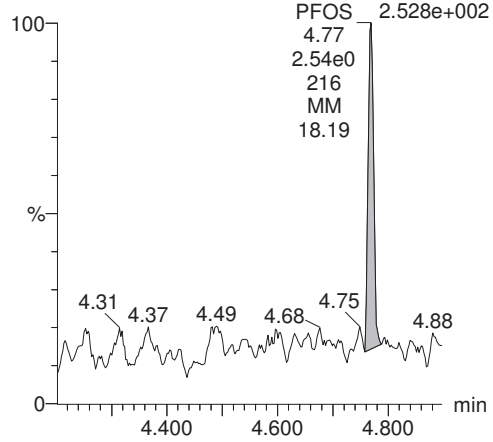
PFBS



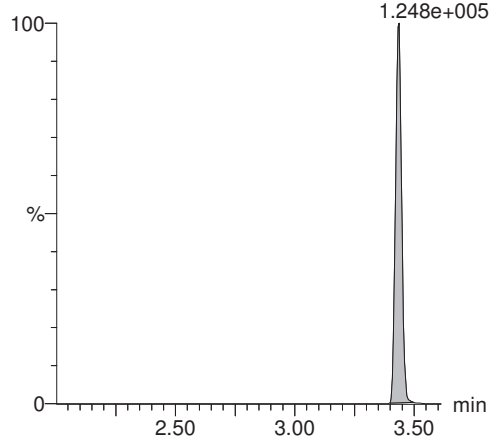
PFOA



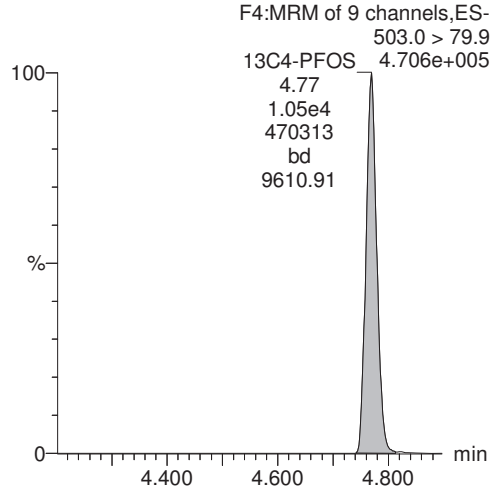
PFOS



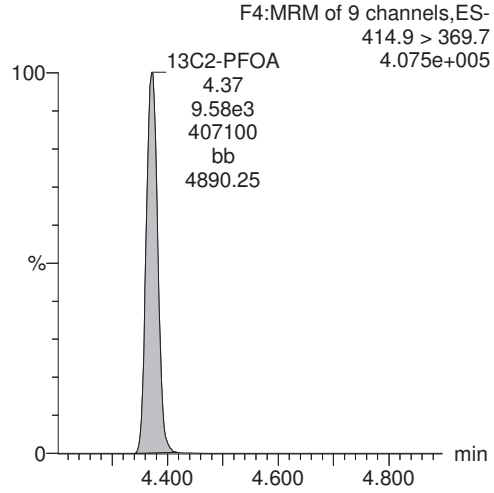
13C2-PFHxA



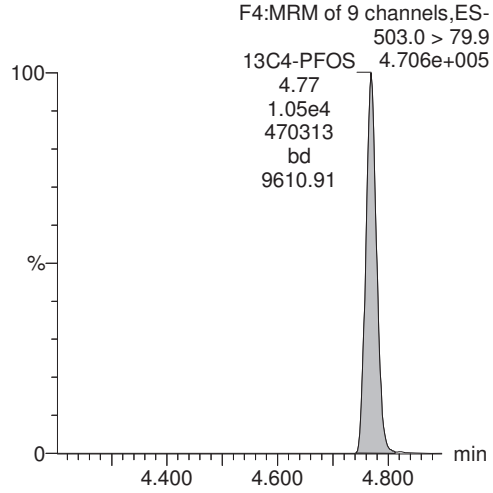
13C4-PFOS



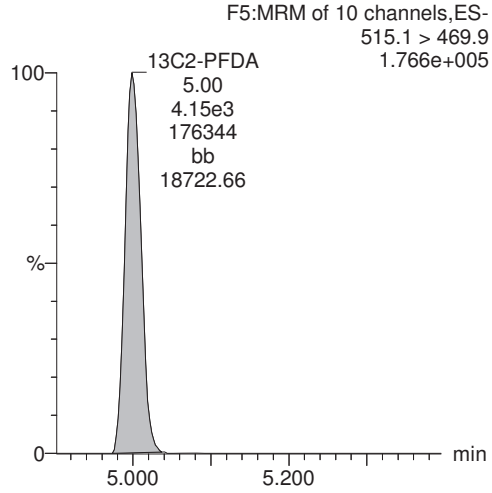
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/4/17

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-54.qld

Last Altered: Monday, December 04, 2017 14:39:18 Pacific Standard Time
Printed: Monday, December 04, 2017 14:39:59 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_54, Date: 03-Dec-2017, Time: 04:50:49, ID: 1701793-16 CH-AT-1FB85-1117 0.25, Description: CH-AT-1FB85-1117

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.76e3		0.2634	3.07				
2	2	PFOA	413 > 368.7		9.48e3		0.2634	4.37				
3	3	PFOS	499 >79.9		9.76e3		0.2634	4.77				
4	4	13C2-PFHxA	315 > 269.8	4.32e3	9.48e3	0.439	0.2634	3.43	3.43	4.56	39.4	103.8
5	5	13C2-PFDA	515.1 > 469.9	4.86e3	9.48e3	0.542	0.2634	5.00	5.00	5.13	35.9	94.6
6	6	13C2-PFOA	414.9 > 369.7	9.48e3	9.48e3	1.000	0.2634	4.41	4.37	10.0	38.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	9.76e3	9.76e3	1.000	0.2634	4.81	4.77	28.7	109	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/4/17

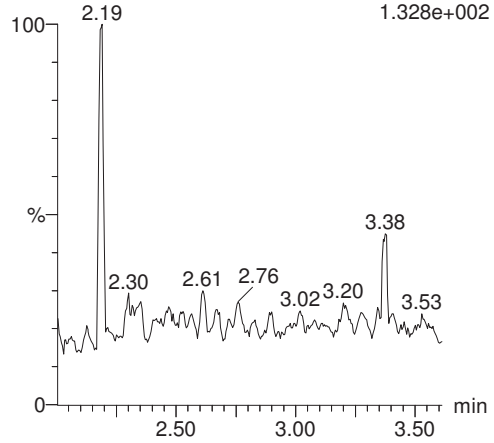
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-54.qld

Last Altered: Monday, December 04, 2017 14:39:18 Pacific Standard Time
Printed: Monday, December 04, 2017 14:39:59 Pacific Standard Time

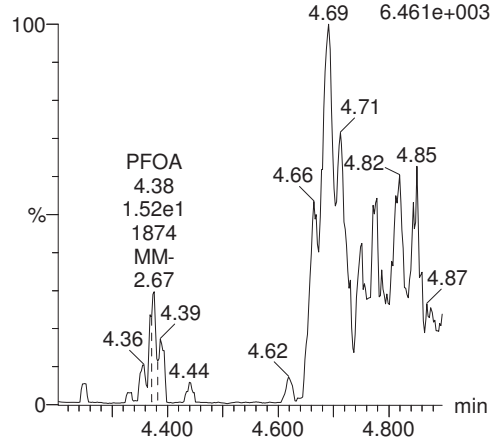
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_54, Date: 03-Dec-2017, Time: 04:50:49, ID: 1701793-16 CH-AT-1FB85-1117 0.25, Description: CH-AT-1FB85-1117

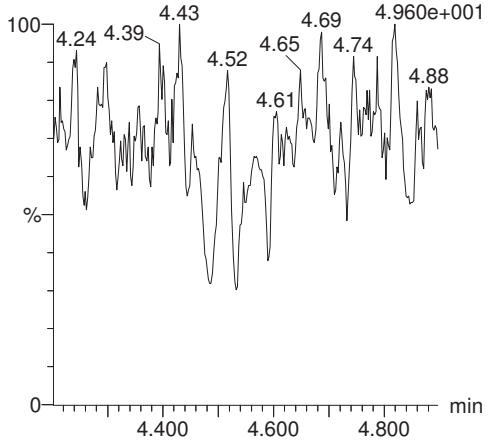
PFBS



PFOA



PFOS



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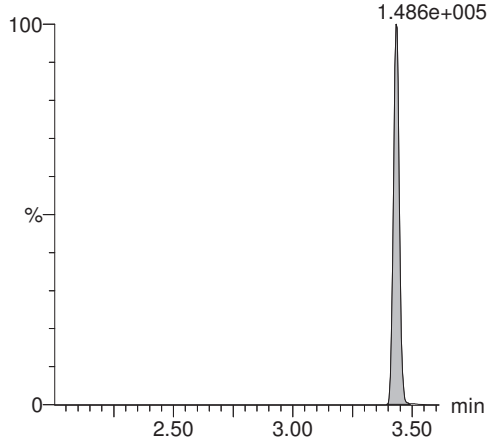
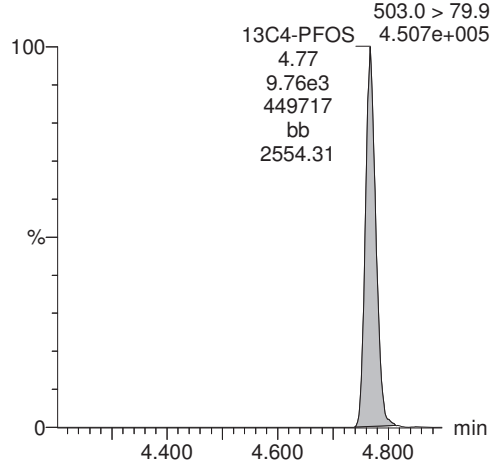
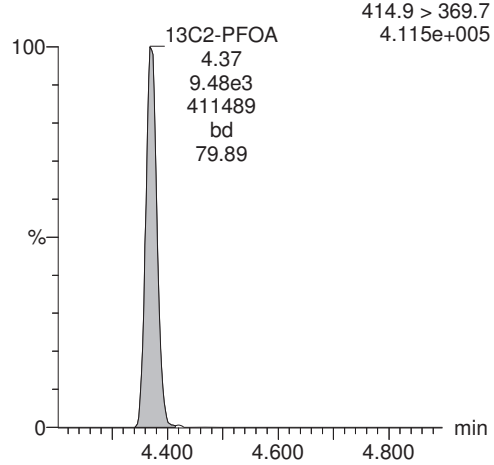


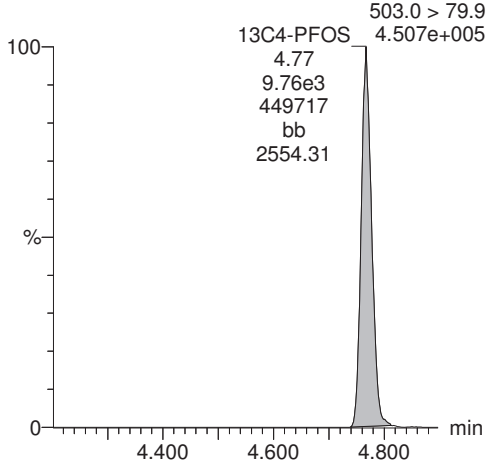
13C4-PFOS



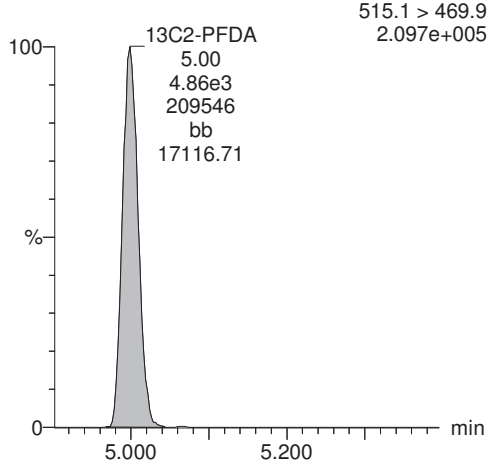
13C2-PFOA



13C4-PFOS



13C2-PFDA



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INJECTION INTERNAL STANDARD (IIS) AREAS,

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

IS Area

Ical

Compound 6: 13C2-PFOA

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical area	Area %
1	B7L0003-BS1 LFB 0.25	171202G3_	Analyte	10	4.37	8307.389	8307.389	9917.414	83.76568
2	IPA	171202G3_	Analyte	10				9917.414	0
3	B7L0003-BLK1 LRB 0.25	171202G3_	Analyte	10	4.37	8351.992	8351.992	9917.414	84.21542
4	B7L0003-MS1 LFSM 0.25	171202G3_	Analyte	10	4.37	9014.499	9014.499	9917.414	90.89566
5	B7L0003-MSD1 LFSMD 0.25	171202G3_	Analyte	10	4.37	8469.849	8469.849	9917.414	85.40381
6	1701769-01 CH-AT-1RW69-1117 0.25	171202G3_	Analyte	10	4.37	9104.979	9104.979	9917.414	91.808
7	1701769-02 CH-AT-1FB69-1117 0.25	171202G3_	Analyte	10	4.37	8695.189	8695.189	9917.414	87.67597
8	1701769-03 CH-AT-1RW70-1117 0.25	171202G3_	Analyte	10	4.37	8994.84	8994.84	9917.414	90.69744
9	1701769-04 CH-AT-1FB70-1117 0.25	171202G3_	Analyte	10	4.37	8616.312	8616.312	9917.414	86.88064
10	1701769-05 CH-AT-1RW71-1117 0.25	171202G3_	Analyte	10	4.37	9556.257	9556.257	9917.414	96.35836
11	1701769-06 CH-AT-1FB71-1117 0.25	171202G3_	Analyte	10	4.37	7887.258	7887.258	9917.414	79.52938
12	1701769-07 CH-AT-1RW72-1117-A 0.25	171202G3_	Analyte	10	4.37	9257.238	9257.238	9917.414	93.34327
13	1701769-08 CH-AT-1FB72-1117-A 0.25	171202G3_	Analyte	10	4.37	9461.732	9461.732	9917.414	95.40524
14	1701769-09 CH-AT-1RW72-1117-B 0.25	171202G3_	Analyte	10	4.37	9011.647	9011.647	9917.414	90.86691
15	1701769-10 CH-AT-1FB72-1117-B 0.25	171202G3_	Analyte	10	4.37	9446.626	9446.626	9917.414	95.25292
16	1701769-11 CH-AT-1RW73-1117 0.25	171202G3_	Analyte	10	4.37	9043.149	9043.149	9917.414	91.18455
17	1701769-12 CH-AT-1FB73-1117 0.25	171202G3_	Analyte	10	4.37	9196.678	9196.678	9917.414	92.73262
18	B7L0005-BS1 LFB 0.25	171202G3_	Analyte	10	4.37	9377.969	9377.969	9917.414	94.56063
19	IPA	171202G3_	Analyte	10				9917.414	0
20	B7L0005-BLK1 LRB 0.25	171202G3_	Analyte	10	4.37	9158.43	9158.43	9917.414	92.34696
21	B7L0005-MS1 LFSM 0.25	171202G3_	Analyte	10	4.37	10086.64	10086.64	9917.414	101.7064
22	B7L0005-MSD1 LFSMD 0.25	171202G3_	Analyte	10	4.37	9594.019	9594.019	9917.414	96.73912
23	1701793-01 CH-AT-1RW78-1117 0.25	171202G3_	Analyte	10	4.37	9117.581	9117.581	9917.414	91.93507
24	1701793-02 CH-AT-1RW79-1117 0.25	171202G3_	Analyte	10	4.37	9549.11	9549.11	9917.414	96.28629
25	1701793-03 CH-AT-1RW80-1117 0.25	171202G3_	Analyte	10	4.37	9876.58	9876.58	9917.414	99.58826
26	1701793-04 CH-AT-1RW81-1117 0.25	171202G3_	Analyte	10	4.37	8222.664	8222.664	9917.414	82.91137
27	IPA	171202G3_	Analyte	10				9917.414	0

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28	ST171202G3-10 PFC CS3 17K3027	171202G3_	Analyte	10	4.37	9352.522	9352.522	9917.414	94.30404
29	IPA	171202G3_	Analyte	10				9917.414	0
30	1701793-05 CH-AT-1RW82-1117 0.25	171202G3_	Analyte	10	4.37	9383.056	9383.056	9917.414	94.61193
31	1701793-06 CH-AT-1RW83-1117 0.25	171202G3_	Analyte	10	4.37	9368.145	9368.145	9917.414	94.46157
32	1701793-07 CH-AT-1RW84-1117 0.25	171202G3_	Analyte	10	4.37	8795.26	8795.26	9917.414	88.68502
33	1701793-08 CH-AT-1RW85-1117 0.25	171202G3_	Analyte	10	4.37	9411.284	9411.284	9917.414	94.89656
34	1701793-09 CH-AT-1FB78-1117 0.25	171202G3_	Analyte	10	4.37	8446.382	8446.382	9917.414	85.16718
35	1701793-10 CH-AT-1FB79-1117 0.25	171202G3_	Analyte	10	4.37	9306.81	9306.81	9917.414	93.84312
36	1701793-11 CH-AT-1FB80-1117 0.25	171202G3_	Analyte	10	4.37	8888.202	8888.202	9917.414	89.62218
37	1701793-12 CH-AT-1FB81-1117 0.25	171202G3_	Analyte	10	4.37	9019.951	9019.951	9917.414	90.95064
38	1701793-13 CH-AT-1FB82-1117 0.25	171202G3_	Analyte	10	4.37	9721.771	9721.771	9917.414	98.02728
39	1701793-14 CH-AT-1FB83-1117 0.25	171202G3_	Analyte	10	4.37	9159.111	9159.111	9917.414	92.35383
40	1701793-15 CH-AT-1FB84-1117 0.25	171202G3_	Analyte	10	4.37	9581.298	9581.298	9917.414	96.61085
41	1701793-16 CH-AT-1FB85-1117 0.25	171202G3_	Analyte	10	4.37	9477.599	9477.599	9917.414	95.56523
42	IPA	171202G3_	Analyte	10				9917.414	0
43	ST171202G3-11 PFC CS5 537 17K3029	171202G3_	Analyte	10	4.37	7271.003	7271.003	9917.414	73.31552
44	IPA	171202G3_	Analyte	10				9917.414	0

Compound 7: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	B7L0003-BS1 LFB 0.25	171202G3_	Analyte	28.7	4.77	9441.979	9441.979	10735.89	87.94781
2	IPA	171202G3_	Analyte	28.7				10735.89	0
3	B7L0003-BLK1 LRB 0.25	171202G3_	Analyte	28.7	4.77	10121.35	10121.35	10735.89	94.27588
4	B7L0003-MS1 LFSM 0.25	171202G3_	Analyte	28.7	4.77	10522.91	10522.91	10735.89	98.01624
5	B7L0003-MSD1 LFSMD 0.25	171202G3_	Analyte	28.7	4.77	9802.556	9802.556	10735.89	91.30643
6	1701769-01 CH-AT-1RW69-1117 0.25	171202G3_	Analyte	28.7	4.77	10055.47	10055.47	10735.89	93.66217
7	1701769-02 CH-AT-1FB69-1117 0.25	171202G3_	Analyte	28.7	4.77	9659.606	9659.606	10735.89	89.97491
8	1701769-03 CH-AT-1RW70-1117 0.25	171202G3_	Analyte	28.7	4.77	9899.51	9899.51	10735.89	92.20951
9	1701769-04 CH-AT-1FB70-1117 0.25	171202G3_	Analyte	28.7	4.77	10260.47	10260.47	10735.89	95.5717
10	1701769-05 CH-AT-1RW71-1117 0.25	171202G3_	Analyte	28.7	4.77	11375.29	11375.29	10735.89	105.9557
11	1701769-06 CH-AT-1FB71-1117 0.25	171202G3_	Analyte	28.7	4.77	9324.077	9324.077	10735.89	86.84961
12	1701769-07 CH-AT-1RW72-1117-A 0.25	171202G3_	Analyte	28.7	4.77	9217.82	9217.82	10735.89	85.85987

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13	1701769-08 CH-AT-1FB72-1117-A 0.25	171202G3_ Analyte	28.7	4.77	9957.396	9957.396	10735.89	92.74869
14	1701769-09 CH-AT-1RW72-1117-B 0.25	171202G3_ Analyte	28.7	4.77	10296.81	10296.81	10735.89	95.91018
15	1701769-10 CH-AT-1FB72-1117-B 0.25	171202G3_ Analyte	28.7	4.77	10551.05	10551.05	10735.89	98.27834
16	1701769-11 CH-AT-1RW73-1117 0.25	171202G3_ Analyte	28.7	4.77	9379.944	9379.944	10735.89	87.36999
17	1701769-12 CH-AT-1FB73-1117 0.25	171202G3_ Analyte	28.7	4.77	9732.354	9732.354	10735.89	90.65253
18	B7L0005-BS1 LFB 0.25	171202G3_ Analyte	28.7	4.77	10226.7	10226.7	10735.89	95.25709
19	IPA	171202G3_ Analyte	28.7				10735.89	0
20	B7L0005-BLK1 LRB 0.25	171202G3_ Analyte	28.7	4.77	10077.43	10077.43	10735.89	93.86672
21	B7L0005-MS1 LFSM 0.25	171202G3_ Analyte	28.7	4.77	10201.79	10201.79	10735.89	95.0251
22	B7L0005-MSD1 LFSMD 0.25	171202G3_ Analyte	28.7	4.77	9393.996	9393.996	10735.89	87.50087
23	1701793-01 CH-AT-1RW78-1117 0.25	171202G3_ Analyte	28.7	4.77	9249.597	9249.597	10735.89	86.15586
24	1701793-02 CH-AT-1RW79-1117 0.25	171202G3_ Analyte	28.7	4.77	9493.079	9493.079	10735.89	88.42379
25	1701793-03 CH-AT-1RW80-1117 0.25	171202G3_ Analyte	28.7	4.77	10721.03	10721.03	10735.89	99.86157
26	1701793-04 CH-AT-1RW81-1117 0.25	171202G3_ Analyte	28.7	4.77	10112.21	10112.21	10735.89	94.19073
27	IPA	171202G3_ Analyte	28.7				10735.89	0
28	ST171202G3-10 PFC CS3 17K3027	171202G3_ Analyte	28.7	4.77	9165.669	9165.669	10735.89	85.37411
29	IPA	171202G3_ Analyte	28.7				10735.89	0
30	1701793-05 CH-AT-1RW82-1117 0.25	171202G3_ Analyte	28.7	4.77	10411.74	10411.74	10735.89	96.98067
31	1701793-06 CH-AT-1RW83-1117 0.25	171202G3_ Analyte	28.7	4.77	9717.53	9717.53	10735.89	90.51445
32	1701793-07 CH-AT-1RW84-1117 0.25	171202G3_ Analyte	28.7	4.77	10187.26	10187.26	10735.89	94.8898
33	1701793-08 CH-AT-1RW85-1117 0.25	171202G3_ Analyte	28.7	4.77	10488.6	10488.6	10735.89	97.69665
34	1701793-09 CH-AT-1FB78-1117 0.25	171202G3_ Analyte	28.7	4.76	8710.019	8710.019	10735.89	81.12993
35	1701793-10 CH-AT-1FB79-1117 0.25	171202G3_ Analyte	28.7	4.77	10102.32	10102.32	10735.89	94.09861
36	1701793-11 CH-AT-1FB80-1117 0.25	171202G3_ Analyte	28.7	4.77	9310.437	9310.437	10735.89	86.72256
37	1701793-12 CH-AT-1FB81-1117 0.25	171202G3_ Analyte	28.7	4.77	9438.375	9438.375	10735.89	87.91424
38	1701793-13 CH-AT-1FB82-1117 0.25	171202G3_ Analyte	28.7	4.77	10399.5	10399.5	10735.89	96.86666
39	1701793-14 CH-AT-1FB83-1117 0.25	171202G3_ Analyte	28.7	4.77	9376.198	9376.198	10735.89	87.33509
40	1701793-15 CH-AT-1FB84-1117 0.25	171202G3_ Analyte	28.7	4.77	10533.85	10533.85	10735.89	98.1181
41	1701793-16 CH-AT-1FB85-1117 0.25	171202G3_ Analyte	28.7	4.77	9761.56	9761.56	10735.89	90.92457
42	IPA	171202G3_ Analyte	28.7				10735.89	0
43	ST171202G3-11 PFC CS5 537 17K3029	171202G3_ Analyte	28.7	4.77	7588.176	7588.176	10735.89	70.68047
44	IPA	171202G3_ Analyte	28.7				10735.89	0

Ccal

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Compound 6: 13C2-PFOA ST171202G3-10 PFC CS3 17K3027

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal area	Area %
28	ST171202G3-10 PFC CS3 17K3027	171202G3_	Analyte	10	4.37	9352.522	9352.522	9352.522	100
29	IPA	171202G3_	Analyte	10				9352.522	0
30	1701793-05 CH-AT-1RW82-1117 0.25	171202G3_	Analyte	10	4.37	9383.056	9383.056	9352.522	100.3265
31	1701793-06 CH-AT-1RW83-1117 0.25	171202G3_	Analyte	10	4.37	9368.145	9368.145	9352.522	100.167
32	1701793-07 CH-AT-1RW84-1117 0.25	171202G3_	Analyte	10	4.37	8795.26	8795.26	9352.522	94.04159
33	1701793-08 CH-AT-1RW85-1117 0.25	171202G3_	Analyte	10	4.37	9411.284	9411.284	9352.522	100.6283
34	1701793-09 CH-AT-1FB78-1117 0.25	171202G3_	Analyte	10	4.37	8446.382	8446.382	9352.522	90.31128
35	1701793-10 CH-AT-1FB79-1117 0.25	171202G3_	Analyte	10	4.37	9306.81	9306.81	9352.522	99.51123
36	1701793-11 CH-AT-1FB80-1117 0.25	171202G3_	Analyte	10	4.37	8888.202	8888.202	9352.522	95.03535
37	1701793-12 CH-AT-1FB81-1117 0.25	171202G3_	Analyte	10	4.37	9019.951	9019.951	9352.522	96.44405
38	1701793-13 CH-AT-1FB82-1117 0.25	171202G3_	Analyte	10	4.37	9721.771	9721.771	9352.522	103.9481
39	1701793-14 CH-AT-1FB83-1117 0.25	171202G3_	Analyte	10	4.37	9159.111	9159.111	9352.522	97.93199
40	1701793-15 CH-AT-1FB84-1117 0.25	171202G3_	Analyte	10	4.37	9581.298	9581.298	9352.522	102.4461
41	1701793-16 CH-AT-1FB85-1117 0.25	171202G3_	Analyte	10	4.37	9477.599	9477.599	9352.522	101.3374
42	IPA	171202G3_	Analyte	10				9352.522	0
43	ST171202G3-11 PFC CS5 537 17K3029	171202G3_	Analyte	10	4.37	7271.003	7271.003	9352.522	77.74377

Compound 7: 13C4-PFOS ST171202G3-10 PFC CS3 17K3027

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
28	ST171202G3-10 PFC CS3 17K3027	171202G3_	Analyte	28.7	4.77	9165.669	9165.669	9165.669	100
29	IPA	171202G3_	Analyte	28.7				9165.669	0
30	1701793-05 CH-AT-1RW82-1117 0.25	171202G3_	Analyte	28.7	4.77	10411.74	10411.74	9165.669	113.5949
31	1701793-06 CH-AT-1RW83-1117 0.25	171202G3_	Analyte	28.7	4.77	9717.53	9717.53	9165.669	106.021
32	1701793-07 CH-AT-1RW84-1117 0.25	171202G3_	Analyte	28.7	4.77	10187.26	10187.26	9165.669	111.1459
33	1701793-08 CH-AT-1RW85-1117 0.25	171202G3_	Analyte	28.7	4.77	10488.6	10488.6	9165.669	114.4336
34	1701793-09 CH-AT-1FB78-1117 0.25	171202G3_	Analyte	28.7	4.76	8710.019	8710.019	9165.669	95.02873
35	1701793-10 CH-AT-1FB79-1117 0.25	171202G3_	Analyte	28.7	4.77	10102.32	10102.32	9165.669	110.2191
36	1701793-11 CH-AT-1FB80-1117 0.25	171202G3_	Analyte	28.7	4.77	9310.437	9310.437	9165.669	101.5795

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37	1701793-12 CH-AT-1FB81-1117 0.25	171202G3_ Analyte	28.7	4.77	9438.375	9438.375	9165.669	102.9753
38	1701793-13 CH-AT-1FB82-1117 0.25	171202G3_ Analyte	28.7	4.77	10399.5	10399.5	9165.669	113.4614
39	1701793-14 CH-AT-1FB83-1117 0.25	171202G3_ Analyte	28.7	4.77	9376.198	9376.198	9165.669	102.2969
40	1701793-15 CH-AT-1FB84-1117 0.25	171202G3_ Analyte	28.7	4.77	10533.85	10533.85	9165.669	114.9272
41	1701793-16 CH-AT-1FB85-1117 0.25	171202G3_ Analyte	28.7	4.77	9761.56	9761.56	9165.669	106.5013
42	IPA	171202G3_ Analyte	28.7				9165.669	0
43	ST171202G3-11 PFC CS5 537 17K3029	171202G3_ Analyte	28.7	4.77	7588.176	7588.176	9165.669	82.78911

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Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-41.qld

Last Altered: Monday, December 04, 2017 09:35:26 Pacific Standard Time
Printed: Monday, December 04, 2017 09:35:41 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_41, Date: 03-Dec-2017, Time: 02:09:15, ID: ST171202G3-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.21e4	9.17e3		1.0000	3.07	3.07	37.9	46.9	106.0
2	2 PFOA	413 > 368.7	3.68e4	9.35e3		1.0000	4.37	4.37	39.3	49.2	98.3
3	3 PFOS	499 >79.9	1.89e4	9.17e3		1.0000	4.77	4.77	59.1	49.1	106.4
4	4 13C2-PFHxA	315 > 269.8	3.95e3	9.35e3	0.439	1.0000	3.43	3.43	4.22	9.62	96.2
5	5 13C2-PFDA	515.1 > 469.9	4.57e3	9.35e3	0.542	1.0000	5.00	5.00	4.88	9.00	90.0
6	6 13C2-PFOA	414.9 > 369.7	9.35e3	9.35e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.17e3	9.17e3	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

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Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 04, 2017 09:46:43 Pacific Standard Time
Printed: Monday, December 04, 2017 09:47:00 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171202G3_1	IPA	02-Dec-17	17:51:52
2	171202G3_2	ST171202G3-1 PFC CS-3 537 17K3022	02-Dec-17	18:04:20
3	171202G3_3	ST171202G3-2 PFC CS-2 537 17K3023	02-Dec-17	18:16:47
4	171202G3_4	ST171202G3-3 PFC CS-1 537 17K3024	02-Dec-17	18:29:13
5	171202G3_5	ST171202G3-4 PFC CS0 537 17K3025	02-Dec-17	18:41:38
6	171202G3_6	ST171202G3-5 PFC CS1 537 17K3026	02-Dec-17	18:54:05
7	171202G3_7	ST171202G3-6 PFC CS2 537 17K3033	02-Dec-17	19:06:30
8	171202G3_8	ST171202G3-7 PFC CS3 537 17K3027	02-Dec-17	19:18:58
9	171202G3_9	ST171202G3-8 PFC CS4 537 17K3028	02-Dec-17	19:31:26
10	171202G3_10	ST171202G3-9 PFC CS5 537 17K3029	02-Dec-17	19:43:54
11	171202G3_11	IPA	02-Dec-17	19:56:18
12	171202G3_12	ICV171202G3-1 PFC ICV 537 17K3030	02-Dec-17	20:08:45
13	171202G3_13	IPA	02-Dec-17	20:21:09
14	171202G3_14	B7L0003-BS1 LFB 0.25	02-Dec-17	20:33:39
15	171202G3_15	IPA	02-Dec-17	20:46:04
16	171202G3_16	B7L0003-BLK1 LRB 0.25	02-Dec-17	20:58:31
17	171202G3_17	B7L0003-MS1 LFSM 0.25	02-Dec-17	21:10:56
18	171202G3_18	B7L0003-MSD1 LFSMD 0.25	02-Dec-17	21:23:22
19	171202G3_19	1701769-01 CH-AT-1RW69-1117 0.25	02-Dec-17	21:35:49
20	171202G3_20	1701769-02 CH-AT-1FB69-1117 0.25	02-Dec-17	21:48:16
21	171202G3_21	1701769-03 CH-AT-1RW70-1117 0.25	02-Dec-17	22:00:45
22	171202G3_22	1701769-04 CH-AT-1FB70-1117 0.25	02-Dec-17	22:13:09
23	171202G3_23	1701769-05 CH-AT-1RW71-1117 0.25	02-Dec-17	22:25:33
24	171202G3_24	1701769-06 CH-AT-1FB71-1117 0.25	02-Dec-17	22:37:58
25	171202G3_25	1701769-07 CH-AT-1RW72-1117-A 0.25	02-Dec-17	22:50:23
26	171202G3_26	1701769-08 CH-AT-1FB72-1117-A 0.25	02-Dec-17	23:02:49
27	171202G3_27	1701769-09 CH-AT-1RW72-1117-B 0.25	02-Dec-17	23:15:15
28	171202G3_28	1701769-10 CH-AT-1FB72-1117-B 0.25	02-Dec-17	23:27:42
29	171202G3_29	1701769-11 CH-AT-1RW73-1117 0.25	02-Dec-17	23:40:10
30	171202G3_30	1701769-12 CH-AT-1FB73-1117 0.25	02-Dec-17	23:52:33
31	171202G3_31	B7L0005-BS1 LFB 0.25	03-Dec-17	00:04:57

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 04, 2017 09:46:43 Pacific Standard Time
Printed: Monday, December 04, 2017 09:47:00 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171202G3_32	IPA	03-Dec-17	00:17:22
33	171202G3_33	B7L0005-BLK1 LRB 0.25	03-Dec-17	00:29:49
34	171202G3_34	B7L0005-MS1 LFSM 0.25	03-Dec-17	00:42:15
35	171202G3_35	B7L0005-MSD1 LFSMD 0.25	03-Dec-17	00:54:41
36	171202G3_36	1701793-01 CH-AT-1RW78-1117 0.25	03-Dec-17	01:07:07
37	171202G3_37	1701793-02 CH-AT-1RW79-1117 0.25	03-Dec-17	01:19:34
38	171202G3_38	1701793-03 CH-AT-1RW80-1117 0.25	03-Dec-17	01:32:01
39	171202G3_39	1701793-04 CH-AT-1RW81-1117 0.25	03-Dec-17	01:44:24
40	171202G3_40	IPA	03-Dec-17	01:56:48
41	171202G3_41	ST171202G3-10 PFC CS3 17K3027	03-Dec-17	02:09:15
42	171202G3_42	IPA	03-Dec-17	02:21:40
43	171202G3_43	1701793-05 CH-AT-1RW82-1117 0.25	03-Dec-17	02:34:07
44	171202G3_44	1701793-06 CH-AT-1RW83-1117 0.25	03-Dec-17	02:46:33
45	171202G3_45	1701793-07 CH-AT-1RW84-1117 0.25	03-Dec-17	02:58:59
46	171202G3_46	1701793-08 CH-AT-1RW85-1117 0.25	03-Dec-17	03:11:25
47	171202G3_47	1701793-09 CH-AT-1FB78-1117 0.25	03-Dec-17	03:23:51
48	171202G3_48	1701793-10 CH-AT-1FB79-1117 0.25	03-Dec-17	03:36:18
49	171202G3_49	1701793-11 CH-AT-1FB80-1117 0.25	03-Dec-17	03:48:45
50	171202G3_50	1701793-12 CH-AT-1FB81-1117 0.25	03-Dec-17	04:01:09
51	171202G3_51	1701793-13 CH-AT-1FB82-1117 0.25	03-Dec-17	04:13:33
52	171202G3_52	1701793-14 CH-AT-1FB83-1117 0.25	03-Dec-17	04:25:58
53	171202G3_53	1701793-15 CH-AT-1FB84-1117 0.25	03-Dec-17	04:38:23
54	171202G3_54	1701793-16 CH-AT-1FB85-1117 0.25	03-Dec-17	04:50:49
55	171202G3_55	IPA	03-Dec-17	05:03:16
56	171202G3_56	ST171202G3-11 PFC CS5 537 17K3029	03-Dec-17	05:15:44
57	171202G3_57	IPA	03-Dec-17	05:28:09

LC Calibration Standards Review Checklist Q1

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NA
Calibration ID: ST17|20263-10	(L) M H	NA ☐	☑	☑	☑	☑	☑	☐
Calibration ID: -11	L M (H)	☑	☑	☑	☑	☑	☑	☑
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/5/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Reviewed By: JLA 12/04/2017
Initials/Date

Comments: DN-L3

Vista Analytical Laboratory

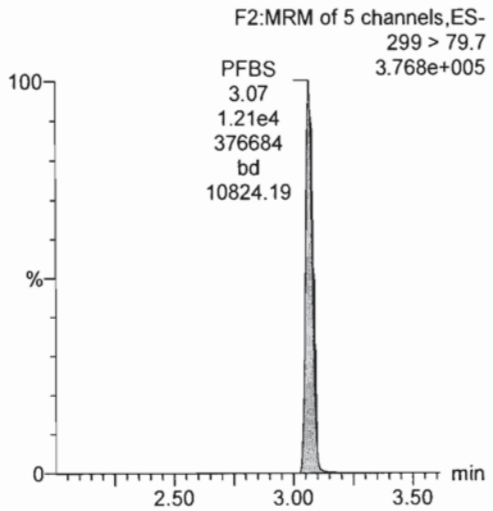
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-41.qld

Last Altered: Monday, December 04, 2017 09:35:26 Pacific Standard Time
Printed: Monday, December 04, 2017 09:35:41 Pacific Standard Time

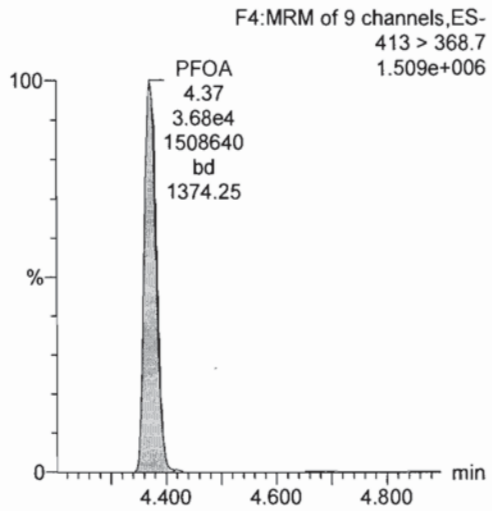
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_41, Date: 03-Dec-2017, Time: 02:09:15, ID: ST171202G3-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

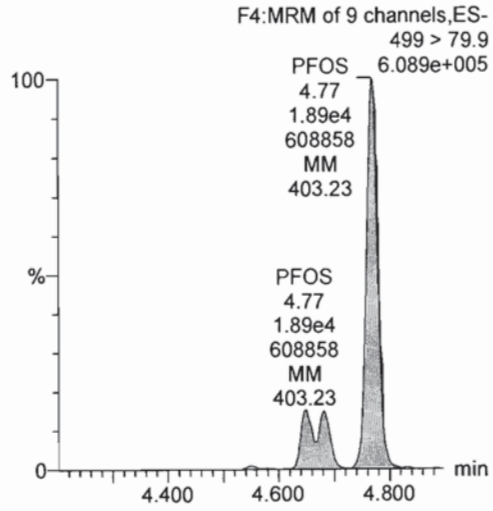
PFBS



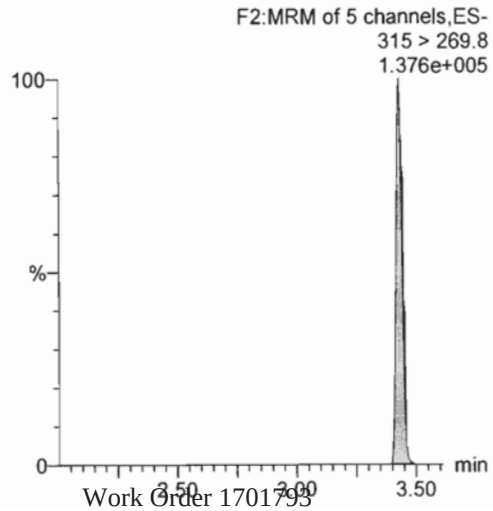
PFOA



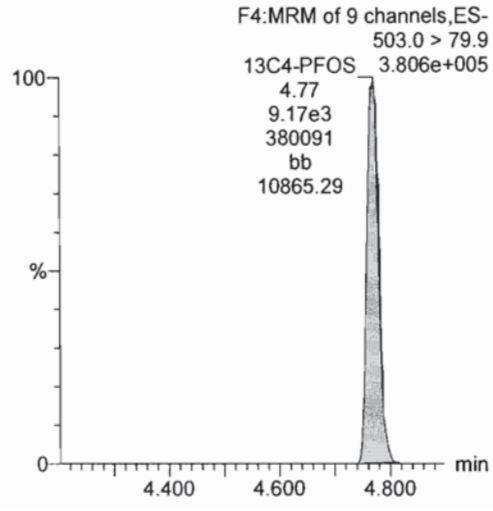
PFOS



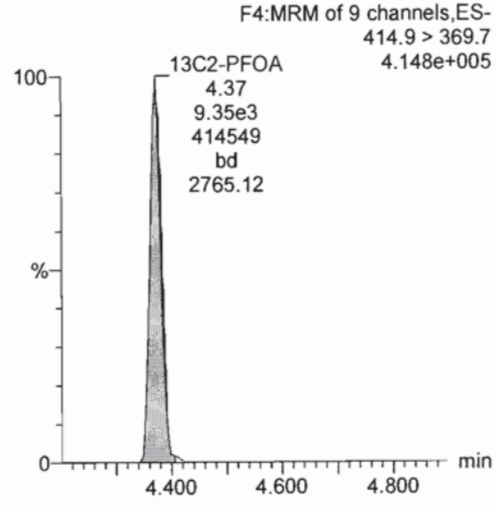
13C2-PFHxA



13C4-PFOS



13C2-PFOA

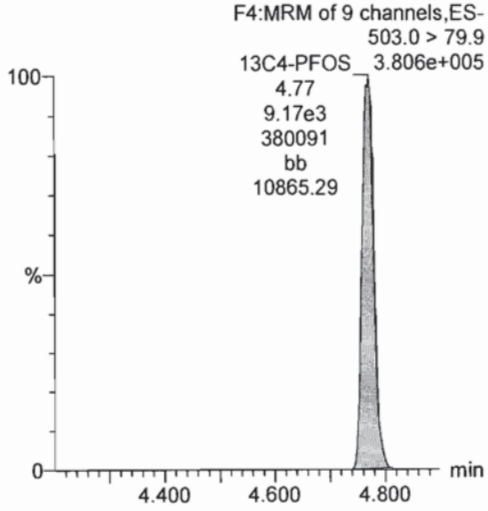


Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-41.qld

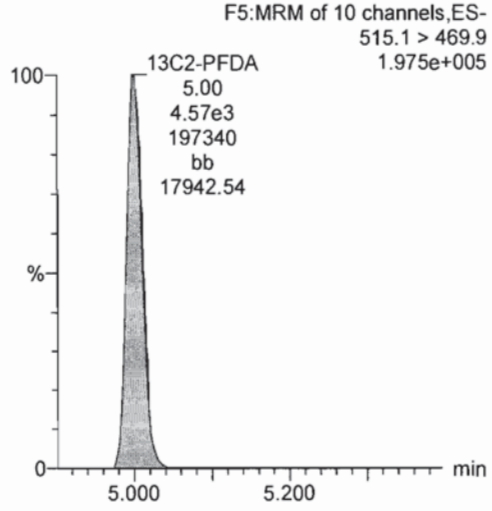
Last Altered: Monday, December 04, 2017 09:35:26 Pacific Standard Time
Printed: Monday, December 04, 2017 09:35:41 Pacific Standard Time

Name: 171202G3_41, Date: 03-Dec-2017, Time: 02:09:15, ID: ST171202G3-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-56.qld

Last Altered: Monday, December 04, 2017 09:35:56 Pacific Standard Time
Printed: Monday, December 04, 2017 09:40:14 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_56, Date: 03-Dec-2017, Time: 05:15:44, ID: ST171202G3-11 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	1.91e4	7.59e3		1.0000	3.07	3.07	72.2	89.3	101.0
2	2	PFOA	413 > 368.7	5.99e4	7.27e3		1.0000	4.37	4.37	82.4	103	102.9
3	3	PFOS	499 >79.9	3.16e4	7.59e3		1.0000	4.77	4.77	120	99.4	107.5
4	4	13C2-PFHxA	315 > 269.8	3.43e3	7.27e3	0.439	1.0000	3.43	3.43	4.71	10.7	107.3
5	5	13C2-PFDA	515.1 > 469.9	3.98e3	7.27e3	0.542	1.0000	5.00	5.00	5.48	10.1	101.1
6	6	13C2-PFOA	414.9 > 369.7	7.27e3	7.27e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	7.59e3	7.59e3	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

70-130

12/4/17

12/04/2017

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 04, 2017 09:46:43 Pacific Standard Time
Printed: Monday, December 04, 2017 09:47:05 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171202G3_1	IPA	02-Dec-17	17:51:52
2	171202G3_2	ST171202G3-1 PFC CS-3 537 17K3022	02-Dec-17	18:04:20
3	171202G3_3	ST171202G3-2 PFC CS-2 537 17K3023	02-Dec-17	18:16:47
4	171202G3_4	ST171202G3-3 PFC CS-1 537 17K3024	02-Dec-17	18:29:13
5	171202G3_5	ST171202G3-4 PFC CS0 537 17K3025	02-Dec-17	18:41:38
6	171202G3_6	ST171202G3-5 PFC CS1 537 17K3026	02-Dec-17	18:54:05
7	171202G3_7	ST171202G3-6 PFC CS2 537 17K3033	02-Dec-17	19:06:30
8	171202G3_8	ST171202G3-7 PFC CS3 537 17K3027	02-Dec-17	19:18:58
9	171202G3_9	ST171202G3-8 PFC CS4 537 17K3028	02-Dec-17	19:31:26
10	171202G3_10	ST171202G3-9 PFC CS5 537 17K3029	02-Dec-17	19:43:54
11	171202G3_11	IPA	02-Dec-17	19:56:18
12	171202G3_12	ICV171202G3-1 PFC ICV 537 17K3030	02-Dec-17	20:08:45
13	171202G3_13	IPA	02-Dec-17	20:21:09
14	171202G3_14	B7L0003-BS1 LFB 0.25	02-Dec-17	20:33:39
15	171202G3_15	IPA	02-Dec-17	20:46:04
16	171202G3_16	B7L0003-BLK1 LRB 0.25	02-Dec-17	20:58:31
17	171202G3_17	B7L0003-MS1 LFSM 0.25	02-Dec-17	21:10:56
18	171202G3_18	B7L0003-MSD1 LFSMD 0.25	02-Dec-17	21:23:22
19	171202G3_19	1701769-01 CH-AT-1RW69-1117 0.25	02-Dec-17	21:35:49
20	171202G3_20	1701769-02 CH-AT-1FB69-1117 0.25	02-Dec-17	21:48:16
21	171202G3_21	1701769-03 CH-AT-1RW70-1117 0.25	02-Dec-17	22:00:45
22	171202G3_22	1701769-04 CH-AT-1FB70-1117 0.25	02-Dec-17	22:13:09
23	171202G3_23	1701769-05 CH-AT-1RW71-1117 0.25	02-Dec-17	22:25:33
24	171202G3_24	1701769-06 CH-AT-1FB71-1117 0.25	02-Dec-17	22:37:58
25	171202G3_25	1701769-07 CH-AT-1RW72-1117-A 0.25	02-Dec-17	22:50:23
26	171202G3_26	1701769-08 CH-AT-1FB72-1117-A 0.25	02-Dec-17	23:02:49
27	171202G3_27	1701769-09 CH-AT-1RW72-1117-B 0.25	02-Dec-17	23:15:15
28	171202G3_28	1701769-10 CH-AT-1FB72-1117-B 0.25	02-Dec-17	23:27:42
29	171202G3_29	1701769-11 CH-AT-1RW73-1117 0.25	02-Dec-17	23:40:10
30	171202G3_30	1701769-12 CH-AT-1FB73-1117 0.25	02-Dec-17	23:52:33
31	171202G3_31	B7L0005-BS1 LFB 0.25	03-Dec-17	00:04:57

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 04, 2017 09:46:43 Pacific Standard Time
Printed: Monday, December 04, 2017 09:47:05 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171202G3_32	IPA	03-Dec-17	00:17:22
33	171202G3_33	B7L0005-BLK1 LRB 0.25	03-Dec-17	00:29:49
34	171202G3_34	B7L0005-MS1 LFSM 0.25	03-Dec-17	00:42:15
35	171202G3_35	B7L0005-MSD1 LFSMD 0.25	03-Dec-17	00:54:41
36	171202G3_36	1701793-01 CH-AT-1RW78-1117 0.25	03-Dec-17	01:07:07
37	171202G3_37	1701793-02 CH-AT-1RW79-1117 0.25	03-Dec-17	01:19:34
38	171202G3_38	1701793-03 CH-AT-1RW80-1117 0.25	03-Dec-17	01:32:01
39	171202G3_39	1701793-04 CH-AT-1RW81-1117 0.25	03-Dec-17	01:44:24
40	171202G3_40	IPA	03-Dec-17	01:56:48
41	171202G3_41	ST171202G3-10 PFC CS3 17K3027	03-Dec-17	02:09:15
42	171202G3_42	IPA	03-Dec-17	02:21:40
43	171202G3_43	1701793-05 CH-AT-1RW82-1117 0.25	03-Dec-17	02:34:07
44	171202G3_44	1701793-06 CH-AT-1RW83-1117 0.25	03-Dec-17	02:46:33
45	171202G3_45	1701793-07 CH-AT-1RW84-1117 0.25	03-Dec-17	02:58:59
46	171202G3_46	1701793-08 CH-AT-1RW85-1117 0.25	03-Dec-17	03:11:25
47	171202G3_47	1701793-09 CH-AT-1FB78-1117 0.25	03-Dec-17	03:23:51
48	171202G3_48	1701793-10 CH-AT-1FB79-1117 0.25	03-Dec-17	03:36:18
49	171202G3_49	1701793-11 CH-AT-1FB80-1117 0.25	03-Dec-17	03:48:45
50	171202G3_50	1701793-12 CH-AT-1FB81-1117 0.25	03-Dec-17	04:01:09
51	171202G3_51	1701793-13 CH-AT-1FB82-1117 0.25	03-Dec-17	04:13:33
52	171202G3_52	1701793-14 CH-AT-1FB83-1117 0.25	03-Dec-17	04:25:58
53	171202G3_53	1701793-15 CH-AT-1FB84-1117 0.25	03-Dec-17	04:38:23
54	171202G3_54	1701793-16 CH-AT-1FB85-1117 0.25	03-Dec-17	04:50:49
55	171202G3_55	IPA	03-Dec-17	05:03:16
56	171202G3_56	ST171202G3-11 PFC CS5 537 17K3029	03-Dec-17	05:15:44
57	171202G3_57	IPA	03-Dec-17	05:28:09

Vista Analytical Laboratory

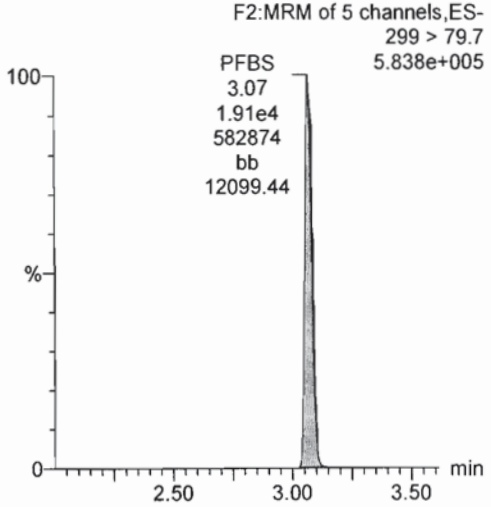
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-56.qld

Last Altered: Monday, December 04, 2017 09:35:56 Pacific Standard Time
Printed: Monday, December 04, 2017 09:40:14 Pacific Standard Time

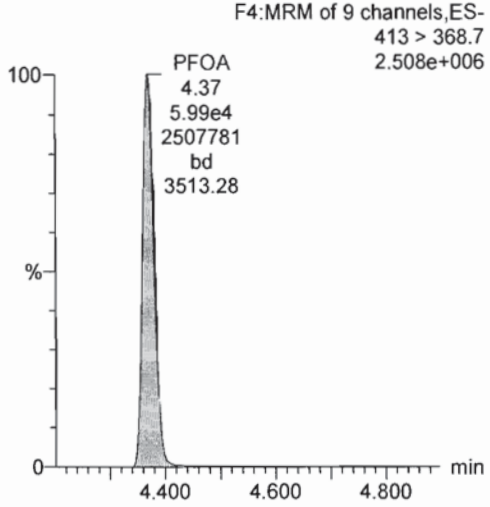
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_56, Date: 03-Dec-2017, Time: 05:15:44, ID: ST171202G3-11 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

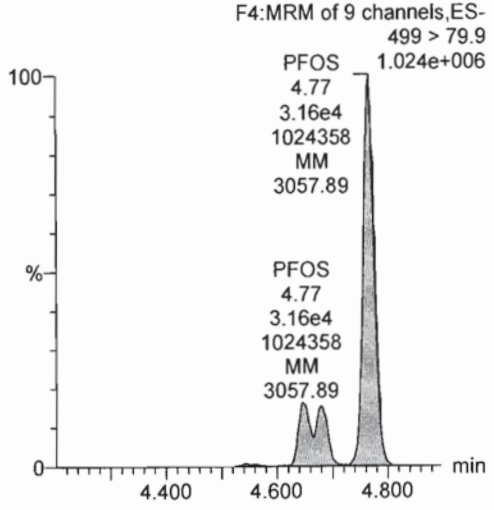
PFBS



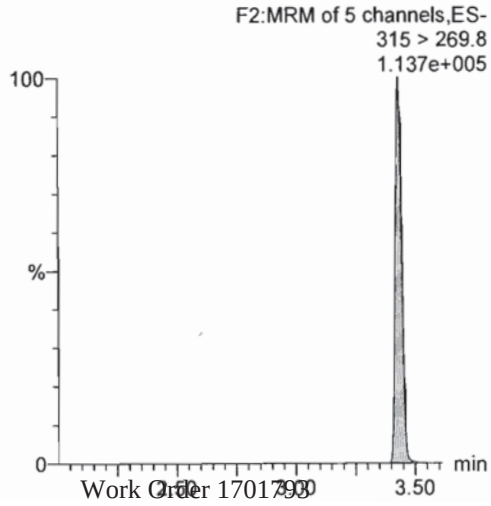
PFOA



PFOS



13C2-PFHxA



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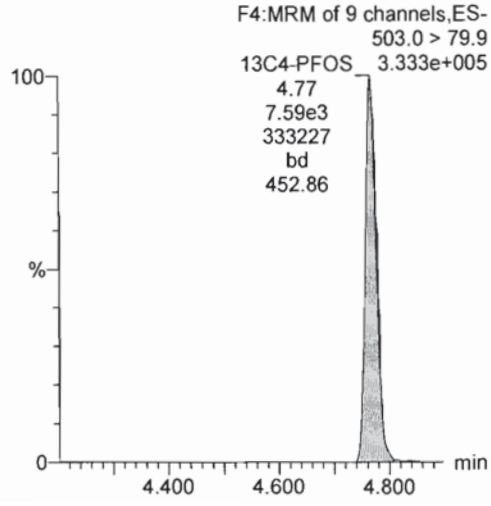
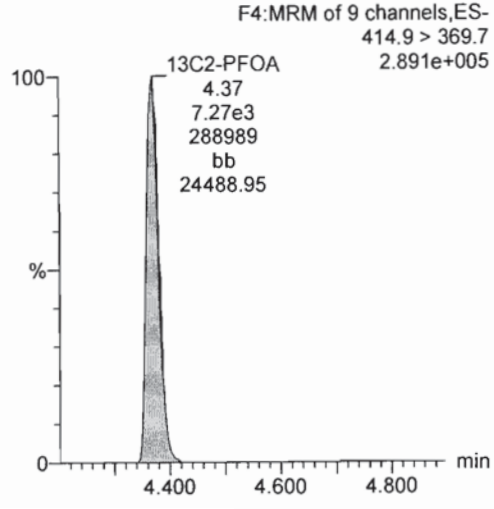


13C2-PFOA

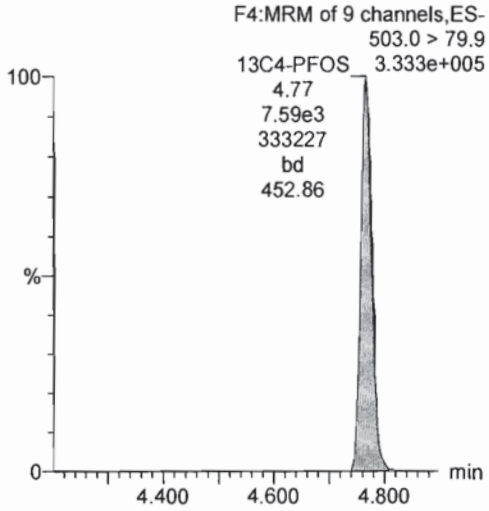


Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-56.qld

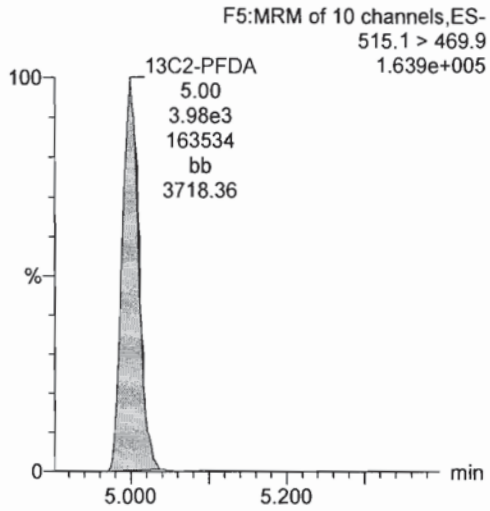
Last Altered: Monday, December 04, 2017 09:35:56 Pacific Standard Time
Printed: Monday, December 04, 2017 09:40:14 Pacific Standard Time

Name: 171202G3_56, Date: 03-Dec-2017, Time: 05:15:44, ID: ST171202G3-11 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\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:47:27 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

12/4/17

12/04/2017

Compound name: PFBS
Coefficient of Determination: R^2 = 0.996875
Calibration curve: 0.808887 * 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	171202G3_2	Standard	0.443	3.07	124.684	10928.282	0.327	0.4	-8.5	NO	0.997	NO	bb
2	2	171202G3_3	Standard	0.885	3.07	276.354	11039.067	0.718	0.9	0.4	NO	0.997	NO	bb
3	3	171202G3_4	Standard	1.770	3.06	473.120	10765.878	1.261	1.6	-11.9	NO	0.997	NO	MM
4	4	171202G3_5	Standard	4.420	3.06	1464.085	10556.226	3.981	4.9	11.3	NO	0.997	NO	bb
5	5	171202G3_6	Standard	8.850	3.06	2950.752	10811.866	7.833	9.7	9.4	NO	0.997	NO	bd
6	6	171202G3_7	Standard	22.100	3.07	6909.177	11667.251	16.996	21.0	-4.9	NO	0.997	NO	bb
7	7	171202G3_8	Standard	44.200	3.07	13181.105	11173.312	33.857	41.9	-5.3	NO	0.997	NO	bb
8	8	171202G3_9	Standard	66.300	3.07	20185.486	10125.710	57.213	70.7	6.7	NO	0.997	NO	bb
9	9	171202G3_10	Standard	88.400	3.06	23244.936	9555.402	69.817	86.3	-2.4	NO	0.997	NO	MM

Compound name: PFOA
Coefficient of Determination: R^2 = 0.999583
Calibration curve: 0.800284 * 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	171202G3_2	Standard	0.500	4.37	459.826	9754.635	0.471	0.6	17.8	NO	1.000	NO	bb
2	2	171202G3_3	Standard	1.000	4.36	914.715	10228.641	0.894	1.1	11.7	NO	1.000	NO	bb
3	3	171202G3_4	Standard	2.000	4.37	1757.373	11046.186	1.591	2.0	-0.6	NO	1.000	NO	bd
4	4	171202G3_5	Standard	5.000	4.37	3765.525	9677.063	3.891	4.9	-2.8	NO	1.000	NO	MM
5	5	171202G3_6	Standard	10.000	4.37	8657.657	10294.740	8.410	10.5	5.1	NO	1.000	NO	bb
6	6	171202G3_7	Standard	25.000	4.37	20516.010	10550.622	19.445	24.3	-2.8	NO	1.000	NO	bd
7	7	171202G3_8	Standard	50.000	4.37	37504.695	9548.714	39.277	49.1	-1.8	NO	1.000	NO	bb
8	8	171202G3_9	Standard	75.000	4.37	57477.461	9505.696	60.466	75.6	0.7	NO	1.000	NO	bb
9	9	171202G3_10	Standard	100.000	4.37	69575.234	8650.426	80.430	100.5	0.5	NO	1.000	NO	bb

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:47:27 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.998680
Calibration curve: 1.20311 * 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 171202G3_2	Standard	0.464	4.77	168.419	10928.282	0.442	0.4	-20.8	NO	0.999	NO	MM
2	2 171202G3_3	Standard	0.925	4.76	416.001	11039.067	1.082	0.9	-2.8	NO	0.999	NO	MM
3	3 171202G3_4	Standard	1.850	4.77	698.785	10765.878	1.863	1.5	-16.3	NO	0.999	NO	MM
4	4 171202G3_5	Standard	4.625	4.77	1920.758	10556.226	5.222	4.3	-6.2	NO	0.999	NO	MM
5	5 171202G3_6	Standard	9.250	4.76	4501.411	10811.866	11.949	9.9	7.4	NO	0.999	NO	MM
6	6 171202G3_7	Standard	23.100	4.77	10488.731	11667.251	25.801	21.4	-7.2	NO	0.999	NO	MM
7	7 171202G3_8	Standard	46.200	4.77	21488.533	11173.312	55.196	45.9	-0.7	NO	0.999	NO	MM
8	8 171202G3_9	Standard	69.300	4.77	30172.984	10125.710	85.521	71.1	2.6	NO	0.999	NO	MM
9	9 171202G3_10	Standard	92.400	4.77	37100.809	9555.402	111.434	92.6	0.2	NO	0.999	NO	MM

Compound name: 13C2-PFHxA
Response Factor: 0.439248
RRF SD: 0.0279903, Relative SD: 6.37231
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 171202G3_2	Standard	10.000	3.43	4249.101	9754.635	4.356	9.9	-0.8	NO		NO	bd
2	2 171202G3_3	Standard	10.000	3.43	4597.770	10228.641	4.495	10.2	2.3	NO		NO	bb
3	3 171202G3_4	Standard	10.000	3.43	4328.222	11046.186	3.918	8.9	-10.8	NO		NO	bb
4	4 171202G3_5	Standard	10.000	3.43	4594.959	9677.063	4.748	10.8	8.1	NO		NO	bb
5	5 171202G3_6	Standard	10.000	3.43	4648.389	10294.740	4.515	10.3	2.8	NO		NO	bb
6	6 171202G3_7	Standard	10.000	3.43	4309.811	10550.622	4.085	9.3	-7.0	NO		NO	bb
7	7 171202G3_8	Standard	10.000	3.43	3996.948	9548.714	4.186	9.5	-4.7	NO		NO	bd
8	8 171202G3_9	Standard	10.000	3.43	4310.814	9505.696	4.535	10.3	3.2	NO		NO	bb
9	9 171202G3_10	Standard	10.000	3.43	4060.292	8650.426	4.694	10.7	6.9	NO		NO	bb

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:47:27 Pacific Standard Time

Compound name: 13C2-PFDA
Response Factor: 0.542326
RRF SD: 0.0329129, Relative SD: 6.06884
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 171202G3_2	Standard	10.000	5.00	5478.132	9754.635	5.616	10.4	3.6	NO		NO	bb
2	2 171202G3_3	Standard	10.000	5.00	6214.181	10228.641	6.075	11.2	12.0	NO		NO	bd
3	3 171202G3_4	Standard	10.000	5.00	6238.650	11046.186	5.648	10.4	4.1	NO		NO	bd
4	4 171202G3_5	Standard	10.000	5.00	5234.255	9677.063	5.409	10.0	-0.3	NO		NO	bd
5	5 171202G3_6	Standard	10.000	5.00	5321.287	10294.740	5.169	9.5	-4.7	NO		NO	bb
6	6 171202G3_7	Standard	10.000	5.00	5254.766	10550.622	4.981	9.2	-8.2	NO		NO	bb
7	7 171202G3_8	Standard	10.000	5.00	5149.371	9548.714	5.393	9.9	-0.6	NO		NO	bd
8	8 171202G3_9	Standard	10.000	5.00	4867.642	9505.696	5.121	9.4	-5.6	NO		NO	bd
9	9 171202G3_10	Standard	10.000	5.00	4669.878	8650.426	5.398	10.0	-0.5	NO		NO	bd

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 171202G3_2	Standard	10.000	4.37	9754.635	9754.635	10.000	10.0	0.0	NO		NO	bd
2	2 171202G3_3	Standard	10.000	4.37	10228.641	10228.641	10.000	10.0	0.0	NO		NO	bb
3	3 171202G3_4	Standard	10.000	4.36	11046.186	11046.186	10.000	10.0	0.0	NO		NO	bb
4	4 171202G3_5	Standard	10.000	4.37	9677.063	9677.063	10.000	10.0	0.0	NO		NO	bd
5	5 171202G3_6	Standard	10.000	4.36	10294.740	10294.740	10.000	10.0	0.0	NO		NO	bd
6	6 171202G3_7	Standard	10.000	4.37	10550.622	10550.622	10.000	10.0	0.0	NO		NO	bb
7	7 171202G3_8	Standard	10.000	4.37	9548.714	9548.714	10.000	10.0	0.0	NO		NO	bb
8	8 171202G3_9	Standard	10.000	4.37	9505.696	9505.696	10.000	10.0	0.0	NO		NO	bd
9	9 171202G3_10	Standard	10.000	4.37	8650.426	8650.426	10.000	10.0	0.0	NO		NO	bb

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Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:47:27 Pacific Standard Time

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 5.55112e-017, Relative SD: 5.55112e-015
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	171202G3_2	Standard	28.700	4.77	10928.282	10928.282	28.700	28.7	0.0	NO		NO	bb
2	2	171202G3_3	Standard	28.700	4.76	11039.067	11039.067	28.700	28.7	0.0	NO		NO	bd
3	3	171202G3_4	Standard	28.700	4.77	10765.878	10765.878	28.700	28.7	0.0	NO		NO	bb
4	4	171202G3_5	Standard	28.700	4.77	10556.226	10556.226	28.700	28.7	0.0	NO		NO	bd
5	5	171202G3_6	Standard	28.700	4.76	10811.866	10811.866	28.700	28.7	0.0	NO		NO	bb
6	6	171202G3_7	Standard	28.700	4.77	11667.251	11667.251	28.700	28.7	0.0	NO		NO	bd
7	7	171202G3_8	Standard	28.700	4.77	11173.312	11173.312	28.700	28.7	0.0	NO		NO	bd
8	8	171202G3_9	Standard	28.700	4.77	10125.710	10125.710	28.700	28.7	0.0	NO		NO	bb
9	9	171202G3_10	Standard	28.700	4.77	9555.402	9555.402	28.700	28.7	0.0	NO		NO	bd

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 04, 2017 08:49:18 Pacific Standard Time
Printed: Monday, December 04, 2017 08:49:38 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171202G3_1	IPA	02-Dec-17	17:51:52
2	171202G3_2	ST171202G3-1 PFC CS-3 537 17K3022	02-Dec-17	18:04:20
3	171202G3_3	ST171202G3-2 PFC CS-2 537 17K3023	02-Dec-17	18:16:47
4	171202G3_4	ST171202G3-3 PFC CS-1 537 17K3024	02-Dec-17	18:29:13
5	171202G3_5	ST171202G3-4 PFC CS0 537 17K3025	02-Dec-17	18:41:38
6	171202G3_6	ST171202G3-5 PFC CS1 537 17K3026	02-Dec-17	18:54:05
7	171202G3_7	ST171202G3-6 PFC CS2 537 17K3033	02-Dec-17	19:06:30
8	171202G3_8	ST171202G3-7 PFC CS3 537 17K3027	02-Dec-17	19:18:58
9	171202G3_9	ST171202G3-8 PFC CS4 537 17K3028	02-Dec-17	19:31:26
10	171202G3_10	ST171202G3-9 PFC CS5 537 17K3029	02-Dec-17	19:43:54
11	171202G3_11	IPA	02-Dec-17	19:56:18
12	171202G3_12	ICV171202G3-1 PFC ICV 537 17K3030	02-Dec-17	20:08:45
13	171202G3_13	IPA	02-Dec-17	20:21:09
14	171202G3_14	B7L0003-BS1 LFB 0.25	02-Dec-17	20:33:39
15	171202G3_15	IPA	02-Dec-17	20:46:04
16	171202G3_16	B7L0003-BLK1 LRB 0.25	02-Dec-17	20:58:31
17	171202G3_17	B7L0003-MS1 LFSM 0.25	02-Dec-17	21:10:56
18	171202G3_18	B7L0003-MSD1 LFSMD 0.25	02-Dec-17	21:23:22
19	171202G3_19	1701769-01 CH-AT-1RW69-1117 0.25	02-Dec-17	21:35:49
20	171202G3_20	1701769-02 CH-AT-1FB69-1117 0.25	02-Dec-17	21:48:16
21	171202G3_21	1701769-03 CH-AT-1RW70-1117 0.25	02-Dec-17	22:00:45
22	171202G3_22	1701769-04 CH-AT-1FB70-1117 0.25	02-Dec-17	22:13:09
23	171202G3_23	1701769-05 CH-AT-1RW71-1117 0.25	02-Dec-17	22:25:33
24	171202G3_24	1701769-06 CH-AT-1FB71-1117 0.25	02-Dec-17	22:37:58
25	171202G3_25	1701769-07 CH-AT-1RW72-1117-A 0.25	02-Dec-17	22:50:23
26	171202G3_26	1701769-08 CH-AT-1FB72-1117-A 0.25	02-Dec-17	23:02:49
27	171202G3_27	1701769-09 CH-AT-1RW72-1117-B 0.25	02-Dec-17	23:15:15
28	171202G3_28	1701769-10 CH-AT-1FB72-1117-B 0.25	02-Dec-17	23:27:42
29	171202G3_29	1701769-11 CH-AT-1RW73-1117 0.25	02-Dec-17	23:40:10
30	171202G3_30	1701769-12 CH-AT-1FB73-1117 0.25	02-Dec-17	23:52:33
31	171202G3_31	B7L0005-BS1 LFB 0.25	03-Dec-17	00:04:57

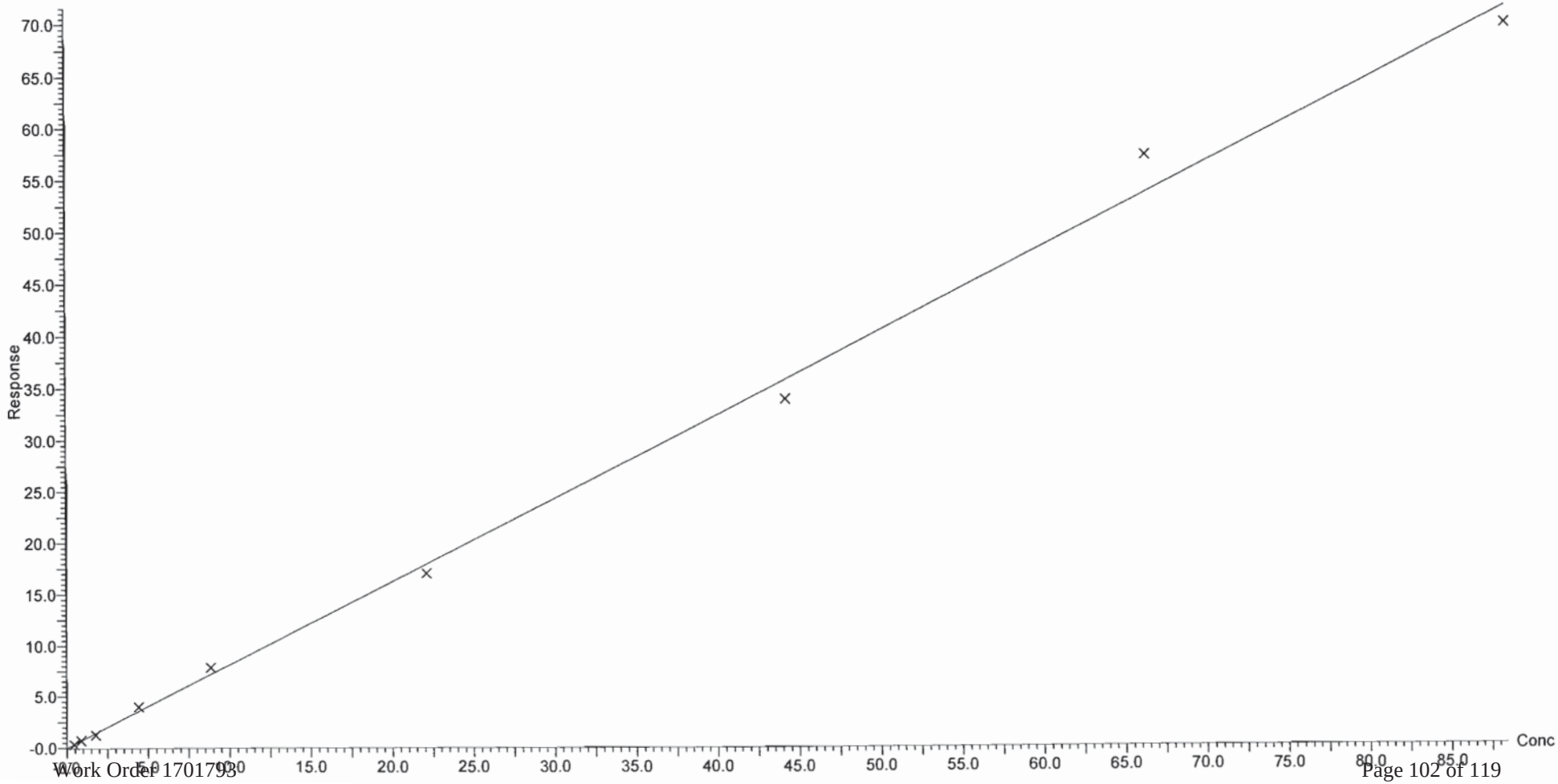
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:38:29 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

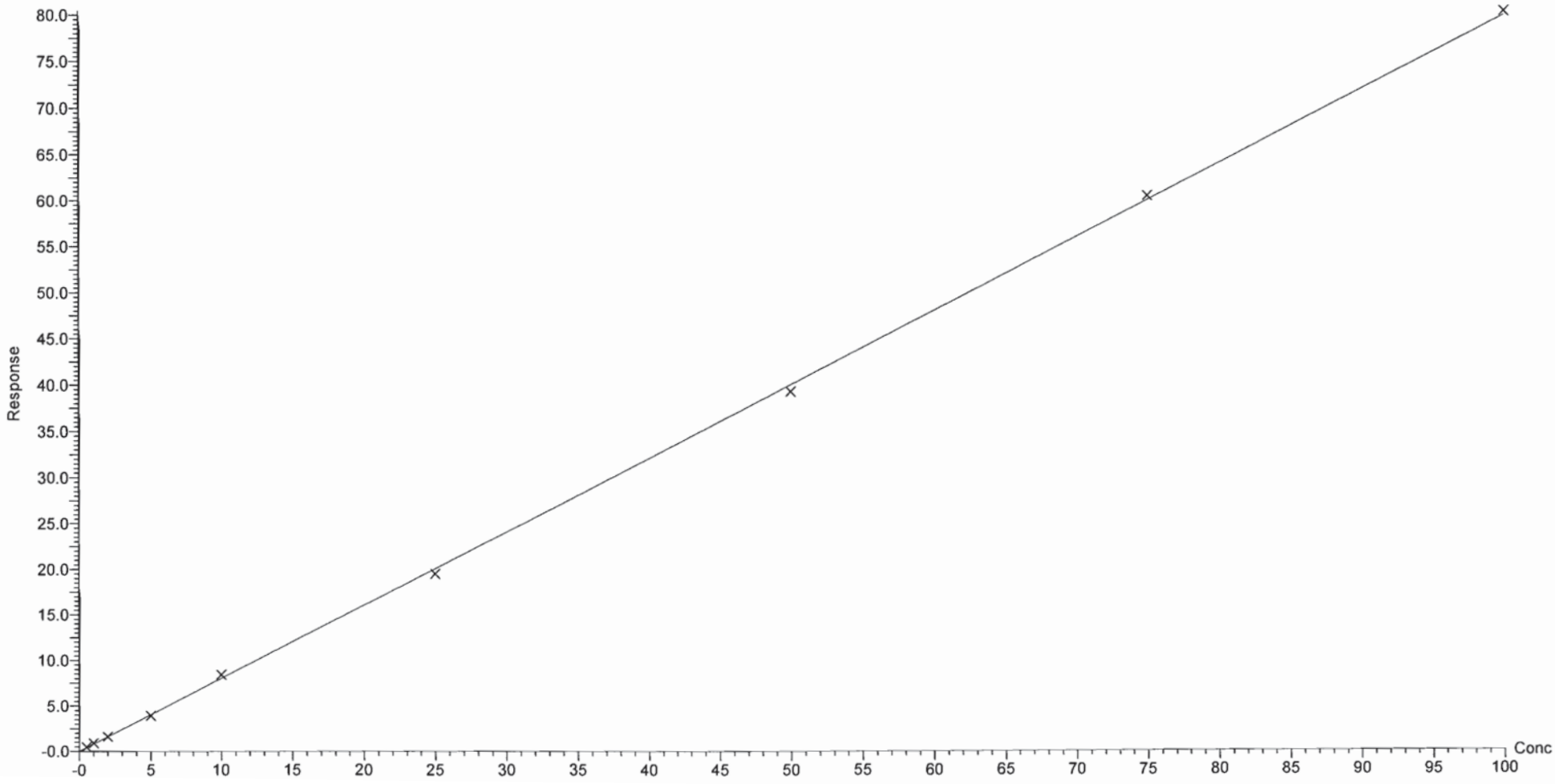
Compound name: PFBS
Coefficient of Determination: R^2 = 0.996875
Calibration curve: 0.808887 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:38:29 Pacific Standard Time

Compound name: PFOA
Coefficient of Determination: R^2 = 0.999583
Calibration curve: 0.800284 * x
Response type: Internal Std (Ref 6), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

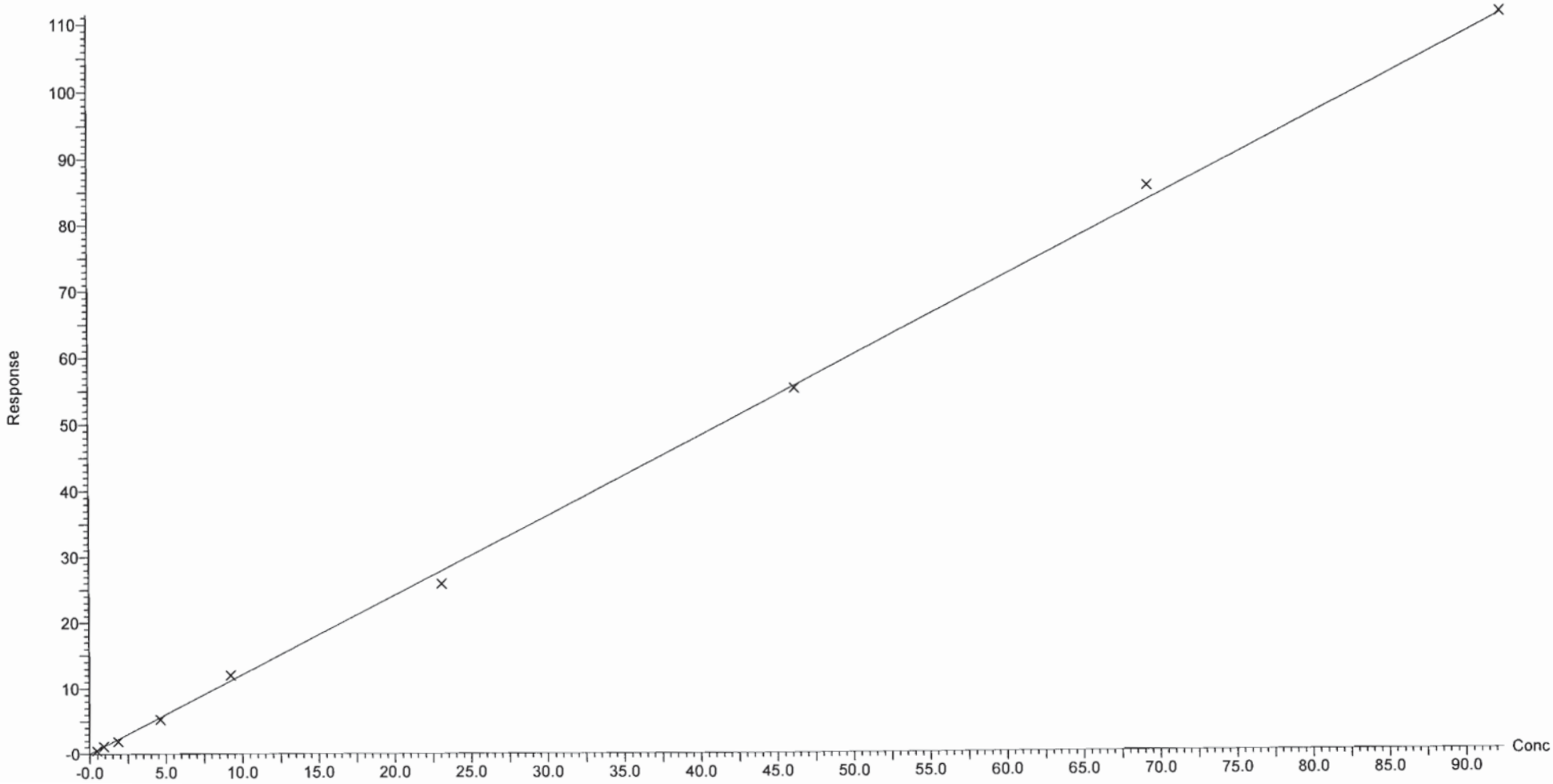


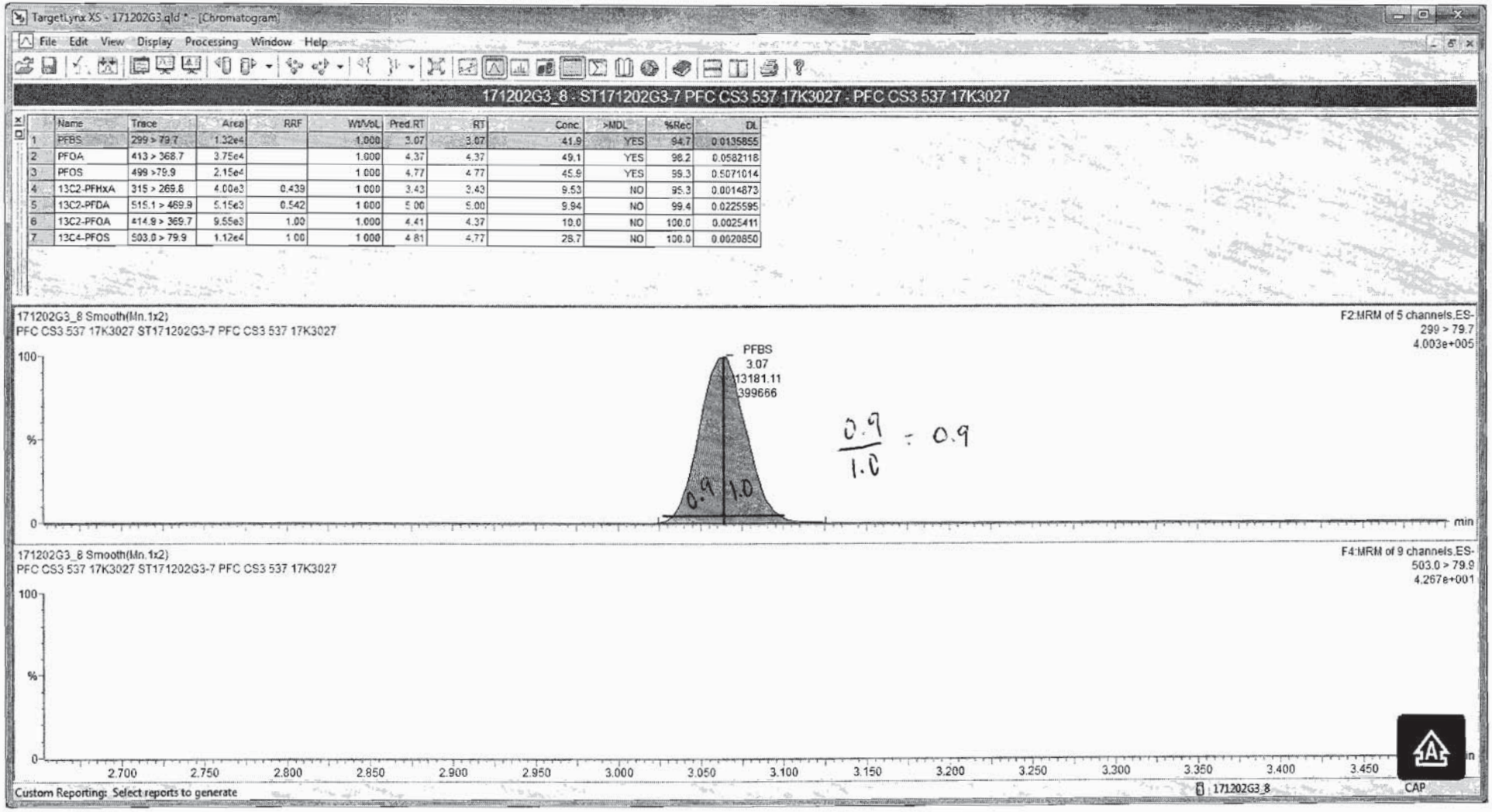
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

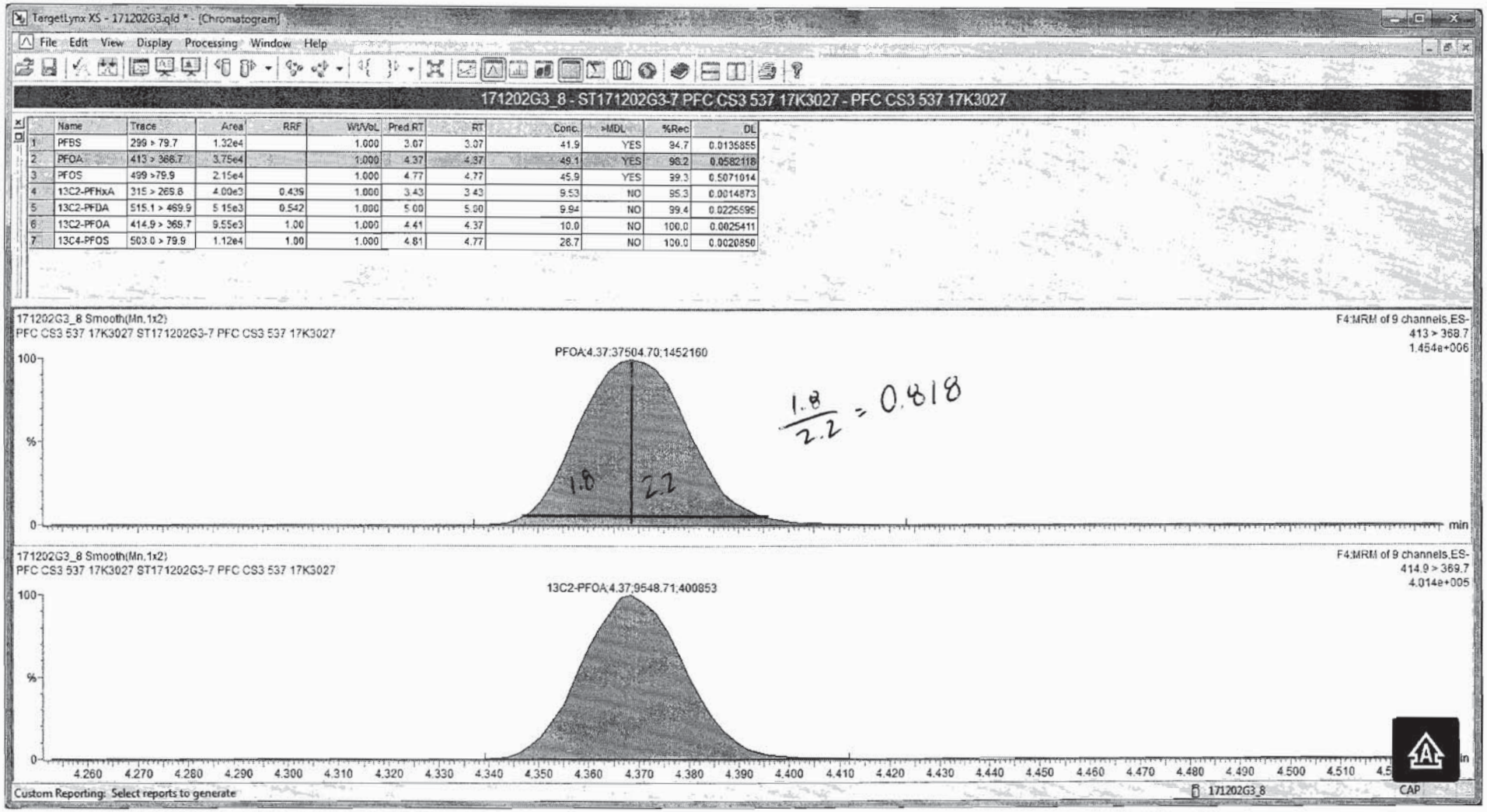
Last Altered: Monday, December 04, 2017 08:35:33 Pacific Standard Time
Printed: Monday, December 04, 2017 08:38:29 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.998680
Calibration curve: 1.20311 * x
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None





	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	299 > 79.7	1.32e4		1.000	3.07	3.07	41.9	YES	94.7	0.0135855
2	PFOA	413 > 368.7	3.75e4		1.000	4.37	4.37	49.1	YES	98.2	0.0582118
3	PFOS	499 >79.9	2.15e4		1.000	4.77	4.77	45.9	YES	99.3	0.5071014
4	13C2-PFHxA	315 > 269.8	4.00e3	0.439	1.000	3.43	3.43	9.53	NO	95.3	0.0014873
5	13C2-PFDA	515.1 > 469.9	5.15e3	0.542	1.000	5.00	5.00	9.94	NO	99.4	0.0225595
6	13C2-PFOA	414.9 > 369.7	9.55e3	1.00	1.000	4.41	4.37	10.0	NO	100.0	0.0025411
7	13C4-PFOS	503.0 > 79.9	1.12e4	1.00	1.000	4.81	4.77	28.7	NO	100.0	0.0020850



	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc.	>MDL	%Rec	DL
1	PFBS	299 > 79.7	1.32e4		1.000	3.07	3.07	41.9	YES	94.7	0.0135855
2	PFOA	413 > 368.7	3.75e4		1.000	4.37	4.37	49.1	YES	98.2	0.0582118
3	PFOS	499 >79.9	2.15e4		1.000	4.77	4.77	45.9	YES	99.3	0.5071014
4	13C2-PFHxA	315 > 269.8	4.00e3	0.439	1.000	3.43	3.43	9.53	NO	95.3	0.0014873
5	13C2-PFDA	515.1 > 469.9	5.15e3	0.542	1.000	5.00	5.00	9.94	NO	99.4	0.0225595
6	13C2-PFOA	414.9 > 369.7	9.55e3	1.00	1.000	4.41	4.37	10.0	NO	100.0	0.0025411
7	13C4-PFOS	503.0 > 79.9	1.12e4	1.00	1.000	4.81	4.77	26.7	NO	100.0	0.0020850

Compound 6: 13C2-PFOA

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171202G3-1 PFC CS-3 537 17K3022	171202G3_	Standard	10	4.37	9754.635	9754.635	bd
2	ST171202G3-2 PFC CS-2 537 17K3023	171202G3_	Standard	10	4.37	10228.64	10228.64	bb
3	ST171202G3-3 PFC CS-1 537 17K3024	171202G3_	Standard	10	4.36	11046.19	11046.19	bb
4	ST171202G3-4 PFC CS0 537 17K3025	171202G3_	Standard	10	4.37	9677.063	9677.063	bd
5	ST171202G3-5 PFC CS1 537 17K3026	171202G3_	Standard	10	4.36	10294.74	10294.74	bd
6	ST171202G3-6 PFC CS2 537 17K3033	171202G3_	Standard	10	4.37	10550.62	10550.62	bb
7	ST171202G3-7 PFC CS3 537 17K3027	171202G3_	Standard	10	4.37	9548.714	9548.714	bb
8	ST171202G3-8 PFC CS4 537 17K3028	171202G3_	Standard	10	4.37	9505.696	9505.696	bd
9	ST171202G3-9 PFC CS5 537 17K3029	171202G3_	Standard	10	4.37	8650.426	8650.426	bb
						AVERAGE		RPD
						9917.414		19.79262799

Compound 7: 13C4-PFOS

	ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171202G3-1 PFC CS-3 537 17K3022	171202G3_	Standard	28.7	4.77	10928.28	10928.28	bb
2	ST171202G3-2 PFC CS-2 537 17K3023	171202G3_	Standard	28.7	4.76	11039.07	11039.07	bd
3	ST171202G3-3 PFC CS-1 537 17K3024	171202G3_	Standard	28.7	4.77	10765.88	10765.88	bb
4	ST171202G3-4 PFC CS0 537 17K3025	171202G3_	Standard	28.7	4.77	10556.23	10556.23	bd
5	ST171202G3-5 PFC CS1 537 17K3026	171202G3_	Standard	28.7	4.76	10811.87	10811.87	bb
6	ST171202G3-6 PFC CS2 537 17K3033	171202G3_	Standard	28.7	4.77	11667.25	11667.25	bd
7	ST171202G3-7 PFC CS3 537 17K3027	171202G3_	Standard	28.7	4.77	11173.31	11173.31	bd
8	ST171202G3-8 PFC CS4 537 17K3028	171202G3_	Standard	28.7	4.77	10125.71	10125.71	bb
9	ST171202G3-9 PFC CS5 537 17K3029	171202G3_	Standard	28.7	4.77	9555.402	9555.402	bd
						AVERAGE		RPD
						10735.89		19.90183791

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3.qld

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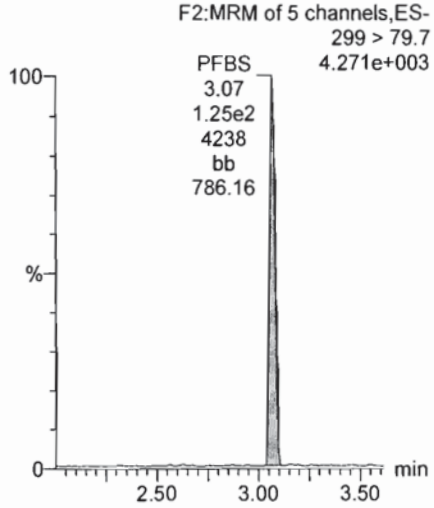
Name: 171202G3_2, Date: 02-Dec-2017, Time: 18:04:20, ID: ST171202G3-1 PFC CS-3 537 17K3022, Description: PFC CS-3 537 17K3022

PFBS



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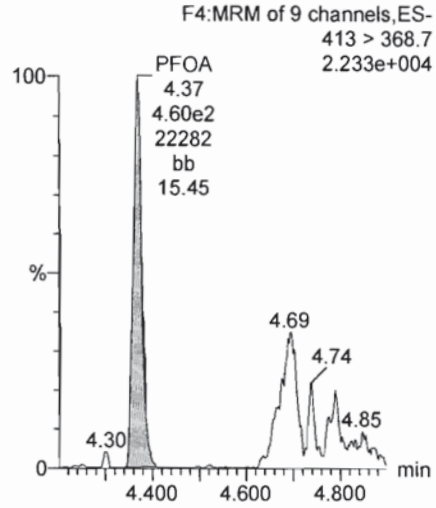
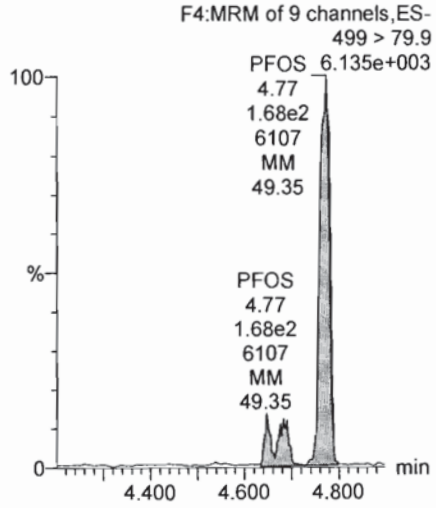


PFOS



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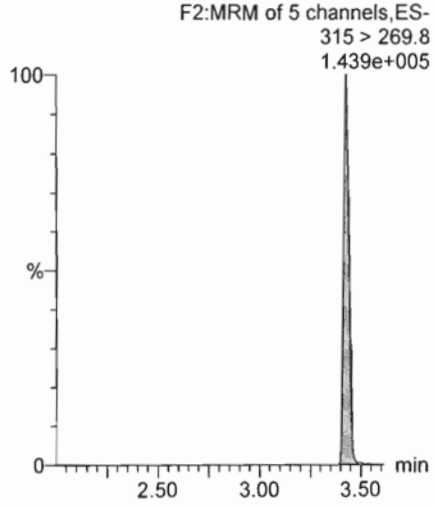

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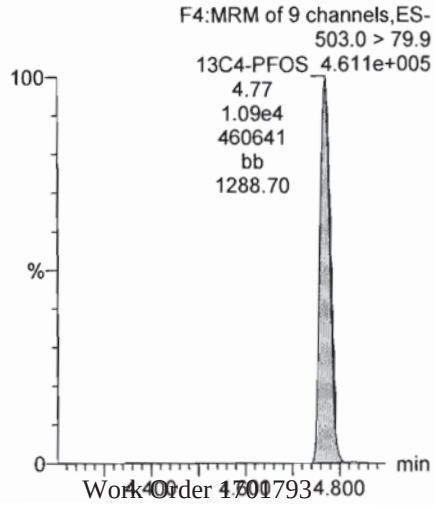

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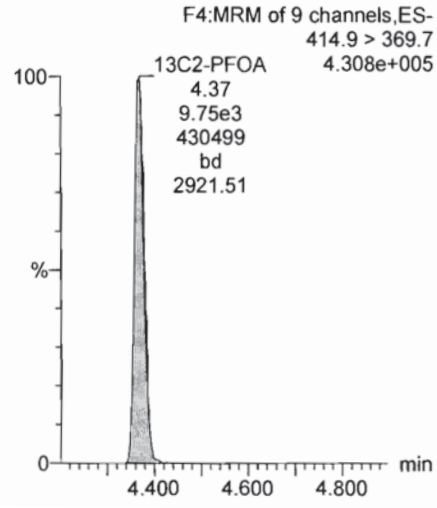

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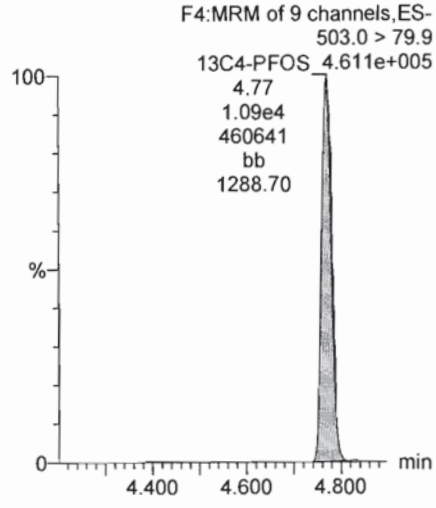

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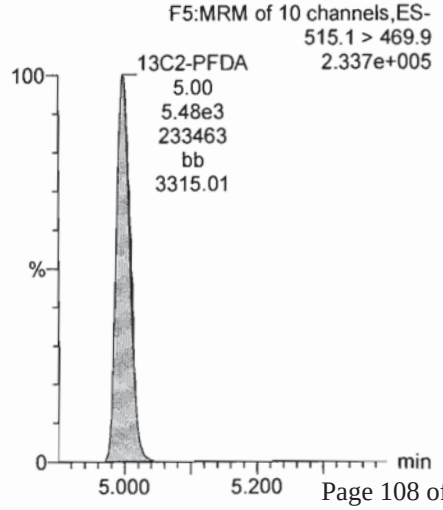

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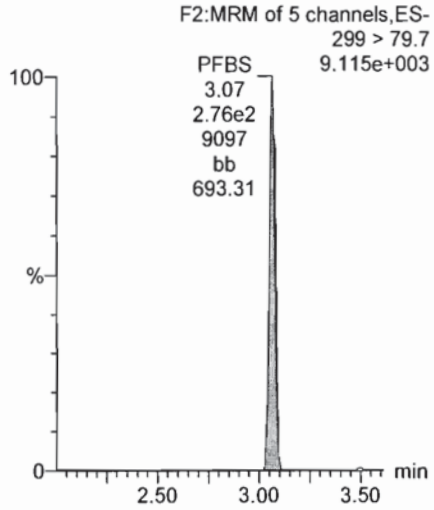
Name: 171202G3_3, Date: 02-Dec-2017, Time: 18:16:47, ID: ST171202G3-2 PFC CS-2 537 17K3023, Description: PFC CS-2 537 17K3023

PFBS



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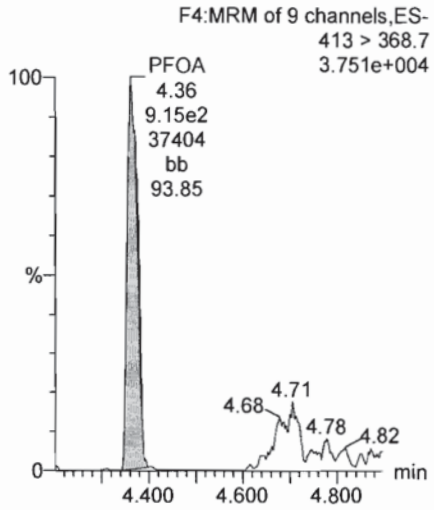

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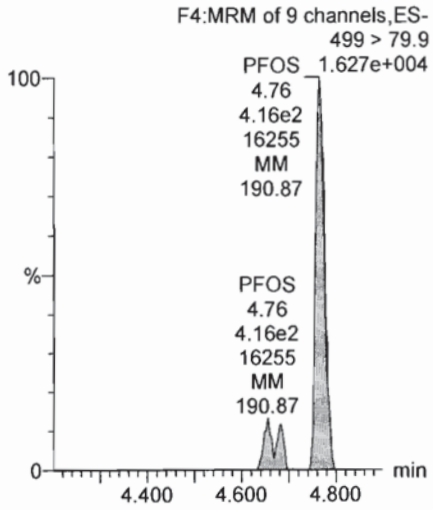

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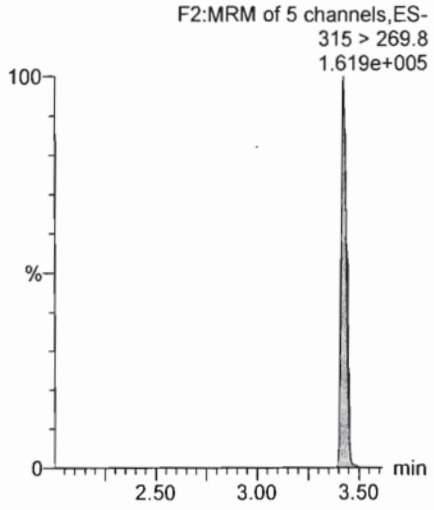

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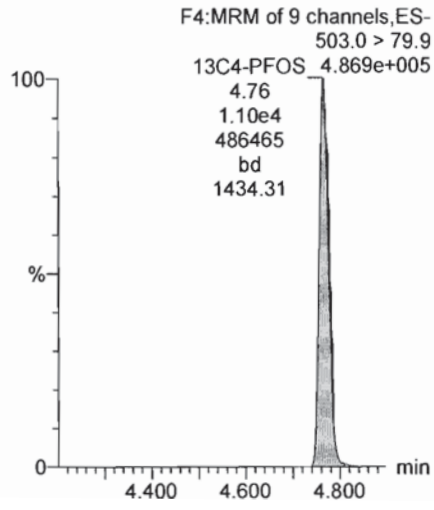

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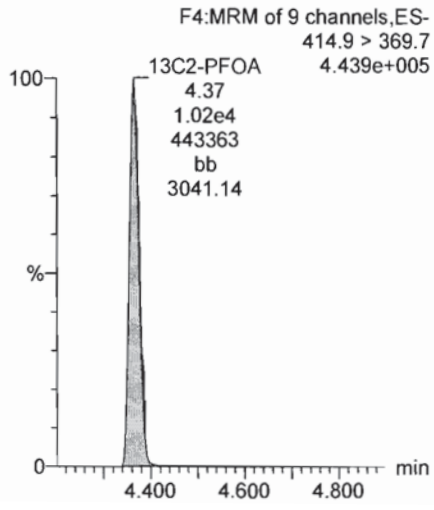

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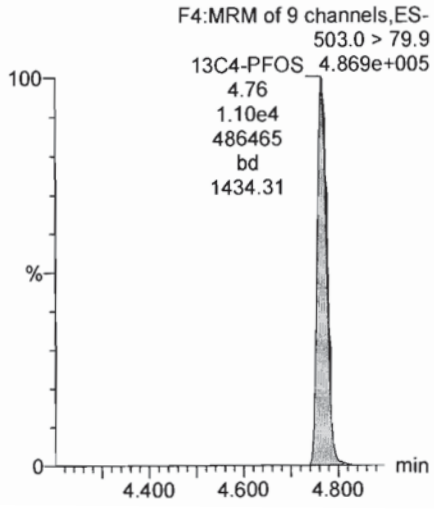

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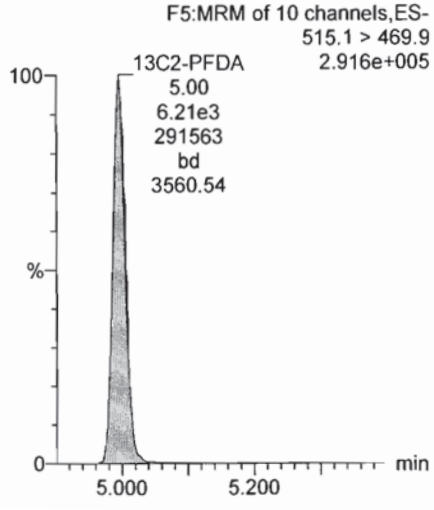

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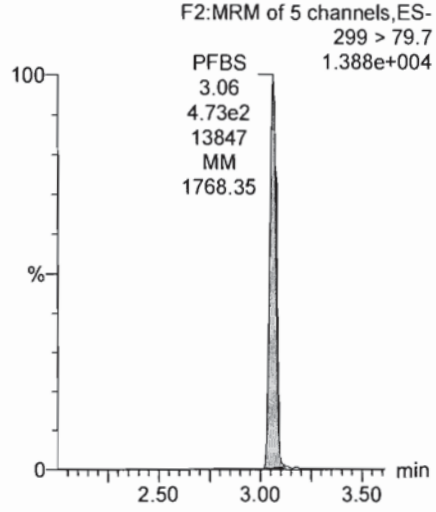
Name: 171202G3_4, Date: 02-Dec-2017, Time: 18:29:13, ID: ST171202G3-3 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

PFBS



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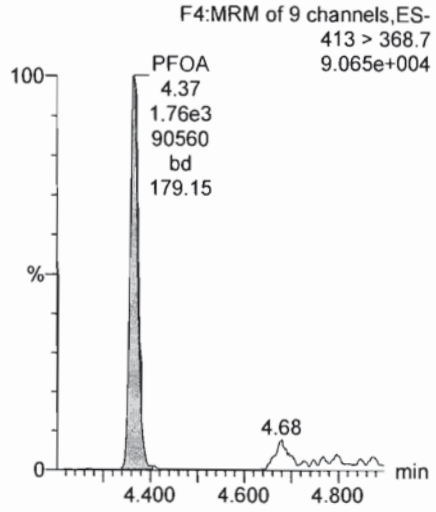

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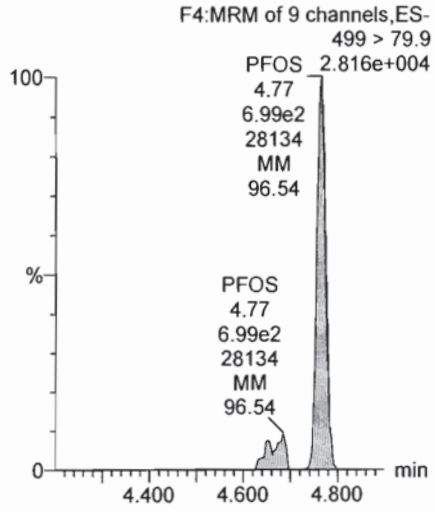

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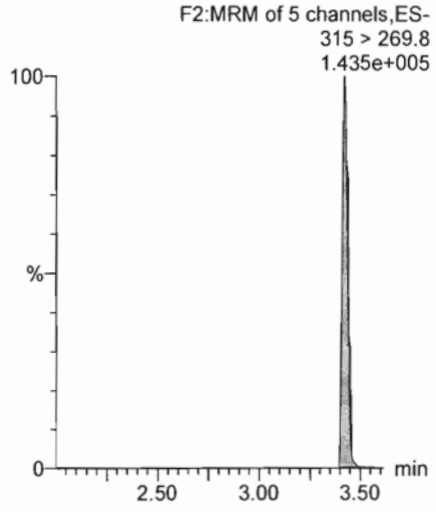

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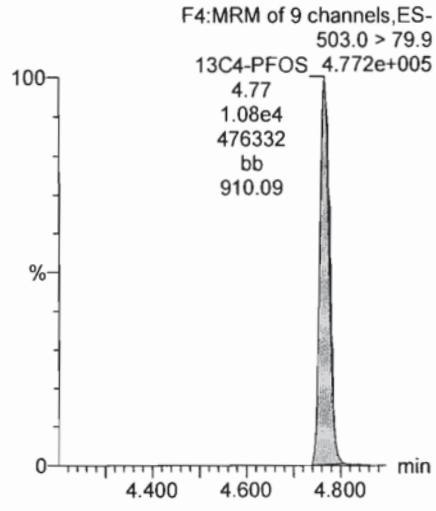

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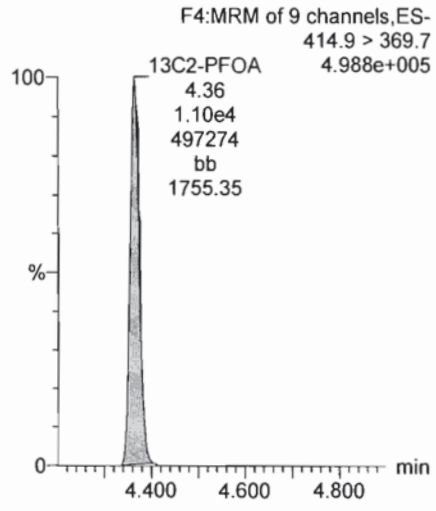

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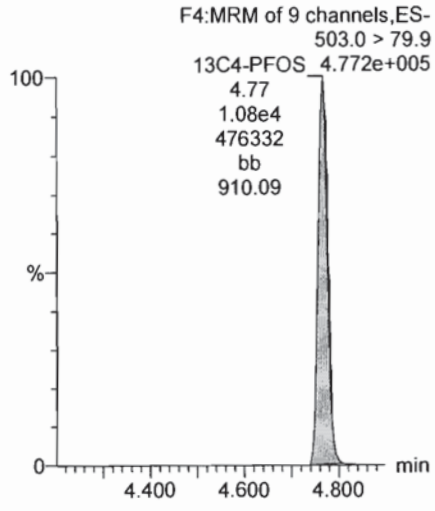

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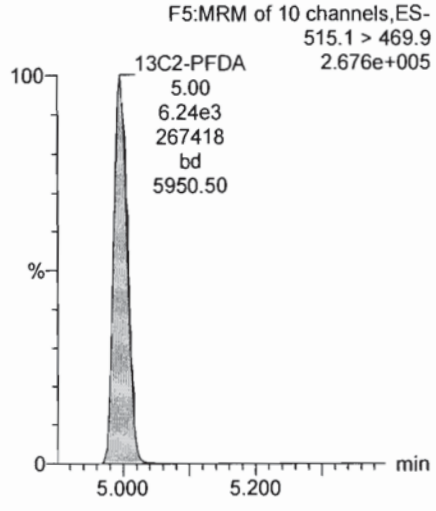

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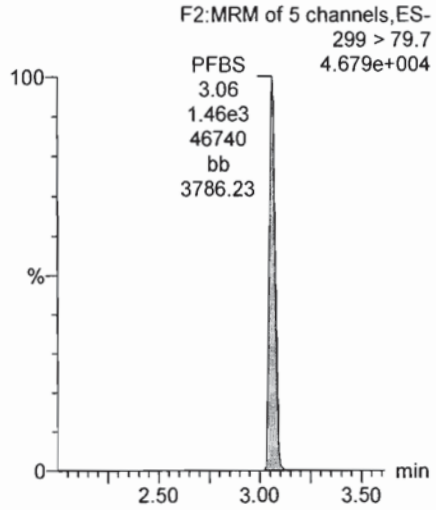
PFBS



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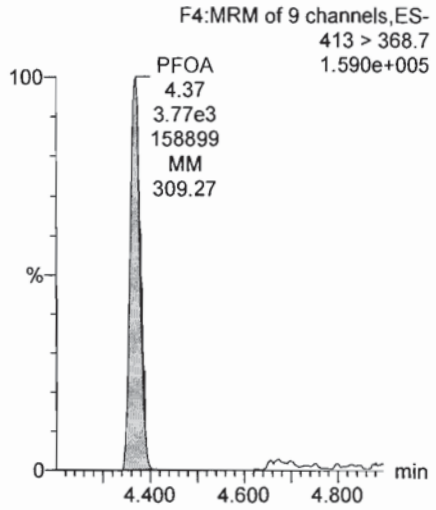

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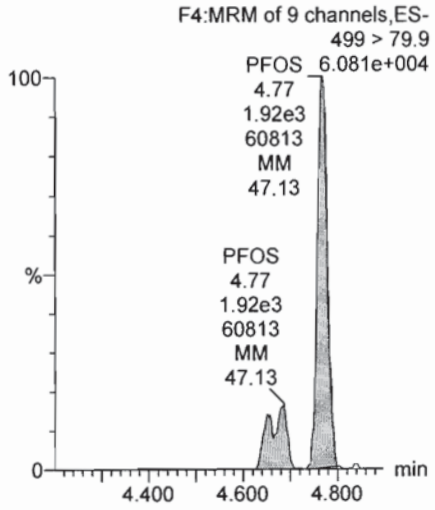

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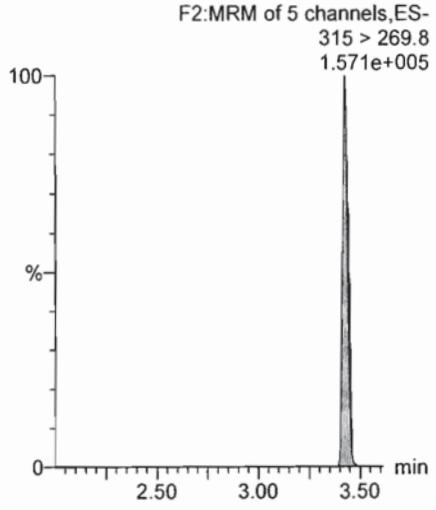

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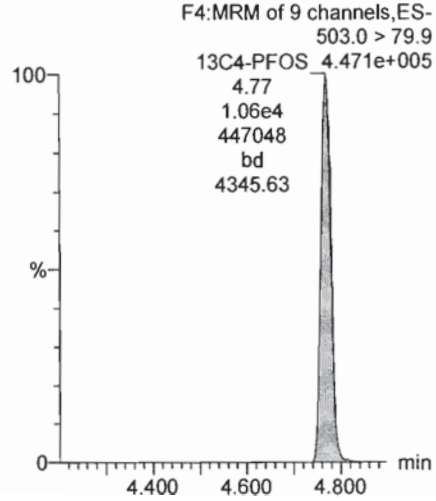

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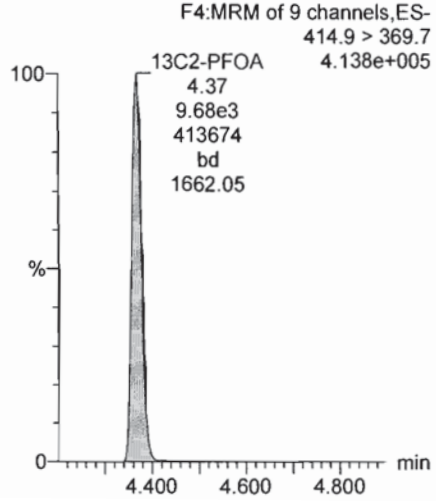

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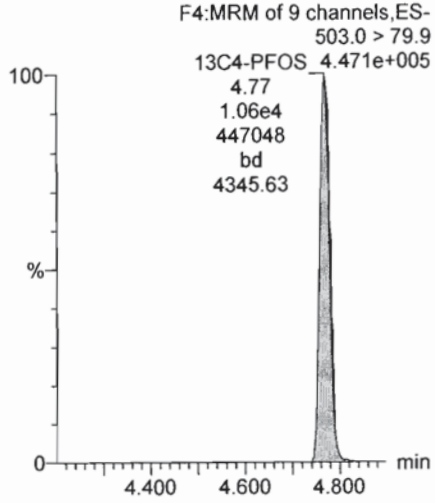

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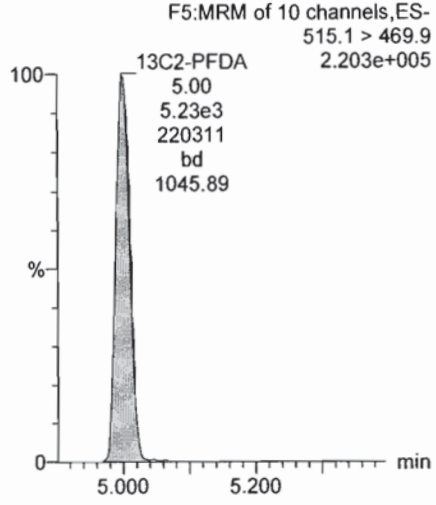

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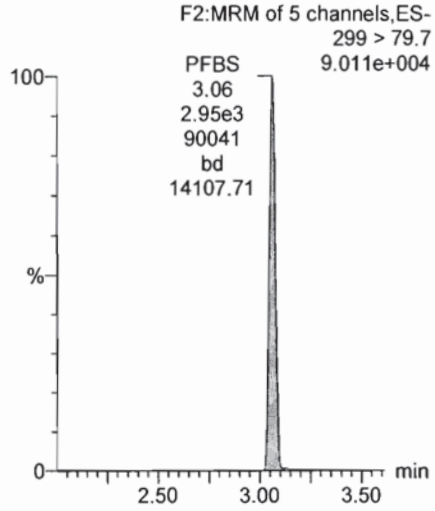
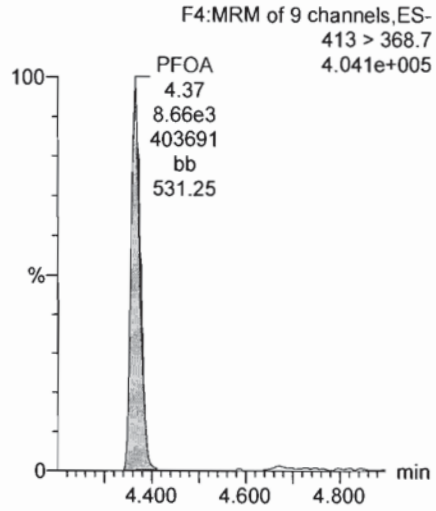
Name: 171202G3_6, Date: 02-Dec-2017, Time: 18:54:05, ID: ST171202G3-5 PFC CS1 537 17K3026, Description: PFC CS1 537 17K3026

PFBS



PFOA



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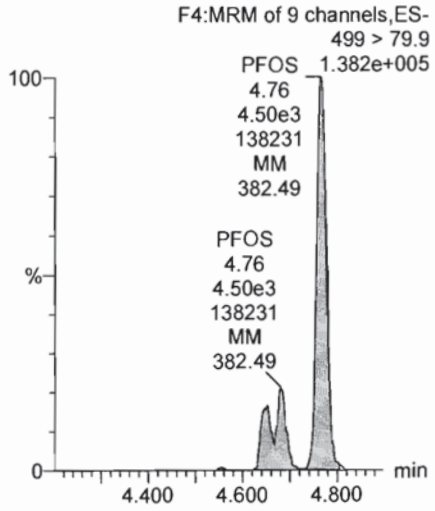

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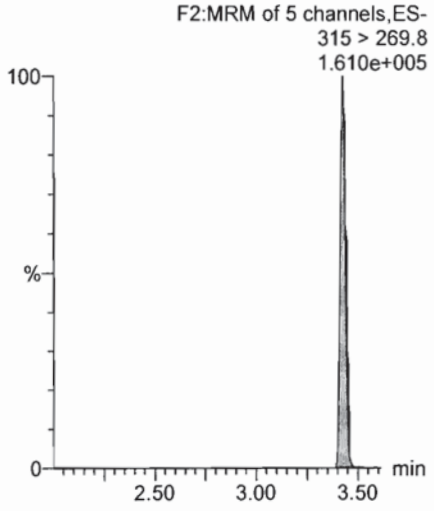

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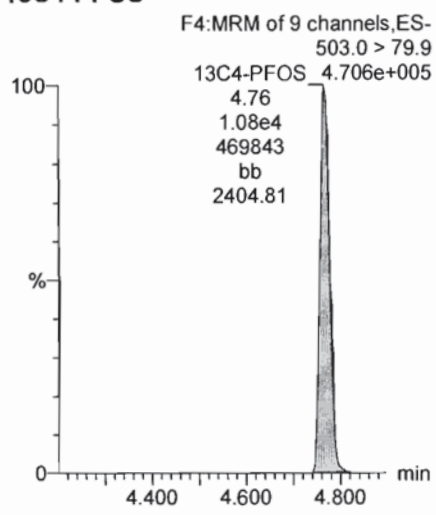

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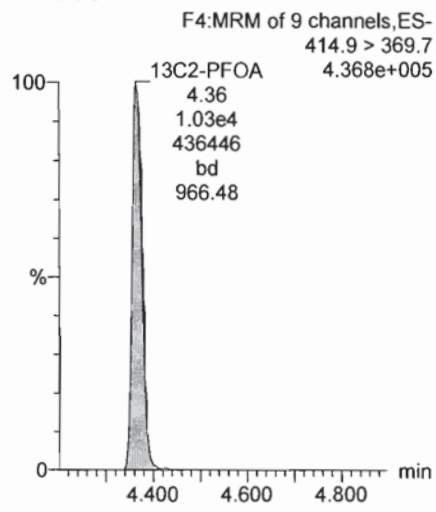

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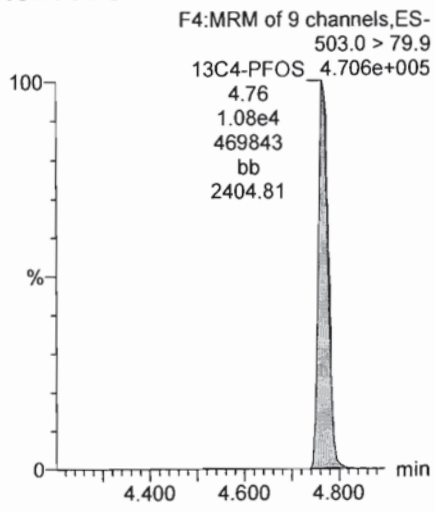

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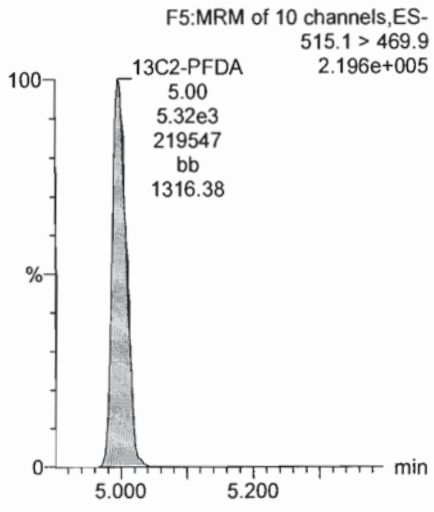

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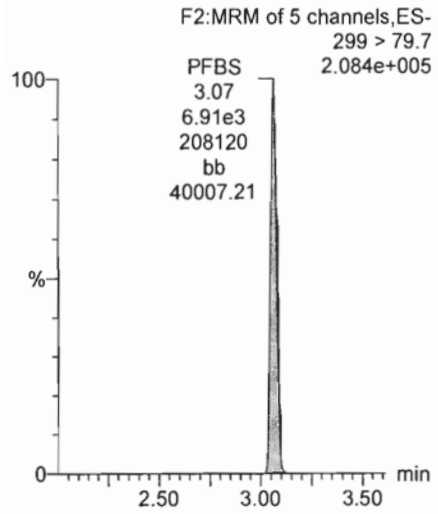
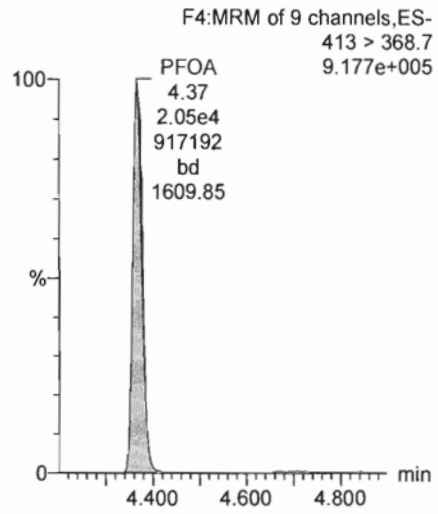
Name: 171202G3_7, Date: 02-Dec-2017, Time: 19:06:30, ID: ST171202G3-6 PFC CS2 537 17K3033, Description: PFC CS2 537 17K3033

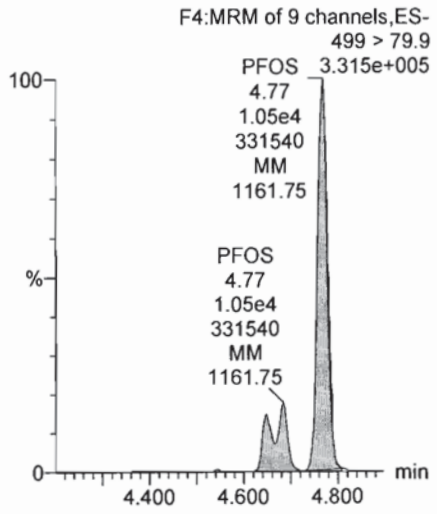
PFBS



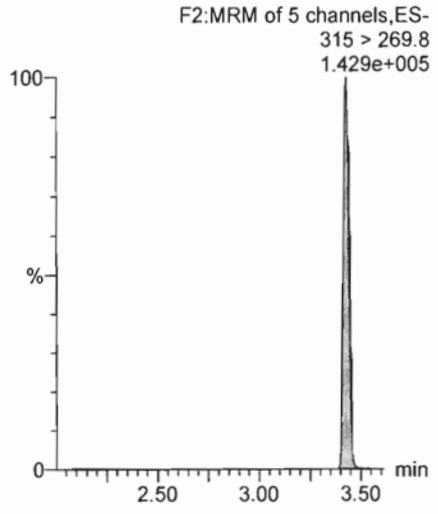
PFOA



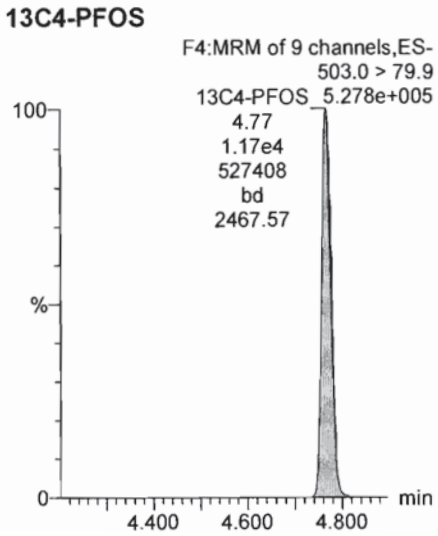
PFOS



13C2-PFHxA



13C4-PFOS



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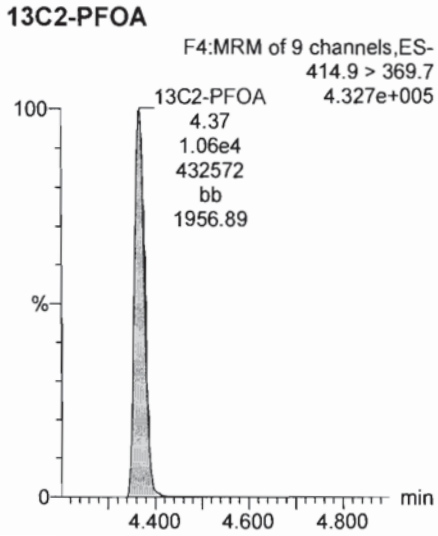

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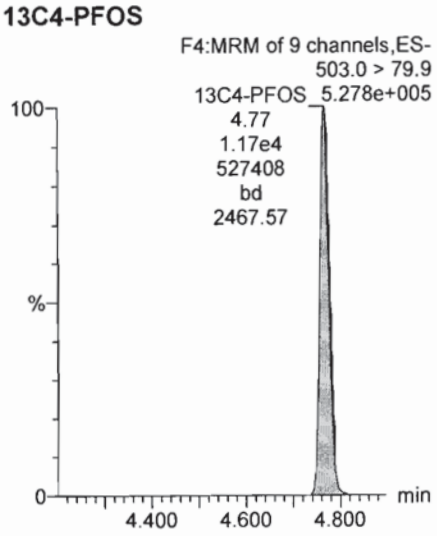

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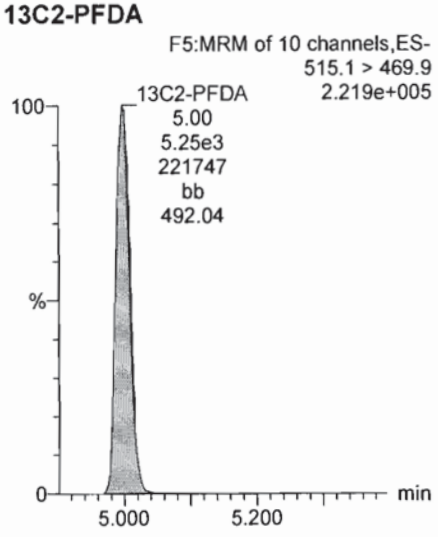

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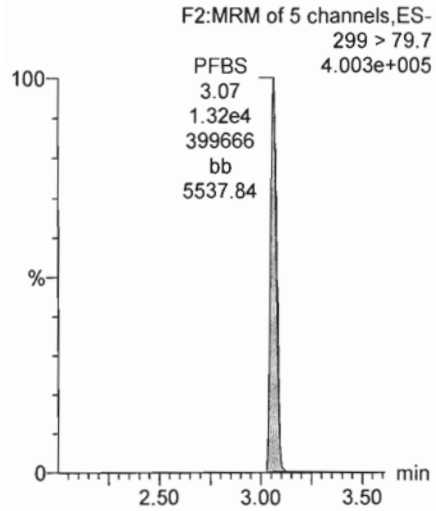
Printed: Monday, December 04, 2017 08:37:23 Pacific Standard Time

Name: 171202G3_8, Date: 02-Dec-2017, Time: 19:18:58, ID: ST171202G3-7 PFC CS3 537 17K3027, Description: PFC CS3 537 17K3027

PFBS



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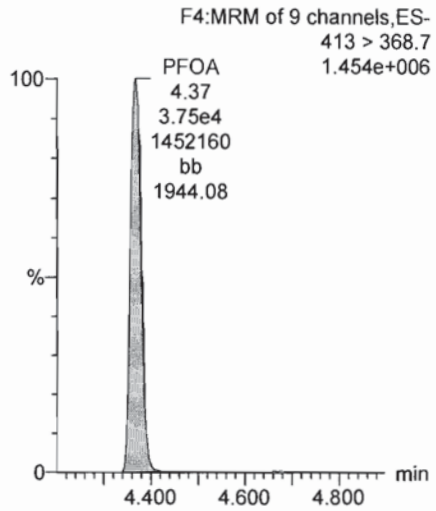
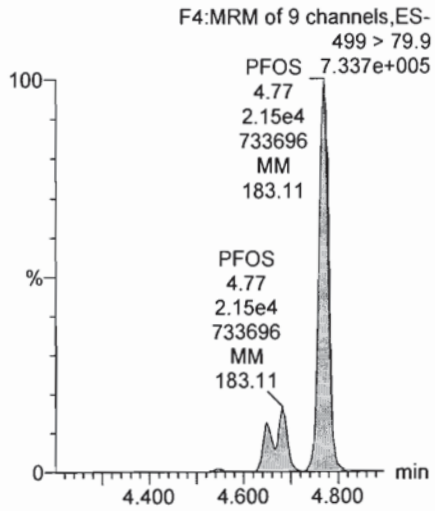


PFOS



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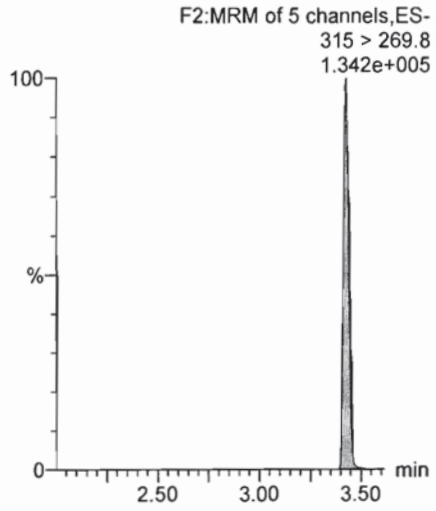

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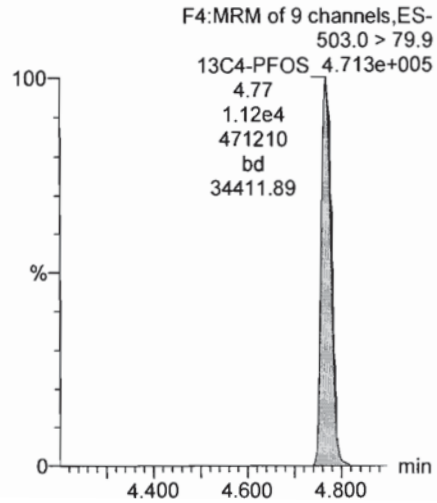

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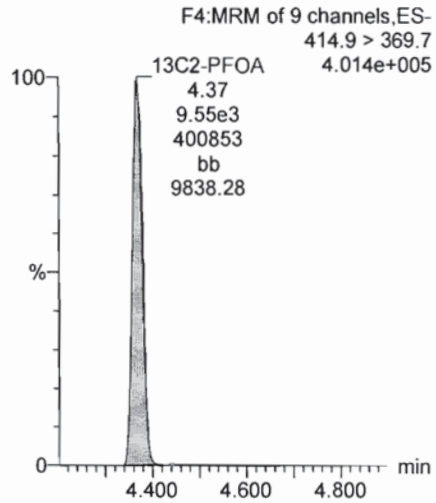

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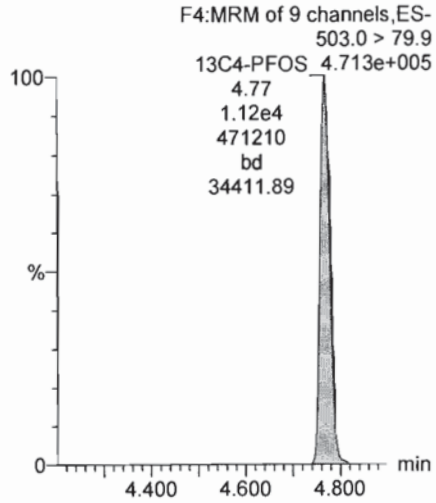

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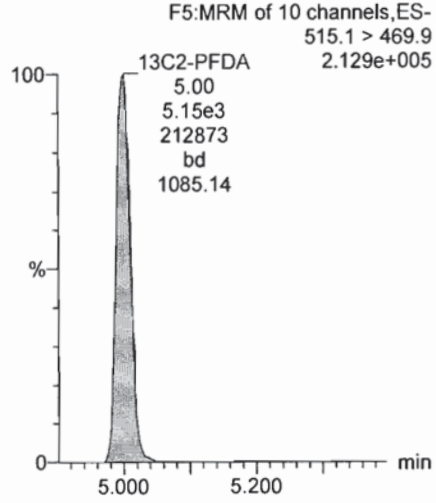

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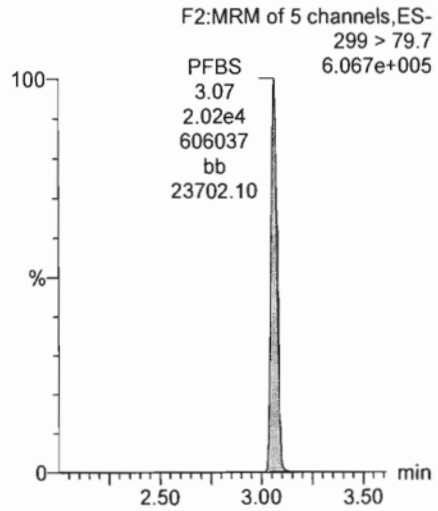
Name: 171202G3_9, Date: 02-Dec-2017, Time: 19:31:26, ID: ST171202G3-8 PFC CS4 537 17K3028, Description: PFC CS4 537 17K3028

PFBS



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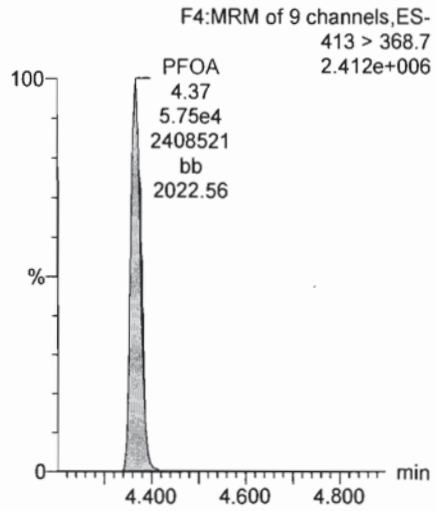
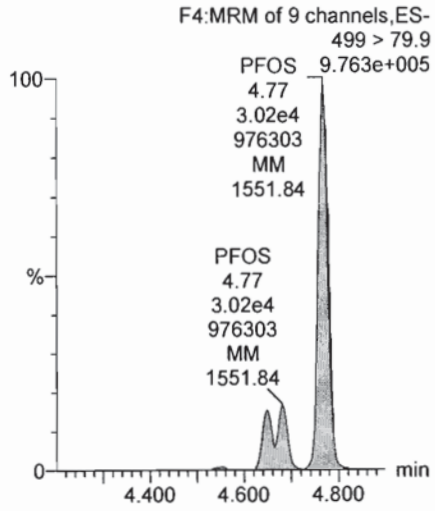


PFOS



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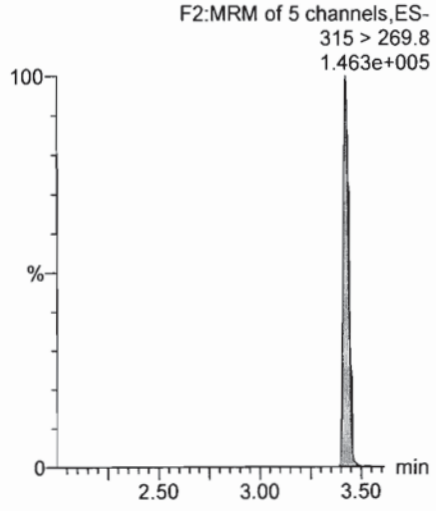

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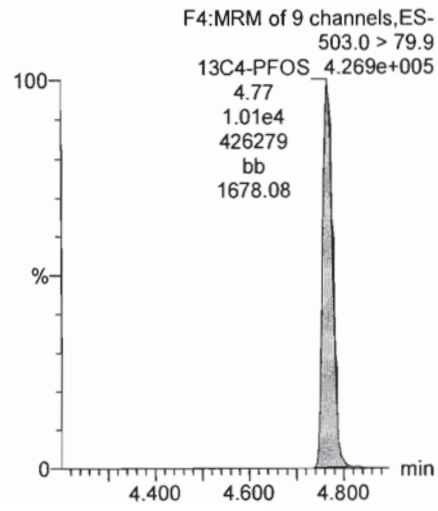

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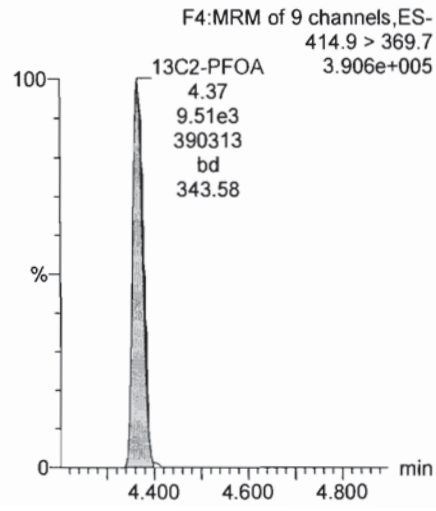

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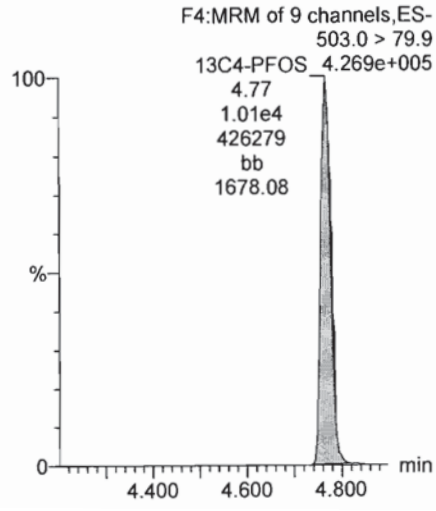

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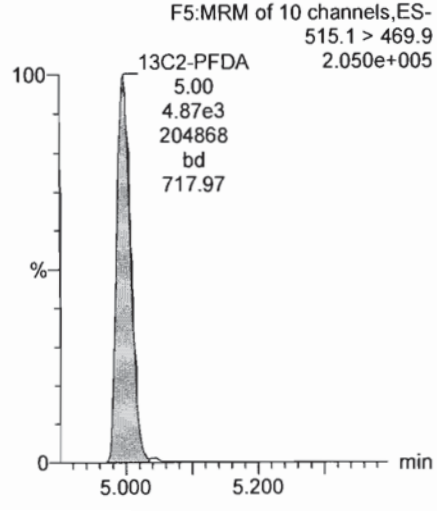

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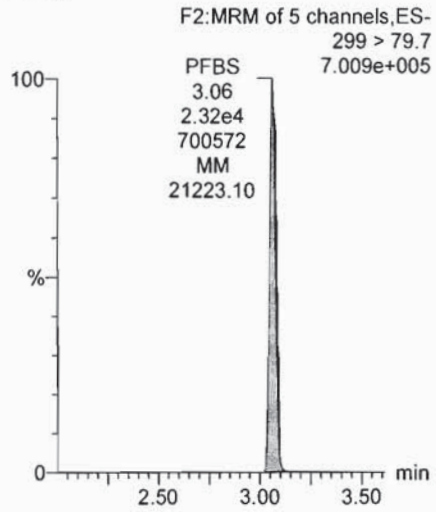
Name: 171202G3_10, Date: 02-Dec-2017, Time: 19:43:54, ID: ST171202G3-9 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

PFBS



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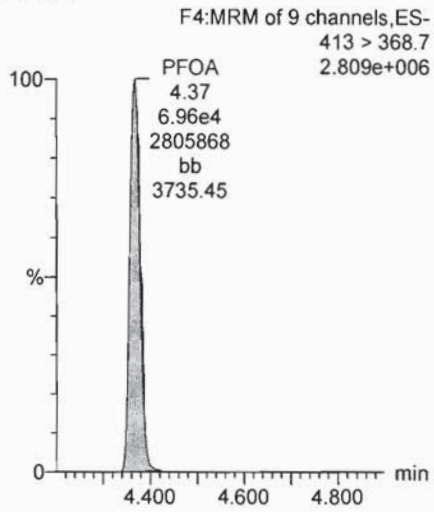

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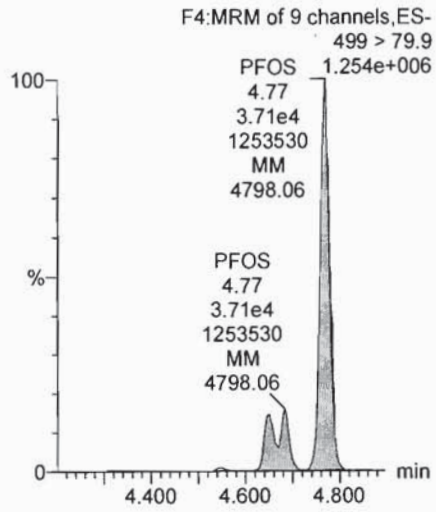

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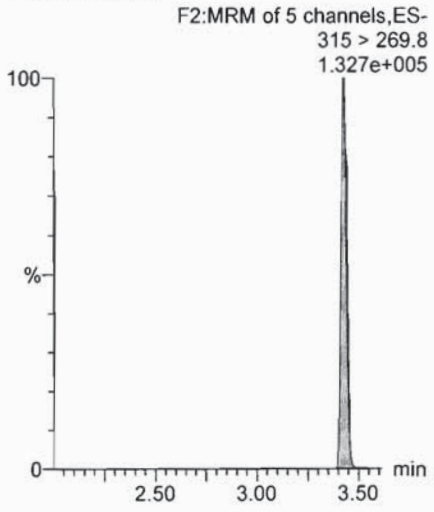

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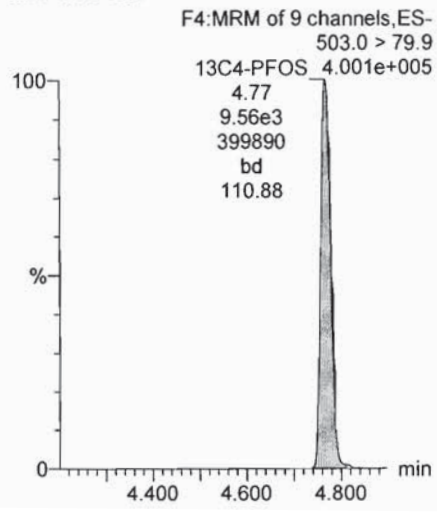

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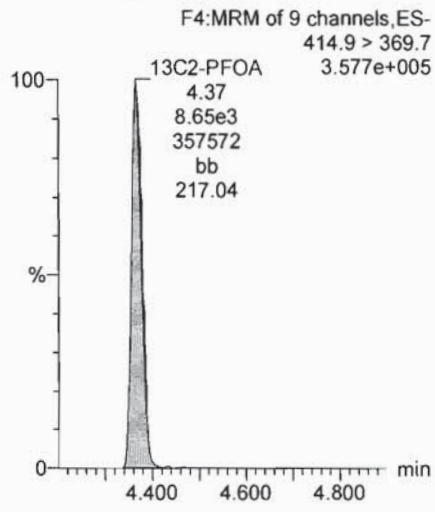

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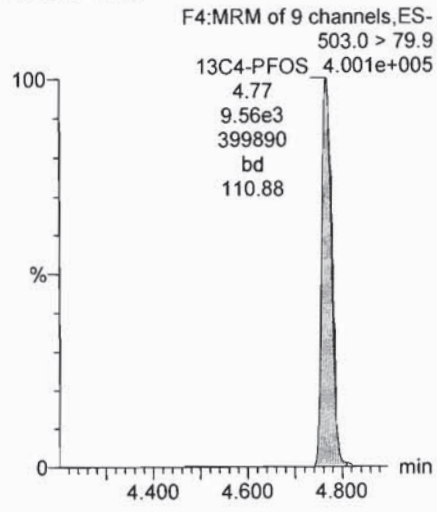

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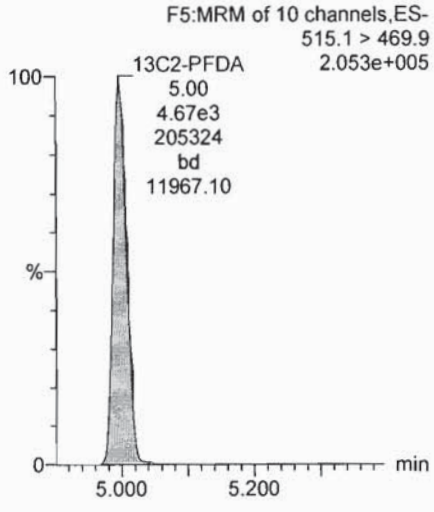


Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-12.qld

Last Altered: Monday, December 04, 2017 08:48:12 Pacific Standard Time
Printed: Monday, December 04, 2017 08:48:51 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_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_12, Date: 02-Dec-2017, Time: 20:08:45, ID: ICV171202G3-1 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	3.02e3	9.95e3		1.0000	3.07	3.07	8.71	10.8	107.7
2	2 PFOA	413 > 368.7	7.72e3	9.02e3		1.0000	4.37	4.37	8.55	10.7	106.9
3	3 PFOS	499 >79.9	4.11e3	9.95e3		1.0000	4.77	4.77	11.8	9.84	98.4
4	4 13C2-PFHxA	315 > 269.8	4.03e3	9.02e3	0.439	1.0000	3.43	3.43	4.47	10.2	101.8
5	5 13C2-PFDA	515.1 > 469.9	4.46e3	9.02e3	0.542	1.0000	5.00	5.00	4.94	9.12	91.2
6	6 13C2-PFOA	414.9 > 369.7	9.02e3	9.02e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.95e3	9.95e3	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

70-130

12/4/17

12/04/2017

Vista Analytical Laboratory

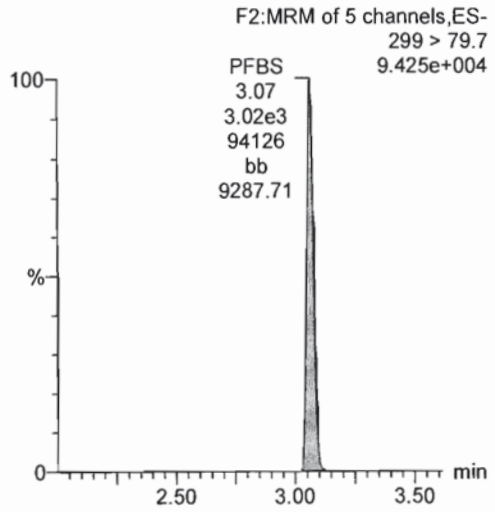
Dataset: U:\G1.PRO\Results\2017\171202G3\171202G3-12.qld

Last Altered: Monday, December 04, 2017 08:48:12 Pacific Standard Time
Printed: Monday, December 04, 2017 08:48:51 Pacific Standard Time

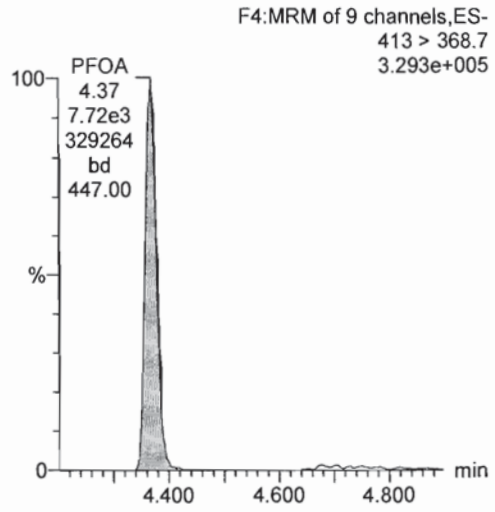
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-02-17_L3.cdb 04 Dec 2017 08:35:33

Name: 171202G3_12, Date: 02-Dec-2017, Time: 20:08:45, ID: ICV171202G3-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

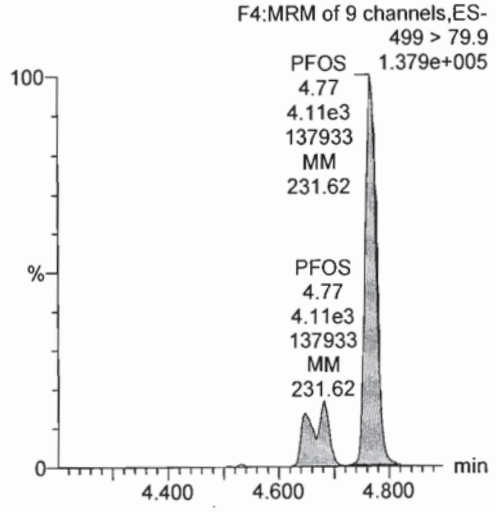
PFBS



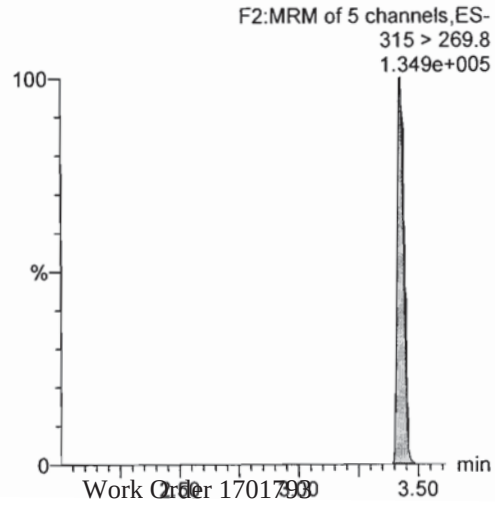
PFOA



PFOS



13C2-PFHxA



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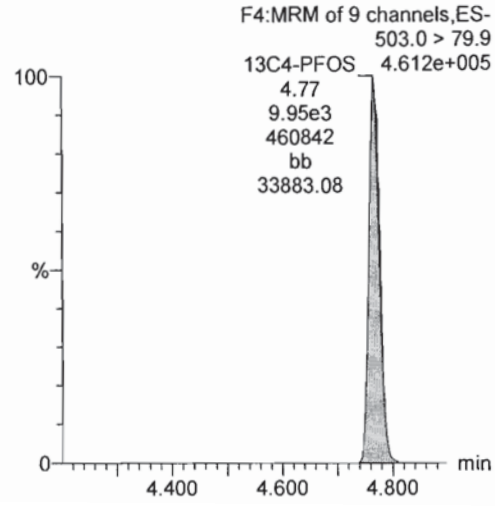

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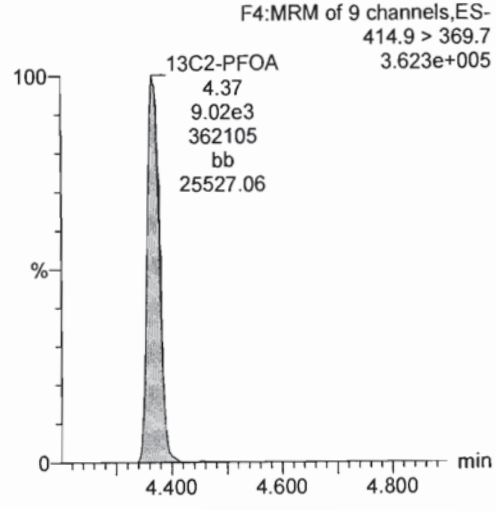

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Name: 171202G3_12, Date: 02-Dec-2017, Time: 20:08:45, ID: ICV171202G3-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

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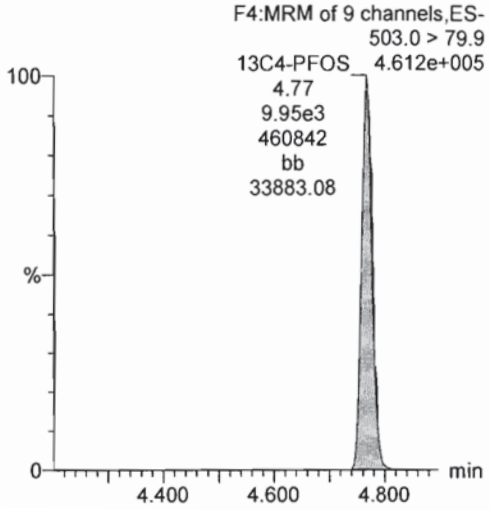

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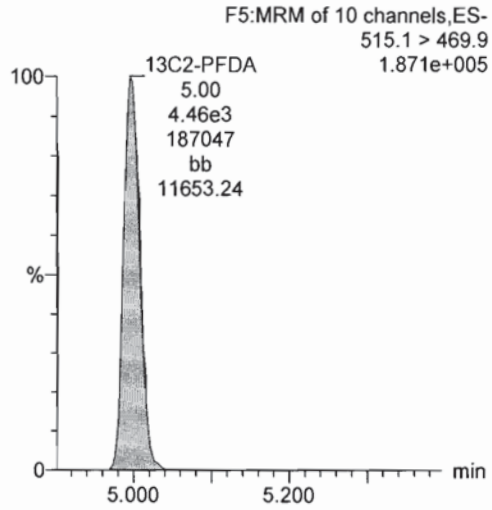

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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW78-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 09:41	11/29/2017			20171202	09:32:00	20171203	01:07:00	1701793-01	1	-999	
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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW79-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:08	11/29/2017			20171202	09:32:00	20171203	01:19:00	1701793-02	1	-999	
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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:35	11/29/2017			20171202	09:32:00	20171203	01:32:00	1701793-03	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:35	11/29/2017			20171202	09:32:00	20171203	01:32:00	1701793-03	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:35	11/29/2017			20171202	09:32:00	20171203	01:32:00	1701793-03	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:35	11/29/2017			20171202	09:32:00	20171203	01:32:00	1701793-03	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:54	11/29/2017			20171202	09:32:00	20171203	01:44:00	1701793-04	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:54	11/29/2017			20171202	09:32:00	20171203	01:44:00	1701793-04	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:54	11/29/2017			20171202	09:32:00	20171203	01:44:00	1701793-04	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:54	11/29/2017			20171202	09:32:00	20171203	01:44:00	1701793-04	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:09	11/29/2017			20171202	09:32:00	20171203	02:34:00	1701793-05	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:09	11/29/2017			20171202	09:32:00	20171203	02:34:00	1701793-05	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:09	11/29/2017			20171202	09:32:00	20171203	02:34:00	1701793-05	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:09	11/29/2017			20171202	09:32:00	20171203	02:34:00	1701793-05	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:07	11/29/2017			20171202	09:32:00	20171203	02:46:00	1701793-06	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:07	11/29/2017			20171202	09:32:00	20171203	02:46:00	1701793-06	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:07	11/29/2017			20171202	09:32:00	20171203	02:46:00	1701793-06	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:07	11/29/2017			20171202	09:32:00	20171203	02:46:00	1701793-06	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:20	11/29/2017			20171202	09:32:00	20171203	02:58:00	1701793-07	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:20	11/29/2017			20171202	09:32:00	20171203	02:58:00	1701793-07	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:20	11/29/2017			20171202	09:32:00	20171203	02:58:00	1701793-07	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:20	11/29/2017			20171202	09:32:00	20171203	02:58:00	1701793-07	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 17:59	11/29/2017			20171202	09:32:00	20171203	03:11:00	1701793-08	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 17:59	11/29/2017			20171202	09:32:00	20171203	03:11:00	1701793-08	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 17:59	11/29/2017			20171202	09:32:00	20171203	03:11:00	1701793-08	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 17:59	11/29/2017			20171202	09:32:00	20171203	03:11:00	1701793-08	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB78-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 09:42	11/29/2017			20171202	09:32:00	20171203	03:23:00	1701793-09	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB78-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 09:42	11/29/2017			20171202	09:32:00	20171203	03:23:00	1701793-09	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB78-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 09:42	11/29/2017			20171202	09:32:00	20171203	03:23:00	1701793-09	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB78-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 09:42	11/29/2017			20171202	09:32:00	20171203	03:23:00	1701793-09	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB79-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:09	11/29/2017			20171202	09:32:00	20171203	03:36:00	1701793-10	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB79-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:09	11/29/2017			20171202	09:32:00	20171203	03:36:00	1701793-10	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB79-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:09	11/29/2017			20171202	09:32:00	20171203	03:36:00	1701793-10	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB79-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:09	11/29/2017			20171202	09:32:00	20171203	03:36:00	1701793-10	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:36	11/29/2017			20171202	09:32:00	20171203	03:48:00	1701793-11	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:36	11/29/2017			20171202	09:32:00	20171203	03:48:00	1701793-11	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:36	11/29/2017			20171202	09:32:00	20171203	03:48:00	1701793-11	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB80-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:36	11/29/2017			20171202	09:32:00	20171203	03:48:00	1701793-11	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:55	11/29/2017			20171202	09:32:00	20171203	04:01:00	1701793-12	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:55	11/29/2017			20171202	09:32:00	20171203	04:01:00	1701793-12	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:55	11/29/2017			20171202	09:32:00	20171203	04:01:00	1701793-12	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB81-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 11:55	11/29/2017			20171202	09:32:00	20171203	04:01:00	1701793-12	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:10	11/29/2017			20171202	09:32:00	20171203	04:13:00	1701793-13	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:10	11/29/2017			20171202	09:32:00	20171203	04:13:00	1701793-13	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:10	11/29/2017			20171202	09:32:00	20171203	04:13:00	1701793-13	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB82-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 13:10	11/29/2017			20171202	09:32:00	20171203	04:13:00	1701793-13	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:08	11/29/2017			20171202	09:32:00	20171203	04:25:00	1701793-14	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:08	11/29/2017			20171202	09:32:00	20171203	04:25:00	1701793-14	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:08	11/29/2017			20171202	09:32:00	20171203	04:25:00	1701793-14	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB83-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:08	11/29/2017			20171202	09:32:00	20171203	04:25:00	1701793-14	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:21	11/29/2017			20171202	09:32:00	20171203	04:38:00	1701793-15	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:21	11/29/2017			20171202	09:32:00	20171203	04:38:00	1701793-15	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:21	11/29/2017			20171202	09:32:00	20171203	04:38:00	1701793-15	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB84-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 15:21	11/29/2017			20171202	09:32:00	20171203	04:38:00	1701793-15	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 18:00	11/29/2017			20171202	09:32:00	20171203	04:50:00	1701793-16	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 18:00	11/29/2017			20171202	09:32:00	20171203	04:50:00	1701793-16	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 18:00	11/29/2017			20171202	09:32:00	20171203	04:50:00	1701793-16	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB85-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/27/2017 18:00	11/29/2017			20171202	09:32:00	20171203	04:50:00	1701793-16	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:29:00	B7L0005-BLK1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:29:00	B7L0005-BLK1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:29:00	B7L0005-BLK1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:29:00	B7L0005-BLK1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:04:00	B7L0005-BS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:04:00	B7L0005-BS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:04:00	B7L0005-BS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:04:00	B7L0005-BS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:42:00	B7L0005-MS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:42:00	B7L0005-MS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:42:00	B7L0005-MS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:42:00	B7L0005-MS1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:54:00	B7L0005-MSD1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:54:00	B7L0005-MSD1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:54:00	B7L0005-MSD1	1	-999	
N6247016D9000	0008		CHERRY_POINT_MCAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	12/02/2017 09:32	12/02/2017			20171202	09:32:00	20171203	00:54:00	B7L0005-MSD1	1	-999	

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Percent_Lipid	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier	Validator_Qualifier	GC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	QSM_Version	DL	LOD	LOQ	SDG	Analysis_Batch
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.91	NG_L	U		PR	TRG									5.1	0.435	4.91	9.81	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.91	NG_L	U		PR	TRG									5.1	1.06	4.91	9.81	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.91	NG_L	U		PR	TRG									5.1	1.02	4.91	9.81	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		99.2	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.81	NG_L	U		PR	TRG									5.1	0.426	4.81	9.61	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.81	NG_L	U		PR	TRG									5.1	1.04	4.81	9.61	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.81	NG_L	U		PR	TRG									5.1	1.00	4.81	9.61	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		94.0	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.74	NG_L	U		PR	TRG									5.1	0.420	4.74	9.48	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.74	NG_L	U		PR	TRG									5.1	1.02	4.74	9.48	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.74	NG_L	U		PR	TRG									5.1	0.985	4.74	9.48	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		92.7	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.89	NG_L	U		PR	TRG									5.1	0.433	4.89	9.78	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.89	NG_L	U		PR	TRG									5.1	1.06	4.89	9.78	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.89	NG_L	U		PR	TRG									5.1	1.02	4.89	9.78	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		108	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		1.30	NG_L	J		PR	TRG									5.1	0.435	4.91	9.82	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		12.5	NG_L			PR	TRG									5.1	1.06	4.91	9.82	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		13.0	NG_L			PR	TRG									5.1	1.02	4.91	9.82	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		92.0	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.80	NG_L	U		PR	TRG									5.1	0.425	4.80	9.60	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.80	NG_L	U		PR	TRG									5.1	1.04	4.80	9.60	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.80	NG_L	U		PR	TRG									5.1	0.998	4.80	9.60	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		105	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.78	NG_L	U		PR	TRG									5.1	0.424	4.78	9.56	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.78	NG_L	U		PR	TRG									5.1	1.03	4.78	9.56	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.78	NG_L	U		PR	TRG									5.1	0.994	4.78	9.56	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		95.4	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.86	NG_L	U		PR	TRG									5.1	0.430	4.86	9.71	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.86	NG_L	U		PR	TRG									5.1	1.05	4.86	9.71	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.86	NG_L	U		PR	TRG									5.1	1.01	4.86	9.71	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		96.7	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.79	NG_L	U		PR	TRG									5.1	0.425	4.79	9.59	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.79	NG_L	U		PR	TRG									5.1	1.04	4.79	9.59	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.79	NG_L	U		PR	TRG									5.1	0.997	4.79	9.59	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		108	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.95	NG_L	U		PR	TRG									5.1	0.438	4.95	9.89	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.95	NG_L	U		PR	TRG									5.1	1.07	4.95	9.89	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.95	NG_L	U		PR	TRG									5.1	1.03	4.95	9.89	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		96.7	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.96	NG_L	U		PR	TRG									5.1	0.440	4.96	9.93	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.96	NG_L	U		PR	TRG									5.1	1.07	4.96	9.93	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.96	NG_L	U		PR	TRG									5.1	1.03	4.96	9.93	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		88.7	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.79	NG_L	U		PR	TRG									5.1	0.424	4.79	9.57	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.79	NG_L	U		PR	TRG									5.1	1.03	4.79	9.57	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.79	NG_L	U		PR	TRG									5.1	0.996	4.79	9.57	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		92.6	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.78	NG_L	U		PR	TRG									5.1	0.424	4.78	9.57	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.78	NG_L	U		PR	TRG									5.1	1.03	4.78	9.57	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.78	NG_L	U		PR	TRG									5.1	0.995	4.78	9.57	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		92.4	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.72	NG_L	U		PR	TRG									5.1	0.418	4.72	9.45	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.72	NG_L	U		PR	TRG									5.1	1.02	4.72	9.45	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.72	NG_L	U		PR	TRG									5.1	0.982	4.72	9.45	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		84.3	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.77	NG_L	U		PR	TRG									5.1	0.423	4.77	9.55	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.77	NG_L	U		PR	TRG									5.1	1.03	4.77	9.55	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.77	NG_L	U		PR	TRG									5.1	0.993	4.77	9.55	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		88.0	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.75	NG_L	U		PR	TRG									5.1	0.420	4.75	9.49	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		4.75	NG_L	U		PR	TRG									5.1	1.03	4.75	9.49	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.75	NG_L	U		PR	TRG									5.1	0.987	4.75	9.49	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		104	PCT_REC			PR			SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.00	NG_L	U		PR	TRG									5.1	0.443	5.00	10.0	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		5.00	NG_L	U		PR	TRG									5.1	1.08	5.00	10.0	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.00	NG_L	U		PR	TRG									5.1	1.04	5.00	10.0	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		94.9	PCT_REC			PR	SUR		SLSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		61.2	NG_L			PR	TRG		LSA	130	70					5.1	0.443	5.00	10.0	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		72.5	NG_L			PR	TRG		LSA	130	70					5.1	1.08	5.00	10.0	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		71.9	NG_L			PR	TRG		LSA	130	70					5.1	1.04	5.00	10.0	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		95.3	PCT_REC			PR	SUR		LSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		63.2	NG_L			PR	TRG		LSA	130	70					5.1	0.426	4.81	9.61	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		70.7	NG_L			PR	TRG		LSA	130	70					5.1	1.04	4.81	9.61	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		67.3	NG_L			PR	TRG		LSA	130	70					5.1	0.999	4.81	9.61	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		85.9	PCT_REC			PR	SUR		LSA	130	70					5.1				1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorobutanesulfonic acid (PFBS)	375-73-5		71.6	NG_L			PR	TRG		LSA	130	70					5.1	0.419	4.73	9.46	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctanoic acid (PFOA)	335-67-1		75.3	NG_L			PR	TRG		LSA	130	70					5.1	1.02	4.73	9.46	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		Perfluorooctane Sulfonate (PFOS)	1763-23-1		67.9	NG_L			PR	TRG		LSA	130	70					5.1	0.984	4.73	9.46	1701793	S7L0006
N6247016D9000	0008		CHERRY_POINT_MCAS		13C2-PFHxA	13C2-PFHxA		95.3	PCT_REC			PR	SUR		LSA	130	70					5.1				1701793	S7L0006

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
MCOLF ATLANTC, NORTH CAROLINA

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701793
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCOLF Atlantic, North Carolina
Date: January 3, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-1RW78-1117	1701793-01	Water
2	CH-AT-1RW79-1117	1701793-02	Water
3	CH-AT-1RW80-1117	1701793-03	Water
3MS	CH-AT-1RW80-1117MS	1701793-03MS	Water
3MSD	CH-AT-1RW80-1117MSD	1701793-03MSD	Water
4	CH-AT-1RW81-1117	1701793-04	Water
5	CH-AT-1RW82-1117	1701793-05	Water
6	CH-AT-1RW83-1117	1701793-06	Water
7	CH-AT-1RW84-1117	1701793-07	Water
8	CH-AT-1RW85-1117	1701793-08	Water
9	CH-AT-1FB78-1117	1701793-09	Water
10	CH-AT-1FB79-1117	1701793-10	Water
11	CH-AT-1FB80-1117	1701793-11	Water
12	CH-AT-1FB81-1117	1701793-12	Water
13	CH-AT-1FB82-1117	1701793-13	Water
14	CH-AT-1FB83-1117	1701793-14	Water
15	CH-AT-1FB84-1117	1701793-15	Water
16	CH-AT-1FB85-1117	1701793-16	Water

A full data validation was performed on the analytical data for eight water samples and eight aqueous field blank samples collected on November 27, 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-1FB78-1117	None - ND	-	-	-
CH-AT-1FB79-1117	None - ND	-	-	-
CH-AT-1FB80-1117	None - ND	-	-	-
CH-AT-1FB81-1117	None - ND	-	-	-
CH-AT-1FB82-1117	None - ND	-	-	-
CH-AT-1FB83-1117	None - ND	-	-	-
CH-AT-1FB84-1117	None - ND	-	-	-
CH-AT-1FB85-1117	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples

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

Internal Standard (IS) Area Performance

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

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed: Nancy Weaver Dated: 1/5/18

Nancy Weaver
Senior Chemist

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

Sample ID: CH-AT-1RW78-1117 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-01	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 09:41	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1
PFOA	ND	1.06	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1
PFOS	ND	1.02	4.91	9.81		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.2	70 - 130		B7L0005	02-Dec-17	0.255 L	03-Dec-17 01:07	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 1131.8

Vista Analytical Laboratory

Sample ID: CH-AT-1RW79-1117 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-02	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:08	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.81	9.61		B7L0005	02-Dec-17	0.260 L	03-Dec-17 01:19	1
PFOA	ND	1.04	4.81	9.61		B7L0005	02-Dec-17	0.260 L	03-Dec-17 01:19	1
PFOS	ND	1.00	4.81	9.61		B7L0005	02-Dec-17	0.260 L	03-Dec-17 01:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.0	70 - 130		B7L0005	02-Dec-17	0.260 L	03-Dec-17 01:19	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 13/18

Vista Analytical Laboratory 3

Sample ID: CH-AT-1RW80-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-03	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:35	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7L0005	02-Dec-17	0.264 L	03-Dec-17 01:32	1
PFOA	ND	1.02	4.74	9.48		B7L0005	02-Dec-17	0.264 L	03-Dec-17 01:32	1
PFOS	ND	0.985	4.74	9.48		B7L0005	02-Dec-17	0.264 L	03-Dec-17 01:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.7	70 - 130		B7L0005	02-Dec-17	0.264 L	03-Dec-17 01:32	1

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

NW 1.31.18

Vista Analytical Laboratory 4

Sample ID: CH-AT-1RW81-1117 **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:54

Laboratory Data

Lab Sample: 1701793-04
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.78		B7L0005	02-Dec-17	0.256 L	03-Dec-17 01:44	1
PFOA	ND	1.06	4.89	9.78		B7L0005	02-Dec-17	0.256 L	03-Dec-17 01:44	1
PFOS	ND	1.02	4.89	9.78		B7L0005	02-Dec-17	0.256 L	03-Dec-17 01:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0005	02-Dec-17	0.256 L	03-Dec-17 01:44	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 5

Sample ID: CH-AT-1RW82-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-05	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 13:09	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1.30	0.435	4.91	9.82	J	B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1
PFOA	12.5	1.06	4.91	9.82		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1
PFOS	13.0	1.02	4.91	9.82		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.0	70 - 130		B7L0005	02-Dec-17	0.255 L	03-Dec-17 02:34	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 13.8

Vista Analytical Laboratory

Sample ID: CH-AT-1RW83-1117 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-06	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 15:07	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.425	4.80	9.60		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:46	1
PFOA	ND	1.04	4.80	9.60		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:46	1
PFOS	ND	0.998	4.80	9.60		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:46	1

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

NW 131.8

Vista Analytical Laboratory 7

Sample ID: CH-AT-1RW84-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-07	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 15:20	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.56		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:58	1
PFOA	ND	1.03	4.78	9.56		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:58	1
PFOS	ND	0.994	4.78	9.56		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	95.4	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 02:58	1

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

NW 1/31/18

Vista Analytical Laboratory

Sample ID: CH-AT-1RW85-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 17:59

Laboratory Data

Lab Sample: 1701793-08
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.86	9.71		B7L0005	02-Dec-17	0.257 L	03-Dec-17 03:11	1
PFOA	ND	1.05	4.86	9.71		B7L0005	02-Dec-17	0.257 L	03-Dec-17 03:11	1
PFOS	ND	1.01	4.86	9.71		B7L0005	02-Dec-17	0.257 L	03-Dec-17 03:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.7	70 - 130		B7L0005	02-Dec-17	0.257 L	03-Dec-17 03:11	1

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

Vista Analytical Laboratory 9

Sample ID: CH-AT-1FB78-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 09:42

Laboratory Data

Lab Sample: 1701793-09
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.425	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1
PFOA	ND	1.04	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1
PFOS	ND	0.997	4.79	9.59		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	108	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 03:23	1

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

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Vista Analytical Laboratory 10

Sample ID: CH-AT-1FB79-1117 — **EPA Method 537**

Client Data

Name:	CH2M Hill	Matrix:	Drinking Water
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:09

Laboratory Data

Lab Sample:	1701793-10	Column:	BEH C18
Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.95	9.89		B7L0005	02-Dec-17	0.253 L	03-Dec-17 03:36	1
PFOA	ND	1.07	4.95	9.89		B7L0005	02-Dec-17	0.253 L	03-Dec-17 03:36	1
PFOS	ND	1.03	4.95	9.89		B7L0005	02-Dec-17	0.253 L	03-Dec-17 03:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.7	70 - 130		B7L0005	02-Dec-17	0.253 L	03-Dec-17 03:36	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 1131.8

Sample ID: CH-AT-1FB80-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-11	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 11:36	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.96	9.93		B7L0005	02-Dec-17	0.252 L	03-Dec-17 03:48	1
PFOA	ND	1.07	4.96	9.93		B7L0005	02-Dec-17	0.252 L	03-Dec-17 03:48	1
PFOS	ND	1.03	4.96	9.93		B7L0005	02-Dec-17	0.252 L	03-Dec-17 03:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.7	70 - 130		B7L0005	02-Dec-17	0.252 L	03-Dec-17 03:48	1

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

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Vista 12
Analytical Laboratory

Sample ID: CH-AT-1FB81-1117

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 11:55

Laboratory Data

Lab Sample: 1701793-12
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.57		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:01	1
PFOA	ND	1.03	4.79	9.57		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:01	1
PFOS	ND	0.996	4.79	9.57		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.6	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:01	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 13118

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Sample ID: CH-AT-1FB82-1117 | **EPA Method 537**

Client Data

Name: CH2M Hill
Project: CTO-08, MCOLF Atlantic PFAS DW Investigation
Matrix: Drinking Water
Date Collected: 27-Nov-17 13:10

Laboratory Data

Lab Sample: 1701793-13
Date Received: 29-Nov-17 09:37
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.78	9.57		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:13	1
PFOA	ND	1.03	4.78	9.57		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:13	1
PFOS	ND	0.995	4.78	9.57		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.4	70 - 130		B7L0005	02-Dec-17	0.261 L	03-Dec-17 04:13	1

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

ms11/31/18

Vista Analytical Laboratory 14

Sample ID: CH-AT-1FB83-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-14	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 15:08	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.418	4.72	9.45		B7L0005	02-Dec-17	0.265 L	03-Dec-17 04:25	1
PFOA	ND	1.02	4.72	9.45		B7L0005	02-Dec-17	0.265 L	03-Dec-17 04:25	1
PFOS	ND	0.982	4.72	9.45		B7L0005	02-Dec-17	0.265 L	03-Dec-17 04:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.3	70 - 130		B7L0005	02-Dec-17	0.265 L	03-Dec-17 04:25	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.

12/13/18

Sample ID: CH-AT-1FB84-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-15	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 15:21	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.55		B7L0005	02-Dec-17	0.262 L	03-Dec-17 04:38	1
PFOA	ND	1.03	4.77	9.55		B7L0005	02-Dec-17	0.262 L	03-Dec-17 04:38	1
PFOS	ND	0.993	4.77	9.55		B7L0005	02-Dec-17	0.262 L	03-Dec-17 04:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.0	70 - 130		B7L0005	02-Dec-17	0.262 L	03-Dec-17 04:38	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.

Ne 113L.8

Vista 16 Analytical Laboratory

Sample ID: CH-AT-1FB85-1117 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701793-16	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic PFAS DW Investigation	Date Collected:	27-Nov-17 18:00	Date Received:	29-Nov-17 09:37		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.75	9.49		B7L0005	02-Dec-17	0.263 L	03-Dec-17 04:50	1
PFOA	ND	1.03	4.75	9.49		B7L0005	02-Dec-17	0.263 L	03-Dec-17 04:50	1
PFOS	ND	0.987	4.75	9.49		B7L0005	02-Dec-17	0.263 L	03-Dec-17 04:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0005	02-Dec-17	0.263 L	03-Dec-17 04:50	1

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

nw 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