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 1701904

Marine Corps Outlying Landing Field Atlantic
MCAS Cherry Point NC

February 2019

December 18, 2017

Vista Work Order No. 1701904

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 09, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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

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

Sincerely,

Karen J. Wolpenstein for

Martha Maier
Laboratory Director

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

Vista Work Order No. 1701904
Case Narrative

Sample Condition on Receipt:

Eighteen drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The client confirmed that the sample ID on the container label is correct for sample "CH-AT1RW150-1217".

Analytical Notes:

EPA Method 537

Sample "CH-AT-2RW58-1217" contained particulate and was centrifuged prior to extraction.

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

Holding Times

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

Quality Control

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

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

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

Table of Contents

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701904-01	CH-AT-2RW56-1217	06-Dec-17 10:19	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-02	CH-AT-2FB56-1217	06-Dec-17 10:19	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-03	CH-AT-2RW57-1217	06-Dec-17 10:37	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-04	CH-AT-2FB57-1217	06-Dec-17 10:37	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-05	CH-AT-2RW58-1217	06-Dec-17 11:31	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-06	CH-AT-2FB58-1217	06-Dec-17 11:31	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-07	CH-AT-2RW59-1217	06-Dec-17 11:47	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-08	CH-AT-2FB59-1217	06-Dec-17 11:47	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-09	CH-AT-2RW60-1217	07-Dec-17 09:09	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-10	CH-AT-2FB60-1217	07-Dec-17 09:09	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-11	CH-AT-2RW61-1217	07-Dec-17 09:16	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-12	CH-AT-2FB61-1217	07-Dec-17 09:16	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-13	CH-AT-1RW150-1217	08-Dec-17 09:28	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-14	CH-AT-1FB150-1217	08-Dec-17 09:29	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-15	CH-AT-1RW151-1217	08-Dec-17 09:47	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-16	CH-AT-1FB151-1217	08-Dec-17 09:48	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-17	CH-AT-1RW152-1217	08-Dec-17 10:41	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-18	CH-AT-1FB152-1217	08-Dec-17 10:42	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

Vista Project: 1701904

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

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: B7L0107-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		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1
PFOA	ND	1.08	5.00	10.0		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1
PFOS	ND	1.04	5.00	10.0		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.6	70 - 130		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1

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

Sample ID: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0107-BS1/B7L0107-BSD1
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	QC Batch:	B7L0107
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L
		Date Extracted:	14-Dec-17
		Column:	BEH C18

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	19.3	17.7	109		19.5	17.7	110	0.884		50-150		16-Dec-17 18:37	1	16-Dec-17 18:49	1
PFOA	27.4	20.0	137		27.3	20.0	136	0.370		50-150		16-Dec-17 18:37	1	16-Dec-17 18:49	1
PFOS	21.9	18.5	119		20.5	18.5	111	6.75		50-150		16-Dec-17 18:37	1	16-Dec-17 18:49	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	110		110		70-130	16-Dec-17 18:37	1	16-Dec-17 18:49	1

Sample ID: CH-AT-2RW56-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:19

Laboratory Data

Lab Sample: 1701904-01
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.24	10.5		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1
PFOA	1.91	1.13	5.24	10.5	J	B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1
PFOS	ND	1.09	5.24	10.5		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	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-2FB56-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:19

Laboratory Data

Lab Sample: 1701904-02
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1
PFOA	ND	1.07	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1
PFOS	ND	1.03	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1

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

Sample ID: CH-AT-2RW57-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:37

Laboratory Data

Lab Sample: 1701904-03
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.95	9.89		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1
PFOA	1.18	1.07	4.95	9.89	J	B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1
PFOS	ND	1.03	4.95	9.89		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1

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

Sample ID: CH-AT-2FB57-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:37

Laboratory Data

Lab Sample: 1701904-04
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1
PFOA	ND	1.06	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1
PFOS	ND	1.02	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.2	70 - 130		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1

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

Sample ID: CH-AT-2RW58-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:31

Laboratory Data

Lab Sample: 1701904-05
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.04	10.1		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1
PFOA	142	1.09	5.04	10.1		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1
PFOS	9.47	1.05	5.04	10.1	J	B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1

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

Sample ID: CH-AT-2FB58-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:31

Laboratory Data

Lab Sample: 1701904-06
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1
PFOA	ND	1.07	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1
PFOS	ND	1.03	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.6	70 - 130		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1

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

Sample ID: CH-AT-2RW59-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:47

Laboratory Data

Lab Sample: 1701904-07
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1
PFOA	ND	1.05	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1
PFOS	ND	1.02	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1

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

Sample ID: CH-AT-2FB59-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:47

Laboratory Data

Lab Sample: 1701904-08
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1
PFOA	ND	1.07	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1
PFOS	ND	1.03	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.0	70 - 130		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	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-2RW60-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:09

Laboratory Data

Lab Sample: 1701904-09
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1
PFOA	ND	1.13	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1
PFOS	ND	1.08	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1

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

Sample ID: CH-AT-2FB60-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:09

Laboratory Data

Lab Sample: 1701904-10
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1
PFOA	ND	1.05	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1
PFOS	ND	1.01	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	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.

Sample ID: CH-AT-2RW61-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:16

Laboratory Data

Lab Sample: 1701904-11
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1
PFOA	ND	1.09	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1
PFOS	ND	1.05	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1

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

Sample ID: CH-AT-2FB61-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:16

Laboratory Data

Lab Sample: 1701904-12
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.448	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1
PFOA	ND	1.09	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1
PFOS	ND	1.05	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	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.

Sample ID: CH-AT-1RW150-1217

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: 1701904-13
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1
PFOA	ND	1.07	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1
PFOS	ND	1.03	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.0	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1

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

Sample ID: CH-AT-1FB150-1217

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: 1701904-14
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1
PFOA	ND	1.03	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1
PFOS	ND	0.993	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1

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

Sample ID: CH-AT-1RW151-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 09:47

Laboratory Data

Lab Sample: 1701904-15
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.458	5.17	10.3		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1
PFOA	ND	1.12	5.17	10.3		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1
PFOS	7.04	1.07	5.17	10.3	J	B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	120	70 - 130		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1

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

Sample ID: CH-AT-1FB151-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 09:48

Laboratory Data

Lab Sample: 1701904-16
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1
PFOA	ND	1.07	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1
PFOS	ND	1.03	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1

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

Sample ID: CH-AT-1RW152-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 10:41

Laboratory Data

Lab Sample: 1701904-17
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1
PFOA	ND	1.11	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1
PFOS	ND	1.07	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1

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

Sample ID: CH-AT-1FB152-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 10:42

Laboratory Data

Lab Sample: 1701904-18
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1
PFOA	ND	1.08	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1
PFOS	ND	1.04	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	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.

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

CTO-08 679580. 15. F1. F5

Submit by Email*

Vista

12/8/17 COOLER #1 Pg 1 of ~~2~~ 3 MB

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701904 Temp 1.4 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

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

Project I.D.: **CTO-08/MCOLF ATLANTIC PFAS INV.** P.O. #: **100006-7-106051** Sampler: **M. Clay/J. Schrlau** (Name)

Invoice to: Name	Company	Address	City	State	Zip	Ph#	Fax #
TIFFANY HILL	CH2M HILL	1100 NE CIRCLE BLVD	CORVALLIS	OR	97330	541-768-3109	

Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
MORGAN BRUNO	12/8/17	1500	Marissa Sparks	12/09/17	1027
Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

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

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

Method of Shipment: FEDEX

Tracking No.:

ATTN: **Martha Maier**

Add Analysis(es) Requested

Sample ID (MB)	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1668 PBDE	EPA1614 PAH	CARB429 WHO-29	
CH-AT-2RW561217 (MB) -1217	12/06/17	1019		2	P	DW															X	
CH-AT-2FB561217 (MB) -1217	12/06/17	1019		2	P	DW															X	
CH-AT-2RW57-1217	12/06/17	1037		2	P	DW															X	
CH-AT-2FB57-1217	12/06/17	1037		2	P	DW															X	
CH-AT-2RW58-1217	12/06/17	1131		2	P	DW															X	
CH-AT-2FB58-1217	12/06/17	1131		2	P	DW															X	
CH-AT-2RW59-1217	12/06/17	1147		2	P	DW															X	
CH-AT-2FB59-1217	12/06/17	1147		2	P	DW															X	

Special Instructions/Comments: **7 DAY TAT**
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: **TIFFANY HILL**
Company: **CH2M**
Address: **1100 NE CIRCLE BLVD STE 300**
City: **CORVALLIS** State: **OR** Zip: **97330**
Phone: **541-768-3109** Fax:
Email: **TIFFANY.HILL@CH2M.COM**

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

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

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

Submit by Email*

CTO-08 679580. 15. FI. FS

Vista

12/8/17 COOLER #1 Pg 2 of 3 (MD)

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701904 Temp 1.4 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

CHAIN OF CUSTODY RECORD

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

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051 Sampler: M. Clay/J. Schrlau (Name)

Invoice to: Name	Company	Address	City	State	Zip	Ph#	Fax #
TIFFANY HILL	CH2M HILL	1100 NE CIRCLE BLVD	CORVALLIS	OR	97330	541-768-3109	

Relinquished by: (Printed Name and Signature) MORGAN BRUNO Date: 12/8/17 Time: 1500 Received by: (Signature and Printed Name) Marissa Sparks Date: 12/09/17 Time: 1028

Relinquished by: (Printed Name and Signature) Date: Time: Received by: (Signature and Printed Name) Date: Time:

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

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1614 PBDE	EPA1614 PAH	CARB429 WHO-29
CH-AT-2RW601217 (MD)	~~12/05/17~~ 12/7/17	0909		2	P	DW															x
CH-AT-2FB60-1217	12/07/17	0909		2	P	DW															x
CH-AT-2RW61-1217	12/0717	0916		2	P	DW															x
CH-AT-2FB61-1217	12/0717	0916		2	P	DW															x

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:
Name: TIFFANY HILL
Company: CH2M
Address: 1100 NE CIRCLE BLVD STE 300
City: CORVALLIS State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: TIFFANY.HILL@CH2M.COM

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

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

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

Submit by Email*

CTO-08 679584.15.P1.PS

Vista

12/8/17 Cooler #1 Pg 3 of 3

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701904 Temp 1.4 °C
Storage ID: WR-8 Storage Secured: Yes ☑ No ☐

CHAIN OF CUSTODY RECORD

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

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051 Sampler: J. Towns/M. Clay (Name)

Invoice to: Name	Company	Address	City	State	Zip	Ph#	Fax #
TIFFANY HILL	CH2M HILL	1100 NE CIRCLE BLVD	CORVALLIS	OR	97330	541-768-3109	

Relinquished by: (Printed Name and Signature) MORGAN BRUNO Date: 12/8/17 Time: 1500 Received by: (Signature and Printed Name) Marissa Sparks Date: 12/09/17 Time: 1028

Relinquished by: (Printed Name and Signature) Date: Time: Received by: (Signature and Printed Name) Date: Time:

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

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1614 PBDE	CARB429 PAH	EPA 537 WHO-29	DW ONLY PFOA, PFOS, PFBS
CH-AT-1RW150-217	12/08/17	0928		2	P	DW																X
CH-AT-1FB150-1217	12/0817	0929		2	P	DW																X
CH-AT-1RW151-1217	12/08/17	0947		2	P	DW																X
CH-AT-1FB151-1217	12/08/17	0948		2	P	DW																X
CH-AT-1RW152-1217	12/08/17	1041		2	P	DW																X
CH-AT-1FB152-1217	12/08/17	1042		2	P	DW																X

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: TIFFANY HILL
Company: CH2M
Address: 1100 NE CIRCLE BLVD STE 300
City: CORVALLIS State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: TIFFANY.HILL@CH2M.COM

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

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

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

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701904 **TAT** 7

Samples Arrival:	**Date/Time** 12/09/17 1005	**Initials:** WWS	**Location:** WR-2 **Shelf/Rack:** N/A
Logged In:	**Date/Time** 12/09/17 1057	**Initials:** RJB	**Location:** WR-2 **Shelf/Rack:** B5

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

Temp °C: 1.3 (uncorrected)	**Time:** 1027	**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 — Trk # 7888 2476 6812	✓		
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?				✓		RJB
Preservation Documented:	$Na_2S_2O_3$	(Trizma)	None	(Yes)	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return	Dispose	

Comments: Sample label ID CH-AT-1RW150-1217 COC ID CH-AT-1RW150-217

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

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

Workorder Number: 1701904
Date Received: 09-Dec-17 10:05
Documented by/date: B.Benedict 12/09/2017

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

Thank you,

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

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

Chain of Custody ID	Container Label ID
CH-AT1RW150-**217**	CH-AT1RW150-**1217**

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date [signature] 12-11-17

Client Comments/Instructions Per client email, the sample ID on the container label ID is correct.

December 18, 2017

Vista Work Order No. 1701904

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 09, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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

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

Sincerely,

Karen J. Volpendesta for

Martha Maier
Laboratory Director

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

Vista Work Order No. 1701904
Case Narrative

Sample Condition on Receipt:

Eighteen drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The client confirmed that the sample ID on the container label is correct for sample "CH-AT1RW150-1217".

Analytical Notes:

EPA Method 537

Sample "CH-AT-2RW58-1217" contained particulate and was centrifuged prior to extraction.

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

Holding Times

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

Quality Control

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

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

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

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701904-01	CH-AT-2RW56-1217	06-Dec-17 10:19	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-02	CH-AT-2FB56-1217	06-Dec-17 10:19	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-03	CH-AT-2RW57-1217	06-Dec-17 10:37	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-04	CH-AT-2FB57-1217	06-Dec-17 10:37	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-05	CH-AT-2RW58-1217	06-Dec-17 11:31	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-06	CH-AT-2FB58-1217	06-Dec-17 11:31	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-07	CH-AT-2RW59-1217	06-Dec-17 11:47	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-08	CH-AT-2FB59-1217	06-Dec-17 11:47	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-09	CH-AT-2RW60-1217	07-Dec-17 09:09	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-10	CH-AT-2FB60-1217	07-Dec-17 09:09	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-11	CH-AT-2RW61-1217	07-Dec-17 09:16	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-12	CH-AT-2FB61-1217	07-Dec-17 09:16	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-13	CH-AT-1RW150-1217	08-Dec-17 09:28	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-14	CH-AT-1FB150-1217	08-Dec-17 09:29	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-15	CH-AT-1RW151-1217	08-Dec-17 09:47	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-16	CH-AT-1FB151-1217	08-Dec-17 09:48	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-17	CH-AT-1RW152-1217	08-Dec-17 10:41	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701904-18	CH-AT-1FB152-1217	08-Dec-17 10:42	09-Dec-17 10:05	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

Vista Project: 1701904

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

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: B7L0107-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		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1
PFOA	ND	1.08	5.00	10.0		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1
PFOS	ND	1.04	5.00	10.0		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.6	70 - 130		B7L0107	14-Dec-17	0.250 L	16-Dec-17 19:14	1

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

Sample ID: LFBD **EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7L0107-BS1/B7L0107-BSD1
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	QC Batch:	B7L0107
Matrix:	Drinking Water	Samp Size:	0.250/0.250 L
		Date Extracted:	14-Dec-17
		Column:	BEH C18

Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	19.3	17.7	109		19.5	17.7	110	0.884		50-150		16-Dec-17 18:37	1	16-Dec-17 18:49	1
PFOA	27.4	20.0	137		27.3	20.0	136	0.370		50-150		16-Dec-17 18:37	1	16-Dec-17 18:49	1
PFOS	21.9	18.5	119		20.5	18.5	111	6.75		50-150		16-Dec-17 18:37	1	16-Dec-17 18:49	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR	110		110		70-130	16-Dec-17 18:37	1	16-Dec-17 18:49	1

Sample ID: CH-AT-2RW56-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:19

Laboratory Data

Lab Sample: 1701904-01
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.24	10.5		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1
PFOA	1.91	1.13	5.24	10.5	J	B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1
PFOS	ND	1.09	5.24	10.5		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	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-2FB56-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:19

Laboratory Data

Lab Sample: 1701904-02
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1
PFOA	ND	1.07	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1
PFOS	ND	1.03	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1

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

Sample ID: CH-AT-2RW57-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:37

Laboratory Data

Lab Sample: 1701904-03
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.95	9.89		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1
PFOA	1.18	1.07	4.95	9.89	J	B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1
PFOS	ND	1.03	4.95	9.89		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1

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

Sample ID: CH-AT-2FB57-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:37

Laboratory Data

Lab Sample: 1701904-04
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1
PFOA	ND	1.06	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1
PFOS	ND	1.02	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.2	70 - 130		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1

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

Sample ID: CH-AT-2RW58-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:31

Laboratory Data

Lab Sample: 1701904-05
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.04	10.1		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1
PFOA	142	1.09	5.04	10.1		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1
PFOS	9.47	1.05	5.04	10.1	J	B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1

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

Sample ID: CH-AT-2FB58-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:31

Laboratory Data

Lab Sample: 1701904-06
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1
PFOA	ND	1.07	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1
PFOS	ND	1.03	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.6	70 - 130		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1

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

Sample ID: CH-AT-2RW59-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:47

Laboratory Data

Lab Sample: 1701904-07
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1
PFOA	ND	1.05	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1
PFOS	ND	1.02	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1

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

Sample ID: CH-AT-2FB59-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:47

Laboratory Data

Lab Sample: 1701904-08
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1
PFOA	ND	1.07	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1
PFOS	ND	1.03	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.0	70 - 130		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	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-2RW60-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:09

Laboratory Data

Lab Sample: 1701904-09
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1
PFOA	ND	1.13	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1
PFOS	ND	1.08	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1

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

Sample ID: CH-AT-2FB60-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:09

Laboratory Data

Lab Sample: 1701904-10
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1
PFOA	ND	1.05	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1
PFOS	ND	1.01	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	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.

Sample ID: CH-AT-2RW61-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:16

Laboratory Data

Lab Sample: 1701904-11
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1
PFOA	ND	1.09	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1
PFOS	ND	1.05	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1

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

Sample ID: CH-AT-2FB61-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:16

Laboratory Data

Lab Sample: 1701904-12
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.448	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1
PFOA	ND	1.09	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1
PFOS	ND	1.05	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	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.

Sample ID: CH-AT-1RW150-1217

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: 1701904-13
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1
PFOA	ND	1.07	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1
PFOS	ND	1.03	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.0	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1

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

Sample ID: CH-AT-1FB150-1217

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: 1701904-14
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1
PFOA	ND	1.03	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1
PFOS	ND	0.993	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1

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

Sample ID: CH-AT-1RW151-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 09:47

Laboratory Data

Lab Sample: 1701904-15
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.458	5.17	10.3		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1
PFOA	ND	1.12	5.17	10.3		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1
PFOS	7.04	1.07	5.17	10.3	J	B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	120	70 - 130		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1

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

Sample ID: CH-AT-1FB151-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 09:48

Laboratory Data

Lab Sample: 1701904-16
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1
PFOA	ND	1.07	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1
PFOS	ND	1.03	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1

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

Sample ID: CH-AT-1RW152-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 10:41

Laboratory Data

Lab Sample: 1701904-17
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1
PFOA	ND	1.11	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1
PFOS	ND	1.07	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1

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

Sample ID: CH-AT-1FB152-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 10:42

Laboratory Data

Lab Sample: 1701904-18
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1
PFOA	ND	1.08	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1
PFOS	ND	1.04	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	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.

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

CTO-08 679580. 15. F1. F5

Submit by Email*

Vista

12/8/17 COOLER #1 Pg 1 of ~~2~~ 3 MB

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701904 Temp 1.4 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

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

Project I.D.: **CTO-08/MCOLF ATLANTIC PFAS INV.** P.O. #: **100006-7-106051** Sampler: **M. Clay/J. Schrlau** (Name)

Invoice to: Name	Company	Address	City	State	Zip	Ph#	Fax #
TIFFANY HILL	CH2M HILL	1100 NE CIRCLE BLVD	CORVALLIS	OR	97330	541-768-3109	

Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
MORGAN BRUNO	12/8/17	1500	Marissa Sparks	12/09/17	1027
Relinquished by: (Printed Name and Signature)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

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

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

Method of Shipment: **FEDEX**

Tracking No.:

ATTN: **Martha Maier**

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1668 PBDE	EPA1668 PAH	EPA1614 WHO-29	CARB429
CH-AT-2RW561217 (MB) -1217	12/06/17	1019		2	P	DW															X	
CH-AT-2FB561217 (MB) -1217	12/06/17	1019		2	P	DW															X	
CH-AT-2RW57-1217	12/06/17	1037		2	P	DW															X	
CH-AT-2FB57-1217	12/06/17	1037		2	P	DW															X	
CH-AT-2RW58-1217	12/06/17	1131		2	P	DW															X	
CH-AT-2FB58-1217	12/06/17	1131		2	P	DW															X	
CH-AT-2RW59-1217	12/06/17	1147		2	P	DW															X	
CH-AT-2FB59-1217	12/06/17	1147		2	P	DW															X	

Special Instructions/Comments: **7 DAY TAT**
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: **TIFFANY HILL**
Company: **CH2M**
Address: **1100 NE CIRCLE BLVD STE 300**
City: **CORVALLIS** State: **OR** Zip: **97330**
Phone: **541-768-3109** Fax:
Email: **TIFFANY.HILL@CH2M.COM**

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

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

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

Submit by Email*

CTO-08 679580. 15. FI. FS

Vista

12/8/17 COOLER #1 Pg 2 of 3 (MO)

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701904 Temp 1.4 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

CHAIN OF CUSTODY RECORD

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

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051 Sampler: M. Clay/J. Schrlau (Name)

Invoice to: Name	Company	Address	City	State	Zip	Ph#	Fax #
TIFFANY HILL	CH2M HILL	1100 NE CIRCLE BLVD	CORVALLIS	OR	97330	541-768-3109	

Relinquished by: (Printed Name and Signature) MORGAN BRUNO — Date: 12/8/17 Time: 1500
Received by: (Signature and Printed Name) Marissa Sparks — Date: 12/09/17 Time: 1028
Relinquished by: (Printed Name and Signature) — Date: Time:
Received by: (Signature and Printed Name) — Date: Time:

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

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

Method of Shipment: FEDEX

Tracking No.:

ATTN: Martha Maier

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1614 PBDE	EPA1614 PAH	CARB429 WHO-29
CH-AT-2RW601217 (MO)	12/07/17	0909		2	P	DW															x
CH-AT-2FB60-1217	12/07/17	0909		2	P	DW															x
CH-AT-2RW61-1217	12/0717	0916		2	P	DW															x
CH-AT-2FB61-1217	12/0717	0916		2	P	DW															x

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:
Name: TIFFANY HILL
Company: CH2M
Address: 1100 NE CIRCLE BLVD STE 300
City: CORVALLIS State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: TIFFANY.HILL@CH2M.COM

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

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

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

Submit by Email*

CTO-08 679584.15.P1.P5

12/8/17 Cooler #1 Pg 3 of 3

Vista

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701904 Temp 1.4 °C
Storage ID: WR-8 Storage Secured: Yes ☑ No ☐

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

Project I.D.: CTO-08/MCOLF ATLANTIC PFAS INV. P.O. #: 100006-7-106051 Sampler: J. Towns/M. Clay (Name)

Invoice to: Name	Company	Address	City	State	Zip	Ph#	Fax #
TIFFANY HILL	CH2M HILL	1100 NE CIRCLE BLVD	CORVALLIS	OR	97330	541-768-3109	

Relinquished by: (Printed Name and Signature) MORGAN BRUNO — Date: 12/8/17 Time: 1500
Received by: (Signature and Printed Name) Marissa Sparks — Date: 12/09/17 Time: 1028
Relinquished by: (Printed Name and Signature) — Date: Time:
Received by: (Signature and Printed Name) — Date: Time:

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

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

ATTN: Martha Maier

Method of Shipment: FEDEX

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCBs	EPA1668 209 CONGENERS	EPA1614 PBDE	CARB429 PAH	EPA 537 WHO-29	DW ONLY PFOA, PFOS, PFBS
CH-AT-1RW150-217	12/08/17	0928		2	P	DW																x
CH-AT-1FB150-1217	12/0817	0929		2	P	DW																x
CH-AT-1RW151-1217	12/08/17	0947		2	P	DW																x
CH-AT-1FB151-1217	12/08/17	0948		2	P	DW																x
CH-AT-1RW152-1217	12/08/17	1041		2	P	DW																x
CH-AT-1FB152-1217	12/08/17	1042		2	P	DW																x

Special Instructions/Comments: 7 DAY TAT
PFOA/PFOS/PFBS DRINKING WATER ANALYSIS

SEND DOCUMENTATION AND RESULTS TO:

Name: TIFFANY HILL
Company: CH2M
Address: 1100 NE CIRCLE BLVD STE 300
City: CORVALLIS State: OR Zip: 97330
Phone: 541-768-3109 Fax:
Email: TIFFANY.HILL@CH2M.COM

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O = Other

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

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

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701904 **TAT** 7

Samples Arrival:	**Date/Time** 12/09/17 1005	**Initials:** WWS	**Location:** WR-2 **Shelf/Rack:** N/A
Logged In:	**Date/Time** 12/09/17 1057	**Initials:** RJB	**Location:** WR-2 **Shelf/Rack:** B5

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

Temp °C: 1.3 (uncorrected)	**Time:** 1027	**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 Trk # 7888 2476 6812	✓		
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?					✓		RJB
Preservation Documented:	$Na_2S_2O_3$	(Trizma)	None		(Yes)	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return		Dispose	

Comments: Sample label ID CH-AT-IRW150-1217 COC ID CH-AT-IRW150-217

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

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

Workorder Number: 1701904
Date Received: 09-Dec-17 10:05
Documented by/date: B.Benedict 12/09/2017

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

Thank you,

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

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

Chain of Custody ID	Container Label ID
CH-AT1RW150-**217**	CH-AT1RW150-**1217**

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date [signature] 12-11-17

Client Comments/Instructions Per client email, the sample ID on the container label ID is correct.

EXTRACTION INFORMATION

RUSH

Process Sheet

Workorder: 1701904

Prep Expiration: 2017-Dec-20
Client: CH2M Hill

Workorder Due: 18-Dec-17 00:00

TAT: 9

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

Prep Batch: B7L0107

Prep Data Entered: KC 12/16/17
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
1701904-01	A	☑	☑	CH-AT-2RW56-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-02		☑	☑	CH-AT-2FB56-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-03		☑	☑	CH-AT-2RW57-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-04		☑	☑	CH-AT-2FB57-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-05		☑	☑	CH-AT-2RW58-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-06		☑	☑	CH-AT-2FB58-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-07		☑	☑	CH-AT-2RW59-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-08		☑	☑	CH-AT-2FB59-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-09		☑	☑	CH-AT-2RW60-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-10		☑	☑	CH-AT-2FB60-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-11		☑	☑	CH-AT-2RW61-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-12		☑	☑	CH-AT-2FB61-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-13		☑	☑	CH-AT-1RW150-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-14		☑	☑	CH-AT-1FB150-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-15		☑	☑	CH-AT-1RW151-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-16		☑	☑	CH-AT-1FB151-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-17		☑	☑	CH-AT-1RW152-1217		WR-2 B-5	HDPE Bottle, 250 mL
1701904-18		☑	☑	CH-AT-1FB152-1217		WR-2 B-5	HDPE Bottle, 250 mL

Pre-Prep Check Out: 12/14/17 ST
Pre-Prep Check In: 12/14/17 ST

Prep Check Out: KC 12/15/17
Prep Check In: NA

Prep Reconciled Initals/Date: 12/14/17 ST
Spike Reconciled Initals/Date: 12/14/17 ST KC 12/15/17
VialBoxID: Boxed Up

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0107

Chemist: KBF

Prep Date/Time: ~~14~~-Dec-17 16:09
15

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
☐	B7L0107-BLK1 (A)	N/A	N/A	(0.250)	KBF VC 12/15/17	KBF HN 12/15/17	GRB 12/16/17
☐	B7L0107-BS1	↓	↓	(0.250)	↓	↓	↓
☐	B7L0107-BSD1	↓	↓	(0.250)	↓	↓	↓
☐	1701904-01	266.29	27.72	0.23857	↓	↓	↓
☐	1701904-02	279.15	27.73	0.25142	↓	↓	↓
☐	1701904-03	279.55	26.88	0.25267	↓	↓	↓
☐	1701904-04	281.22	27.47	0.25375	↓	↓	↓
☒	1701904-05	275.78	27.76	~~0.24802~~ 0.24802	GRB 12/16/17	↓	↓
☐	1701904-06	280.44	26.92	0.25352	↓	↓	↓
☐	1701904-07	283.78	27.80	0.25598	↓	↓	↓
☐	1701904-08	290.70	27.37	0.25333	↓	↓	↓
☐	1701904-09	267.66	27.90	0.23976	↓	↓	↓
☐	1701904-10	284.00	26.99	0.25701	↓	↓	↓
☐	1701904-11	276.44	27.86	0.24858	↓	↓	↓
☐	1701904-12	274.34	26.89	0.24745	↓	↓	↓
☐	1701904-13	278.53	27.30	0.25123	↓	↓	↓

SS/IS: 17L1416, 20uL (V6)

NS: 17I2602, 20mL

IS/RS: 17L1417, 20uL (V6)

SPE Chem: Strata-X-33um 500mg/6mL
Lot#: S17-001946

Ele SOLV: MeOH
Lot#: JB054409

Final Volume(s) 1mL

Notes: (A) 1.25g of Trizma added to QC 12/14/17 ST

Comments: Assume 1 g = 1 mL
Cen = Centrifuged

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0107

Chemist: KBF

Prep Date/Time: ~~14~~-Dec-17 16:09 15

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
☐	1701904-14	288.66	26.90	0.26176	KBF KC 12/15/17	KBF HN 12/15/17	GRB 12/16/17
☐	1701904-15	269.18	27.30	0.24188	↓	↓	↓
☐	1701904-16	279.94	27.67	0.25227			
☐	1701904-17	271.50	27.81	0.24369			
☐	1701904-18	278.66	27.69	0.25097			

SS/IS: 17L1416, 20µL (V6)

NS: 17I2602, 20µL

IS/RS: ~~17L1417~~, 17L1417, 20µL (V6) GRB 12/16/17

SPE Chem: Strata-X 33µm 500mg/6mL Lot#: S17-001946

Ele SOLV: MeOH Lot#: JB054409

Final Volume(s) 1mL

Notes:

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Batch: B7L0107

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701904-01	0.23857 ✓	NA	NA	1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-02	0.25142 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-03	0.25267 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-04	0.25375 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-05	0.24802 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-06	0.25352 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-07	0.25598 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-08	0.25333 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-09	0.23976 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-10	0.25701 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-11	0.24858 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-12	0.24745 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-13	0.25123 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-14	0.26176 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-15	0.24188 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-16	0.25227 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-17	0.24369 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701904-18	0.25097 ✓			1000	14-Dec-17 16:09	HAC			Drinking Water	537 PFAS DW DoD Unmoc
B7L0107-BLK1	0.25 ✓			1000	14-Dec-17 16:09	HAC				QC
B7L0107-BS1	0.25 ✓			1000	14-Dec-17 16:09	HAC	17I2602 ✓	20 ✓		QC
B7L0107-BSD1	0.25 ✓			1000	14-Dec-17 16:09	HAC	17I2602 ✓	20 ✓		QC

KC 12/16/17

Printed: 12/16/2017 11:00:00AM

SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-24.qld

Last Altered: Monday, December 18, 2017 13:46:29 Pacific Standard Time
Printed: Monday, December 18, 2017 13:47:15 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-24, Date: 16-Dec-2017, Time: 19:14:32, ID: B7L0107-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	1.24e0	1.16e4		0.2500	3.29	3.30	0.00306	0.0150	
2	5	PFOA	413 > 368.7	9.50e1	9.76e3		0.2500	4.61	4.61	0.0973	0.488	
3	7	PFOS	499 >79.9		1.16e4		0.2500	4.99				
4	15	13C2-PFHxA	315 > 269.8	3.98e3	9.76e3	0.431	0.2500	3.69	3.69	4.08	37.8	94.6
5	16	13C2-PFDA	515.1 > 469.9	5.44e3	9.76e3	0.602	0.2500	5.25	5.23	5.58	37.0	92.6
6	18	13C2-PFOA	414.9 > 369.7	9.76e3	9.76e3	1.000	0.2500	4.41	4.61	10.0	40.0	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.16e4	1.16e4	1.000	0.2500	4.81	4.99	28.7	115	100.0

MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-24.qld

Last Altered: Monday, December 18, 2017 13:46:29 Pacific Standard Time
Printed: Monday, December 18, 2017 13:47:15 Pacific Standard Time

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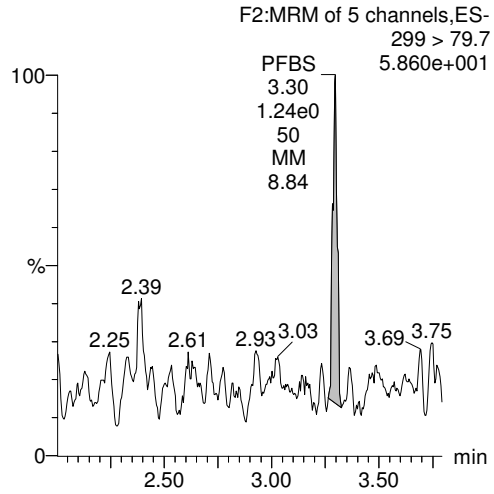
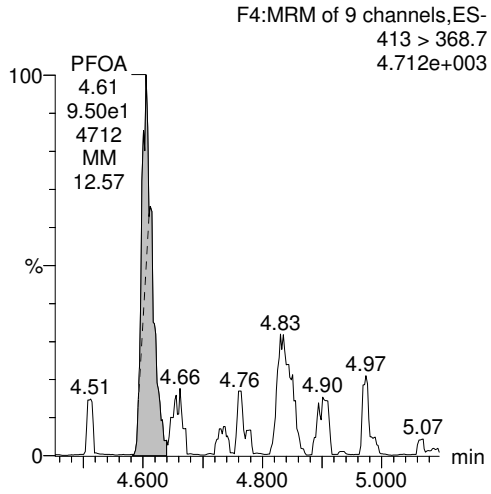
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-24, Date: 16-Dec-2017, Time: 19:14:32, ID: B7L0107-BLK1 LRB 0.25, Description: LRB

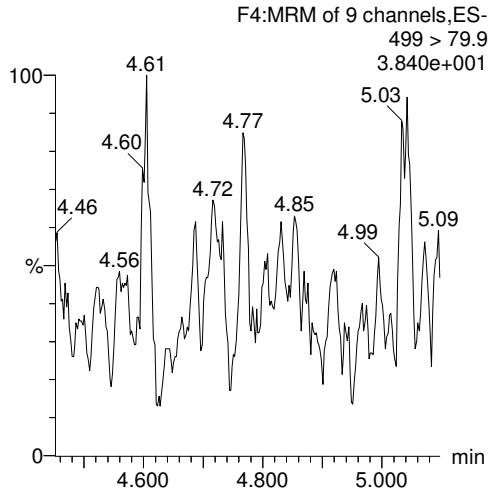
PFBS



PFOA



PFOS



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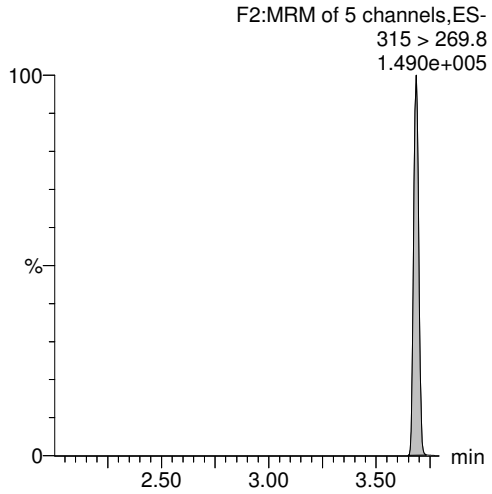
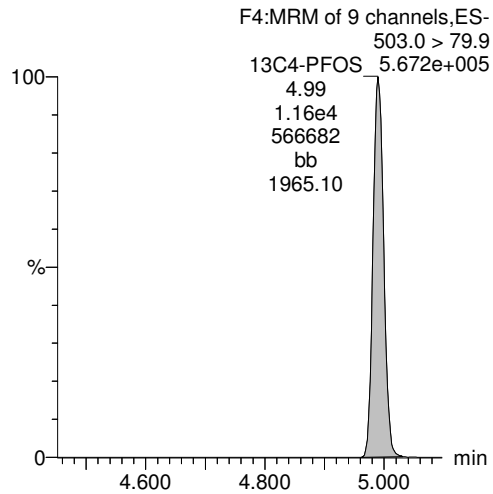
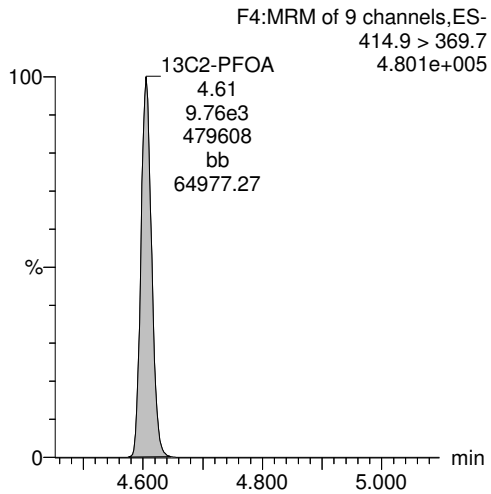


13C4-PFOS



13C2-PFOA



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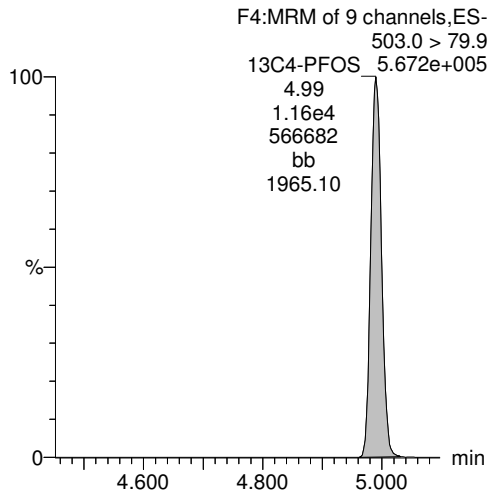
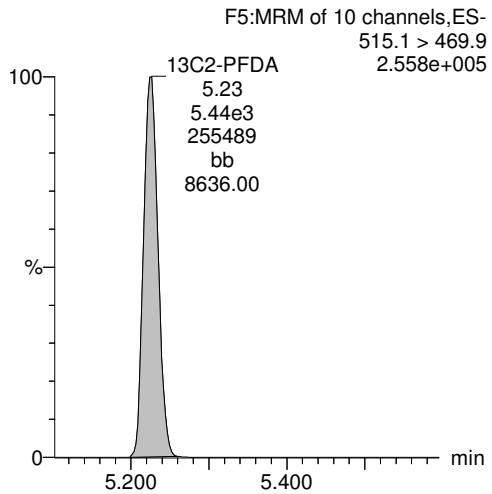


13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-21.qld

Last Altered: Monday, December 18, 2017 13:06:32 Pacific Standard Time
Printed: Monday, December 18, 2017 13:08:10 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-21, Date: 16-Dec-2017, Time: 18:37:14, ID: B7L0107-BS1 LFB 0.25, Description: LFB

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.50e3	1.09e4		0.2500	3.29	3.30	3.95	19.3	109.4
2	5	PFOA	413 > 368.7	4.60e3	8.40e3		0.2500	4.61	4.61	5.47	27.4	137.0
3	7	PFOS	499 >79.9	2.62e3	1.09e4		0.2500	4.99	4.99	6.88	21.9	118.6
4	15	13C2-PFHxA	315 > 269.8	3.98e3	8.40e3	0.431	0.2500	3.70	3.69	4.73	43.9	109.8
5	16	13C2-PFDA	515.1 > 469.9	5.29e3	8.40e3	0.602	0.2500	5.25	5.23	6.30	41.8	104.5
6	18	13C2-PFOA	414.9 > 369.7	8.40e3	8.40e3	1.000	0.2500	4.41	4.61	10.0	40.0	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.09e4	1.09e4	1.000	0.2500	4.81	4.99	28.7	115	100.0

MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

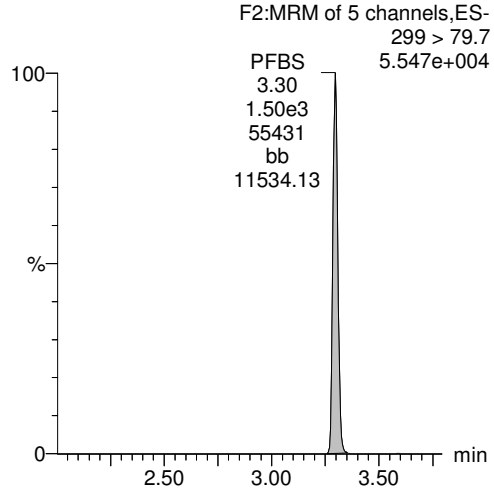
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-21.qld

Last Altered: Monday, December 18, 2017 13:06:32 Pacific Standard Time
Printed: Monday, December 18, 2017 13:08:10 Pacific Standard Time

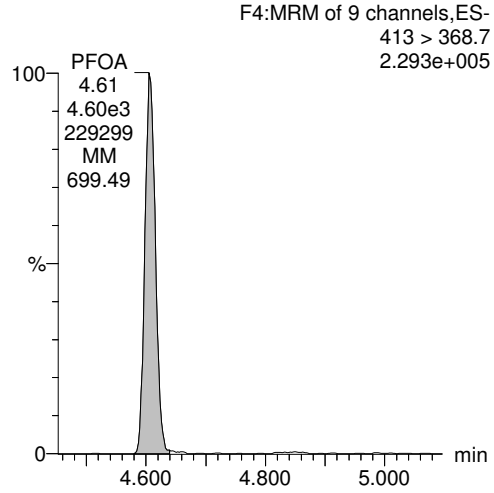
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-21, Date: 16-Dec-2017, Time: 18:37:14, ID: B7L0107-BS1 LFB 0.25, Description: LFB

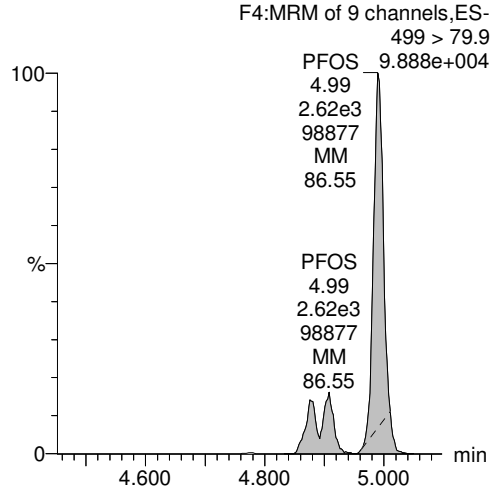
PFBS



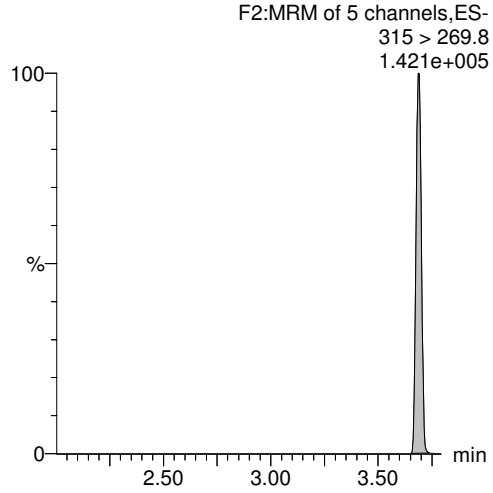
PFOA



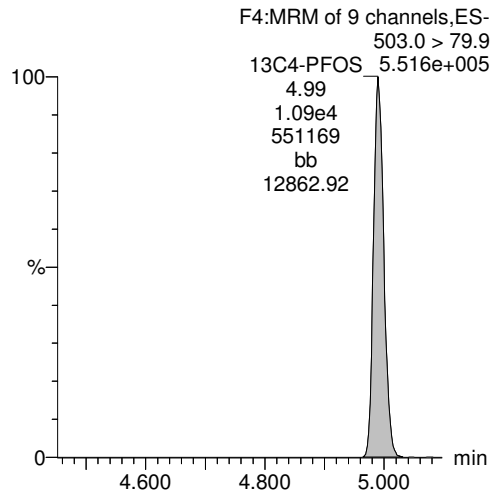
PFOS



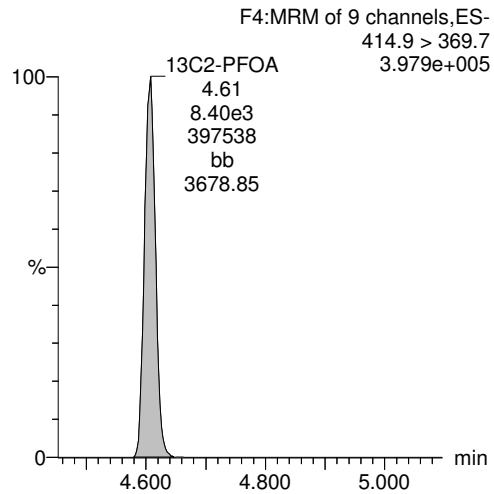
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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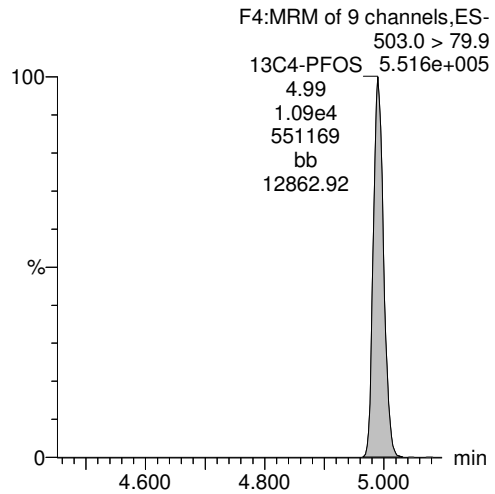
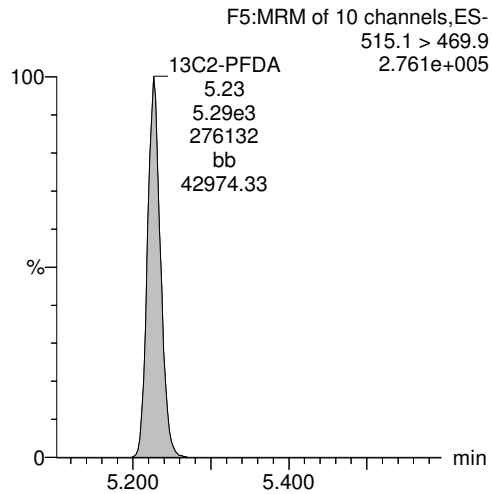


13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-22.qld

Last Altered: Monday, December 18, 2017 13:41:58 Pacific Standard Time
Printed: Monday, December 18, 2017 13:43:58 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-22, Date: 16-Dec-2017, Time: 18:49:39, ID: B7L0107-BSD1 LFBD 0.25, Description: LFBD

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.55e3	1.12e4		0.2500	3.29	3.30	3.98	19.5	110.4
2	5	PFOA	413 > 368.7	4.74e3	8.70e3		0.2500	4.61	4.61	5.45	27.3	136.4
3	7	PFOS	499 >79.9	2.50e3	1.12e4		0.2500	4.99	4.99	6.43	20.5	110.9
4	15	13C2-PFHxA	315 > 269.8	4.13e3	8.70e3	0.431	0.2500	3.70	3.69	4.75	44.1	110.2
5	16	13C2-PFDA	515.1 > 469.9	5.36e3	8.70e3	0.602	0.2500	5.25	5.23	6.17	41.0	102.4
6	18	13C2-PFOA	414.9 > 369.7	8.70e3	8.70e3	1.000	0.2500	4.41	4.61	10.0	40.0	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	0.2500	4.81	4.99	28.7	115	100.0

MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

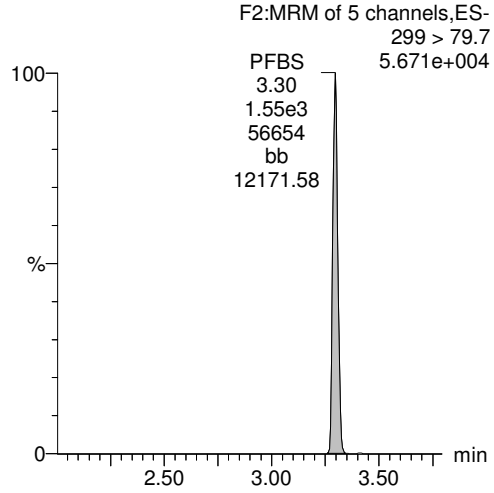
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-22.qld

Last Altered: Monday, December 18, 2017 13:41:58 Pacific Standard Time
Printed: Monday, December 18, 2017 13:43:58 Pacific Standard Time

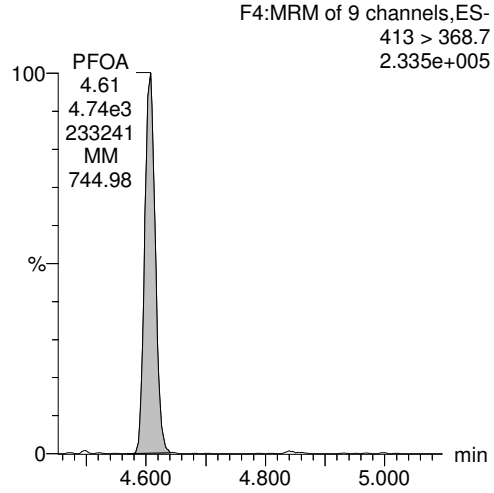
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-22, Date: 16-Dec-2017, Time: 18:49:39, ID: B7L0107-BSD1 LFBD 0.25, Description: LFBD

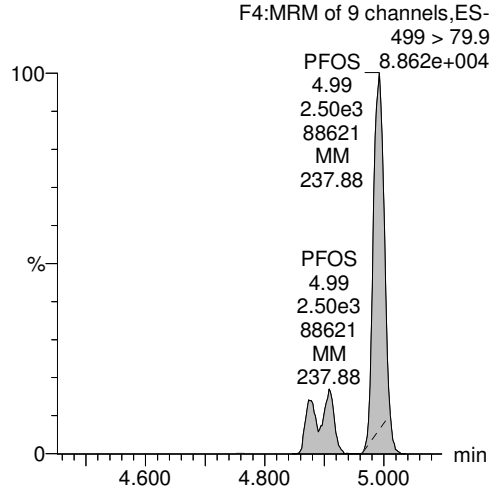
PFBS



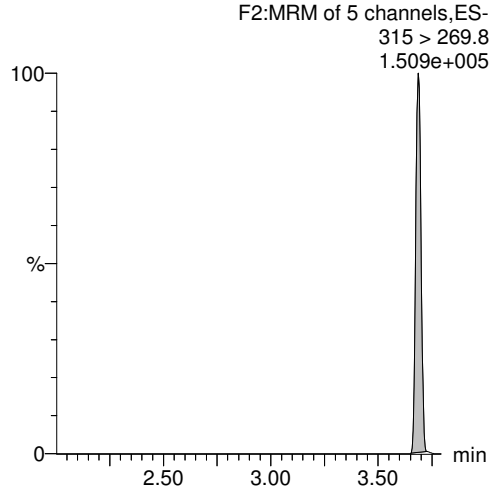
PFOA



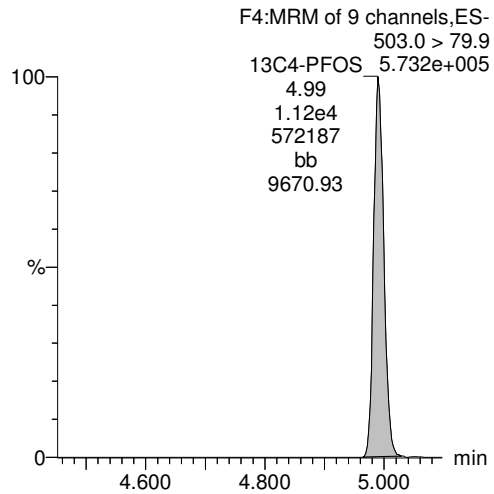
PFOS



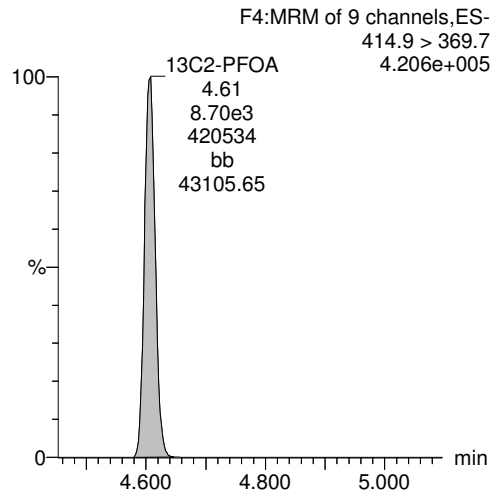
13C2-PFHxA



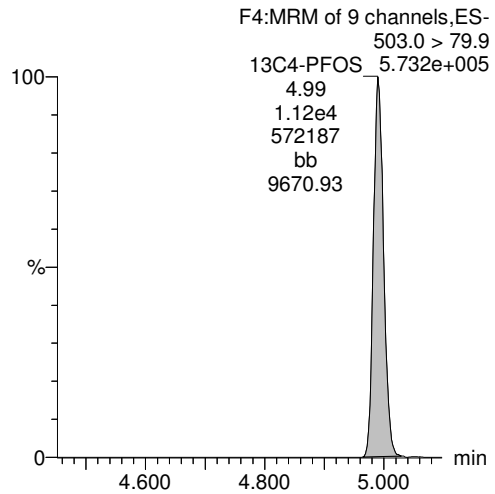
13C4-PFOS



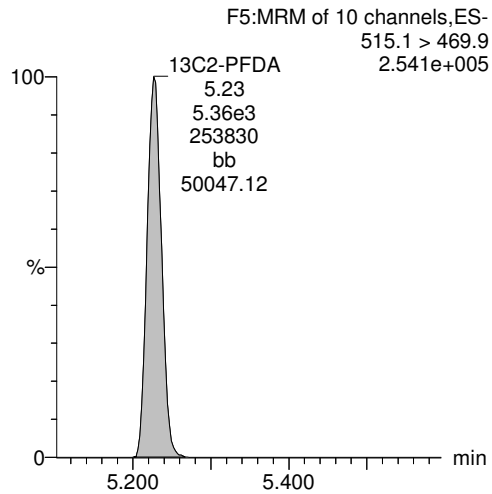
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-25.qld

Last Altered: Monday, December 18, 2017 13:50:38 Pacific Standard Time
Printed: Monday, December 18, 2017 13:51:48 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-25, Date: 16-Dec-2017, Time: 19:26:57, ID: 1701904-01 CH-AT-2RW56-1217 0.23857, Description: CH-AT-2RW56-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.22e4		0.2386	3.29				
2	5	PFOA	413 > 368.7	3.35e2	9.19e3		0.2386	4.60	4.61	0.364	1.91	
3	7	PFOS	499 >79.9	1.08e2	1.22e4		0.2386	4.99	4.87	0.255	0.851	
4	15	13C2-PFHxA	315 > 269.8	4.12e3	9.19e3	0.431	0.2386	3.69	3.68	4.48	43.6	103.9
5	16	13C2-PFDA	515.1 > 469.9	5.24e3	9.19e3	0.602	0.2386	5.24	5.22	5.70	39.6	94.6
6	18	13C2-PFOA	414.9 > 369.7	9.19e3	9.19e3	1.000	0.2386	4.41	4.60	10.0	41.9	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.22e4	1.22e4	1.000	0.2386	4.81	4.99	28.7	120	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/18/17

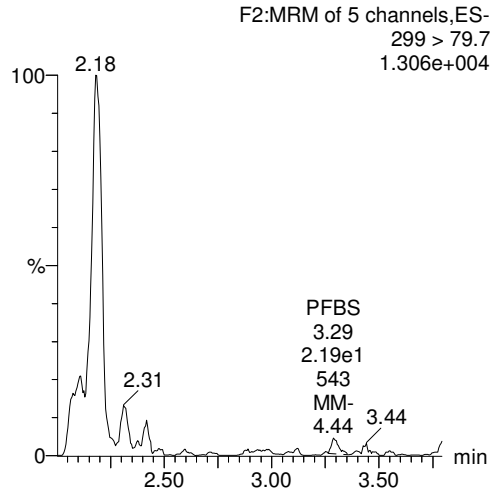
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-25.qld

Last Altered: Monday, December 18, 2017 13:50:38 Pacific Standard Time
Printed: Monday, December 18, 2017 13:51:48 Pacific Standard Time

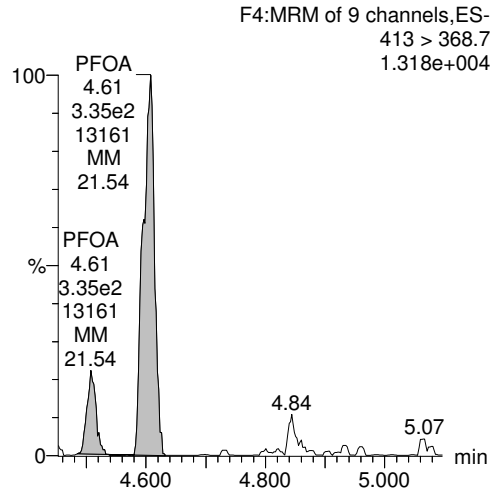
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-25, Date: 16-Dec-2017, Time: 19:26:57, ID: 1701904-01 CH-AT-2RW56-1217 0.23857, Description: CH-AT-2RW56-1217

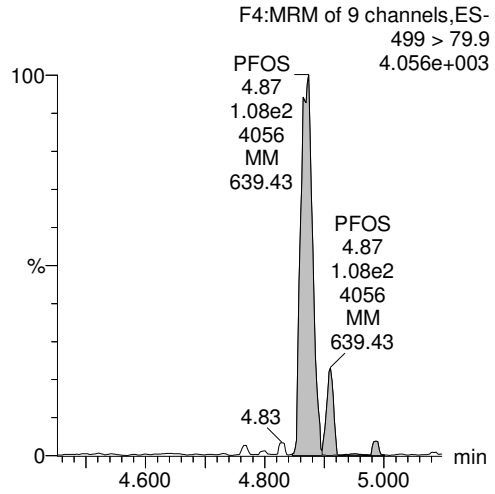
PFBS



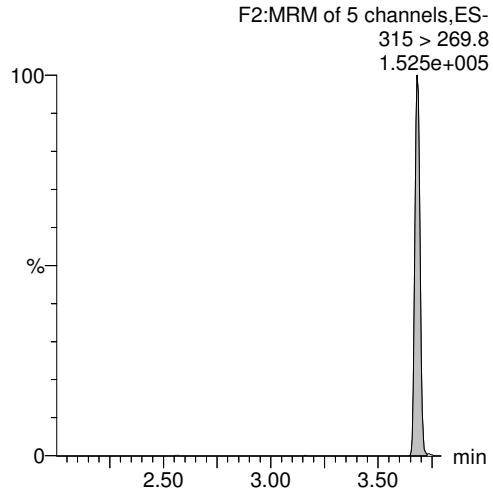
PFOA



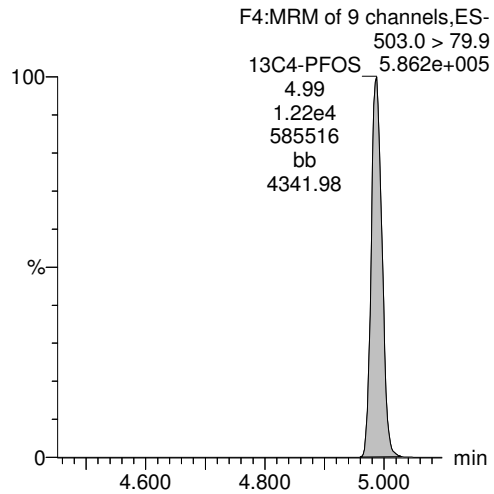
PFOS



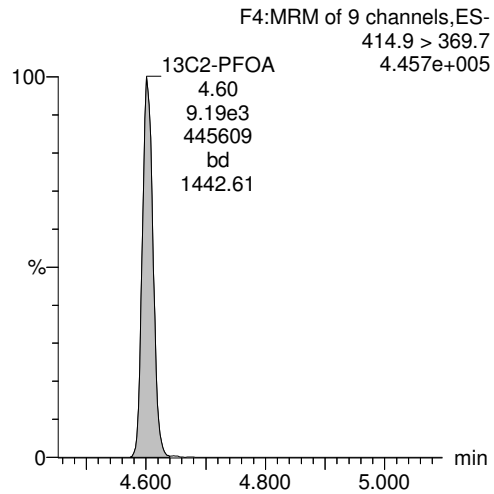
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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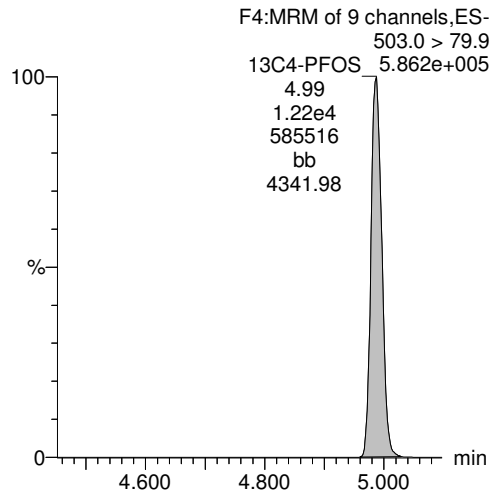
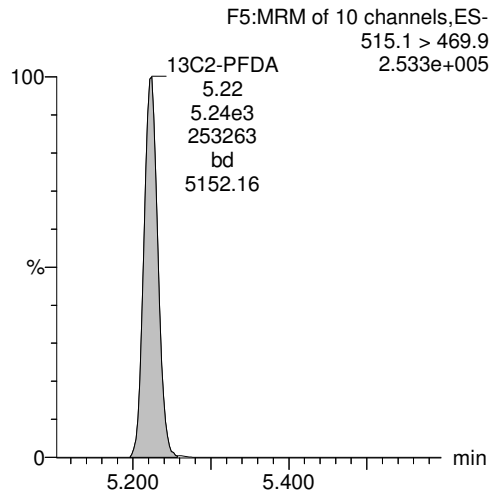


13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-26.qld

Last Altered: Monday, December 18, 2017 13:58:42 Pacific Standard Time
Printed: Monday, December 18, 2017 13:59:10 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-26, Date: 16-Dec-2017, Time: 19:39:24, ID: 1701904-02 CH-AT-2FB56-1217 0.25142, Description: CH-AT-2FB56-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	9.87e-1	1.18e4		0.2514	3.29	3.30	0.00241	0.0117	
2	5	PFOA	413 > 368.7	5.35e1	9.93e3		0.2514	4.60	4.61	0.0539	0.268	
3	7	PFOS	499 >79.9		1.18e4		0.2514	4.99				
4	15	13C2-PFHxA	315 > 269.8	4.25e3	9.93e3	0.431	0.2514	3.69	3.68	4.28	39.5	99.3
5	16	13C2-PFDA	515.1 > 469.9	5.33e3	9.93e3	0.602	0.2514	5.24	5.22	5.36	35.4	89.0
6	18	13C2-PFOA	414.9 > 369.7	9.93e3	9.93e3	1.000	0.2514	4.41	4.60	10.0	39.8	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.18e4	1.18e4	1.000	0.2514	4.81	4.99	28.7	114	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/18/17

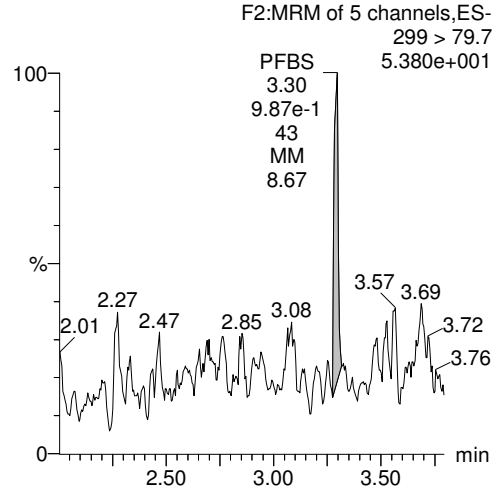
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-26.qld

Last Altered: Monday, December 18, 2017 13:58:42 Pacific Standard Time
Printed: Monday, December 18, 2017 13:59:10 Pacific Standard Time

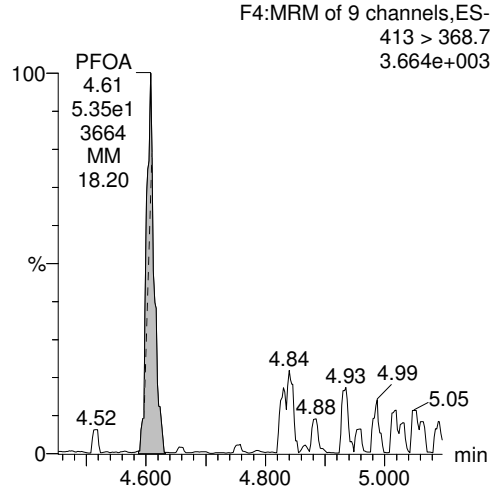
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-26, Date: 16-Dec-2017, Time: 19:39:24, ID: 1701904-02 CH-AT-2FB56-1217 0.25142, Description: CH-AT-2FB56-1217

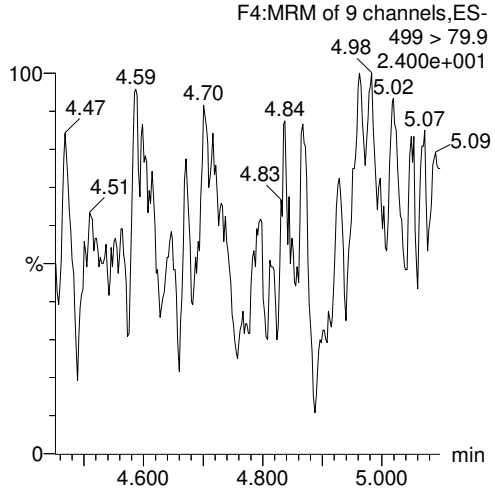
PFBS



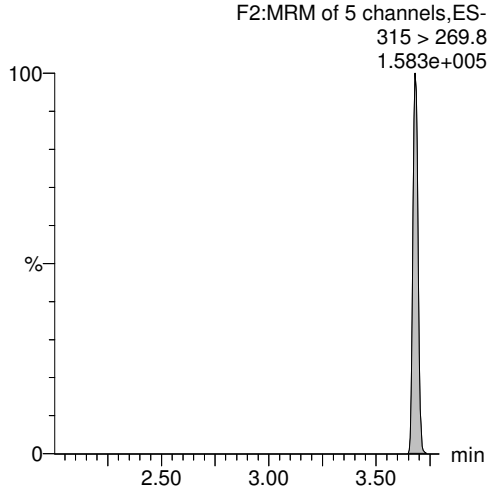
PFOA



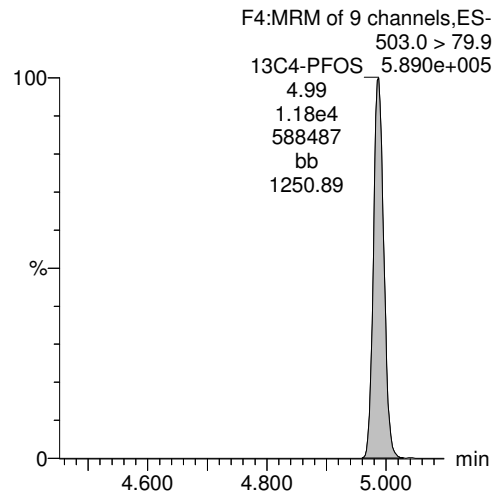
PFOS



13C2-PFHxA



13C4-PFOS



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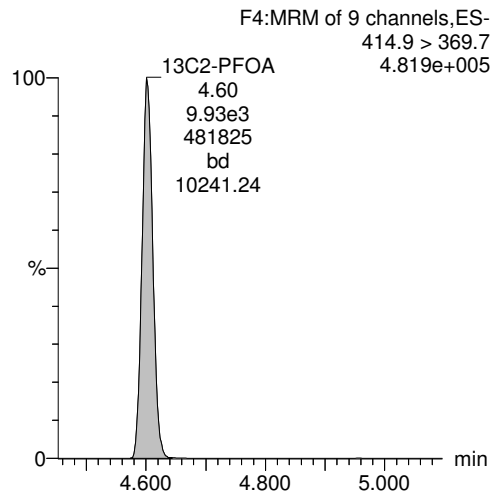

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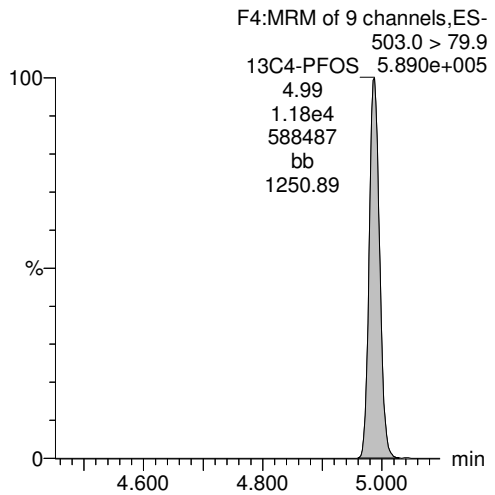
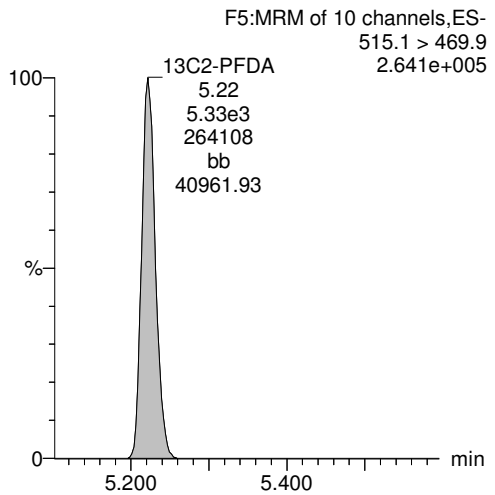


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-27.qld

Last Altered: Monday, December 18, 2017 14:02:14 Pacific Standard Time
Printed: Monday, December 18, 2017 14:04:07 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-27, Date: 16-Dec-2017, Time: 19:51:52, ID: 1701904-03 CH-AT-2RW57-1217 0.25267, Description: CH-AT-2RW57-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.38e1	1.18e4		0.2527	3.29	3.29	0.0335	0.162	
2	5	PFOA	413 > 368.7	2.23e2	9.33e3		0.2527	4.60	4.60	0.239	1.18	
3	7	PFOS	499 >79.9	1.07e2	1.18e4		0.2527	4.99	4.87	0.259	0.818	
4	15	13C2-PFHxA	315 > 269.8	4.29e3	9.33e3	0.431	0.2527	3.69	3.68	4.60	42.3	106.8
5	16	13C2-PFDA	515.1 > 469.9	5.16e3	9.33e3	0.602	0.2527	5.24	5.22	5.53	36.3	91.8
6	18	13C2-PFOA	414.9 > 369.7	9.33e3	9.33e3	1.000	0.2527	4.41	4.60	10.0	39.6	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.18e4	1.18e4	1.000	0.2527	4.81	4.99	28.7	114	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/18/17

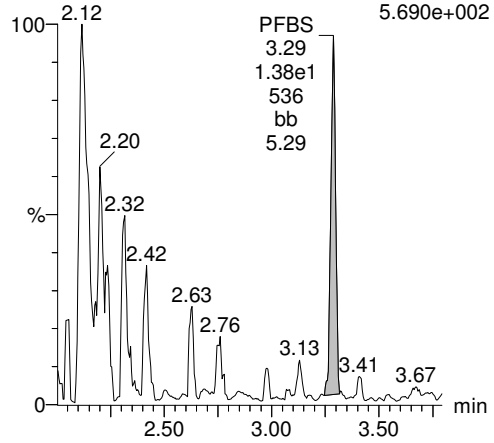
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-27.qld

Last Altered: Monday, December 18, 2017 14:02:14 Pacific Standard Time
Printed: Monday, December 18, 2017 14:04:07 Pacific Standard Time

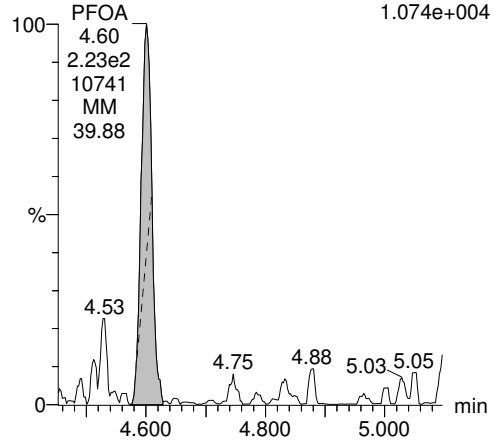
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-27, Date: 16-Dec-2017, Time: 19:51:52, ID: 1701904-03 CH-AT-2RW57-1217 0.25267, Description: CH-AT-2RW57-1217

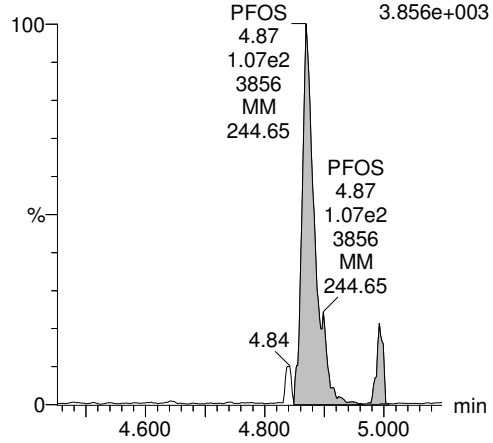
PFBS



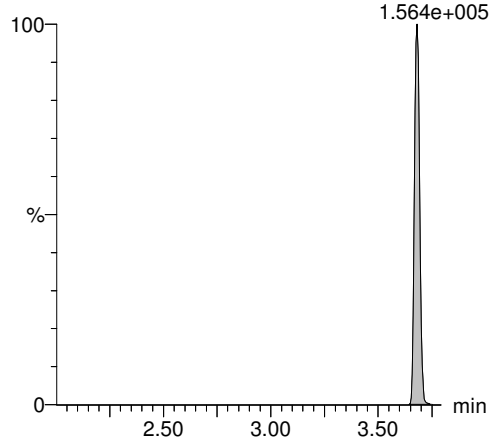
PFOA



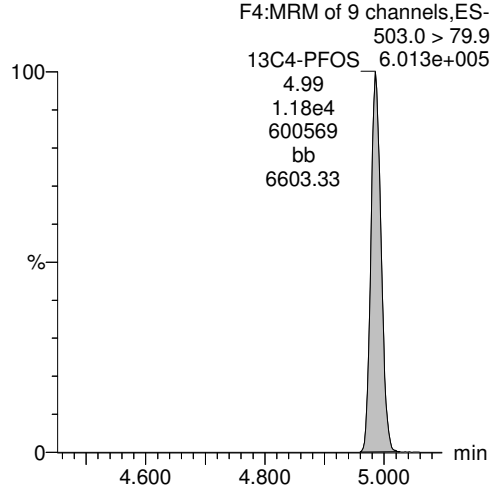
PFOS



13C2-PFHxA



13C4-PFOS



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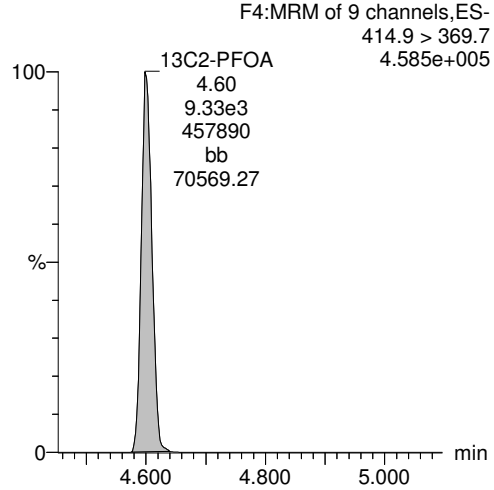
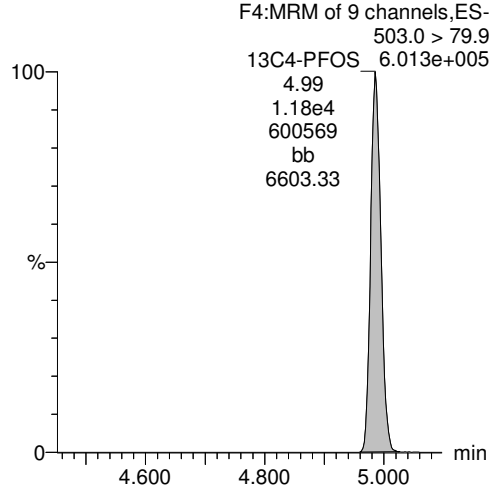
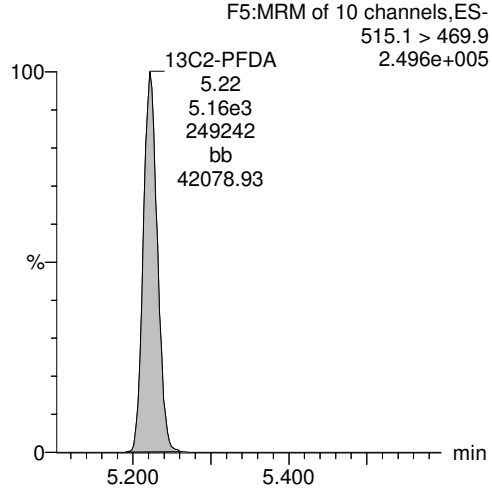


13C4-PFOS



13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-28.qld

Last Altered: Monday, December 18, 2017 14:06:12 Pacific Standard Time
Printed: Monday, December 18, 2017 14:06:37 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-28, Date: 16-Dec-2017, Time: 20:04:20, ID: 1701904-04 CH-AT-2FB57-1217 0.25375, Description: CH-AT-2FB57-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.11e4		0.2537	3.29				
2	5	PFOA	413 > 368.7	7.82e1	9.57e3		0.2537	4.60	4.60	0.0817	0.403	
3	7	PFOS	499 >79.9		1.11e4		0.2537	4.99				
4	15	13C2-PFHxA	315 > 269.8	3.76e3	9.57e3	0.431	0.2537	3.69	3.68	3.93	35.9	91.2
5	16	13C2-PFDA	515.1 > 469.9	5.12e3	9.57e3	0.602	0.2537	5.24	5.22	5.35	35.0	88.8
6	18	13C2-PFOA	414.9 > 369.7	9.57e3	9.57e3	1.000	0.2537	4.41	4.60	10.0	39.4	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.11e4	1.11e4	1.000	0.2537	4.81	4.99	28.7	113	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/18/17

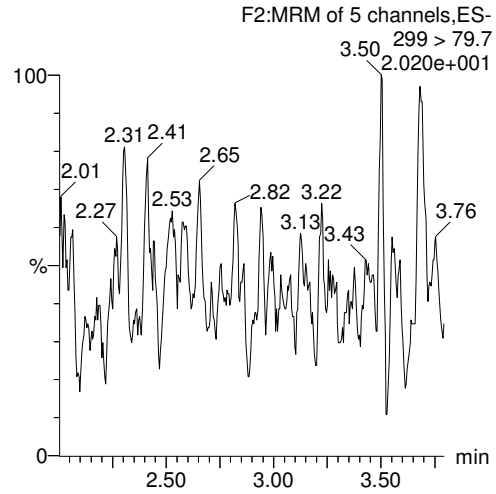
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-28.qld

Last Altered: Monday, December 18, 2017 14:06:12 Pacific Standard Time
Printed: Monday, December 18, 2017 14:06:37 Pacific Standard Time

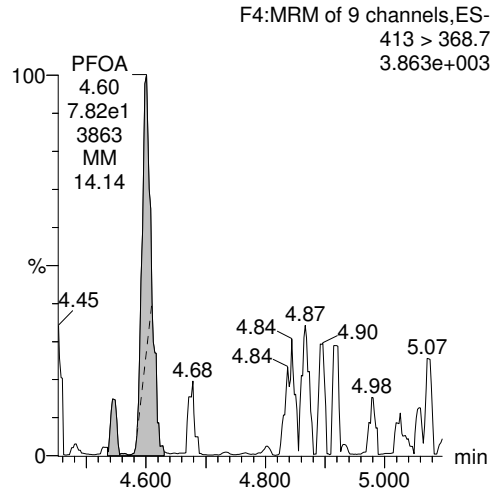
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-28, Date: 16-Dec-2017, Time: 20:04:20, ID: 1701904-04 CH-AT-2FB57-1217 0.25375, Description: CH-AT-2FB57-1217

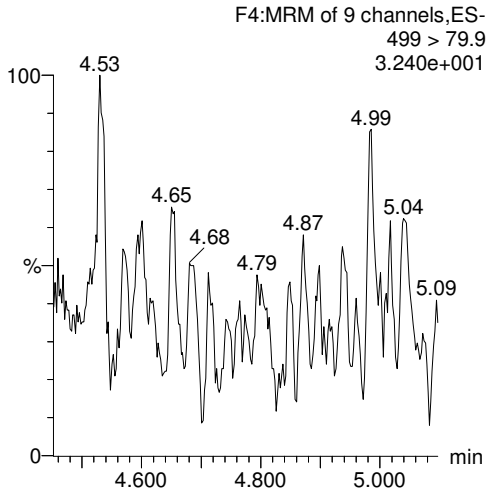
PFBS



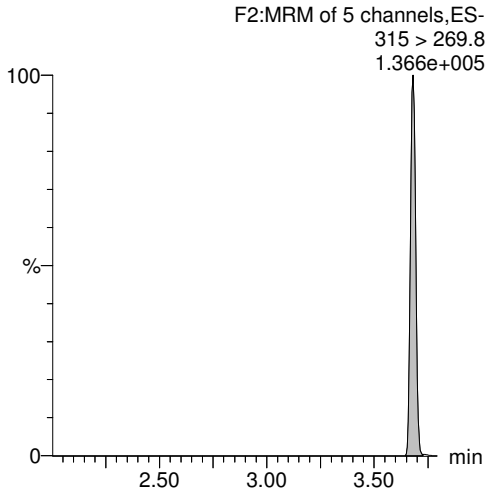
PFOA



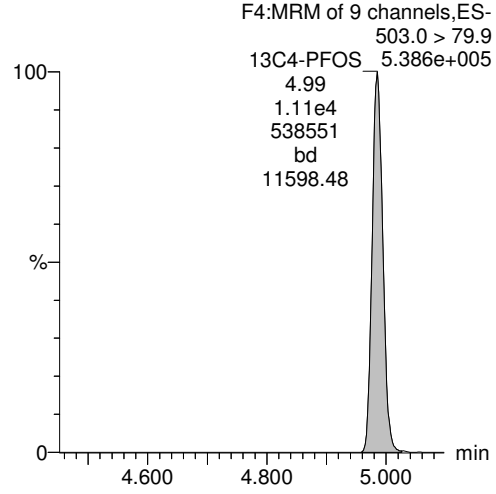
PFOS



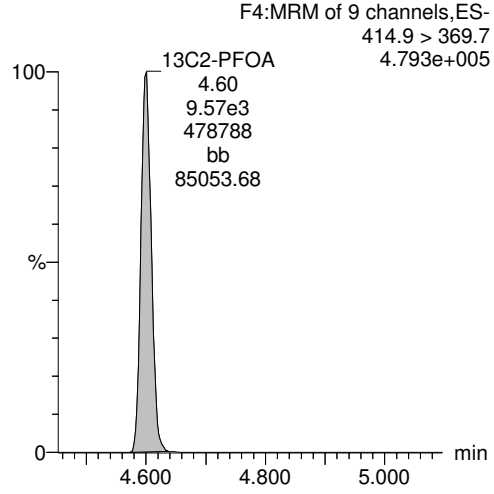
13C2-PFHxA



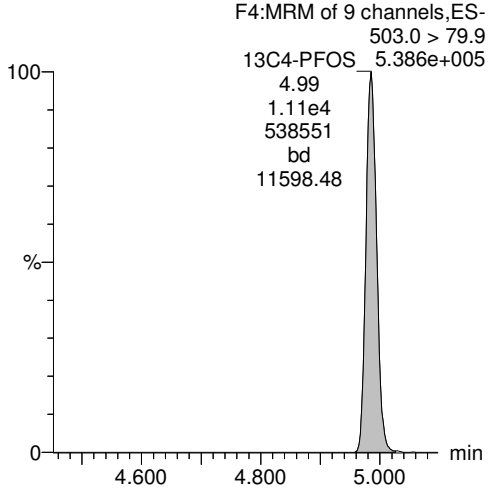
13C4-PFOS



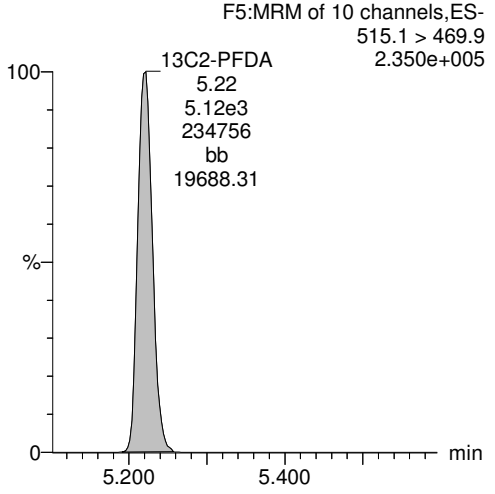
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-29.qld

Last Altered: Monday, December 18, 2017 14:12:53 Pacific Standard Time
Printed: Monday, December 18, 2017 14:13:05 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-29, Date: 16-Dec-2017, Time: 20:16:44, ID: 1701904-05 CH-AT-2RW58-1217 0.24802, Description: CH-AT-2RW58-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	2.43e1	1.17e4		0.2480	3.29	3.29	0.0597	0.295	
2	5	PFOA	413 > 368.7	2.60e4	9.26e3		0.2480	4.60	4.60	28.1	142	
3	7	PFOS	499 >79.9	1.20e3	1.17e4		0.2480	4.98	4.99	2.94	9.47	
4	15	13C2-PFHxA	315 > 269.8	4.15e3	9.26e3	0.431	0.2480	3.69	3.68	4.48	41.9	104.0
5	16	13C2-PFDA	515.1 > 469.9	4.57e3	9.26e3	0.602	0.2480	5.24	5.22	4.94	33.1	82.0
6	18	13C2-PFOA	414.9 > 369.7	9.26e3	9.26e3	1.000	0.2480	4.41	4.60	10.0	40.3	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.17e4	1.17e4	1.000	0.2480	4.81	4.98	28.7	116	100.0

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Rev'd: MM 12/18/17

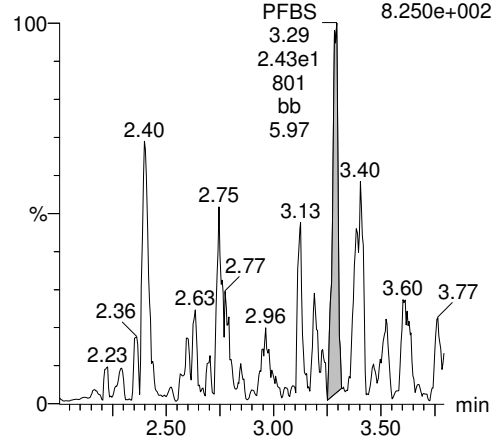
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-29.qld

Last Altered: Monday, December 18, 2017 14:12:53 Pacific Standard Time
Printed: Monday, December 18, 2017 14:13:05 Pacific Standard Time

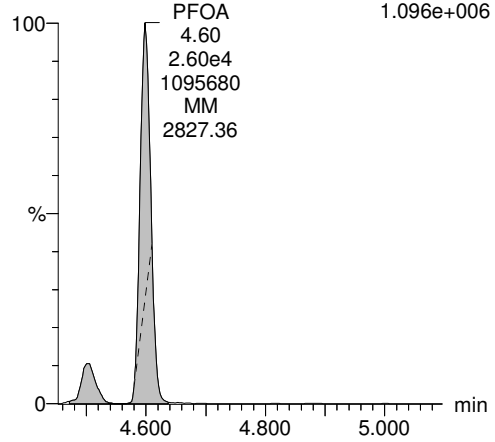
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-29, Date: 16-Dec-2017, Time: 20:16:44, ID: 1701904-05 CH-AT-2RW58-1217 0.24802, Description: CH-AT-2RW58-1217

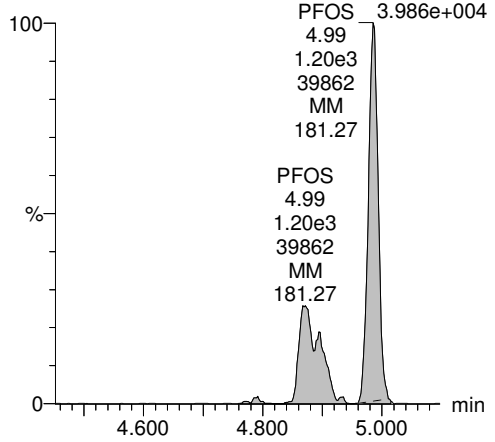
PFBS



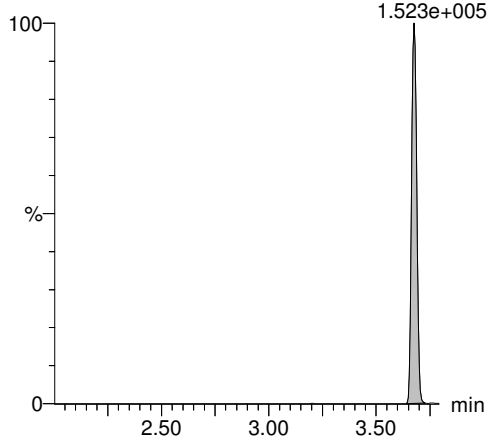
PFOA



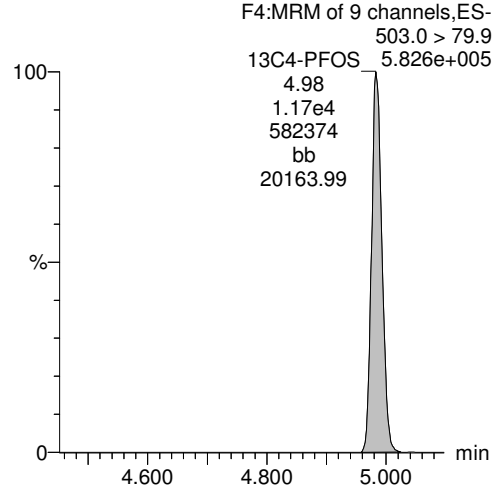
PFOS



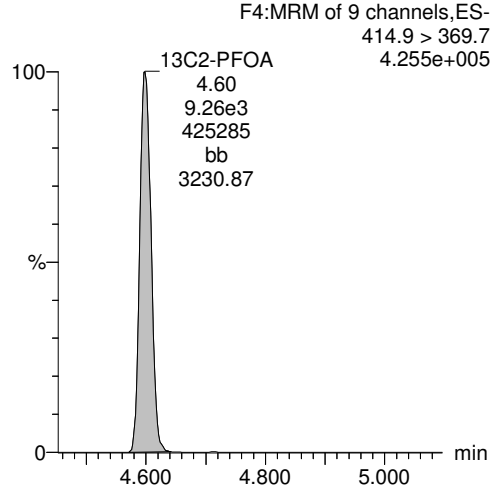
13C2-PFHxA



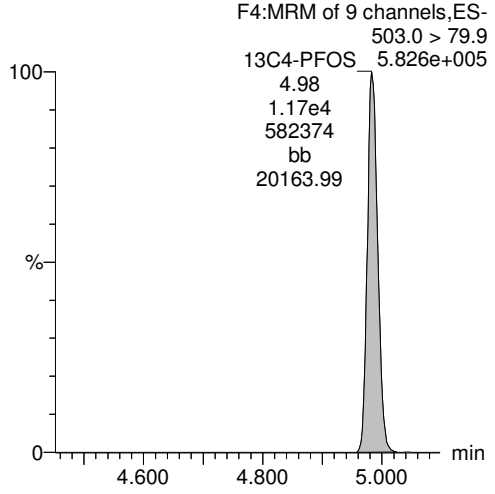
13C4-PFOS



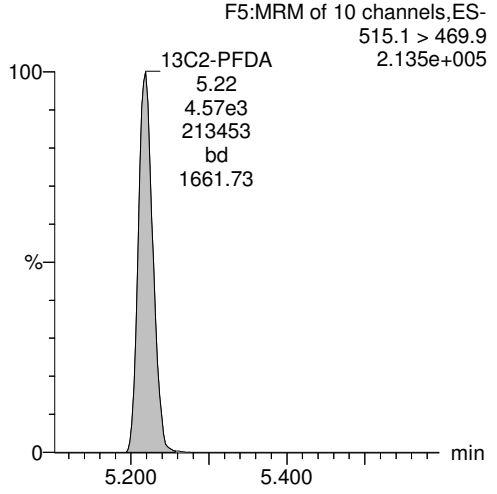
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-30.qld

Last Altered: Monday, December 18, 2017 14:15:22 Pacific Standard Time
Printed: Monday, December 18, 2017 14:15:36 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-30, Date: 16-Dec-2017, Time: 20:29:09, ID: 1701904-06 CH-AT-2FB58-1217 0.25352, Description: CH-AT-2FB58-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.10e4		0.2535	3.29				
2	5	PFOA	413 > 368.7	6.66e1	9.02e3		0.2535	4.60	4.61	0.0738	0.365	
3	7	PFOS	499 >79.9	3.12e1	1.10e4		0.2535	4.99	4.99	0.0811	0.255	
4	15	13C2-PFHxA	315 > 269.8	3.64e3	9.02e3	0.431	0.2535	3.69	3.68	4.03	36.9	93.6
5	16	13C2-PFDA	515.1 > 469.9	4.84e3	9.02e3	0.602	0.2535	5.24	5.22	5.37	35.1	89.1
6	18	13C2-PFOA	414.9 > 369.7	9.02e3	9.02e3	1.000	0.2535	4.41	4.60	10.0	39.4	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.10e4	1.10e4	1.000	0.2535	4.81	4.99	28.7	113	100.0

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Rev'd: MM 12/18/17

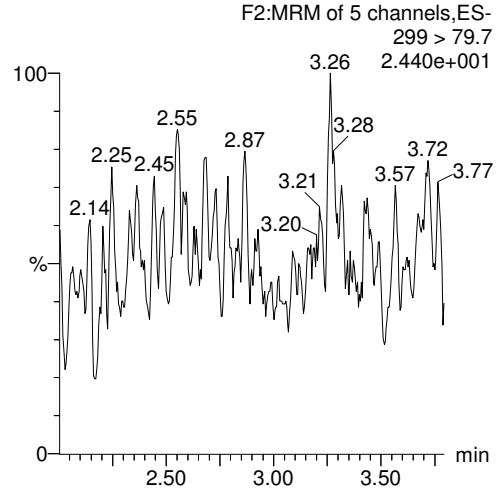
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-30.qld

Last Altered: Monday, December 18, 2017 14:15:22 Pacific Standard Time
Printed: Monday, December 18, 2017 14:15:36 Pacific Standard Time

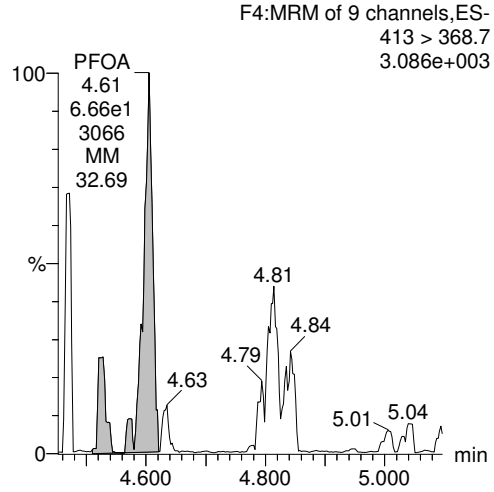
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-30, Date: 16-Dec-2017, Time: 20:29:09, ID: 1701904-06 CH-AT-2FB58-1217 0.25352, Description: CH-AT-2FB58-1217

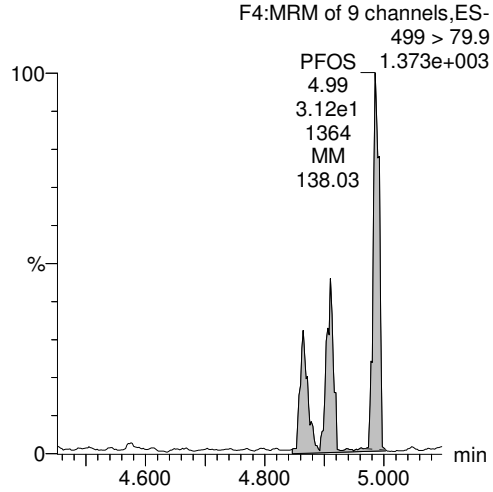
PFBS



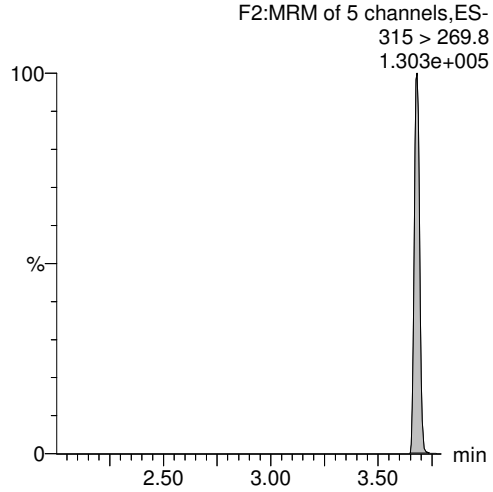
PFOA



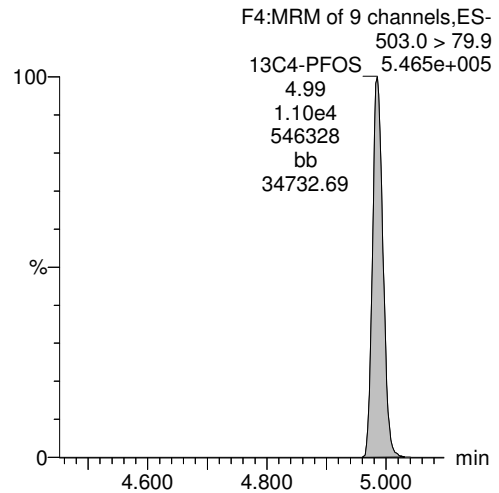
PFOS



13C2-PFHxA



13C4-PFOS



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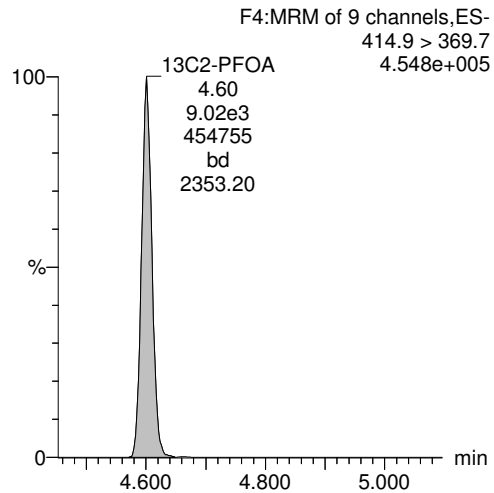

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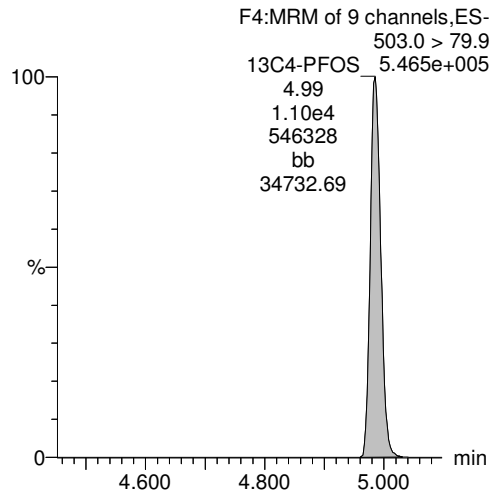
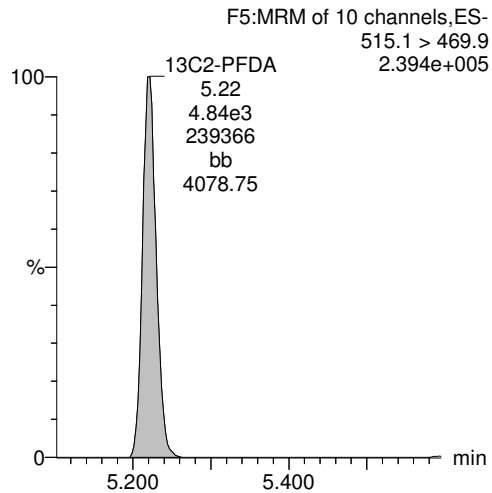


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-31.qld

Last Altered: Monday, December 18, 2017 14:18:57 Pacific Standard Time
Printed: Monday, December 18, 2017 14:19:16 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-31, Date: 16-Dec-2017, Time: 20:41:33, ID: 1701904-07 CH-AT-2RW59-1217 0.25598, Description: CH-AT-2RW59-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.14e4		0.2560	3.29				
2	5	PFOA	413 > 368.7	4.02e1	9.38e3		0.2560	4.60	4.60	0.0429	0.210	
3	7	PFOS	499 >79.9	2.04e0	1.14e4		0.2560	4.98	4.99	0.00514	0.0160	
4	15	13C2-PFHxA	315 > 269.8	4.12e3	9.38e3	0.431	0.2560	3.69	3.68	4.39	39.8	102.0
5	16	13C2-PFDA	515.1 > 469.9	5.71e3	9.38e3	0.602	0.2560	5.24	5.22	6.08	39.5	101.0
6	18	13C2-PFOA	414.9 > 369.7	9.38e3	9.38e3	1.000	0.2560	4.41	4.60	10.0	39.1	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.14e4	1.14e4	1.000	0.2560	4.81	4.98	28.7	112	100.0

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Rev'd: MM 12/18/17

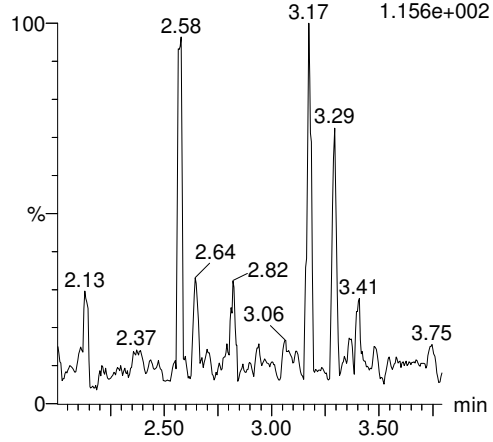
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-31.qld

Last Altered: Monday, December 18, 2017 14:18:57 Pacific Standard Time
Printed: Monday, December 18, 2017 14:19:16 Pacific Standard Time

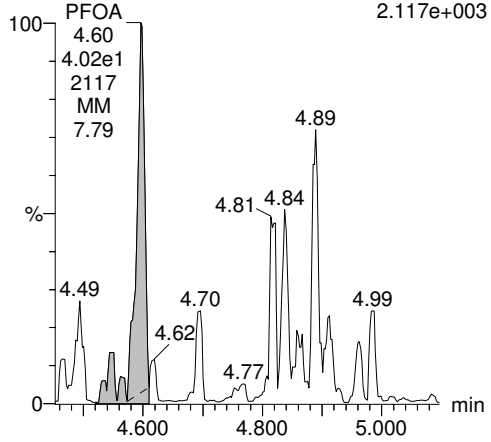
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-31, Date: 16-Dec-2017, Time: 20:41:33, ID: 1701904-07 CH-AT-2RW59-1217 0.25598, Description: CH-AT-2RW59-1217

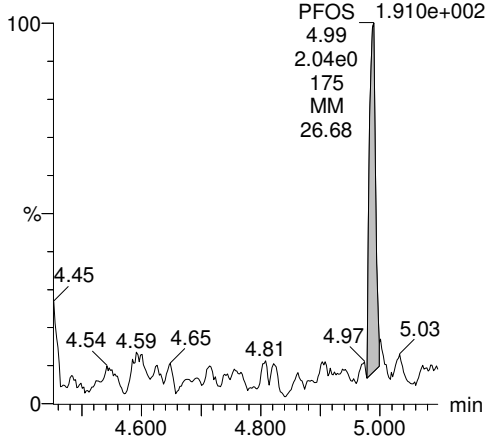
PFBS



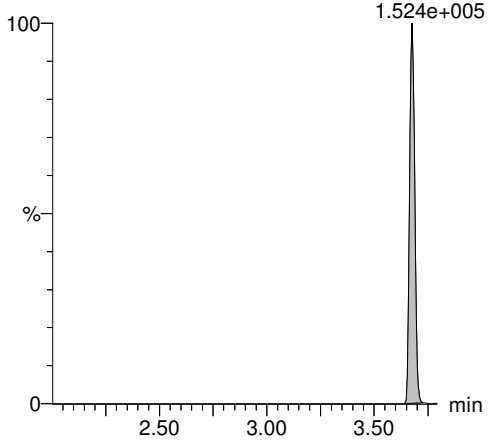
PFOA



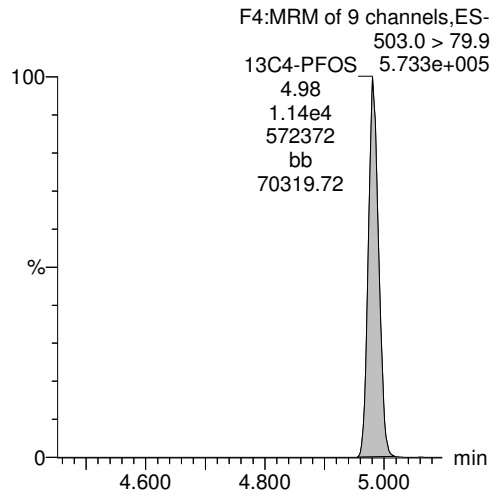
PFOS



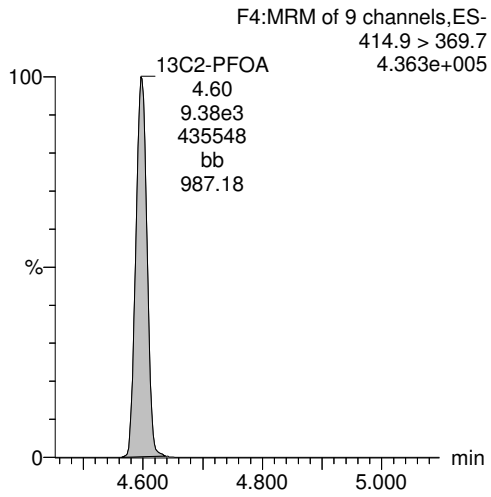
13C2-PFHxA



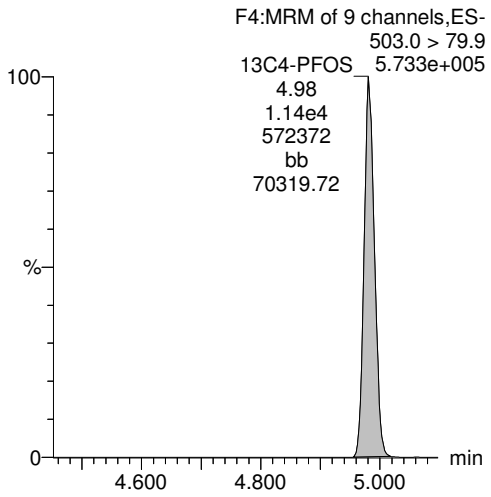
13C4-PFOS



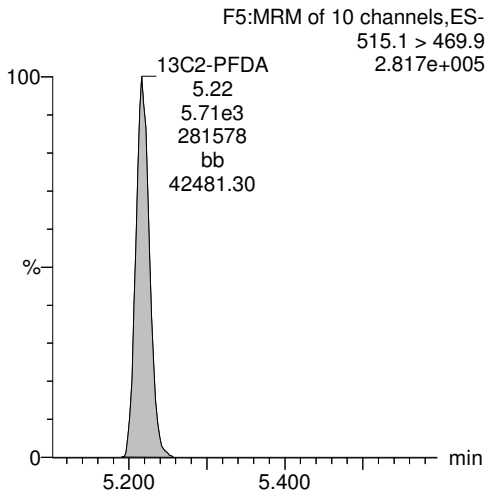
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-32.qld

Last Altered: Monday, December 18, 2017 14:20:35 Pacific Standard Time
Printed: Monday, December 18, 2017 14:21:04 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-32, Date: 16-Dec-2017, Time: 20:53:58, ID: 1701904-08 CH-AT-2FB59-1217 0.25333, Description: CH-AT-2FB59-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.04e4		0.2533	3.29				
2	5	PFOA	413 > 368.7	6.78e1	9.50e3		0.2533	4.60	4.60	0.0714	0.353	
3	7	PFOS	499 >79.9		1.04e4		0.2533	4.98				
4	15	13C2-PFHxA	315 > 269.8	3.81e3	9.50e3	0.431	0.2533	3.69	3.68	4.01	36.7	93.0
5	16	13C2-PFDA	515.1 > 469.9	5.39e3	9.50e3	0.602	0.2533	5.24	5.22	5.67	37.2	94.2
6	18	13C2-PFOA	414.9 > 369.7	9.50e3	9.50e3	1.000	0.2533	4.41	4.60	10.0	39.5	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2533	4.81	4.98	28.7	113	100.0

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Rev'd: MM 12/18/17

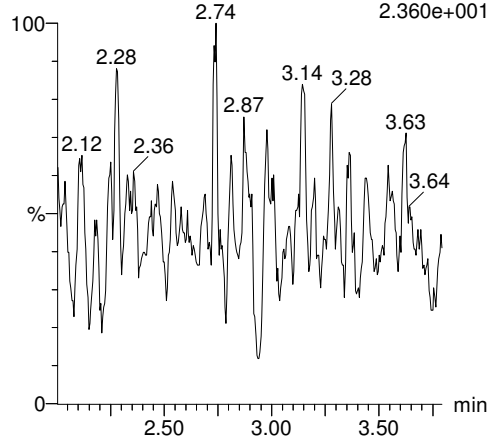
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-32.qld

Last Altered: Monday, December 18, 2017 14:20:35 Pacific Standard Time
Printed: Monday, December 18, 2017 14:21:04 Pacific Standard Time

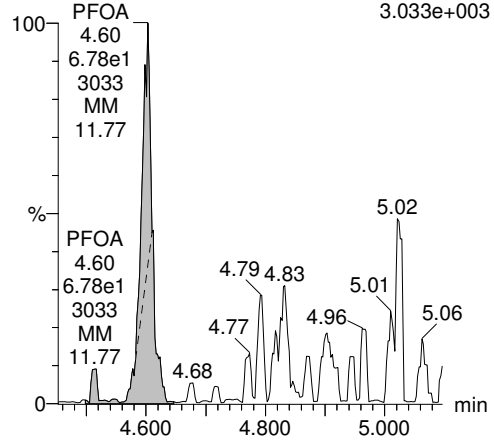
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-32, Date: 16-Dec-2017, Time: 20:53:58, ID: 1701904-08 CH-AT-2FB59-1217 0.25333, Description: CH-AT-2FB59-1217

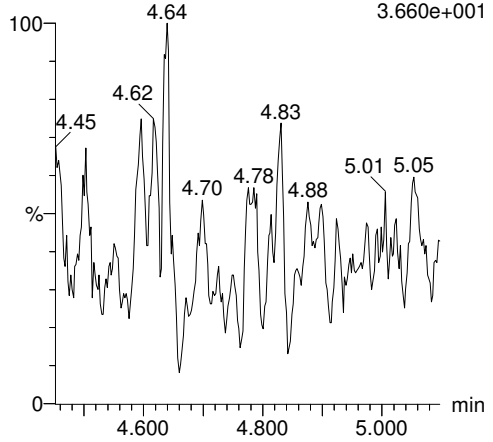
PFBS



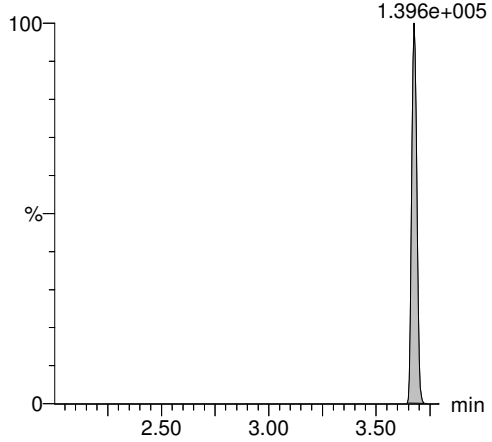
PFOA



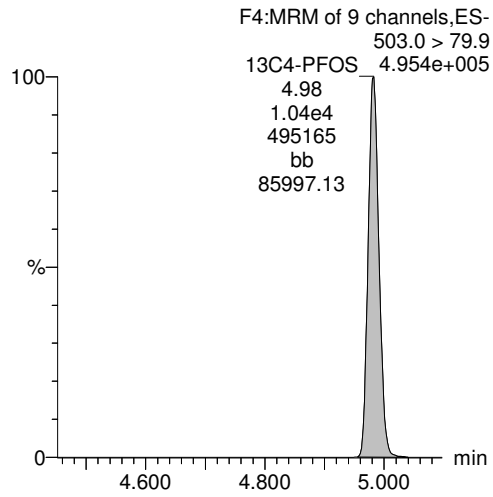
PFOS



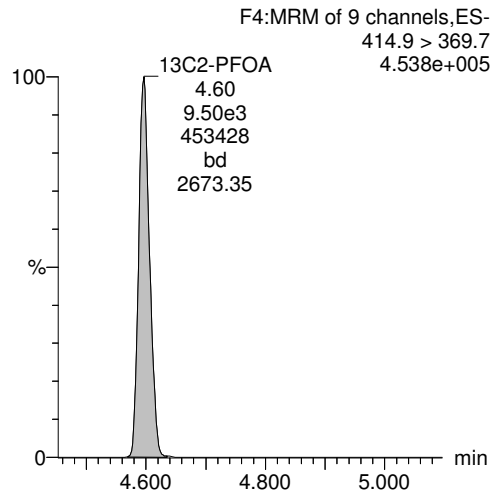
13C2-PFHxA



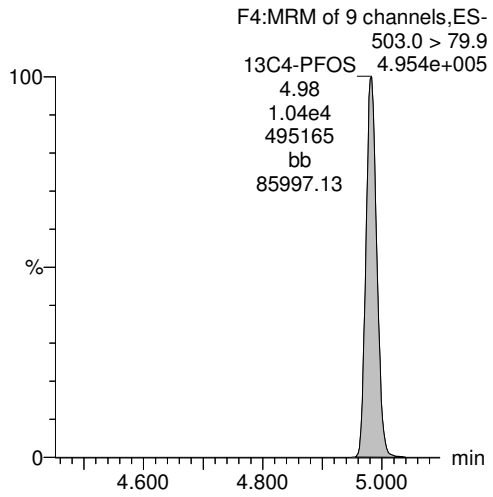
13C4-PFOS



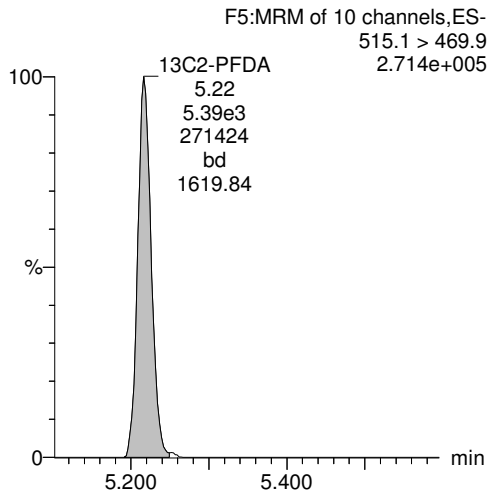
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-33.qld

Last Altered: Monday, December 18, 2017 14:22:27 Pacific Standard Time
Printed: Monday, December 18, 2017 14:22:47 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-33, Date: 16-Dec-2017, Time: 21:06:42, ID: 1701904-09 CH-AT-2RW60-1217 0.23976, Description: CH-AT-2RW60-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2398	3.29				
2	5	PFOA	413 > 368.7	7.57e1	9.02e3		0.2398	4.60	4.60	0.0838	0.438	
3	7	PFOS	499 >79.9	8.98e0	1.05e4		0.2398	4.98	4.87	0.0245	0.0817	
4	15	13C2-PFHxA	315 > 269.8	3.94e3	9.02e3	0.431	0.2398	3.69	3.68	4.37	42.3	101.4
5	16	13C2-PFDA	515.1 > 469.9	5.44e3	9.02e3	0.602	0.2398	5.24	5.22	6.03	41.7	100.1
6	18	13C2-PFOA	414.9 > 369.7	9.02e3	9.02e3	1.000	0.2398	4.41	4.60	10.0	41.7	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2398	4.81	4.98	28.7	120	100.0

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Rev'd: MM 12/18/17

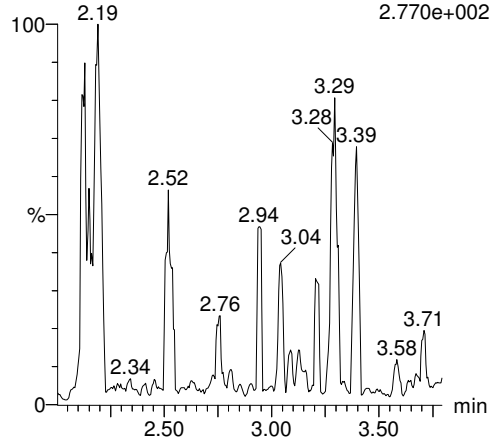
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-33.qld

Last Altered: Monday, December 18, 2017 14:22:27 Pacific Standard Time
Printed: Monday, December 18, 2017 14:22:47 Pacific Standard Time

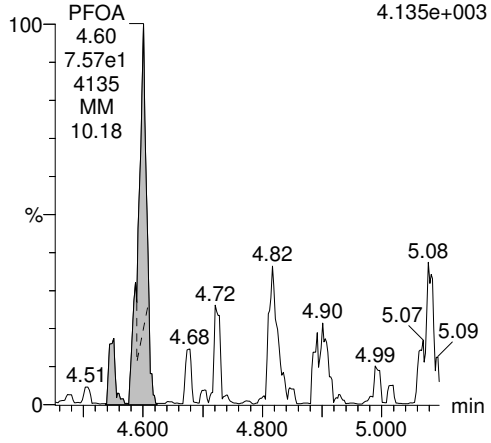
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-33, Date: 16-Dec-2017, Time: 21:06:42, ID: 1701904-09 CH-AT-2RW60-1217 0.23976, Description: CH-AT-2RW60-1217

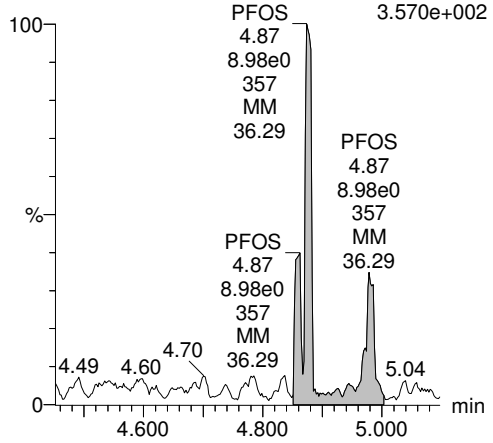
PFBS



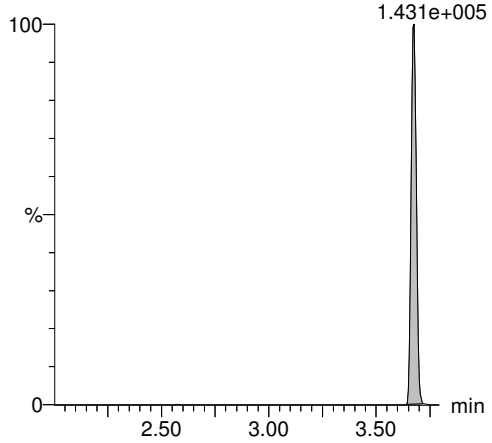
PFOA



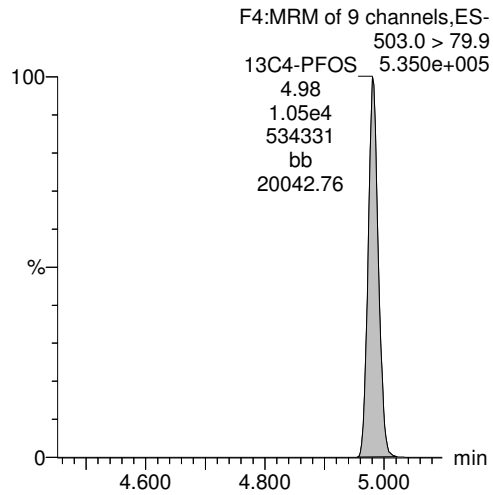
PFOS



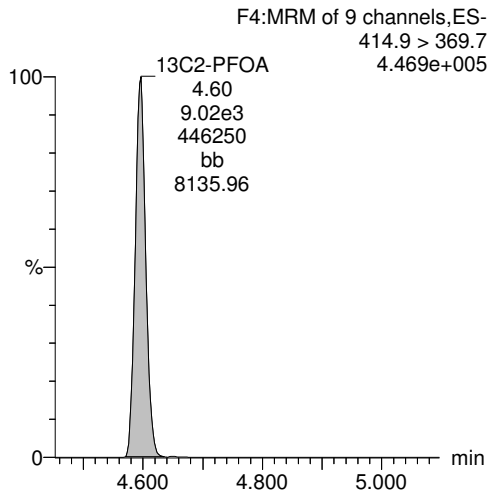
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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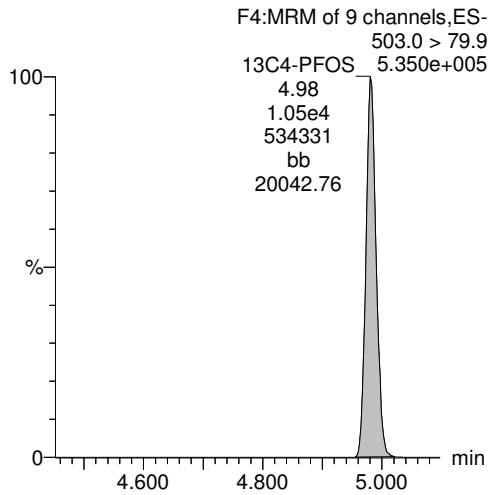
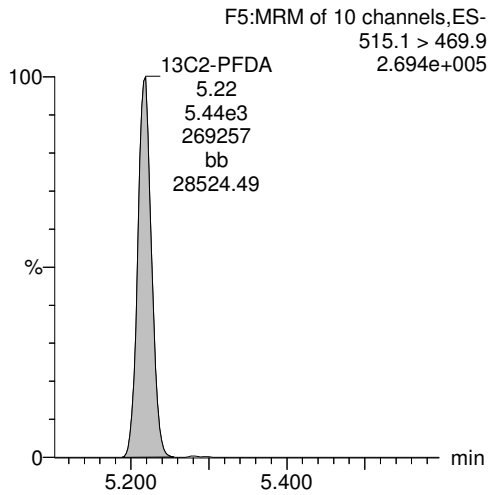


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-34.qld

Last Altered: Monday, December 18, 2017 14:24:00 Pacific Standard Time
Printed: Monday, December 18, 2017 14:24:28 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-34, Date: 16-Dec-2017, Time: 21:19:15, ID: 1701904-10 CH-AT-2FB60-1217 0.25701, Description: CH-AT-2FB60-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.12e4		0.2570	3.29				
2	5	PFOA	413 > 368.7	8.25e1	8.66e3		0.2570	4.60	4.60	0.0953	0.464	
3	7	PFOS	499 >79.9		1.12e4		0.2570	4.98				
4	15	13C2-PFHxA	315 > 269.8	3.92e3	8.66e3	0.431	0.2570	3.69	3.67	4.52	40.9	105.0
5	16	13C2-PFDA	515.1 > 469.9	4.80e3	8.66e3	0.602	0.2570	5.24	5.22	5.54	35.8	92.0
6	18	13C2-PFOA	414.9 > 369.7	8.66e3	8.66e3	1.000	0.2570	4.41	4.60	10.0	38.9	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	0.2570	4.81	4.98	28.7	112	100.0

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Rev'd: MM 12/18/17

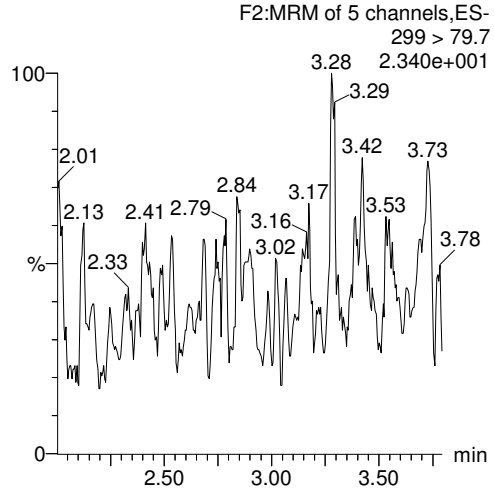
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-34.qld

Last Altered: Monday, December 18, 2017 14:24:00 Pacific Standard Time
Printed: Monday, December 18, 2017 14:24:28 Pacific Standard Time

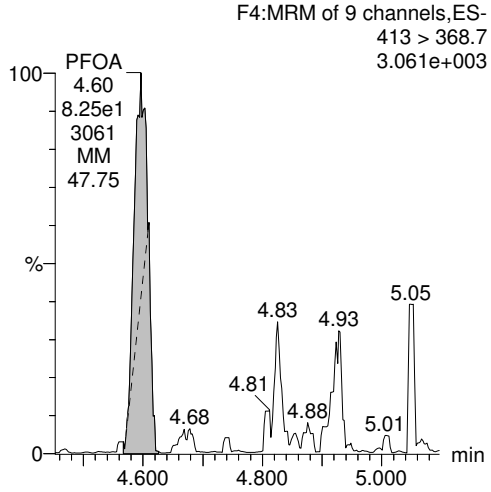
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-34, Date: 16-Dec-2017, Time: 21:19:15, ID: 1701904-10 CH-AT-2FB60-1217 0.25701, Description: CH-AT-2FB60-1217

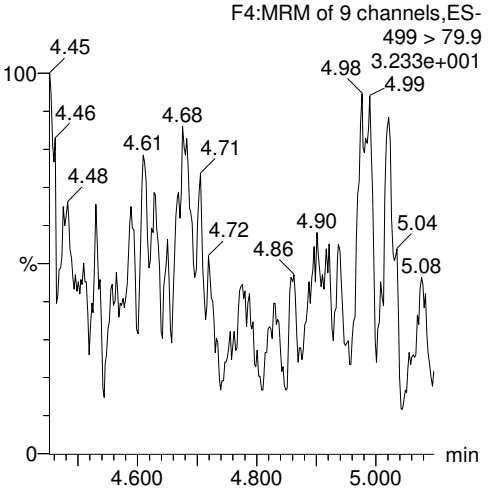
PFBS



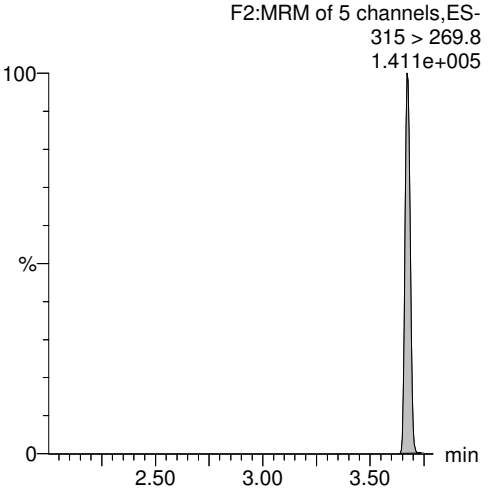
PFOA



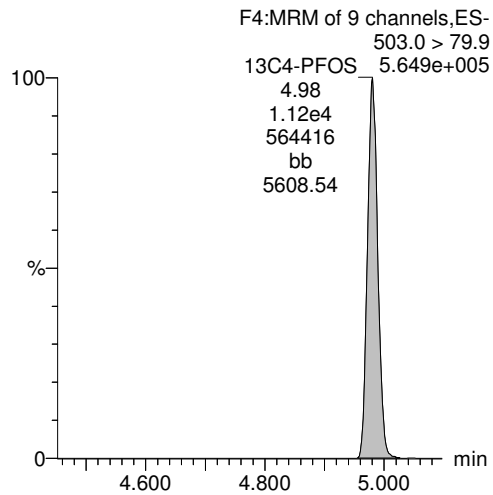
PFOS



13C2-PFHxA



13C4-PFOS



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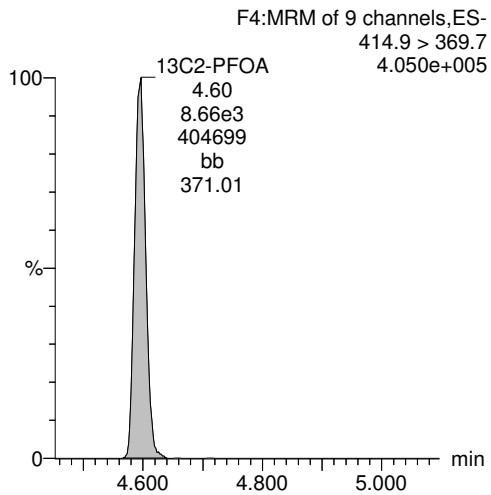

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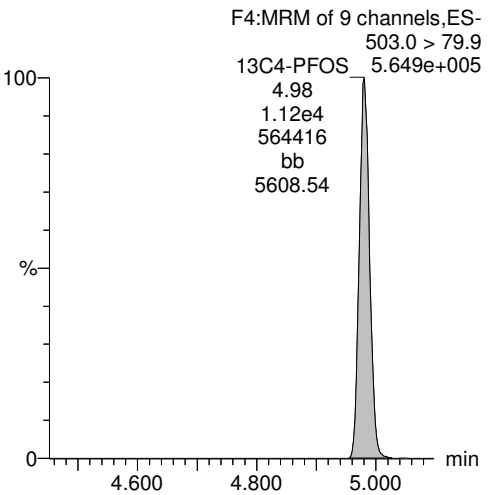
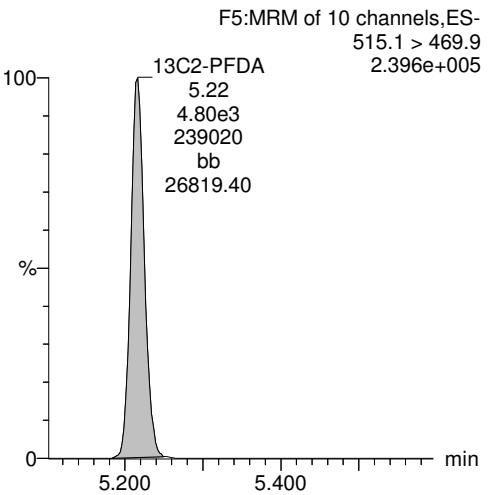


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-35.qld

Last Altered: Monday, December 18, 2017 14:25:52 Pacific Standard Time
Printed: Monday, December 18, 2017 14:26:10 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-35, Date: 16-Dec-2017, Time: 21:31:42, ID: 1701904-11 CH-AT-2RW61-1217 0.24858, Description: CH-AT-2RW61-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.13e4		0.2486	3.29				
2	5	PFOA	413 > 368.7	6.20e1	9.14e3		0.2486	4.59	4.60	0.0679	0.342	
3	7	PFOS	499 >79.9	2.63e1	1.13e4		0.2486	4.98	4.98	0.0667	0.214	
4	15	13C2-PFHxA	315 > 269.8	4.07e3	9.14e3	0.431	0.2486	3.69	3.67	4.45	41.5	103.3
5	16	13C2-PFDA	515.1 > 469.9	5.12e3	9.14e3	0.602	0.2486	5.24	5.21	5.61	37.4	93.0
6	18	13C2-PFOA	414.9 > 369.7	9.14e3	9.14e3	1.000	0.2486	4.41	4.59	10.0	40.2	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.13e4	1.13e4	1.000	0.2486	4.81	4.98	28.7	115	100.0

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Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-35.qld

Last Altered: Monday, December 18, 2017 14:25:52 Pacific Standard Time
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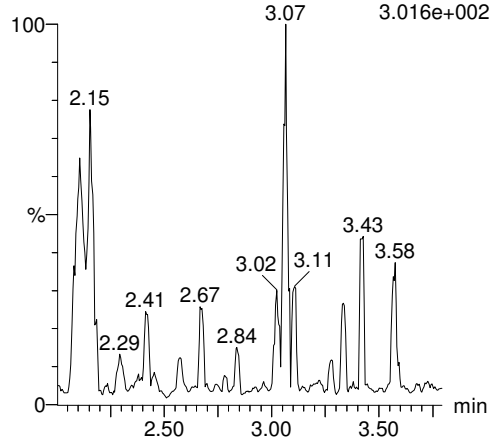
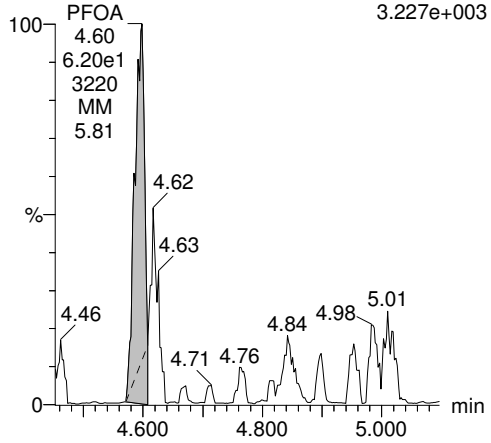
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-35, Date: 16-Dec-2017, Time: 21:31:42, ID: 1701904-11 CH-AT-2RW61-1217 0.24858, Description: CH-AT-2RW61-1217

PFBS



PFOA



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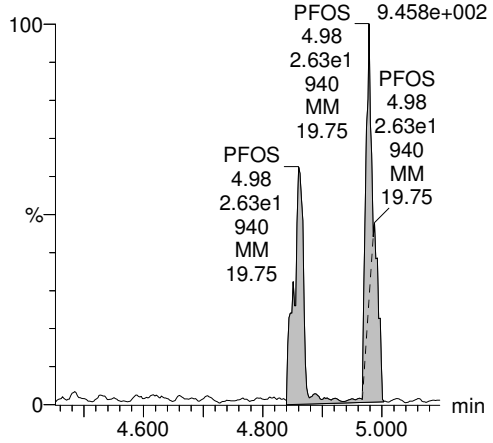
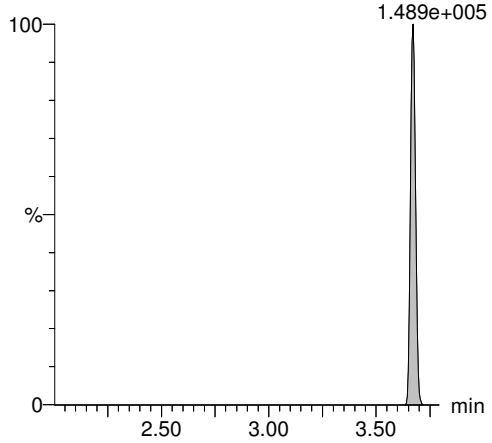
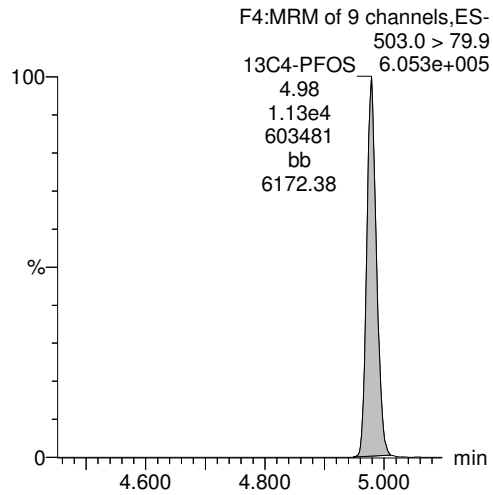


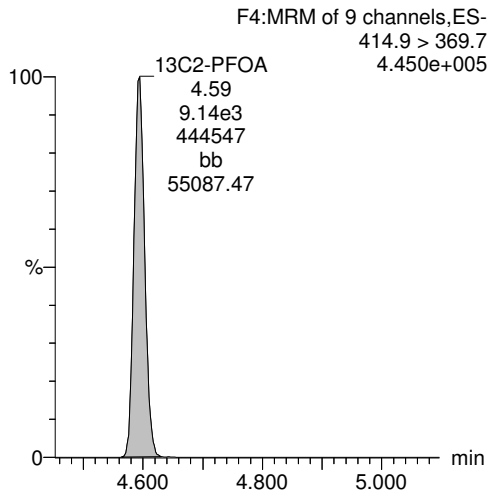
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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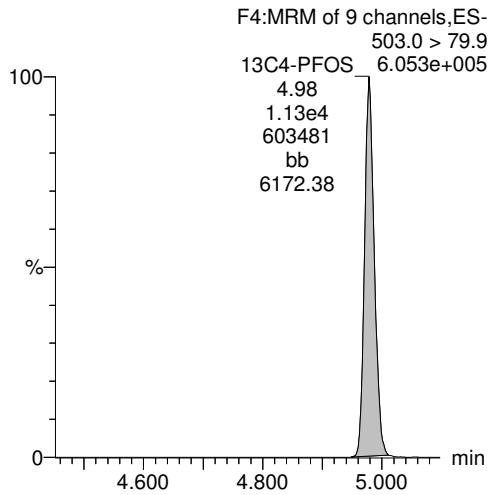
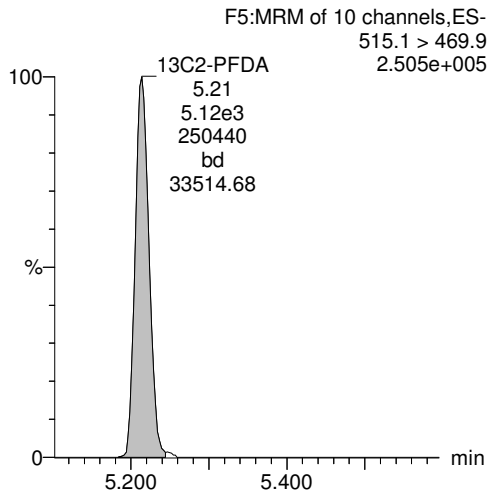


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-36.qld

Last Altered: Monday, December 18, 2017 14:27:59 Pacific Standard Time
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-36, Date: 16-Dec-2017, Time: 21:44:10, ID: 1701904-12 CH-AT-2FB61-1217 0.24745, Description: CH-AT-2FB61-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.18e4		0.2475	3.28				
2	5	PFOA	413 > 368.7	9.65e1	9.44e3		0.2475	4.59	4.59	0.102	0.517	
3	7	PFOS	499 >79.9	4.71e0	1.18e4		0.2475	4.98	4.99	0.0115	0.0370	
4	15	13C2-PFHxA	315 > 269.8	4.11e3	9.44e3	0.431	0.2475	3.68	3.67	4.35	40.8	100.9
5	16	13C2-PFDA	515.1 > 469.9	5.15e3	9.44e3	0.602	0.2475	5.23	5.21	5.46	36.6	90.6
6	18	13C2-PFOA	414.9 > 369.7	9.44e3	9.44e3	1.000	0.2475	4.41	4.59	10.0	40.4	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.18e4	1.18e4	1.000	0.2475	4.81	4.98	28.7	116	100.0

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Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-36.qld

Last Altered: Monday, December 18, 2017 14:27:59 Pacific Standard Time
Printed: Monday, December 18, 2017 14:28:32 Pacific Standard Time

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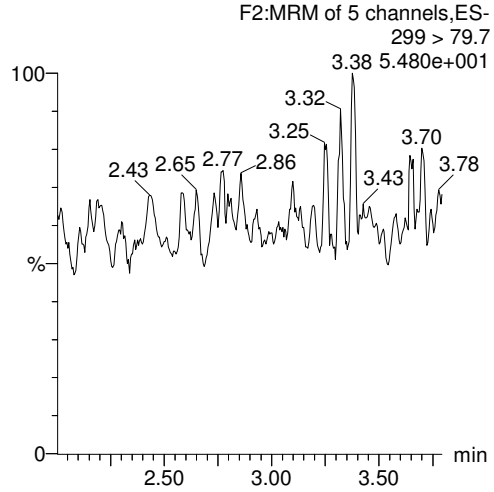
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-36, Date: 16-Dec-2017, Time: 21:44:10, ID: 1701904-12 CH-AT-2FB61-1217 0.24745, Description: CH-AT-2FB61-1217

PFBS



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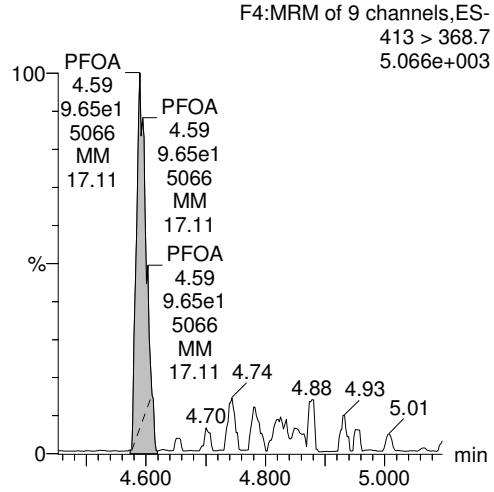
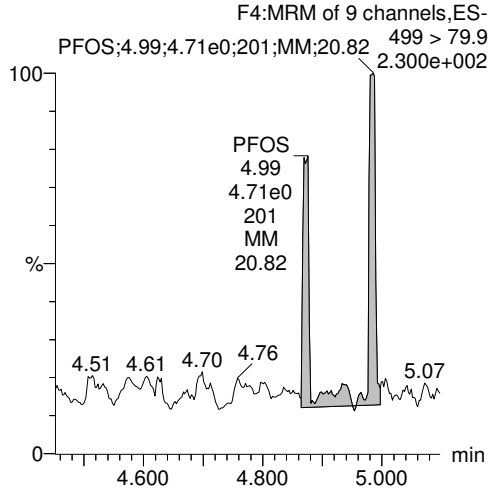


PFOS



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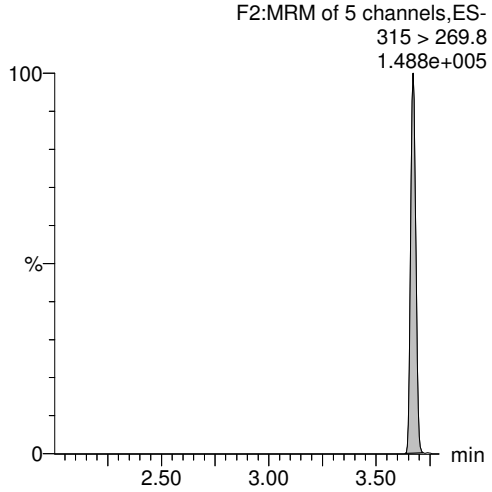
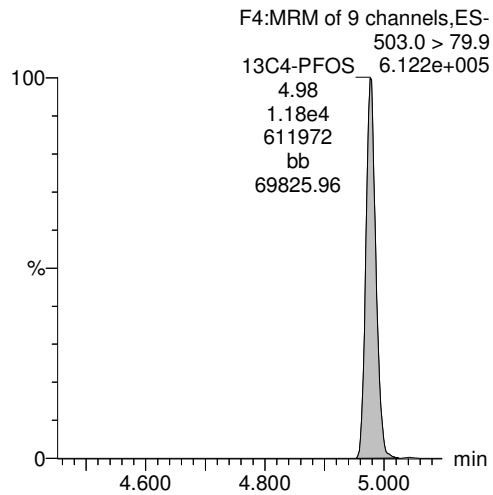
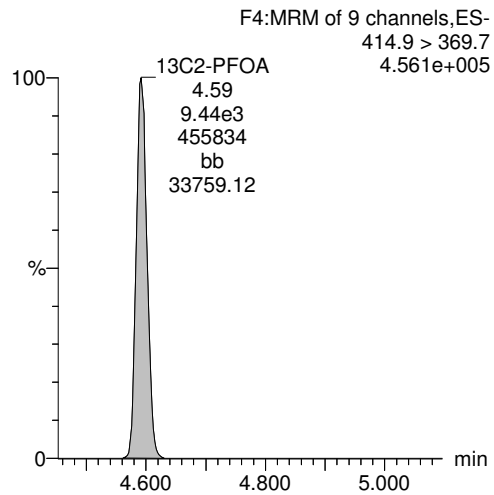


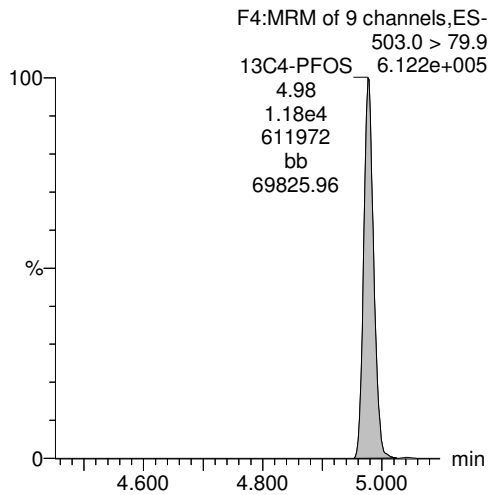
13C4-PFOS



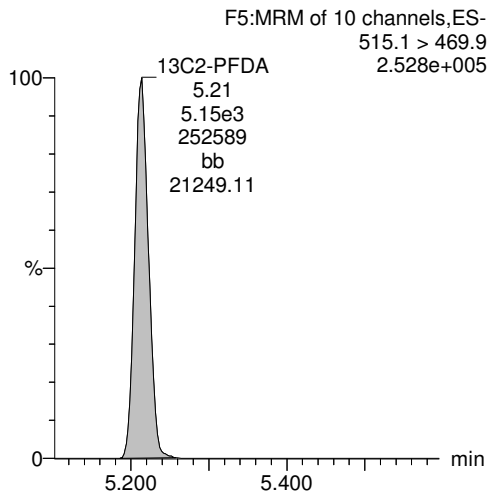
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-37.qld

Last Altered: Monday, December 18, 2017 14:31:47 Pacific Standard Time
Printed: Monday, December 18, 2017 14:32:33 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-37, Date: 16-Dec-2017, Time: 21:56:34, ID: 1701904-13 CH-AT-1RW150-1217 0.25123, Description: CH-AT-1RW150-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.08e4		0.2512	3.29				
2	5	PFOA	413 > 368.7	8.07e1	8.79e3		0.2512	4.59	4.58	0.0918	0.458	
3	7	PFOS	499 >79.9	7.53e0	1.08e4		0.2512	4.98	4.86	0.0200	0.0636	
4	15	13C2-PFHxA	315 > 269.8	3.71e3	8.79e3	0.431	0.2512	3.68	3.67	4.22	39.0	98.0
5	16	13C2-PFDA	515.1 > 469.9	4.88e3	8.79e3	0.602	0.2512	5.23	5.21	5.55	36.7	92.2
6	18	13C2-PFOA	414.9 > 369.7	8.79e3	8.79e3	1.000	0.2512	4.41	4.59	10.0	39.8	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	0.2512	4.81	4.98	28.7	114	100.0

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Rev'd: MM 12/18/17

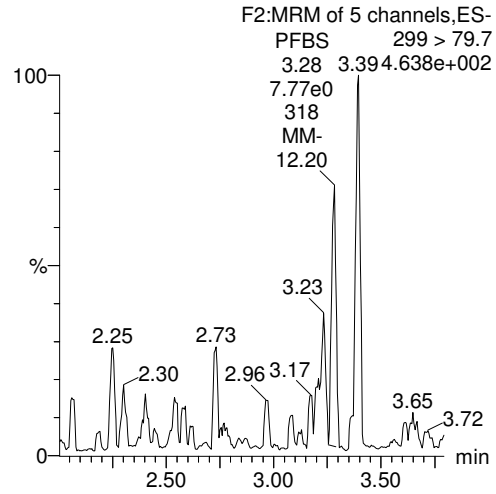
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-37.qld

Last Altered: Monday, December 18, 2017 14:31:47 Pacific Standard Time
Printed: Monday, December 18, 2017 14:32:33 Pacific Standard Time

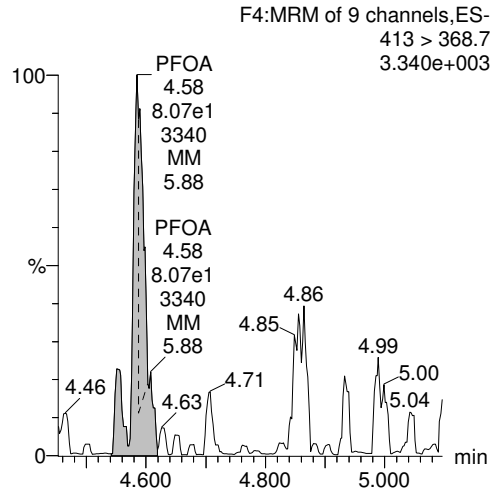
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-37, Date: 16-Dec-2017, Time: 21:56:34, ID: 1701904-13 CH-AT-1RW150-1217 0.25123, Description: CH-AT-1RW150-1217

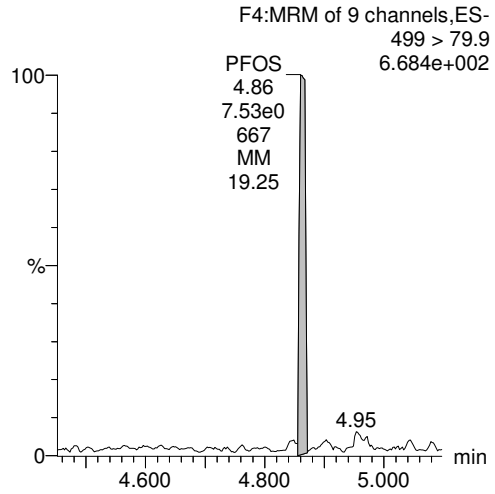
PFBS



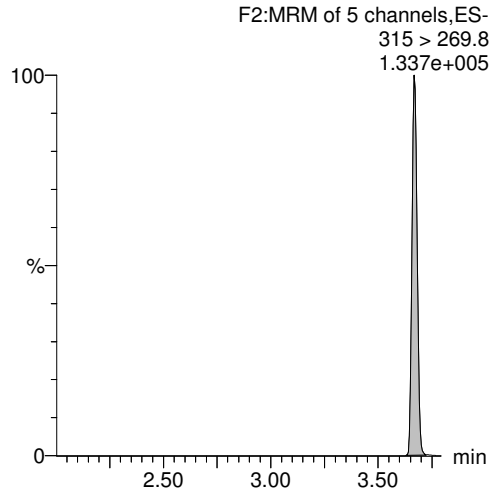
PFOA



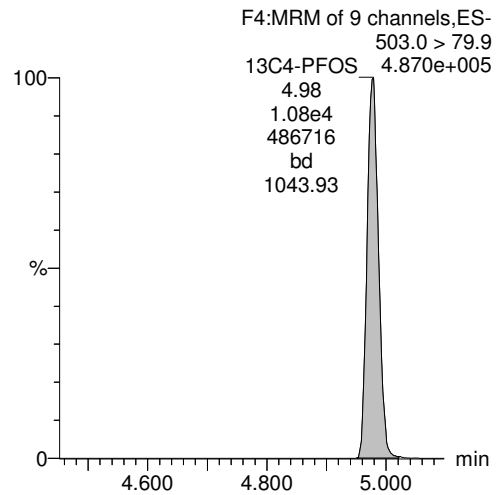
PFOS



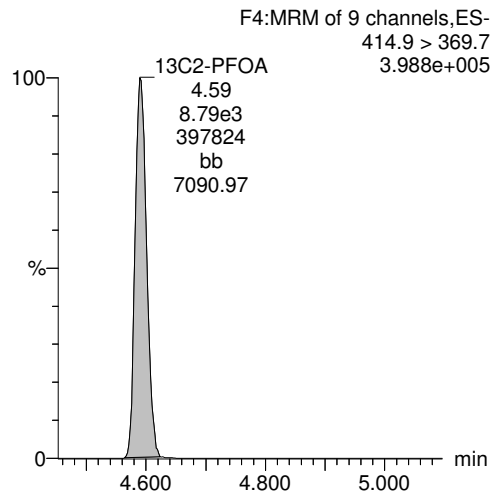
13C2-PFHxA



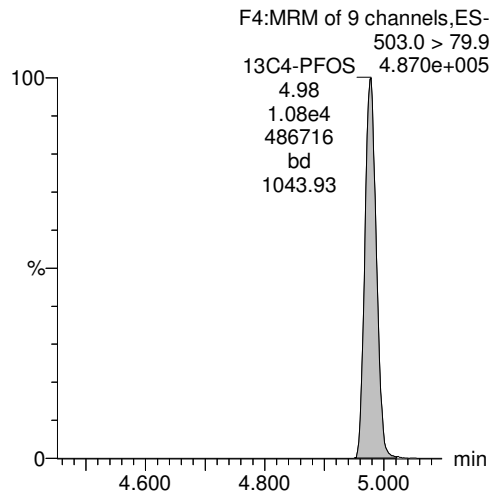
13C4-PFOS



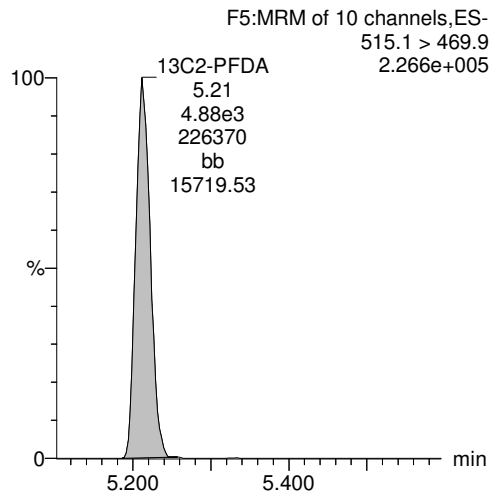
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-38.qld

Last Altered: Monday, December 18, 2017 14:33:59 Pacific Standard Time
Printed: Monday, December 18, 2017 14:34:29 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-38, Date: 16-Dec-2017, Time: 22:08:58, ID: 1701904-14 CH-AT-1FB150-1217 0.26176, Description: CH-AT-1FB150-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.55e0	9.67e3		0.2618	3.29	3.30	0.00461	0.0216	
2	5	PFOA	413 > 368.7	4.01e1	8.32e3		0.2618	4.59	4.59	0.0482	0.231	
3	7	PFOS	499 >79.9		9.67e3		0.2618	4.98				
4	15	13C2-PFHxA	315 > 269.8	3.70e3	8.32e3	0.431	0.2618	3.68	3.67	4.45	39.5	103.3
5	16	13C2-PFDA	515.1 > 469.9	4.10e3	8.32e3	0.602	0.2618	5.23	5.21	4.93	31.3	81.9
6	18	13C2-PFOA	414.9 > 369.7	8.32e3	8.32e3	1.000	0.2618	4.41	4.59	10.0	38.2	100.0
7	19	13C4-PFOS	503.0 > 79.9	9.67e3	9.67e3	1.000	0.2618	4.81	4.98	28.7	110	100.0

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Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-38.qld

Last Altered: Monday, December 18, 2017 14:33:59 Pacific Standard Time
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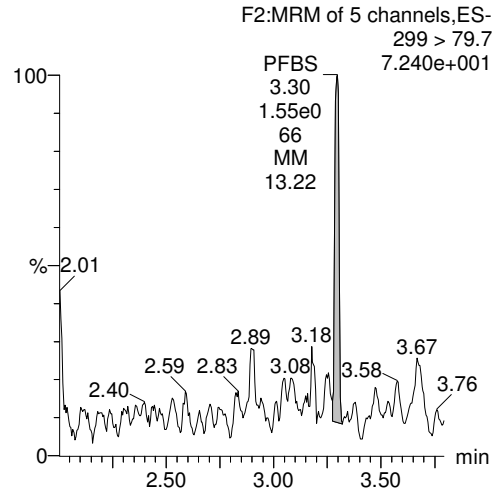
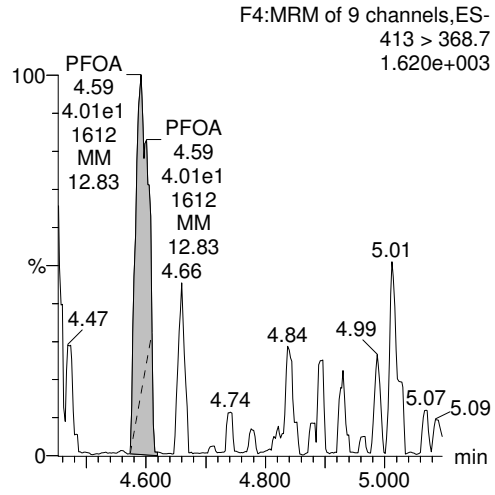
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-38, Date: 16-Dec-2017, Time: 22:08:58, ID: 1701904-14 CH-AT-1FB150-1217 0.26176, Description: CH-AT-1FB150-1217

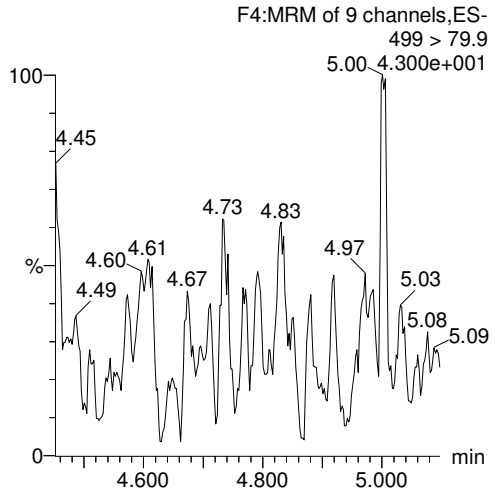
PFBS



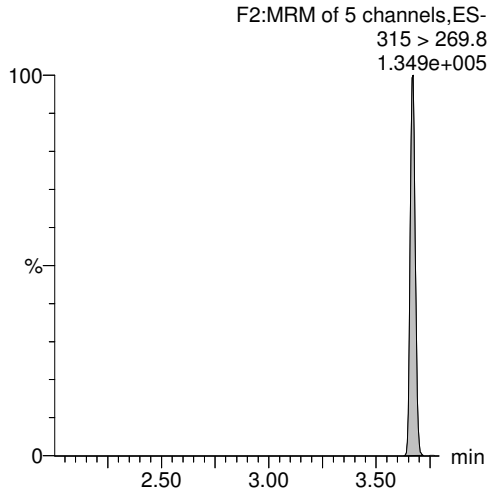
PFOA



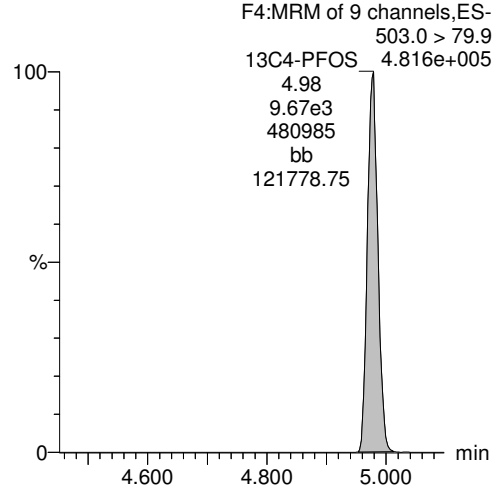
PFOS



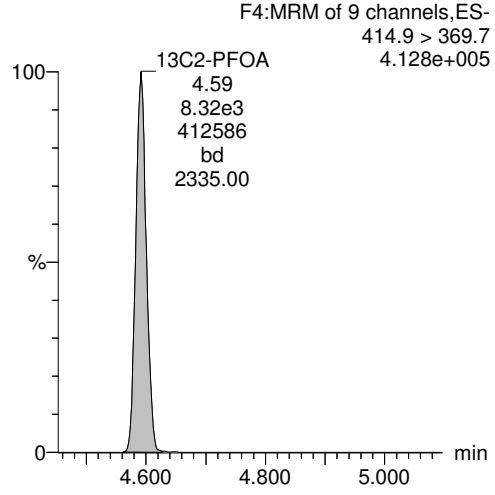
13C2-PFHxA



13C4-PFOS



13C2-PFOA



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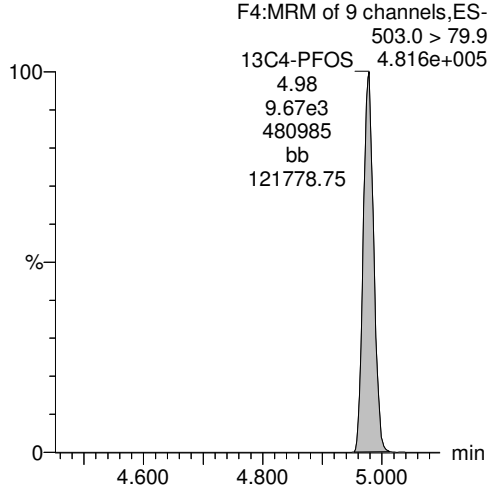
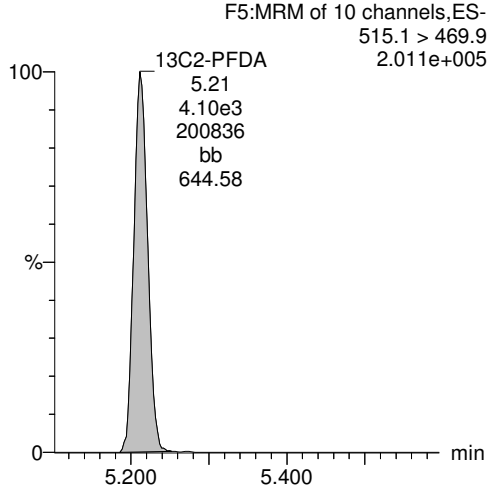


13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-39.qld

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-39, Date: 16-Dec-2017, Time: 22:21:23, ID: 1701904-15 CH-AT-1RW151-1217 0.24188, Description: CH-AT-1RW151-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.11e4		0.2419	3.28				
2	5	PFOA	413 > 368.7	1.76e2	8.56e3		0.2419	4.59	4.59	0.206	1.07	
3	7	PFOS	499 >79.9	8.24e2	1.11e4		0.2419	4.98	4.86	2.13	7.04	
4	15	13C2-PFHxA	315 > 269.8	4.41e3	8.56e3	0.431	0.2419	3.68	3.67	5.16	49.5	119.7
5	16	13C2-PFDA	515.1 > 469.9	4.84e3	8.56e3	0.602	0.2419	5.23	5.21	5.65	38.8	93.9
6	18	13C2-PFOA	414.9 > 369.7	8.56e3	8.56e3	1.000	0.2419	4.41	4.59	10.0	41.3	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.11e4	1.11e4	1.000	0.2419	4.81	4.98	28.7	119	100.0

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Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-39.qld

Last Altered: Monday, December 18, 2017 14:35:57 Pacific Standard Time
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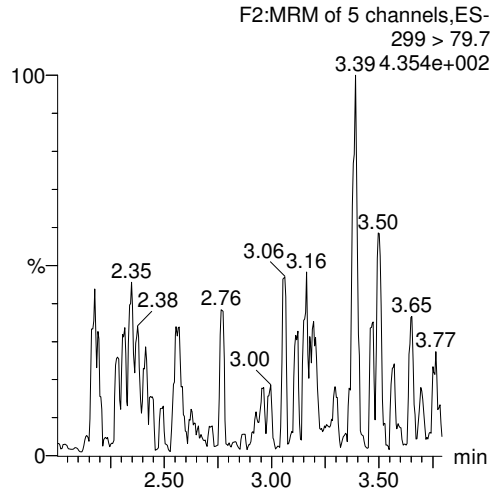
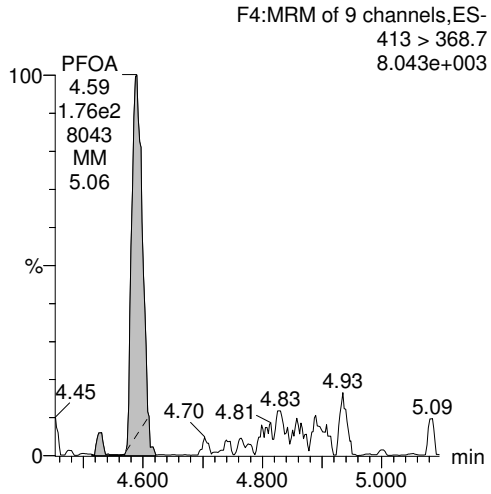
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-39, Date: 16-Dec-2017, Time: 22:21:23, ID: 1701904-15 CH-AT-1RW151-1217 0.24188, Description: CH-AT-1RW151-1217

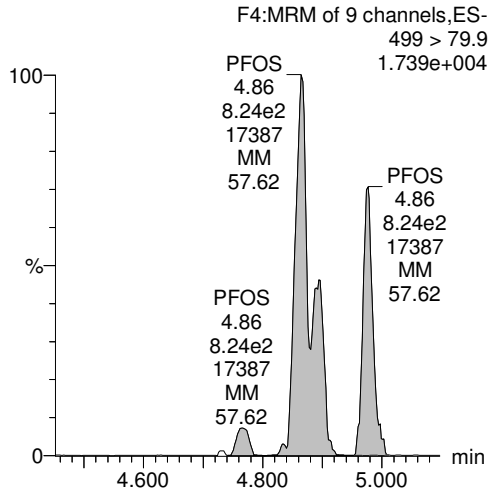
PFBS



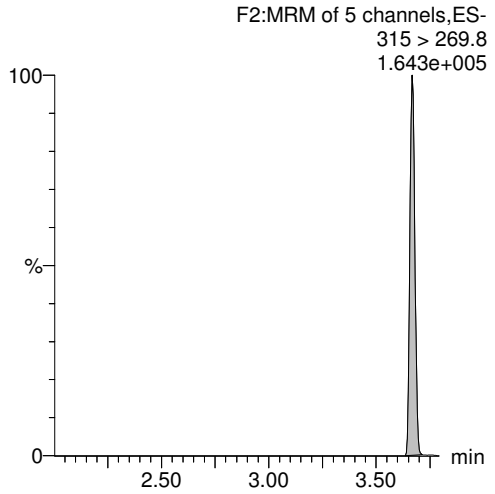
PFOA



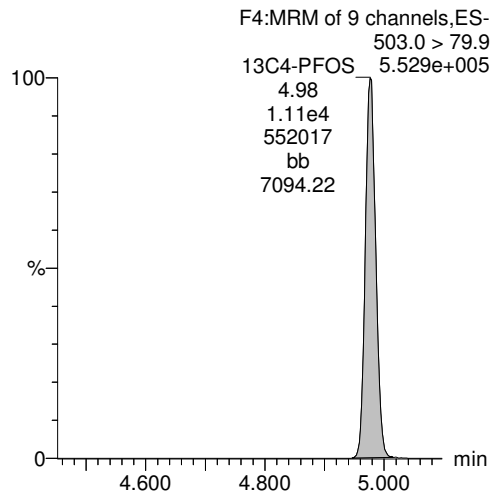
PFOS



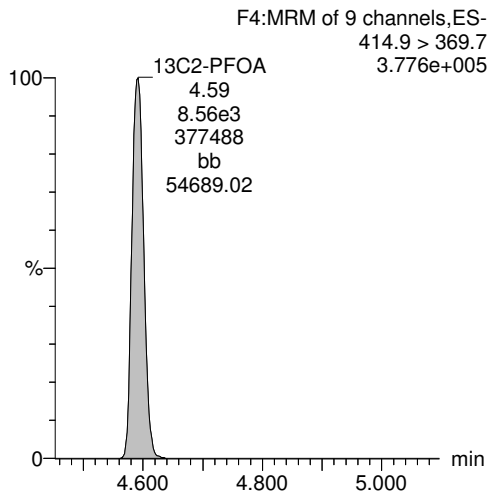
13C2-PFHxA



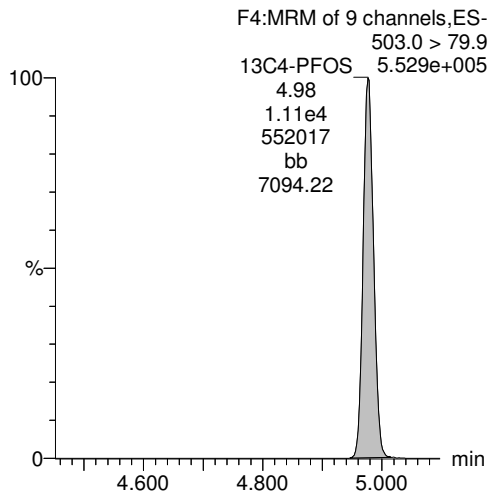
13C4-PFOS



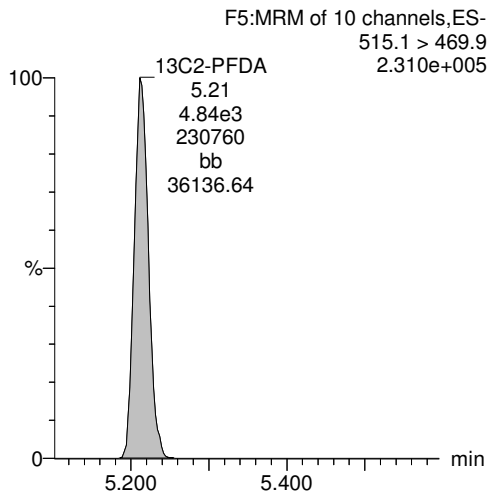
13C2-PFOA



13C4-PFOS



13C2-PFDA



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Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-40.qld

Last Altered: Monday, December 18, 2017 14:42:47 Pacific Standard Time
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-40, Date: 16-Dec-2017, Time: 22:33:48, ID: 1701904-16 CH-AT-1FB151-1217 0.25227, Description: CH-AT-1FB151-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.05e4		0.2523	3.28				
2	5	PFOA	413 > 368.7	6.48e1	8.67e3		0.2523	4.59	4.59	0.0747	0.371	
3	7	PFOS	499 >79.9	4.17e0	1.05e4		0.2523	4.98	4.97	0.0114	0.0360	
4	15	13C2-PFHxA	315 > 269.8	4.10e3	8.67e3	0.431	0.2523	3.68	3.67	4.73	43.5	109.7
5	16	13C2-PFDA	515.1 > 469.9	5.18e3	8.67e3	0.602	0.2523	5.23	5.21	5.97	39.3	99.1
6	18	13C2-PFOA	414.9 > 369.7	8.67e3	8.67e3	1.000	0.2523	4.41	4.59	10.0	39.6	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2523	4.81	4.98	28.7	114	100.0

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Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-40.qld

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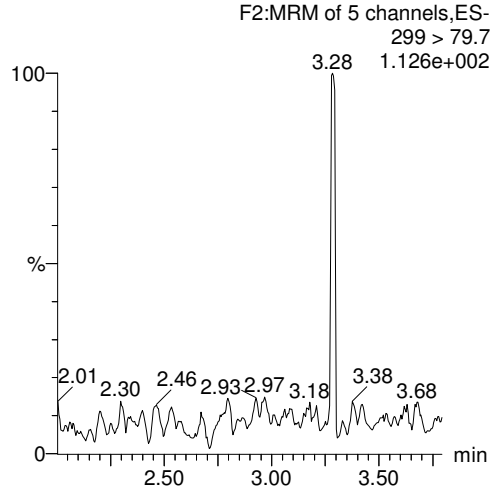
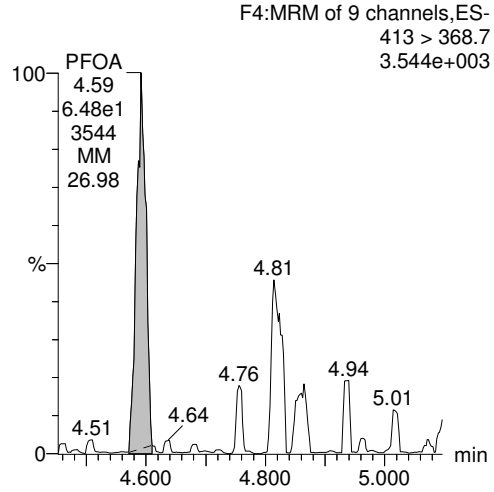
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-40, Date: 16-Dec-2017, Time: 22:33:48, ID: 1701904-16 CH-AT-1FB151-1217 0.25227, Description: CH-AT-1FB151-1217

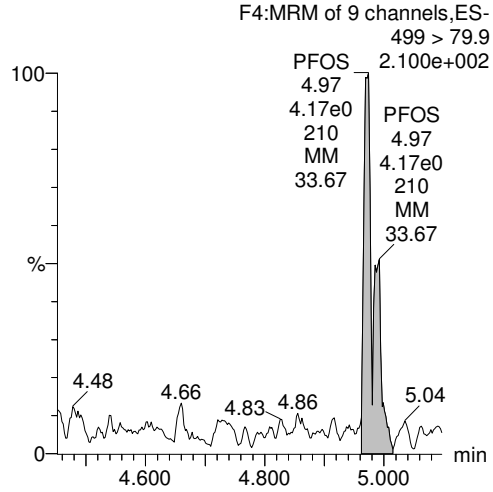
PFBS



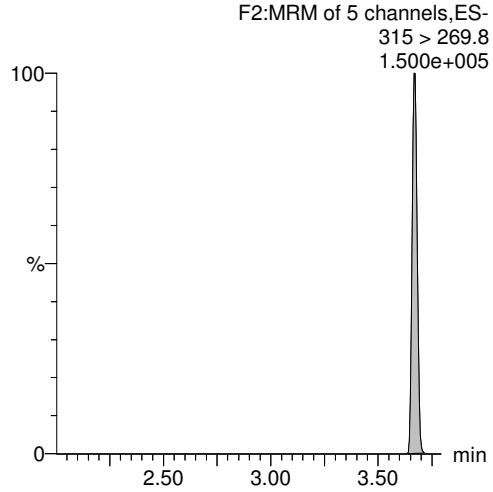
PFOA



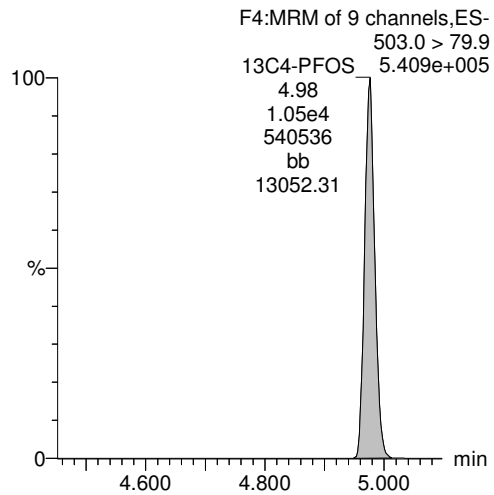
PFOS



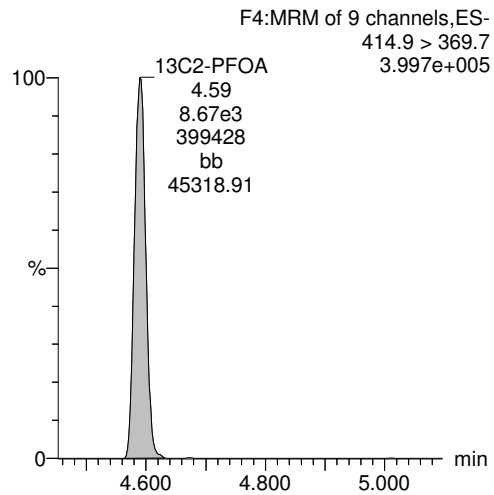
13C2-PFHxA



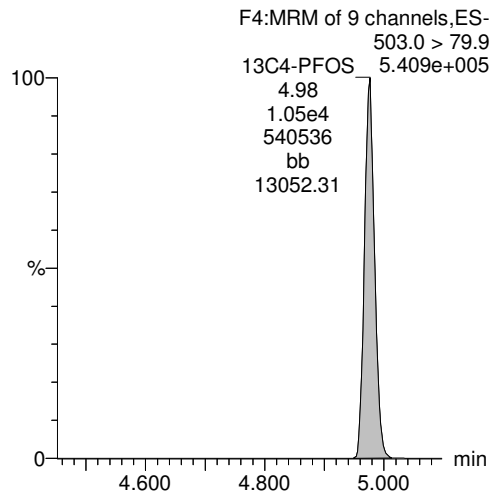
13C4-PFOS



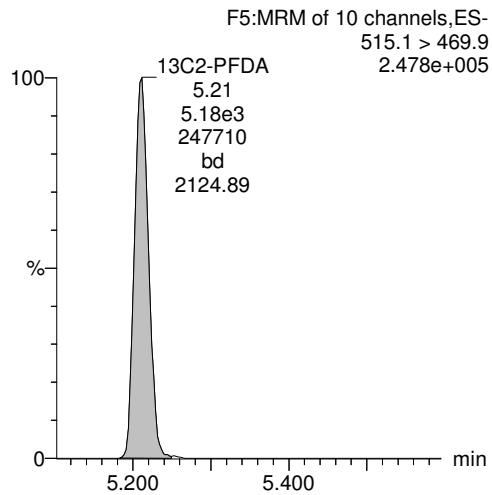
13C2-PFOA



13C4-PFOS



13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-41.qld

Last Altered: Monday, December 18, 2017 14:45:05 Pacific Standard Time
Printed: Monday, December 18, 2017 14:45:34 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-41, Date: 16-Dec-2017, Time: 22:46:14, ID: 1701904-17 CH-AT-1RW152-1217 0.24369, Description: CH-AT-1RW152-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		1.01e4		0.2437	3.28				
2	5	PFOA	413 > 368.7	4.07e1	9.18e3		0.2437	4.59	4.59	0.0443	0.228	
3	7	PFOS	499 >79.9	8.74e-1	1.01e4		0.2437	4.97	4.98	0.00248	0.00811	
4	15	13C2-PFHxA	315 > 269.8	3.98e3	9.18e3	0.431	0.2437	3.68	3.67	4.34	41.3	100.7
5	16	13C2-PFDA	515.1 > 469.9	4.93e3	9.18e3	0.602	0.2437	5.23	5.21	5.37	36.6	89.1
6	18	13C2-PFOA	414.9 > 369.7	9.18e3	9.18e3	1.000	0.2437	4.41	4.59	10.0	41.0	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2437	4.81	4.97	28.7	118	100.0

MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-41.qld

Last Altered: Monday, December 18, 2017 14:45:05 Pacific Standard Time
Printed: Monday, December 18, 2017 14:45:34 Pacific Standard Time

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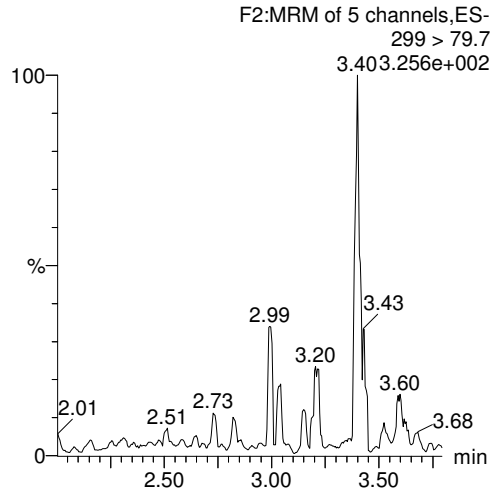
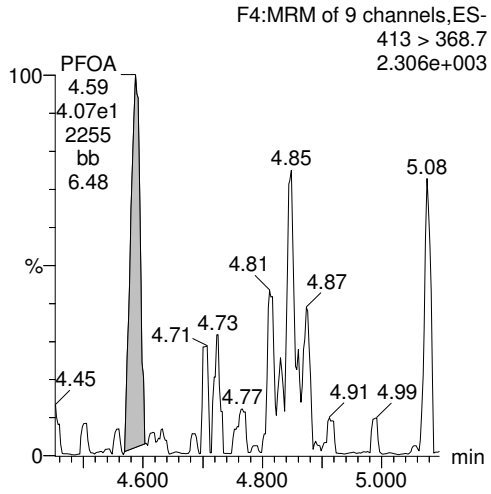
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-41, Date: 16-Dec-2017, Time: 22:46:14, ID: 1701904-17 CH-AT-1RW152-1217 0.24369, Description: CH-AT-1RW152-1217

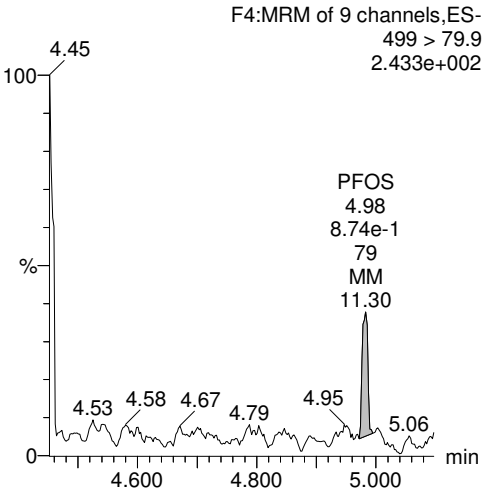
PFBS



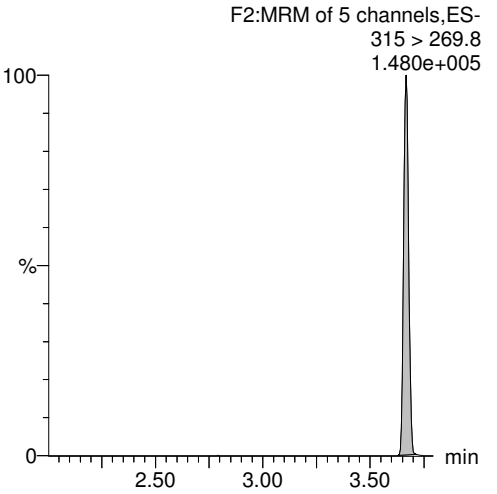
PFOA



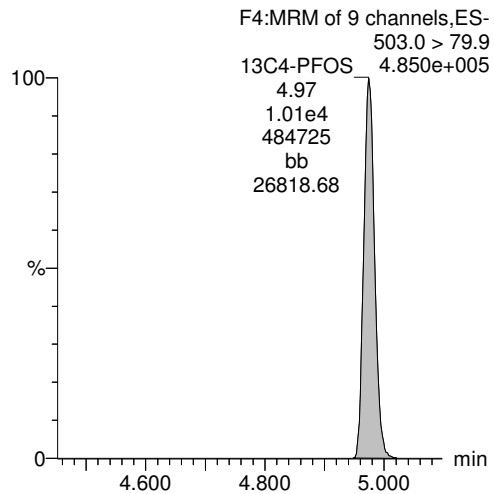
PFOS



13C2-PFHxA



13C4-PFOS



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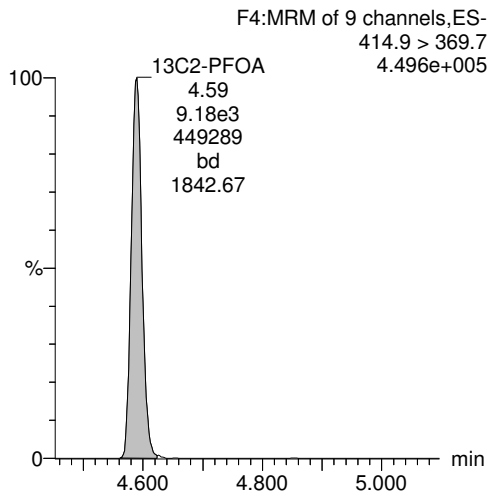
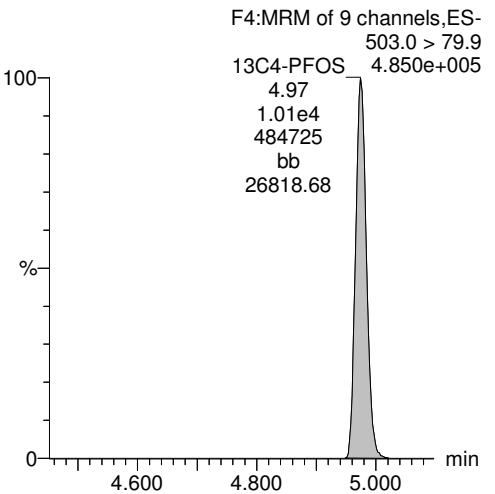
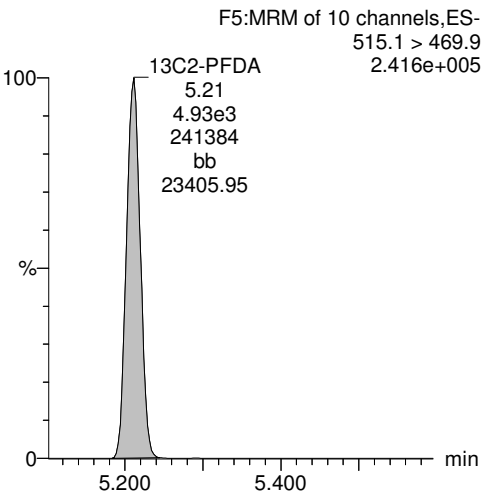


13C4-PFOS



13C2-PFDA



MJT12/18/2017

Vista Analytical Laboratory

Rev'd: MM 12/18/17

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-42.qld

Last Altered: Monday, December 18, 2017 14:48:14 Pacific Standard Time
Printed: Monday, December 18, 2017 14:48:29 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-42, Date: 16-Dec-2017, Time: 22:58:41, ID: 1701904-18 CH-AT-1FB152-1217 0.25097, Description: CH-AT-1FB152-1217

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7		9.66e3		0.2510	3.28				
2	5	PFOA	413 > 368.7	7.72e1	8.52e3		0.2510	4.59	4.59	0.0906	0.452	
3	7	PFOS	499 >79.9		9.66e3		0.2510	4.98				
4	15	13C2-PFHxA	315 > 269.8	3.54e3	8.52e3	0.431	0.2510	3.68	3.67	4.15	38.4	96.3
5	16	13C2-PFDA	515.1 > 469.9	4.10e3	8.52e3	0.602	0.2510	5.23	5.21	4.81	31.8	79.8
6	18	13C2-PFOA	414.9 > 369.7	8.52e3	8.52e3	1.000	0.2510	4.41	4.59	10.0	39.8	100.0
7	19	13C4-PFOS	503.0 > 79.9	9.66e3	9.66e3	1.000	0.2510	4.81	4.98	28.7	114	100.0

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Vista Analytical Laboratory

Rev'd: MM 12/18/17

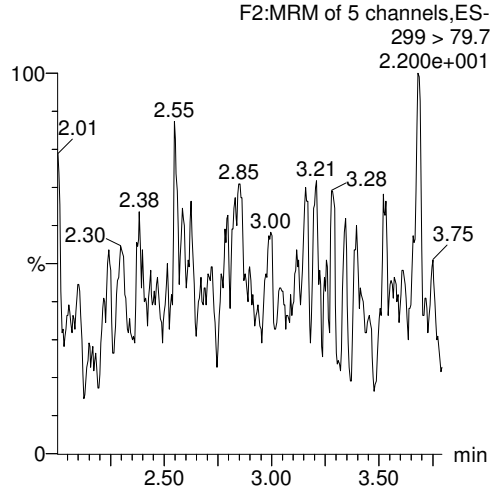
Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-42.qld

Last Altered: Monday, December 18, 2017 14:48:14 Pacific Standard Time
Printed: Monday, December 18, 2017 14:48:29 Pacific Standard Time

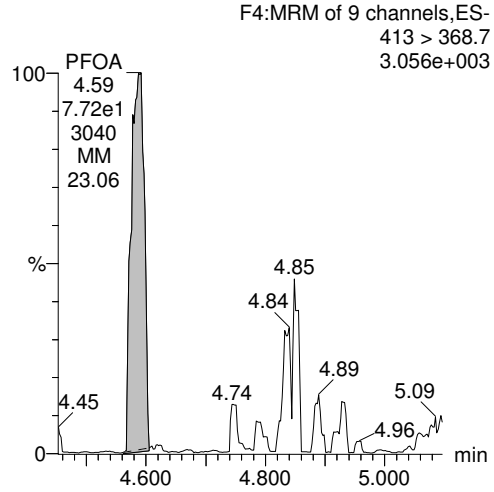
Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-42, Date: 16-Dec-2017, Time: 22:58:41, ID: 1701904-18 CH-AT-1FB152-1217 0.25097, Description: CH-AT-1FB152-1217

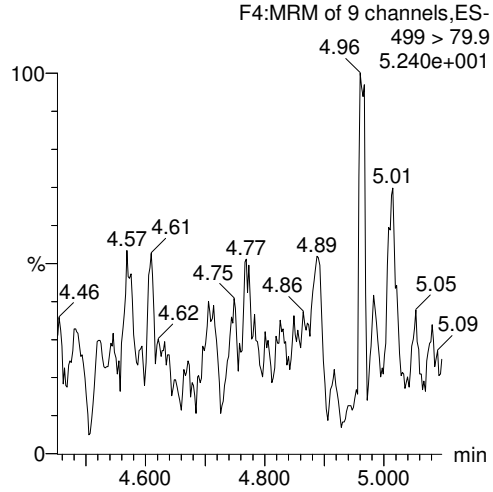
PFBS



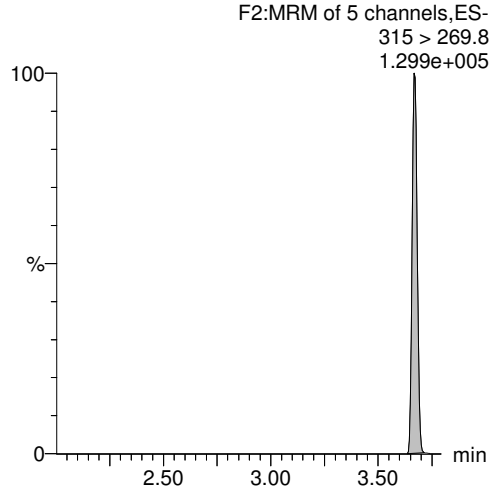
PFOA



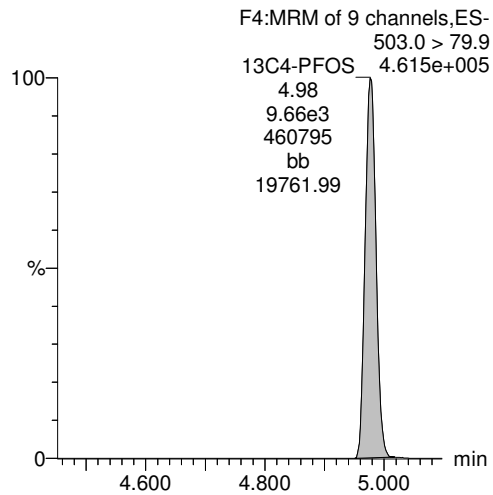
PFOS



13C2-PFHxA



13C4-PFOS



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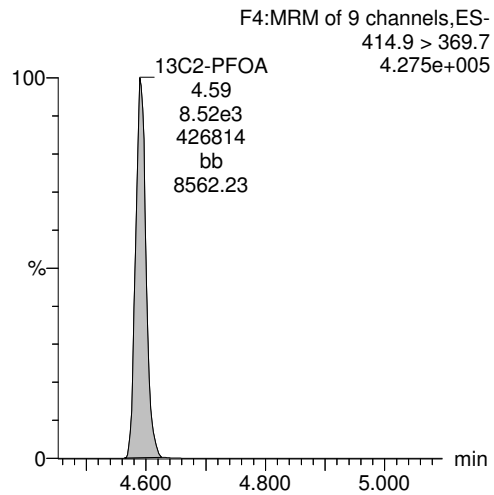

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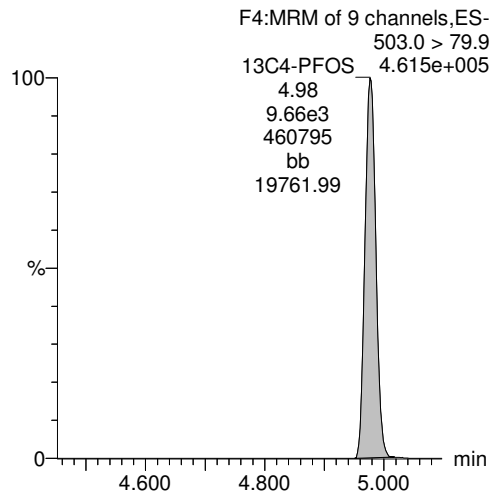

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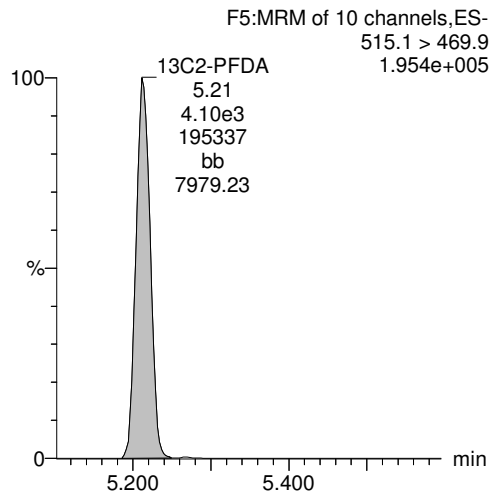

MJT 12/18/17

INJECTION INTERNAL STANDARD (IIS) AREAS,

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

ICAL

Compound 18: 13C2-PFOA

	ID	Name	Typ	Std. Conc	RT	Area	ICAL Area	%AREA
1	ICV171216G2-1 PFC ICV 537 17L1427	171216G2-19	Ana	10	4.61	11338	10723.6	105.7
2	IPA	171216G2-20	Ana	10			10723.6	0.0
3	B7L0107-BS1 LFB 0.25	171216G2-21	Analyte		4.61	8403.4	10723.6	78.4
4	B7L0107-BSD1 LFBD 0.25	171216G2-22	Analyte		4.61	8695.3	10723.6	81.1
5	IPA	171216G2-23	Ana	10			10723.6	0.0
6	B7L0107-BLK1 LRB 0.25	171216G2-24	Analyte		4.61	9756.8	10723.6	91.0
7	1701904-01 CH-AT-2RW56-1217 0.23857	171216G2-25	Analyte		4.6	9190.8	10723.6	85.7
8	1701904-02 CH-AT-2FB56-1217 0.25142	171216G2-26	Analyte		4.6	9931.9	10723.6	92.6
9	1701904-03 CH-AT-2RW57-1217 0.25267	171216G2-27	Analyte		4.6	9329.5	10723.6	87.0
10	1701904-04 CH-AT-2FB57-1217 0.25375	171216G2-28	Analyte		4.6	9565.7	10723.6	89.2
11	1701904-05 CH-AT-2RW58-1217 0.24802	171216G2-29	Analyte		4.6	9259.6	10723.6	86.3
12	1701904-06 CH-AT-2FB58-1217 0.25352	171216G2-30	Analyte		4.6	9019.7	10723.6	84.1
13	1701904-07 CH-AT-2RW59-1217 0.25598	171216G2-31	Analyte		4.6	9379.4	10723.6	87.5
14	1701904-08 CH-AT-2FB59-1217 0.25333	171216G2-32	Analyte		4.6	9498.8	10723.6	88.6
15	1701904-09 CH-AT-2RW60-1217 0.23976	171216G2-33	Analyte		4.6	9024.1	10723.6	84.2
16	1701904-10 CH-AT-2FB60-1217 0.25701	171216G2-34	Analyte		4.6	8660.2	10723.6	80.8
17	1701904-11 CH-AT-2RW61-1217 0.24858	171216G2-35	Analyte		4.59	9138.2	10723.6	85.2
18	1701904-12 CH-AT-2FB61-1217 0.24745	171216G2-36	Analyte		4.59	9441.8	10723.6	88.0
19	1701904-13 CH-AT-1RW150-1217 0.25123	171216G2-37	Analyte		4.59	8792	10723.6	82.0
20	1701904-14 CH-AT-1FB150-1217 0.26176	171216G2-38	Analyte		4.59	8321.4	10723.6	77.6
21	1701904-15 CH-AT-1RW151-1217 0.24188	171216G2-39	Analyte		4.59	8555.7	10723.6	79.8
22	1701904-16 CH-AT-1FB151-1217 0.25227	171216G2-40	Analyte		4.59	8674	10723.6	80.9
23	1701904-17 CH-AT-1RW152-1217 0.24369	171216G2-41	Analyte		4.59	9180.2	10723.6	85.6
24	1701904-18 CH-AT-1FB152-1217 0.25097	171216G2-42	Analyte		4.59	8519.3	10723.6	79.4
25	IPA	171216G2-43	Ana	10			10723.6	0.0
26	ST171216G2-10 PFC CS3 537 17L1424	171216G2-44	Ana	10	4.59	10067	10723.6	93.9
27	IPA	171216G2-45	Ana	10				

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Printed Mon Dec 18 12:09:43 2017

ICAL

Compound 19: 13C4-PFOS

	ID	Name	Typ	Std. Conc	RT	Area	ICAL Area	%AREA
1	ICV171216G2-1 PFC ICV 537 17L1427	171216G2-19	Ana	28.7	4.99	14090	12571.04	112.1
2	IPA	171216G2-20	Ana	28.7	4.99	6.152	12571.04	0.0
3	B7L0107-BS1 LFB 0.25	171216G2-21	Analyte		4.99	10920	12571.04	86.9
4	B7L0107-BSD1 LFBD 0.25	171216G2-22	Analyte		4.99	11164	12571.04	88.8
5	IPA	171216G2-23	Ana	28.7			12571.04	0.0
6	B7L0107-BLK1 LRB 0.25	171216G2-24	Analyte		4.99	11613	12571.04	92.4
7	1701904-01 CH-AT-2RW56-1217 0.23857	171216G2-25	Analyte		4.99	12158	12571.04	96.7
8	1701904-02 CH-AT-2FB56-1217 0.25142	171216G2-26	Analyte		4.99	11760	12571.04	93.5
9	1701904-03 CH-AT-2RW57-1217 0.25267	171216G2-27	Analyte		4.99	11812	12571.04	94.0
10	1701904-04 CH-AT-2FB57-1217 0.25375	171216G2-28	Analyte		4.99	11087	12571.04	88.2
11	1701904-05 CH-AT-2RW58-1217 0.24802	171216G2-29	Analyte		4.98	11662	12571.04	92.8
12	1701904-06 CH-AT-2FB58-1217 0.25352	171216G2-30	Analyte		4.99	11035	12571.04	87.8
13	1701904-07 CH-AT-2RW59-1217 0.25598	171216G2-31	Analyte		4.98	11414	12571.04	90.8
14	1701904-08 CH-AT-2FB59-1217 0.25333	171216G2-32	Analyte		4.98	10383	12571.04	82.6
15	1701904-09 CH-AT-2RW60-1217 0.23976	171216G2-33	Analyte		4.98	10502	12571.04	83.5
16	1701904-10 CH-AT-2FB60-1217 0.25701	171216G2-34	Analyte		4.98	11246	12571.04	89.5
17	1701904-11 CH-AT-2RW61-1217 0.24858	171216G2-35	Analyte		4.98	11319	12571.04	90.0
18	1701904-12 CH-AT-2FB61-1217 0.24745	171216G2-36	Analyte		4.98	11789	12571.04	93.8
19	1701904-13 CH-AT-1RW150-1217 0.25123	171216G2-37	Analyte		4.98	10789	12571.04	85.8
20	1701904-14 CH-AT-1FB150-1217 0.26176	171216G2-38	Analyte		4.98	9666.4	12571.04	76.9
21	1701904-15 CH-AT-1RW151-1217 0.24188	171216G2-39	Analyte		4.98	11080	12571.04	88.1
22	1701904-16 CH-AT-1FB151-1217 0.25227	171216G2-40	Analyte		4.98	10495	12571.04	83.5
23	1701904-17 CH-AT-1RW152-1217 0.24369	171216G2-41	Analyte		4.97	10128	12571.04	80.6
24	1701904-18 CH-AT-1FB152-1217 0.25097	171216G2-42	Analyte		4.98	9662.3	12571.04	76.9
25	IPA	171216G2-43	Ana	28.7			12571.04	0.0
26	ST171216G2-10 PFC CS3 537 17L1424	171216G2-44	Ana	28.7	4.97	11157	12571.04	88.8
27	IPA	171216G2-45	Ana	28.7				

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Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-44.qld

Last Altered: Monday, December 18, 2017 12:34:55 Pacific Standard Time
Printed: Monday, December 18, 2017 12:44:38 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-44, Date: 16-Dec-2017, Time: 23:23:35, ID: ST171216G2-10 PFC CS3 537 17L1424, Description: PFC CS3 537 17L1424

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.36e4	1.12e4		1.0000	3.28	3.28	35.0	42.9	97.0
2	5	PFOA	413 > 368.7	4.13e4	1.01e4		1.0000	4.59	4.59	41.0	51.4	102.7
3	7	PFOS	499 >79.9	2.16e4	1.12e4		1.0000	4.97	4.97	55.6	44.4	96.1
4	15	13C2-PFHxA	315 > 269.8	4.75e3	1.01e4	0.431	1.0000	3.68	3.67	4.72	11.0	109.5
5	16	13C2-PFDA	515.1 > 469.9	5.34e3	1.01e4	0.602	1.0000	5.23	5.21	5.30	8.80	88.0
6	18	13C2-PFOA	414.9 > 369.7	1.01e4	1.01e4	1.000	1.0000	4.41	4.59	10.0	10.0	100.0
7	19	13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	1.0000	4.81	4.97	28.7	28.7	100.0

70-130 %

MJT 12/18/17

VJA 12/18/2017

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 18, 2017 13:37:23 Pacific Standard Time
Printed: Monday, December 18, 2017 13:37:55 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_DW_L14_1214.mdb 15 Dec 2017 11:50:26
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171216G2-1	IPA	16-Dec-17	14:13:55
2	171216G2-2	IPA	16-Dec-17	14:26:23
3	171216G2-3	IPA	16-Dec-17	14:38:51
4	171216G2-4	IPA	16-Dec-17	14:51:18
5	171216G2-5	IPA	16-Dec-17	15:03:45
6	171216G2-6	IPA	16-Dec-17	15:16:13
7	171216G2-7	TESTER CS3	16-Dec-17	15:38:25
8	171216G2-8	TESTER CS-1	16-Dec-17	15:51:01
9	171216G2-9	ST171216G2-1 PFC CS-3 537 17L1418	16-Dec-17	16:07:59
10	171216G2-10	ST171216G2-2 PFC CS-2 537 17L1419	16-Dec-17	16:20:23
11	171216G2-11	ST171216G2-3 PFC CS-1 537 17L1420	16-Dec-17	16:32:48
12	171216G2-12	ST171216G2-4 PFC CS0 537 17L1421	16-Dec-17	16:45:13
13	171216G2-13	ST171216G2-5 PFC CS1 537 17L1422	16-Dec-17	16:57:39
14	171216G2-14	ST171216G2-6 PFC CS2 537 17L1423	16-Dec-17	17:10:07
15	171216G2-15	ST171216G2-7 PFC CS3 537 17L1424	16-Dec-17	17:22:33
16	171216G2-16	ST171216G2-8 PFC CS4 537 17L1425	16-Dec-17	17:35:01
17	171216G2-17	ST171216G2-9 PFC CS5 537 17L1426	16-Dec-17	17:47:29
18	171216G2-18	IPA	16-Dec-17	17:59:53
19	171216G2-19	ICV171216G2-1 PFC ICV 537 17L1427	16-Dec-17	18:12:21
20	171216G2-20	IPA	16-Dec-17	18:24:46
21	171216G2-21	B7L0107-BS1 LFB 0.25	16-Dec-17	18:37:14
22	171216G2-22	B7L0107-BSD1 LFBD 0.25	16-Dec-17	18:49:39
23	171216G2-23	IPA	16-Dec-17	19:02:05
24	171216G2-24	B7L0107-BLK1 LRB 0.25	16-Dec-17	19:14:32
25	171216G2-25	1701904-01 CH-AT-2RW56-1217 0.23857	16-Dec-17	19:26:57
26	171216G2-26	1701904-02 CH-AT-2FB56-1217 0.25142	16-Dec-17	19:39:24
27	171216G2-27	1701904-03 CH-AT-2RW57-1217 0.25267	16-Dec-17	19:51:52
28	171216G2-28	1701904-04 CH-AT-2FB57-1217 0.25375	16-Dec-17	20:04:20
29	171216G2-29	1701904-05 CH-AT-2RW58-1217 0.24802	16-Dec-17	20:16:44
30	171216G2-30	1701904-06 CH-AT-2FB58-1217 0.25352	16-Dec-17	20:29:09
31	171216G2-31	1701904-07 CH-AT-2RW59-1217 0.25598	16-Dec-17	20:41:33
32	171216G2-32	1701904-08 CH-AT-2FB59-1217 0.25333	16-Dec-17	20:53:58

Dataset: Untitled

Last Altered: Monday, December 18, 2017 13:37:23 Pacific Standard Time
Printed: Monday, December 18, 2017 13:37:55 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
33	171216G2-33	1701904-09 CH-AT-2RW60-1217 0.23976	16-Dec-17	21:06:42
34	171216G2-34	1701904-10 CH-AT-2FB60-1217 0.25701	16-Dec-17	21:19:15
35	171216G2-35	1701904-11 CH-AT-2RW61-1217 0.24858	16-Dec-17	21:31:42
36	171216G2-36	1701904-12 CH-AT-2FB61-1217 0.24745	16-Dec-17	21:44:10
37	171216G2-37	1701904-13 CH-AT-1RW150-1217 0.25123	16-Dec-17	21:56:34
38	171216G2-38	1701904-14 CH-AT-1FB150-1217 0.26176	16-Dec-17	22:08:58
39	171216G2-39	1701904-15 CH-AT-1RW151-1217 0.24188	16-Dec-17	22:21:23
40	171216G2-40	1701904-16 CH-AT-1FB151-1217 0.25227	16-Dec-17	22:33:48
41	171216G2-41	1701904-17 CH-AT-1RW152-1217 0.24369	16-Dec-17	22:46:14
42	171216G2-42	1701904-18 CH-AT-1FB152-1217 0.25097	16-Dec-17	22:58:41
43	171216G2-43	IPA	16-Dec-17	23:11:07
44	171216G2-44	ST171216G2-10 PFC CS3 537 17L1424	16-Dec-17	23:23:35
45	171216G2-45	IPA	16-Dec-17	23:36:02

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Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-44.qld

Last Altered: Monday, December 18, 2017 12:34:55 Pacific Standard Time
Printed: Monday, December 18, 2017 12:44:38 Pacific Standard Time

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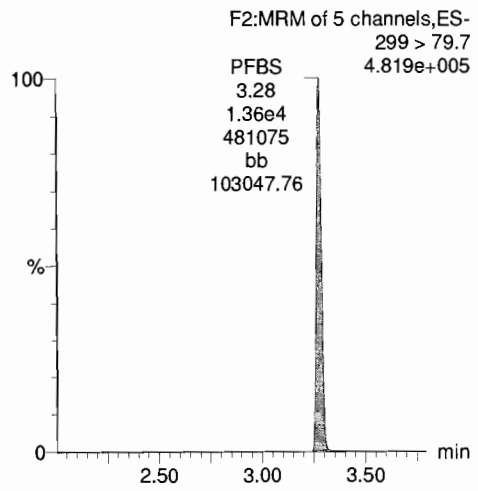
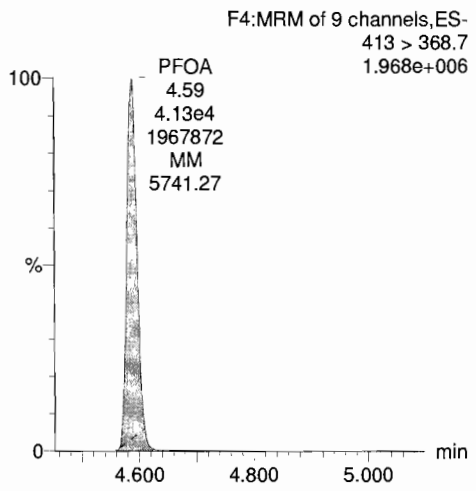
Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-44, Date: 16-Dec-2017, Time: 23:23:35, ID: ST171216G2-10 PFC CS3 537 17L1424, Description: PFC CS3 537 17L1424

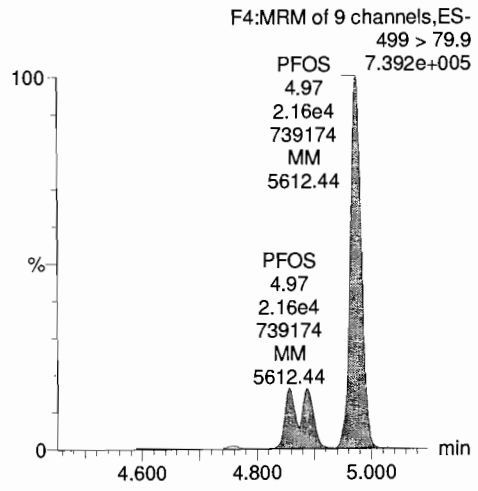
PFBS



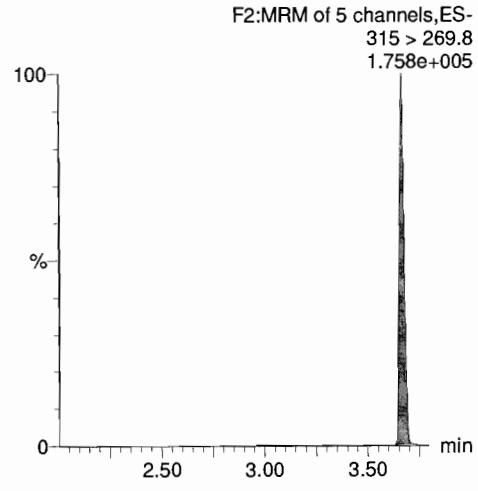
PFOA



PFOS



13C2-PFHxA



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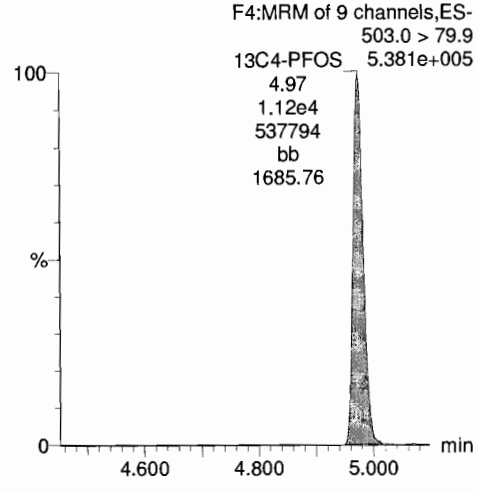
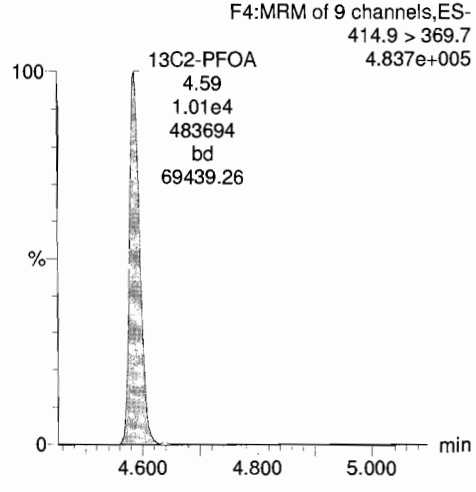
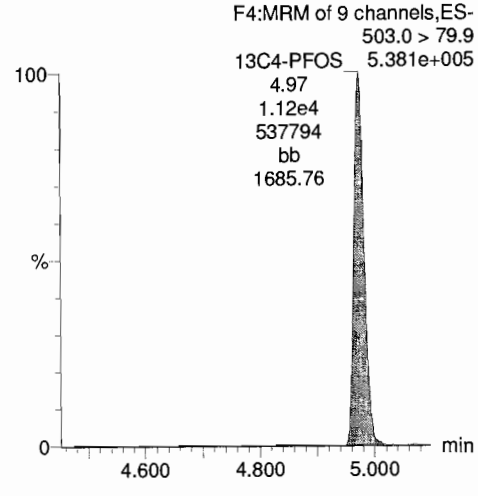


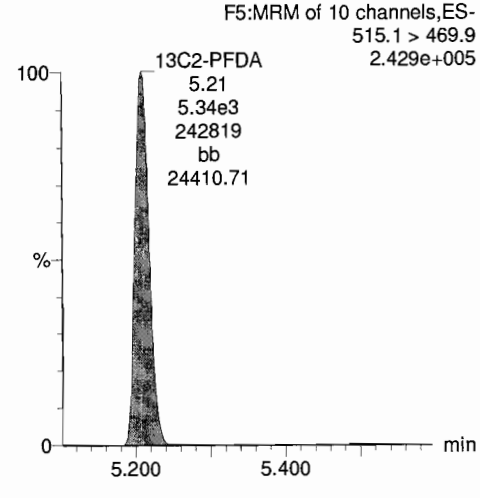
13C2-PFOA



13C4-PFOS



13C2-PFDA



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

INITIAL CALIBRATION VERIFICATION (ICV) AND INSTRUMENT BLANK (IB)

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:38:49 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

MJT 12/18/17

✓ JH 12/18/2017

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999463
Calibration curve: 0.815838 * x
Response type: Internal Std (Ref 19), 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	171216G2-9	Standard	0.443	3.31	162.876	14324.527	0.326	0.4	-9.6	NO	0.999	NO	bbX
2	2	171216G2-10	Standard	0.885	3.31	336.979	13534.720	0.715	0.9	-1.0	NO	0.999	NO	bb
3	3	171216G2-11	Standard	1.770	3.31	651.219	12926.765	1.446	1.8	0.1	NO	0.999	NO	bb
4	4	171216G2-12	Standard	4.420	3.31	1546.936	12919.998	3.436	4.2	-4.7	NO	0.999	NO	bb
5	5	171216G2-13	Standard	8.850	3.31	3150.514	13292.188	6.802	8.3	-5.8	NO	0.999	NO	bb
6	6	171216G2-14	Standard	22.100	3.31	7859.291	12276.330	18.374	22.5	1.9	NO	0.999	NO	bb
7	7	171216G2-15	Standard	44.200	3.31	14584.632	11391.944	36.743	45.0	1.9	NO	0.999	NO	bb
8	8	171216G2-16	Standard	66.300	3.30	21790.234	11655.357	53.656	65.8	-0.8	NO	0.999	NO	bb
9	9	171216G2-17	Standard	88.400	3.30	28694.436	10737.759	76.695	94.0	6.3	NO	0.999	NO	bbX

Compound name: PFHxA
Coefficient of Determination: R^2 = 0.998446
Calibration curve: 0.217604 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	3.71	179.351	11451.849	0.157	0.7	43.9	NO	0.998	NO	MMX
2	2	171216G2-10	Standard	1.000	3.71	310.555	10799.798	0.288	1.3	32.1	NO	0.998	NO	MM
3	3	171216G2-11	Standard	2.000	3.70	621.747	11191.183	0.556	2.6	27.7	NO	0.998	NO	MM
4	4	171216G2-12	Standard	5.000	3.70	1228.942	10585.336	1.161	5.3	6.7	NO	0.998	NO	MM
5	5	171216G2-13	Standard	10.000	3.70	2372.527	11054.179	2.146	9.9	-1.4	NO	0.998	NO	MM
6	6	171216G2-14	Standard	25.000	3.70	5548.298	10660.352	5.205	23.9	-4.3	NO	0.998	NO	MM
7	7	171216G2-15	Standard	50.000	3.70	11023.742	10294.256	10.709	49.2	-1.6	NO	0.998	NO	MM
8	8	171216G2-16	Standard	75.000	3.70	15833.438	9751.885	16.236	74.6	-0.5	NO	0.998	NO	MM
9	9	171216G2-17	Standard	100.000	3.70	20460.676	9292.692	22.018	101.2	1.2	NO	0.998	NO	MM

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Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

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Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999152
Calibration curve: 0.798357 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	4.23	401.101	11451.849	0.350	0.4	-12.3	NO	0.999	NO	MM
2	2	171216G2-10	Standard	1.000	4.22	847.118	10799.798	0.784	1.0	-1.8	NO	0.999	NO	MM
3	3	171216G2-11	Standard	2.000	4.22	1758.919	11191.183	1.572	2.0	-1.6	NO	0.999	NO	MM
4	4	171216G2-12	Standard	5.000	4.21	4406.714	10585.336	4.163	5.2	4.3	NO	0.999	NO	MM
5	5	171216G2-13	Standard	10.000	4.21	8443.121	11054.179	7.638	9.6	-4.3	NO	0.999	NO	MM
6	6	171216G2-14	Standard	25.000	4.21	20797.498	10660.352	19.509	24.4	-2.3	NO	0.999	NO	MM
7	7	171216G2-15	Standard	50.000	4.21	40158.895	10294.256	39.011	48.9	-2.3	NO	0.999	NO	MM
8	8	171216G2-16	Standard	75.000	4.21	59969.816	9751.885	61.496	77.0	2.7	NO	0.999	NO	MM
9	9	171216G2-17	Standard	100.000	4.21	76923.648	9292.692	82.779	103.7	3.7	NO	0.999	NO	MMX

Compound name: PFHxS
Coefficient of Determination: R^2 = 0.998272
Calibration curve: 0.952404 * x
Response type: Internal Std (Ref 19), 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	171216G2-9	Standard	0.455	4.34	192.719	14324.527	0.386	0.4	-10.9	NO	0.998	NO	MMX
2	2	171216G2-10	Standard	0.910	4.33	429.011	13534.720	0.910	1.0	5.0	NO	0.998	NO	MM
3	3	171216G2-11	Standard	1.820	4.33	756.040	12926.765	1.679	1.8	-3.2	NO	0.998	NO	MM
4	4	171216G2-12	Standard	4.560	4.33	1927.068	12919.998	4.281	4.5	-1.4	NO	0.998	NO	MM
5	5	171216G2-13	Standard	9.120	4.32	3558.063	13292.188	7.682	8.1	-11.6	NO	0.998	NO	MM
6	6	171216G2-14	Standard	22.800	4.32	9288.928	12276.330	21.716	22.8	0.0	NO	0.998	NO	MM
7	7	171216G2-15	Standard	45.600	4.32	17992.545	11391.944	45.329	47.6	4.4	NO	0.998	NO	MM
8	8	171216G2-16	Standard	68.400	4.32	26121.576	11655.357	64.321	67.5	-1.3	NO	0.998	NO	MM
9	9	171216G2-17	Standard	91.200	4.32	32908.965	10737.759	87.959	92.4	1.3	NO	0.998	NO	MMX

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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Compound name: PFOA
Coefficient of Determination: R^2 = 0.999126
Calibration curve: 0.798539 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	4.63	461.050	11451.849	0.403	0.5	0.8	NO	0.999	NO	MM
2	2	171216G2-10	Standard	1.000	4.62	1064.253	10799.798	0.985	1.2	23.4	NO	0.999	NO	MM
3	3	171216G2-11	Standard	2.000	4.62	1751.160	11191.183	1.565	2.0	-2.0	NO	0.999	NO	MM
4	4	171216G2-12	Standard	5.000	4.62	4047.855	10585.336	3.824	4.8	-4.2	NO	0.999	NO	MM
5	5	171216G2-13	Standard	10.000	4.62	9320.276	11054.179	8.431	10.6	5.6	NO	0.999	NO	MM
6	6	171216G2-14	Standard	25.000	4.62	21859.672	10660.352	20.506	25.7	2.7	NO	0.999	NO	MM
7	7	171216G2-15	Standard	50.000	4.62	40356.008	10294.256	39.202	49.1	-1.8	NO	0.999	NO	MM
8	8	171216G2-16	Standard	75.000	4.61	58157.813	9751.885	59.638	74.7	-0.4	NO	0.999	NO	MM
9	9	171216G2-17	Standard	100.000	4.61	76379.023	9292.692	82.193	102.9	2.9	NO	0.999	NO	MMX

Compound name: PFNA
Coefficient of Determination: R^2 = 0.997983
Calibration curve: 0.931848 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	4.96	533.994	11451.849	0.466	0.5	0.1	NO	0.998	NO	MM
2	2	171216G2-10	Standard	1.000	4.96	940.292	10799.798	0.871	0.9	-6.6	NO	0.998	NO	MM
3	3	171216G2-11	Standard	2.000	4.95	2018.879	11191.183	1.804	1.9	-3.2	NO	0.998	NO	MM
4	4	171216G2-12	Standard	5.000	4.95	5457.339	10585.336	5.156	5.5	10.7	NO	0.998	NO	MM
5	5	171216G2-13	Standard	10.000	4.95	9998.343	11054.179	9.045	9.7	-2.9	NO	0.998	NO	MM
6	6	171216G2-14	Standard	25.000	4.95	22658.732	10660.352	21.255	22.8	-8.8	NO	0.998	NO	MM
7	7	171216G2-15	Standard	50.000	4.95	48246.895	10294.256	46.868	50.3	0.6	NO	0.998	NO	MM
8	8	171216G2-16	Standard	75.000	4.94	69776.750	9751.885	71.552	76.8	2.4	NO	0.998	NO	MM
9	9	171216G2-17	Standard	100.000	4.94	86204.922	9292.692	92.766	99.6	-0.4	NO	0.998	NO	MMX

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Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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Compound name: PFOS
Coefficient of Determination: R^2 = 0.997754
Calibration curve: 1.25338 * x
Response type: Internal Std (Ref 19), 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	171216G2-9	Standard	0.464	5.01	239.904	14324.527	0.481	0.4	-17.4	NO	0.998	NO	MMX
2	2	171216G2-10	Standard	0.925	5.01	470.710	13534.720	0.998	0.8	-13.9	NO	0.998	NO	MM
3	3	171216G2-11	Standard	1.850	5.01	1051.938	12926.765	2.336	1.9	0.7	NO	0.998	NO	MM
4	4	171216G2-12	Standard	4.625	5.00	2670.010	12919.998	5.931	4.7	2.3	NO	0.998	NO	MM
5	5	171216G2-13	Standard	9.250	5.00	4969.387	13292.188	10.730	8.6	-7.5	NO	0.998	NO	MM
6	6	171216G2-14	Standard	23.100	5.00	12386.591	12276.330	28.958	23.1	0.0	NO	0.998	NO	MM
7	7	171216G2-15	Standard	46.200	5.00	24355.307	11391.944	61.359	49.0	6.0	NO	0.998	NO	MM
8	8	171216G2-16	Standard	69.300	5.00	34225.441	11655.357	84.276	67.2	-3.0	NO	0.998	NO	MM
9	9	171216G2-17	Standard	92.400	5.00	44937.156	10737.759	120.109	95.8	3.7	NO	0.998	NO	MMX

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999050
Calibration curve: -0.000556908 * x^2 + 0.886608 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, 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	171216G2-9	Standard	0.500	5.25	644.902	11451.849	0.563	0.6	27.1	NO	0.999	NO	MM
2	2	171216G2-10	Standard	1.000	5.24	1183.299	10799.798	1.096	1.2	23.7	NO	0.999	NO	MM
3	3	171216G2-11	Standard	2.000	5.24	2012.200	11191.183	1.798	2.0	1.5	NO	0.999	NO	MM
4	4	171216G2-12	Standard	5.000	5.24	4643.445	10585.336	4.387	5.0	-0.7	NO	0.999	NO	MM
5	5	171216G2-13	Standard	10.000	5.24	9864.173	11054.179	8.923	10.1	1.3	NO	0.999	NO	MM
6	6	171216G2-14	Standard	25.000	5.24	22385.563	10660.352	20.999	24.0	-3.8	NO	0.999	NO	MM
7	7	171216G2-15	Standard	50.000	5.23	44589.059	10294.256	43.315	50.5	0.9	NO	0.999	NO	MM
8	8	171216G2-16	Standard	75.000	5.23	61795.375	9751.885	63.368	75.0	0.0	NO	0.999	NO	MM
9	9	171216G2-17	Standard	100.000	5.23	79238.859	9292.692	85.270	102.8	2.8	NO	0.999	NO	MMX

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Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.999604
Calibration curve: 0.00361609 * x^2 + 2.52998 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, 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	171216G2-9	Standard	0.500	5.37	239.002	7149.723	1.337	0.5	5.6	NO	1.000	NO	MM
2	2	171216G2-10	Standard	1.000	5.36	378.238	6658.350	2.272	0.9	-10.3	NO	1.000	NO	MM
3	3	171216G2-11	Standard	2.000	5.37	724.112	6472.295	4.475	1.8	-11.8	NO	1.000	NO	MM
4	4	171216G2-12	Standard	5.000	5.36	2089.795	6155.667	13.580	5.3	6.5	NO	1.000	NO	MM
5	5	171216G2-13	Standard	10.000	5.36	3939.154	6280.129	25.090	9.8	-2.2	NO	1.000	NO	MM
6	6	171216G2-14	Standard	25.000	5.35	10467.558	6356.821	65.867	25.1	0.5	NO	1.000	NO	MM
7	7	171216G2-15	Standard	50.000	5.36	20405.707	5989.695	136.272	50.3	0.5	NO	1.000	NO	MM
8	8	171216G2-16	Standard	75.000	5.36	31757.504	6062.900	209.520	74.8	-0.2	NO	1.000	NO	MM
9	9	171216G2-17	Standard	100.000	5.35	40027.078	5115.337	312.997	107.3	7.3	NO	1.000	NO	MMX

Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.997900
Calibration curve: 1.89593 * x
Response type: Internal Std (Ref 20), 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	171216G2-9	Standard	0.500	5.49	172.534	7149.723	0.965	0.5	1.8	NO	0.998	NO	MM
2	2	171216G2-10	Standard	1.000	5.48	325.896	6658.350	1.958	1.0	3.3	NO	0.998	NO	MM
3	3	171216G2-11	Standard	2.000	5.48	583.906	6472.295	3.609	1.9	-4.8	NO	0.998	NO	MM
4	4	171216G2-12	Standard	5.000	5.48	1571.738	6155.667	10.213	5.4	7.7	NO	0.998	NO	MM
5	5	171216G2-13	Standard	10.000	5.48	3016.886	6280.129	19.215	10.1	1.4	NO	0.998	NO	MM
6	6	171216G2-14	Standard	25.000	5.48	7365.462	6356.821	46.347	24.4	-2.2	NO	0.998	NO	MM
7	7	171216G2-15	Standard	50.000	5.48	15011.362	5989.695	100.248	52.9	5.8	NO	0.998	NO	MM
8	8	171216G2-16	Standard	75.000	5.47	20751.586	6062.900	136.909	72.2	-3.7	NO	0.998	NO	MM
9	9	171216G2-17	Standard	100.000	5.47	25938.957	5115.337	202.833	107.0	7.0	NO	0.998	NO	MMX

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Compound name: PFUnA
Coefficient of Determination: R^2 = 0.998998
Calibration curve: 0.852106 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	5.50	515.437	11451.849	0.450	0.5	5.6	NO	0.999	NO	MM
2	2	171216G2-10	Standard	1.000	5.49	996.053	10799.798	0.922	1.1	8.2	NO	0.999	NO	MM
3	3	171216G2-11	Standard	2.000	5.49	1866.703	11191.183	1.668	2.0	-2.1	NO	0.999	NO	MM
4	4	171216G2-12	Standard	5.000	5.49	4686.649	10585.336	4.427	5.2	3.9	NO	0.999	NO	MM
5	5	171216G2-13	Standard	10.000	5.49	9493.643	11054.179	8.588	10.1	0.8	NO	0.999	NO	MM
6	6	171216G2-14	Standard	25.000	5.49	24167.361	10660.352	22.670	26.6	6.4	NO	0.999	NO	MM
7	7	171216G2-15	Standard	50.000	5.49	43050.797	10294.256	41.820	49.1	-1.8	NO	0.999	NO	MM
8	8	171216G2-16	Standard	75.000	5.48	61469.266	9751.885	63.033	74.0	-1.4	NO	0.999	NO	MM
9	9	171216G2-17	Standard	100.000	5.48	78342.750	9292.692	84.306	98.9	-1.1	NO	0.999	NO	MMX

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999658
Calibration curve: 0.179736 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	5.72	79.897	11451.849	0.070	0.4	-22.4	NO	1.000	NO	MM
2	2	171216G2-10	Standard	1.000	5.71	197.199	10799.798	0.183	1.0	1.6	NO	1.000	NO	MM
3	3	171216G2-11	Standard	2.000	5.71	402.312	11191.183	0.359	2.0	0.0	NO	1.000	NO	MM
4	4	171216G2-12	Standard	5.000	5.71	1014.377	10585.336	0.958	5.3	6.6	NO	1.000	NO	MM
5	5	171216G2-13	Standard	10.000	5.71	1965.815	11054.179	1.778	9.9	-1.1	NO	1.000	NO	MM
6	6	171216G2-14	Standard	25.000	5.70	4792.867	10660.352	4.496	25.0	0.1	NO	1.000	NO	MM
7	7	171216G2-15	Standard	50.000	5.70	9179.188	10294.256	8.917	49.6	-0.8	NO	1.000	NO	MM
8	8	171216G2-16	Standard	75.000	5.70	13188.628	9751.885	13.524	75.2	0.3	NO	1.000	NO	MM
9	9	171216G2-17	Standard	100.000	5.70	16899.688	9292.692	18.186	101.2	1.2	NO	1.000	NO	MMX

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Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999525
Calibration curve: 1.40909 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	5.90	901.878	11451.849	0.788	0.6	11.8	NO	1.000	NO	MM
2	2	171216G2-10	Standard	1.000	5.89	1598.682	10799.798	1.480	1.1	5.1	NO	1.000	NO	MM
3	3	171216G2-11	Standard	2.000	5.89	3255.377	11191.183	2.909	2.1	3.2	NO	1.000	NO	MM
4	4	171216G2-12	Standard	5.000	5.89	8129.971	10585.336	7.680	5.5	9.0	NO	1.000	NO	MM
5	5	171216G2-13	Standard	10.000	5.89	15654.644	11054.179	14.162	10.1	0.5	NO	1.000	NO	MM
6	6	171216G2-14	Standard	25.000	5.89	36867.684	10660.352	34.584	24.5	-1.8	NO	1.000	NO	MM
7	7	171216G2-15	Standard	50.000	5.89	71585.781	10294.256	69.540	49.4	-1.3	NO	1.000	NO	MM
8	8	171216G2-16	Standard	75.000	5.88	103651.789	9751.885	106.289	75.4	0.6	NO	1.000	NO	MM
9	9	171216G2-17	Standard	100.000	5.88	134279.656	9292.692	144.500	102.5	2.5	NO	1.000	NO	MMX

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.998912
Calibration curve: 1.35258 * x
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	0.500	6.06	806.934	11451.849	0.705	0.5	4.2	NO	0.999	NO	MM
2	2	171216G2-10	Standard	1.000	6.06	1468.431	10799.798	1.360	1.0	0.5	NO	0.999	NO	MM
3	3	171216G2-11	Standard	2.000	6.05	3190.886	11191.183	2.851	2.1	5.4	NO	0.999	NO	MM
4	4	171216G2-12	Standard	5.000	6.05	7550.233	10585.336	7.133	5.3	5.5	NO	0.999	NO	MM
5	5	171216G2-13	Standard	10.000	6.05	14967.491	11054.179	13.540	10.0	0.1	NO	0.999	NO	MM
6	6	171216G2-14	Standard	25.000	6.05	33828.637	10660.352	31.733	23.5	-6.2	NO	0.999	NO	MM
7	7	171216G2-15	Standard	50.000	6.05	68746.055	10294.256	66.781	49.4	-1.3	NO	0.999	NO	MM
8	8	171216G2-16	Standard	75.000	6.05	101231.008	9751.885	103.807	76.7	2.3	NO	0.999	NO	MM
9	9	171216G2-17	Standard	100.000	6.04	135919.578	9292.692	146.265	108.1	8.1	NO	0.999	NO	MMX

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Compound name: 13C2-PFHxA
Response Factor: 0.430944
RRF SD: 0.0128812, Relative SD: 2.98906
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	10.000	3.71	4831.916	11451.849	4.219	9.8	-2.1	NO		NO	bb
2	2	171216G2-10	Standard	10.000	3.70	4918.695	10799.798	4.554	10.6	5.7	NO		NO	bb
3	3	171216G2-11	Standard	10.000	3.70	4636.519	11191.183	4.143	9.6	-3.9	NO		NO	bb
4	4	171216G2-12	Standard	10.000	3.70	4570.420	10585.336	4.318	10.0	0.2	NO		NO	bb
5	5	171216G2-13	Standard	10.000	3.70	4704.054	11054.179	4.255	9.9	-1.3	NO		NO	bb
6	6	171216G2-14	Standard	10.000	3.70	4655.772	10660.352	4.367	10.1	1.3	NO		NO	bd
7	7	171216G2-15	Standard	10.000	3.70	4349.868	10294.256	4.226	9.8	-1.9	NO		NO	bd
8	8	171216G2-16	Standard	10.000	3.70	4283.688	9751.885	4.393	10.2	1.9	NO		NO	bb
9	9	171216G2-17	Standard	10.000	3.69	4342.621	9292.692	4.673	10.8	8.4	NO		NO	bbX

Compound name: 13C2-PFDA
Response Factor: 0.602408
RRF SD: 0.0420449, Relative SD: 6.97947
Response type: Internal Std (Ref 18), 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	171216G2-9	Standard	10.000	5.25	7830.743	11451.849	6.838	11.4	13.5	NO		NO	bd
2	2	171216G2-10	Standard	10.000	5.24	6802.831	10799.798	6.299	10.5	4.6	NO		NO	bb
3	3	171216G2-11	Standard	10.000	5.24	6514.169	11191.183	5.821	9.7	-3.4	NO		NO	bb
4	4	171216G2-12	Standard	10.000	5.24	6582.097	10585.336	6.218	10.3	3.2	NO		NO	bb
5	5	171216G2-13	Standard	10.000	5.24	6142.107	11054.179	5.556	9.2	-7.8	NO		NO	bb
6	6	171216G2-14	Standard	10.000	5.24	6047.019	10660.352	5.672	9.4	-5.8	NO		NO	bd
7	7	171216G2-15	Standard	10.000	5.23	5914.402	10294.256	5.745	9.5	-4.6	NO		NO	bb
8	8	171216G2-16	Standard	10.000	5.23	5892.646	9751.885	6.043	10.0	0.3	NO		NO	bb
9	9	171216G2-17	Standard	10.000	5.23	5575.048	9292.692	5.999	10.0	-0.4	NO		NO	bbX

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Compound name: d5-N-EtFOSAA
Response Factor: 1.20544
RRF SD: 0.0942859, Relative SD: 7.82167
Response type: Internal Std (Ref 20), 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 171216G2-9	Standard	40.000	5.48	9030.316	7149.723	50.521	41.9	4.8	NO		NO	bdX
2	2 171216G2-10	Standard	40.000	5.48	7815.607	6658.350	46.952	39.0	-2.6	NO		NO	bb
3	3 171216G2-11	Standard	40.000	5.48	7771.687	6472.295	48.030	39.8	-0.4	NO		NO	bd
4	4 171216G2-12	Standard	40.000	5.48	7989.681	6155.667	51.918	43.1	7.7	NO		NO	bb
5	5 171216G2-13	Standard	40.000	5.47	8165.495	6280.129	52.008	43.1	7.9	NO		NO	bb
6	6 171216G2-14	Standard	40.000	5.47	7858.083	6356.821	49.447	41.0	2.5	NO		NO	bd
7	7 171216G2-15	Standard	40.000	5.47	6154.469	5989.695	41.100	34.1	-14.8	NO		NO	bd
8	8 171216G2-16	Standard	40.000	5.47	6846.348	6062.900	45.169	37.5	-6.3	NO		NO	bd
9	9 171216G2-17	Standard	40.000	5.47	6537.074	5115.337	51.117	42.4	6.0	NO		NO	bd

Compound name: 13C2-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 18), 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 171216G2-9	Standard	10.000	4.63	11451.849	11451.849	10.000	10.0	0.0	NO		NO	bb
2	2 171216G2-10	Standard	10.000	4.62	10799.798	10799.798	10.000	10.0	0.0	NO		NO	bb
3	3 171216G2-11	Standard	10.000	4.62	11191.183	11191.183	10.000	10.0	0.0	NO		NO	bb
4	4 171216G2-12	Standard	10.000	4.62	10585.336	10585.336	10.000	10.0	0.0	NO		NO	bb
5	5 171216G2-13	Standard	10.000	4.62	11054.179	11054.179	10.000	10.0	0.0	NO		NO	bb
6	6 171216G2-14	Standard	10.000	4.61	10660.352	10660.352	10.000	10.0	0.0	NO		NO	bb
7	7 171216G2-15	Standard	10.000	4.61	10294.256	10294.256	10.000	10.0	0.0	NO		NO	bb
8	8 171216G2-16	Standard	10.000	4.61	9751.885	9751.885	10.000	10.0	0.0	NO		NO	bd
9	9 171216G2-17	Standard	10.000	4.61	9292.692	9292.692	10.000	10.0	0.0	NO		NO	bbX

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Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 19), 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	171216G2-9	Standard	28.700	5.01	14324.527	14324.527	28.700	28.7	0.0	NO		NO	bdX
2	2	171216G2-10	Standard	28.700	5.01	13534.720	13534.720	28.700	28.7	0.0	NO		NO	bd
3	3	171216G2-11	Standard	28.700	5.01	12926.765	12926.765	28.700	28.7	0.0	NO		NO	bd
4	4	171216G2-12	Standard	28.700	5.00	12919.998	12919.998	28.700	28.7	0.0	NO		NO	bb
5	5	171216G2-13	Standard	28.700	5.00	13292.188	13292.188	28.700	28.7	0.0	NO		NO	bb
6	6	171216G2-14	Standard	28.700	5.00	12276.330	12276.330	28.700	28.7	0.0	NO		NO	bb
7	7	171216G2-15	Standard	28.700	5.00	11391.944	11391.944	28.700	28.7	0.0	NO		NO	bb
8	8	171216G2-16	Standard	28.700	5.00	11655.357	11655.357	28.700	28.7	0.0	NO		NO	bd
9	9	171216G2-17	Standard	28.700	5.00	10737.759	10737.759	28.700	28.7	0.0	NO		NO	bbX

Compound name: d3-N-MeFOSAA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 20), 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	171216G2-9	Standard	40.000	5.37	7149.723	7149.723	40.000	40.0	0.0	NO		NO	bd
2	2	171216G2-10	Standard	40.000	5.36	6658.350	6658.350	40.000	40.0	0.0	NO		NO	bb
3	3	171216G2-11	Standard	40.000	5.36	6472.295	6472.295	40.000	40.0	0.0	NO		NO	bd
4	4	171216G2-12	Standard	40.000	5.36	6155.667	6155.667	40.000	40.0	0.0	NO		NO	bd
5	5	171216G2-13	Standard	40.000	5.36	6280.129	6280.129	40.000	40.0	0.0	NO		NO	bd
6	6	171216G2-14	Standard	40.000	5.35	6356.821	6356.821	40.000	40.0	0.0	NO		NO	bd
7	7	171216G2-15	Standard	40.000	5.35	5989.695	5989.695	40.000	40.0	0.0	NO		NO	bb
8	8	171216G2-16	Standard	40.000	5.35	6062.900	6062.900	40.000	40.0	0.0	NO		NO	bb
9	9	171216G2-17	Standard	40.000	5.35	5115.337	5115.337	40.000	40.0	0.0	NO		NO	bbX

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Compound 18: 13C2-PFOA

	#	Name	Type	Std. Con	RT	Area	IS Area	Respons	Primary	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	171216G2-9	Standard	10	4.63	11452	11452	10	bb	10	0	16-Dec-17	16:07:59	18-Dec-17	100	1	1	
2	2	171216G2-10	Standard	10	4.62	10800	10800	10	bb	10	0	16-Dec-17	16:20:23	18-Dec-17	100	1	1	
3	3	171216G2-11	Standard	10	4.62	11191	11191	10	bb	10	0	16-Dec-17	16:32:48	18-Dec-17	100	1	1	
4	4	171216G2-12	Standard	10	4.62	10585	10585	10	bb	10	0	16-Dec-17	16:45:13	18-Dec-17	100	1	1	
5	5	171216G2-13	Standard	10	4.62	11054	11054	10	bb	10	0	16-Dec-17	16:57:39	18-Dec-17	100	1	1	
6	6	171216G2-14	Standard	10	4.61	10660	10660	10	bb	10	0	16-Dec-17	17:10:07	18-Dec-17	100	1	1	
7	7	171216G2-15	Standard	10	4.61	10294	10294	10	bb	10	0	16-Dec-17	17:22:33	18-Dec-17	100	1	1	
8	8	171216G2-16	Standard	10	4.61	9751.9	9751.9	10	bd	10	0	16-Dec-17	17:35:01	18-Dec-17	100	1	1	
9	9	171216G2-17	Standard	10	4.61	9292.7	9292.7	10	bbX	10	0	16-Dec-17	17:47:29	18-Dec-17	100	1	1	

Compound 18: 13C2-PFOA

RPD	HIGH ARE	11452
	LOW ARE/	9752
	RPD %	16.0

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUM

Quantify Compound Summary Report

Printed Mon Dec 18 10:29:03 2017

Compound 19: 13C4-PFOS

	#	Name	Type	Std. Con	RT	Area	IS Area	Respons	Primary	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	171216G2-9	Standard	28.7	5.01	14325	14325	28.7	bdX	28.7	0	16-Dec-17	16:07:59	18-Dec-17	100	1	1	
2	2	171216G2-10	Standard	28.7	5.01	13535	13535	28.7	bd	28.7	0	16-Dec-17	16:20:23	18-Dec-17	100	1	1	
3	3	171216G2-11	Standard	28.7	5.01	12927	12927	28.7	bd	28.7	0	16-Dec-17	16:32:48	18-Dec-17	100	1	1	
4	4	171216G2-12	Standard	28.7	5	12920	12920	28.7	bb	28.7	0	16-Dec-17	16:45:13	18-Dec-17	100	1	1	
5	5	171216G2-13	Standard	28.7	5	13292	13292	28.7	bb	28.7	0	16-Dec-17	16:57:39	18-Dec-17	100	1	1	
6	6	171216G2-14	Standard	28.7	5	12276	12276	28.7	bb	28.7	0	16-Dec-17	17:10:07	18-Dec-17	100	1	1	
7	7	171216G2-15	Standard	28.7	5	11392	11392	28.7	bb	28.7	0	16-Dec-17	17:22:33	18-Dec-17	100	1	1	
8	8	171216G2-16	Standard	28.7	5	11655	11655	28.7	bd	28.7	0	16-Dec-17	17:35:01	18-Dec-17	100	1	1	
9	9	171216G2-17	Standard	28.7	5	10738	10738	28.7	bbX	28.7	0	16-Dec-17	17:47:29	18-Dec-17	100	1	1	

Compound 19: 13C4-PFOS

RPD

HIGH ARE	13535
LOW ARE	11655
RPD %	14.9

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUM

Quantify Compound Summary Report

Printed Mon Dec 18 10:30:11 2017

Compound 20: d3-N-MeFOSAA

	#	Name	Type	Std. Con	RT	Area	IS Area	Respons	Primary	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	171216G2-9	Standard	40	5.37	7149.7	7149.7	40	bd	40	0	16-Dec-17	16:07:59	18-Dec-17	100	1	1	
2	2	171216G2-10	Standard	40	5.36	6658.4	6658.4	40	bb	40	0	16-Dec-17	16:20:23	18-Dec-17	100	1	1	
3	3	171216G2-11	Standard	40	5.36	6472.3	6472.3	40	bd	40	0	16-Dec-17	16:32:48	18-Dec-17	100	1	1	
4	4	171216G2-12	Standard	40	5.36	6155.7	6155.7	40	bd	40	0	16-Dec-17	16:45:13	18-Dec-17	100	1	1	
5	5	171216G2-13	Standard	40	5.36	6280.1	6280.1	40	bd	40	0	16-Dec-17	16:57:39	18-Dec-17	100	1	1	
6	6	171216G2-14	Standard	40	5.35	6356.8	6356.8	40	bd	40	0	16-Dec-17	17:10:07	18-Dec-17	100	1	1	
7	7	171216G2-15	Standard	40	5.35	5989.7	5989.7	40	bb	40	0	16-Dec-17	17:22:33	18-Dec-17	100	1	1	
8	8	171216G2-16	Standard	40	5.35	6062.9	6062.9	40	bb	40	0	16-Dec-17	17:35:01	18-Dec-17	100	1	1	
9	9	171216G2-17	Standard	40	5.35	5115.3	5115.3	40	bbX	40	0	16-Dec-17	17:47:29	18-Dec-17	100	1	1	

Compound 20: d3-N-MeFOSAA

RPD	HIGH ARE	7150
	LOW ARE/	5990
	RPD %	17.7

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUM

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, December 18, 2017 10:41:04 Pacific Standard Time
Printed: Monday, December 18, 2017 10:41:31 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 18 Dec 2017 10:00:01
Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171216G2-9	ST171216G2-1 PFC CS-3 537 17L1418	16-Dec-17	16:07:59
2	171216G2-10	ST171216G2-2 PFC CS-2 537 17L1419	16-Dec-17	16:20:23
3	171216G2-11	ST171216G2-3 PFC CS-1 537 17L1420	16-Dec-17	16:32:48
4	171216G2-12	ST171216G2-4 PFC CS0 537 17L1421	16-Dec-17	16:45:13
5	171216G2-13	ST171216G2-5 PFC CS1 537 17L1422	16-Dec-17	16:57:39
6	171216G2-14	ST171216G2-6 PFC CS2 537 17L1423	16-Dec-17	17:10:07
7	171216G2-15	ST171216G2-7 PFC CS3 537 17L1424	16-Dec-17	17:22:33
8	171216G2-16	ST171216G2-8 PFC CS4 537 17L1425	16-Dec-17	17:35:01
9	171216G2-17	ST171216G2-9 PFC CS5 537 17L1426	16-Dec-17	17:47:29
10	171216G2-18	IPA	16-Dec-17	17:59:53
11	171216G2-19	ICV171216G2-1 PFC ICV 537 17L1427	16-Dec-17	18:12:21
12	171216G2-20	IPA	16-Dec-17	18:24:46

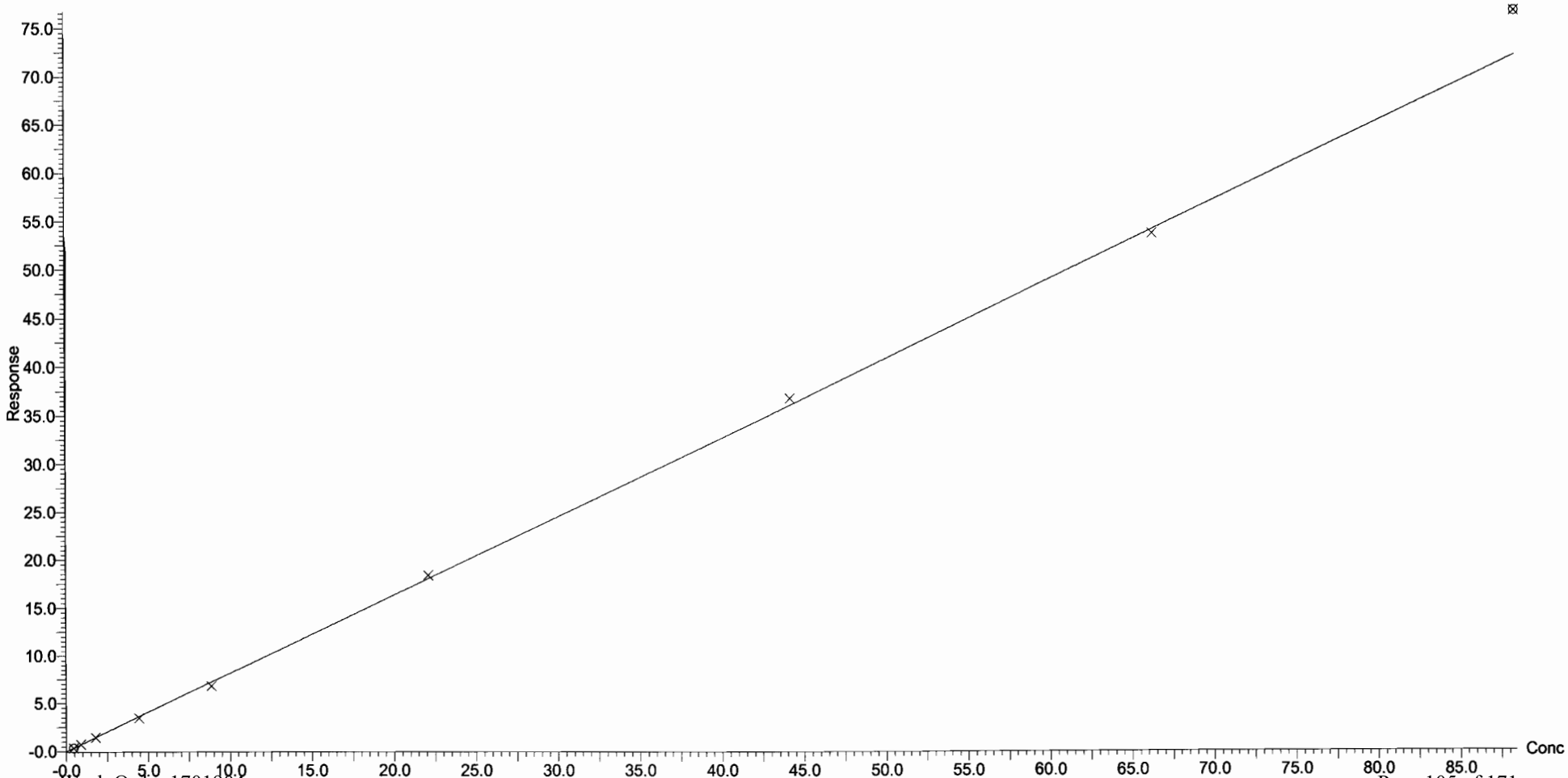
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L14_1217.mdb 17 Dec 2017 15:10:41
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999463
Calibration curve: 0.815838 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

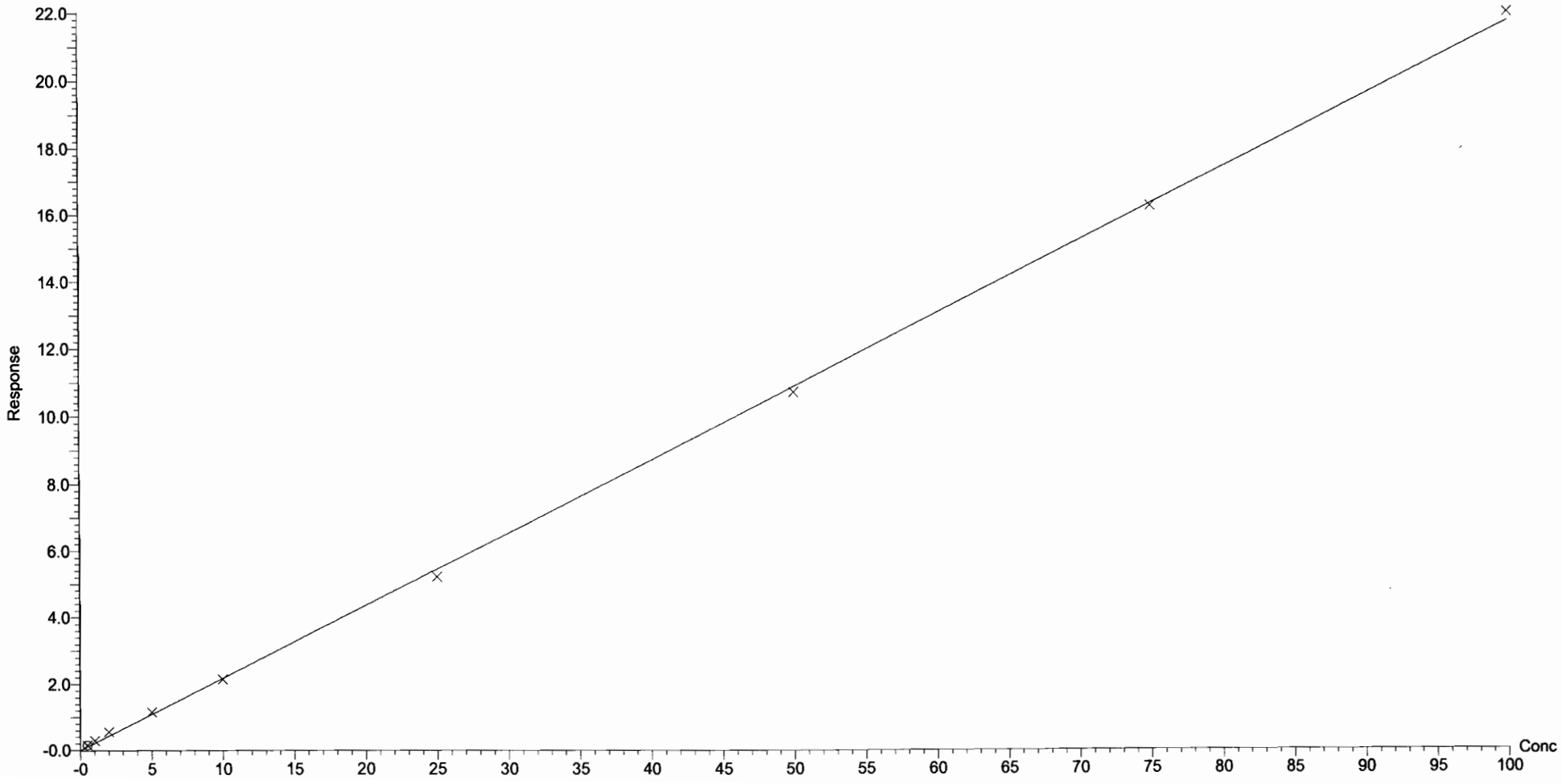


Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

Compound name: PFHxA
Coefficient of Determination: R^2 = 0.998446
Calibration curve: 0.217604 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

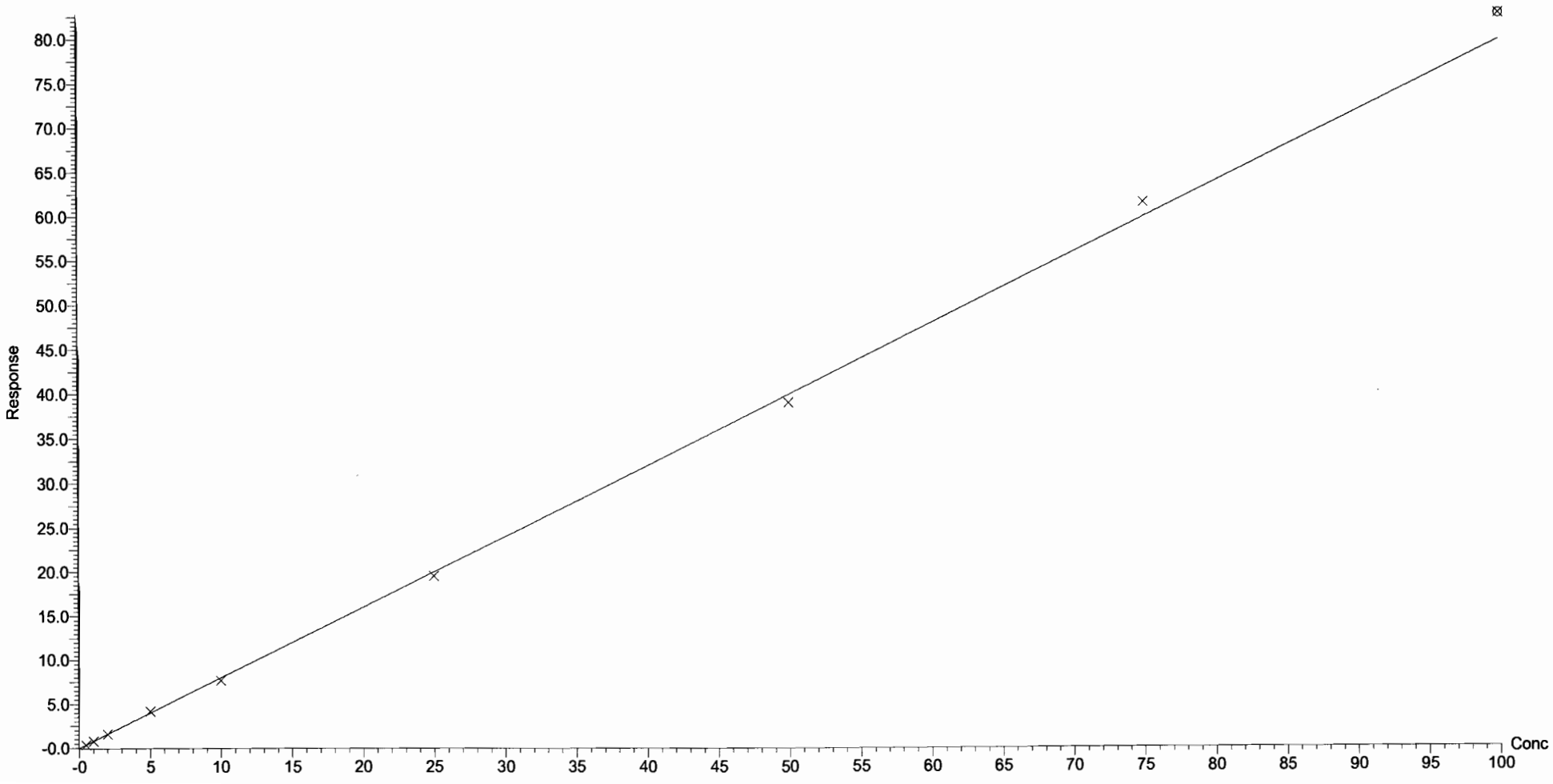


Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

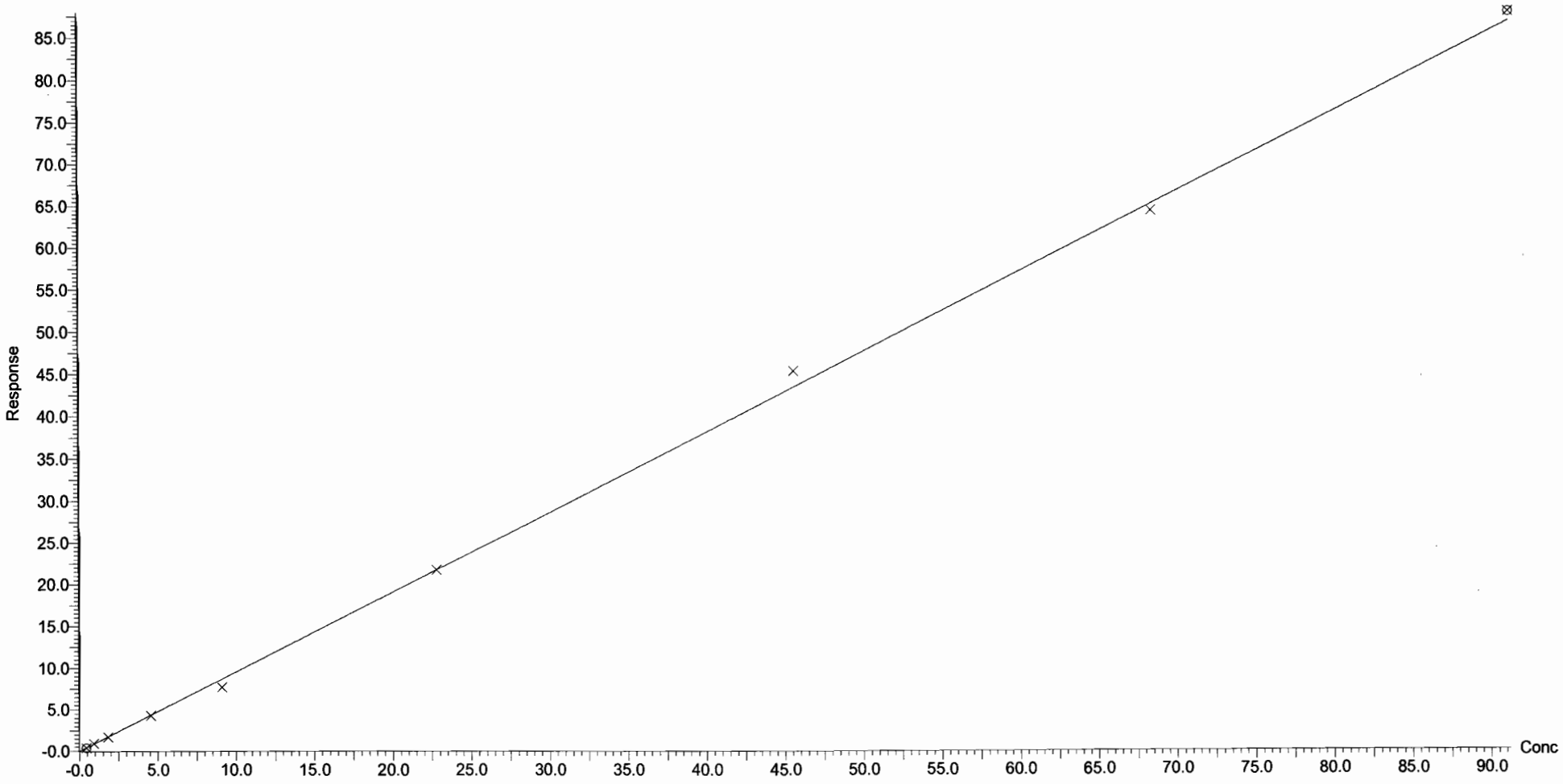
Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999152
Calibration curve: 0.798357 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

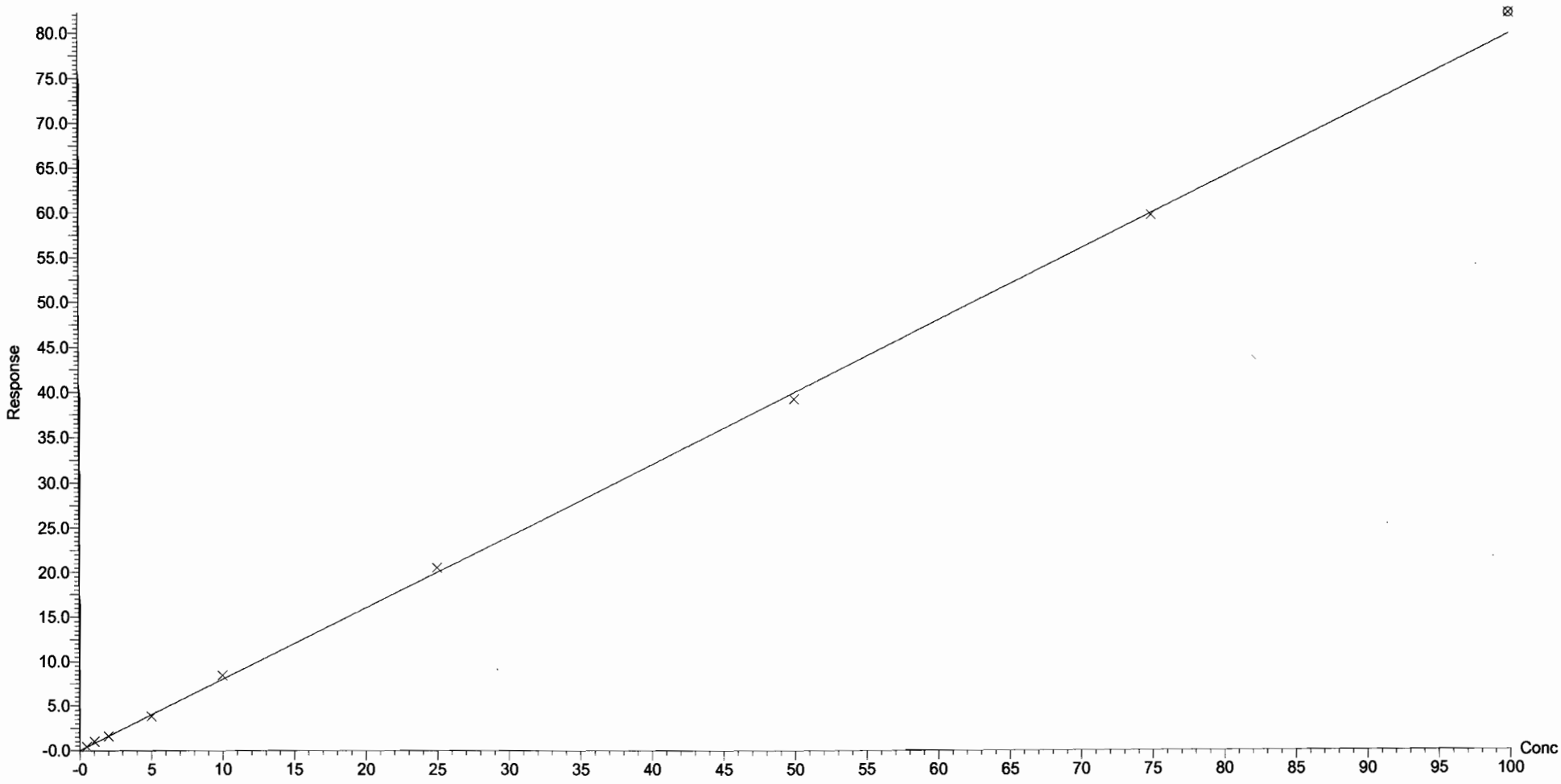
Compound name: PFHxS
Coefficient of Determination: R^2 = 0.998272
Calibration curve: 0.952404 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

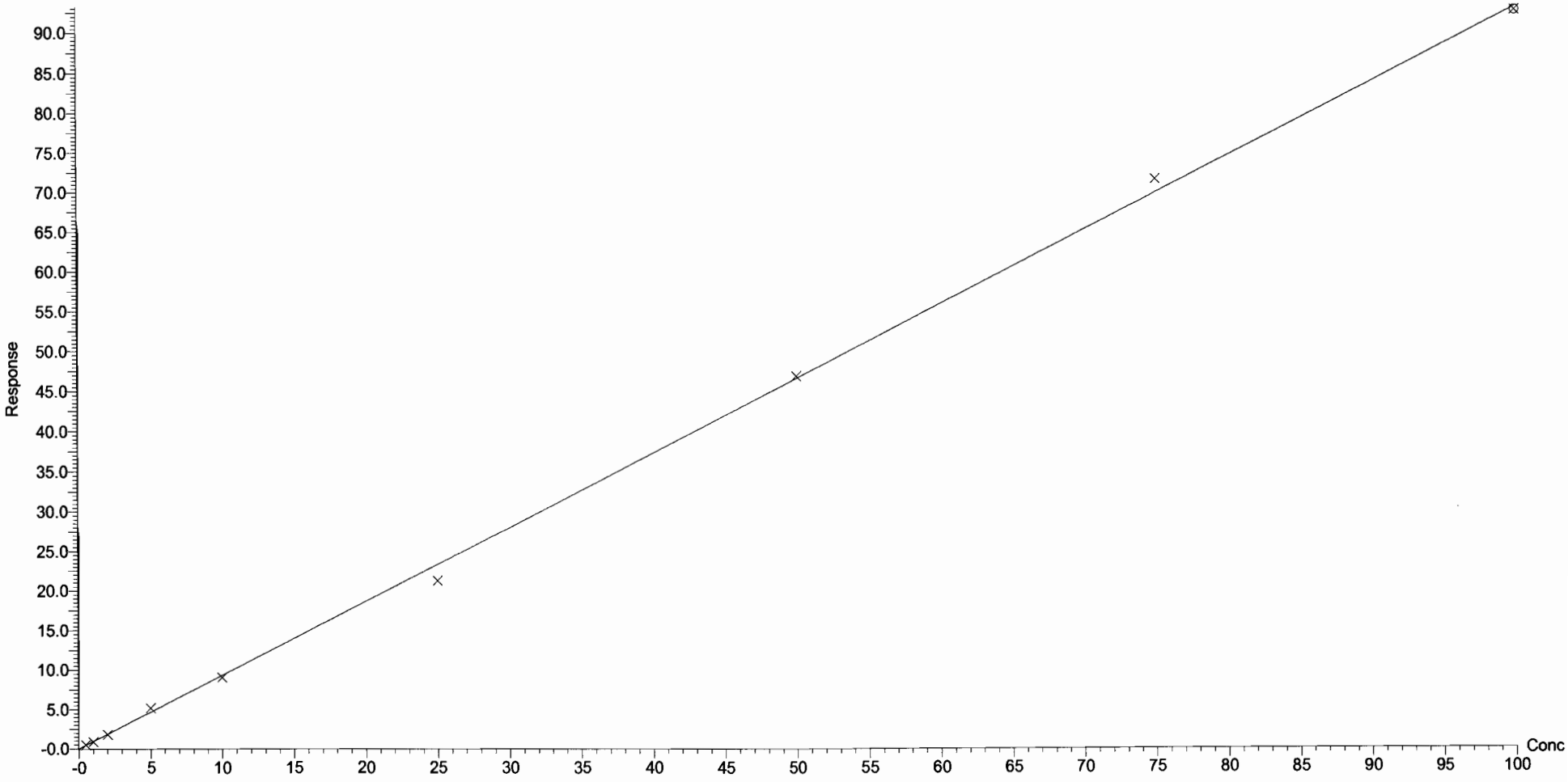
Compound name: PFOA
Coefficient of Determination: R^2 = 0.999126
Calibration curve: 0.798539 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

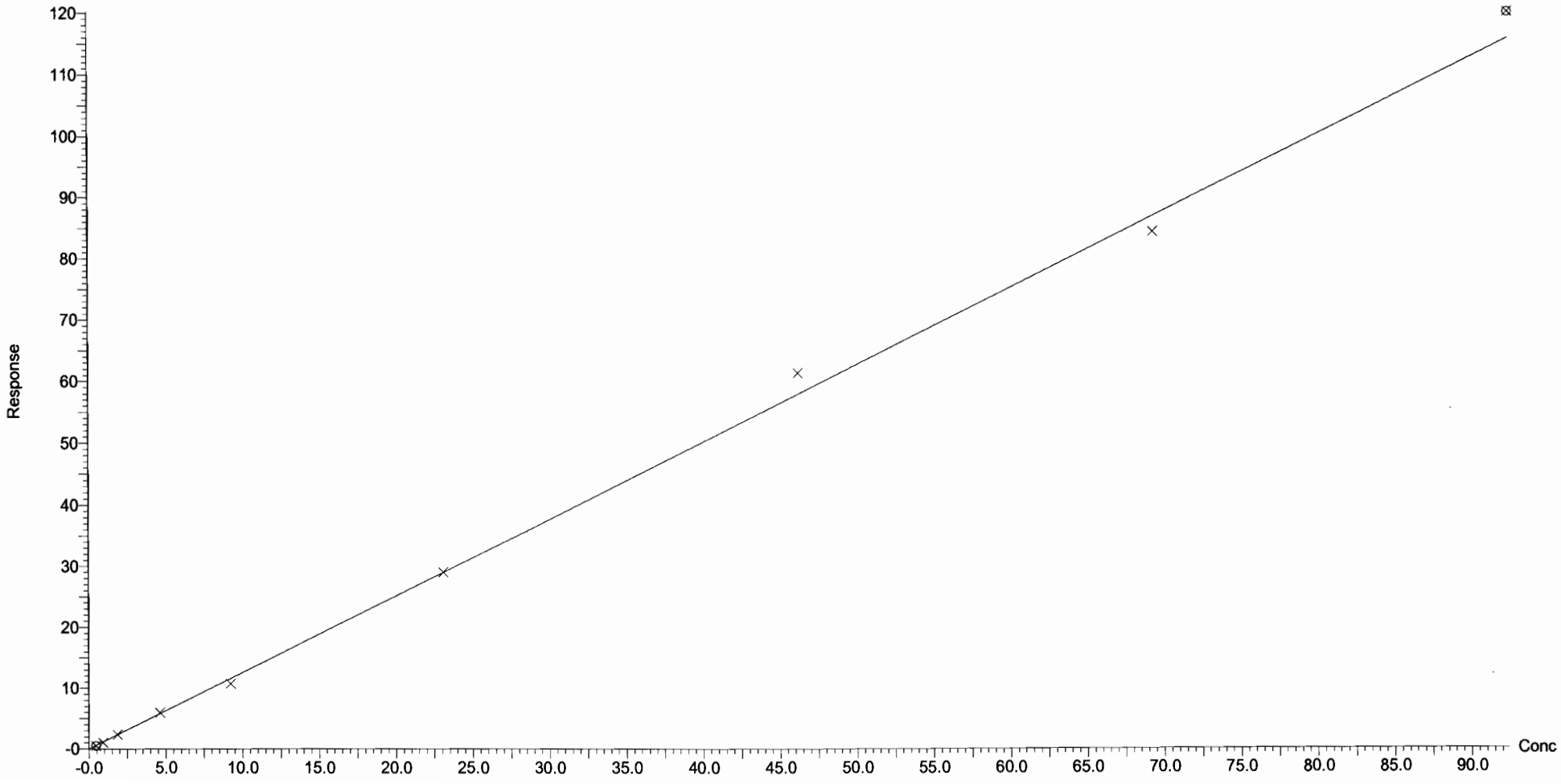
Compound name: PFNA
Coefficient of Determination: R^2 = 0.997983
Calibration curve: 0.931848 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

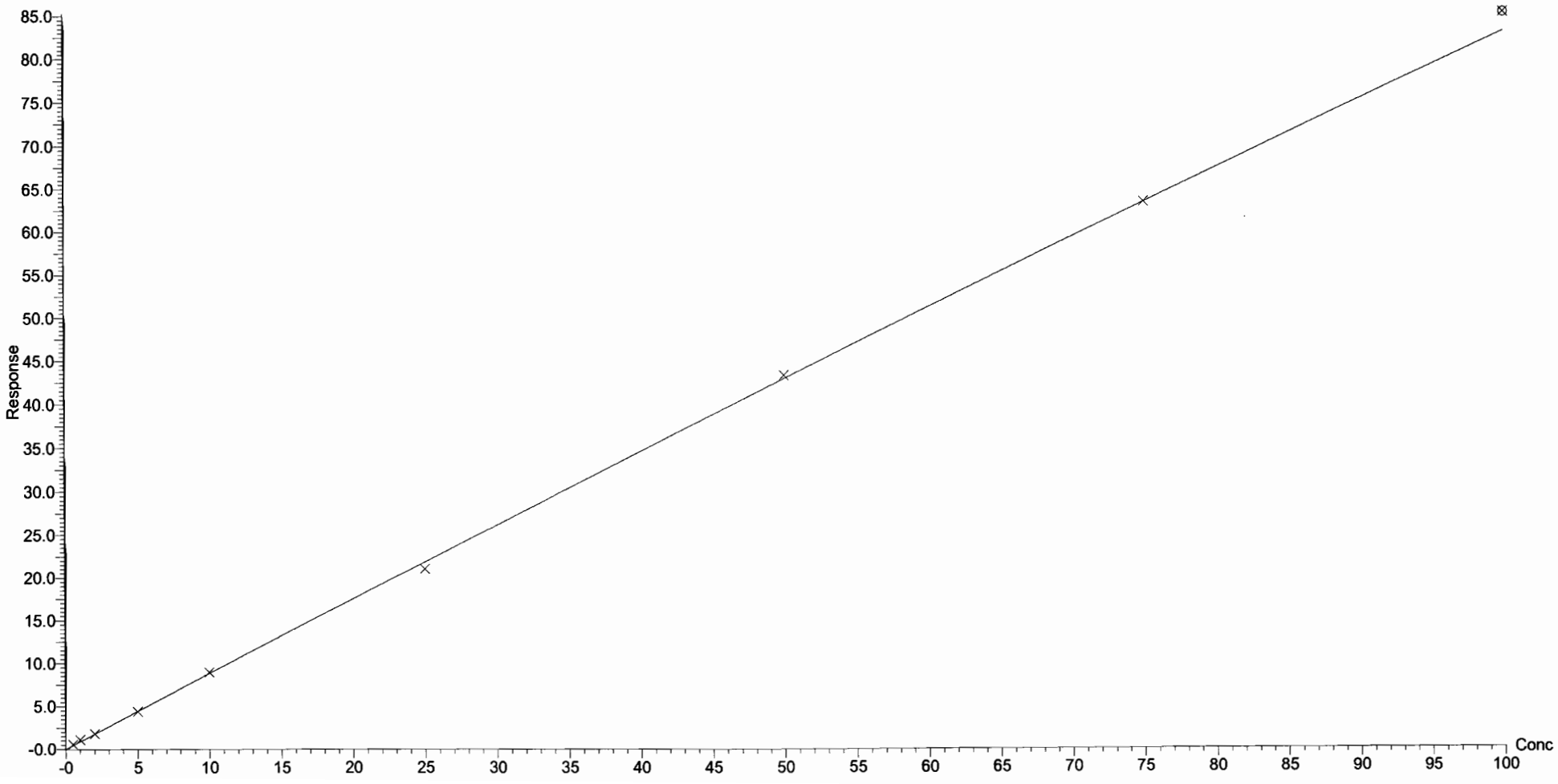
Compound name: PFOS
Coefficient of Determination: R^2 = 0.997754
Calibration curve: 1.25338 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

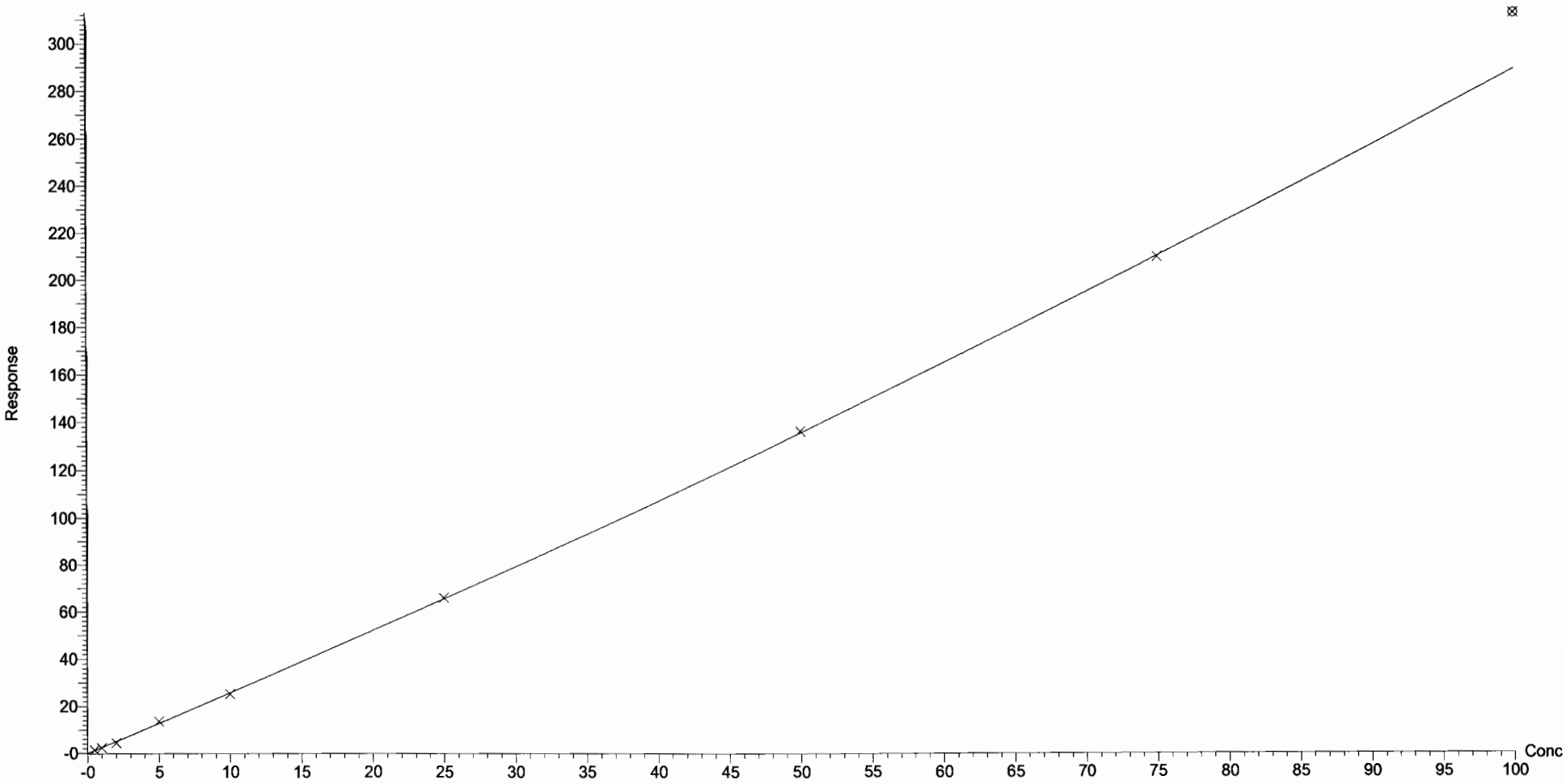
Compound name: PFDA
Coefficient of Determination: R^2 = 0.999050
Calibration curve: -0.000556908 * x^2 + 0.886608 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

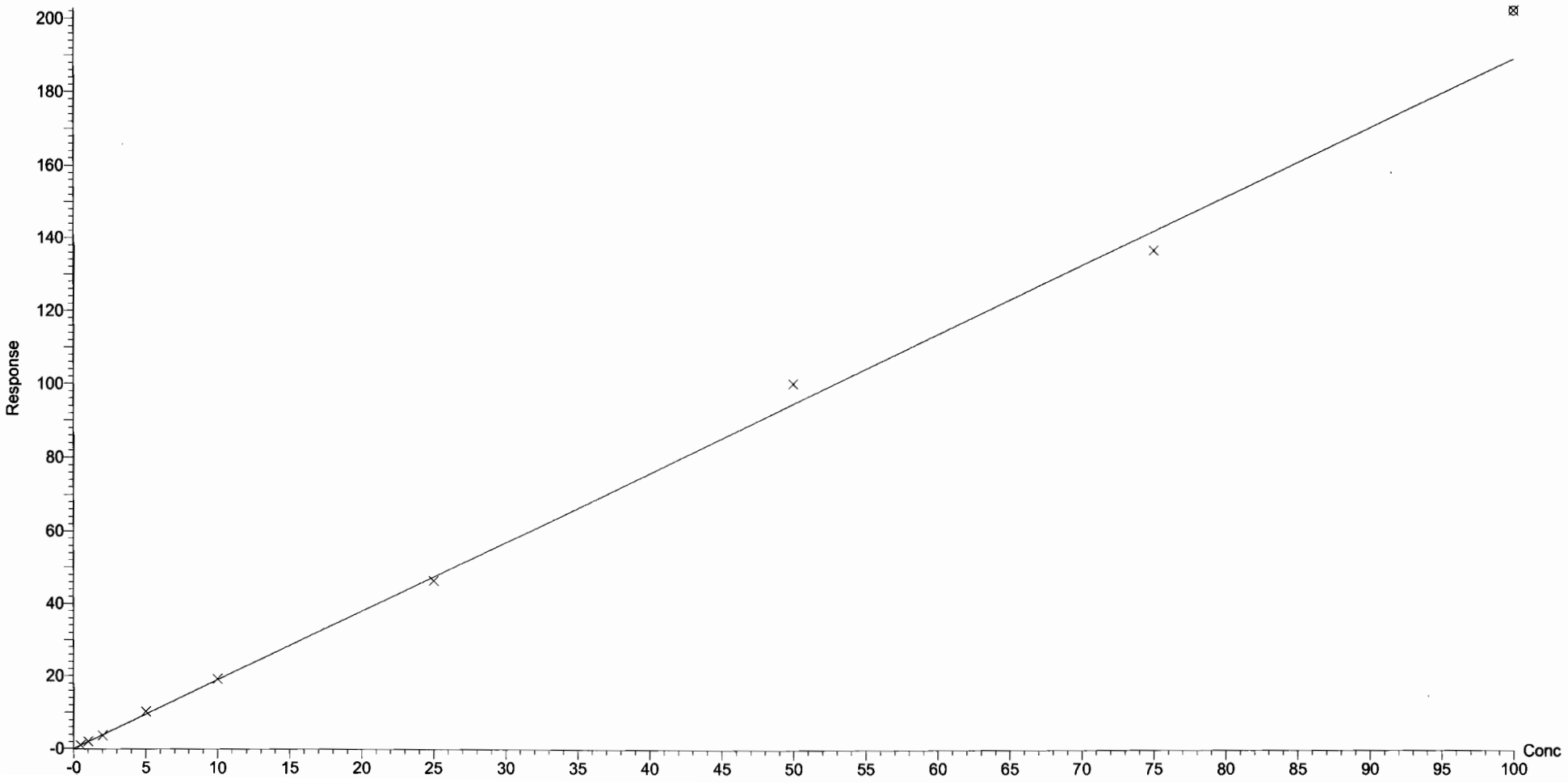
Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.999604
Calibration curve: 0.00361609 * x^2 + 2.52998 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.997900
Calibration curve: 1.89593 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

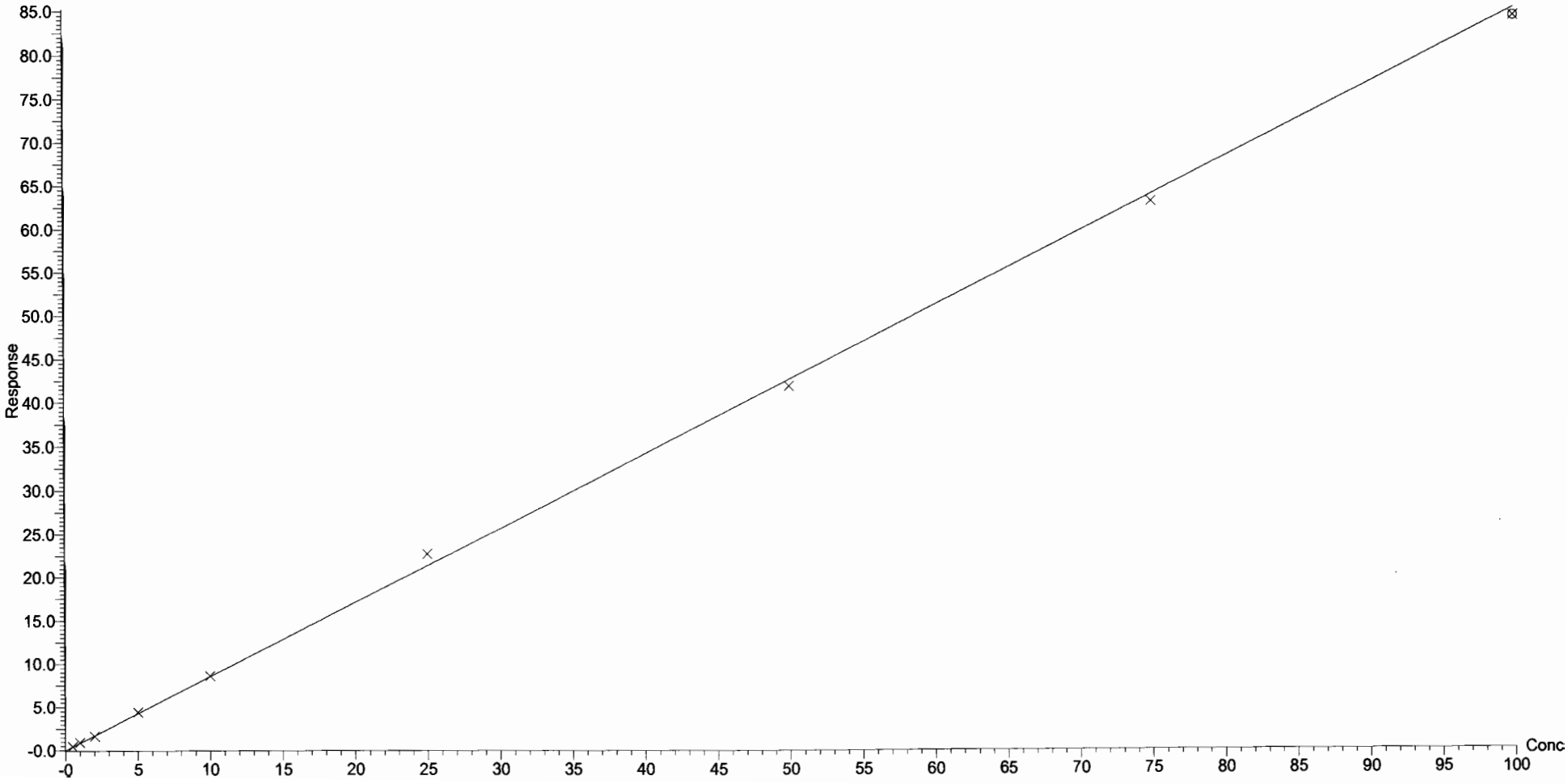


Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

Compound name: PFUnA
Coefficient of Determination: R^2 = 0.998998
Calibration curve: 0.852106 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

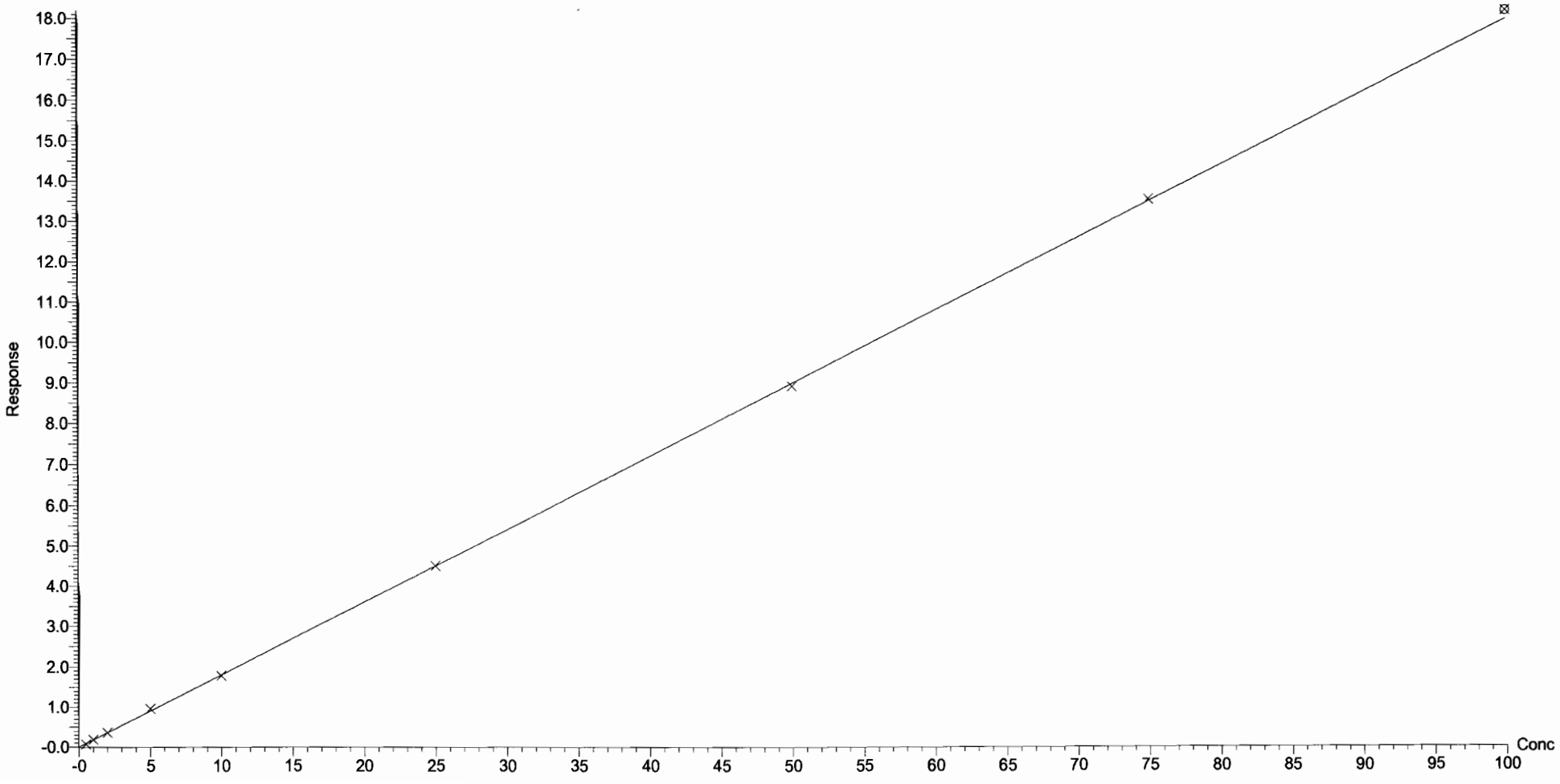


Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

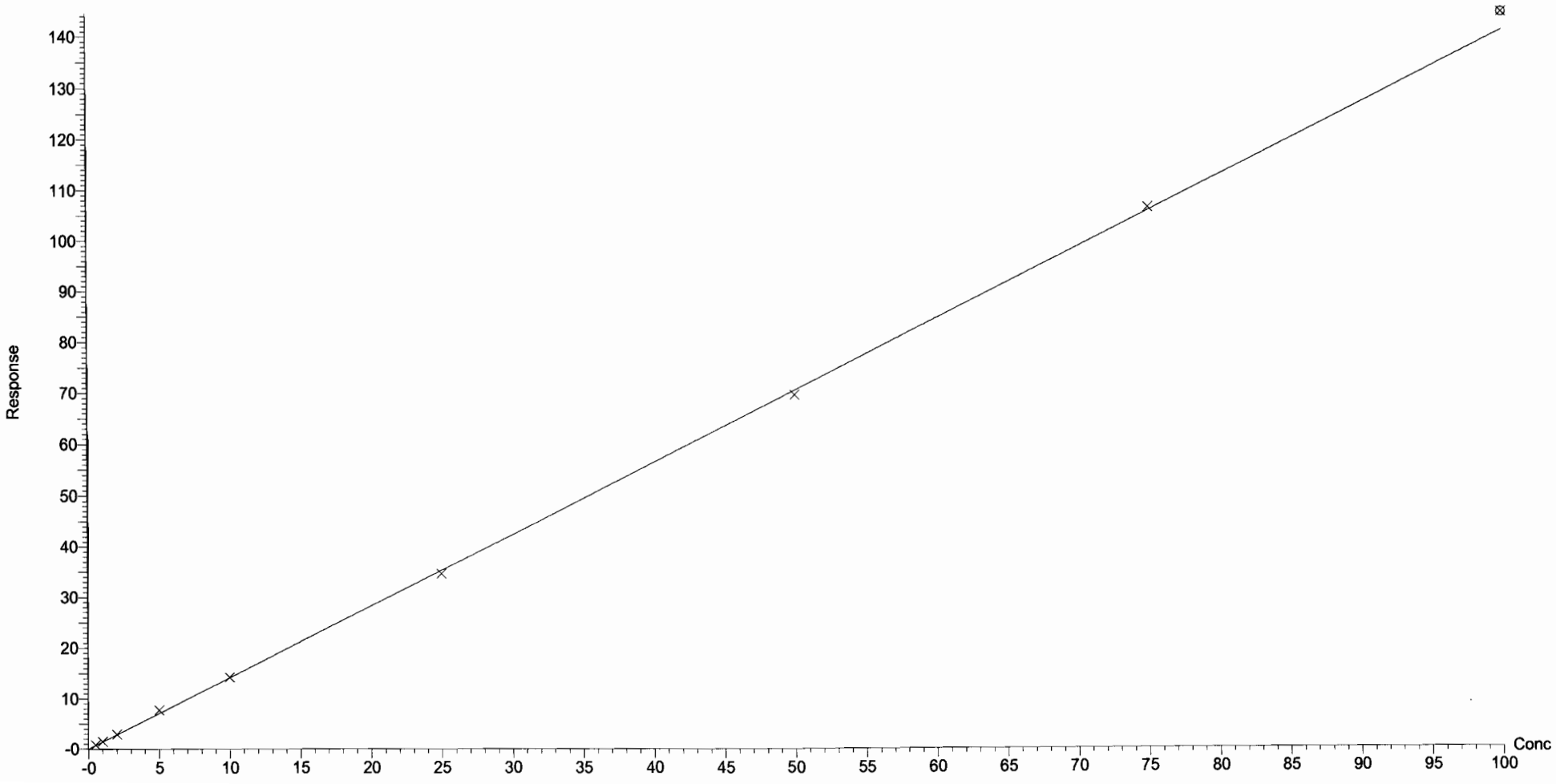
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999658
Calibration curve: 0.179736 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999525
Calibration curve: 1.40909 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

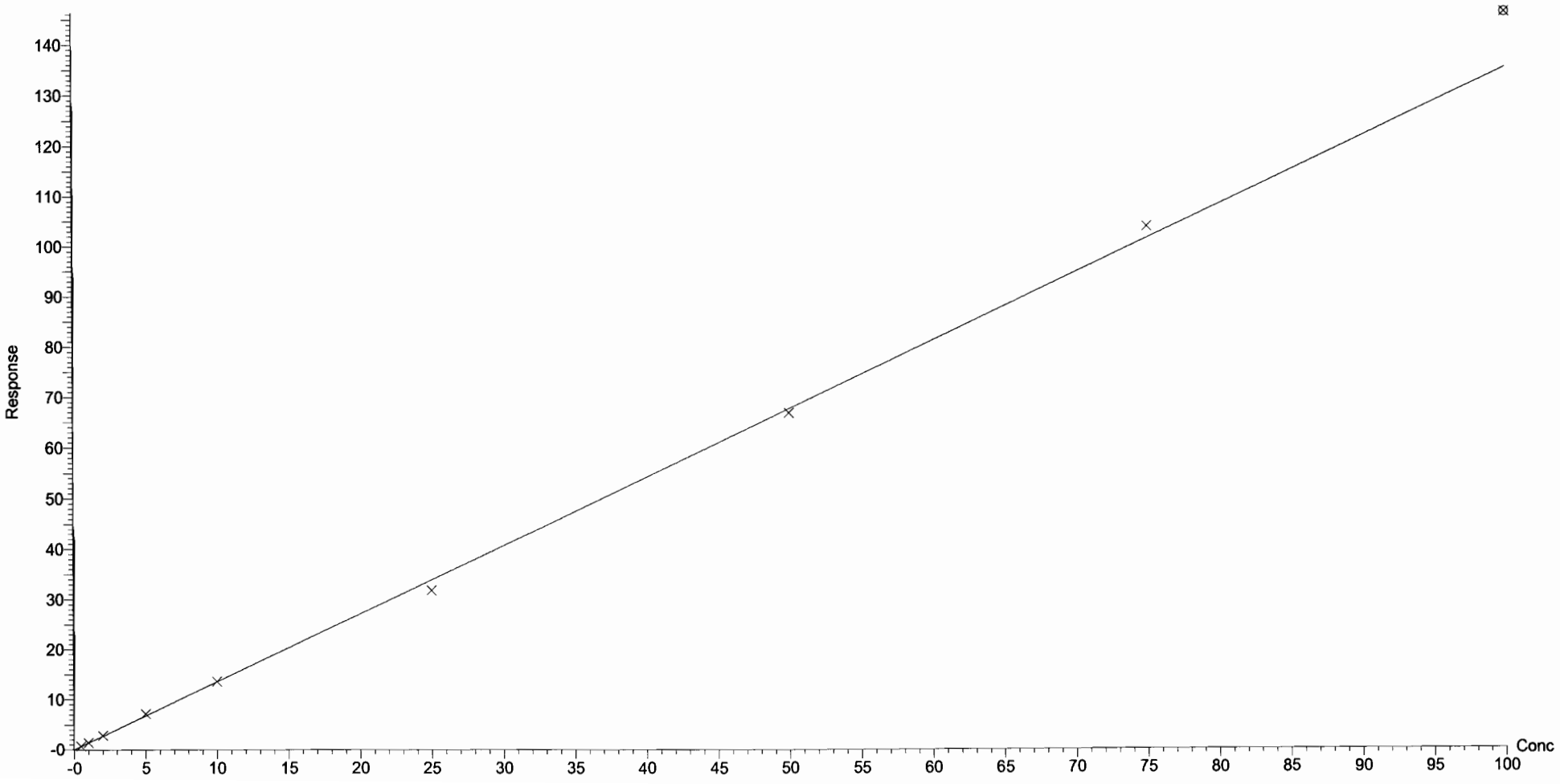


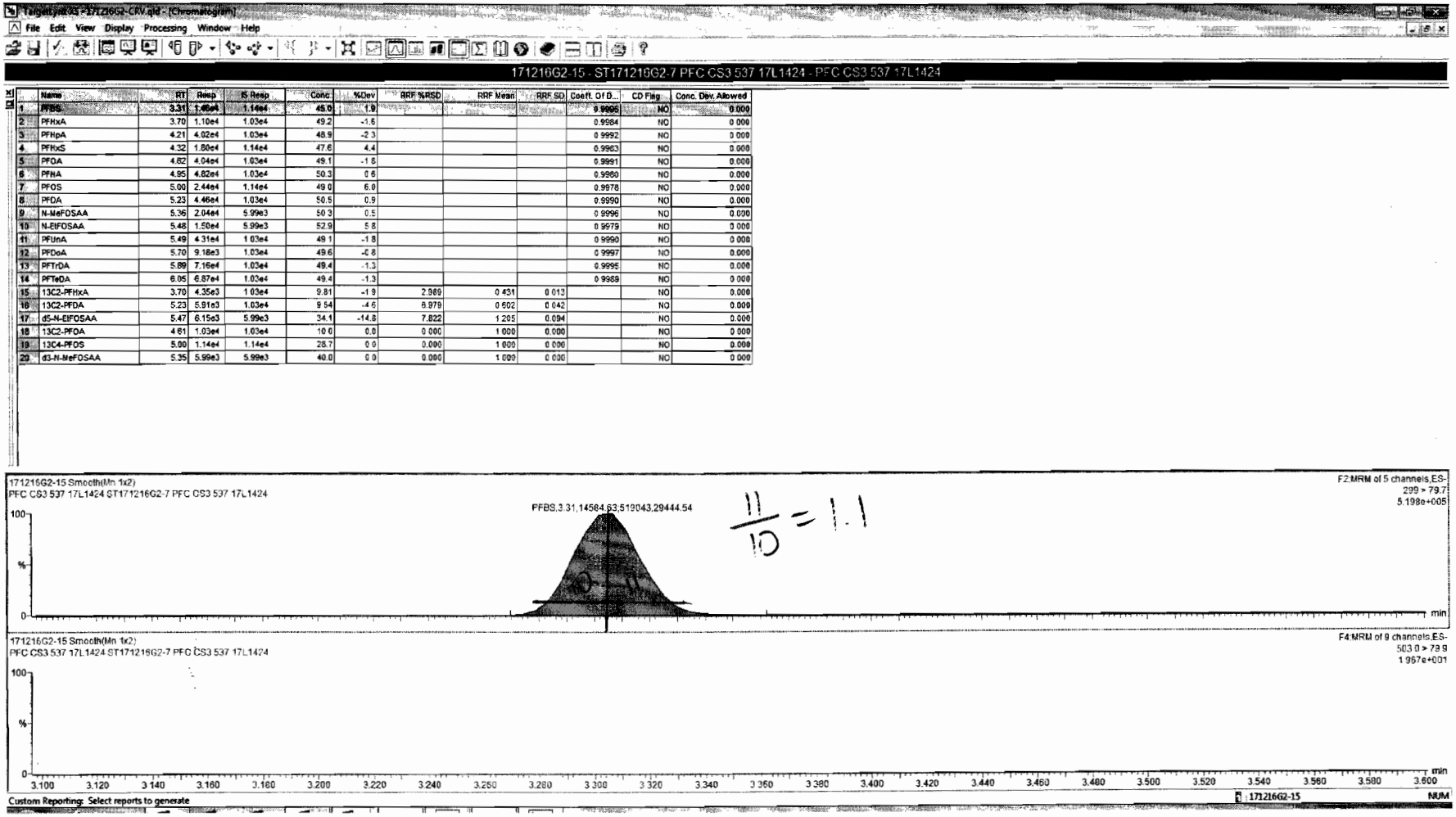
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

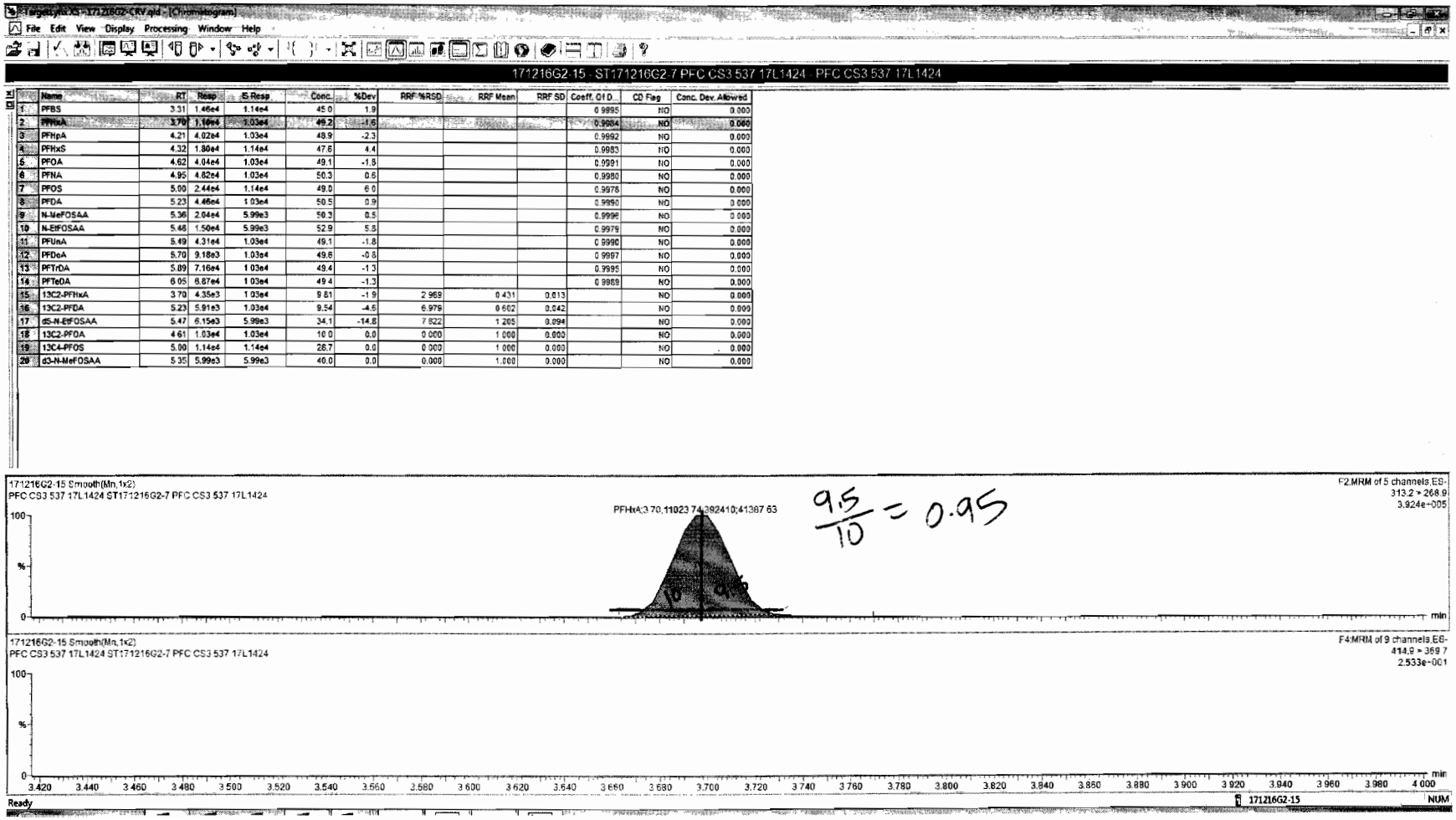
Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:36:55 Pacific Standard Time

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.998912
Calibration curve: 1.35258 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None





	Name	RT	Resp	IS Resp	Conc.	%Dev	RRF %RSD	RRF Mean	RRF SD	Coeff. Of D...	CD Flag	Conc. Dev. Allowed
1	FFBS	3.31	1.46e4	1.14e4	45.0	1.9				0.9995	NO	0.000
2	PFHxA	3.70	1.10e4	1.03e4	49.2	-1.6				0.9984	NO	0.000
3	PFHpA	4.21	4.02e4	1.03e4	48.9	-2.3				0.9992	NO	0.000
4	PFHxS	4.32	1.80e4	1.14e4	47.6	4.4				0.9983	NO	0.000
5	PFOA	4.82	4.04e4	1.03e4	49.1	-1.8				0.9991	NO	0.000
6	PFNA	4.95	4.82e4	1.03e4	50.3	0.6				0.9980	NO	0.000
7	PFOS	5.00	2.44e4	1.14e4	49.0	6.0				0.9978	NO	0.000
8	PFDA	5.23	4.46e4	1.03e4	50.5	0.9				0.9990	NO	0.000
9	N-MeFOSAA	5.36	2.04e4	5.99e3	50.3	0.5				0.9996	NO	0.000
10	N-EtFOSAA	5.48	1.50e4	5.99e3	52.9	5.8				0.9979	NO	0.000
11	PFUnA	5.49	4.31e4	1.03e4	49.1	-1.8				0.9990	NO	0.000
12	PFDoA	5.70	9.18e3	1.03e4	49.6	-0.8				0.9997	NO	0.000
13	PFTrDA	5.89	7.16e4	1.03e4	49.4	-1.3				0.9995	NO	0.000
14	PFTeDA	6.05	6.87e4	1.03e4	49.4	-1.3				0.9989	NO	0.000
15	13C2-PFHxA	3.70	4.35e3	1.03e4	9.81	-1.9	2.989	0.431	0.013		NO	0.000
16	13C2-PFDA	5.23	5.91e3	1.03e4	9.54	-4.6	6.979	0.602	0.042		NO	0.000
17	d5-N-EtFOSAA	5.47	6.15e3	5.99e3	34.1	-14.8	7.822	1.205	0.094		NO	0.000
18	13C2-PFOA	4.81	1.03e4	1.03e4	10.0	0.0	0.000	1.000	0.000		NO	0.000
19	13C4-PFOS	5.00	1.14e4	1.14e4	28.7	0.0	0.000	1.000	0.000		NO	0.000
20	d3-N-MeFOSAA	5.35	5.99e3	5.99e3	40.0	0.0	0.000	1.000	0.000		NO	0.000



	Name	RT	Resp	IS Resp	Conc.	%Dev	RRF %RSD	RRF Mean	RRF SD	Coeff. Of D.	CD Flag	Conc. Dev. Allowed
1	PFBS	3.31	1.46e4	1.14e4	45.0	1.9				0.9995	NO	0.000
2	PFHxA	3.70	1.10e4	1.03e4	49.2	-1.6				0.9984	NO	0.000
3	PFHpA	4.21	4.02e4	1.03e4	48.9	-2.3				0.9992	NO	0.000
4	PFHxS	4.32	1.80e4	1.14e4	47.8	4.4				0.9983	NO	0.000
5	PFOA	4.62	4.04e4	1.03e4	49.1	-1.8				0.9991	NO	0.000
6	PFNA	4.95	4.82e4	1.03e4	50.3	0.6				0.9980	NO	0.000
7	PFOS	5.00	2.44e4	1.14e4	49.0	6.0				0.9978	NO	0.000
8	PFDA	5.23	4.46e4	1.03e4	50.5	0.9				0.9990	NO	0.000
9	N-MeFOSAA	5.36	2.04e4	5.99e3	50.3	0.5				0.9998	NO	0.000
10	N-EtFOSAA	5.48	1.50e4	5.99e3	52.9	5.8				0.9979	NO	0.000
11	PFUnA	5.49	4.31e4	1.03e4	49.1	-1.8				0.9990	NO	0.000
12	PFDoA	5.70	9.18e3	1.03e4	49.8	-0.6				0.9997	NO	0.000
13	PFTrDA	5.89	7.16e4	1.03e4	49.4	-1.3				0.9995	NO	0.000
14	PFTeDA	6.05	6.87e4	1.03e4	49.4	-1.3				0.9989	NO	0.000
15	13C2-PFHxA	3.70	4.35e3	1.03e4	9.81	-1.9	2.969	0.431	0.013		NO	0.000
16	13C2-PFDA	5.23	5.91e3	1.03e4	9.54	-4.6	6.979	0.602	0.042		NO	0.000
17	d5-N-EtFOSAA	5.47	6.15e3	5.99e3	34.1	-14.8	7.822	1.205	0.094		NO	0.000
18	13C2-PFOA	4.61	1.03e4	1.03e4	10.0	0.0	0.000	1.000	0.000		NO	0.000
19	13C4-PFOS	5.00	1.14e4	1.14e4	26.7	0.0	0.000	1.000	0.000		NO	0.000
20	d3-N-MeFOSAA	5.35	5.99e3	5.99e3	40.0	0.0	0.000	1.000	0.000		NO	0.000

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

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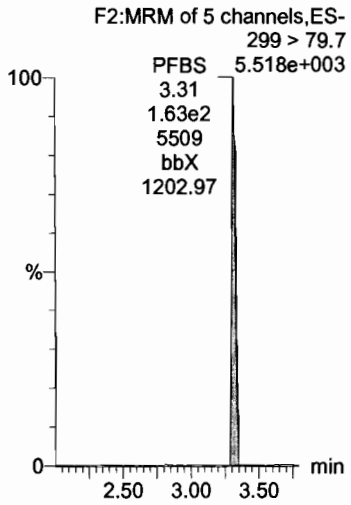
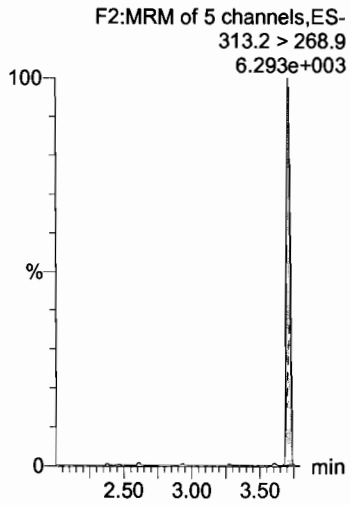
Calibration: 18 Dec 2017 10:33:08

Name: 171216G2-9, Date: 16-Dec-2017, Time: 16:07:59, ID: ST171216G2-1 PFC CS-3 537 17L1418, Description: PFC CS-3 537 17L1418

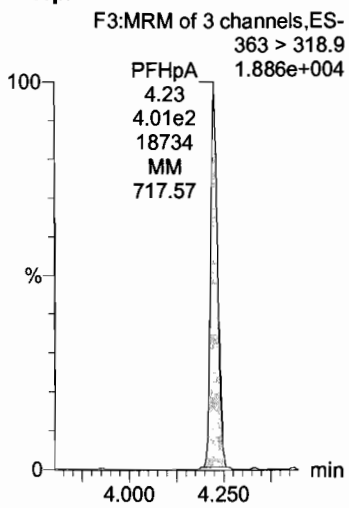
PFBS



PFHxA



PFHpA



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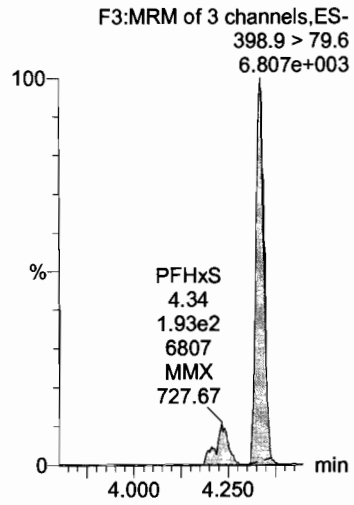
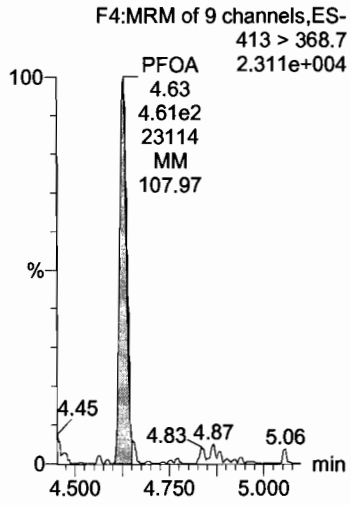


PFOA



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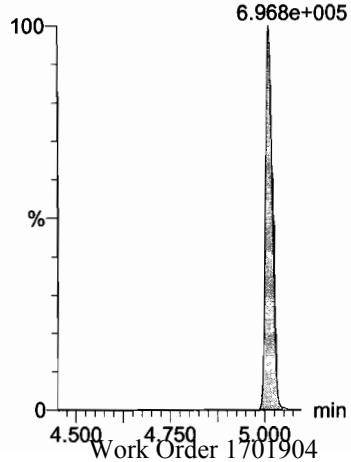

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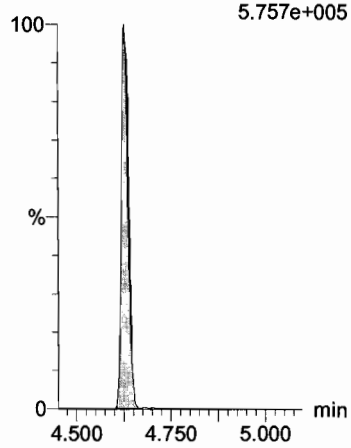

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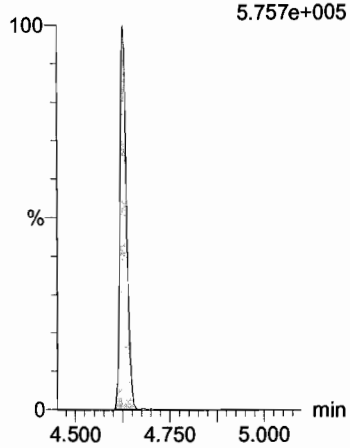

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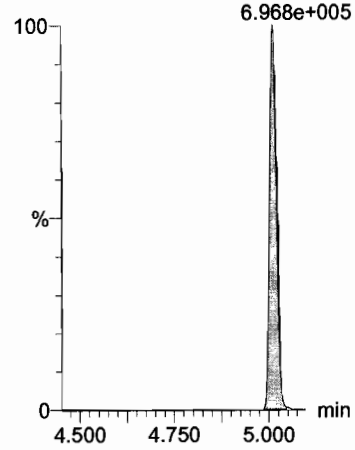

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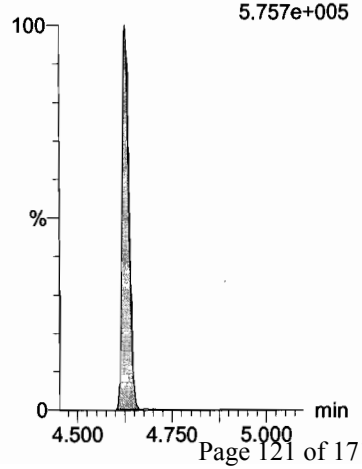

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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Name: 171216G2-9, Date: 16-Dec-2017, Time: 16:07:59, ID: ST171216G2-1 PFC CS-3 537 17L1418, Description: PFC CS-3 537 17L1418

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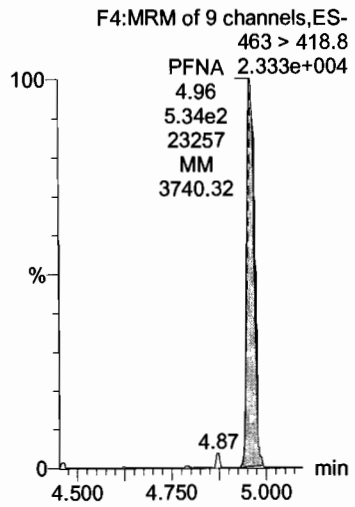

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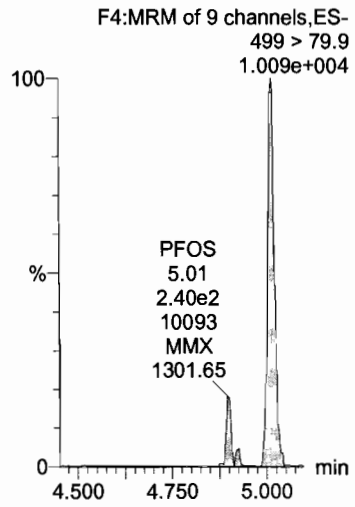

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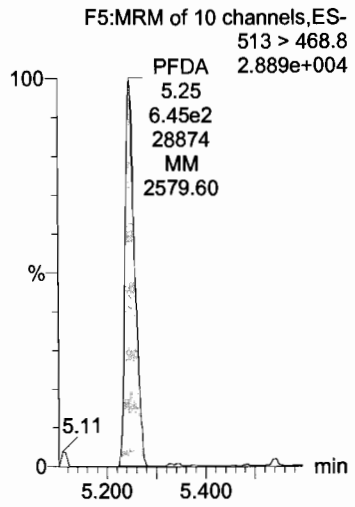

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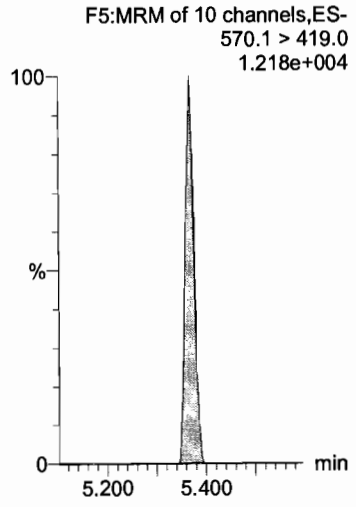

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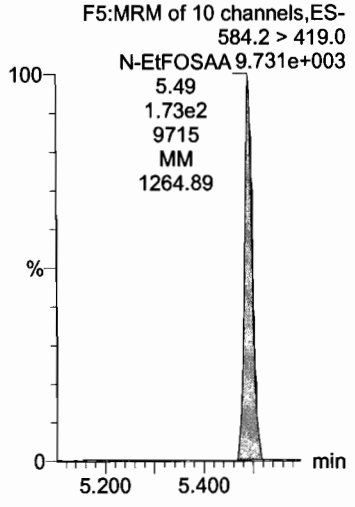
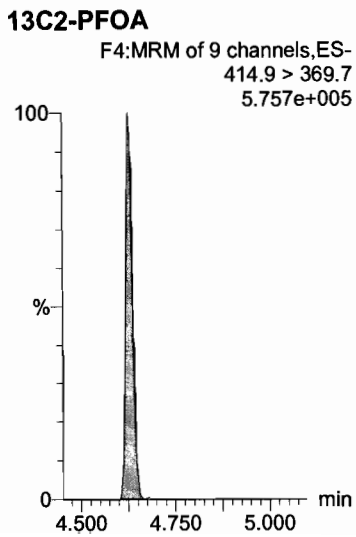


13C2-PFOA



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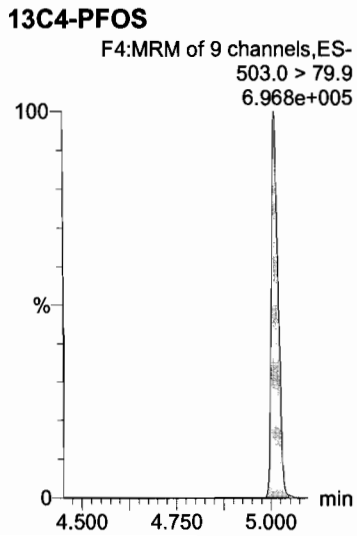
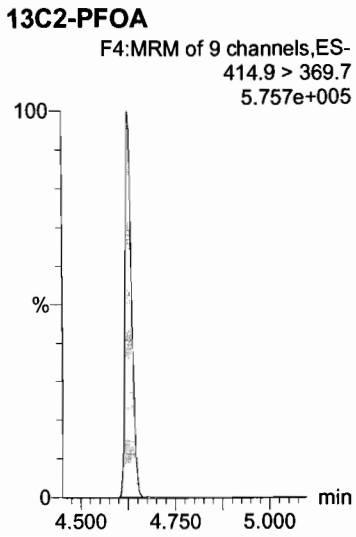
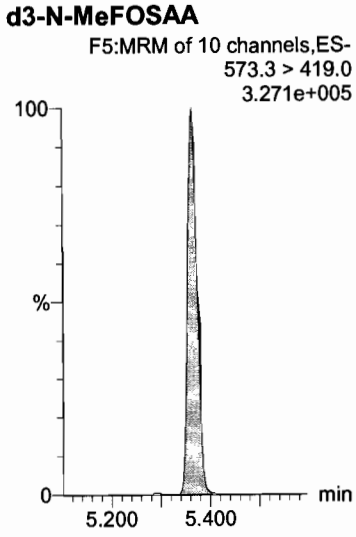


13C2-PFOA



d3-N-MeFOSAA



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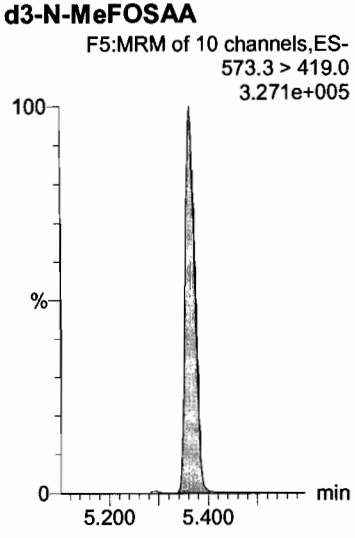

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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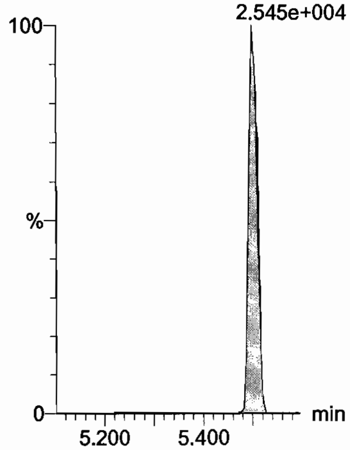
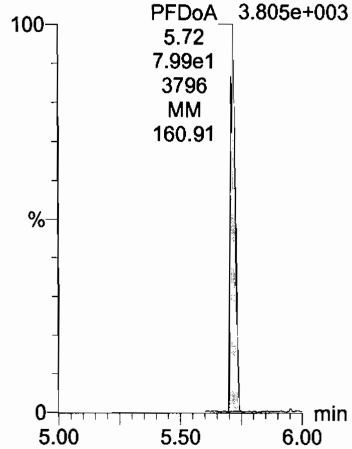
Name: 171216G2-9, Date: 16-Dec-2017, Time: 16:07:59, ID: ST171216G2-1 PFC CS-3 537 17L1418, Description: PFC CS-3 537 17L1418

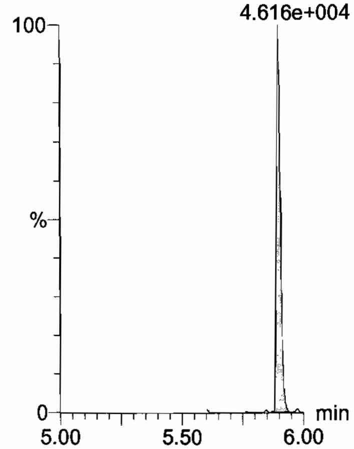
PFUnA
F5:MRM of 10 channels,ES-
563 > 518.9
2.545e+004



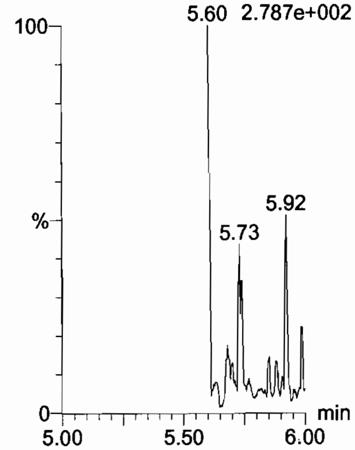
PFDoA
F6:MRM of 5 channels,ES-
612.9 > 318.8
PFDoA 3.805e+003



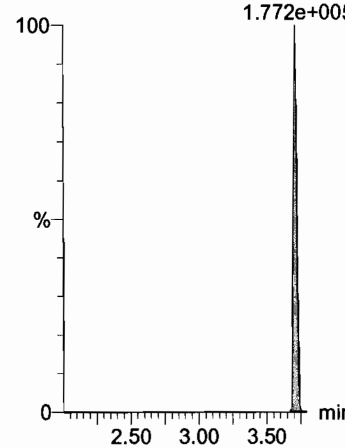
PFTrDA
F6:MRM of 5 channels,ES-
662.9 > 618.9
4.616e+004



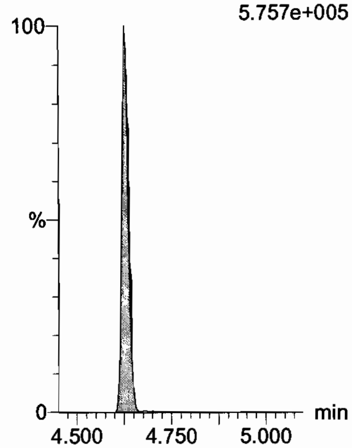
PFTeDA
F6:MRM of 5 channels,ES-
712.9 > 668.8
5.60 2.787e+002



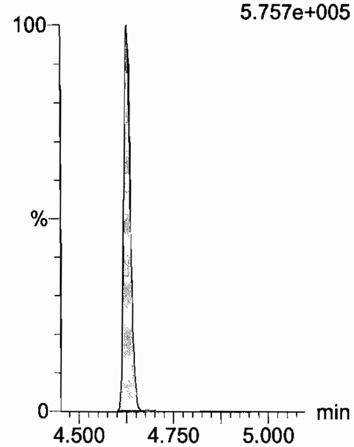
13C2-PFHxA
F2:MRM of 5 channels,ES-
315 > 269.8
1.772e+005



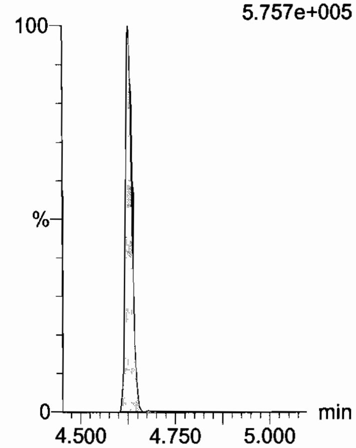
13C2-PFOA
F4:MRM of 9 channels,ES-
414.9 > 369.7
5.757e+005



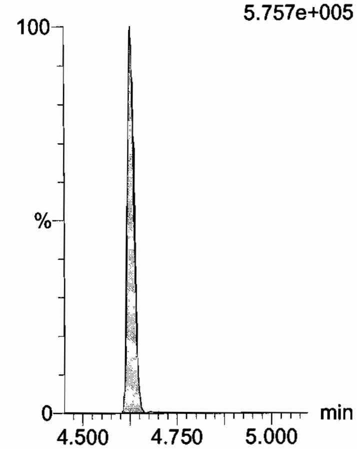
13C2-PFOA
F4:MRM of 9 channels,ES-
414.9 > 369.7
5.757e+005



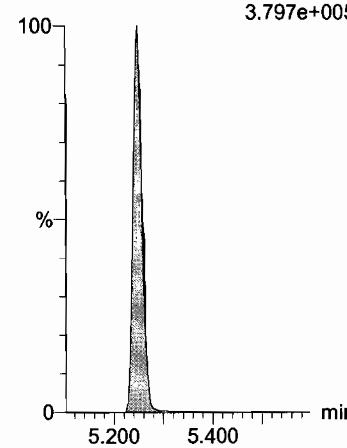
13C2-PFOA
F4:MRM of 9 channels,ES-
414.9 > 369.7
5.757e+005

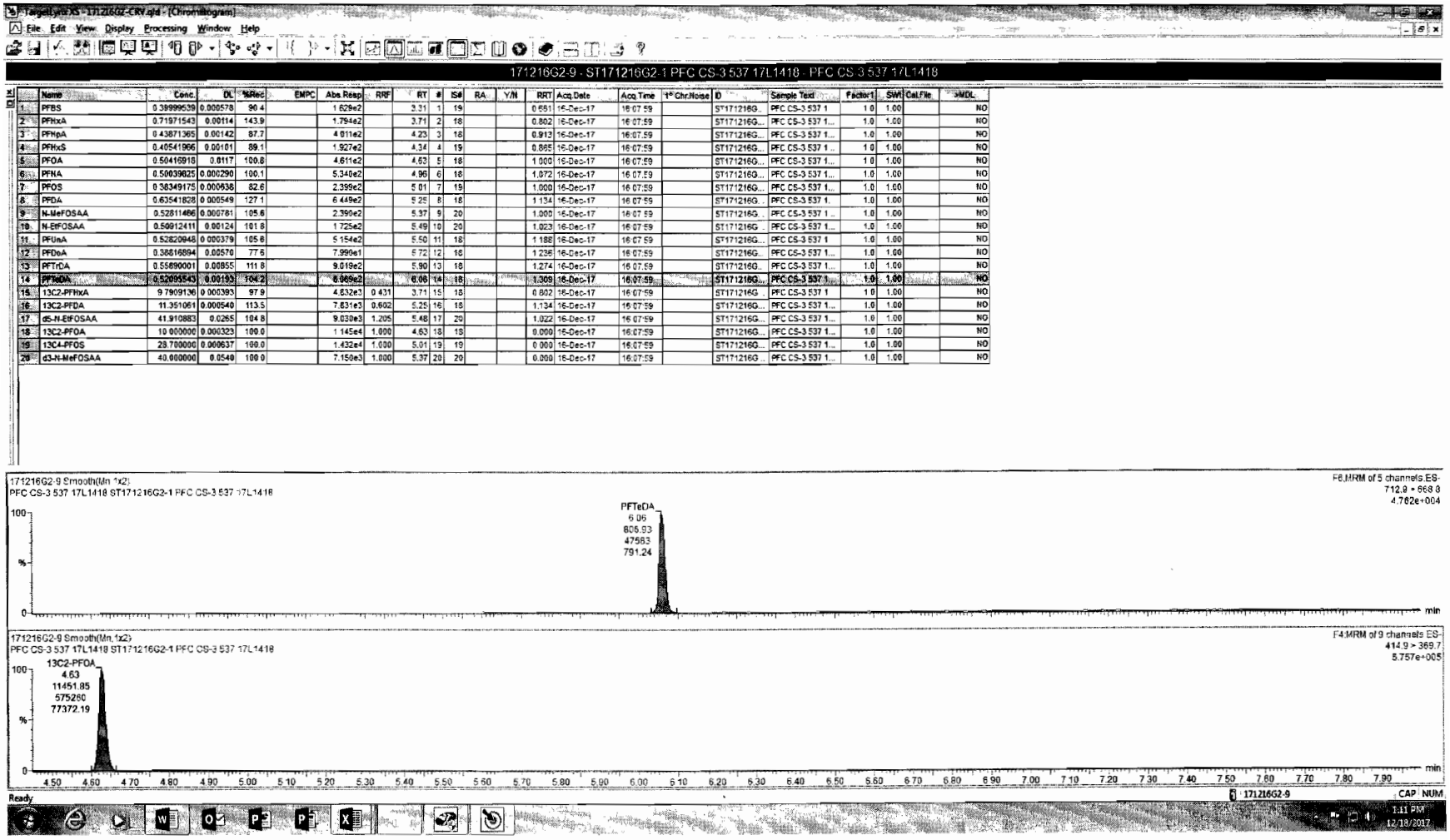


13C2-PFOA
F4:MRM of 9 channels,ES-
414.9 > 369.7
5.757e+005



13C2-PFDA
F5:MRM of 10 channels,ES-
515.1 > 469.9
3.797e+005





	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	SW	Cal.File	>MDL
1	PFBS	0.39999539	0.000578	90.4		1.629e2		3.31	1	19			0.651	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1	1.0	1.00		NO
2	PFHxA	0.71971543	0.00114	143.9		1.794e2		3.71	2	18			0.802	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
3	PFHpA	0.43871365	0.00142	87.7		4.011e2		4.23	3	18			0.913	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
4	PFHxS	0.40541966	0.00101	89.1		1.927e2		4.34	4	19			0.865	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
5	PFOA	0.50416918	0.0117	100.8		4.611e2		4.63	5	18			1.000	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
6	PFNA	0.50039025	0.000290	100.1		5.340e2		4.96	6	18			1.072	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
7	PFOS	0.38349175	0.000938	82.6		2.399e2		5.01	7	19			1.000	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
8	PFDA	0.63541828	0.000549	127.1		6.449e2		5.25	8	18			1.134	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1.	1.0	1.00		NO
9	N-MeFOSAA	0.52811466	0.000781	105.6		2.390e2		5.37	9	20			1.000	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
10	N-EtFOSAA	0.59912411	0.00124	101.8		1.725e2		5.49	10	20			1.023	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
11	PFUnA	0.52620948	0.000379	105.8		5.154e2		5.50	11	18			1.188	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1	1.0	1.00		NO
12	PFDoA	0.38816894	0.00570	77.6		7.999e1		5.72	12	18			1.236	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
13	PFTrDA	0.55890001	0.00855	111.8		9.019e2		5.90	13	18			1.274	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
14	PFTeDA	0.52095543	0.00193	104.2		8.969e2		6.06	14	18			1.309	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
15	13C2-PFHxA	9.7909136	0.000393	97.9		4.832e3	0.431	3.71	15	18			0.802	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1	1.0	1.00		NO
16	13C2-PFDA	11.351061	0.000540	113.5		7.631e3	0.602	5.25	16	18			1.134	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
17	d5-N-EtFOSAA	41.910883	0.0265	104.8		9.030e3	1.205	5.48	17	29			1.022	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.000323	100.0		1.145e4	1.000	4.63	18	18			0.000	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.000637	100.0		1.432e4	1.000	5.01	19	19			0.000	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0540	100.0		7.150e3	1.000	5.37	20	29			0.000	16-Dec-17	16:07:59		ST171216G...	PFC CS-3 537 1...	1.0	1.00		NO

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

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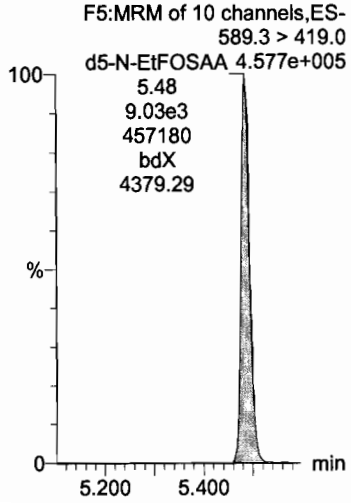
Name: 171216G2-9, Date: 16-Dec-2017, Time: 16:07:59, ID: ST171216G2-1 PFC CS-3 537 17L1418, Description: PFC CS-3 537 17L1418

d5-N-EtFOSAA



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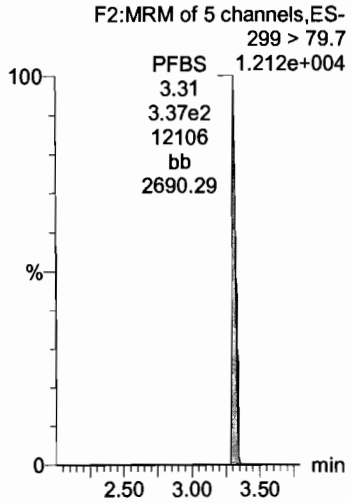
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-10, Date: 16-Dec-2017, Time: 16:20:23, ID: ST171216G2-2 PFC CS-2 537 17L1419, Description: PFC CS-2 537 17L1419

PFBS



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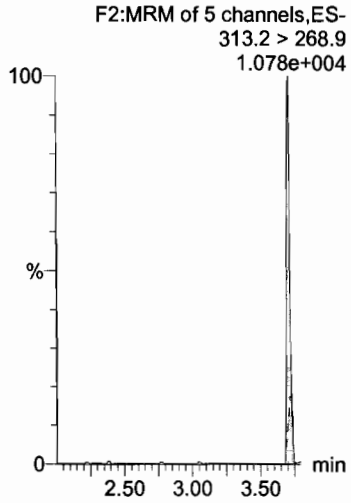

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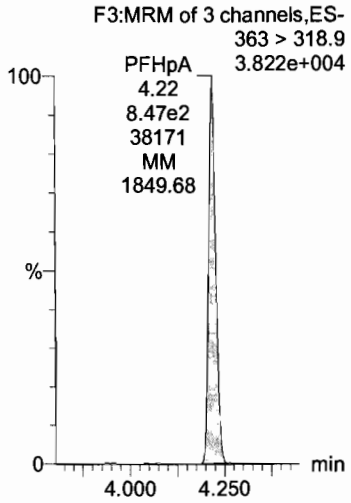

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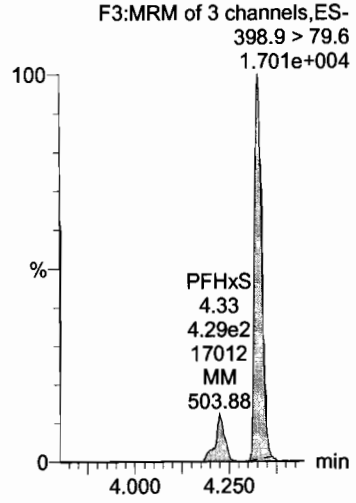

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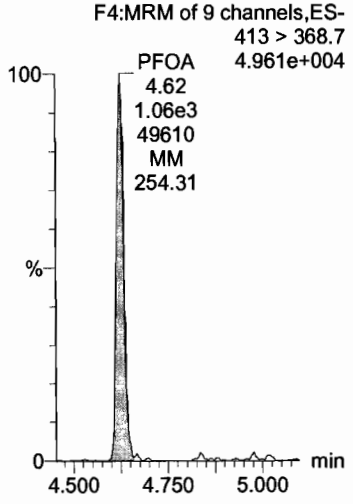

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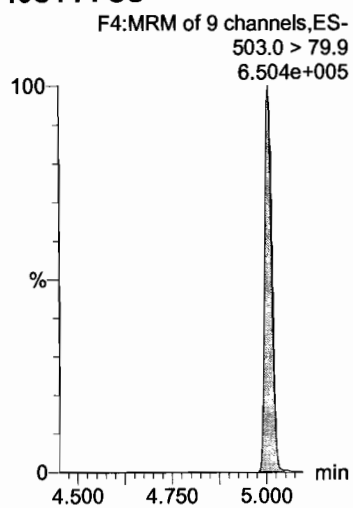

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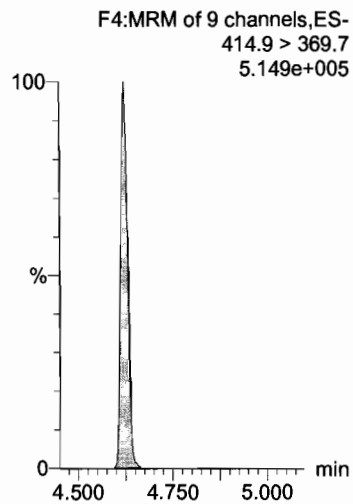

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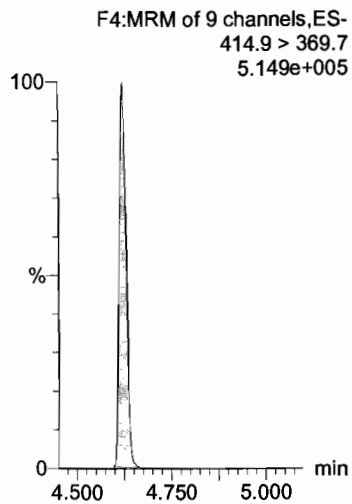

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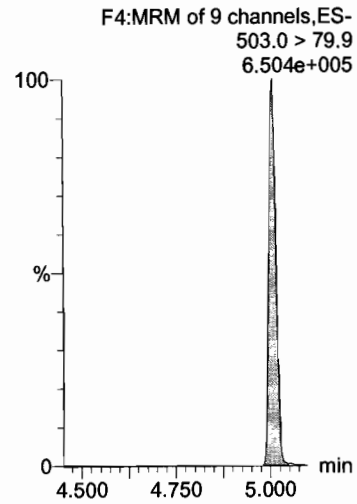

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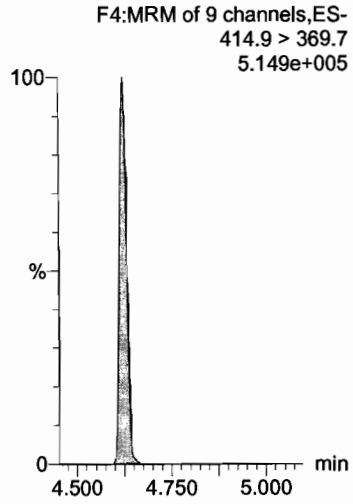

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-10, Date: 16-Dec-2017, Time: 16:20:23, ID: ST171216G2-2 PFC CS-2 537 17L1419, Description: PFC CS-2 537 17L1419

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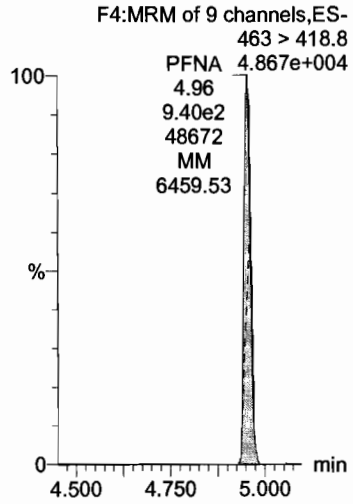

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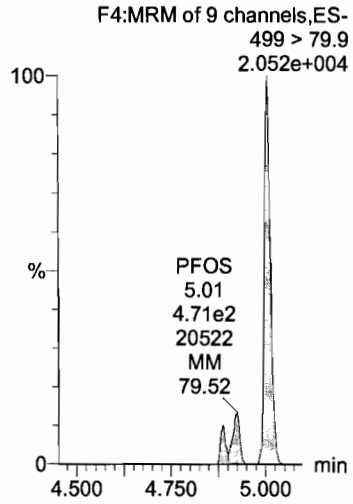

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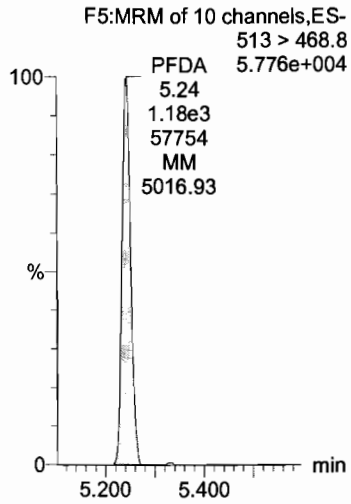

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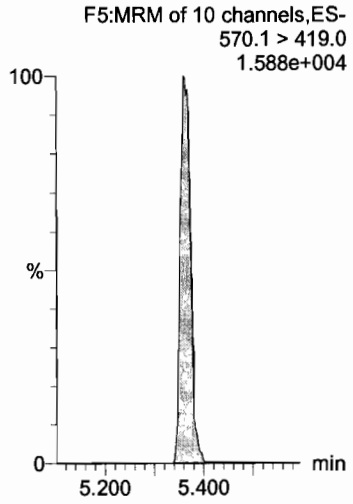

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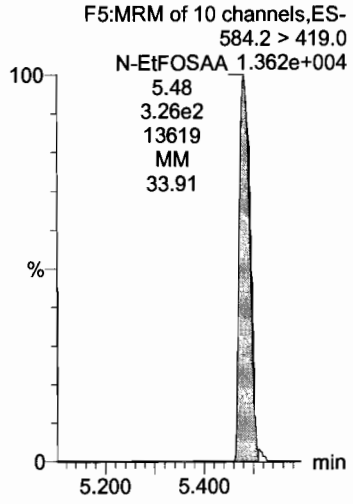

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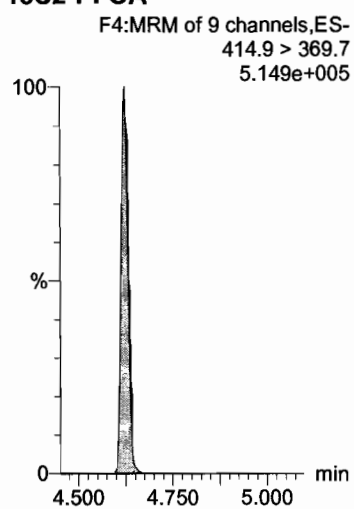

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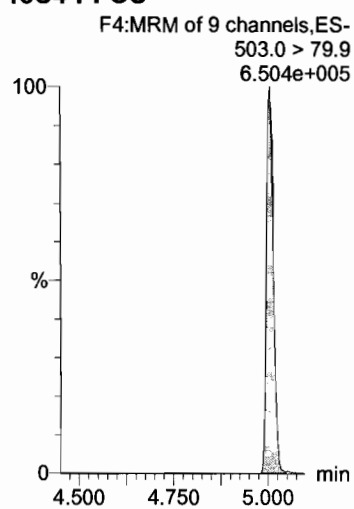

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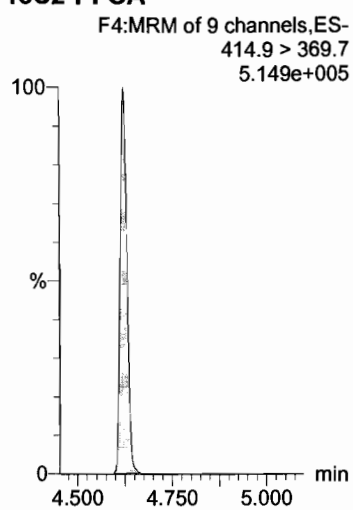

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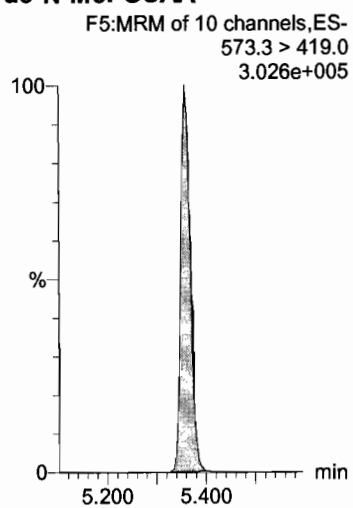

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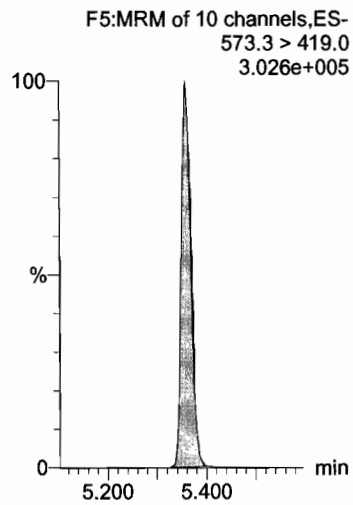

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-10, Date: 16-Dec-2017, Time: 16:20:23, ID: ST171216G2-2 PFC CS-2 537 17L1419, Description: PFC CS-2 537 17L1419

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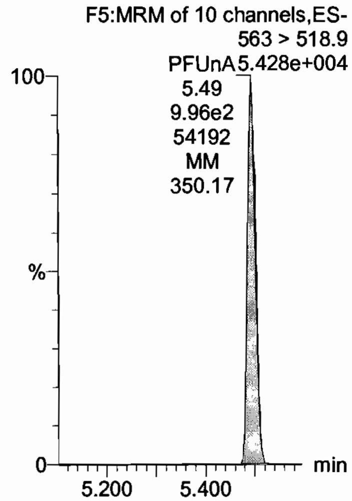

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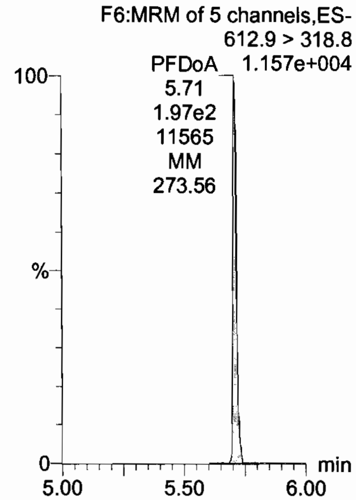

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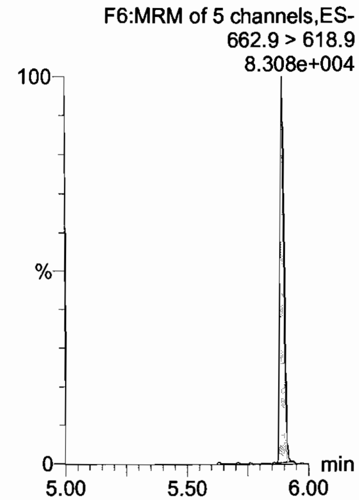

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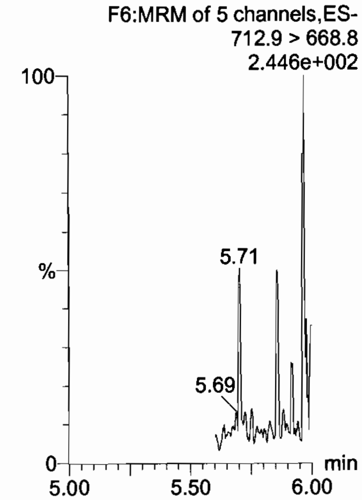

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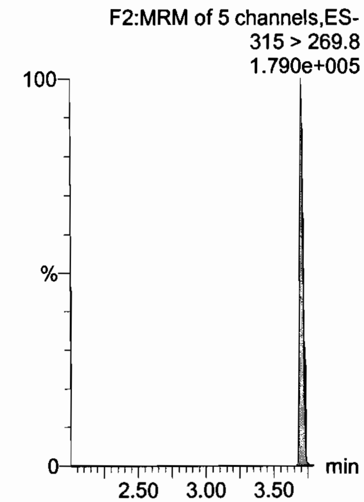

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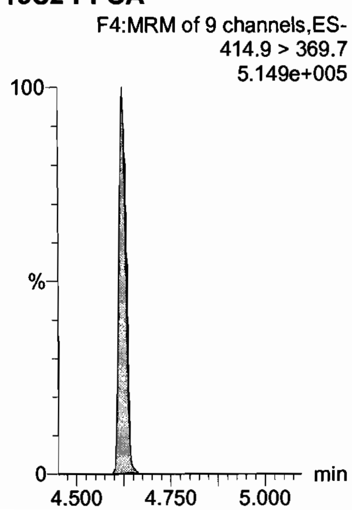

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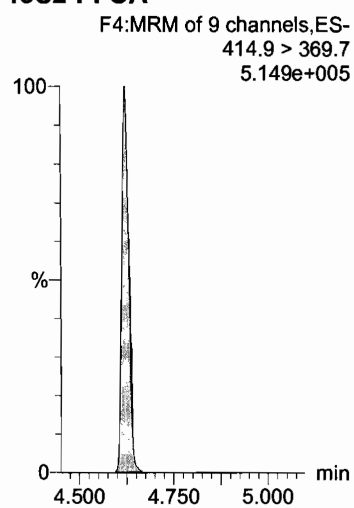

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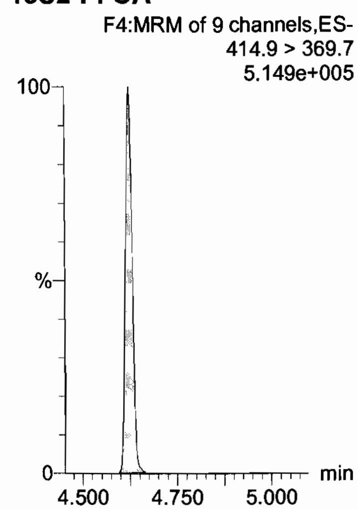

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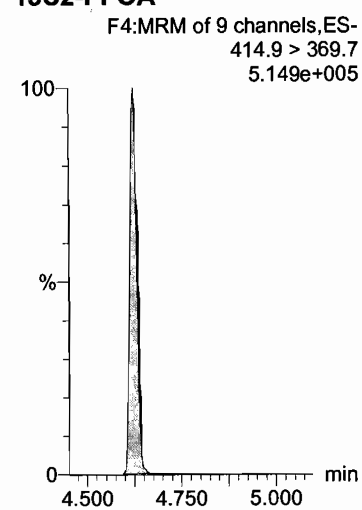

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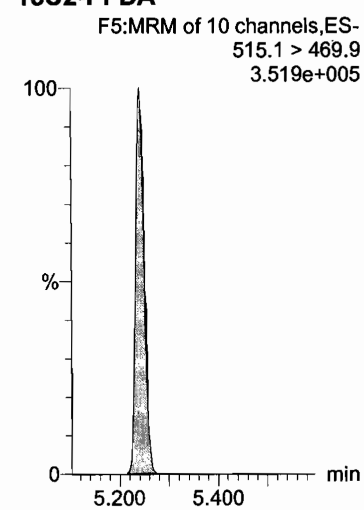

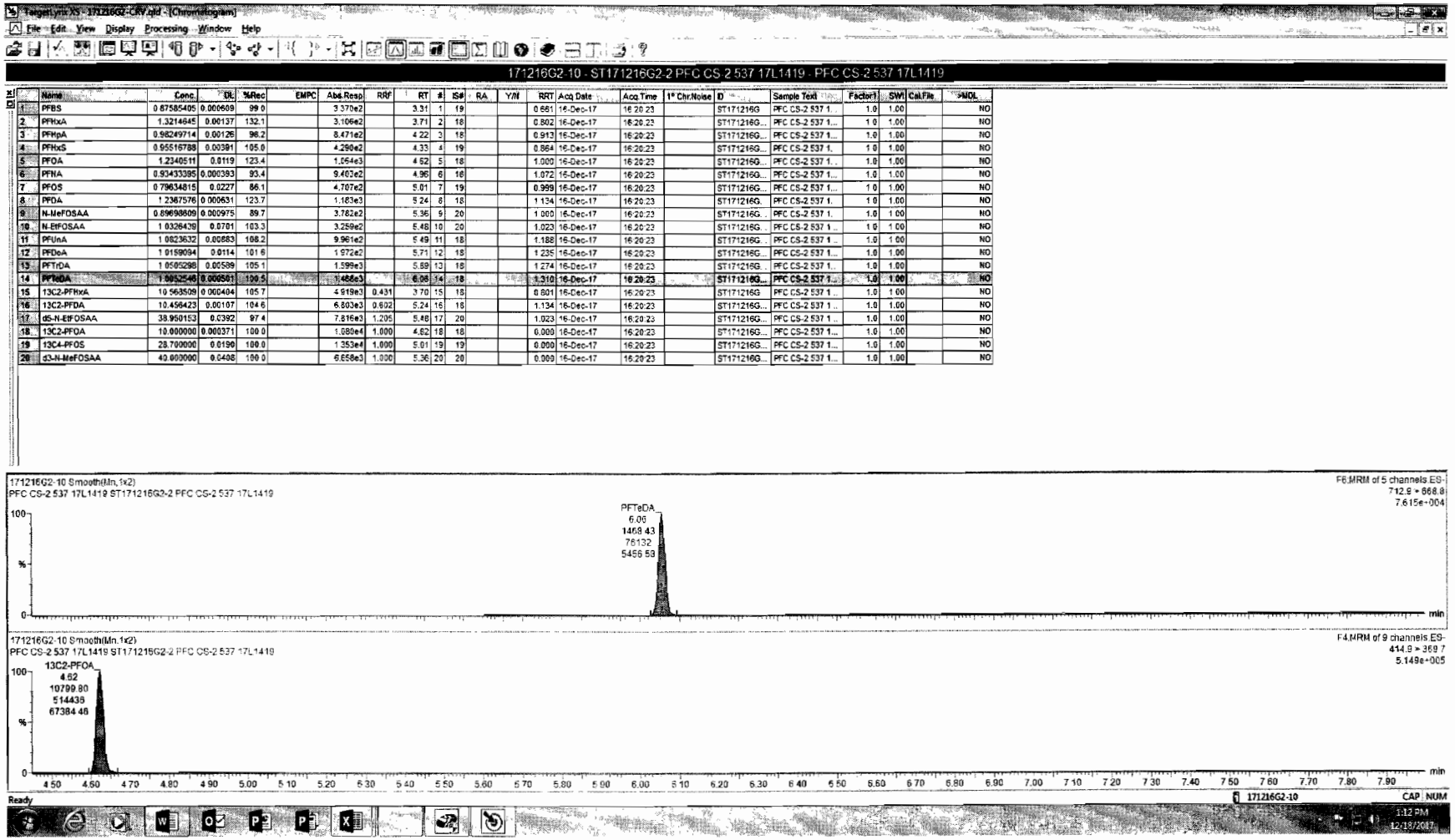

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1° Chr.Noise	ID	Sample Text	Factor	SW	Cal.File	%NOL
1	PFBS	0.87585405	0.000609	99.0		3.370e2		3.31	1	19			0.661	16-Dec-17	16:20:23		ST171216G	PFC CS-2 537 1...	1.0	1.00		NO
2	PFHxA	1.3214645	0.00137	132.1		3.106e2		3.71	2	18			0.802	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
3	PFHpA	0.98249714	0.00126	98.2		8.471e2		4.22	3	18			0.913	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
4	PFHxS	0.95516788	0.00391	105.0		4.290e2		4.33	4	19			0.864	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
5	PFOA	1.2340511	0.0119	123.4		1.054e3		4.62	5	18			1.000	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
6	PFNA	0.93433385	0.000393	93.4		9.403e2		4.96	6	18			1.072	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
7	PFOS	0.79634815	0.0227	86.1		4.707e2		5.01	7	19			0.999	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
8	PFDA	1.2367576	0.000631	123.7		1.183e3		5.24	8	18			1.134	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
9	N-MeFOSAA	0.89698809	0.000975	89.7		3.782e2		5.36	9	20			1.000	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
10	N-EtFOSAA	1.0326439	0.0701	103.3		3.259e2		5.48	10	20			1.023	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
11	PFUnA	1.0823632	0.00883	108.2		9.961e2		5.49	11	18			1.188	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
12	PFDoA	1.0159094	0.0114	101.6		1.972e2		5.71	12	18			1.235	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
13	PFTrDA	1.0505298	0.00589	105.1		1.599e3		5.89	13	18			1.274	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
14	PFTeDA	1.0052546	0.000561	100.5		1.468e3		6.06	14	18			1.310	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
15	13C2-PFHxA	10.563509	0.000404	105.7		4.919e3	0.431	3.70	15	18			0.801	16-Dec-17	16:20:23		ST171216G	PFC CS-2 537 1...	1.0	1.00		NO
16	13C2-PFDA	10.456423	0.00107	104.6		6.803e3	0.602	5.24	16	18			1.134	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
17	d5-N-EtFOSAA	38.950153	0.0392	97.4		7.816e3	1.205	5.48	17	20			1.023	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.000371	100.0		1.080e4	1.000	4.62	18	18			0.000	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.0196	100.0		1.353e4	1.000	5.01	19	19			0.000	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0408	100.0		6.658e3	1.000	5.36	20	20			0.000	16-Dec-17	16:20:23		ST171216G...	PFC CS-2 537 1...	1.0	1.00		NO

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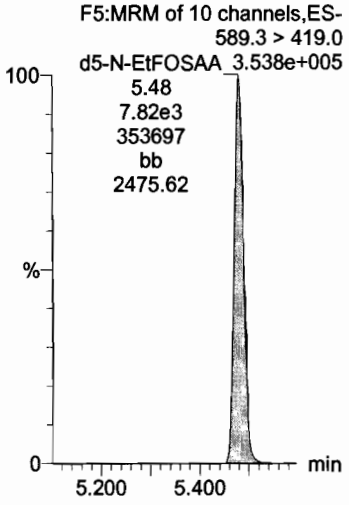
Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-10, Date: 16-Dec-2017, Time: 16:20:23, ID: ST171216G2-2 PFC CS-2 537 17L1419, Description: PFC CS-2 537 17L1419

d5-N-EtFOSAA



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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-11, Date: 16-Dec-2017, Time: 16:32:48, ID: ST171216G2-3 PFC CS-1 537 17L1420, Description: PFC CS-1 537 17L1429

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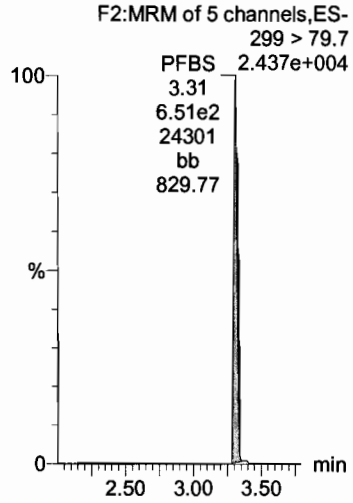

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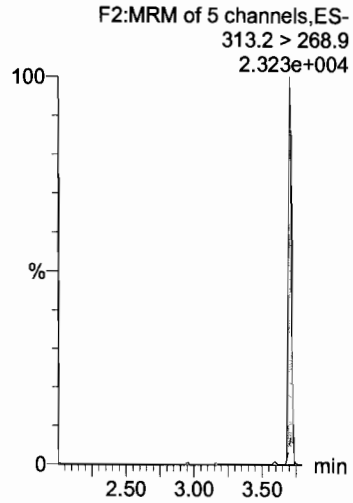

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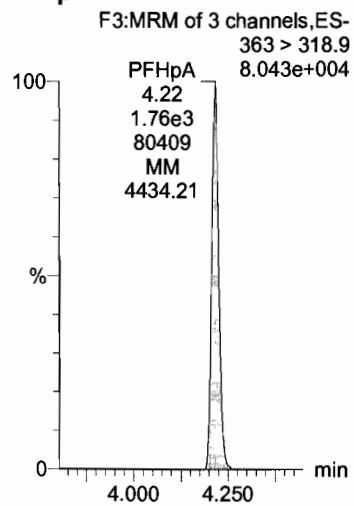

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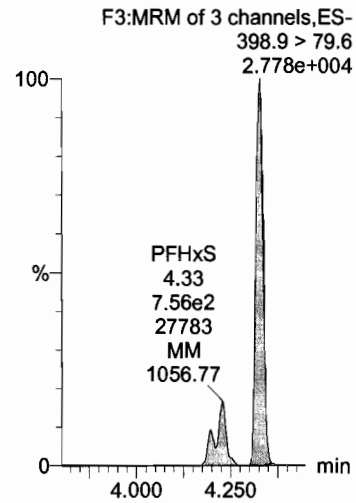

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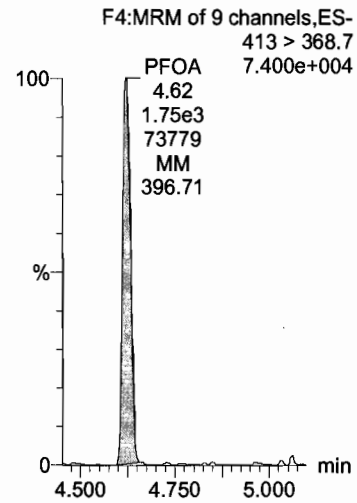
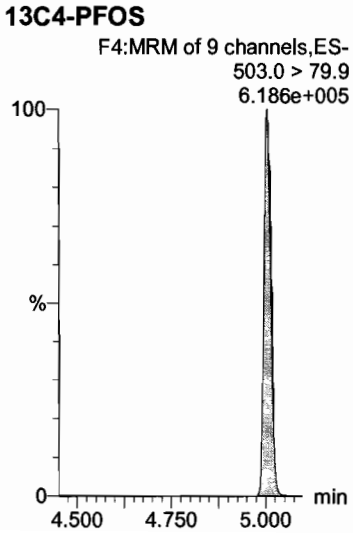


13C4-PFOS



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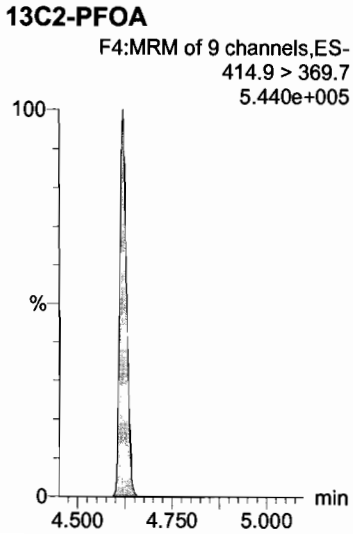

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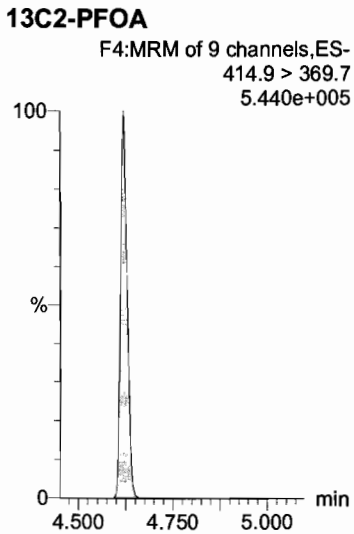

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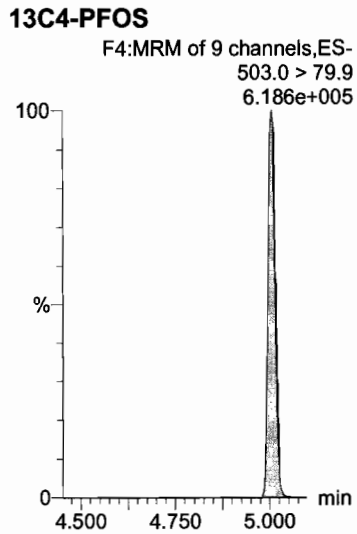

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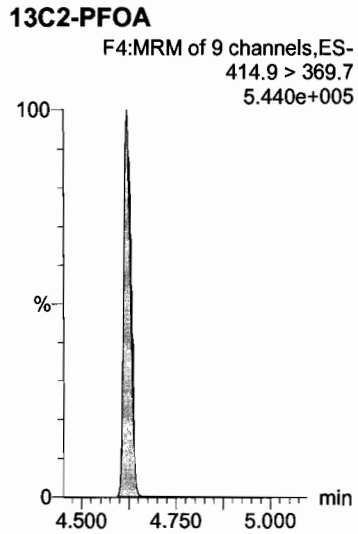

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Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-11, Date: 16-Dec-2017, Time: 16:32:48, ID: ST171216G2-3 PFC CS-1 537 17L1420, Description: PFC CS-1 537 17L1429

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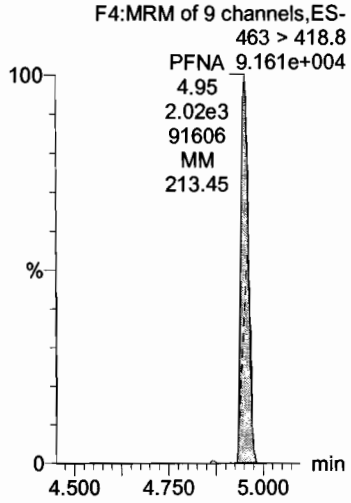

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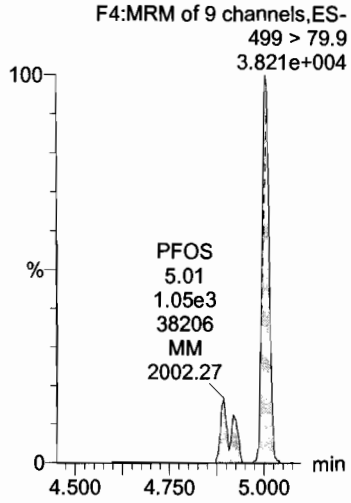
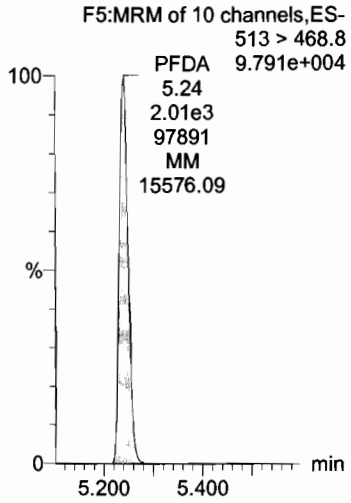


PFDA



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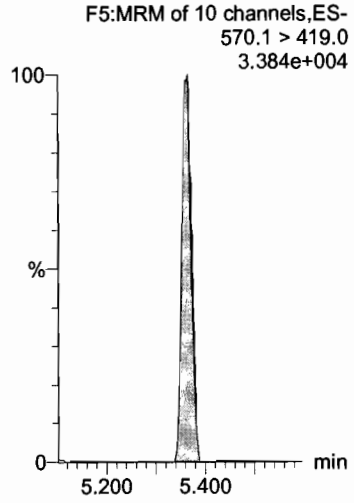

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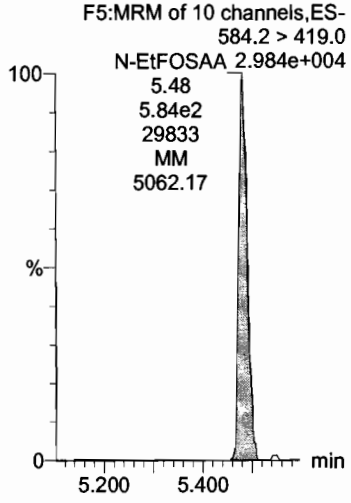
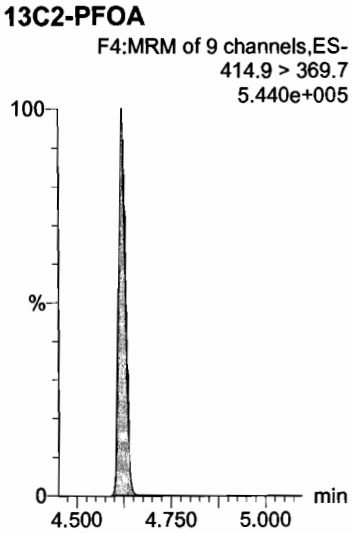


13C2-PFOA



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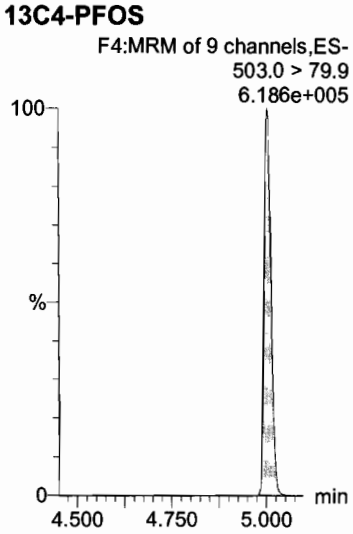

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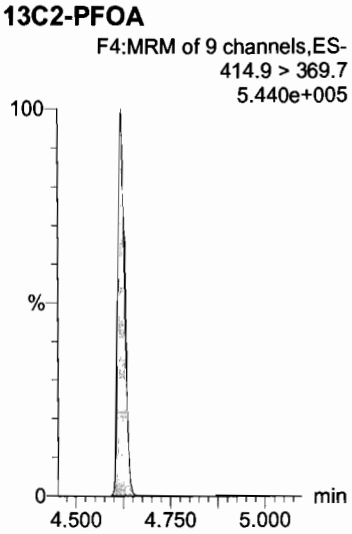

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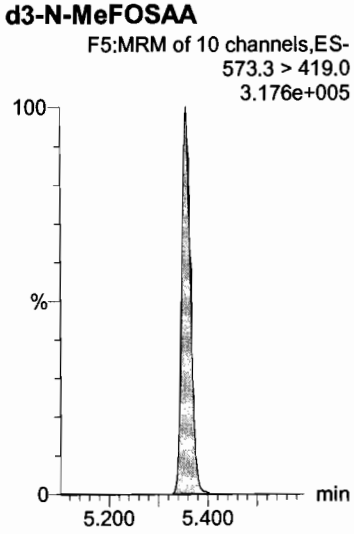

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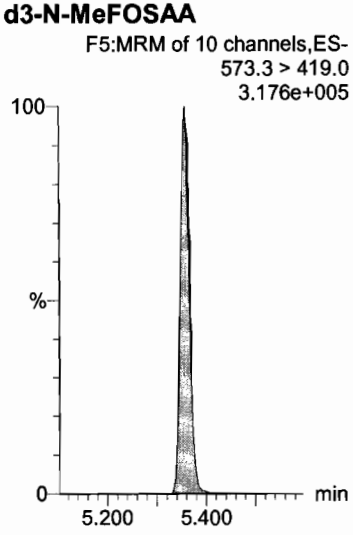

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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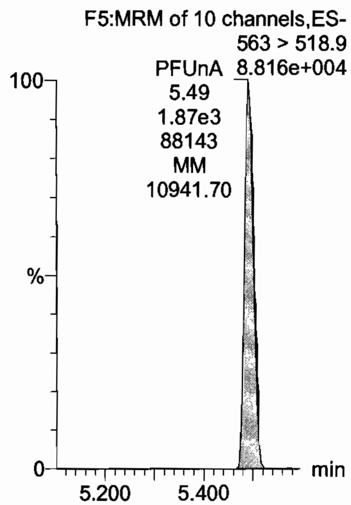
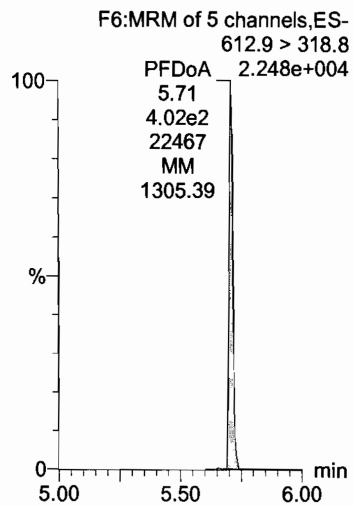
Name: 171216G2-11, Date: 16-Dec-2017, Time: 16:32:48, ID: ST171216G2-3 PFC CS-1 537 17L1420, Description: PFC CS-1 537 17L1429

PFUnA



PFDoA



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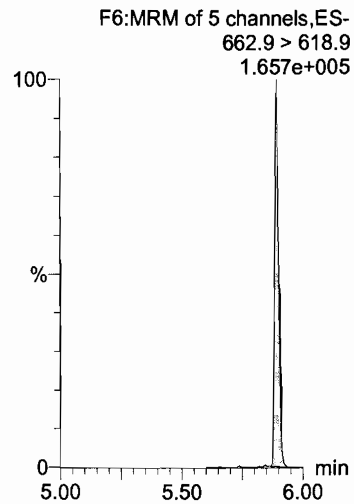

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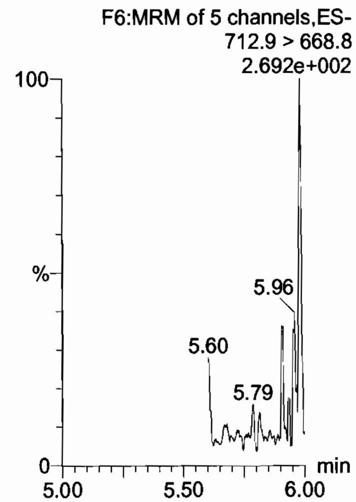

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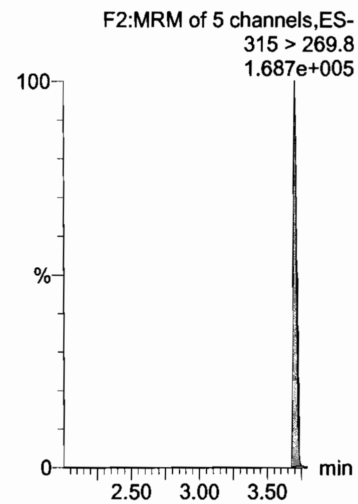

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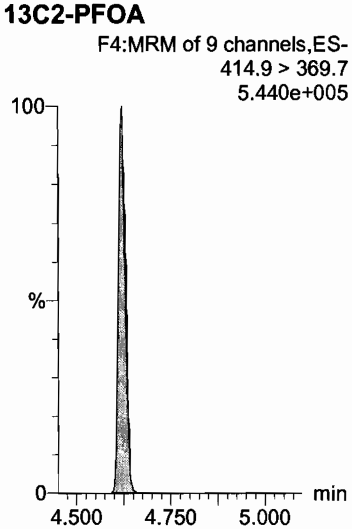

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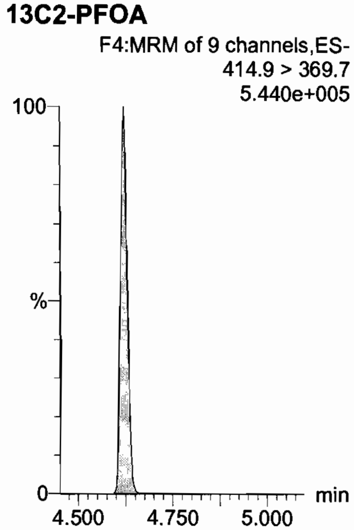

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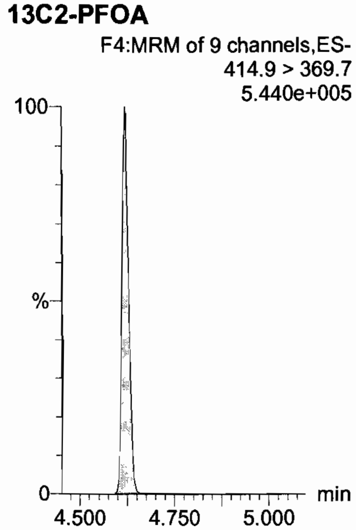

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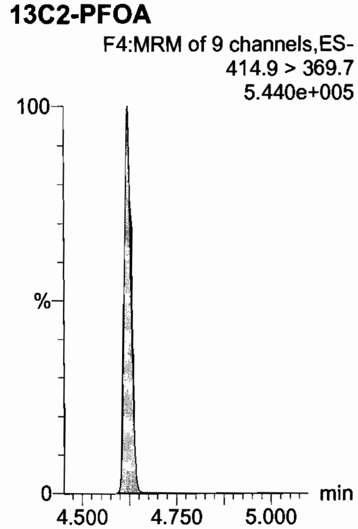

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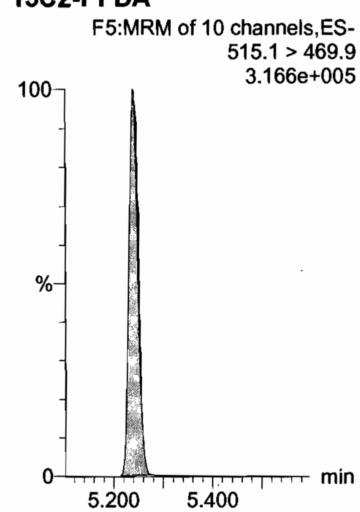

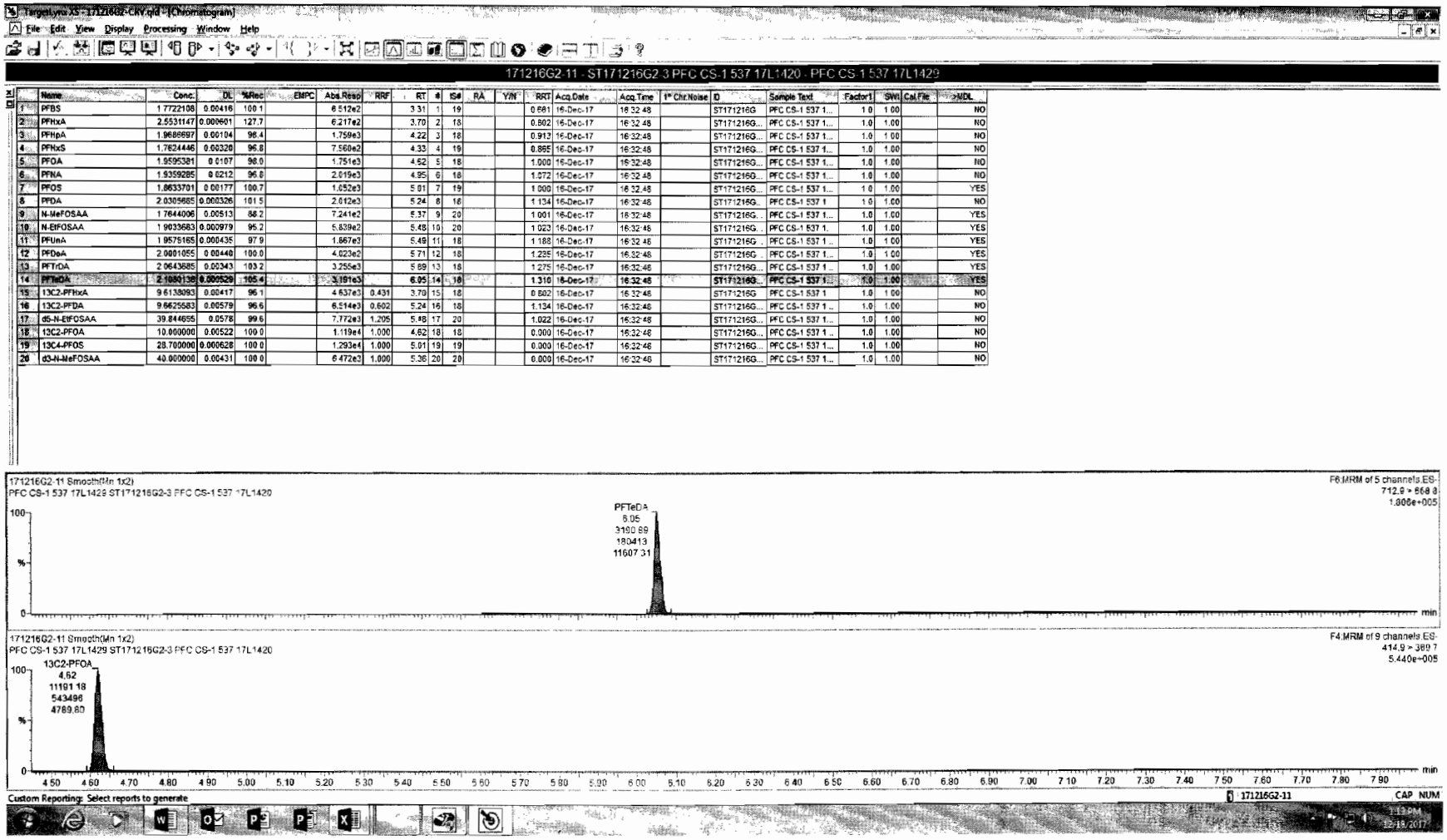

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	SW1	Cal.File	>MDL
1	PFBS	1.7722108	0.00416	100.1		6.512e2		3.31	1	19			0.681	16-Dec-17	16:32:48		ST171216G	PFC CS-1 537 1...	1.0	1.00		NO
2	PFHxA	2.5531147	0.000601	127.7		6.217e2		3.70	2	18			0.802	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
3	PFHpA	1.9686697	0.00104	98.4		1.759e3		4.22	3	18			0.913	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
4	PFHxS	1.7624446	0.00320	96.8		7.560e2		4.33	4	19			0.885	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
5	PFOA	1.9595381	0.0107	98.0		1.751e3		4.62	5	18			1.000	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
6	PFNA	1.9359285	0.0212	96.8		2.019e3		4.95	6	18			1.072	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
7	PFOS	1.8633701	0.00177	100.7		1.652e3		5.01	7	19			1.000	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		YES
8	PFDA	2.0305685	0.000326	101.5		2.012e3		5.24	8	18			1.134	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1	1.0	1.00		NO
9	N-MeFOSAA	1.7644006	0.00513	88.2		7.241e2		5.37	9	20			1.001	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		YES
10	N-EtFOSAA	1.9033683	0.000979	95.2		5.839e2		5.48	10	20			1.023	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1.	1.0	1.00		YES
11	PFUnA	1.9575165	0.000435	97.9		1.867e3		5.49	11	18			1.188	16-Dec-17	16:32:48		ST171216G	PFC CS-1 537 1...	1.0	1.00		YES
12	PFDoA	2.0001055	0.00440	100.0		4.023e2		5.71	12	18			1.235	16-Dec-17	16:32:48		ST171216G	PFC CS-1 537 1...	1.0	1.00		YES
13	PFTrDA	2.0643685	0.00343	103.2		3.255e3		5.89	13	18			1.275	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1	1.0	1.00		YES
14	PFTeDA	2.1061138	0.000529	105.4		3.191e3		6.05	14	18			1.310	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1	1.0	1.00		YES
15	13C2-PFHxA	9.6138093	0.00417	96.1		4.637e3	0.431	3.70	15	18			0.802	16-Dec-17	16:32:48		ST171216G	PFC CS-1 537 1	1.0	1.00		NO
16	13C2-PFDA	9.6625583	0.00579	96.6		6.514e3	0.602	5.24	16	18			1.134	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
17	d5-N-EtFOSAA	39.844655	0.0578	99.6		7.772e3	1.205	5.48	17	20			1.022	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.00522	100.0		1.119e4	1.000	4.62	18	18			0.000	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.000628	100.0		1.293e4	1.000	5.01	19	19			0.000	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00431	100.0		6.472e3	1.000	5.36	20	20			0.000	16-Dec-17	16:32:48		ST171216G...	PFC CS-1 537 1...	1.0	1.00		NO

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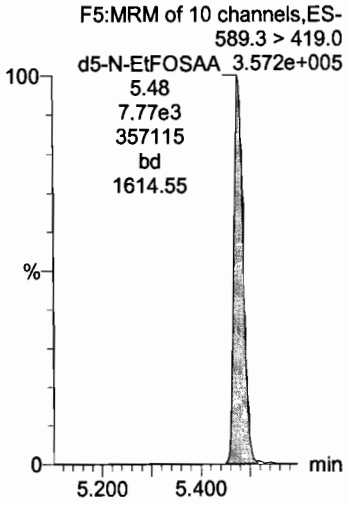
Name: 171216G2-11, Date: 16-Dec-2017, Time: 16:32:48, ID: ST171216G2-3 PFC CS-1 537 17L1420, Description: PFC CS-1 537 17L1429

d5-N-EtFOSAA



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Name: 171216G2-12, Date: 16-Dec-2017, Time: 16:45:13, ID: ST171216G2-4 PFC CS0 537 17L1421, Description: PFC CS0 537 17L1421

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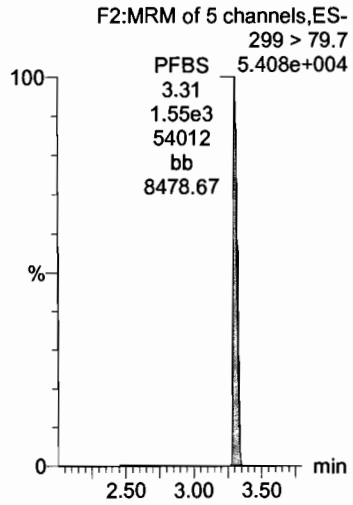
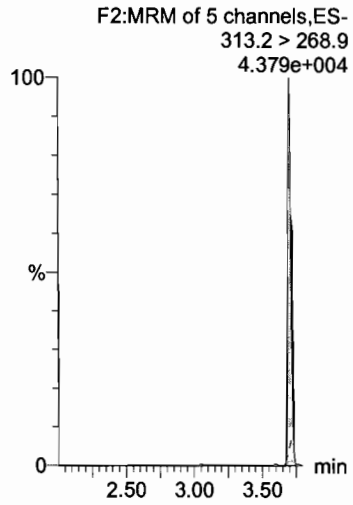
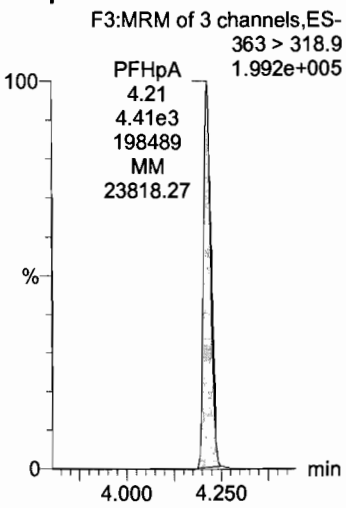


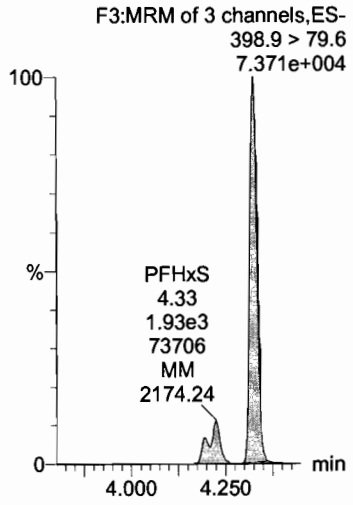
PFHxA



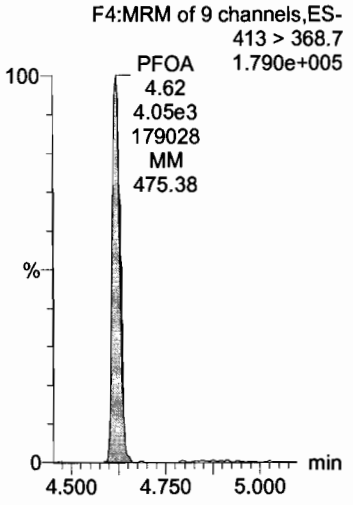
PFHpA



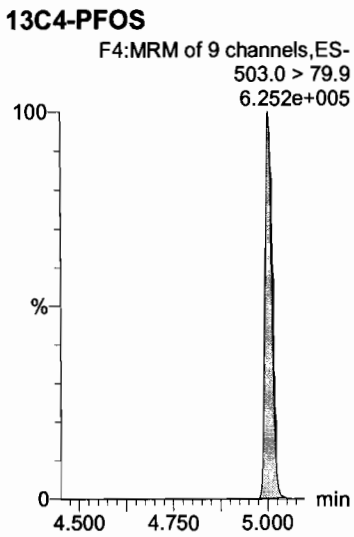
PFHxS



PFOA



13C4-PFOS



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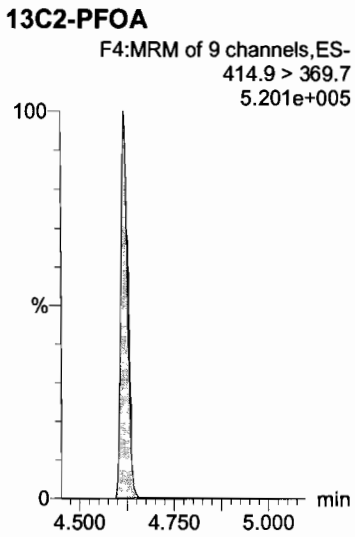

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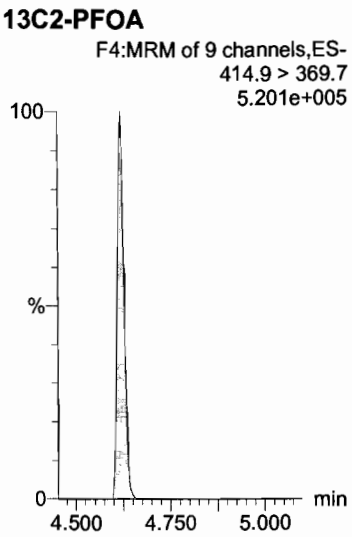

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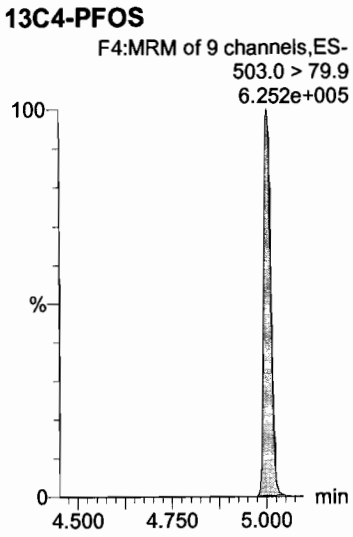

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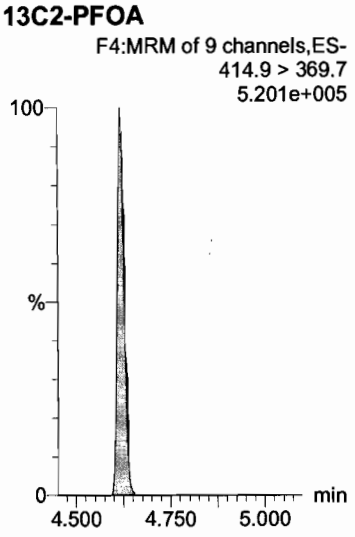

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Name: 171216G2-12, Date: 16-Dec-2017, Time: 16:45:13, ID: ST171216G2-4 PFC CS0 537 17L1421, Description: PFC CS0 537 17L1421

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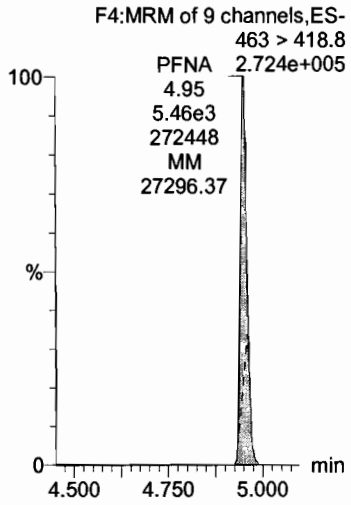

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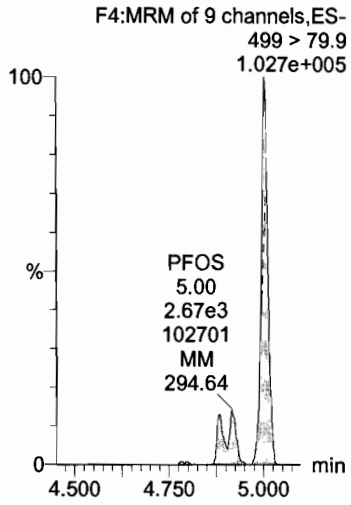

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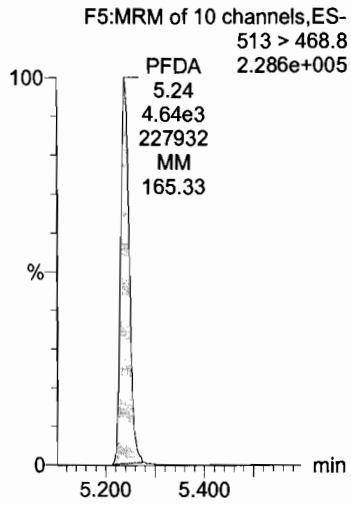

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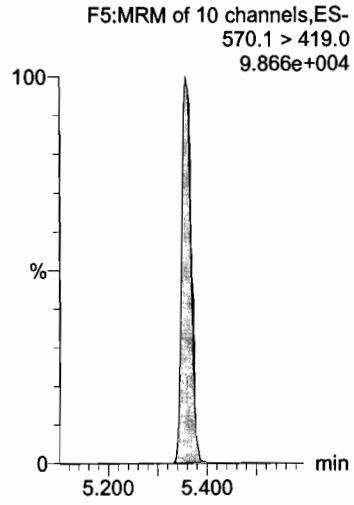
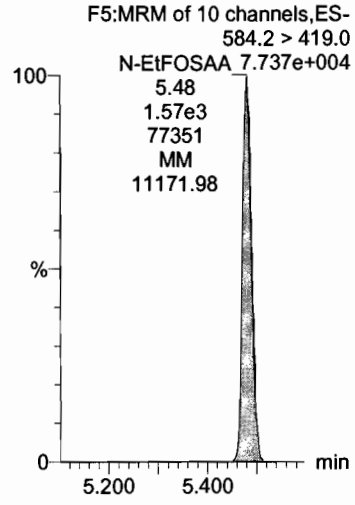


N-EtFOSAA



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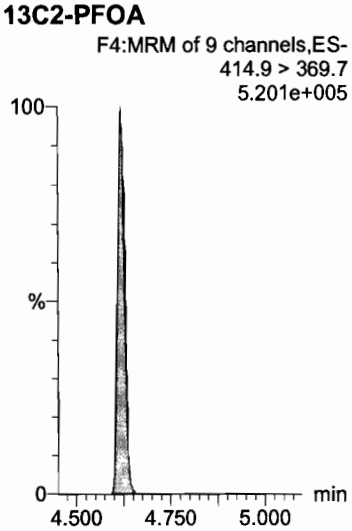

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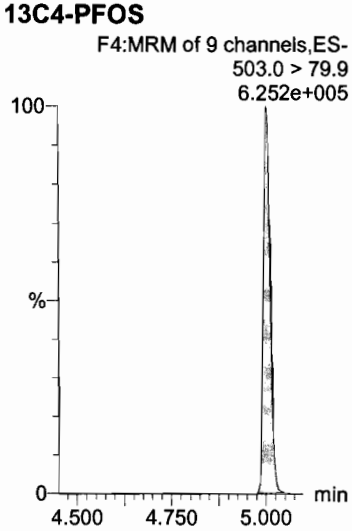

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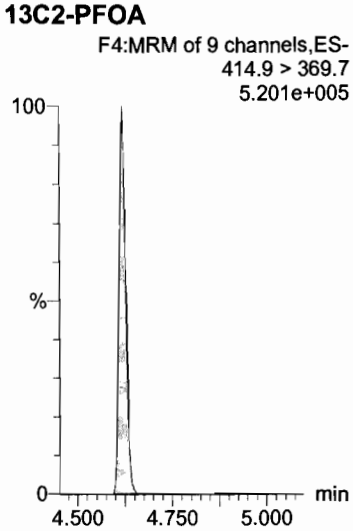

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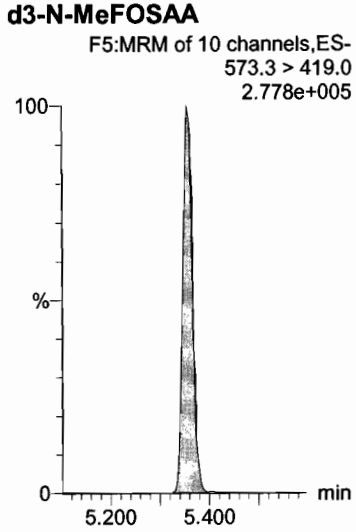

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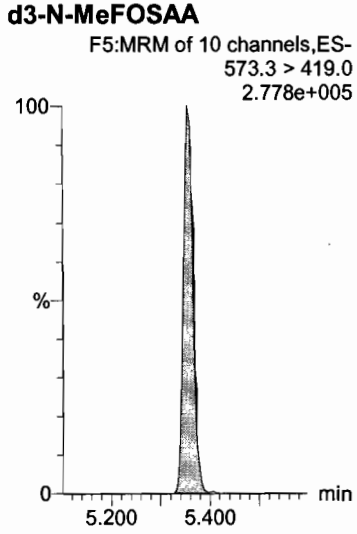

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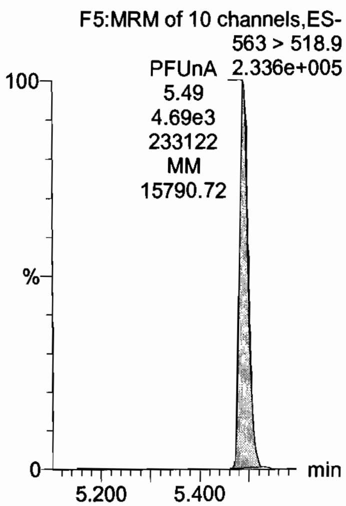
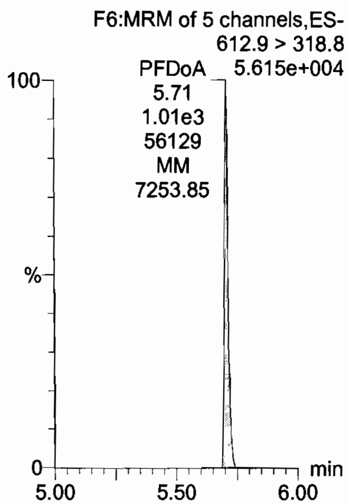
Name: 171216G2-12, Date: 16-Dec-2017, Time: 16:45:13, ID: ST171216G2-4 PFC CS0 537 17L1421, Description: PFC CS0 537 17L1421

PFUnA



PFDoA



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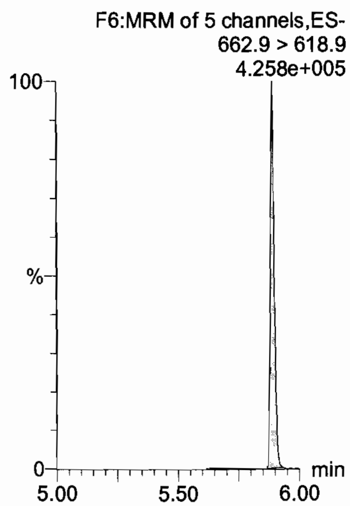
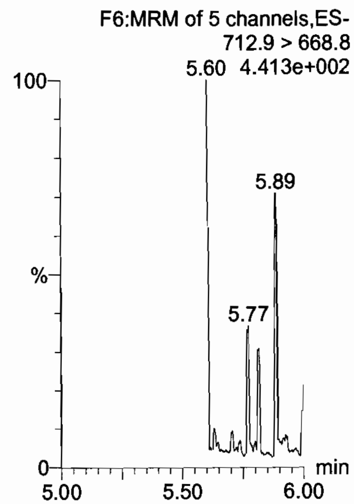
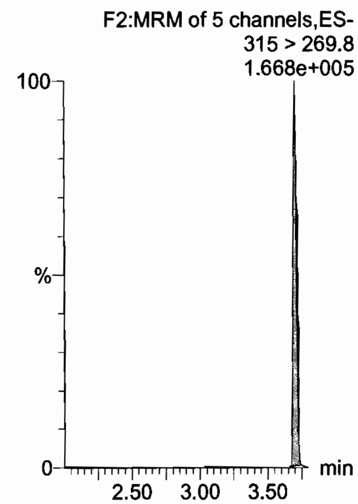


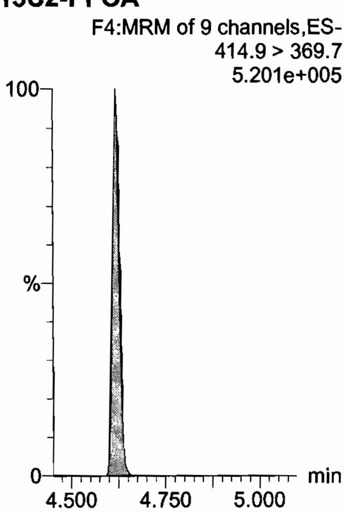
PFTeDA



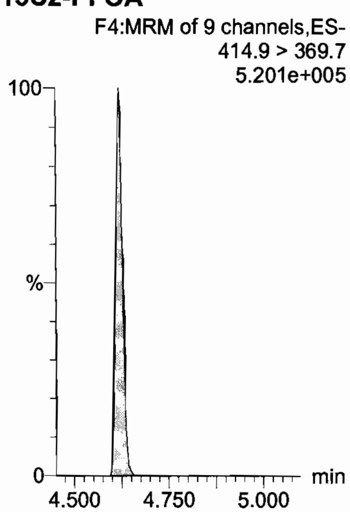
13C2-PFHxA



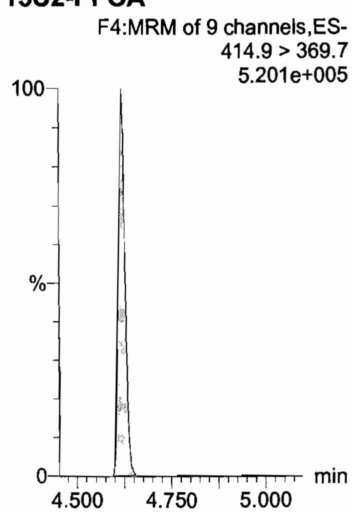
13C2-PFOA



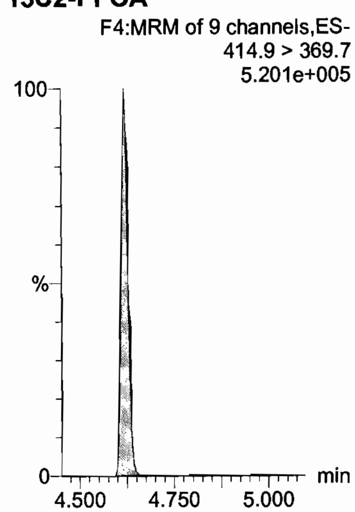
13C2-PFOA



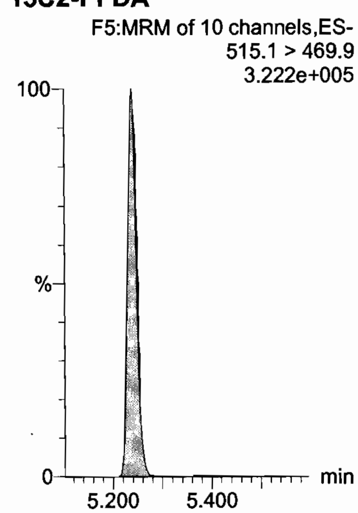
13C2-PFOA

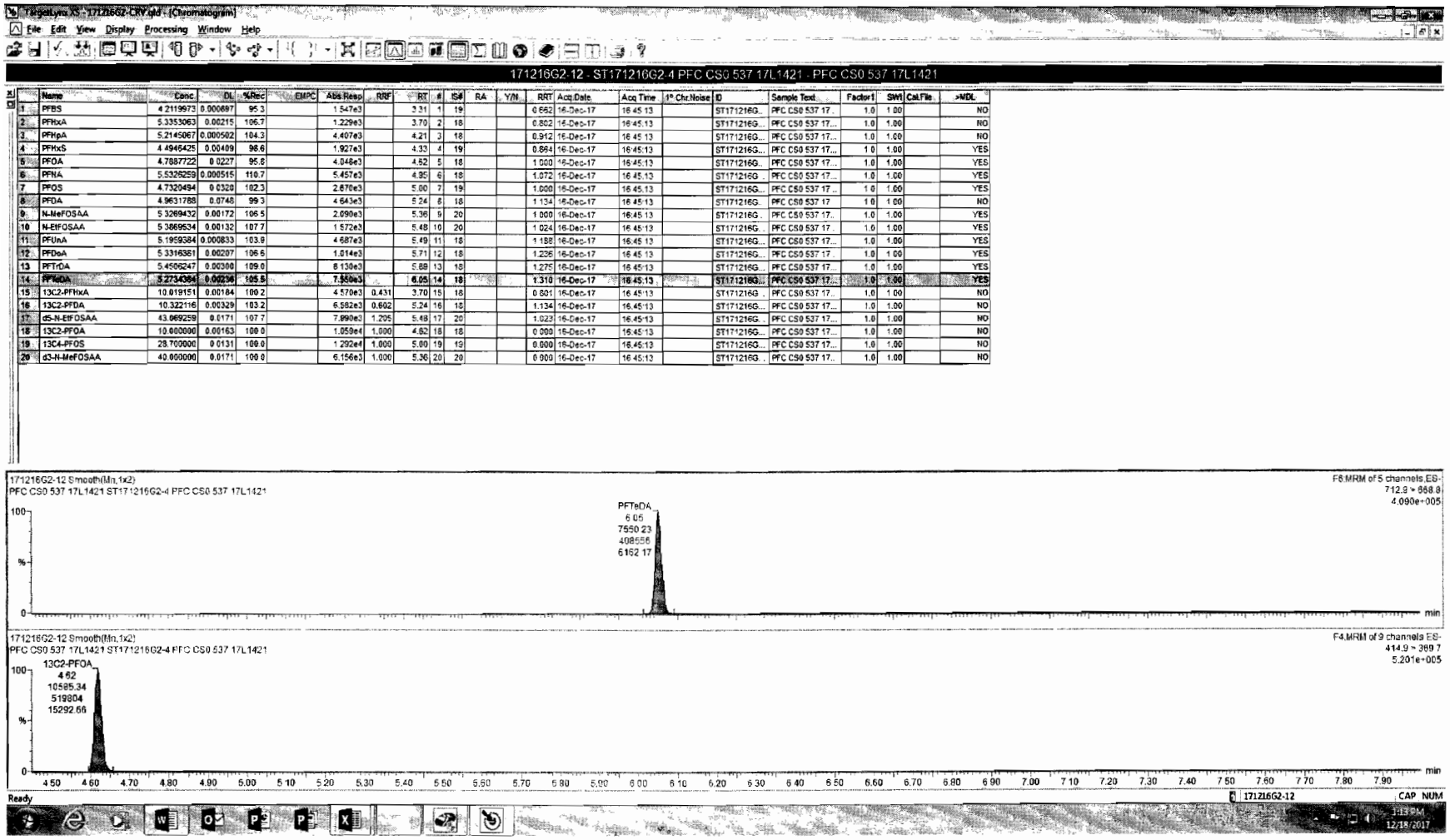


13C2-PFOA



13C2-PFDA





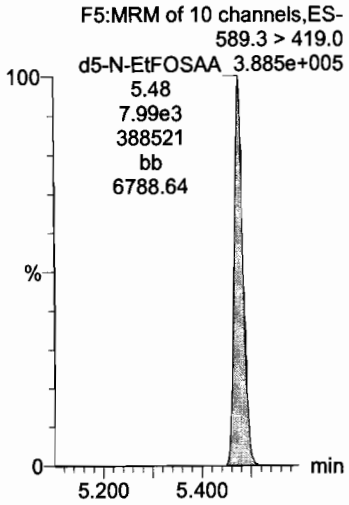
	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Noise	ID	Sample Text	Factor1	SW1	Cal.File	>MDL
1	PFBS	4.2119973	0.000697	95.3		1.547e3		3.31	1	19			0.662	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
2	PFHxA	5.3353063	0.00215	106.7		1.229e3		3.70	2	18			0.802	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
3	PFHpA	5.2145067	0.000502	104.3		4.407e3		4.21	3	18			0.912	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
4	PFHxS	4.4946425	0.00409	98.6		1.927e3		4.33	4	19			0.864	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
5	PFOA	4.7887722	0.0227	95.8		4.046e3		4.52	5	18			1.000	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
6	PFNA	5.5326259	0.000515	110.7		5.457e3		4.95	6	18			1.072	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
7	PFOS	4.7320494	0.0320	102.3		2.870e3		5.00	7	19			1.000	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
8	PFDA	4.9631788	0.0748	99.3		4.643e3		5.24	8	18			1.134	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
9	N-MeFOSAA	5.3269432	0.00172	106.5		2.090e3		5.36	9	20			1.000	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
10	N-EtFOSAA	5.3869534	0.00132	107.7		1.572e3		5.48	10	20			1.024	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
11	PFUnA	5.1959384	0.000833	103.9		4.687e3		5.49	11	18			1.188	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
12	PFDoA	5.3316381	0.00207	106.6		1.014e3		5.71	12	18			1.296	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
13	PFTrDA	5.4506247	0.00300	109.0		8.130e3		5.88	13	18			1.275	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
14	PFTeDA	5.2734384	0.00234	105.5		7.550e3		6.05	14	18			1.310	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		YES
15	13C2-PFHxA	10.019151	0.00184	100.2		4.570e3	0.431	3.70	15	18			0.801	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
16	13C2-PFDA	10.322116	0.00329	103.2		6.582e3	0.602	5.24	16	18			1.134	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
17	d5-N-EtFOSAA	43.069259	0.0171	107.7		7.990e3	1.205	5.48	17	20			1.023	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.00163	100.0		1.059e4	1.000	4.62	18	18			0.000	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.0131	100.0		1.292e4	1.000	5.00	19	19			0.000	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0171	100.0		6.156e3	1.000	5.36	20	20			0.000	16-Dec-17	16:45:13		ST171216G...	PFC CS0 537 17...	1.0	1.00		NO

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-12, Date: 16-Dec-2017, Time: 16:45:13, ID: ST171216G2-4 PFC CS0 537 17L1421, Description: PFC CS0 537 17L1421

d5-N-EtFOSAA

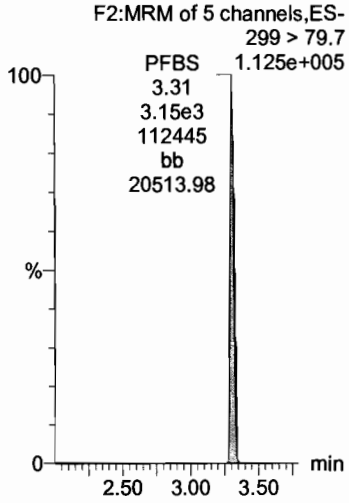


Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

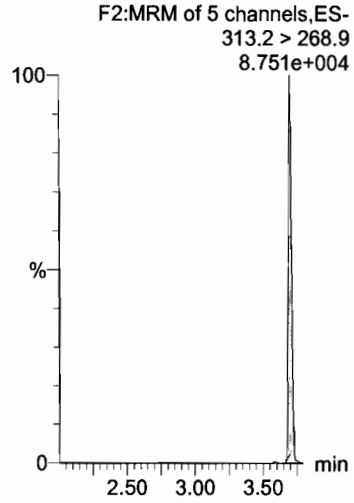
Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-13, Date: 16-Dec-2017, Time: 16:57:39, ID: ST171216G2-5 PFC CS1 537 17L1422, Description: PFC CS1 537 17L1422

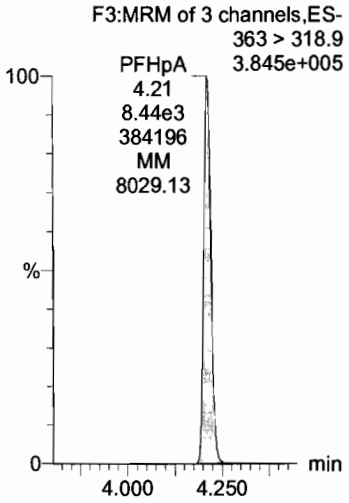
PFBS



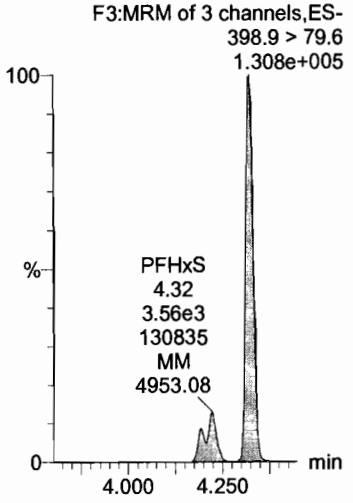
PFHxA



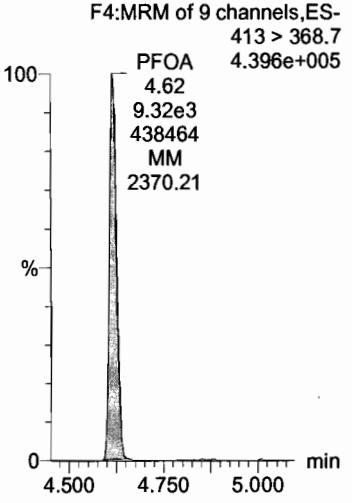
PFHpA



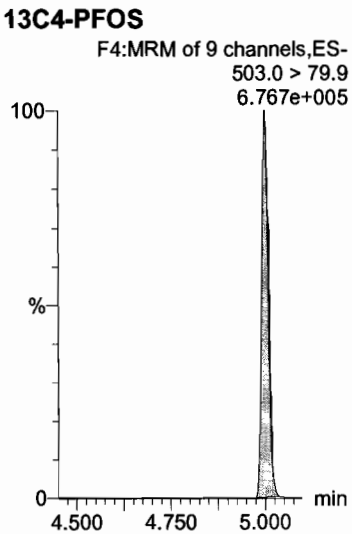
PFHxS



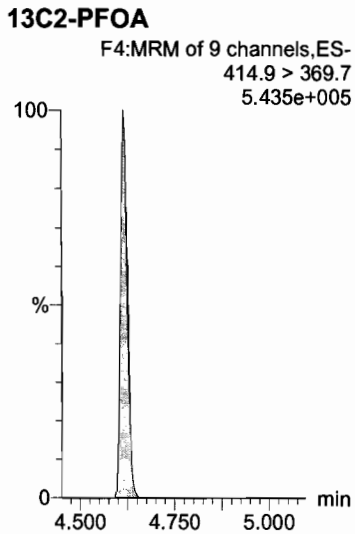
PFOA



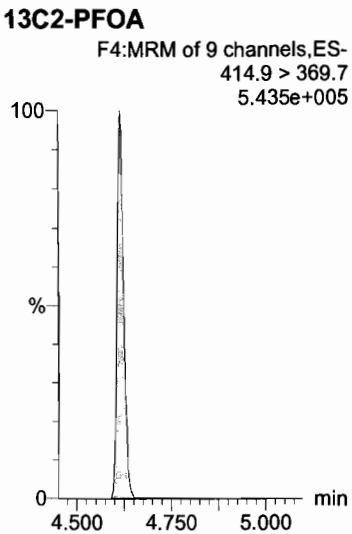
13C4-PFOS



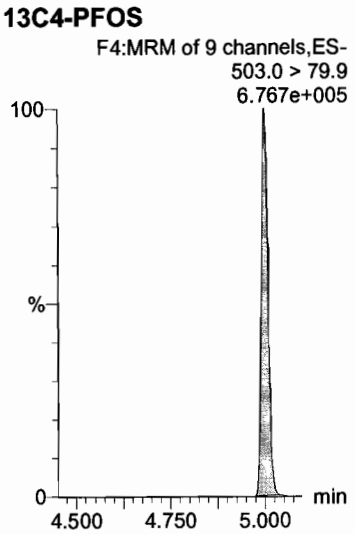
13C2-PFOA



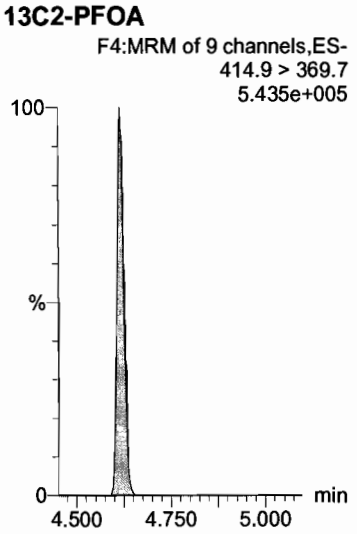
13C2-PFOA



13C4-PFOS



13C2-PFOA



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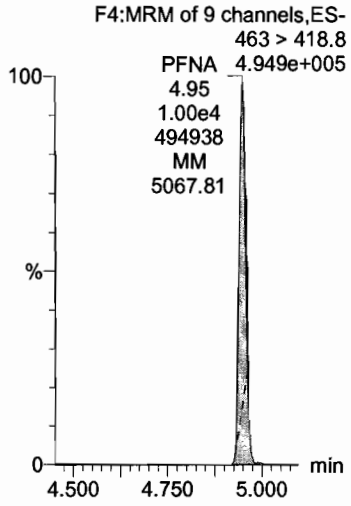
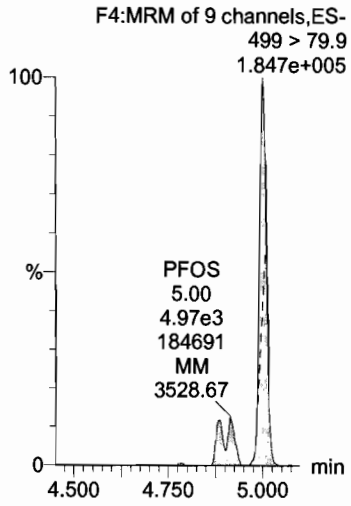
Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-13, Date: 16-Dec-2017, Time: 16:57:39, ID: ST171216G2-5 PFC CS1 537 17L1422, Description: PFC CS1 537 17L1422

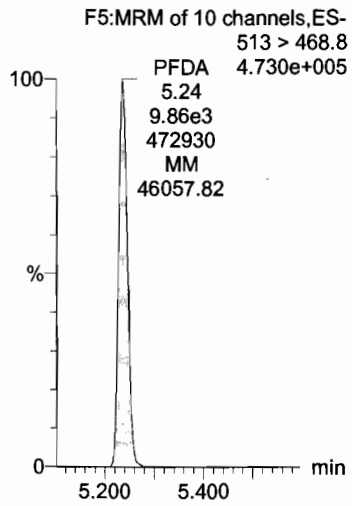
PFNA



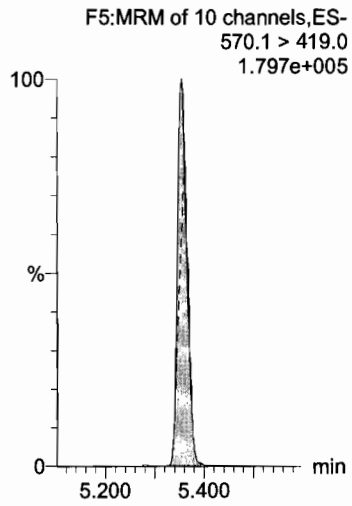
PFOS



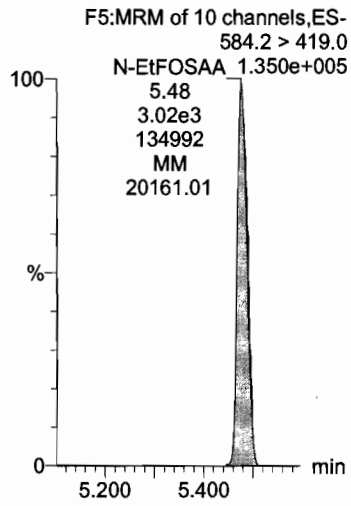
PFDA



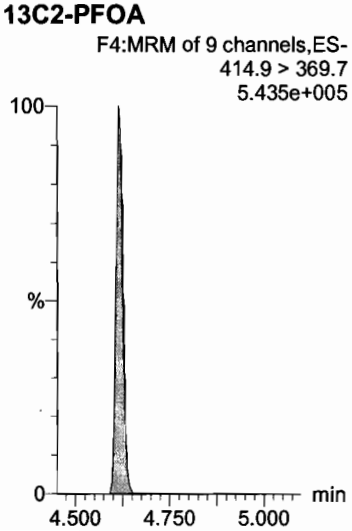
N-MeFOSAA



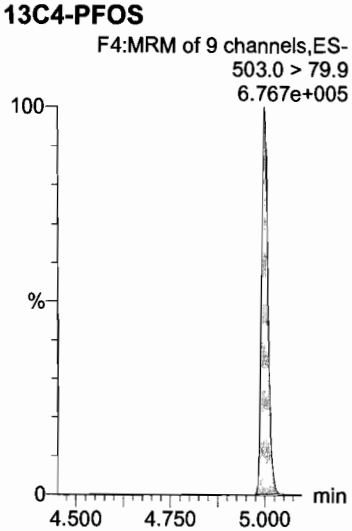
N-EtFOSAA



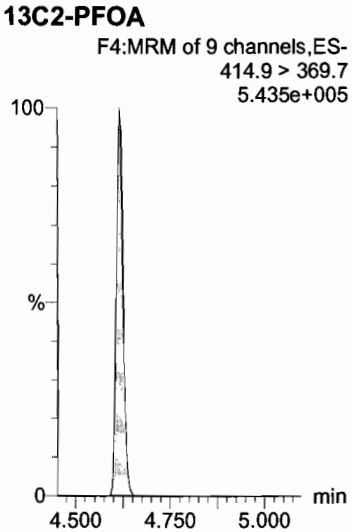
13C2-PFOA



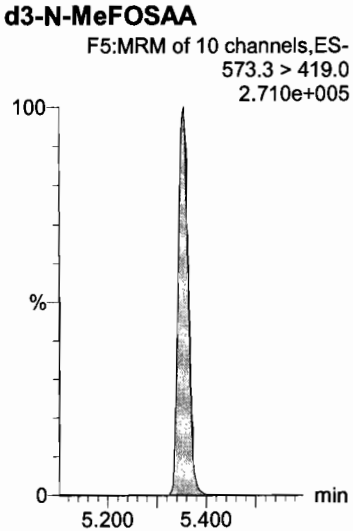
13C4-PFOS



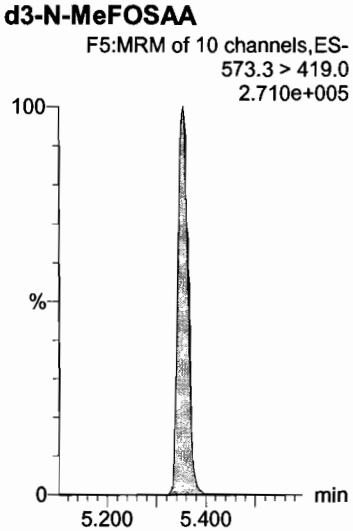
13C2-PFOA



d3-N-MeFOSAA



d3-N-MeFOSAA



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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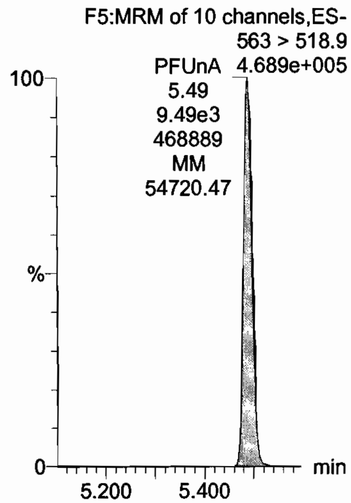
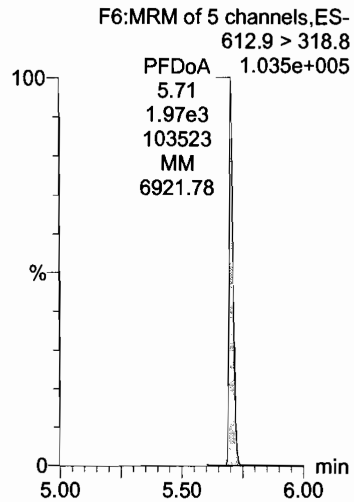
Name: 171216G2-13, Date: 16-Dec-2017, Time: 16:57:39, ID: ST171216G2-5 PFC CS1 537 17L1422, Description: PFC CS1 537 17L1422

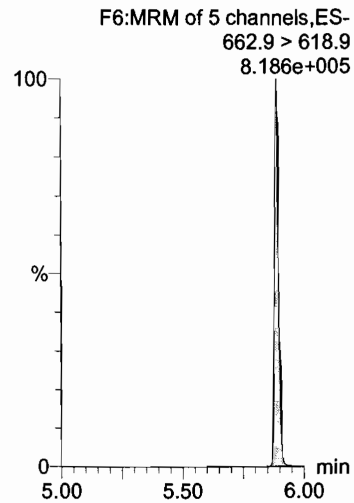
PFUnA



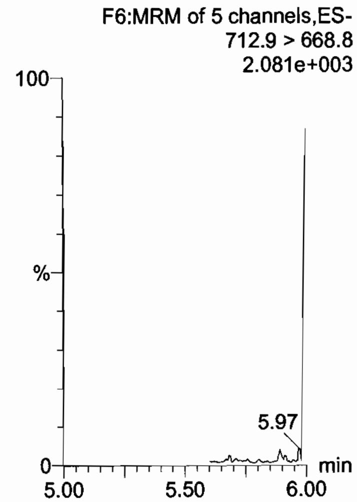
PFDoA



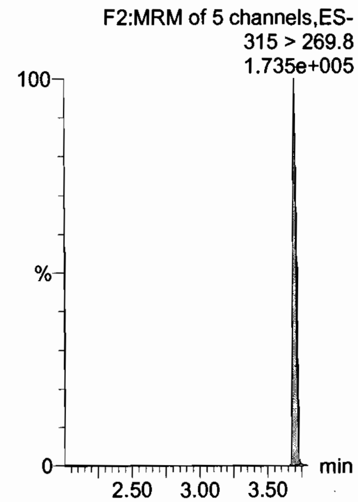
PFTrDA



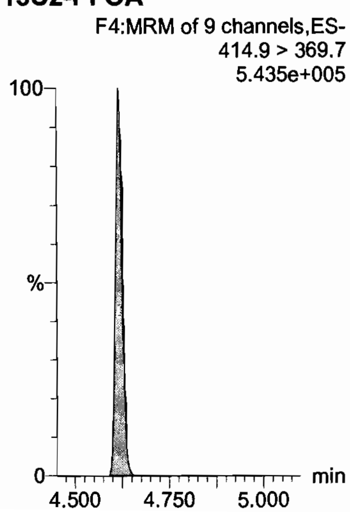
PFTeDA



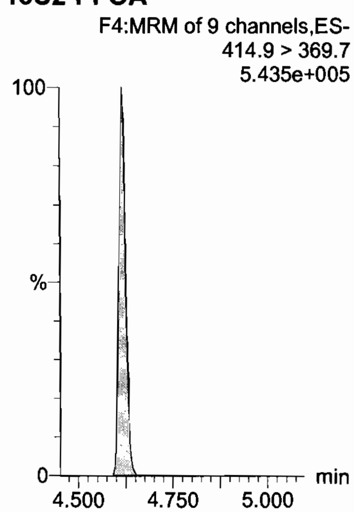
13C2-PFHxA



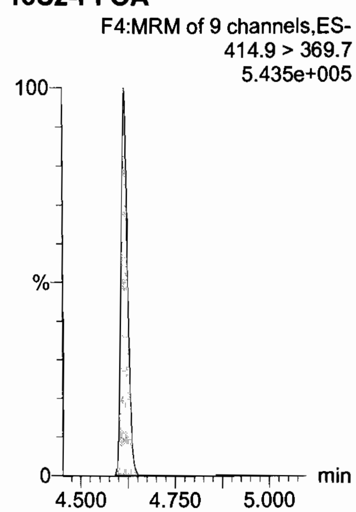
13C2-PFOA



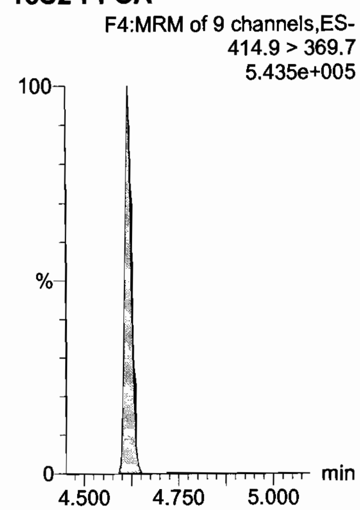
13C2-PFOA



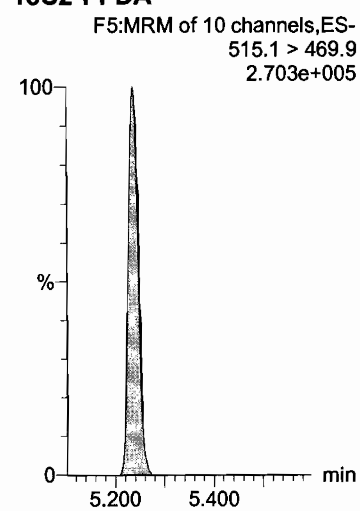
13C2-PFOA

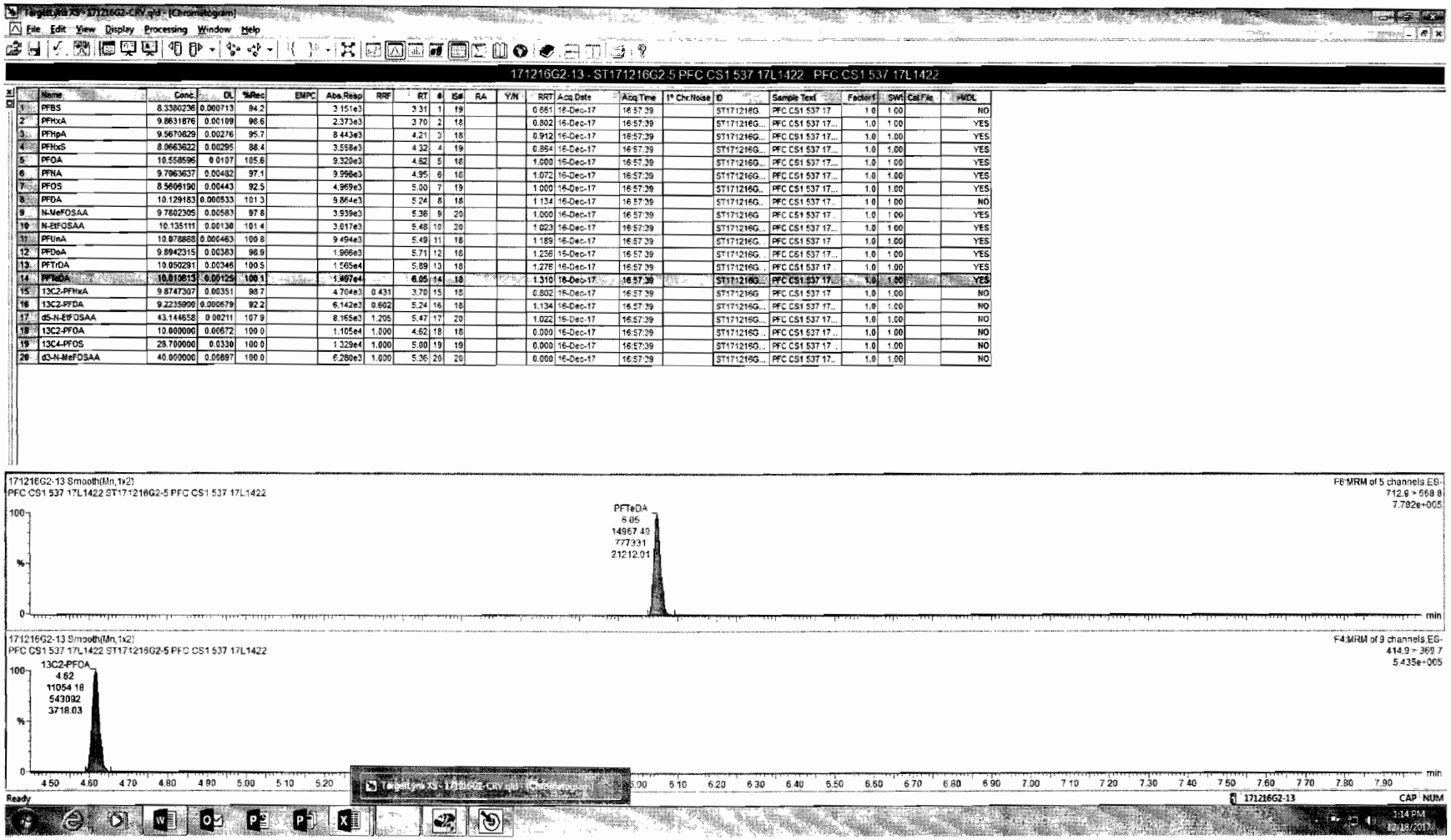


13C2-PFOA



13C2-PFDA





	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Noise	ID	Sample Text	Factor1	SW1	Cal.File	HDL
1	PFBS	8.3380236	0.000713	94.2		3.151e3		3.31	1	19			0.861	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17	1.0	1.00		NO
2	PFHxA	9.8631876	0.00109	98.6		2.373e3		3.70	2	18			0.802	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
3	PFHpA	9.5670829	0.00276	95.7		8.443e3		4.21	3	18			0.912	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
4	PFHxS	8.0663622	0.00295	88.4		3.558e3		4.32	4	19			0.864	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
5	PFOA	10.558596	0.0107	105.6		9.329e3		4.62	5	18			1.000	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
6	PFNA	9.7063637	0.00482	97.1		9.998e3		4.95	6	18			1.072	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
7	PFOS	8.5606190	0.00443	92.5		4.969e3		5.00	7	19			1.000	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
8	PFDA	10.129183	0.000533	101.3		9.864e3		5.24	8	18			1.134	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		NO
9	N-MeFOSAA	9.7802305	0.00583	97.8		3.939e3		5.36	9	20			1.000	16-Dec-17	16:57:39		ST171216G	PFC CS1 537 17..	1.0	1.00		YES
10	N-EtFOSAA	10.135111	0.00138	101.4		3.017e3		5.48	10	20			1.023	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
11	PFUnA	10.078868	0.000463	100.8		9.494e3		5.49	11	18			1.189	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17	1.0	1.00		YES
12	PFDoA	9.8942315	0.00383	98.9		1.966e3		5.71	12	18			1.236	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
13	PFTrDA	10.050291	0.00346	100.5		1.565e4		5.89	13	18			1.276	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17..	1.0	1.00		YES
14	PFTeDA	10.010813	0.00125	100.1		1.497e4		6.05	14	18			1.310	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		YES
15	13C2-PFHxA	9.8747307	0.00351	98.7		4.704e3	0.431	3.70	15	18			0.802	16-Dec-17	16:57:39		ST171216G	PFC CS1 537 17	1.0	1.00		NO
16	13C2-PFDA	9.2235906	0.000679	92.2		6.142e3	0.602	5.24	16	18			1.134	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17..	1.0	1.00		NO
17	d5-N-EtFOSAA	43.144658	0.00211	107.9		8.165e3	1.205	5.47	17	20			1.022	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.00672	100.0		1.105e4	1.000	4.62	18	18			0.000	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.0330	100.0		1.329e4	1.000	5.00	19	19			0.000	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17 ..	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00697	100.0		6.280e3	1.000	5.36	20	20			0.000	16-Dec-17	16:57:39		ST171216G..	PFC CS1 537 17..	1.0	1.00		NO

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

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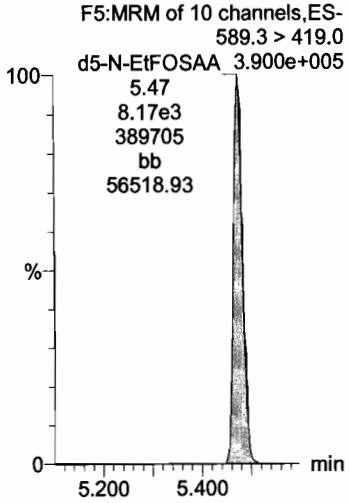
Name: 171216G2-13, Date: 16-Dec-2017, Time: 16:57:39, ID: ST171216G2-5 PFC CS1 537 17L1422, Description: PFC CS1 537 17L1422

d5-N-EtFOSAA



Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

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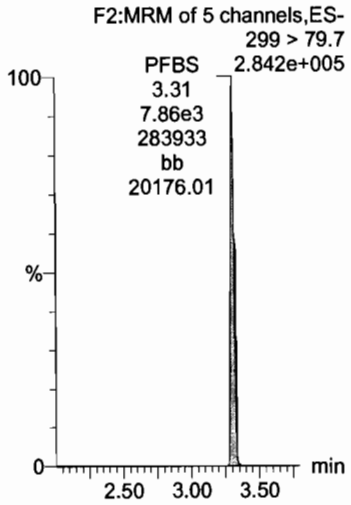
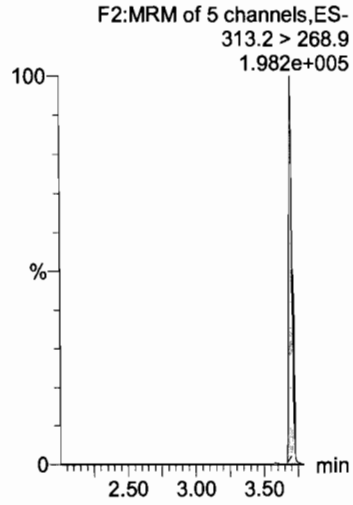
Name: 171216G2-14, Date: 16-Dec-2017, Time: 17:10:07, ID: ST171216G2-6 PFC CS2 537 17L1423, Description: PFC CS2 537 17L1423

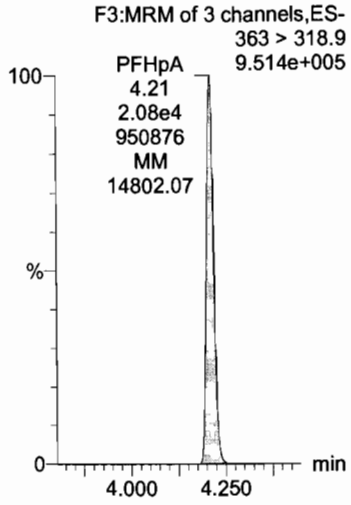
PFBS



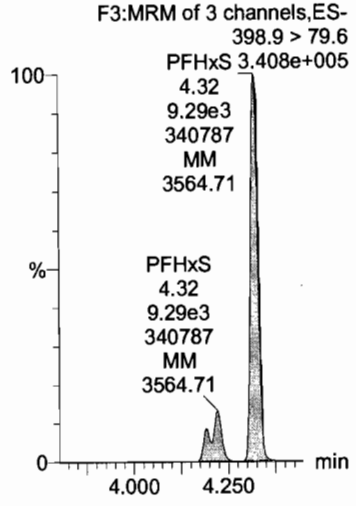
PFHxA



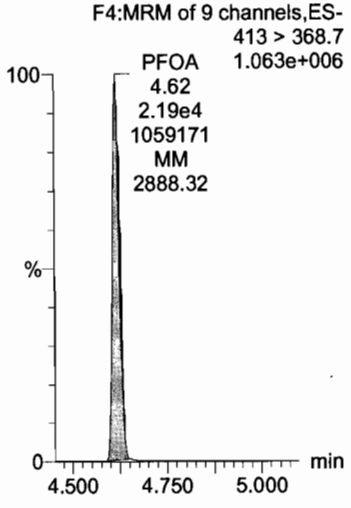
PFHpA



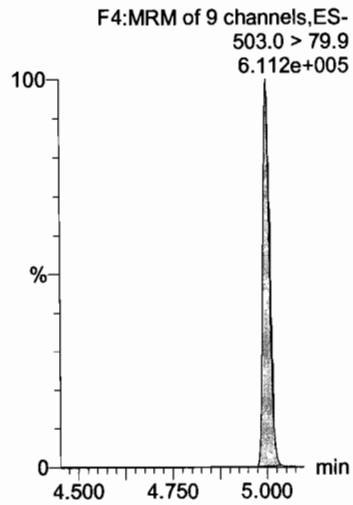
PFHxS



PFOA



13C4-PFOS



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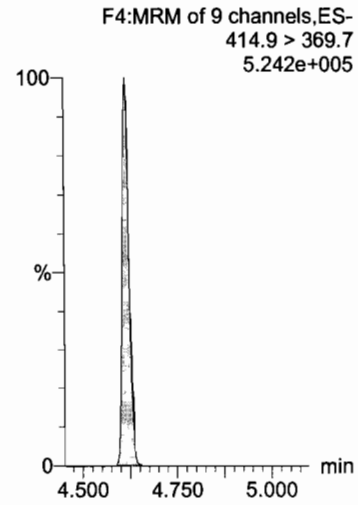

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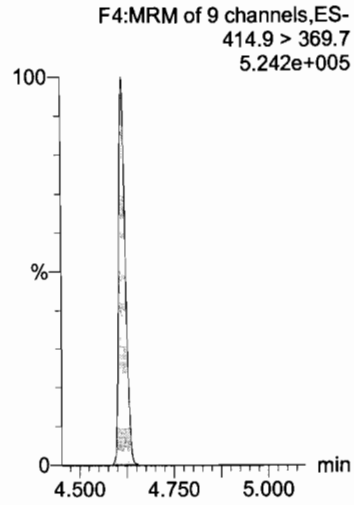

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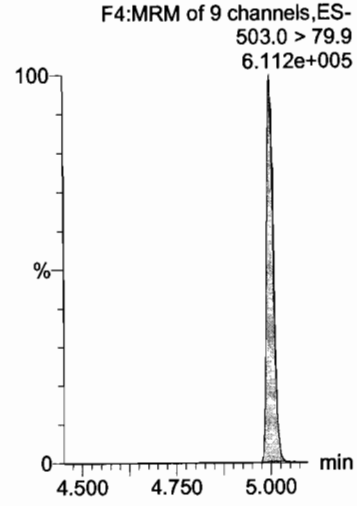

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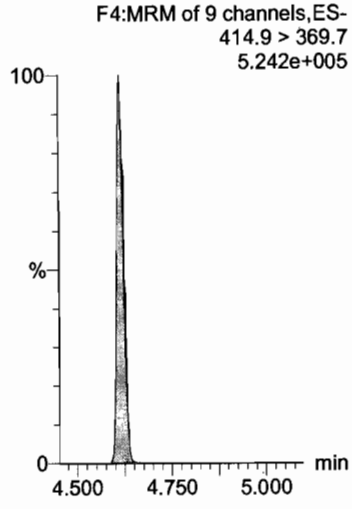

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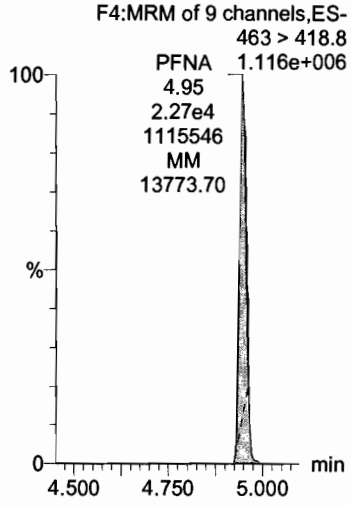
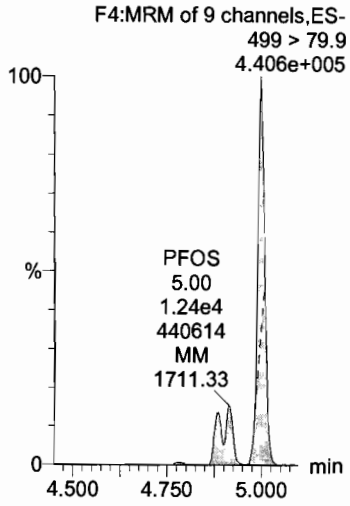
Name: 171216G2-14, Date: 16-Dec-2017, Time: 17:10:07, ID: ST171216G2-6 PFC CS2 537 17L1423, Description: PFC CS2 537 17L1423

PFNA



PFOS



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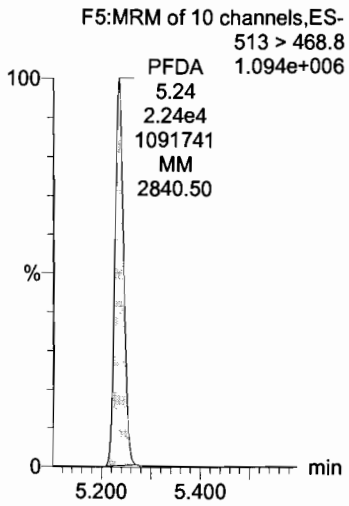

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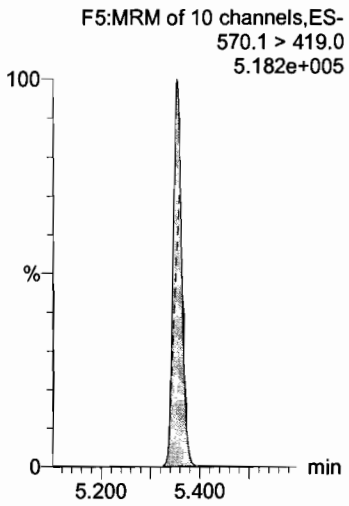

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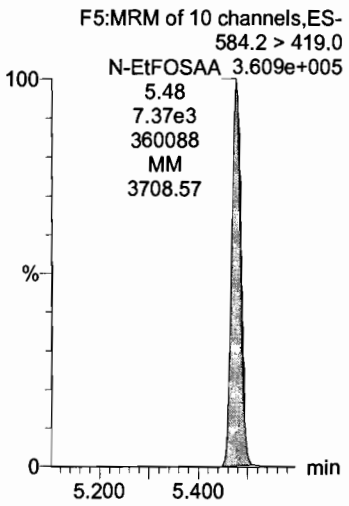
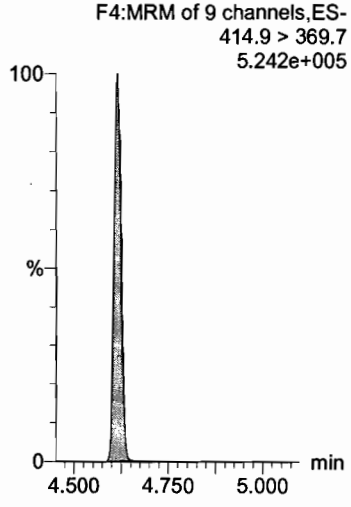


13C2-PFOA



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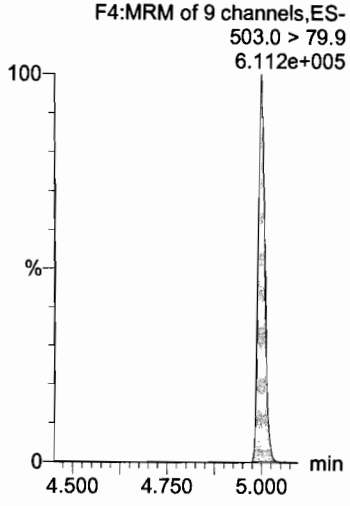

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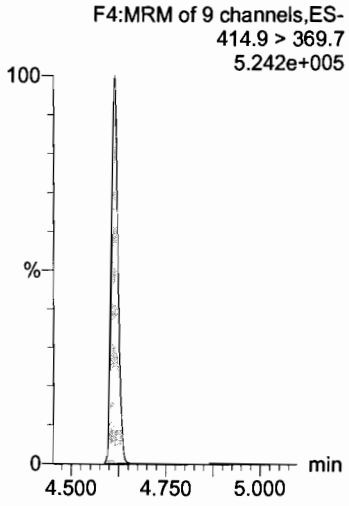

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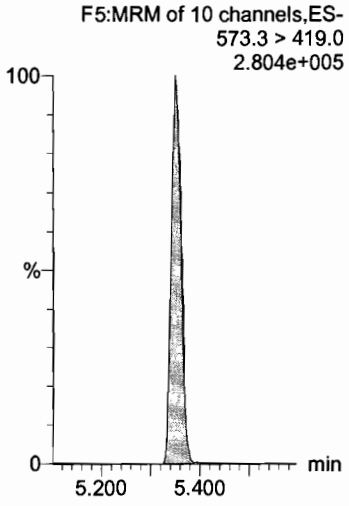

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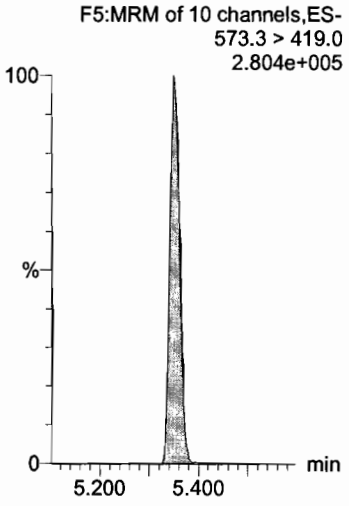

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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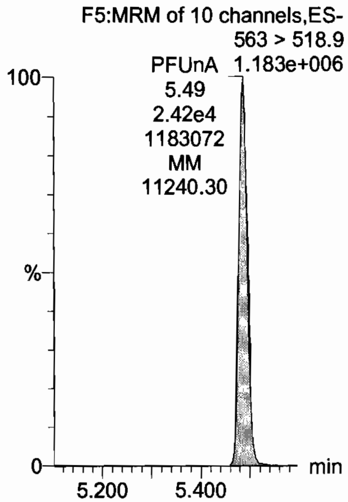
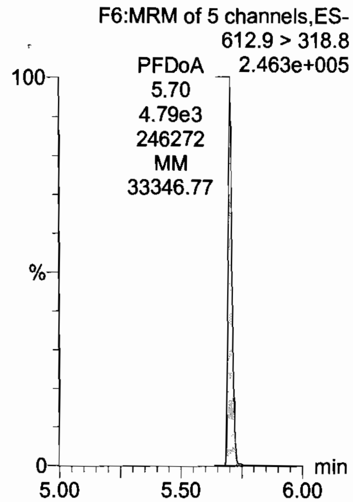
Name: 171216G2-14, Date: 16-Dec-2017, Time: 17:10:07, ID: ST171216G2-6 PFC CS2 537 17L1423, Description: PFC CS2 537 17L1423

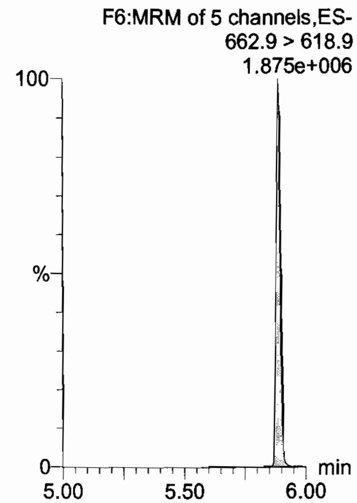
PFUnA



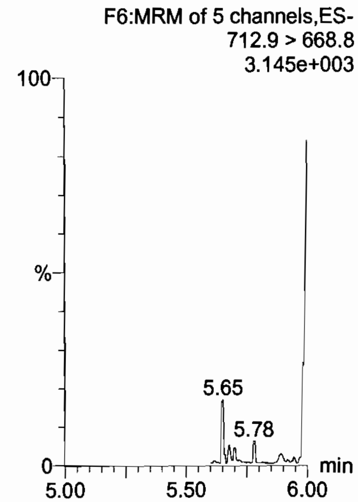
PFDoA



PFTrDA



PFTeDA



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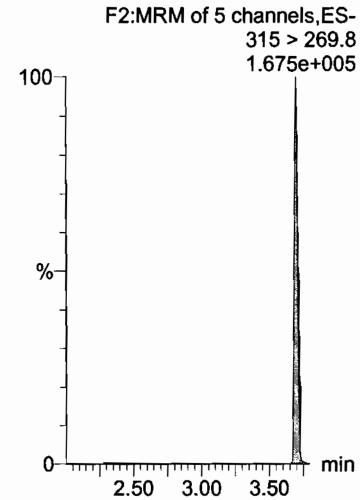
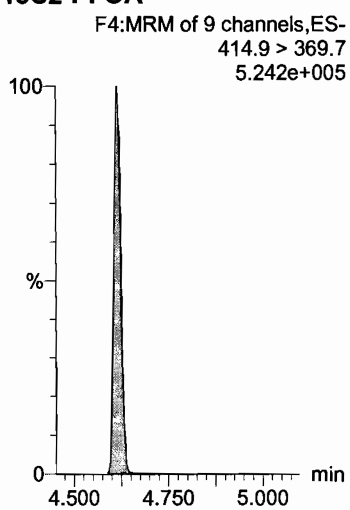


13C2-PFOA



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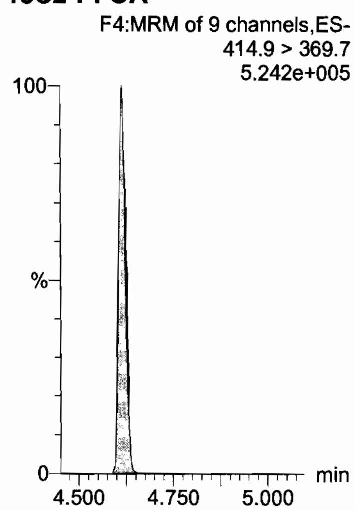
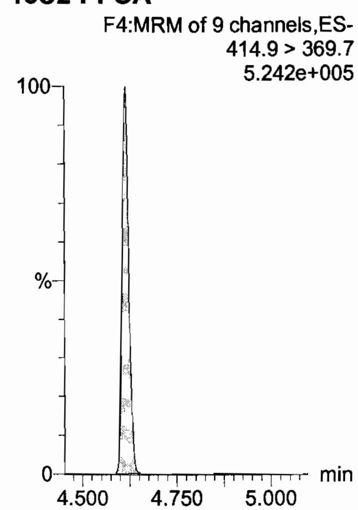


13C2-PFOA



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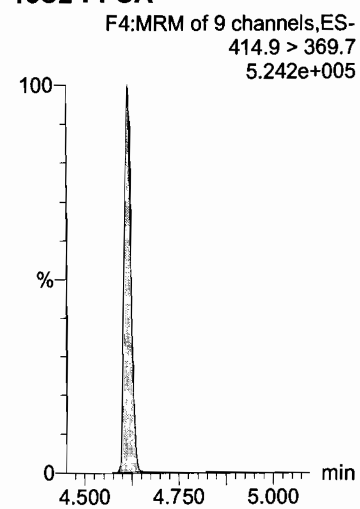

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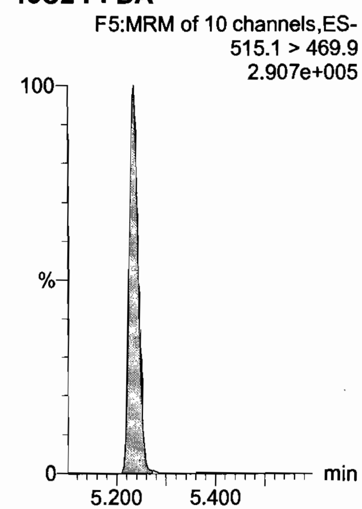

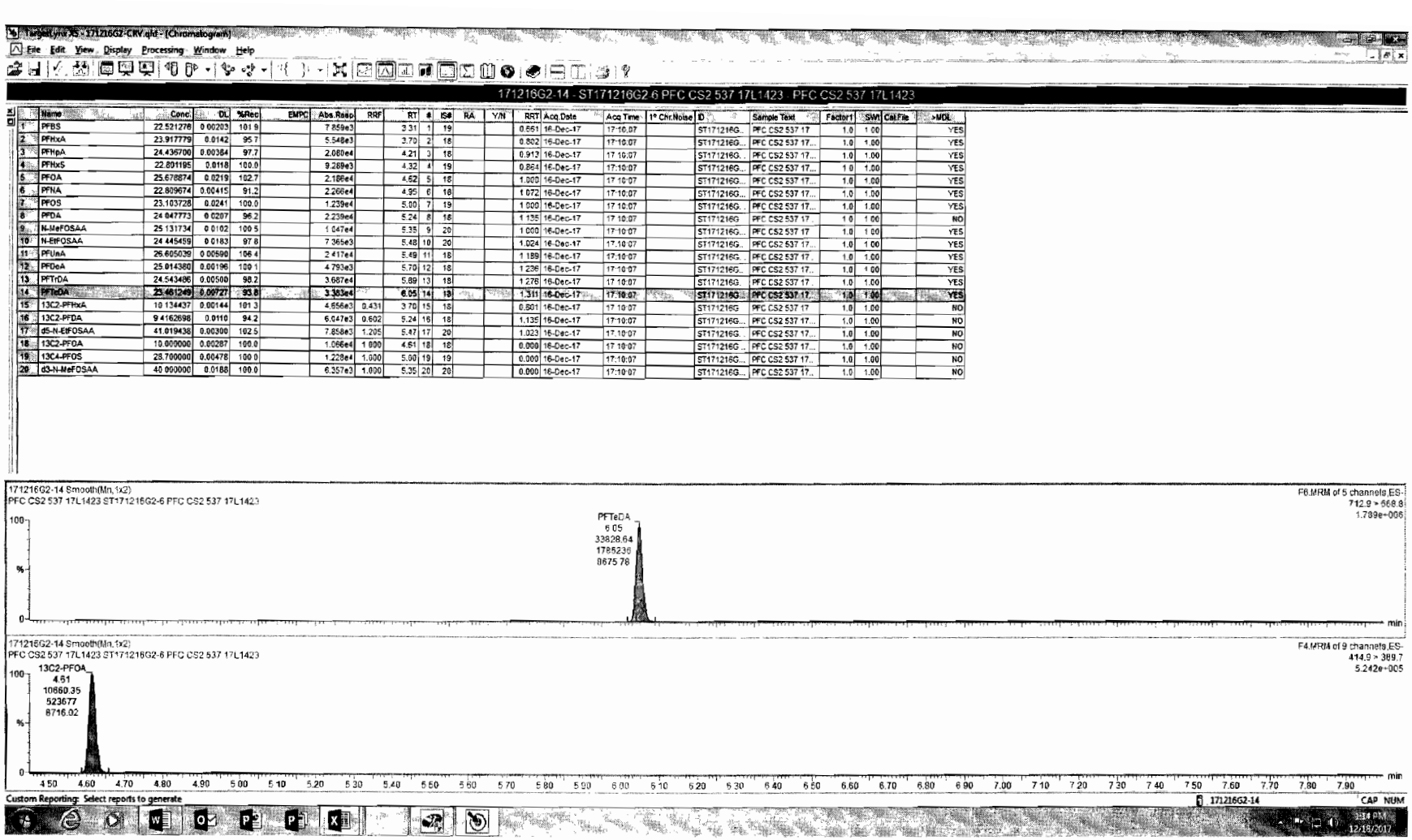

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Noise	ID	Sample Text	Factor1	SWI	Cal.File	>MDL
1	PFBS	22.521278	0.00203	101.9		7.859e3		3.31	1	19			0.551	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17	1.0	1.00		YES
2	PFHxA	23.917779	0.0142	95.7		5.548e3		3.70	2	18			0.562	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
3	PFHpA	24.436700	0.00364	97.7		2.080e4		4.21	3	18			0.913	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
4	PFHxS	22.801195	0.0118	100.0		9.289e3		4.32	4	19			0.864	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
5	PFOA	25.678874	0.0219	102.7		2.186e4		4.52	5	18			1.000	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
6	PFNA	22.809674	0.00415	91.2		2.266e4		4.95	6	18			1.072	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
7	PFOS	23.103728	0.0241	100.0		1.239e4		5.00	7	19			1.000	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
8	PFDA	24.847773	0.0207	96.2		2.239e4		5.24	8	18			1.135	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		NO
9	N-MeFOSAA	25.131734	0.0102	100.5		1.047e4		5.35	9	20			1.000	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17	1.0	1.00		YES
10	N-EtFOSAA	24.445459	0.0183	97.8		7.365e3		5.48	10	20			1.024	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
11	PFUnA	26.605039	0.00590	106.4		2.417e4		5.49	11	18			1.189	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
12	PFDoA	25.014380	0.00196	100.1		4.793e3		5.70	12	18			1.236	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
13	PFTrDA	24.543486	0.00500	98.2		3.687e4		5.89	13	18			1.276	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17	1.0	1.00		YES
14	PFTeDA	25.461249	0.00727	93.8		3.383e4		6.05	14	18			1.311	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		YES
15	13C2-PFHxA	10.134437	0.00144	101.3		4.556e3	0.431	3.70	15	18			0.801	16-Dec-17	17:10:07		ST171216G	PFC CS2 537 17	1.0	1.00		NO
16	13C2-PFDA	9.4162698	0.0110	94.2		6.047e3	0.602	5.24	16	18			1.135	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		NO
17	d5-N-EtFOSAA	41.019438	0.00300	102.5		7.858e3	1.205	5.47	17	20			1.023	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.00287	100.0		1.066e4	1.000	4.51	18	18			0.000	16-Dec-17	17:10:07		ST171216G ...	PFC CS2 537 17...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00478	100.0		1.228e4	1.000	5.00	19	19			0.000	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0188	100.0		6.357e3	1.000	5.35	20	20			0.000	16-Dec-17	17:10:07		ST171216G...	PFC CS2 537 17...	1.0	1.00		NO

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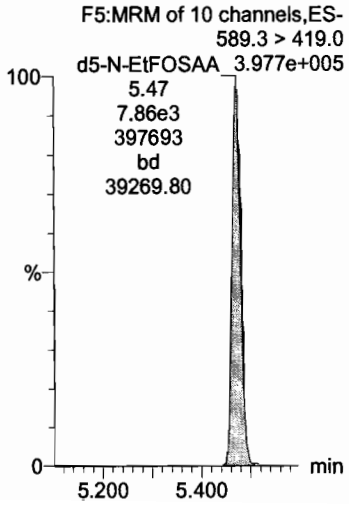
Name: 171216G2-14, Date: 16-Dec-2017, Time: 17:10:07, ID: ST171216G2-6 PFC CS2 537 17L1423, Description: PFC CS2 537 17L1423

d5-N-EtFOSAA



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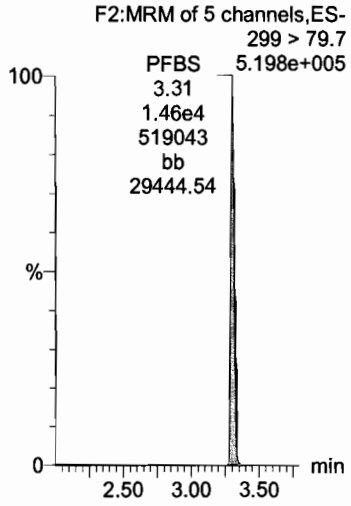
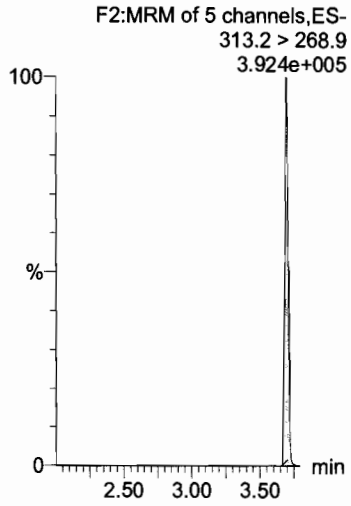
Name: 171216G2-15, Date: 16-Dec-2017, Time: 17:22:33, ID: ST171216G2-7 PFC CS3 537 17L1424, Description: PFC CS3 537 17L1424

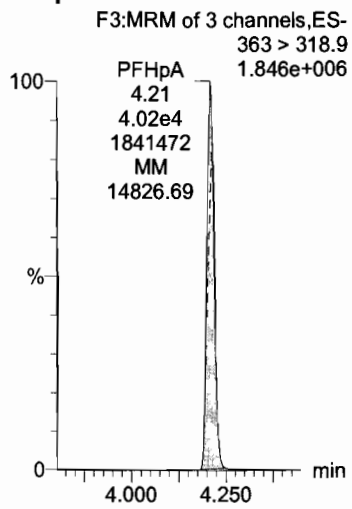
PFBS



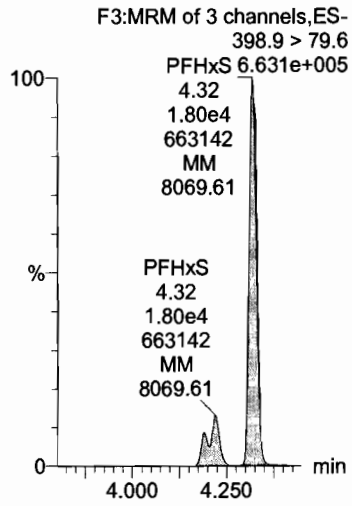
PFHxA



PFHpA



PFHxS



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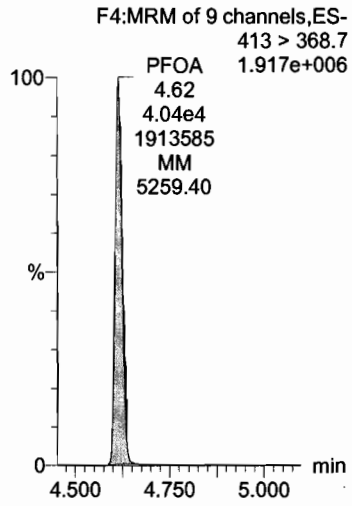

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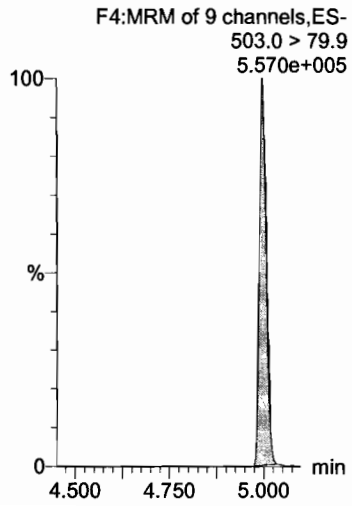

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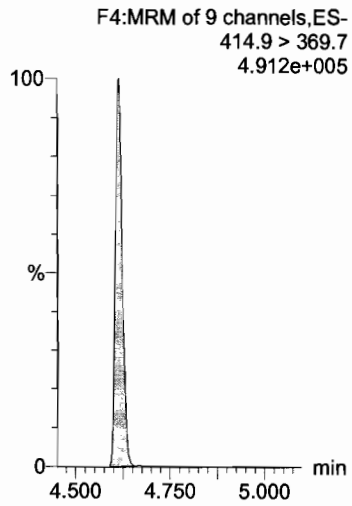

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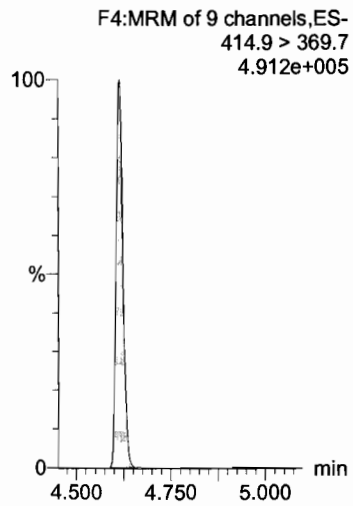

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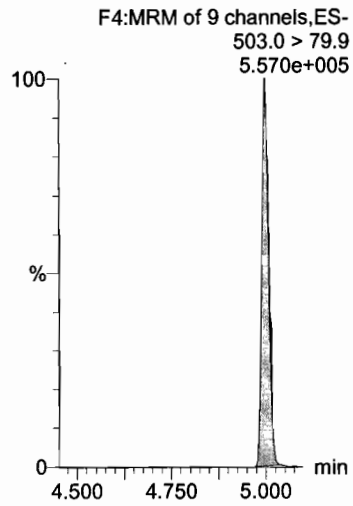

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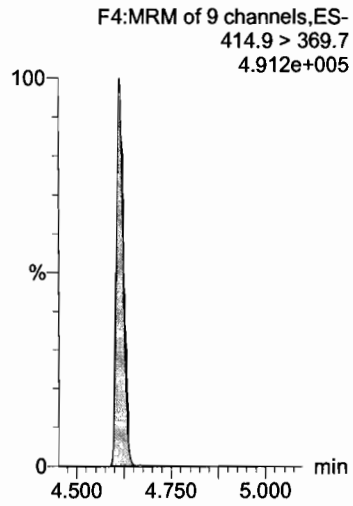

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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Name: 171216G2-15, Date: 16-Dec-2017, Time: 17:22:33, ID: ST171216G2-7 PFC CS3 537 17L1424, Description: PFC CS3 537 17L1424

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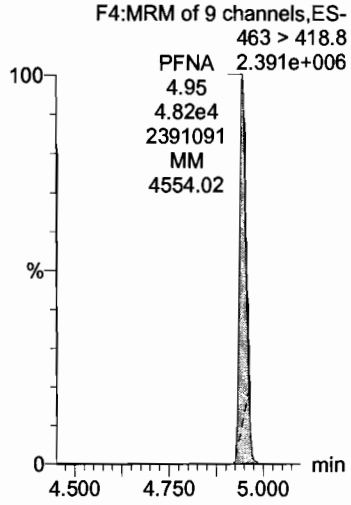

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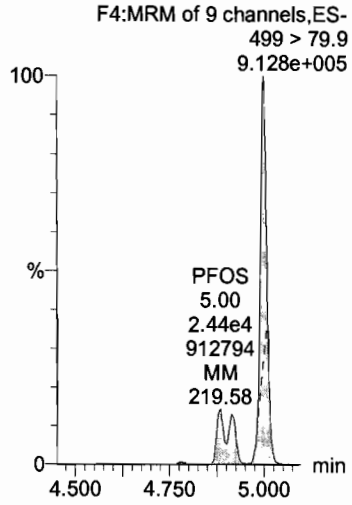

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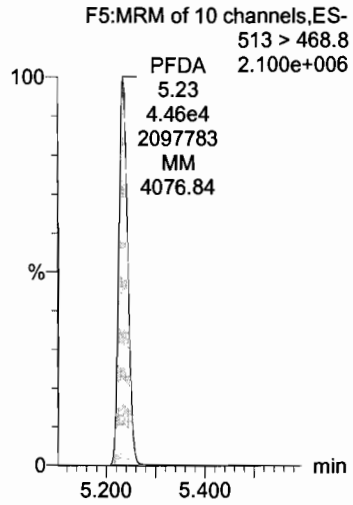

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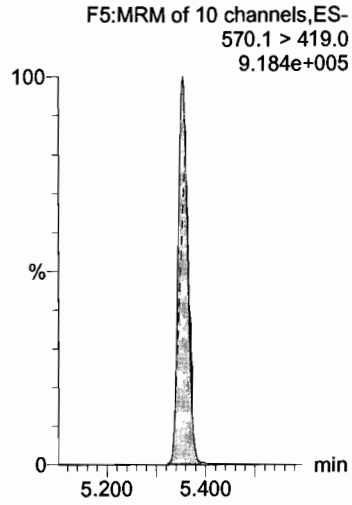

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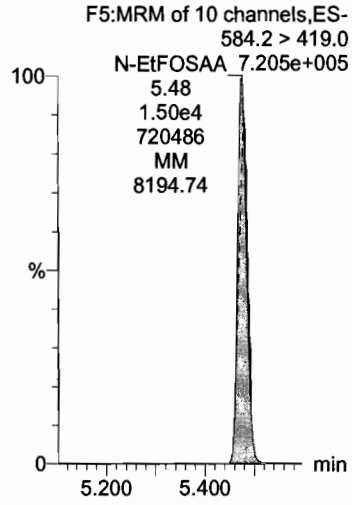

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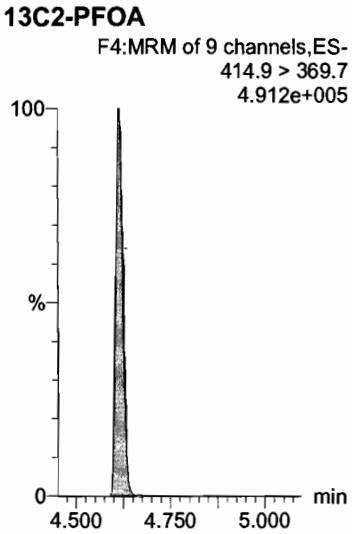

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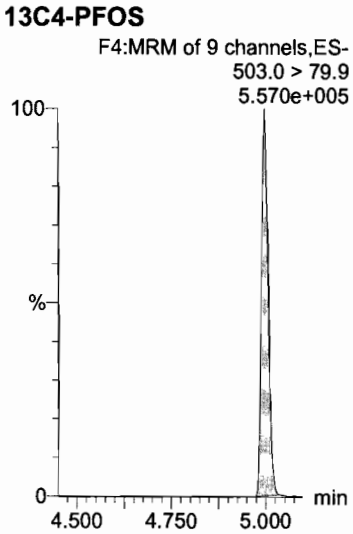

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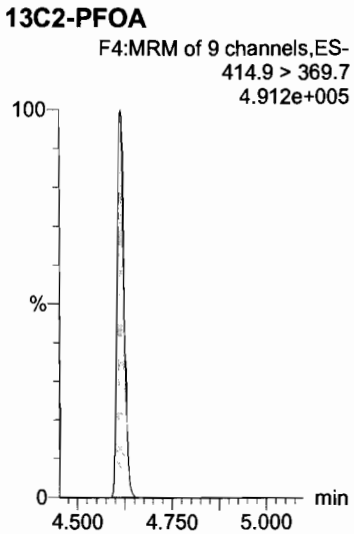

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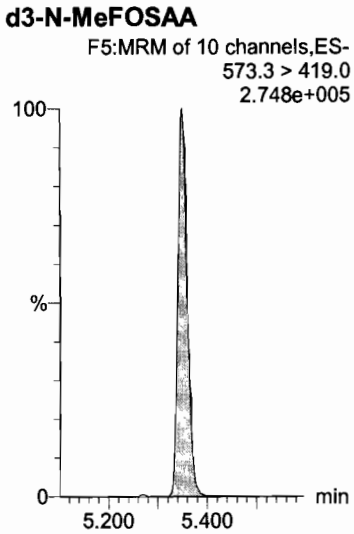

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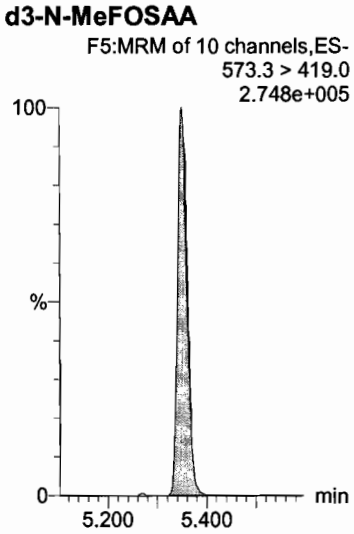

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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Name: 171216G2-15, Date: 16-Dec-2017, Time: 17:22:33, ID: ST171216G2-7 PFC CS3 537 17L1424, Description: PFC CS3 537 17L1424

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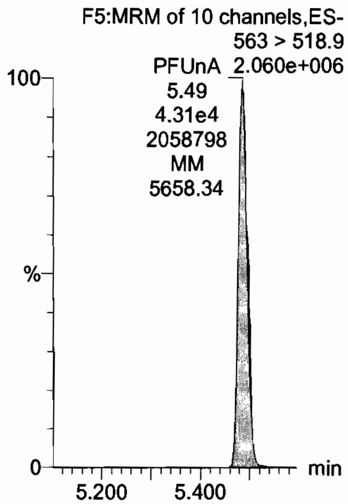

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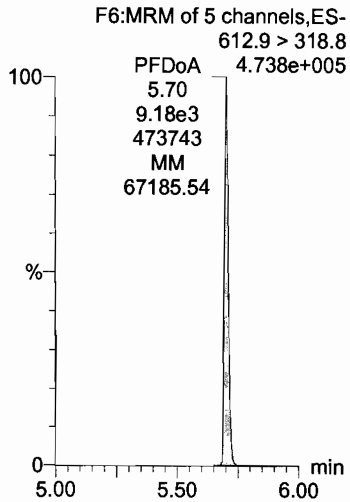

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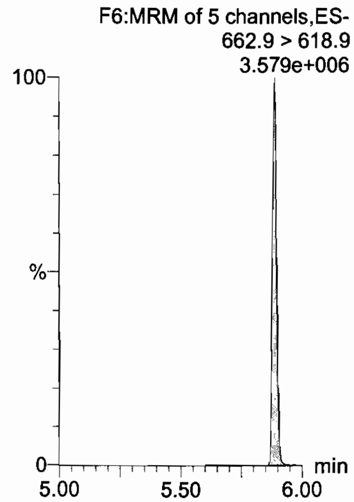

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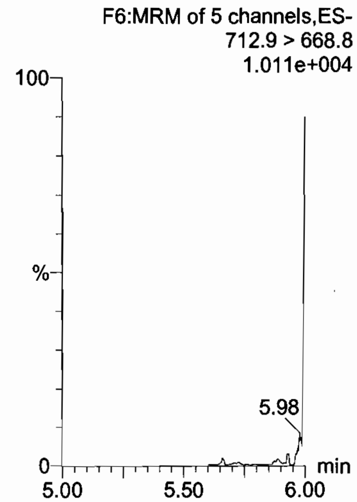

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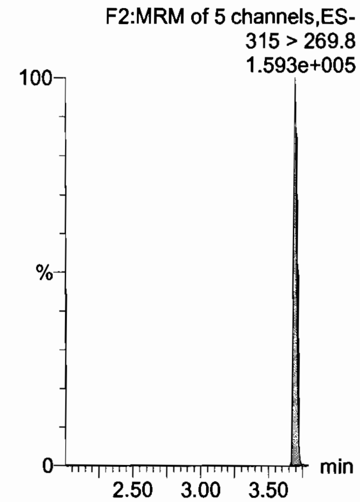

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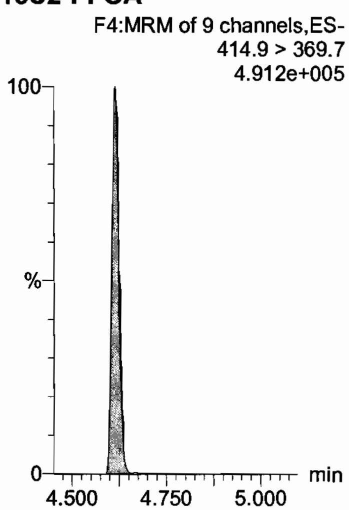

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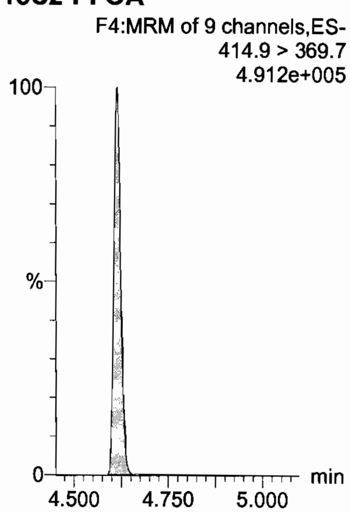

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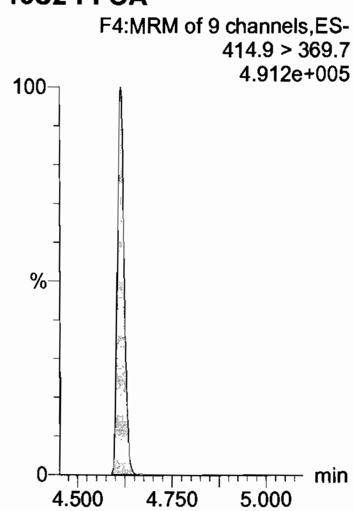

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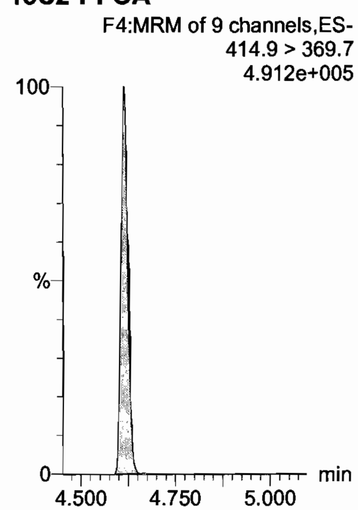

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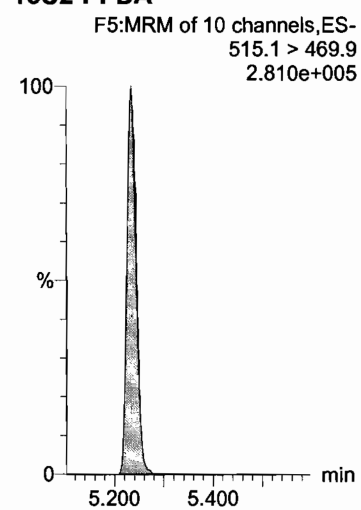

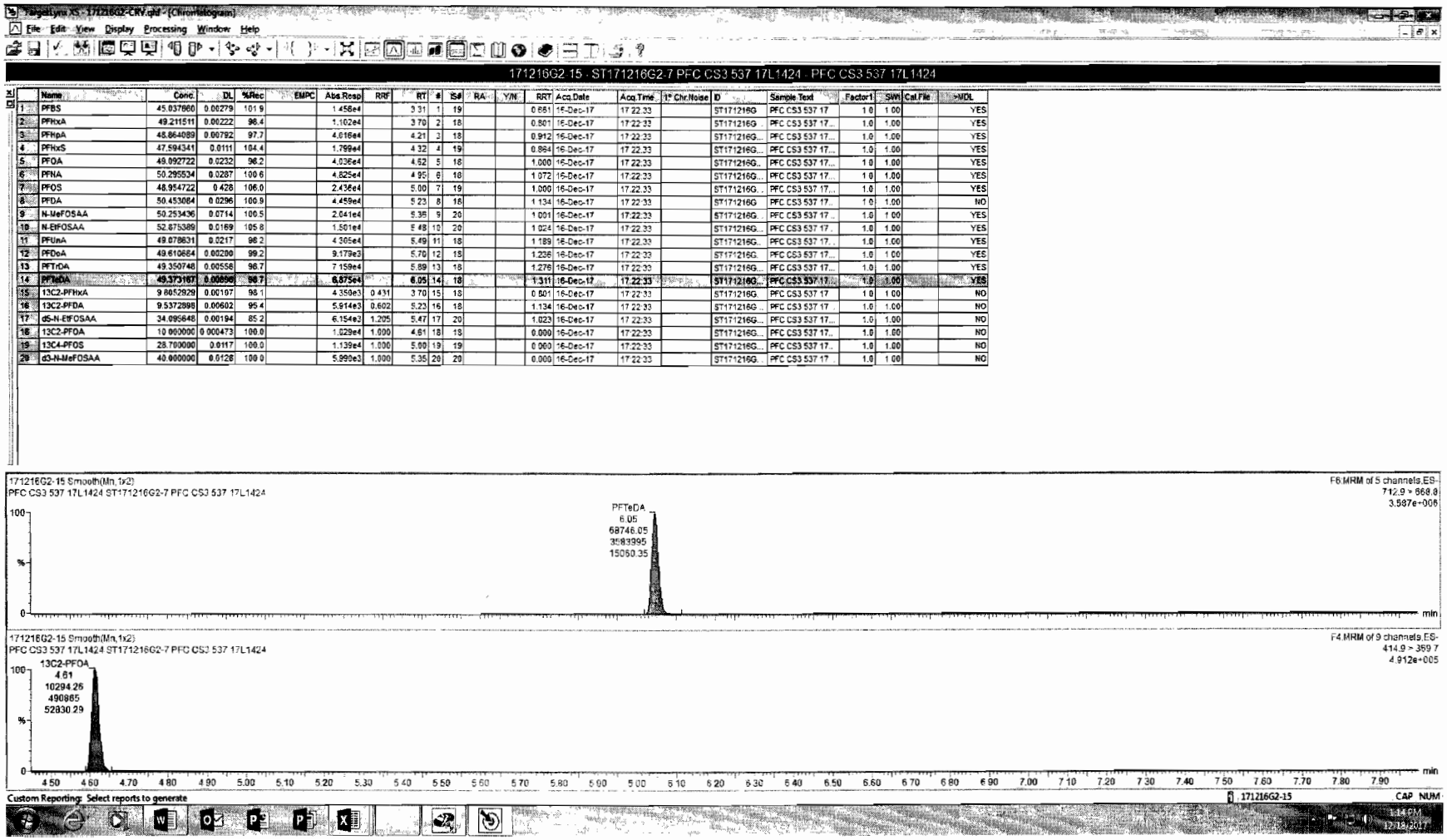

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Noise	ID	Sample Text	Factor1	SWI	Cal.File	>MDL
1	PFBS	45.037660	0.00279	101.9		1.456e4		3.31	1	19			0.661	16-Dec-17	17:22:33		ST171216G	PFC CS3 537 17	1.0	1.00		YES
2	PFHxA	49.211511	0.00222	98.4		1.102e4		3.70	2	18			0.801	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
3	PFHpA	48.864089	0.00792	97.7		4.016e4		4.21	3	18			0.912	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
4	PFHxS	47.594341	0.0111	104.4		1.799e4		4.32	4	19			0.864	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
5	PFOA	49.092722	0.0232	98.2		4.036e4		4.52	5	18			1.000	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
6	PFNA	50.295534	0.0287	100.6		4.825e4		4.95	6	18			1.072	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
7	PFOS	48.954722	0.428	106.0		2.436e4		5.00	7	19			1.000	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
8	PFDA	50.453084	0.0296	100.9		4.459e4		5.23	8	18			1.134	16-Dec-17	17:22:33		ST171216G	PFC CS3 537 17...	1.0	1.00		NO
9	N-MeFOSAA	50.253436	0.0714	100.5		2.041e4		5.36	9	20			1.001	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
10	N-EtFOSAA	52.875389	0.0169	105.8		1.501e4		5.48	10	20			1.024	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
11	PFUnA	49.078631	0.0217	98.2		4.305e4		5.49	11	18			1.189	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
12	PFDoA	49.610664	0.00280	99.2		9.179e3		5.76	12	18			1.236	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
13	PFTrDA	49.350748	0.00558	98.7		7.159e4		5.89	13	18			1.276	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
14	PFTeDA	49.373167	0.00890	98.7		6.875e4		6.05	14	18			1.311	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		YES
15	13C2-PFHxA	9.8652929	0.00197	98.1		4.350e3	0.431	3.70	15	18			0.801	16-Dec-17	17:22:33		ST171216G	PFC CS3 537 17	1.0	1.00		NO
16	13C2-PFDA	9.5372898	0.00602	95.4		5.914e3	0.602	5.23	16	18			1.134	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		NO
17	d5-N-EtFOSAA	34.095648	0.00194	85.2		6.154e3	1.205	5.47	17	20			1.023	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.000473	100.0		1.029e4	1.000	4.61	18	18			0.000	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.0117	100.0		1.139e4	1.000	5.00	19	19			0.000	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0128	100.0		5.999e3	1.000	5.35	20	20			0.000	16-Dec-17	17:22:33		ST171216G...	PFC CS3 537 17	1.0	1.00		NO

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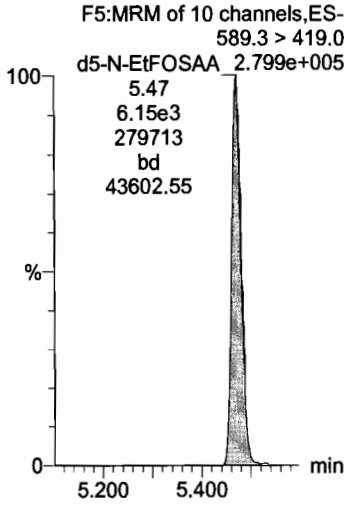
Name: 171216G2-15, Date: 16-Dec-2017, Time: 17:22:33, ID: ST171216G2-7 PFC CS3 537 17L1424, Description: PFC CS3 537 17L1424

d5-N-EtFOSAA



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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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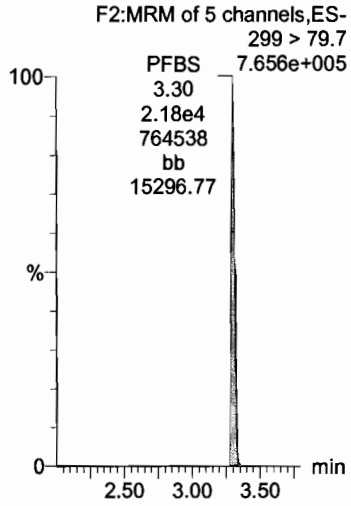
Name: 171216G2-16, Date: 16-Dec-2017, Time: 17:35:01, ID: ST171216G2-8 PFC CS4 537 17L1425, Description: PFC CS4 537 17L1425

PFBS



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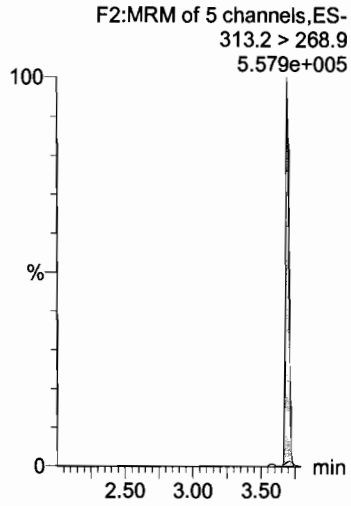
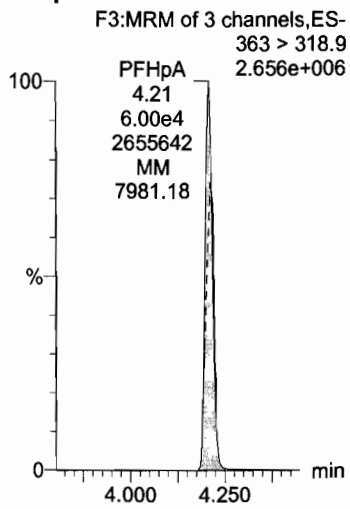


PFHpA



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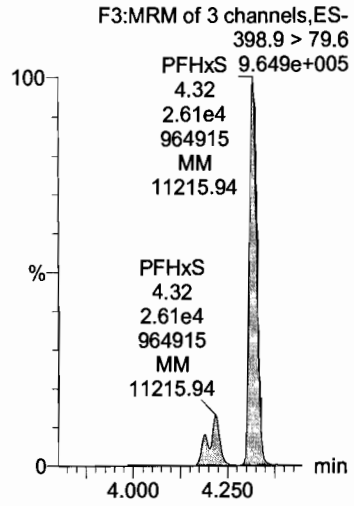

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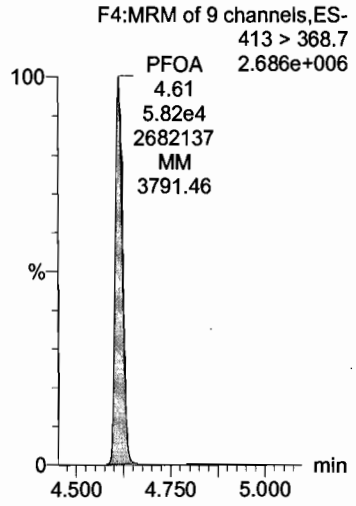
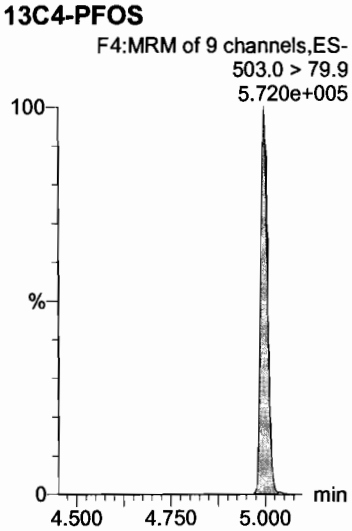


13C4-PFOS



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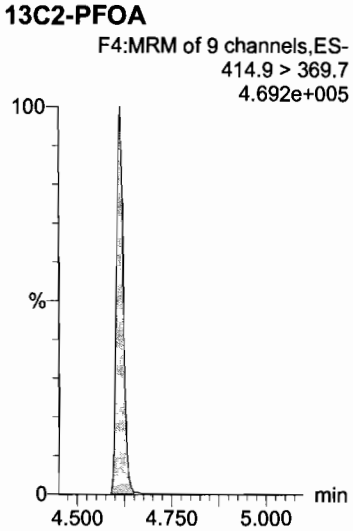

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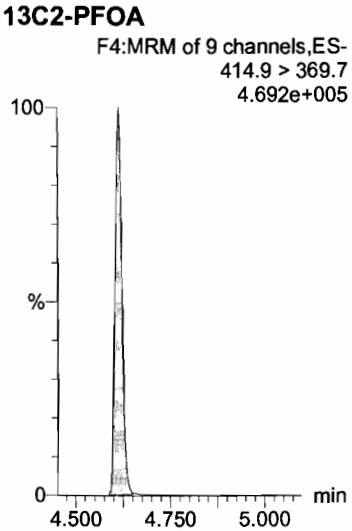

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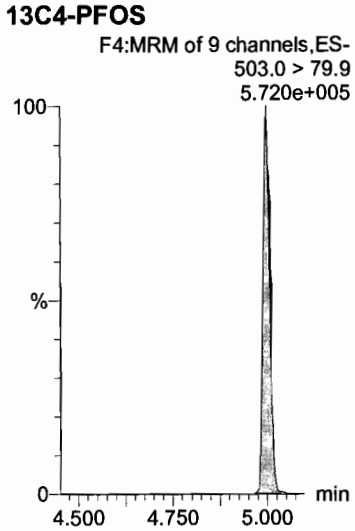

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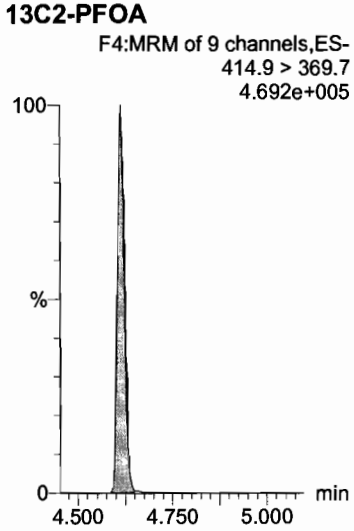

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Name: 171216G2-16, Date: 16-Dec-2017, Time: 17:35:01, ID: ST171216G2-8 PFC CS4 537 17L1425, Description: PFC CS4 537 17L1425

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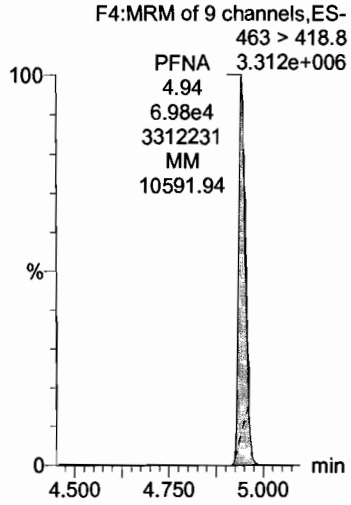

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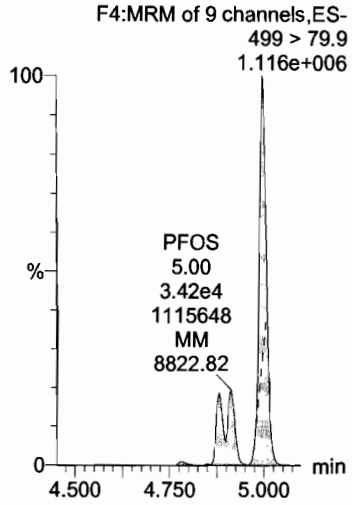

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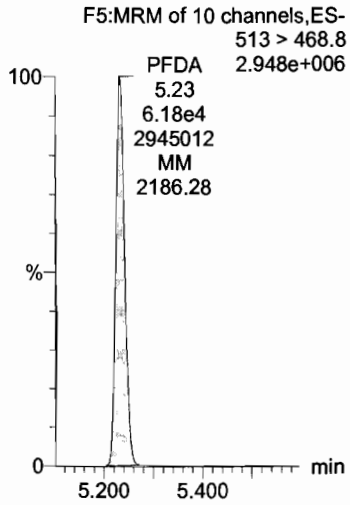

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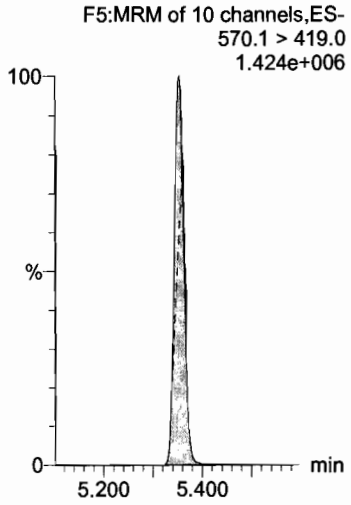
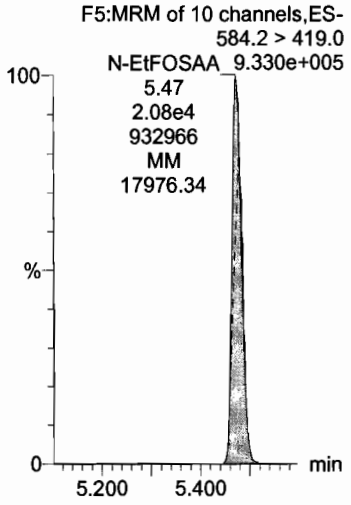
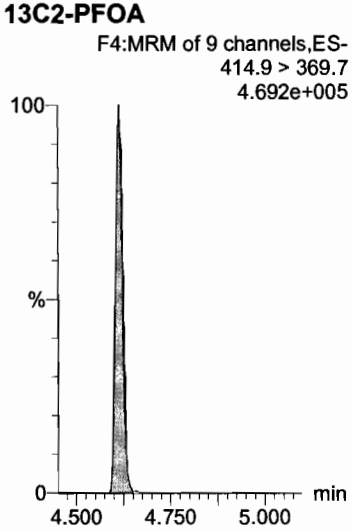


N-EtFOSAA



13C2-PFOA



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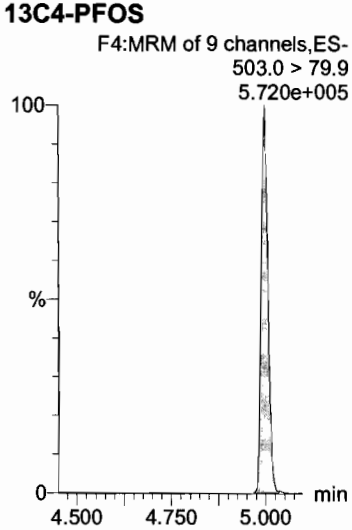

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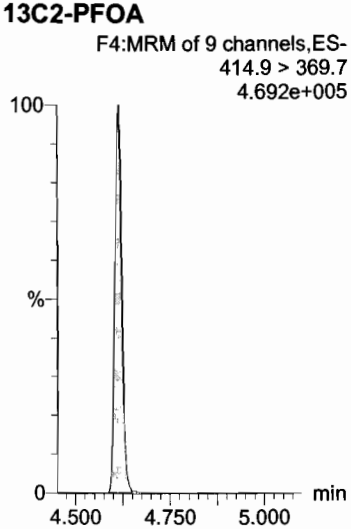

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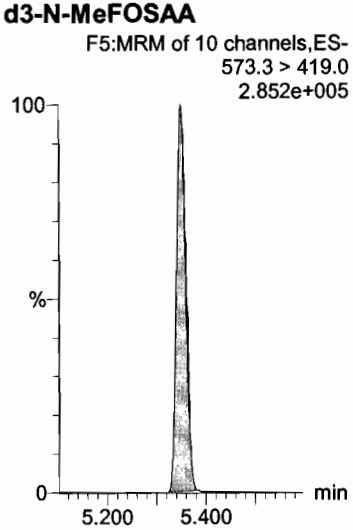

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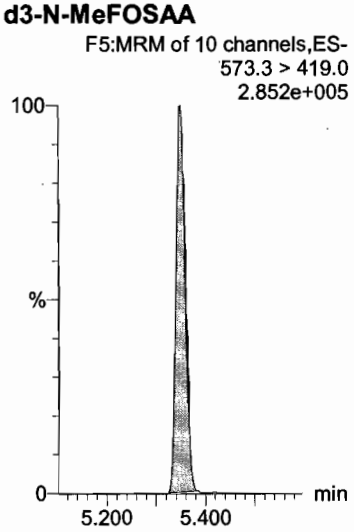

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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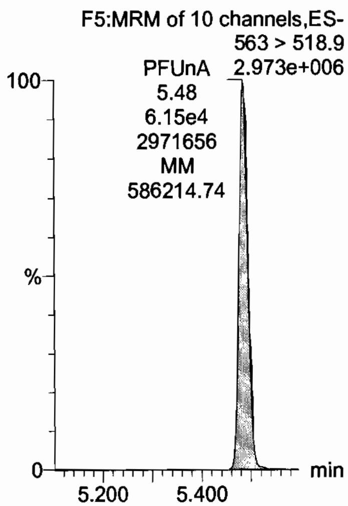
Name: 171216G2-16, Date: 16-Dec-2017, Time: 17:35:01, ID: ST171216G2-8 PFC CS4 537 17L1425, Description: PFC CS4 537 17L1425

PFUnA



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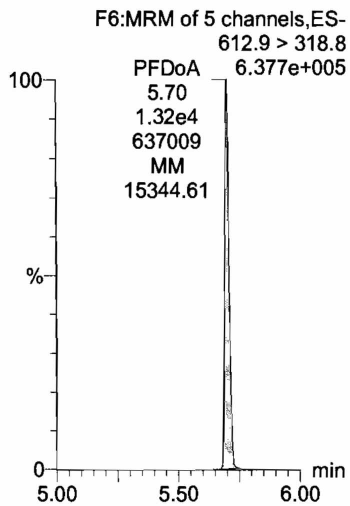

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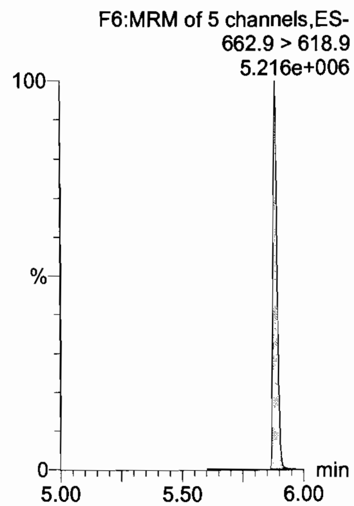

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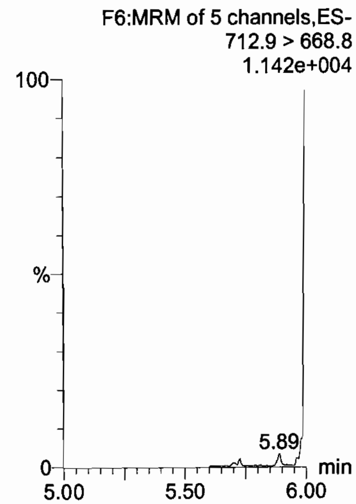
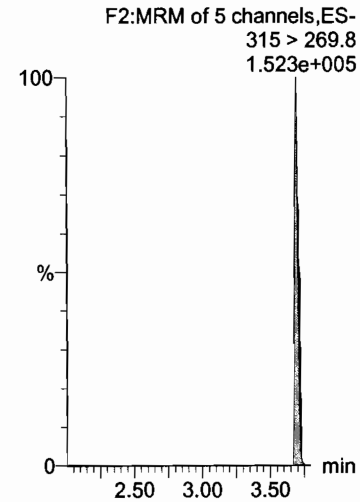


13C2-PFHxA



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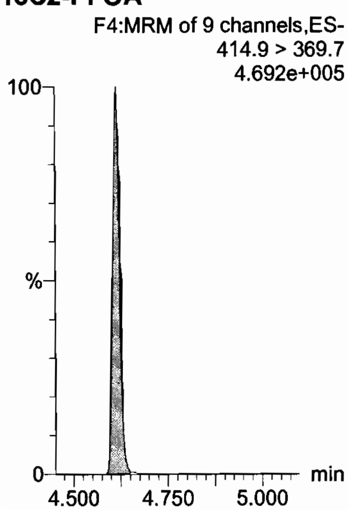

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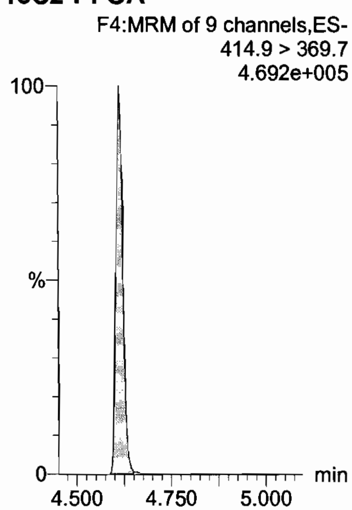

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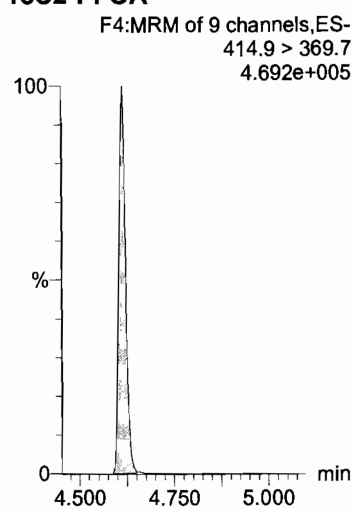

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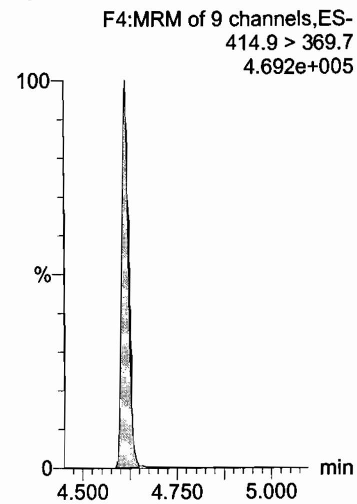

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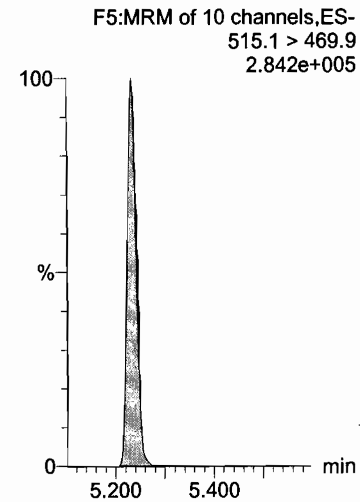

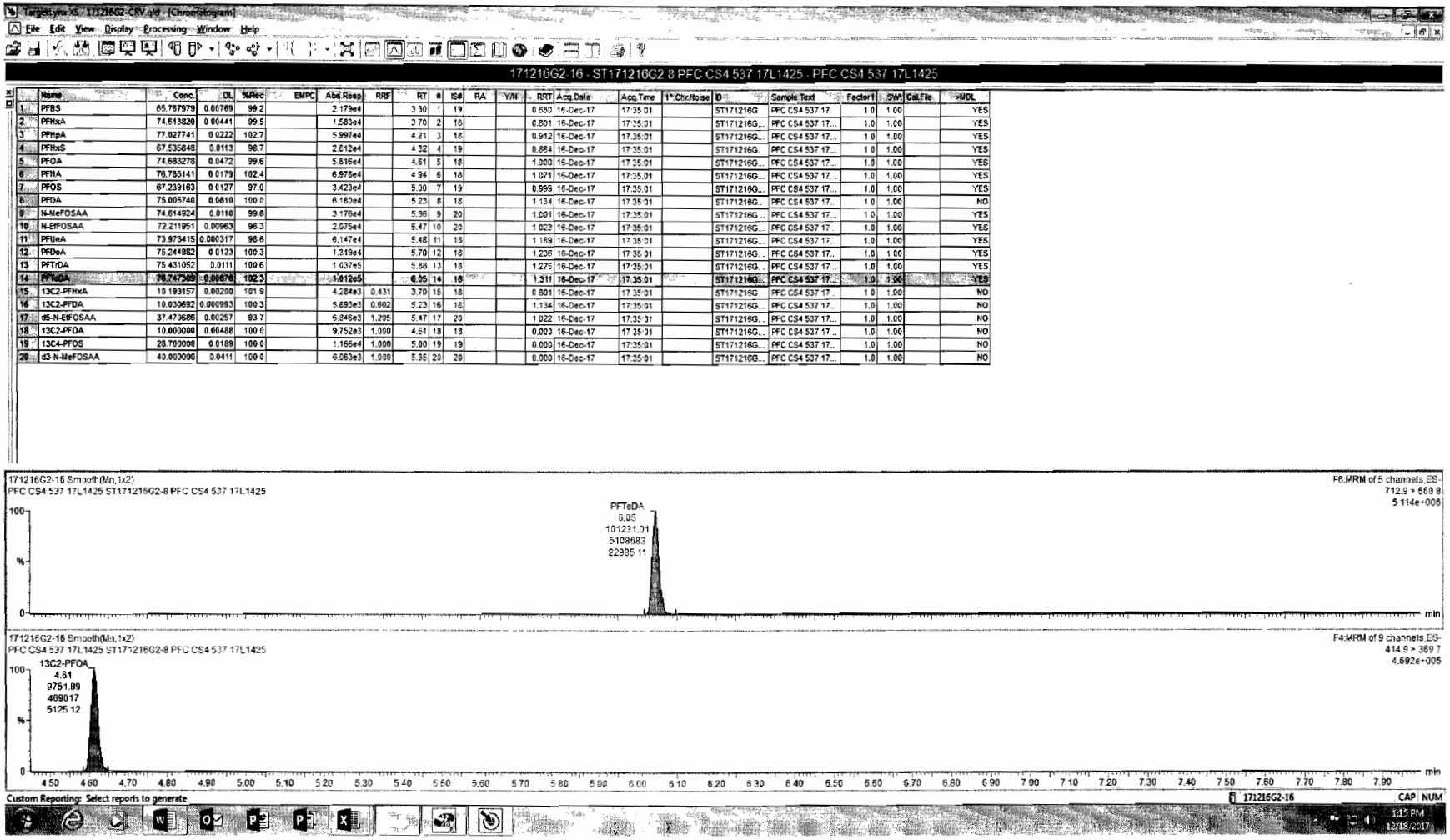

	Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1*Chn Noise	ID	Sample Text	Factor	SWI	CalFile	>MDL
1	PFBS	65.767979	0.00769	99.2		2.179e4		3.30	1	19			0.680	16-Dec-17	17:35:01		ST171216G	PFC CS4 537 17	1.0	1.00		YES
2	PFHxA	74.613820	0.00441	99.5		1.583e4		3.76	2	18			0.801	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
3	PFHpA	77.827741	0.0222	102.7		5.997e4		4.21	3	18			0.912	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
4	PFHxS	67.535848	0.0113	98.7		2.612e4		4.32	4	19			0.864	16-Dec-17	17:35:01		ST171216G	PFC CS4 537 17...	1.0	1.00		YES
5	PFOA	74.683278	0.0472	99.6		5.816e4		4.61	5	18			1.000	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
6	PFNA	76.785141	0.0179	102.4		6.978e4		4.94	6	18			1.071	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
7	PFOS	67.239163	0.0127	97.0		3.423e4		5.00	7	19			0.999	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
8	PFDA	75.005740	0.0810	100.0		6.180e4		5.23	8	18			1.134	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		NO
9	N-MeFOSAA	74.614924	0.0110	99.8		3.176e4		5.36	9	20			1.001	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
10	N-EtFOSAA	72.211951	0.00963	96.3		2.075e4		5.47	10	20			1.023	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
11	PFUnA	73.973415	0.000317	98.6		6.147e4		5.48	11	18			1.169	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
12	PFDoA	75.244882	0.0123	100.3		1.319e4		5.79	12	18			1.236	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
13	PFTrDA	75.431052	0.0111	100.6		1.037e5		5.88	13	18			1.275	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
14	PFTeDA	76.747509	0.00678	102.3		1.012e5		6.05	14	18			1.311	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		YES
15	13C2-PFHxA	10.193157	0.00200	101.9		4.284e3	0.431	3.70	15	18			0.801	16-Dec-17	17:35:01		ST171216G	PFC CS4 537 17...	1.0	1.00		NO
16	13C2-PFDA	10.030692	0.000993	100.3		5.693e3	0.602	5.23	16	18			1.134	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		NO
17	d5-N-EtFOSAA	37.470686	0.00257	93.7		6.846e3	1.205	5.47	17	20			1.022	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.00488	100.0		9.752e3	1.000	4.61	18	18			0.000	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.0189	109.0		1.166e4	1.000	5.00	19	19			0.000	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0411	100.0		6.063e3	1.000	5.35	20	20			0.000	16-Dec-17	17:35:01		ST171216G...	PFC CS4 537 17...	1.0	1.00		NO

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Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
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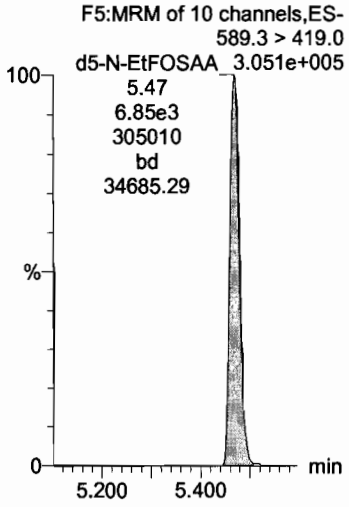
Name: 171216G2-16, Date: 16-Dec-2017, Time: 17:35:01, ID: ST171216G2-8 PFC CS4 537 17L1425, Description: PFC CS4 537 17L1425

d5-N-EtFOSAA



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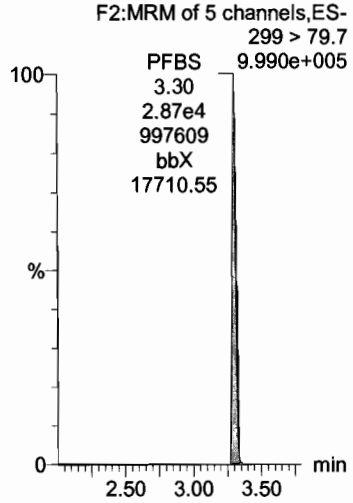
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-17, Date: 16-Dec-2017, Time: 17:47:29, ID: ST171216G2-9 PFC CS5 537 17L1426, Description: PFC CS5 537 17L1426

PFBS



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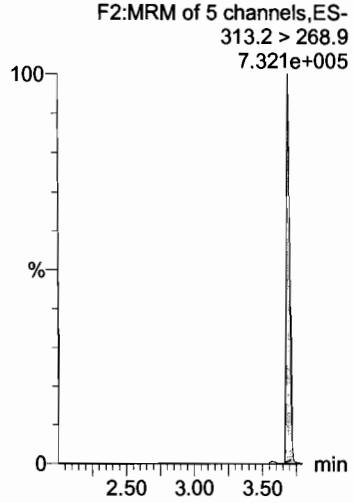
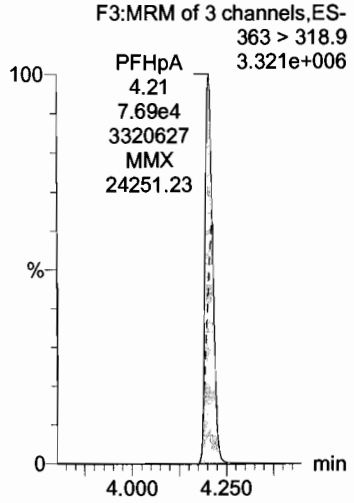
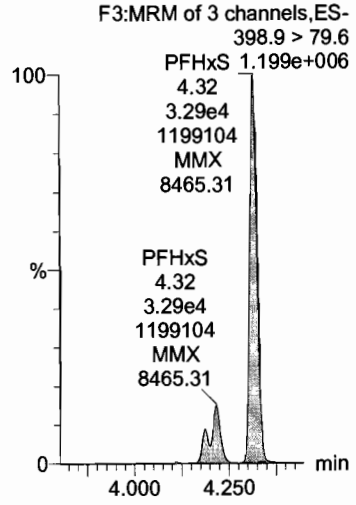


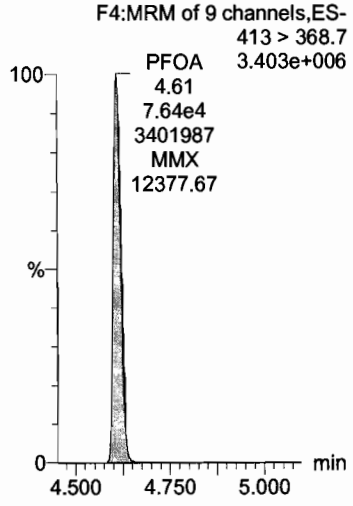
PFHpA



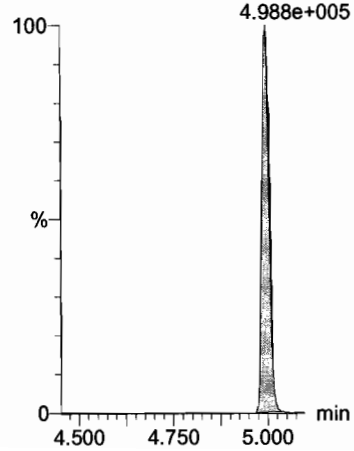
PFHxS



PFOA



13C4-PFOS



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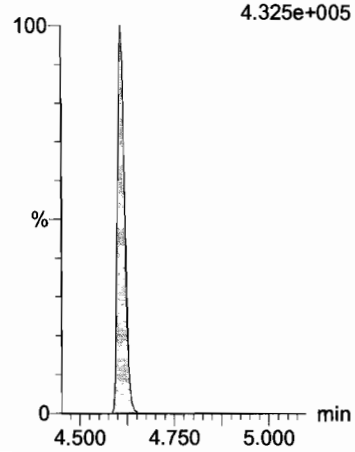

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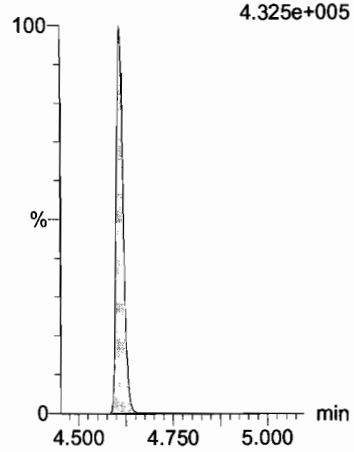

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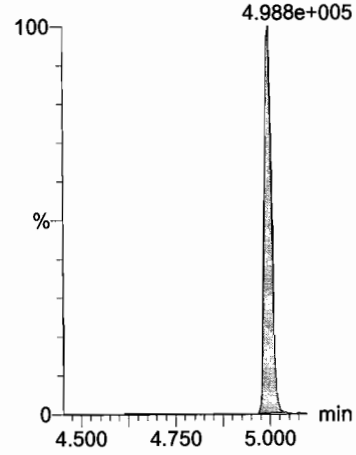

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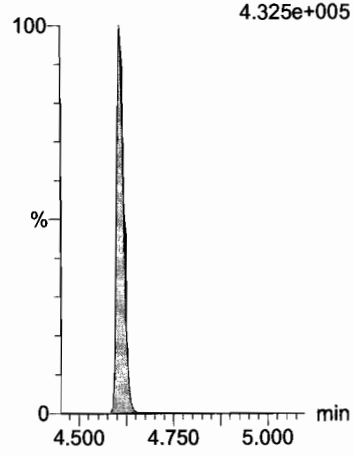

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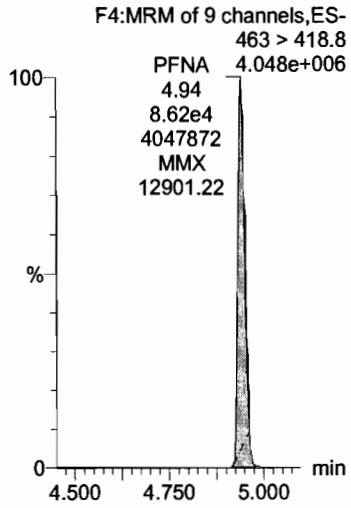
Name: 171216G2-17, Date: 16-Dec-2017, Time: 17:47:29, ID: ST171216G2-9 PFC CS5 537 17L1426, Description: PFC CS5 537 17L1426

PFNA



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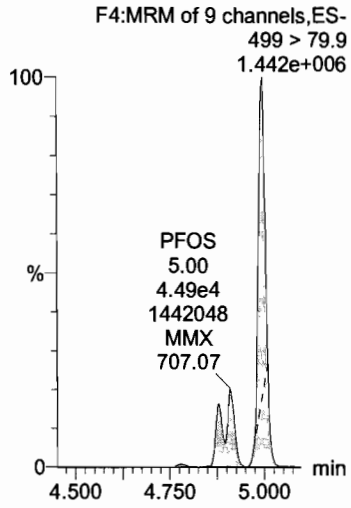

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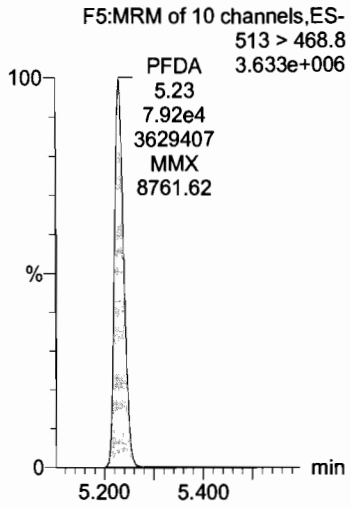

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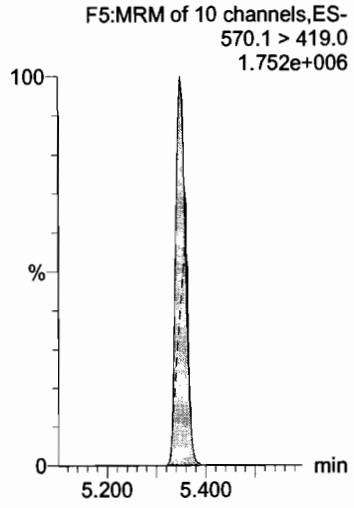
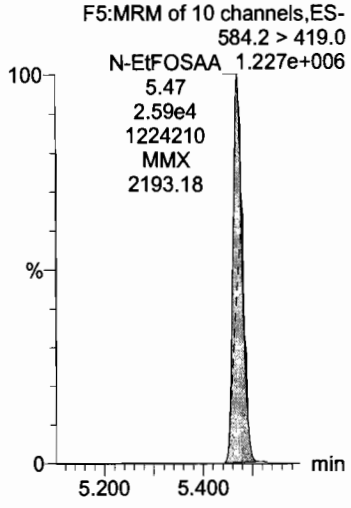


N-EtFOSAA



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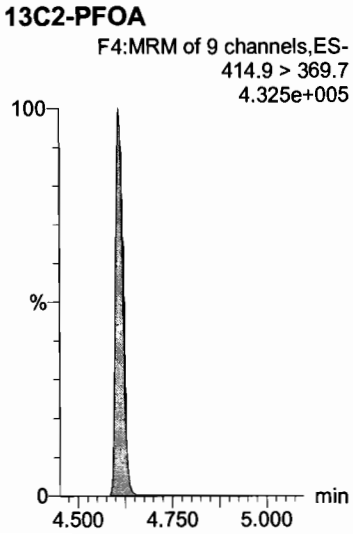

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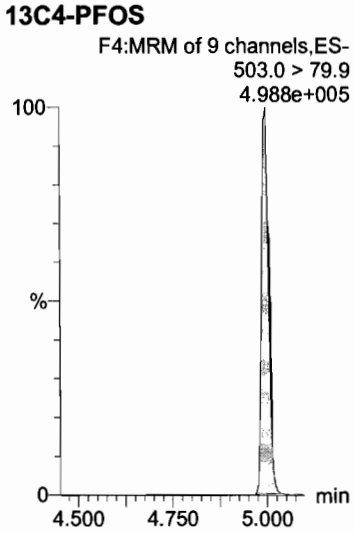

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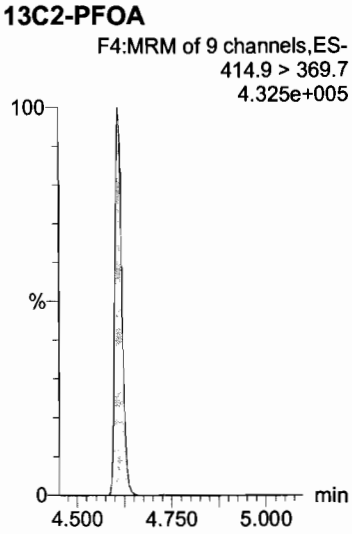

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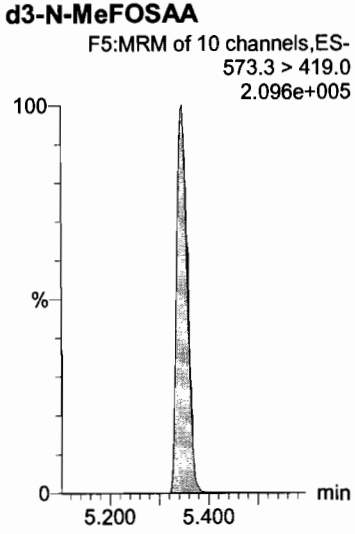

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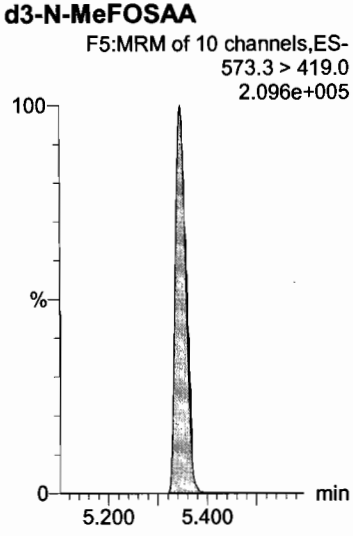

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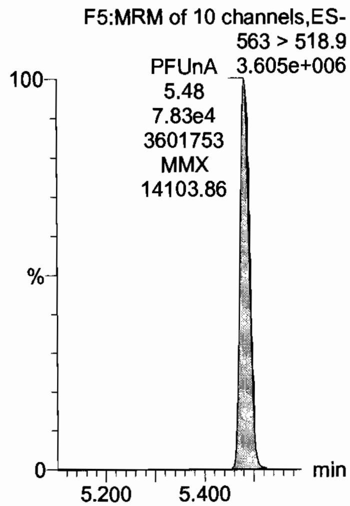
Name: 171216G2-17, Date: 16-Dec-2017, Time: 17:47:29, ID: ST171216G2-9 PFC CS5 537 17L1426, Description: PFC CS5 537 17L1426

PFUnA



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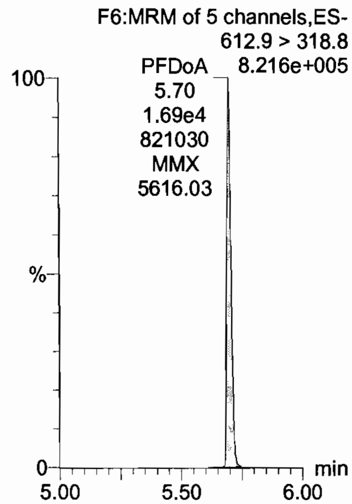

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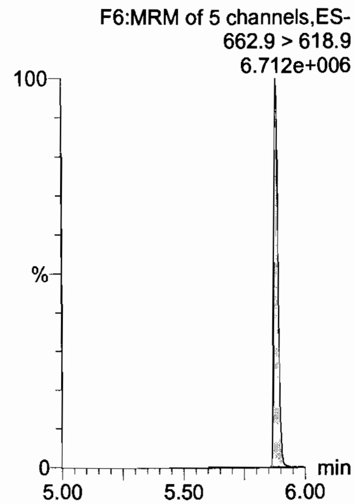

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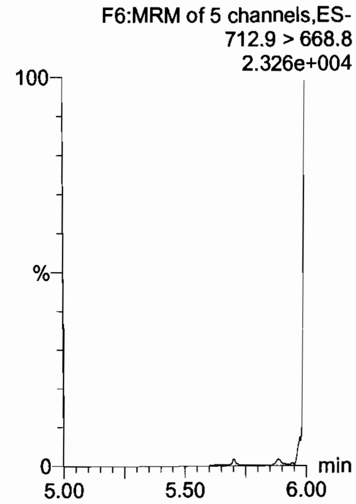

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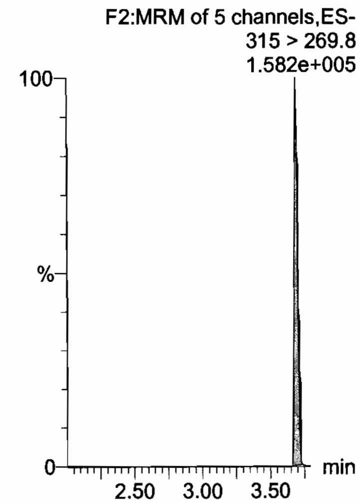

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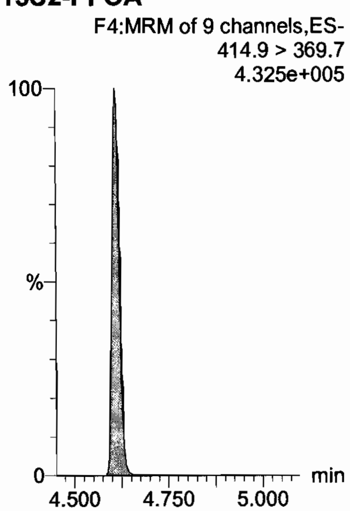

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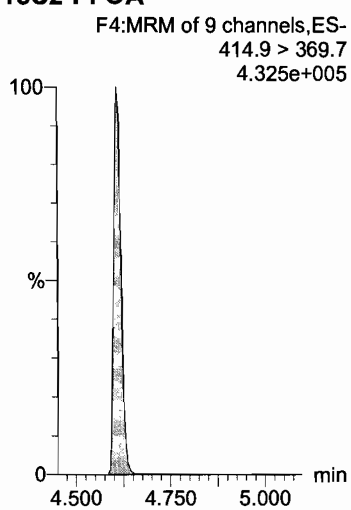
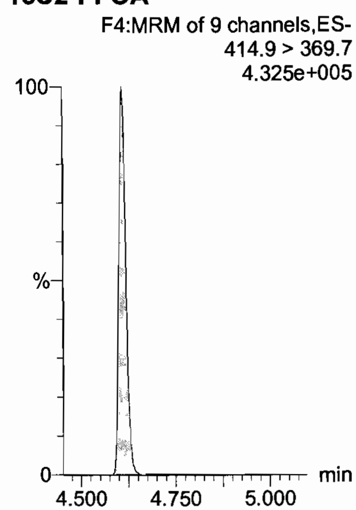
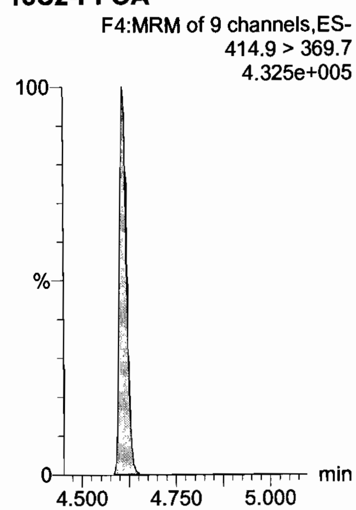


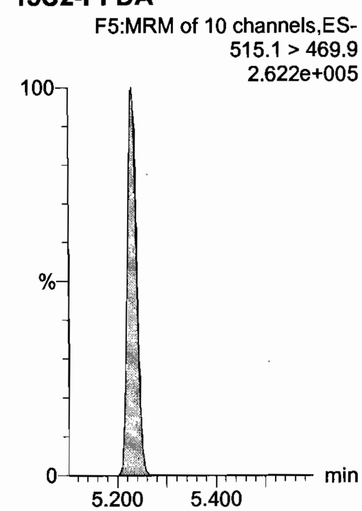
13C2-PFOA

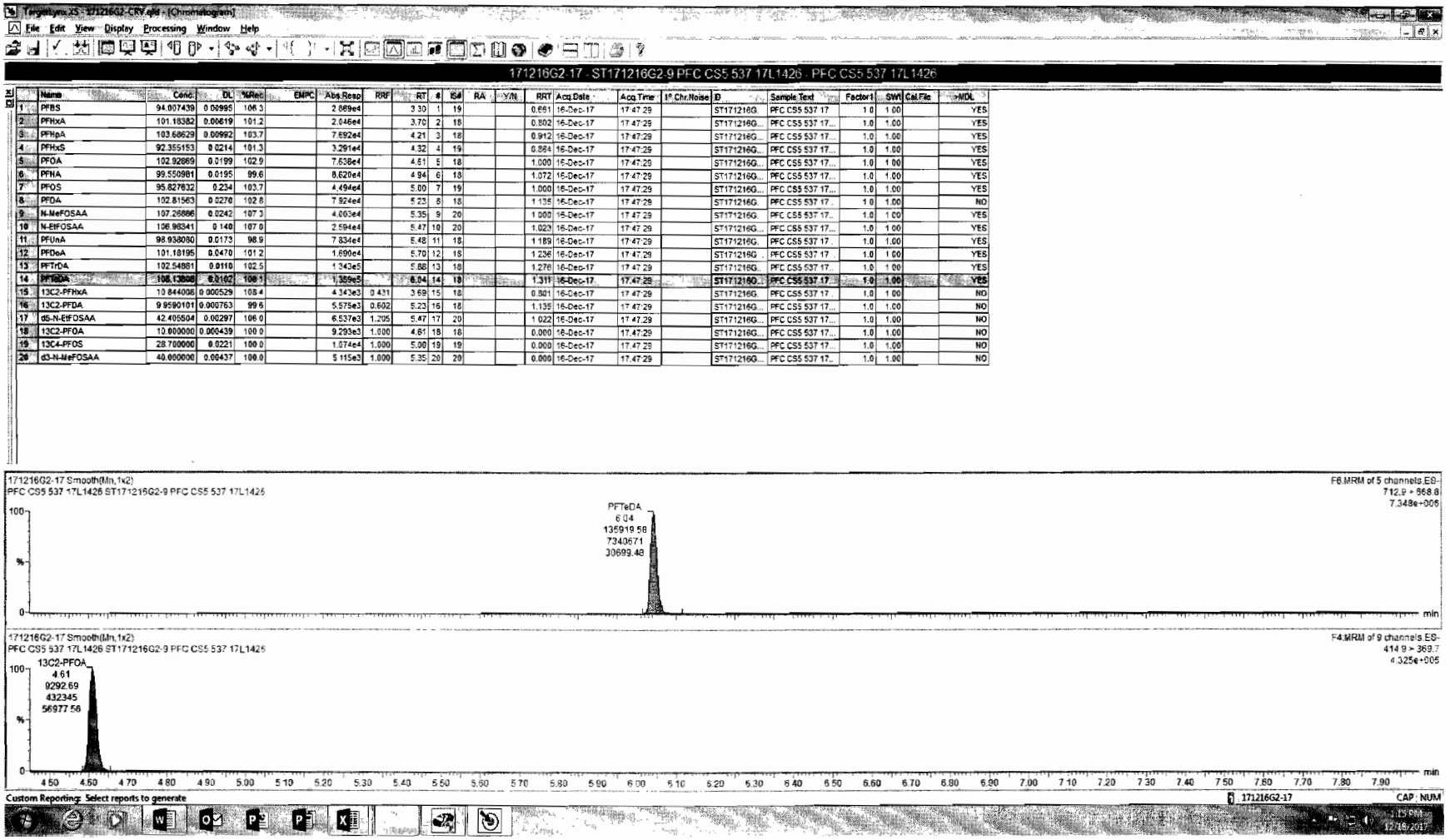


13C2-PFOA



13C2-PFDA





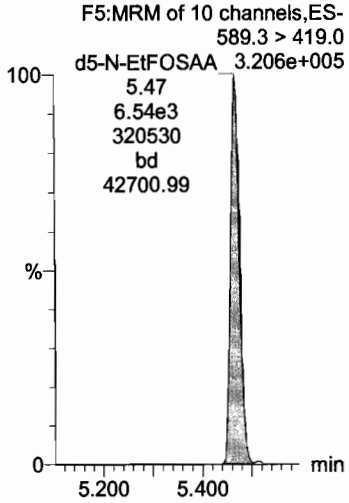
	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor	SWI	Cal File	>MDL
1	PFBS	94.007439	0.00995	106.3		2.869e4		3.30	1	19			0.661	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17	1.0	1.00		YES
2	PFHxA	101.18382	0.00619	101.2		2.046e4		3.70	2	18			0.802	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
3	PFHpA	103.68629	0.00992	103.7		7.892e4		4.21	3	18			0.912	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
4	PFHxS	92.355153	0.0214	101.3		3.291e4		4.32	4	19			0.864	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
5	PFOA	102.92869	0.0199	102.9		7.638e4		4.61	5	18			1.000	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
6	PFNA	99.550981	0.0195	99.6		8.620e4		4.94	6	18			1.072	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
7	PFOS	95.827632	0.234	103.7		4.494e4		5.00	7	19			1.000	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
8	PFDA	102.81563	0.0270	102.8		7.924e4		5.23	8	18			1.135	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17...	1.0	1.00		NO
9	N-MeFOSAA	107.26886	0.0242	107.3		4.003e4		5.35	9	20			1.000	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17...	1.0	1.00		YES
10	N-EtFOSAA	106.98341	0.140	107.0		2.594e4		5.47	10	20			1.023	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
11	PFUnA	98.938080	0.0173	98.9		7.834e4		5.48	11	18			1.189	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17...	1.0	1.00		YES
12	PFDoA	101.18195	0.0470	101.2		1.690e4		5.70	12	18			1.236	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17...	1.0	1.00		YES
13	PFTrDA	102.54881	0.0110	102.5		1.343e5		5.88	13	18			1.276	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17...	1.0	1.00		YES
14	PFTeDA	108.13088	0.2102	108.1		1.359e5		6.04	14	18			1.311	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		YES
15	13C2-PFHxA	10.844008	0.000529	108.4		4.343e3	0.431	3.69	15	18			0.801	16-Dec-17	17:47:29		ST171216G	PFC CS5 537 17...	1.0	1.00		NO
16	13C2-PFDA	9.9590101	0.000763	99.6		5.575e3	0.602	5.23	16	18			1.135	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		NO
17	d5-N-EtFOSAA	42.405504	0.00297	106.0		6.537e3	1.205	5.47	17	20			1.022	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		NO
18	13C2-PFOA	10.000000	0.000439	100.0		9.293e3	1.000	4.61	18	18			0.000	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		NO
19	13C4-PFOS	28.700000	0.0221	100.0		1.074e4	1.000	5.00	19	19			0.000	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00437	100.0		5.115e3	1.000	5.35	20	20			0.000	16-Dec-17	17:47:29		ST171216G...	PFC CS5 537 17...	1.0	1.00		NO

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-CRV.qld

Last Altered: Monday, December 18, 2017 10:33:08 Pacific Standard Time
Printed: Monday, December 18, 2017 10:35:12 Pacific Standard Time

Name: 171216G2-17, Date: 16-Dec-2017, Time: 17:47:29, ID: ST171216G2-9 PFC CS5 537 17L1426, Description: PFC CS5 537 17L1426

d5-N-EtFOSAA



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-19.qld

Last Altered: Monday, December 18, 2017 10:52:41 Pacific Standard Time
Printed: Monday, December 18, 2017 10:53:25 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

MJT 12/18/17

Name: 171216G2-19, Date: 16-Dec-2017, Time: 18:12:21, ID: ICV171216G2-1 PFC ICV 537 17L1427, Description: PFC ICV 537 17L1427

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	3.55e3	1.41e4	1.0000		3.30	3.30	7.23	8.856	88.6
2	2	PFHxA	313.2 > 268.9	2.56e3	1.13e4	1.0000		3.69	3.69	2.26	10.375	103.7
3	3	PFHpA	363 > 318.9	8.76e3	1.13e4	1.0000		4.19	4.20	7.73	9.678	96.8
4	4	PFHxS	398.9 > 79.6	4.22e3	1.41e4	1.0000		4.32	4.31	8.59	9.018	90.2
5	5	PFOA	413 > 368.7	8.69e3	1.13e4	1.0000		4.61	4.61	7.66	9.597	96.0
6	6	PFNA	463 > 418.8	1.02e4	1.13e4	1.0000		4.98	4.94	9.04	9.697	97.0
7	7	PFOS	499 >79.9	5.72e3	1.41e4	1.0000		4.99	4.99	11.6	9.289	92.9
8	8	PFDA	513 > 468.8	9.89e3	1.13e4	1.0000		5.24	5.23	8.73	9.904	99.0
9	9	N-MeFOSAA	570.1 > 419.0	3.84e3	6.47e3	1.0000		5.35	5.35	23.7	9.259	92.6
10	10	N-EtFOSAA	584.2 >419.0	2.95e3	6.47e3	1.0000		5.47	5.47	18.2	9.616	96.2
11	11	PFUnA	563 > 518.9	9.45e3	1.13e4	1.0000		5.50	5.48	8.34	9.785	97.9
12	12	PFDoA	612.9 > 318.8	1.94e3	1.13e4	1.0000		5.72	5.70	1.71	9.496	95.0
13	13	PFTrDA	662.9 > 618.9	1.61e4	1.13e4	1.0000		5.83	5.88	14.2	10.081	100.8
14	14	PFTeDA	712.9 > 668.8	1.47e4	1.13e4	1.0000		6.01	6.04	13.0	9.583	95.8
15	15	13C2-PFHxA	315 > 269.8	4.62e3	1.13e4	1.0000	0.431	3.70	3.69	4.07	9.455	94.5
16	16	13C2-PFDA	515.1 > 469.9	6.32e3	1.13e4	1.0000	0.602	5.26	5.23	5.57	9.250	92.5
17	17	d5-N-EtFOSAA	589.3 > 419.0	8.06e3	6.47e3	1.0000	1.205	5.35	5.46	49.9	41.362	103.4
18	18	13C2-PFOA	414.9 > 369.7	1.13e4	1.13e4	1.0000	1.000	4.41	4.61	10.0	10.000	100.0
19	19	13C4-PFOS	503.0 > 79.9	1.41e4	1.41e4	1.0000	1.000	4.81	4.99	28.7	28.700	100.0
20	20	d3-N-MeFOSAA	573.3 > 419.0	6.47e3	6.47e3	1.0000	1.000	5.16	5.35	40.0	40.000	100.0

70% – 130%

✓ MJT 12/18/2017

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\171216G2\171216G2-19.qld

Last Altered: Monday, December 18, 2017 10:52:41 Pacific Standard Time
Printed: Monday, December 18, 2017 10:53:25 Pacific Standard Time

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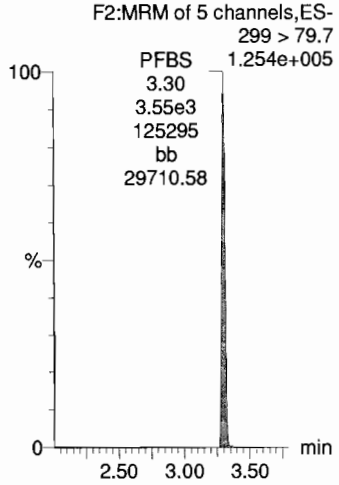
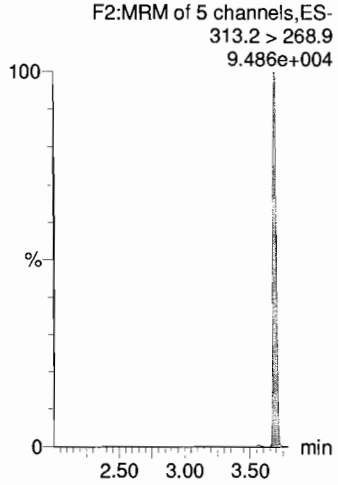
Calibration: U:\G1.pro\CurveDB\C18_537_Q1_12-16-17_L14.cdb 18 Dec 2017 10:33:08

Name: 171216G2-19, Date: 16-Dec-2017, Time: 18:12:21, ID: ICV171216G2-1 PFC ICV 537 17L1427, Description: PFC ICV 537 17L1427

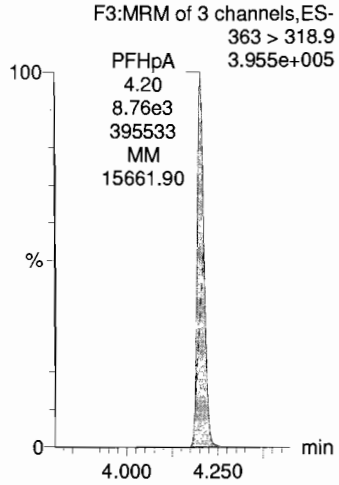
PFBS



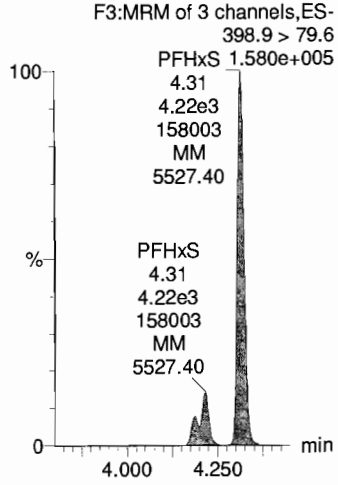
PFHxA



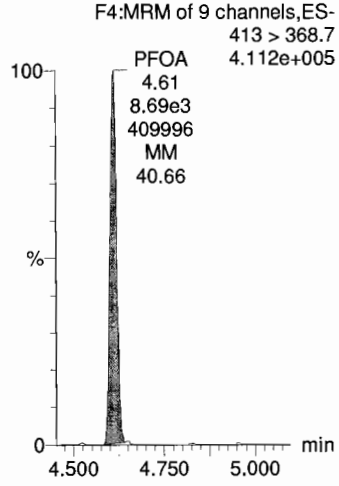
PFHpA



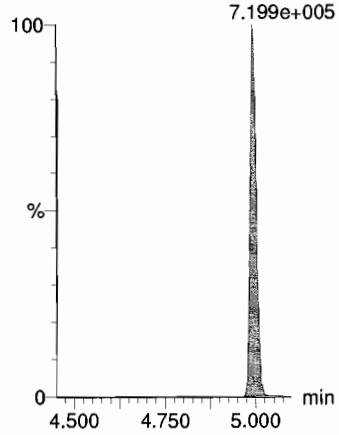
PFHxS



PFOA



13C4-PFOS



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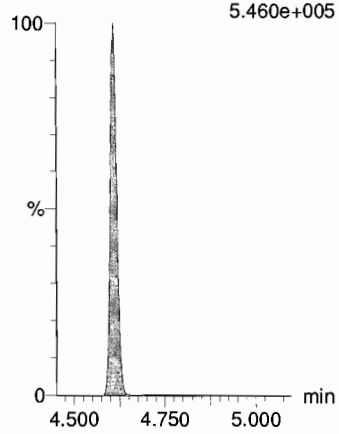

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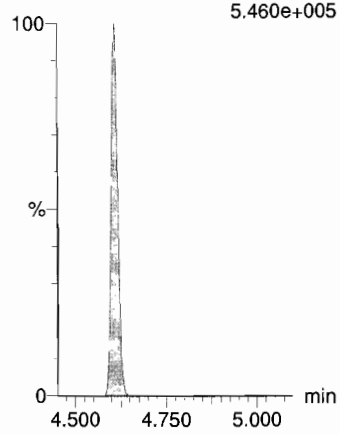
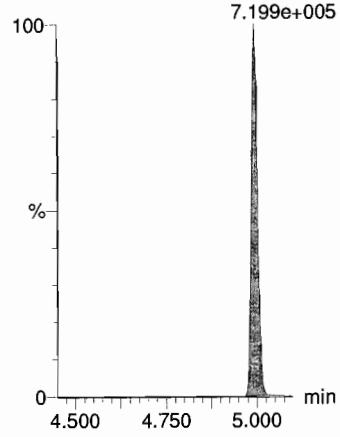


13C4-PFOS



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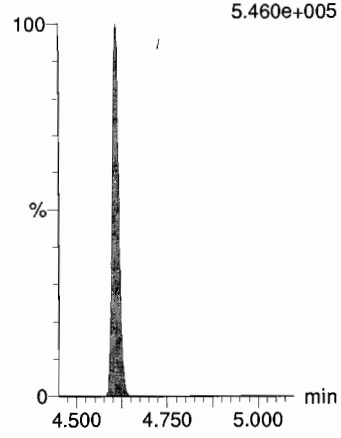

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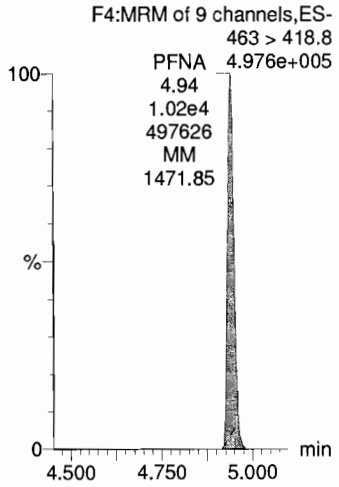
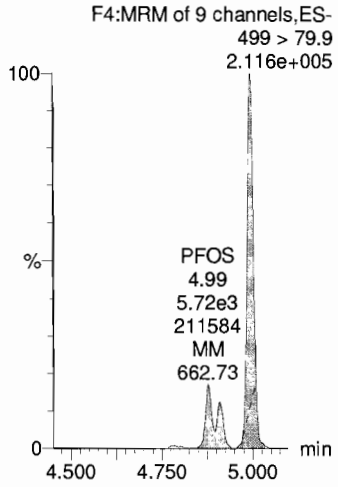
Last Altered: Monday, December 18, 2017 10:52:41 Pacific Standard Time
Printed: Monday, December 18, 2017 10:53:25 Pacific Standard Time

Name: 171216G2-19, Date: 16-Dec-2017, Time: 18:12:21, ID: ICV171216G2-1 PFC ICV 537 17L1427, Description: PFC ICV 537 17L1427

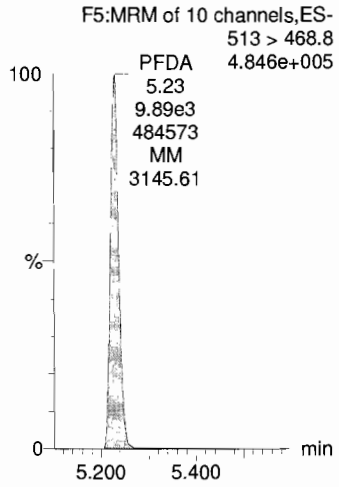
PFNA



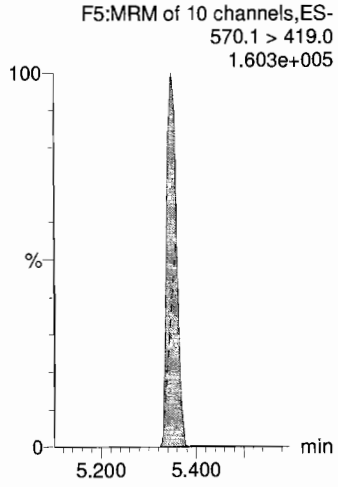
PFOS



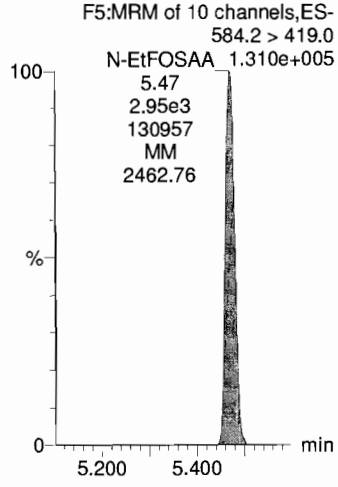
PFDA



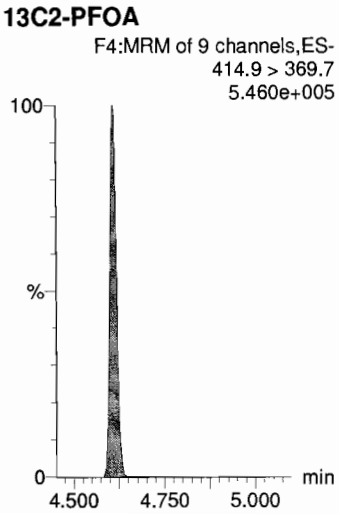
N-MeFOSAA



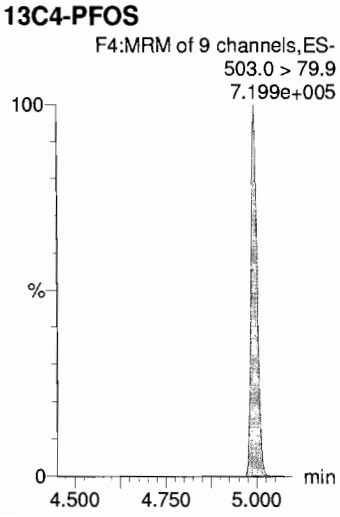
N-EtFOSAA



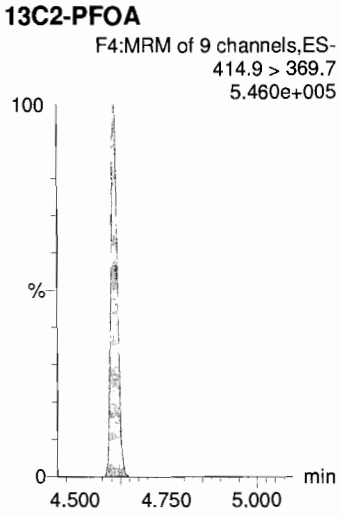
13C2-PFOA



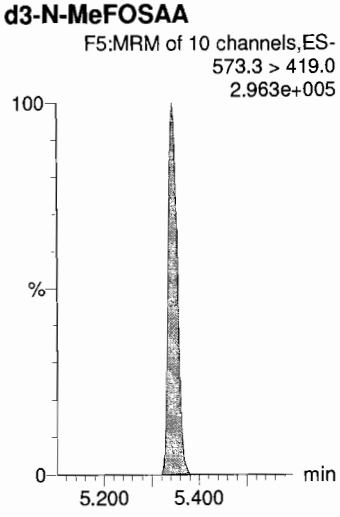
13C4-PFOS



13C2-PFOA



d3-N-MeFOSAA



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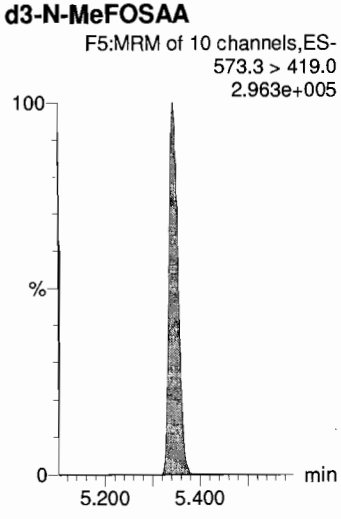

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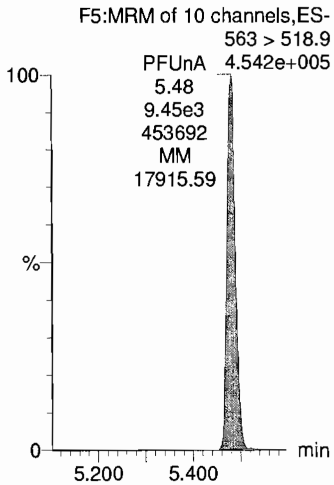
Printed: Monday, December 18, 2017 10:53:25 Pacific Standard Time

Name: 171216G2-19, Date: 16-Dec-2017, Time: 18:12:21, ID: ICV171216G2-1 PFC ICV 537 17L1427, Description: PFC ICV 537 17L1427

PFUnA



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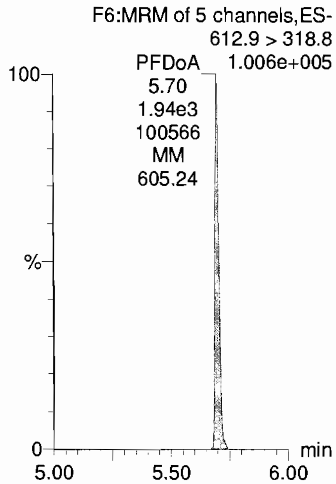
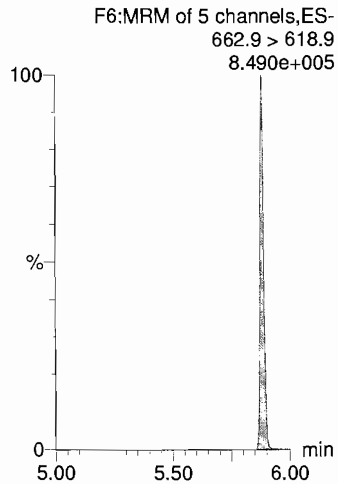
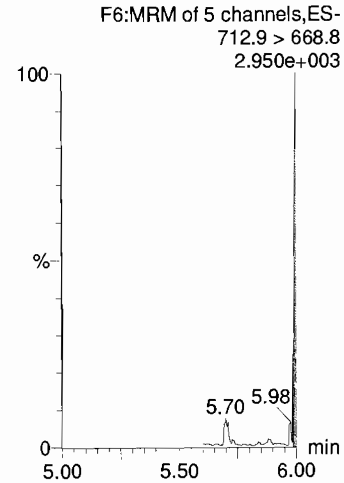


PFTrDA



PFTeDA



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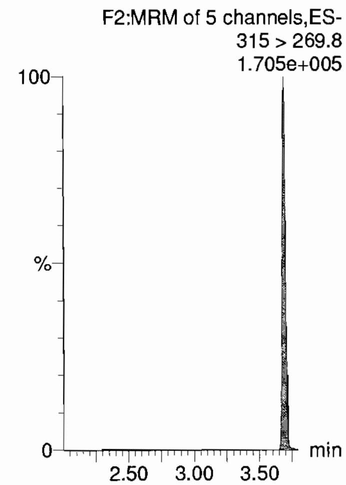

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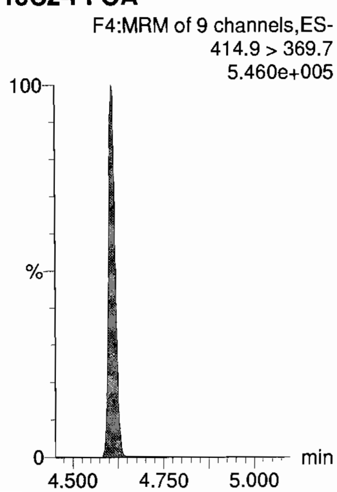

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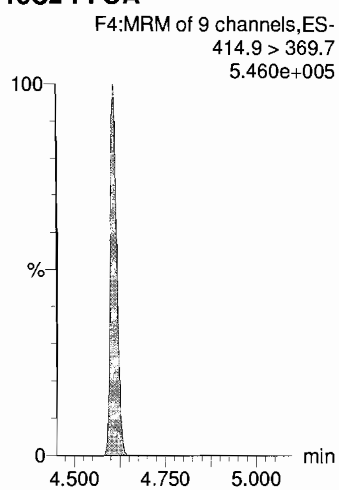

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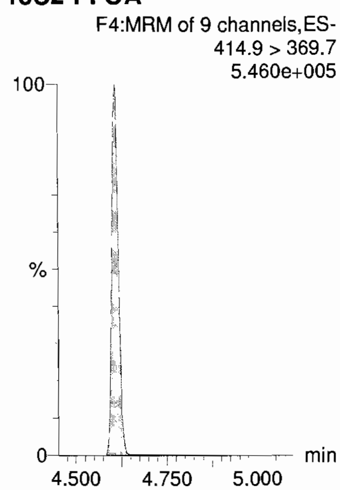

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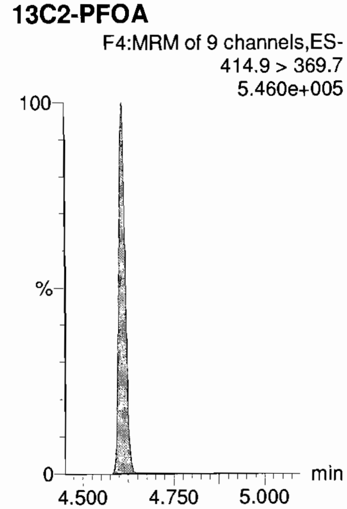
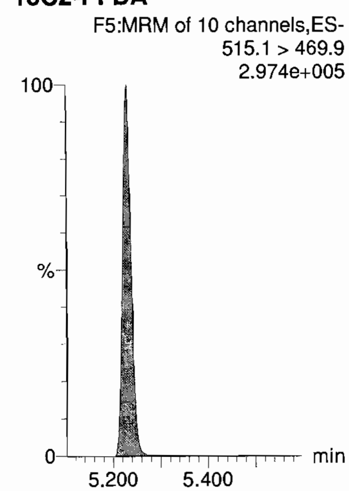
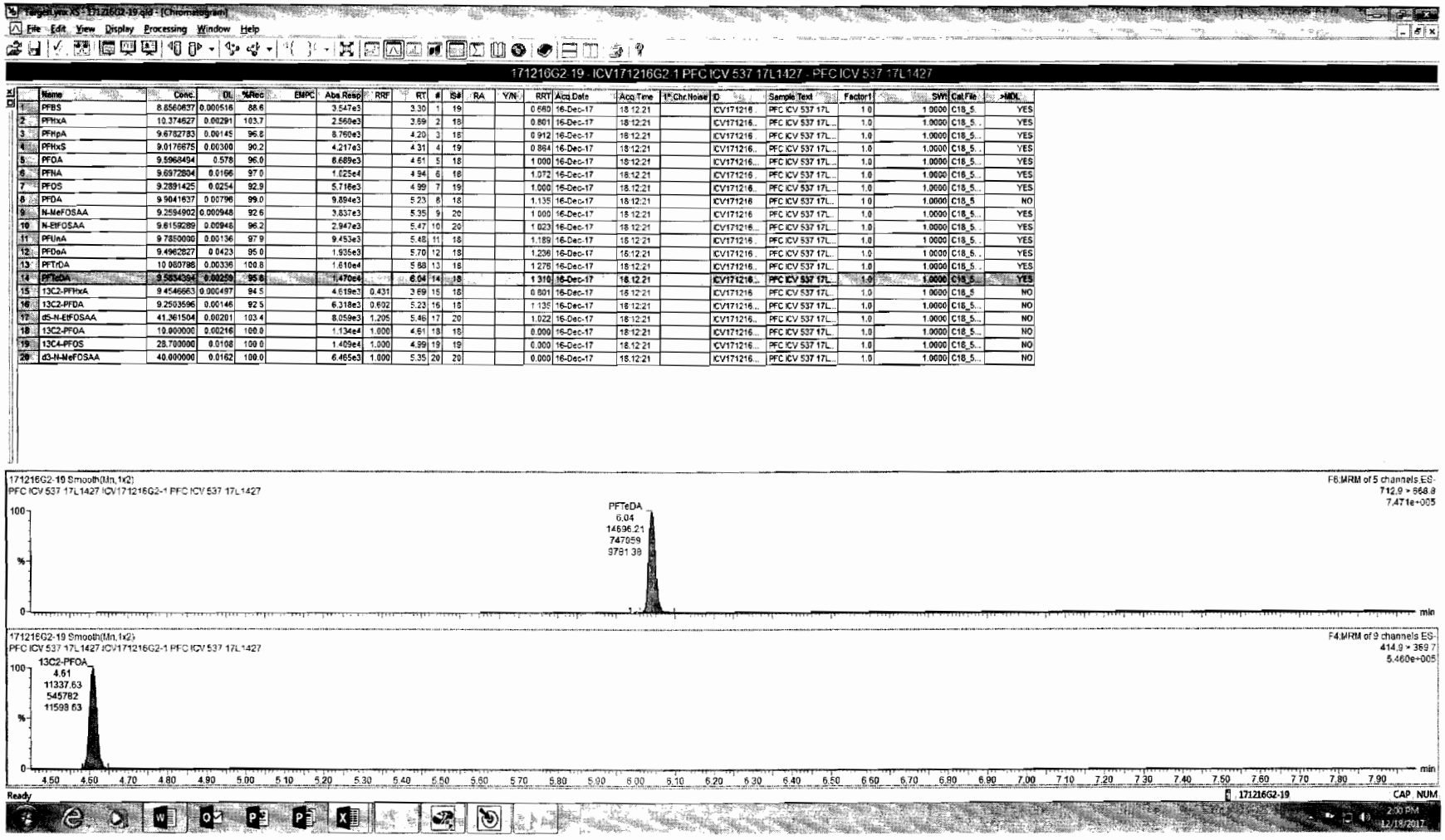


13C2-PFDA





	Name	Conc.	DL	%Rec	EMPC	Aba.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	SWI	Cal.File	>MDL
1	PFBS	8.8560837	0.000516	88.6		3.547e3		3.30	1	19			0.660	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L	1.0	1.0000	C18_5...	YES
2	PFHxA	10.374627	0.00291	103.7		2.560e3		3.59	2	18			0.801	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
3	PFHpA	9.6782783	0.00145	96.8		8.760e3		4.20	3	18			0.912	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
4	PFHxS	9.0176675	0.00300	90.2		4.217e3		4.31	4	19			0.864	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
5	PFOA	9.5968494	0.578	96.0		8.689e3		4.61	5	18			1.000	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
6	PFNA	9.6972804	0.0166	97.0		1.025e4		4.94	6	18			1.072	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
7	PFOS	9.2891425	0.0254	92.9		5.716e3		4.99	7	19			1.000	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
8	PFDA	9.9041637	0.00796	99.0		9.894e3		5.23	8	18			1.135	16-Dec-17	18:12:21		ICV171216	PFC ICV 537 17L...	1.0	1.0000	C18_5	NO
9	N-MeFOSAA	9.2594902	0.000948	92.6		3.837e3		5.35	9	20			1.000	16-Dec-17	18:12:21		ICV171216	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
10	N-EtFOSAA	9.6159289	0.00946	96.2		2.947e3		5.47	10	20			1.023	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
11	PFUnA	9.7850000	0.00136	97.9		9.453e3		5.48	11	18			1.189	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
12	PFDoA	9.4962827	0.0423	95.0		1.935e3		5.70	12	18			1.236	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
13	PFTrDA	10.080786	0.00336	100.8		1.610e4		5.88	13	18			1.278	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
14	PFTeDA	9.5834394	0.00259	95.8		1.470e4		6.04	14	18			1.310	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	YES
15	13C2-PFHxA	9.4546663	0.000497	94.5		4.619e3	0.431	3.69	15	18			0.801	16-Dec-17	18:12:21		ICV171216	PFC ICV 537 17L...	1.0	1.0000	C18_5	NO
16	13C2-PFDA	9.2503596	0.00146	92.5		6.318e3	0.602	5.23	16	18			1.135	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	NO
17	d5-N-EtFOSAA	41.361504	0.00201	103.4		8.059e3	1.205	5.46	17	20			1.022	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	NO
18	13C2-PFOA	10.000000	0.00216	100.0		1.134e4	1.000	4.61	18	18			0.000	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	NO
19	13C4-PFOS	28.700000	0.0108	100.0		1.409e4	1.000	4.99	19	19			0.000	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	NO
20	d3-N-MeFOSAA	40.000000	0.0162	100.0		6.465e3	1.000	5.35	20	20			0.000	16-Dec-17	18:12:21		ICV171216...	PFC ICV 537 17L...	1.0	1.0000	C18_5...	NO

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Printed: Monday, December 18, 2017 10:53:25 Pacific Standard Time

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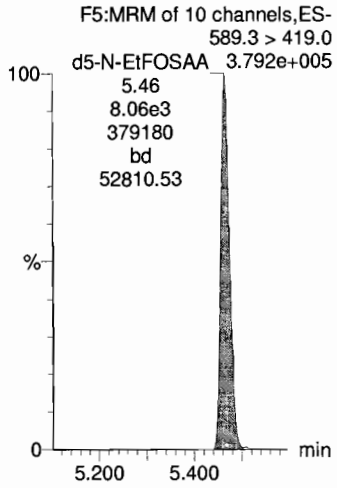
d5-N-EtFOSAA



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N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2RW61-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/07/2017 09:16	12/09/2017			20171214	16:09:00	20171216	21:31:00	1701904-11	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2RW61-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/07/2017 09:16	12/09/2017			20171214	16:09:00	20171216	21:31:00	1701904-11	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB61-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/07/2017 09:16	12/09/2017			20171214	16:09:00	20171216	21:44:00	1701904-12	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB61-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/07/2017 09:16	12/09/2017			20171214	16:09:00	20171216	21:44:00	1701904-12	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB61-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/07/2017 09:16	12/09/2017			20171214	16:09:00	20171216	21:44:00	1701904-12	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-2FB61-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/07/2017 09:16	12/09/2017			20171214	16:09:00	20171216	21:44:00	1701904-12	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:28	12/09/2017			20171214	16:09:00	20171216	21:56:00	1701904-13	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:28	12/09/2017			20171214	16:09:00	20171216	21:56:00	1701904-13	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:28	12/09/2017			20171214	16:09:00	20171216	21:56:00	1701904-13	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:28	12/09/2017			20171214	16:09:00	20171216	21:56:00	1701904-13	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:29	12/09/2017			20171214	16:09:00	20171216	22:08:00	1701904-14	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:29	12/09/2017			20171214	16:09:00	20171216	22:08:00	1701904-14	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:29	12/09/2017			20171214	16:09:00	20171216	22:08:00	1701904-14	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB150-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:29	12/09/2017			20171214	16:09:00	20171216	22:08:00	1701904-14	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:47	12/09/2017			20171214	16:09:00	20171216	22:21:00	1701904-15	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:47	12/09/2017			20171214	16:09:00	20171216	22:21:00	1701904-15	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:47	12/09/2017			20171214	16:09:00	20171216	22:21:00	1701904-15	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:47	12/09/2017			20171214	16:09:00	20171216	22:21:00	1701904-15	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:48	12/09/2017			20171214	16:09:00	20171216	22:33:00	1701904-16	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:48	12/09/2017			20171214	16:09:00	20171216	22:33:00	1701904-16	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:48	12/09/2017			20171214	16:09:00	20171216	22:33:00	1701904-16	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB151-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 09:48	12/09/2017			20171214	16:09:00	20171216	22:33:00	1701904-16	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:41	12/09/2017			20171214	16:09:00	20171216	22:46:00	1701904-17	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:41	12/09/2017			20171214	16:09:00	20171216	22:46:00	1701904-17	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:41	12/09/2017			20171214	16:09:00	20171216	22:46:00	1701904-17	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:41	12/09/2017			20171214	16:09:00	20171216	22:46:00	1701904-17	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:42	12/09/2017			20171214	16:09:00	20171216	22:58:00	1701904-18	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:42	12/09/2017			20171214	16:09:00	20171216	22:58:00	1701904-18	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:42	12/09/2017			20171214	16:09:00	20171216	22:58:00	1701904-18	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB152-1217	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	12/08/2017 10:42	12/09/2017			20171214	16:09:00	20171216	22:58:00	1701904-18	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	19:14:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	19:14:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	19:14:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	19:14:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:37:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:37:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:37:00	B7L0107-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	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:37:00	B7L0107-BS1	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:49:00	B7L0107-BSD1	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:49:00	B7L0107-BSD1	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:49:00	B7L0107-BSD1	1	-999		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	12/14/2017 16:09	12/14/2017			20171214	16:09:00	20171216	18:49:00	B7L0107-BSD1	1	-999		

Contract_ID	DO_CTO_Number	Phase	Installation_ID	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		5.24	NG_L	U		PR	TRG									5.1	0.464	5.24	10.5	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		1.91	NG_L	J		PR	TRG									5.1	1.13	5.24	10.5	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.24	NG_L	U		PR	TRG									5.1	1.09	5.24	10.5	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		104	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.97	NG_L	U		PR	TRG									5.1	0.440	4.97	9.94	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.97	NG_L	U		PR	TRG									5.1	1.07	4.97	9.94	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.97	NG_L	U		PR	TRG									5.1	1.03	4.97	9.94	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		99.3	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
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	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		1.18	NG_L	J		PR	TRG									5.1	1.07	4.95	9.89	1701904	S7L0058
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	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		107	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.93	NG_L	U		PR	TRG									5.1	0.436	4.93	9.85	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.93	NG_L	U		PR	TRG									5.1	1.06	4.93	9.85	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.93	NG_L	U		PR	TRG									5.1	1.02	4.93	9.85	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		91.2	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.04	NG_L	U		PR	TRG									5.1	0.447	5.04	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		142	NG_L			PR	TRG									5.1	1.09	5.04	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		9.47	NG_L	J		PR	TRG									5.1	1.05	5.04	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		104	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.93	NG_L	U		PR	TRG									5.1	0.437	4.93	9.86	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.93	NG_L	U		PR	TRG									5.1	1.07	4.93	9.86	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.93	NG_L	U		PR	TRG									5.1	1.03	4.93	9.86	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		93.6	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.88	NG_L	U		PR	TRG									5.1	0.433	4.88	9.77	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.88	NG_L	U		PR	TRG									5.1	1.05	4.88	9.77	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.88	NG_L	U		PR	TRG									5.1	1.02	4.88	9.77	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		102	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.93	NG_L	U		PR	TRG									5.1	0.437	4.93	9.87	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.93	NG_L	U		PR	TRG									5.1	1.07	4.93	9.87	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.93	NG_L	U		PR	TRG									5.1	1.03	4.93	9.87	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		93.0	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.21	NG_L	U		PR	TRG									5.1	0.462	5.21	10.4	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		5.21	NG_L	U		PR	TRG									5.1	1.13	5.21	10.4	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.21	NG_L	U		PR	TRG									5.1	1.08	5.21	10.4	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		101	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.86	NG_L	U		PR	TRG									5.1	0.431	4.86	9.73	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.86	NG_L	U		PR	TRG									5.1	1.05	4.86	9.73	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.86	NG_L	U		PR	TRG									5.1	1.01	4.86	9.73	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		105	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.03	NG_L	U		PR	TRG									5.1	0.446	5.03	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		5.03	NG_L	U		PR	TRG									5.1	1.09	5.03	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.03	NG_L	U		PR	TRG									5.1	1.05	5.03	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		103	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.03	NG_L	U		PR	TRG									5.1	0.446	5.03	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		5.03	NG_L	U		PR	TRG									5.1	1.09	5.03	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.03	NG_L	U		PR	TRG									5.1	1.05	5.03	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		103	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.05	NG_L	U		PR	TRG									5.1	0.448	5.05	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		5.05	NG_L	U		PR	TRG									5.1	1.09	5.05	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.05	NG_L	U		PR	TRG									5.1	1.05	5.05	10.1	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		101	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.98	NG_L	U		PR	TRG									5.1	0.441	4.98	9.95	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.98	NG_L	U		PR	TRG									5.1	1.07	4.98	9.95	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.98	NG_L	U		PR	TRG									5.1	1.03	4.98	9.95	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		98.0	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.78	NG_L	U		PR	TRG									5.1	0.423	4.78	9.55	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.78	NG_L	U		PR	TRG									5.1	1.03	4.78	9.55	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.78	NG_L	U		PR	TRG									5.1	0.993	4.78	9.55	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		103	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.17	NG_L	U		PR	TRG									5.1	0.458	5.17	10.3	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		5.17	NG_L	U		PR	TRG									5.1	1.12	5.17	10.3	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		7.04	NG_L	J		PR	TRG									5.1	1.07	5.17	10.3	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		120	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.96	NG_L	U		PR	TRG									5.1	0.439	4.96	9.91	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.96	NG_L	U		PR	TRG									5.1	1.07	4.96	9.91	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.96	NG_L	U		PR	TRG									5.1	1.03	4.96	9.91	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		110	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.13	NG_L	U		PR	TRG									5.1	0.454	5.13	10.3	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		5.13	NG_L	U		PR	TRG									5.1	1.11	5.13	10.3	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.13	NG_L	U		PR	TRG									5.1	1.07	5.13	10.3	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		101	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.98	NG_L	U		PR	TRG									5.1	0.441	4.98	9.96	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.98	NG_L	U		PR	TRG									5.1	1.08	4.98	9.96	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.98	NG_L	U		PR	TRG									5.1	1.04	4.98	9.96	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		96.3	PCT_REC			PR			SLSA	130	70					5.1				1701904	S7L0058
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	1701904	S7L0058
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	1701904	S7L0058
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	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		94.6	PCT_REC			PR	SUR		SLSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		19.3	NG_L			PR	TRG		LSA	150	50					5.1	0.443	5.00	10.0	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		27.4	NG_L			PR	TRG		LSA	150	50					5.1	1.08	5.00	10.0	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		21.9	NG_L			PR	TRG		LSA	150	50					5.1	1.04	5.00	10.0	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		110	PCT_REC			PR	SUR		LSA	130	70					5.1				1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		19.5	NG_L			PR	TRG		LSA	150	50					5.1	0.443	5.00	10.0	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		27.3	NG_L			PR	TRG		LSA	150	50					5.1	1.08	5.00	10.0	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		20.5	NG_L			PR	TRG		LSA	150	50					5.1	1.04	5.00	10.0	1701904	S7L0058
N6247016D9000	0008		CHERRY_POINT_MCAS	13C2-PFHxA	13C2-PFHxA		110	PCT_REC			PR	SUR		LSA	130	70					5.1				1701904	S7L0058

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
MCOLF ATLANTC, NORTH CAROLINA

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701904
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCOLF Atlantic, North Carolina
Date: January 13, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-2RW56-1217	1701904-01	Water
2	CH-AT-2FB56-1217	1701904-02	Water
3	CH-AT-2RW57-1217	1701904-03	Water
4	CH-AT-2FB57-1217	1701904-04	Water
5	CH-AT-2RW58-1217	1701904-05	Water
6	CH-AT-2FB58-1217	1701904-06	Water
7	CH-AT-2RW59-1217	1701904-07	Water
8	CH-AT-2FB59-1217	1701904-08	Water
9	CH-AT-2RW60-1217	1701904-09	Water
10	CH-AT-2FB60-1217	1701904-10	Water
11	CH-AT-2RW61-1217	1701904-11	Water
12	CH-AT-2FB61-1217	1701904-12	Water
13	CH-AT-1RW150-1217	1701904-13	Water
14	CH-AT-1FB150-1217	1701904-14	Water
15	CH-AT-1RW151-1217	1701904-15	Water
16	CH-AT-1FB151-1217	1701904-16	Water
17	CH-AT-1RW152-1217	1701904-17	Water
18	CH-AT-1FB152-1217	1701904-18	Water

A full data validation was performed on the analytical data for nine water samples and nine aqueous field blank samples collected on December 6-8, 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-2FB56-1217	None - ND	-	-	-
CH-AT-2FB57-1217	None - ND	-	-	-
CH-AT-2FB58-1217	None - ND	-	-	-
CH-AT-2FB59-1217	None - ND	-	-	-
CH-AT-2FB60-1217	None - ND	-	-	-
CH-AT-2FB61-1217	None - ND	-	-	-
CH-AT-1FB150-1217	None - ND	-	-	-
CH-AT-1FB151-1217	None - ND	-	-	-
CH-AT-1FB152-1217	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- MS/MSD samples were not analyzed.

Laboratory Control Samples

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

Internal Standard (IS) Area Performance

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

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed: Nancy Weaver Dated: 1/15/18

Nancy Weaver
Senior Chemist

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

Vista Analytical Laboratory

Sample ID: CH-AT-2RW56-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:19

Laboratory Data

Lab Sample: 1701904-01
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.464	5.24	10.5		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1
PFOA	1.91	1.13	5.24	10.5	J	B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1
PFOS	ND	1.09	5.24	10.5		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0107	14-Dec-17	0.239 L	16-Dec-17 19:26	1

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

1/13/18

Vista Analytical Laboratory

Sample ID: CH-AT-2FB56-1217 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-02	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	06-Dec-17 10:19	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1
PFOA	ND	1.07	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1
PFOS	ND	1.03	4.97	9.94		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.3	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 19:39	1

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

Vista 3
Analytical Laboratory

Sample ID: CH-AT-2RW57-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:37

Laboratory Data

Lab Sample: 1701904-03
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.95	9.89		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1
PFOA	1.18	1.07	4.95	9.89	J	B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1
PFOS	ND	1.03	4.95	9.89		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0107	14-Dec-17	0.253 L	16-Dec-17 19:51	1

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

nw 1/31.8

Vista Analytical Laboratory 4

Sample ID: CH-AT-2FB57-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 10:37

Laboratory Data

Lab Sample: 1701904-04
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1
PFOA	ND	1.06	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1
PFOS	ND	1.02	4.93	9.85		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.2	70 - 130		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:04	1

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

nw 1/31/18

Vista Analytical Laboratory

5

Sample ID: CH-AT-2RW58-1217 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-05	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	06-Dec-17 11:31	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.447	5.04	10.1		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1
PFOA	142	1.09	5.04	10.1		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1
PFOS	9.47	1.05	5.04	10.1	J	B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0107	14-Dec-17	0.248 L	16-Dec-17 20:16	1

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

سه ۱/۳/۱۸

Vista Analytical Laboratory

6

Sample ID: CH-AT-2FB58-1217 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-06	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	06-Dec-17 11:31	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1
PFOA	ND	1.07	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1
PFOS	ND	1.03	4.93	9.86		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.6	70 - 130		B7L0107	14-Dec-17	0.254 L	16-Dec-17 20:29	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.

12.31.18

Vista 7
Analytical Laboratory

Sample ID: CH-AT-2RW59-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 06-Dec-17 11:47

Laboratory Data

Lab Sample: 1701904-07
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1
PFOA	ND	1.05	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1
PFOS	ND	1.02	4.88	9.77		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130		B7L0107	14-Dec-17	0.256 L	16-Dec-17 20:41	1

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

بعد ١٠٣١٠٨

Sample ID: CH-AT-2FB59-1217 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-08	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	06-Dec-17 11:47	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1
PFOA	ND	1.07	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1
PFOS	ND	1.03	4.93	9.87		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.0	70 - 130		B7L0107	14-Dec-17	0.253 L	16-Dec-17 20:53	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 9
Analytical Laboratory

Sample ID: CH-AT-2RW60-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 07-Dec-17 09:09

Laboratory Data

Lab Sample: 1701904-09
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1
PFOA	ND	1.13	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1
PFOS	ND	1.08	5.21	10.4		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.240 L	16-Dec-17 21:06	1

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

11.3.18

Vista Analytical Laboratory 10

Sample ID: CH-AT-2FB60-1217 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-10	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	07-Dec-17 09:09	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1
PFOA	ND	1.05	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1
PFOS	ND	1.01	4.86	9.73		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130		B7L0107	14-Dec-17	0.257 L	16-Dec-17 21:19	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.

1.8

Sample ID: CH-AT-2RW61-1217 — **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-11	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	07-Dec-17 09:16	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1
PFOA	ND	1.09	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1
PFOS	ND	1.05	5.03	10.1		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0107	14-Dec-17	0.249 L	16-Dec-17 21:31	1

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

Vista Analytical Laboratory 12

Sample ID: CH-AT-2FB61-1217 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-12	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	07-Dec-17 09:16	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.448	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1
PFOA	ND	1.09	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1
PFOS	ND	1.05	5.05	10.1		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.247 L	16-Dec-17 21:44	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

AW 1/13/18

Vista Analytical Laboratory 13

Sample ID: CH-AT-1RW150-1217

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: 1701904-13
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1
PFOA	ND	1.07	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1
PFOS	ND	1.03	4.98	9.95		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.0	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 21:56	1

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

1.3.18

Vista 14 Analytical Laboratory

Sample ID: CH-AT-1FB150-1217

EPA Method 537

Client Data

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

Laboratory Data

Lab Sample: 1701904-14
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	**ND**	**0.423**	**4.78**	**9.55**		**B7L0107**	**14-Dec-17**	**0.262 L**	**16-Dec-17 22:08**	1
PFOA	ND	1.03	4.78	9.55		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1
PFOS	**ND**	**0.993**	**4.78**	**9.55**		**B7L0107**	**14-Dec-17**	**0.262 L**	**16-Dec-17 22:08**	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0107	14-Dec-17	0.262 L	16-Dec-17 22:08	1

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

New 1/3/18

Vista Analytical Laboratory 15

Sample ID: CH-AT-1RW151-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 09:47

Laboratory Data

Lab Sample: 1701904-15
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.458	5.17	10.3		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1
PFOA	ND	1.12	5.17	10.3		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1
PFOS	7.04	1.07	5.17	10.3	J	B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	120	70 - 130		B7L0107	14-Dec-17	0.242 L	16-Dec-17 22:21	1

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

12/13/18

Vista Analytical Laboratory 16

Sample ID: CH-AT-1FB151-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 09:48

Laboratory Data

Lab Sample: 1701904-16
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1
PFOA	ND	1.07	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1
PFOS	ND	1.03	4.96	9.91		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130		B7L0107	14-Dec-17	0.252 L	16-Dec-17 22:33	1

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

8/13/2018

Vista 17
Analytical Laboratory

Sample ID: CH-AT-1RW152-1217 **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701904-17	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	08-Dec-17 10:41	Date Received:	09-Dec-17 10:05		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.454	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1
PFOA	ND	1.11	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1
PFOS	ND	1.07	5.13	10.3		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0107	14-Dec-17	0.244 L	16-Dec-17 22:46	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 1/3/18

Vista 18
Analytical Laboratory

Sample ID: CH-AT-1FB152-1217

EPA Method 537

Client Data

Name: CH2M Hill
Project: CTO-08/MCOLF ATLANTIC PFAS INV.
Matrix: Drinking Water
Date Collected: 08-Dec-17 10:42

Laboratory Data

Lab Sample: 1701904-18
Date Received: 09-Dec-17 10:05
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1
PFOA	ND	1.08	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1
PFOS	ND	1.04	4.98	9.96		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.3	70 - 130		B7L0107	14-Dec-17	0.251 L	16-Dec-17 22:58	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.

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