



**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 1701814**

*Marine Corps Outlying Landing Field Atlantic  
MCAS Cherry Point NC*

February 2019

December 11, 2017

**Vista Work Order No. 1701814**

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 01, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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

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

Sincerely,



*Karen J. Wolfenbarger*  
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. 1701814**

### **Case Narrative**

#### **Sample Condition on Receipt:**

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

#### **Analytical Notes:**

##### **EPA Method 537**

Sample "CH-AT-1RW107-1117" contained particulate and was centrifuged prior to extraction.

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

##### **Holding Times**

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

##### **Quality Control**

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

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

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "CH-AT-1RW112-1117". The analyte recoveries and RPDs were within the method acceptance criteria.

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701814-01	CH-AT-1RW109-1117	30-Nov-17 08:48	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-02	CH-AT-1FB109-1117	30-Nov-17 08:49	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-03	CH-AT-1RW110-1117	30-Nov-17 09:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-04	CH-AT-1FB110-1117	30-Nov-17 09:10	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-05	CH-AT-1RW111-1117	30-Nov-17 09:21	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-06	CH-AT-1FB111-1117	30-Nov-17 09:22	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-07	CH-AT-1RW112-1117	MS/MSD30-Nov-17 10:11	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-08	CH-AT-1FB112-1117	30-Nov-17 10:12	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-09	CH-AT-1RW107-1117	29-Nov-17 17:02	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-10	CH-AT-1FB107-1117	29-Nov-17 17:03	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-11	CH-AT-1RW108-1117	29-Nov-17 18:21	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-12	CH-AT-1FB108-1117	29-Nov-17 18:22	01-Dec-17 09:40	HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

<b>Sample ID: LRB</b>	<b>EPA Method 537</b>
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<b>Client Data</b>	<b>Laboratory Data</b>
Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.	Matrix: Drinking Water Lab Sample: B7L0025-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		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1
PFOA	ND	1.08	5.00	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1
PFOS	ND	1.04	5.00	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.9	70 - 130			B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

Sample ID: LFB					EPA Method 537						
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	B7L0025-BS1	Column:	BEH C18				
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.										
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	62.1	70.8	87.7	70-130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	
PFOA	81.5	80.0	102	70-130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	
PFOS	67.6	74.0	91.4	70-130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR		93.4	70- 130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	



**Sample ID: CH-AT-1RW109-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-01	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 08:48	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
PFOA	ND	1.08	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
PFOS	ND	1.04	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-1FB109-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-02	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 08:49	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
PFOA	ND	1.05	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
PFOS	ND	1.01	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-1RW110-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-03	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:09	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.445	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
PFOA	ND	1.08	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
PFOS	ND	1.04	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1

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

**Sample ID: CH-AT-1FB110-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-04	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:10	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
PFOA	ND	1.08	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
PFOS	ND	1.04	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1

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

**Sample ID: CH-AT-1RW111-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-05	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:21	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
PFOA	ND	1.09	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
PFOS	ND	1.05	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1

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

**Sample ID: CH-AT-1FB111-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-06	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:22	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
PFOA	ND	1.07	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
PFOS	ND	1.03	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1

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

**Sample ID: CH-AT-1RW112-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-07	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 10:11	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
PFOA	ND	1.06	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
PFOS	ND	1.03	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1

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

Sample ID: CH-AT-1RW112-1117													EPA Method 537			
Name:	CH2M Hill				Lab Sample:	B7L0025-MS1/B7L0025-MSD1				Source Lab Sample:	1701814-07					
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.				QC Batch:	B7L0025				Date Extracted:	06-Dec-17					
Matrix:	Drinking Water				Samp Size:	0.243/0.256 L				Column:	BEH C18					
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	65.4	72.8	89.9		68.7	69.2	99.3	9.94		70-130	30	07-Dec-17 20:50	1	07-Dec-17 21:02	1
PFOA	ND	88.5	82.2	107		88.4	78.2	113	5.45		70-130	30	07-Dec-17 20:50	1	07-Dec-17 21:02	1
PFOS	ND	74.3	76.1	97.7		71.3	72.3	98.6	0.917		70-130	30	07-Dec-17 20:50	1	07-Dec-17 21:02	1
Labeled Standards	Type			MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA	SURR			101				105			70-130		07-Dec-17 20:50	1	07-Dec-17 21:02	1



**Sample ID: CH-AT-1FB112-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-08	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 10:12	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
PFOA	ND	1.03	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
PFOS	ND	0.992	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130			B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	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-1RW107-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-09	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 17:02	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
PFOA	ND	1.03	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
PFOS	ND	0.988	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1

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

**Sample ID: CH-AT-1FB107-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-10	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 17:03	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
PFOA	ND	1.03	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
PFOS	ND	0.990	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	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-1RW108-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-11	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 18:21	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
PFOA	ND	1.04	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
PFOS	ND	1.00	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.0	70 - 130			B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1

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

**Sample ID: CH-AT-1FB108-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-12	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 18:22	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1
PFOA	ND	1.05	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1
PFOS	ND	1.01	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130			B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1

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

## **DATA QUALIFIERS & ABBREVIATIONS**

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

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

## CERTIFICATIONS

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

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

## NELAP Accredited Test Methods

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

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

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

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

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



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

Submit by Email\*



11/30/17 COOLBR #3

679500.15.FI.FS

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701814
Temp: 0.4 °C
Storage ID: WR-2
Storage Secured: Yes [X] No [ ]

CHAIN OF CUSTODY RECORD

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

TAT: (Check One)
Standard [ ] 21 days
Rush (surcharge may apply)
[ ] 14 days [X] 7 days Specify: \_\_\_\_\_

Invoice to: Name Tiffany Hill Company CH2M HILL Address 1100 NE Circle Blvd City Corvallis State OR Zip 541-768-3109
Relinquished by: David Lubell Date: 11/30/17 Time: 1500 Received by: B. Benedict Date: 12/1/17 Time: 0942

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.: 7887 0048 6850
ATTN: Martha Maier

Table with columns for Analysis Requested (EPA1613, EPA8290, EPA8280, EPA1668, EPA1614, CARB429, EPA 537 DW ONLY, etc.) and rows for Quantity, Type, Matrix, and various chemical analysis codes.

Main data table with columns: Sample ID, Date, Time, Location/Sample Description, and columns for various analysis results (EPA1613, EPA8290, EPA8280, EPA1668, EPA1614, CARB429, EPA 537 DW ONLY, etc.).

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

SEND DOCUMENTATION AND RESULTS TO:

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

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

\*Bottle Preservative Type: [ ] T = Thiosulfate, [X] O = Other Trizma

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

Submit by Email\*



11/30/17 COOLER #2

FOR LABORATORY USE ONLY

Laboratory Project ID: 1701814 Temp 2.0 °C

Storage ID: WR-8 Storage Secured: Yes  No

# CHAIN OF CUSTODY RECORD

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

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

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

Relinquished by: (Printed Name and Signature) David Lubell Date: 11/30/17 Time: 1500 Received by: (Signature and Printed Name) Beth Benedict B. Benedict Date: 12/01/17 Time: 1156

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

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

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

Method of Shipment: FEDEX

Tracking No.: 788693072559

ATTN: Martha Maier

Add Analysis(es) Requested

Container(s)

Quantity Type Matrix

2378-TCDD  
 2378-TCDD/TCDF  
 PCDD/PCDF  
 2378-TCDD  
 2378-TCDD/TCDF  
 PCDD/PCDF  
 2378-TCDD  
 2378-TCDD/TCDF  
 PCDD/PCDF  
 TOTALS  
 COPLANAR PCBs  
 209 CONGENERS  
 PBDE  
 PAH  
 WHO-29  
 PFOA PFOS PFBS

EPA1613  
 EPA8290  
 EPA8280  
 EPA1668  
 EPA1614  
 CARB429  
 EPA 537  
 DW ONLY

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	TOTALS	COPLANAR PCBs	209 CONGENERS	PBDE	PAH	WHO-29	PFOA PFOS PFBS	
CH-AT-1RW107-1117	11/29/17	1702		2	P	DW																	X
CH-AT-1FB107-1117	11/29/17	1703		2	P	DW																	X
CH-AT-1RW108-1117	11/29/17	1821		2	P	DW																	X
CH-AT-1FB108-1117	11/29/17	1822		2	P	DW																	X
				2	P	DW																	X
				2	P	DW																	X
				2	P	DW																	X
				2	P	DW																	X
				2	P	DW																	X

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

SEND DOCUMENTATION AND RESULTS TO:

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

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

\*Bottle Preservative Type:  T = Thiosulfate,  
 O = Other Trizma \_\_\_\_\_

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

### Sample Log-in Checklist

Vista Work Order #: 1701814 TAT 7

Samples Arrival:	Date/Time 12/1/17 0940	Initials: BOB	Location: WR-2
			Shelf/Rack: N/A
Logged In:	Date/Time 12/1/17 1019 <del>0959</del> SR 12/1/17	Initials: SR	Location: WR-2
			Shelf/Rack: B5
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> On Trac
		<input type="radio"/> GSO	<input type="radio"/> DHL
		<input type="radio"/> Hand Delivered	<input type="radio"/> Other
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
	<input type="radio"/> None		
Temp °C: 0.3 (uncorrected)	Time: 0941	Thermometer ID: IR-1	
Temp °C: 0.4 (corrected)	Probe used: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

	YES	NO	NA
Adequate Sample Volume Received?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill	Trk # 7887 00486850	<input checked="" type="checkbox"/>	
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	<input checked="" type="checkbox"/>		
Preservation Documented:	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="radio"/> Trizma	<input type="radio"/> None
		<input checked="" type="radio"/> Yes	<input type="radio"/> No
Shipping Container	<input checked="" type="radio"/> Vista	<input type="radio"/> Client	<input type="radio"/> Retain
		<input type="radio"/> Return	<input type="radio"/> Dispose

Comments:

### Sample Log-in Checklist

 Vista Work Order #: 1701814 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 12/01/17 0940	<b>Initials:</b> BSB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> NA
<b>Logged In:</b>	<b>Date/Time:</b> 12/01/17 1019	<b>Initials:</b> MSB SR	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> B5
<b>Delivered By:</b>	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> GSO	<input type="checkbox"/> DHL
		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
<b>Preservation:</b>	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
<b>Temp °C:</b> 1.9 (uncorrected)	<b>Time:</b> 1043		<b>Thermometer ID:</b> IR-1
<b>Temp °C:</b> 2.0 (corrected)	<b>Probe used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk # 7886 9307 2559	✓	
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
<b>Preservation Documented:</b>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="checkbox"/> Trizma	<input type="checkbox"/> None
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Shipping Container</b>	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input type="checkbox"/> Retain
		<input type="checkbox"/> Return	<input type="checkbox"/> Dispose

Comments:

December 11, 2017

**Vista Work Order No. 1701814**

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 01, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08/MCOLF ATLANTIC PFAS INV.'.

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

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

Sincerely,



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. 1701814**

### **Case Narrative**

#### **Sample Condition on Receipt:**

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

#### **Analytical Notes:**

##### **EPA Method 537**

Sample "CH-AT-1RW107-1117" contained particulate and was centrifuged prior to extraction.

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

##### **Holding Times**

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

##### **Quality Control**

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

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

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "CH-AT-1RW112-1117". The analyte recoveries and RPDs were within the method acceptance criteria.

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701814-01	CH-AT-1RW109-1117	30-Nov-17 08:48	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-02	CH-AT-1FB109-1117	30-Nov-17 08:49	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-03	CH-AT-1RW110-1117	30-Nov-17 09:09	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-04	CH-AT-1FB110-1117	30-Nov-17 09:10	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-05	CH-AT-1RW111-1117	30-Nov-17 09:21	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-06	CH-AT-1FB111-1117	30-Nov-17 09:22	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-07	CH-AT-1RW112-1117	MS/MSD30-Nov-17 10:11	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-08	CH-AT-1FB112-1117	30-Nov-17 10:12	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-09	CH-AT-1RW107-1117	29-Nov-17 17:02	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-10	CH-AT-1FB107-1117	29-Nov-17 17:03	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-11	CH-AT-1RW108-1117	29-Nov-17 18:21	01-Dec-17 09:40	HDPE Bottle, 250 mL
1701814-12	CH-AT-1FB108-1117	29-Nov-17 18:22	01-Dec-17 09:40	HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

<b>Sample ID: LRB</b>	<b>EPA Method 537</b>
-----------------------	-----------------------

<b>Client Data</b>	<b>Laboratory Data</b>
Name: CH2M Hill Project: CTO-08/MCOLF ATLANTIC PFAS INV.	Matrix: Drinking Water Lab Sample: B7L0025-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		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1
PFOA	ND	1.08	5.00	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1
PFOS	ND	1.04	5.00	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.9	70 - 130			B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:37	1

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

Sample ID: LFB					EPA Method 537						
Client Data				Laboratory Data							
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	B7L0025-BS1	Column:	BEH C18				
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.										
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	62.1	70.8	87.7	70-130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	
PFOA	81.5	80.0	102	70-130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	
PFOS	67.6	74.0	91.4	70-130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR		93.4	70- 130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 20:25	1	

**Sample ID: CH-AT-1RW109-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-01	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 08:48	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
PFOA	ND	1.08	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
PFOS	ND	1.04	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1

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

**Sample ID: CH-AT-1FB109-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-02	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 08:49	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
PFOA	ND	1.05	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
PFOS	ND	1.01	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6	70 - 130			B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit  
Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.  
Only the linear isomer is reported for all other analytes.

**Sample ID: CH-AT-1RW110-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-03	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:09	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.445	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
PFOA	ND	1.08	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
PFOS	ND	1.04	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	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-1FB110-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-04	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:10	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
PFOA	ND	1.08	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
PFOS	ND	1.04	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1

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



**Sample ID: CH-AT-1RW111-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-05	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:21	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
PFOA	ND	1.09	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
PFOS	ND	1.05	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	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-1FB111-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-06	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 09:22	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
PFOA	ND	1.07	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
PFOS	ND	1.03	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1

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

**Sample ID: CH-AT-1RW112-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-07	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 10:11	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
PFOA	ND	1.06	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
PFOS	ND	1.03	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1

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

Sample ID: CH-AT-1RW112-1117													EPA Method 537			
Name:	CH2M Hill				Lab Sample:	B7L0025-MS1/B7L0025-MSD1				Source Lab Sample:	1701814-07					
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.				QC Batch:	B7L0025				Date Extracted:	06-Dec-17					
Matrix:	Drinking Water				Samp Size:	0.243/0.256 L				Column:	BEH C18					
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	65.4	72.8	89.9		68.7	69.2	99.3	9.94		70-130	30	07-Dec-17 20:50	1	07-Dec-17 21:02	1
PFOA	ND	88.5	82.2	107		88.4	78.2	113	5.45		70-130	30	07-Dec-17 20:50	1	07-Dec-17 21:02	1
PFOS	ND	74.3	76.1	97.7		71.3	72.3	98.6	0.917		70-130	30	07-Dec-17 20:50	1	07-Dec-17 21:02	1
Labeled Standards	Type			MS % Rec	MS Quals	MSD % Rec			MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil		
13C2-PFHxA	SURR			101		105				70-130	07-Dec-17 20:50	1	07-Dec-17 21:02	1		

**Sample ID: CH-AT-1FB112-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-08	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	30-Nov-17 10:12	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
PFOA	ND	1.03	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
PFOS	ND	0.992	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100	70 - 130			B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1

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

**Sample ID: CH-AT-1RW107-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-09	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 17:02	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
PFOA	ND	1.03	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
PFOS	ND	0.988	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1

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

**Sample ID: CH-AT-1FB107-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-10	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 17:03	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
PFOA	ND	1.03	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
PFOS	ND	0.990	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1

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

**Sample ID: CH-AT-1RW108-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-11	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 18:21	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
PFOA	ND	1.04	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
PFOS	ND	1.00	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.0	70 - 130			B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1

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



**Sample ID: CH-AT-1FB108-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-12	Column:	BEH C18
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 18:22	Date Received:	01-Dec-17 09:40		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1
PFOA	ND	1.05	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1
PFOS	ND	1.01	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130			B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1

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

## **DATA QUALIFIERS & ABBREVIATIONS**

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

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

## CERTIFICATIONS

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

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

## NELAP Accredited Test Methods

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

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

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

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

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

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

Submit by Email\*



11/30/17 COOLBR #3

679500.15.FI.FS

FOR LABORATORY USE ONLY
Laboratory Project ID: 1701814
Temp: 0.4 °C
Storage ID: WR-2
Storage Secured: Yes [X] No [ ]

CHAIN OF CUSTODY RECORD

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

TAT: (Check One)
Standard [ ] 21 days
Rush (surcharge may apply)
[ ] 14 days [X] 7 days Specify: [ ]

Invoice to: Name Tiffany Hill Company CH2M HILL Address 1100 NE Circle Blvd City Corvallis State OR Zip 541-768-3109
Relinquished by: David Lubell Date: 11/30/17 Time: 1500 Received by: B. Benedict Date: 12/1/17 Time: 0942

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.: 7887 0048 6850
ATTN: Martha Maier

Table with columns for Analysis Requested (EPA1613, EPA8290, EPA8280, EPA1668, EPA1614, CARB429, EPA 537 DW ONLY, etc.) and rows for Quantity, Type, Matrix, and various chemical analysis codes.

Main data table with columns: Sample ID, Date, Time, Location/Sample Description, and columns for various analysis results (EPA codes, etc.).

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

SEND DOCUMENTATION AND RESULTS TO:

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

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

\*Bottle Preservative Type: [ ] T = Thiosulfate, [X] 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



### Sample Log-in Checklist

 Vista Work Order #: 1701814 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 12/1/17 0940	<b>Initials:</b> BOB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> N/A
<b>Logged In:</b>	<b>Date/Time:</b> 12/1/17 1019 0959 SR 12/1/17	<b>Initials:</b> SR	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> B5
<b>Delivered By:</b>	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> GSO	<input type="checkbox"/> DHL
		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
<b>Preservation:</b>	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
<b>Temp °C:</b> 0.3 (uncorrected)	<b>Time:</b> 0941		<b>Thermometer ID:</b> IR-1
<b>Temp °C:</b> 0.4 (corrected)	<b>Probe used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk # 7887 00486850	✓	
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
Preservation Documented:	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Trizma	None
	<input checked="" type="checkbox"/> Yes	No	NA
Shipping Container	Vista	Client	Retain
	Return	Dispose	

Comments:



### Sample Log-in Checklist

 Vista Work Order #: 1701814 TAT 7

<b>Samples Arrival:</b>	<b>Date/Time:</b> 12/01/17 0940	<b>Initials:</b> BSB	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> NA
<b>Logged In:</b>	<b>Date/Time:</b> 12/01/17 1019	<b>Initials:</b> MSB SR	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> B5
<b>Delivered By:</b>	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> GSO	<input type="checkbox"/> DHL
		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
<b>Preservation:</b>	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
<b>Temp °C:</b> 1.9 (uncorrected)	<b>Time:</b> 1043		<b>Thermometer ID:</b> IR-1
<b>Temp °C:</b> 2.0 (corrected)	<b>Probe used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk # 7886 9307 2559	✓	
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
<b>Preservation Documented:</b>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="checkbox"/> Trizma	<input type="checkbox"/> None
		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Shipping Container</b>	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input type="checkbox"/> Retain
		<input type="checkbox"/> Return	<input type="checkbox"/> Dispose

Comments:

## **EXTRACTION INFORMATION**

Process Sheet  
 Workorder: 1701814



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

Workorder Due: 08-Dec-17 00:00

TAT: 7

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

Prep Batch: B7L0025

Prep Data Entered: 12-7-17 HC  
 Date and Initials

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

Initial Sequence: \_\_\_\_\_

LabSampleID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701814-01	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW109-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB109-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW110-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB110-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-05		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW111-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-06		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB111-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-07	BC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW112-1117	MS/MSD	WR-2 B-5	HDPE Bottle, 250 mL
1701814-08		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB112-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-09		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW107-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-10		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB107-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW108-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701814-12		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB108-1117		WR-2 B-5	HDPE Bottle, 250 mL

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

Prep Check Out: NA  
 Prep Check In: NA

Prep Reconciled Initials/Date: 12/6/17 ST  
 Spike Reconciled Initials/Date: HC 12-6-17  
 VialBoxID: Garfield

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7L0025

Chemist: JHC

Prep Date/Time: 05-Dec-17 18:18

12-6-17 10:00  
JHC

Prepared using: LCMS - SPE Extraction-LCMS

Balance ID: 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
<input type="checkbox"/>	B7L0025-BLK1 <u>Ⓐ</u>	N/A	N/A	0.250 ✓	JHC GRB 12-6-17	JHC 12-6-17	KBF GRB 12/6/17
<input type="checkbox"/>	B7L0025-BS1 <u>↓</u>	↓	↓	0.250 ✓			
<input type="checkbox"/>	B7L0025-MS1 1701814-07	270.78	27.54	0.24324 ✓			
<input type="checkbox"/>	B7L0025-MSD1 1701814-07	283.39	27.68	0.25571 ✓			
<input type="checkbox"/>	1701814-01	277.01	27.38	0.24963 ✓			
<input type="checkbox"/>	1701814-02	285.70	27.58	0.25812 ✓			
<input type="checkbox"/>	1701814-03	276.89	28.03	0.24886 ✓			
<input type="checkbox"/>	1701814-04	277.00	27.68	0.24932 ✓			
<input type="checkbox"/>	1701814-05	276.07	27.80	0.24827 ✓			
<input type="checkbox"/>	1701814-06	280.72	27.52	0.25320 ✓			
<input type="checkbox"/>	1701814-07	281.35	27.82	0.25353 ✓			
<input type="checkbox"/>	1701814-08	289.51	27.51	0.26200 ✓			
<input checked="" type="checkbox"/>	1701814-09	291.15	27.92	0.26323 ✓			
<input type="checkbox"/>	1701814-10	289.56	26.98	0.26258 ✓			
<input type="checkbox"/>	1701814-11	286.62	27.64	0.25898 ✓			
<input type="checkbox"/>	1701814-12	284.37	27.10	0.25727 ✓			

SS/IS: 17L0515, 20µl (VI)  
 NS: 17I2601, 20µl (I2)  
 IS/RS: 17L0516, 20µl (VI)

SPE Chem: Strata X-33µm 500mg/bul  
 Lot#: 517-001561  
 Ele SOLV: MeOH  
 Lot#: I0890409720  
 Final Volume(s) 1mL

Notes: Ⓐ 1.25g of Trizma added 12/6/17 ST

Comments: Assume 1 g = 1 mL  
 Cen = Centrifuged  
 Work Order 1701814

Batch: B7L0025

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701814-01	0.24963 ✓	NA	NA	1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-02	0.25812 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-03	0.24886 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-04	0.24932 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-05	0.24827 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-06	0.2532 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-07	0.25353 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-08	0.262 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-09	0.26323 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-10	0.26258 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-11	0.25898 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701814-12	0.25727 ✓			1000	06-Dec-17 10:00	HAC			Drinking Water	537 PFAS DW DoD Unmoc
B7L0025-BLK1	0.25			1000	06-Dec-17 10:00	HAC				QC
B7L0025-BS1	0.25			1000	06-Dec-17 10:00	HAC	17I2601	20		QC
B7L0025-MS1	0.24324 ✓			1000	06-Dec-17 10:00	HAC	17I2601	20		QC
B7L0025-MSD1	0.25571 ✓			1000	06-Dec-17 10:00	HAC	17I2601	20		QC

HC  
12-17-17

**SAMPLE DATA –EPA METHOD 537**

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-32.qld

Last Altered: Sunday, December 10, 2017 12:06:28 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:06:56 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_32, Date: 07-Dec-2017, Time: 20:37:45, ID: B7L0025-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		8.99e3		0.2500	3.03				
2	2 PFOA	413 > 368.7	5.20e1	8.94e3		0.2500	4.33	4.33	0.0582	0.301	
3	3 PFOS	499 > 79.9	8.21e-1	8.99e3		0.2500	4.73	4.73	0.00262	0.00781	
4	4 13C2-PFHxA	315 > 269.8	3.67e3	8.94e3	0.424	0.2500	3.39	3.38	4.11	38.8	96.9
5	5 13C2-PFDA	515.1 > 469.9	5.10e3	8.94e3	0.478	0.2500	4.96	4.96	5.70	47.7	119.3
6	6 13C2-PFOA	414.9 > 369.7	8.94e3	8.94e3	1.000	0.2500	4.41	4.33	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.99e3	8.99e3	1.000	0.2500	4.81	4.73	28.7	115	100.0

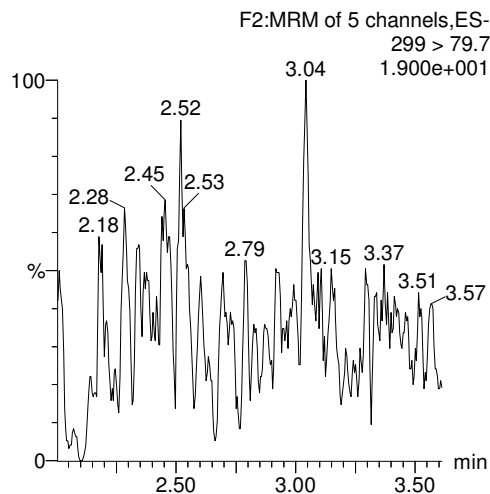
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-32.qld

Last Altered: Sunday, December 10, 2017 12:06:28 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:06:56 Pacific Standard Time

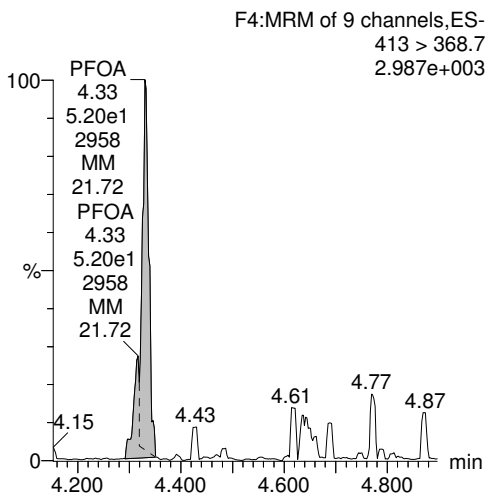
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Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_32, Date: 07-Dec-2017, Time: 20:37:45, ID: B7L0025-BLK1 LRB 0.25, Description: LRB

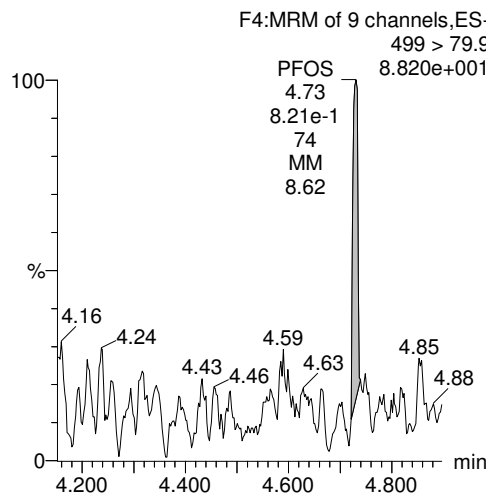
**PFBS**



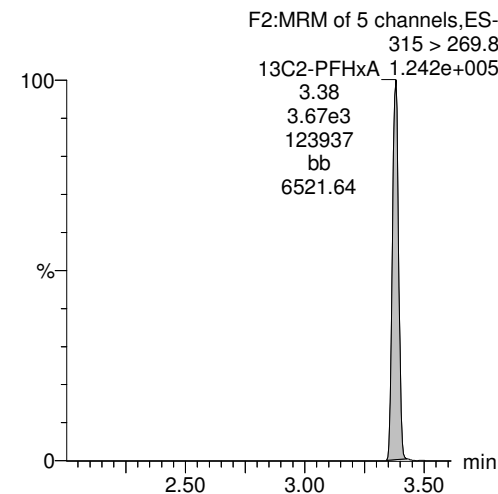
**PFOA**



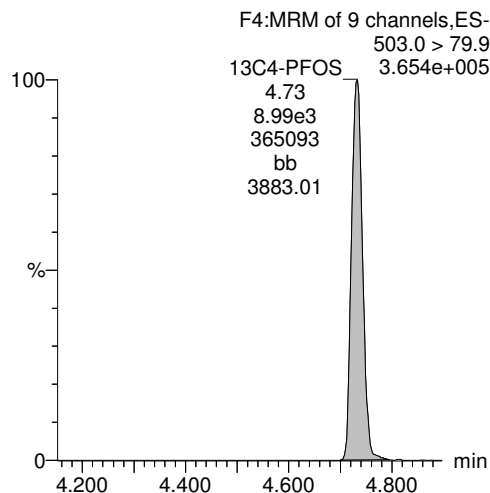
**PFOS**



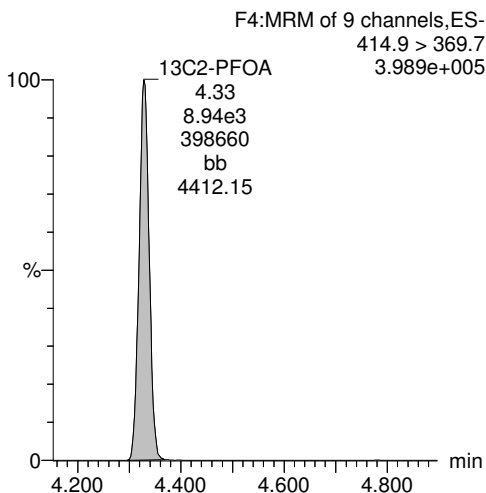
**13C2-PFHxA**



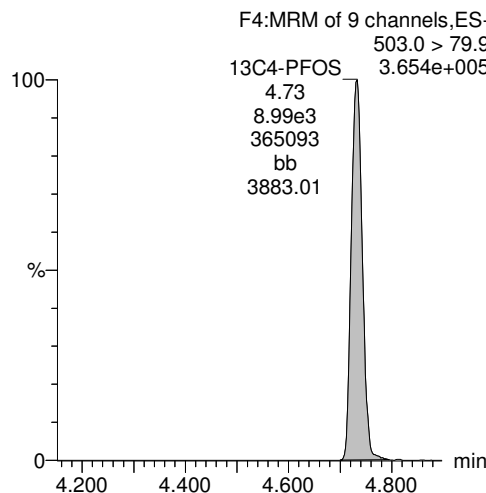
**13C4-PFOS**



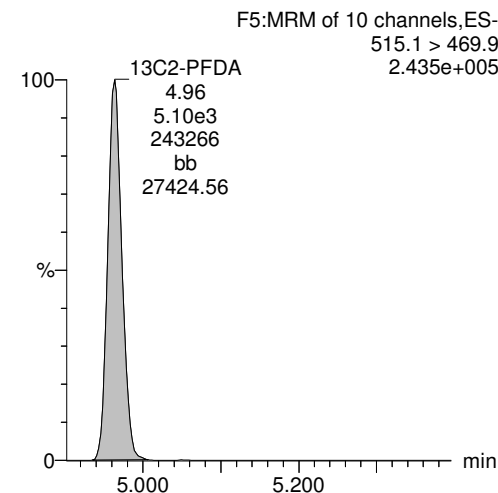
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**





Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-31.qld

Last Altered: Monday, December 11, 2017 09:05:51 Pacific Standard Time

Printed: Monday, December 11, 2017 09:10:53 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_31, Date: 07-Dec-2017, Time: 20:25:20, ID: B7L0025-BS1 LFB 0.25, Description: LFB

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	4.96e3	9.88e3		0.2500	3.03	3.01	14.4	62.1	87.8
2	2 PFOA	413 > 368.7	1.55e4	9.83e3		0.2500	4.33	4.33	15.7	81.5	101.9
3	3 PFOS	499 > 79.9	7.48e3	9.88e3		0.2500	4.73	4.73	21.7	67.6	91.4
4	4 13C2-PFHxA	315 > 269.8	3.89e3	9.83e3	0.424	0.2500	3.39	3.38	3.96	37.4	93.4
5	5 13C2-PFDA	515.1 > 469.9	4.56e3	9.83e3	0.478	0.2500	4.96	4.97	4.63	38.8	96.9
6	6 13C2-PFOA	414.9 > 369.7	9.83e3	9.83e3	1.000	0.2500	4.41	4.33	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.88e3	9.88e3	1.000	0.2500	4.81	4.73	28.7	115	100.0

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-31.qld

Last Altered: Monday, December 11, 2017 09:05:51 Pacific Standard Time

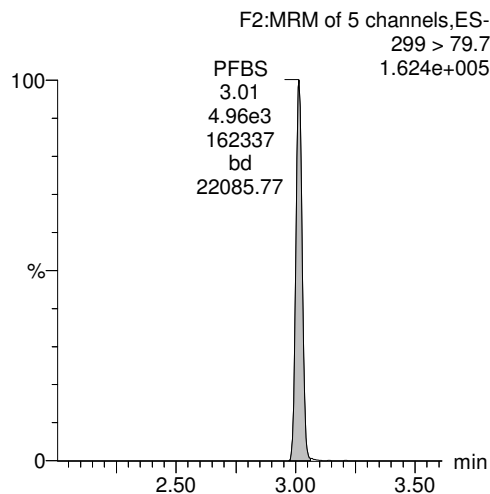
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Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

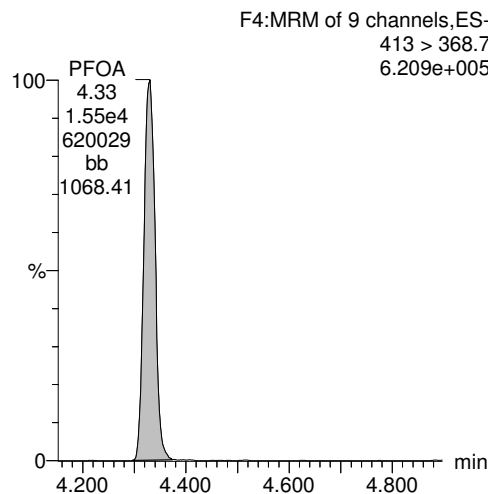
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_31, Date: 07-Dec-2017, Time: 20:25:20, ID: B7L0025-BS1 LFB 0.25, Description: LFB

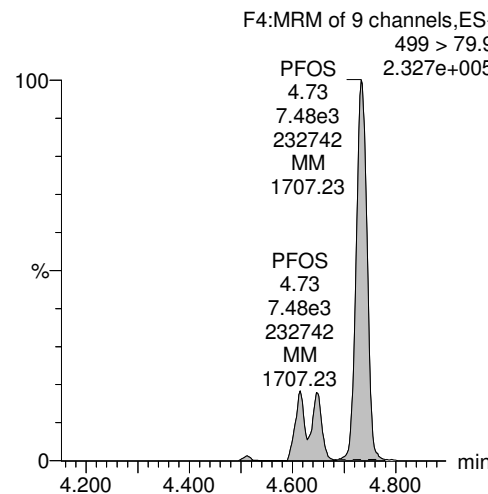
**PFBS**



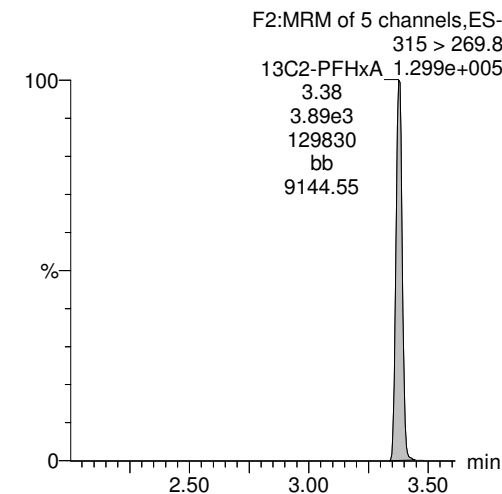
**PFOA**



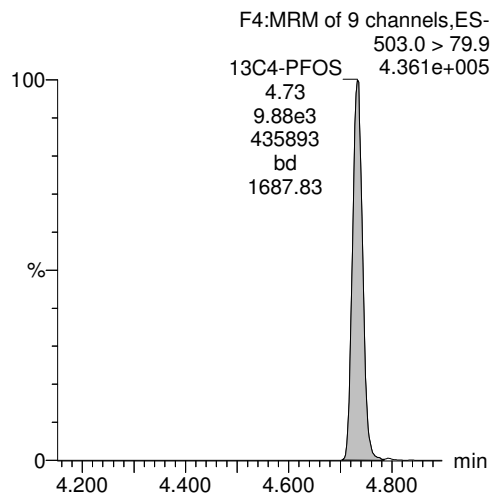
**PFOS**



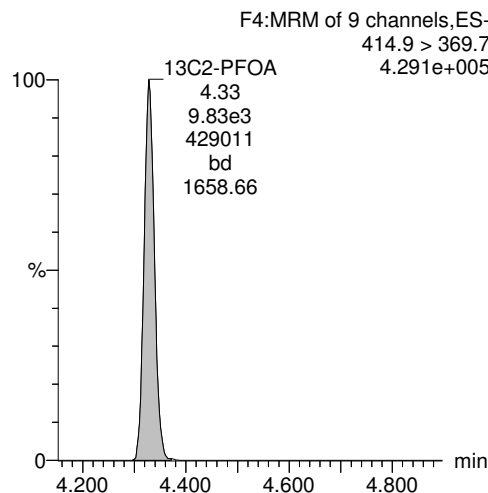
**13C2-PFHxA**



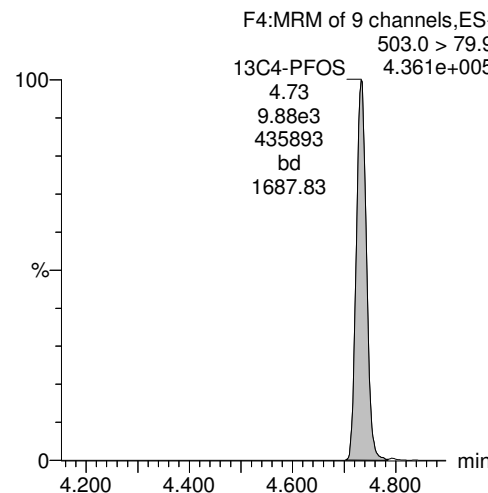
**13C4-PFOS**



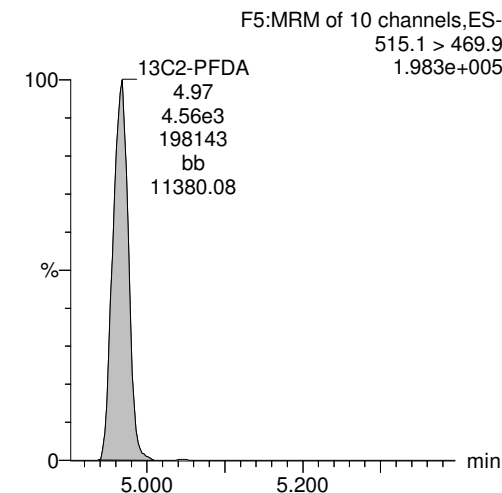
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-35.qld

Last Altered: Sunday, December 10, 2017 12:24:58 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:25:27 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_35, Date: 07-Dec-2017, Time: 21:15:04, ID: 1701814-01 CH-AT-1RW109-1117 0.24963, Description: CH-AT-1RW109-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.01e4		0.2496	3.03				
2	2 PFOA	413 > 368.7	6.45e1	9.57e3		0.2496	4.33	4.33	0.0673	0.349	
3	3 PFOS	499 > 79.9		1.01e4		0.2496	4.73				
4	4 13C2-PFHxA	315 > 269.8	4.23e3	9.57e3	0.424	0.2496	3.39	3.38	4.42	41.8	104.3
5	5 13C2-PFDA	515.1 > 469.9	4.15e3	9.57e3	0.478	0.2496	4.96	4.97	4.33	36.3	90.6
6	6 13C2-PFOA	414.9 > 369.7	9.57e3	9.57e3	1.000	0.2496	4.41	4.33	10.0	40.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.01e4	1.01e4	1.000	0.2496	4.81	4.73	28.7	115	100.0

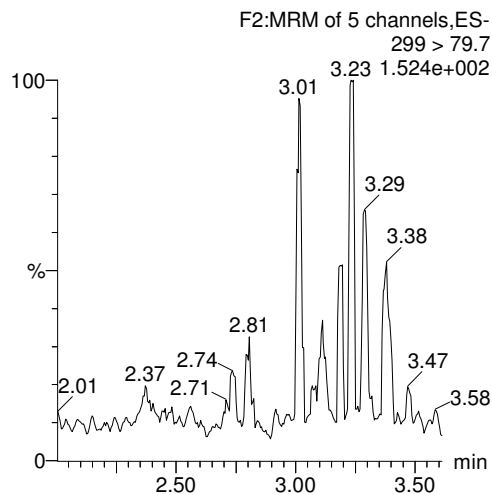
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Printed: Sunday, December 10, 2017 12:25:27 Pacific Standard Time

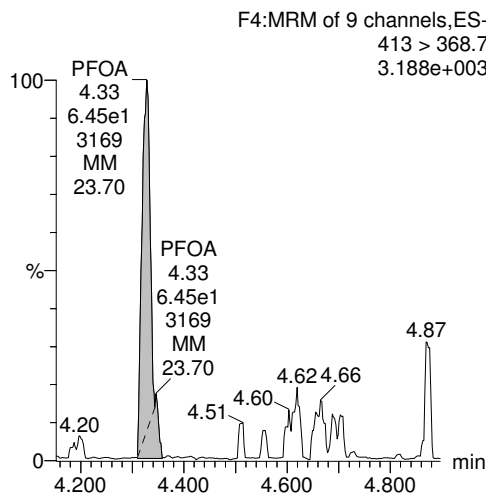
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_35, Date: 07-Dec-2017, Time: 21:15:04, ID: 1701814-01 CH-AT-1RW109-1117 0.24963, Description: CH-AT-1RW109-1117

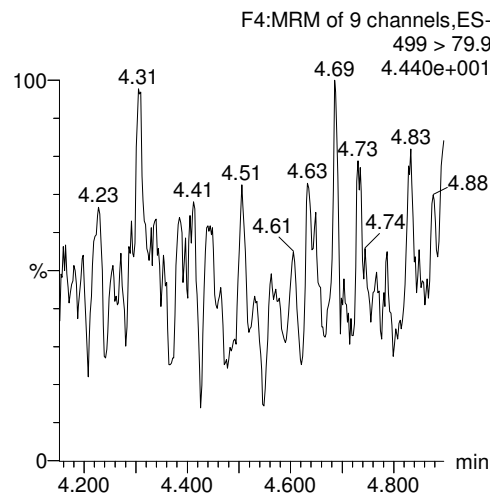
PFBS



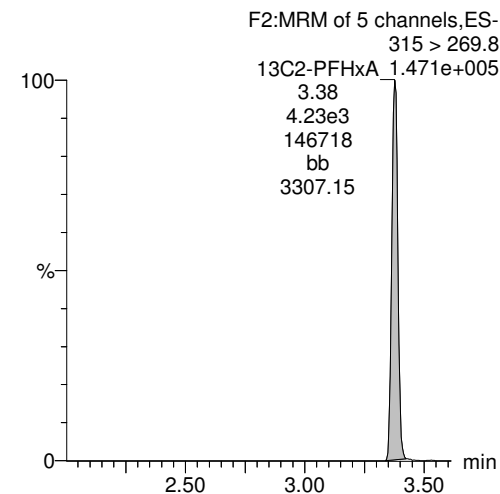
PFOA



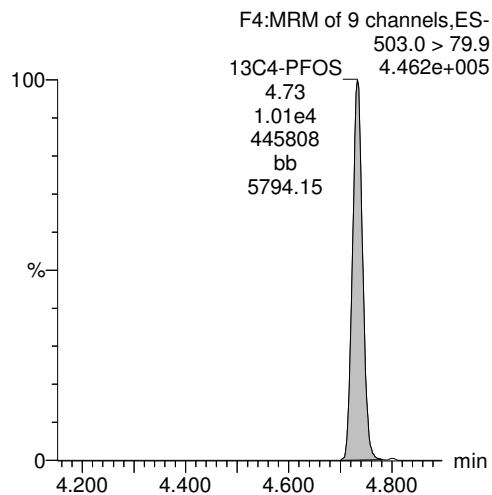
PFOS



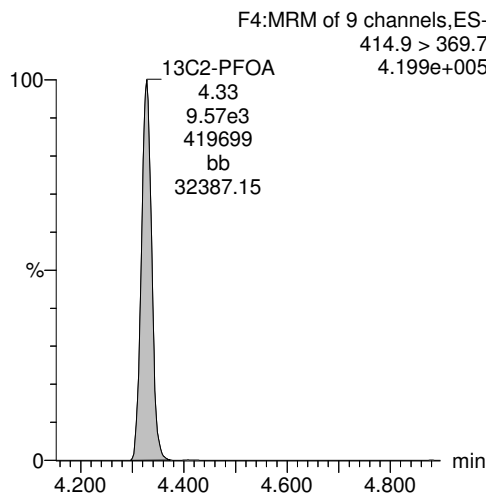
13C2-PFHxA



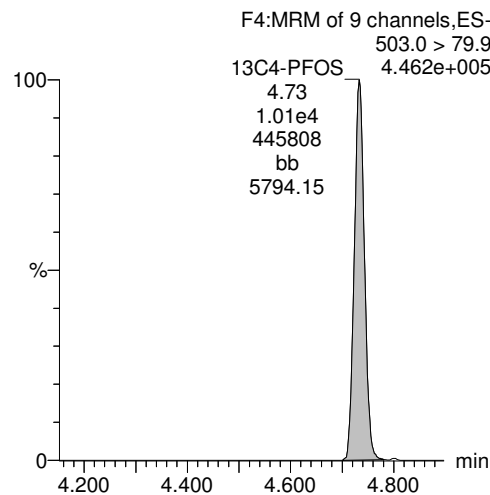
13C4-PFOS



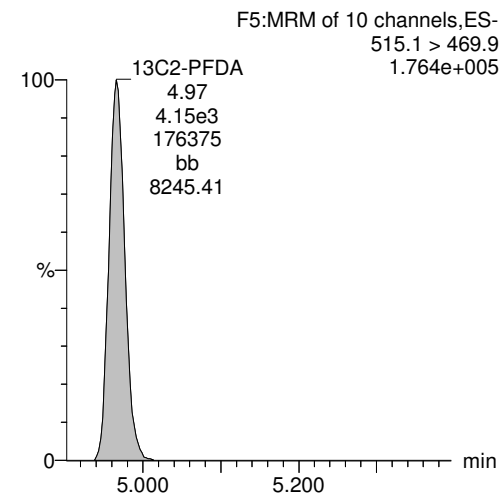
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-36.qld

Last Altered: Sunday, December 10, 2017 12:26:58 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:27:36 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_36, Date: 07-Dec-2017, Time: 21:27:30, ID: 1701814-02 CH-AT-1FB109-1117 0.25812, Description: CH-AT-1FB109-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	6.56e0	1.00e4		0.2581	3.03	3.02	0.0188	0.0751	
2	2 PFOA	413 > 368.7	5.89e1	1.08e4		0.2581	4.33	4.33	0.0545	0.273	
3	3 PFOS	499 > 79.9	2.36e0	1.00e4		0.2581	4.73	4.74	0.00678	0.0196	
4	4 13C2-PFHxA	315 > 269.8	4.20e3	1.08e4	0.424	0.2581	3.39	3.38	3.88	35.5	91.6
5	5 13C2-PFDA	515.1 > 469.9	4.71e3	1.08e4	0.478	0.2581	4.96	4.96	4.36	35.3	91.2
6	6 13C2-PFOA	414.9 > 369.7	1.08e4	1.08e4	1.000	0.2581	4.41	4.33	10.0	38.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.00e4	1.00e4	1.000	0.2581	4.81	4.73	28.7	111	100.0

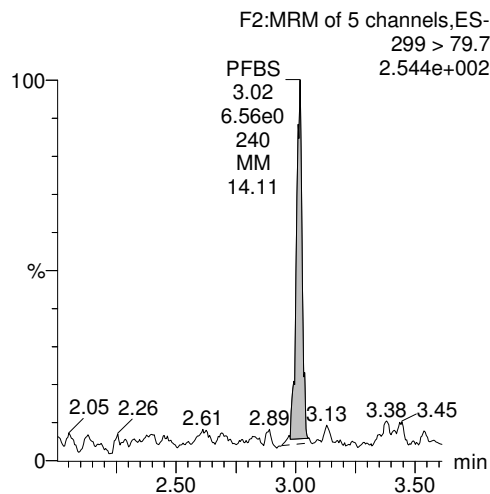
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Last Altered: Sunday, December 10, 2017 12:26:58 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:27:36 Pacific Standard Time

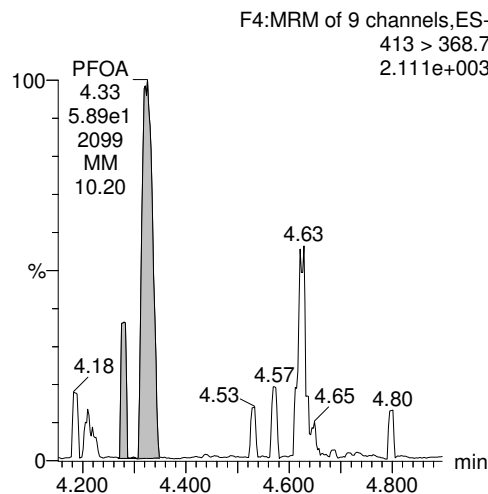
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_36, Date: 07-Dec-2017, Time: 21:27:30, ID: 1701814-02 CH-AT-1FB109-1117 0.25812, Description: CH-AT-1FB109-1117

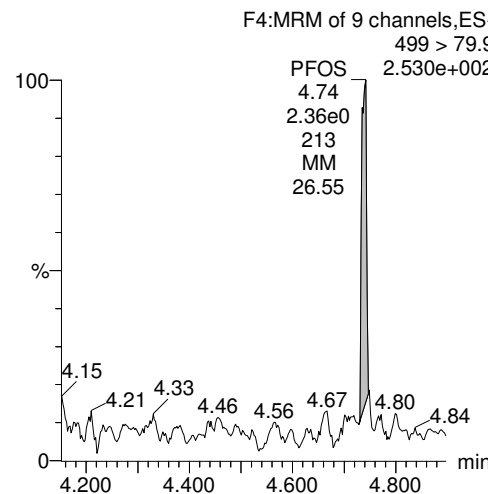
**PFBS**



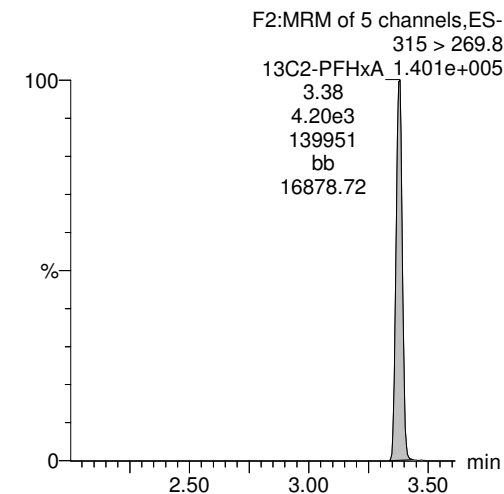
**PFOA**



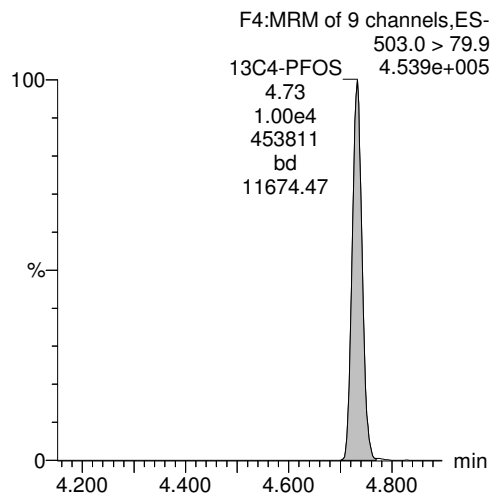
**PFOS**



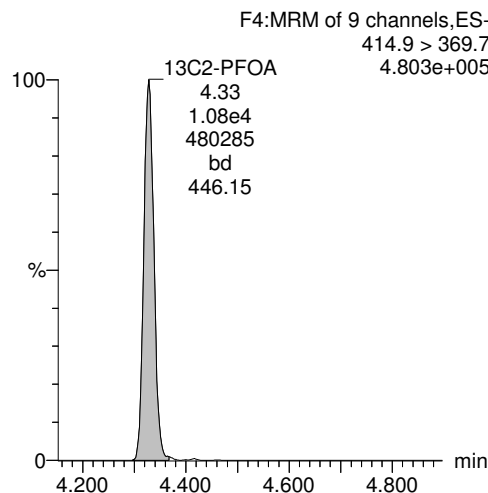
**13C2-PFHxA**



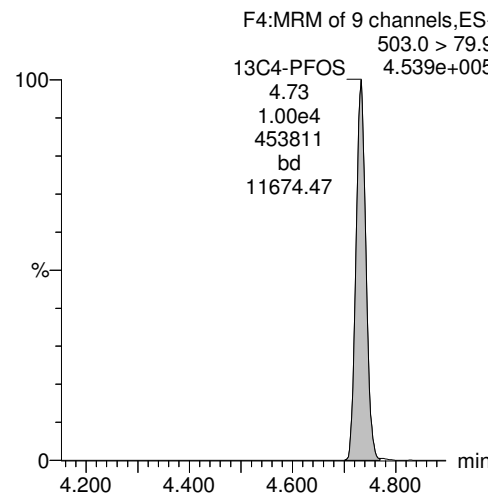
**13C4-PFOS**



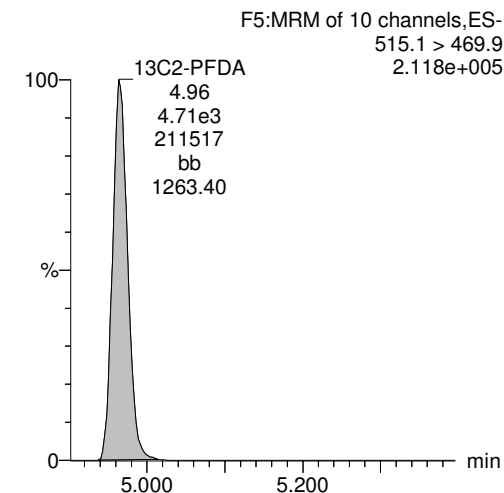
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-37.qld

Last Altered: Sunday, December 10, 2017 12:29:10 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:29:31 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_37, Date: 07-Dec-2017, Time: 21:39:54, ID: 1701814-03 CH-AT-1RW110-1117 0.24886, Description: CH-AT-1RW110-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.56e3		0.2489	3.03				
2	2 PFOA	413 > 368.7	7.11e1	9.59e3		0.2489	4.33	4.33	0.0742	0.385	
3	3 PFOS	499 > 79.9	3.57e0	9.56e3		0.2489	4.73	4.74	0.0107	0.0320	
4	4 13C2-PFHxA	315 > 269.8	4.09e3	9.59e3	0.424	0.2489	3.39	3.38	4.27	40.5	100.7
5	5 13C2-PFDA	515.1 > 469.9	3.95e3	9.59e3	0.478	0.2489	4.96	4.97	4.12	34.7	86.2
6	6 13C2-PFOA	414.9 > 369.7	9.59e3	9.59e3	1.000	0.2489	4.41	4.33	10.0	40.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.56e3	9.56e3	1.000	0.2489	4.81	4.73	28.7	115	100.0

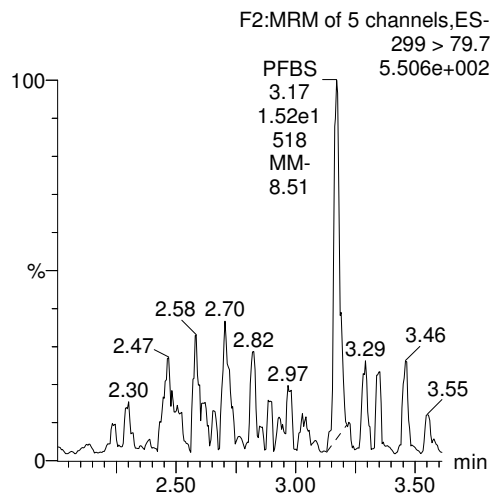
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-37.qld

Last Altered: Sunday, December 10, 2017 12:29:10 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:29:31 Pacific Standard Time

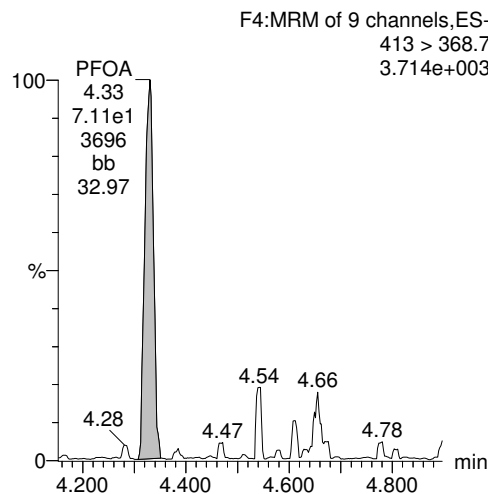
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_37, Date: 07-Dec-2017, Time: 21:39:54, ID: 1701814-03 CH-AT-1RW110-1117 0.24886, Description: CH-AT-1RW110-1117

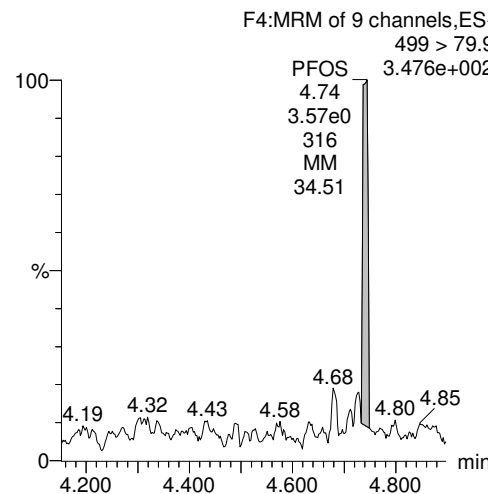
PFBS



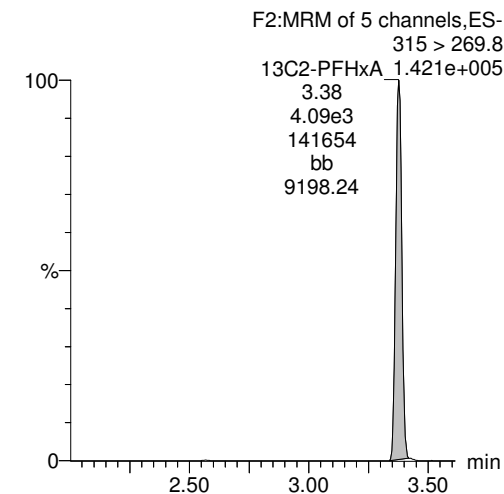
PFOA



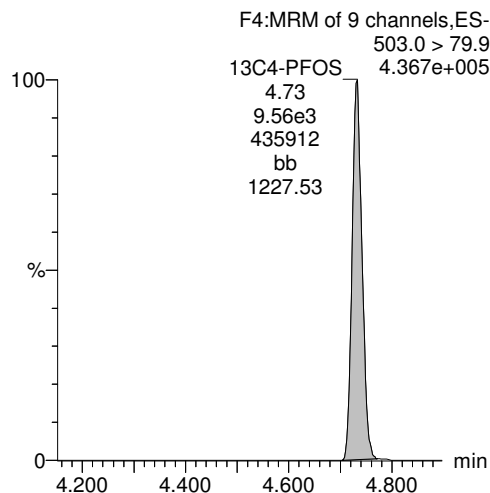
PFOS



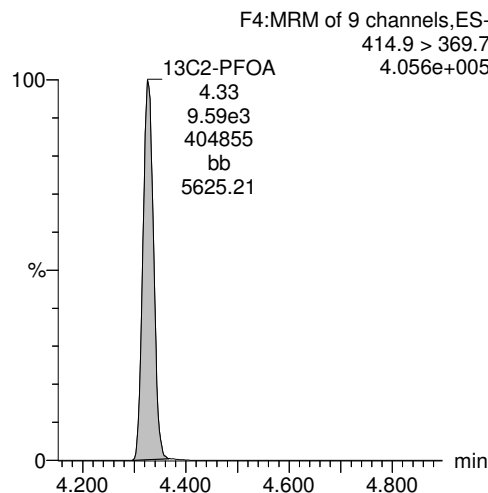
13C2-PFHxA



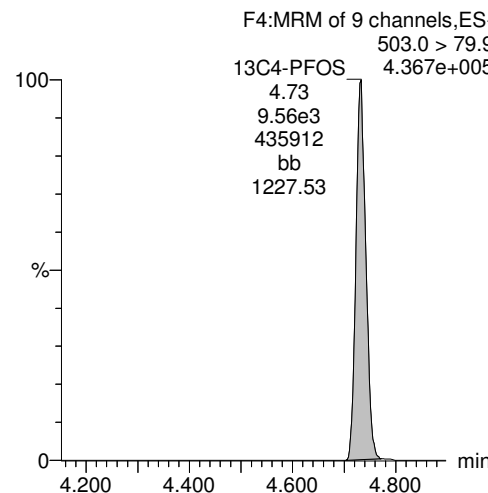
13C4-PFOS



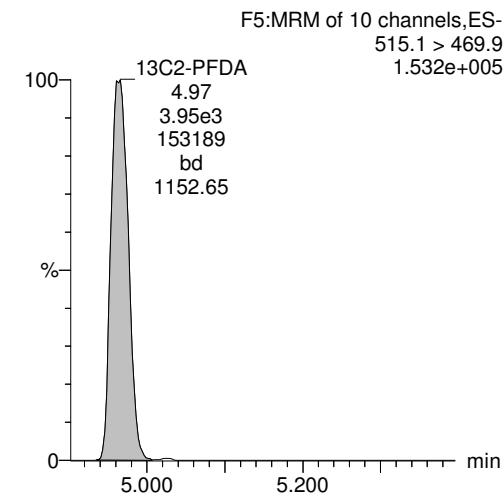
13C2-PFOA



13C4-PFOS



13C2-PFDA





Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-38.qld

Last Altered: Sunday, December 10, 2017 12:30:41 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:32:02 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_38, Date: 07-Dec-2017, Time: 21:52:18, ID: 1701814-04 CH-AT-1FB110-1117 0.24932, Description: CH-AT-1FB110-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.80e3		0.2493	3.04				
2	2 PFOA	413 > 368.7	2.87e1	9.96e3		0.2493	4.33	4.32	0.0288	0.149	
3	3 PFOS	499 > 79.9		9.80e3		0.2493	4.74				
4	4 13C2-PFHxA	315 > 269.8	4.35e3	9.96e3	0.424	0.2493	3.39	3.38	4.37	41.3	103.0
5	5 13C2-PFDA	515.1 > 469.9	4.79e3	9.96e3	0.478	0.2493	4.96	4.97	4.81	40.4	100.7
6	6 13C2-PFOA	414.9 > 369.7	9.96e3	9.96e3	1.000	0.2493	4.41	4.33	10.0	40.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.80e3	9.80e3	1.000	0.2493	4.81	4.74	28.7	115	100.0

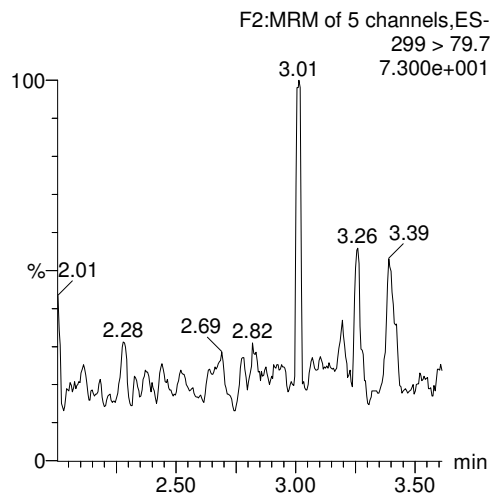
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-38.qld

Last Altered: Sunday, December 10, 2017 12:30:41 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:32:02 Pacific Standard Time

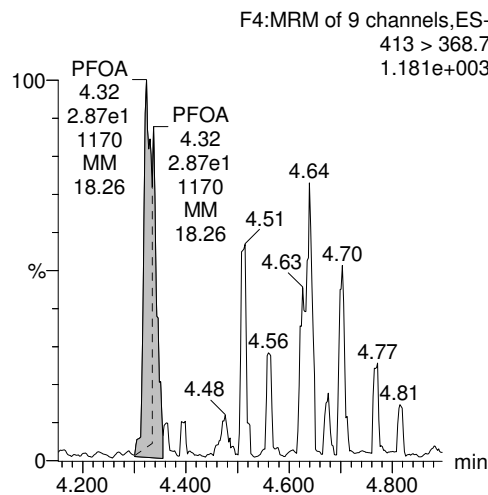
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_38, Date: 07-Dec-2017, Time: 21:52:18, ID: 1701814-04 CH-AT-1FB110-1117 0.24932, Description: CH-AT-1FB110-1117

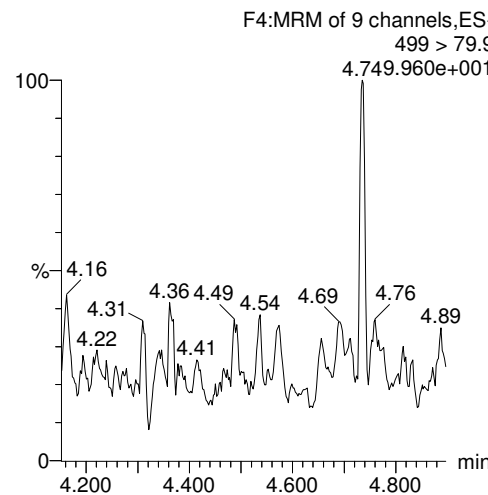
**PFBS**



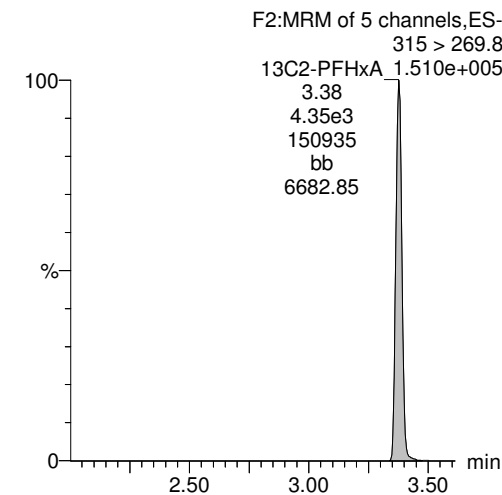
**PFOA**



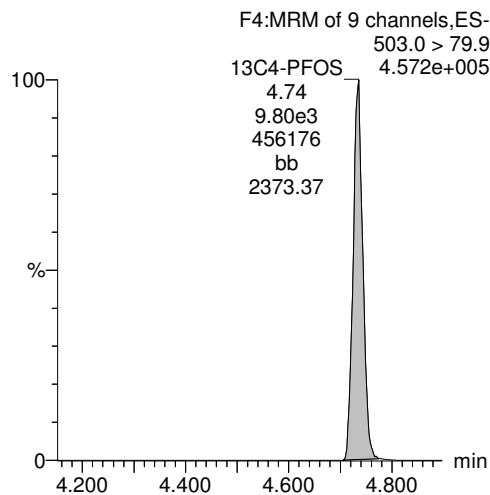
**PFOS**



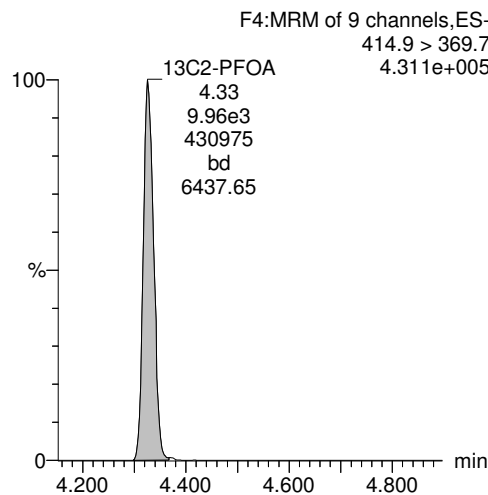
**13C2-PFHxA**



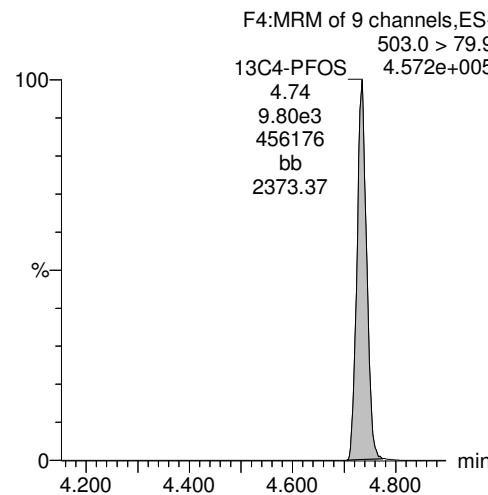
**13C4-PFOS**



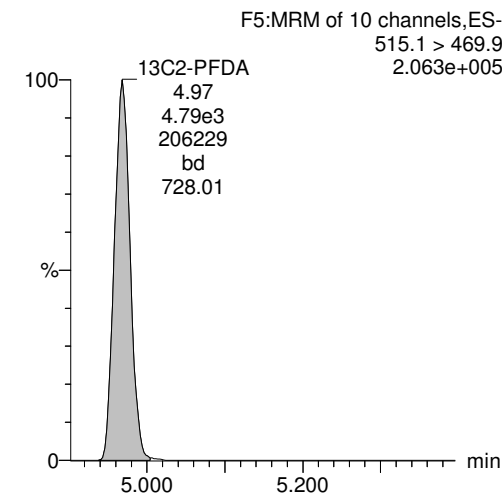
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-39.qld

Last Altered: Sunday, December 10, 2017 12:33:44 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:34:04 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_39, Date: 07-Dec-2017, Time: 22:04:43, ID: 1701814-05 CH-AT-1RW111-1117 0.24827, Description: CH-AT-1RW111-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.07e4		0.2483	3.03				
2	2 PFOA	413 > 368.7	6.09e1	9.82e3		0.2483	4.33	4.33	0.0621	0.323	
3	3 PFOS	499 > 79.9	1.54e0	1.07e4		0.2483	4.73	4.73	0.00414	0.0124	
4	4 13C2-PFHxA	315 > 269.8	4.25e3	9.82e3	0.424	0.2483	3.39	3.38	4.33	41.2	102.2
5	5 13C2-PFDA	515.1 > 469.9	4.79e3	9.82e3	0.478	0.2483	4.96	4.97	4.88	41.1	102.1
6	6 13C2-PFOA	414.9 > 369.7	9.82e3	9.82e3	1.000	0.2483	4.41	4.33	10.0	40.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.07e4	1.07e4	1.000	0.2483	4.81	4.73	28.7	116	100.0

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-39.qld

Last Altered: Sunday, December 10, 2017 12:33:44 Pacific Standard Time

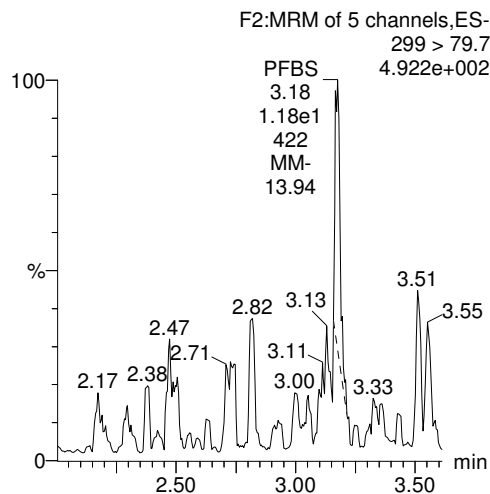
Printed: Sunday, December 10, 2017 12:34:04 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

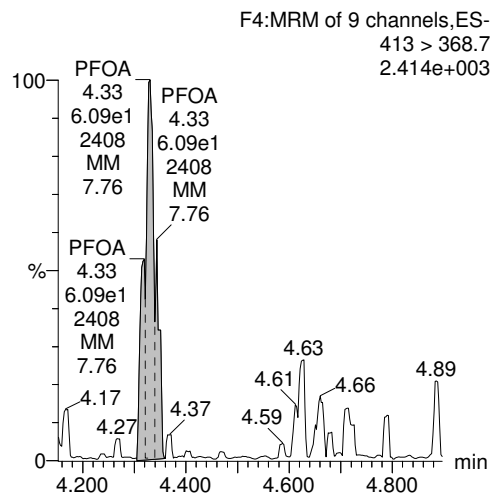
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_39, Date: 07-Dec-2017, Time: 22:04:43, ID: 1701814-05 CH-AT-1RW111-1117 0.24827, Description: CH-AT-1RW111-1117

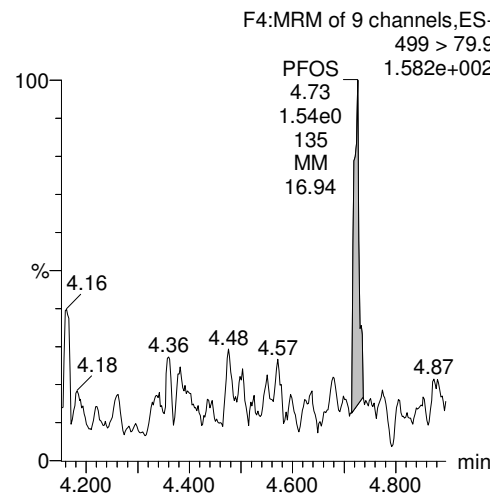
**PFBS**



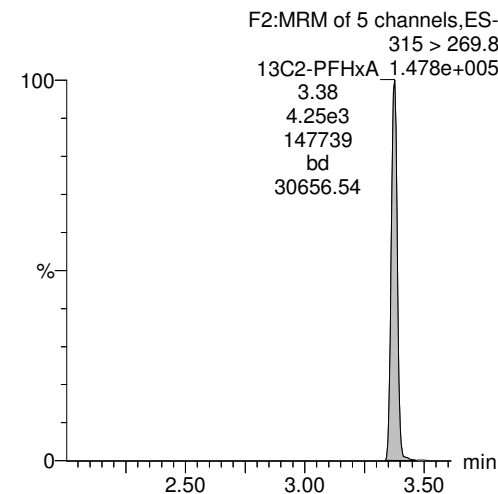
**PFOA**



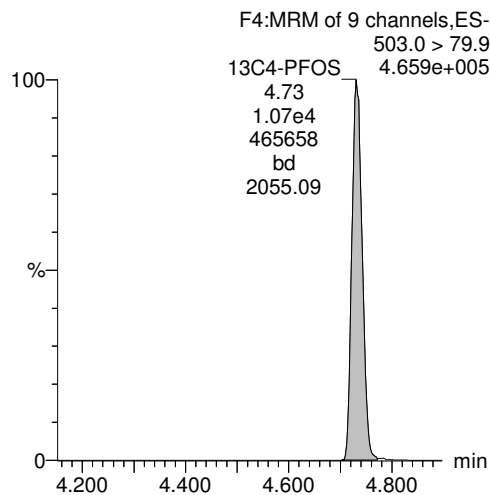
**PFOS**



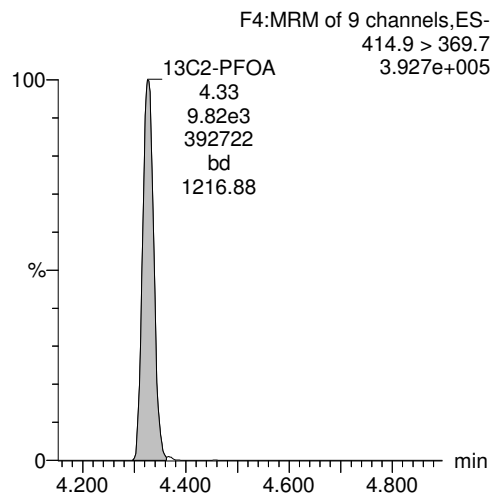
**13C2-PFHxA**



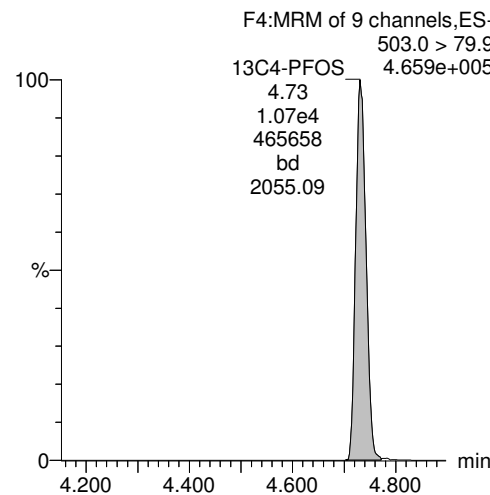
**13C4-PFOS**



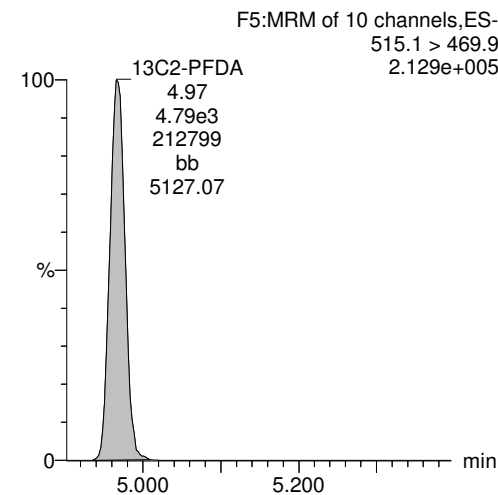
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-40.qld

Last Altered: Sunday, December 10, 2017 12:35:25 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:36:06 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_40, Date: 07-Dec-2017, Time: 22:17:09, ID: 1701814-06 CH-AT-1FB111-1117 0.2532, Description: CH-AT-1FB111-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.55e3		0.2532	3.03				
2	2 PFOA	413 > 368.7	4.12e1	9.06e3		0.2532	4.33	4.33	0.0455	0.232	
3	3 PFOS	499 > 79.9		9.55e3		0.2532	4.73				
4	4 13C2-PFHxA	315 > 269.8	3.94e3	9.06e3	0.424	0.2532	3.39	3.38	4.35	40.5	102.5
5	5 13C2-PFDA	515.1 > 469.9	5.15e3	9.06e3	0.478	0.2532	4.96	4.97	5.69	47.0	119.0
6	6 13C2-PFOA	414.9 > 369.7	9.06e3	9.06e3	1.000	0.2532	4.41	4.33	10.0	39.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.55e3	9.55e3	1.000	0.2532	4.81	4.73	28.7	113	100.0

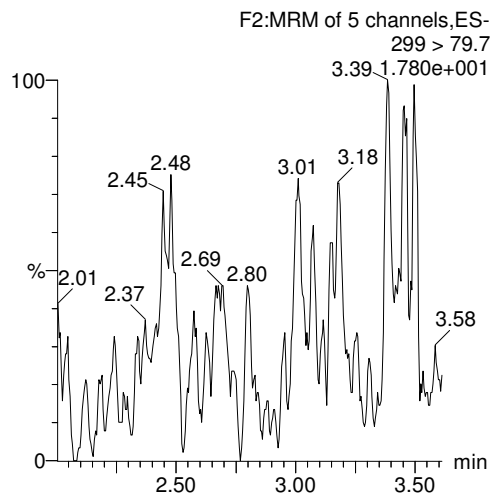
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-40.qld

Last Altered: Sunday, December 10, 2017 12:35:25 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:36:06 Pacific Standard Time

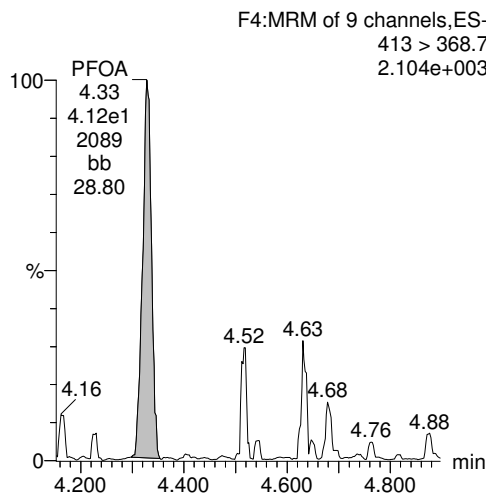
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_40, Date: 07-Dec-2017, Time: 22:17:09, ID: 1701814-06 CH-AT-1FB111-1117 0.2532, Description: CH-AT-1FB111-1117

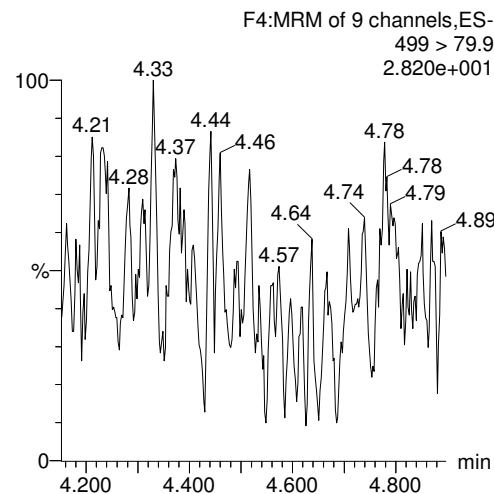
**PFBS**



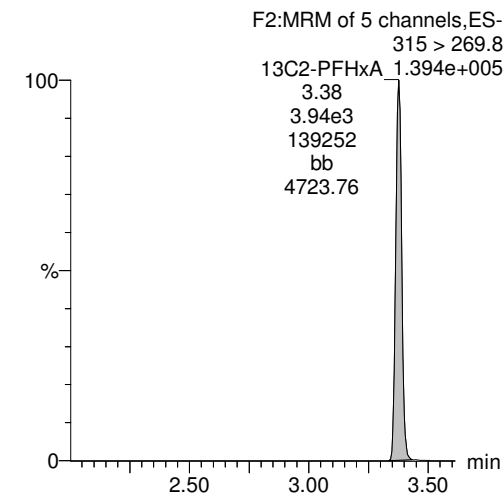
**PFOA**



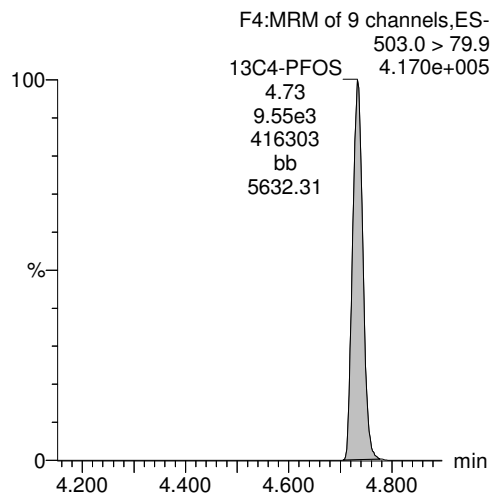
**PFOS**



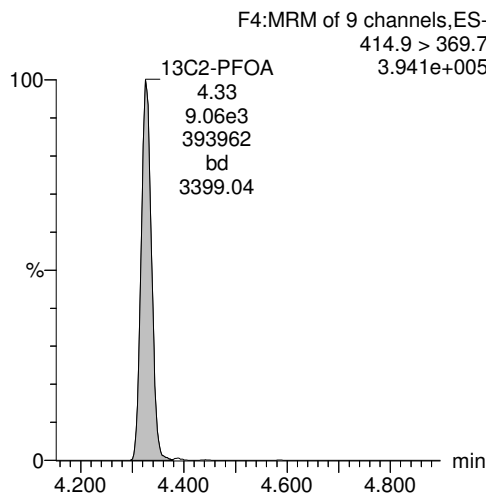
**13C2-PFHxA**



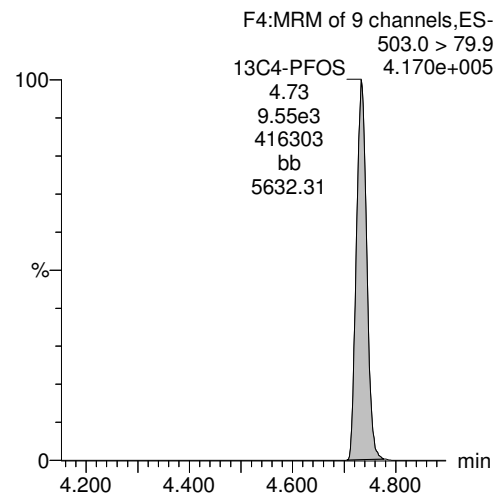
**13C4-PFOS**



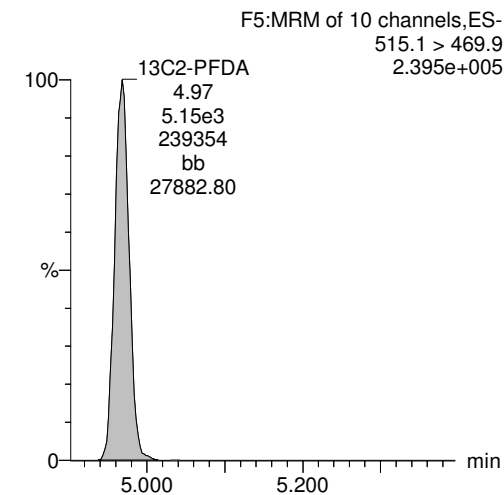
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-41.qld

Last Altered: Sunday, December 10, 2017 12:37:23 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:50:19 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_41, Date: 07-Dec-2017, Time: 22:29:34, ID: 1701814-07 CH-AT-1RW112-1117 0.25353, Description: CH-AT-1RW112-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.07e4		0.2535	3.03				
2	2 PFOA	413 > 368.7	4.45e1	9.09e3		0.2535	4.33	4.33	0.0489	0.249	
3	3 PFOS	499 > 79.9		1.07e4		0.2535	4.73				
4	4 13C2-PFHxA	315 > 269.8	4.12e3	9.09e3	0.424	0.2535	3.39	3.38	4.53	42.2	106.9
5	5 13C2-PFDA	515.1 > 469.9	4.38e3	9.09e3	0.478	0.2535	4.96	4.97	4.82	39.7	100.8
6	6 13C2-PFOA	414.9 > 369.7	9.09e3	9.09e3	1.000	0.2535	4.41	4.33	10.0	39.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.07e4	1.07e4	1.000	0.2535	4.81	4.73	28.7	113	100.0

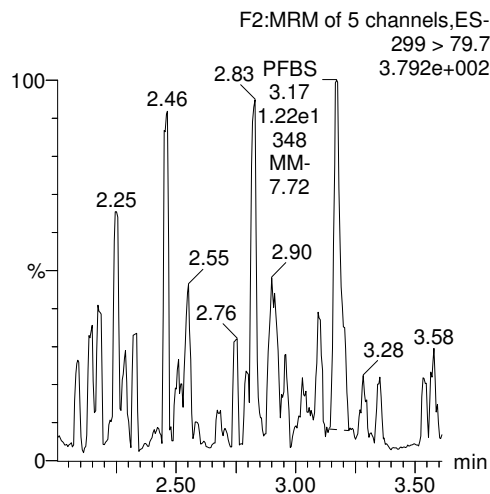
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Last Altered: Sunday, December 10, 2017 12:37:23 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:50:19 Pacific Standard Time

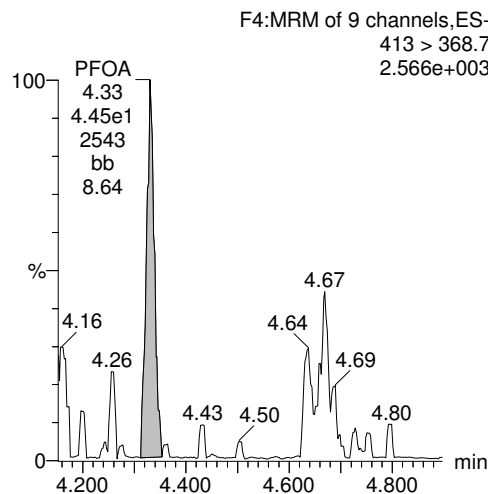
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_41, Date: 07-Dec-2017, Time: 22:29:34, ID: 1701814-07 CH-AT-1RW112-1117 0.25353, Description: CH-AT-1RW112-1117

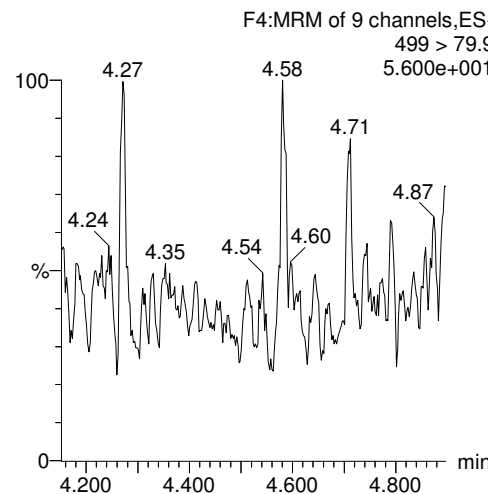
PFBS



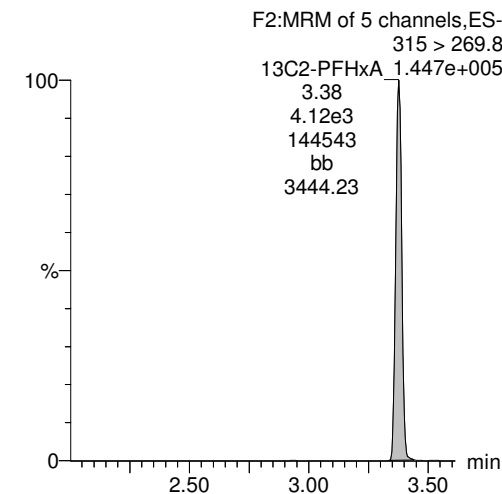
PFOA



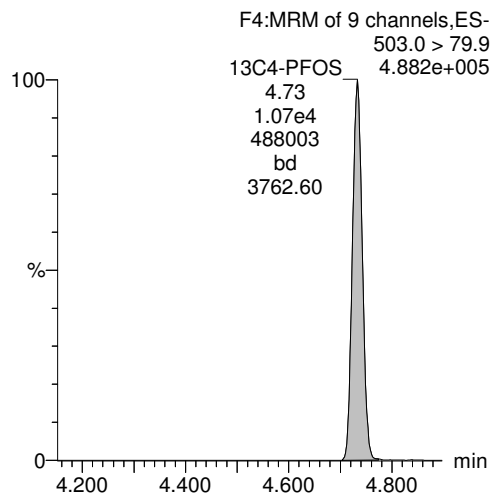
PFOS



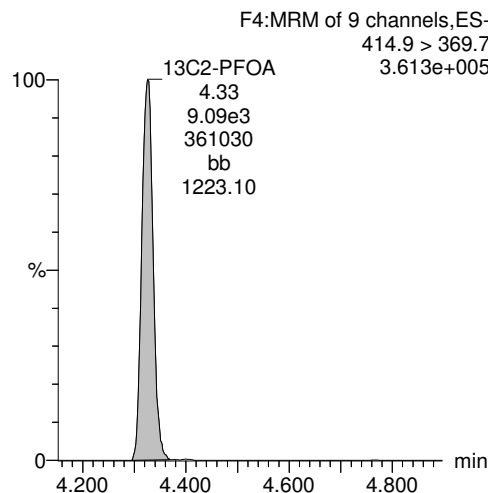
13C2-PFHxA



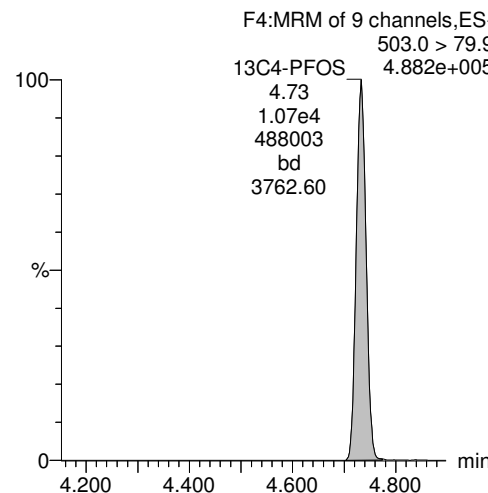
13C4-PFOS



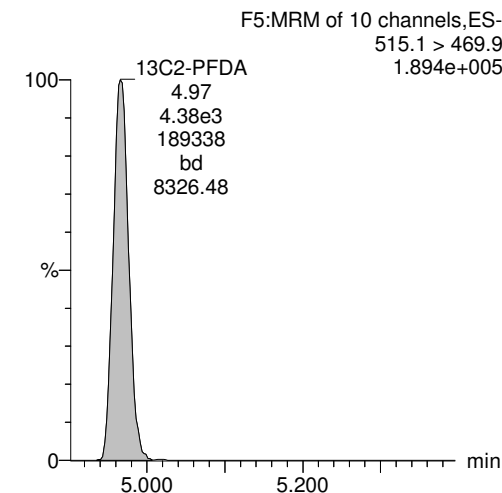
13C2-PFOA



13C4-PFOS



13C2-PFDA





Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-33.qld

Last Altered: Sunday, December 10, 2017 12:08:56 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:09:19 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_33, Date: 07-Dec-2017, Time: 20:50:11, ID: B7L0025-MS1 LFSM 0.24324, Description: LFSM

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	4.56e3	8.87e3		0.2432	3.03	3.01	14.7	65.4	
2	2 PFOA	413 > 368.7	1.44e4	8.63e3		0.2432	4.33	4.33	16.6	88.5	
3	3 PFOS	499 > 79.9	7.16e3	8.87e3		0.2432	4.73	4.73	23.2	74.3	
4	4 13C2-PFHxA	315 > 269.8	3.69e3	8.63e3	0.424	0.2432	3.39	3.38	4.27	41.4	100.8
5	5 13C2-PFDA	515.1 > 469.9	3.81e3	8.63e3	0.478	0.2432	4.96	4.97	4.41	37.9	92.3
6	6 13C2-PFOA	414.9 > 369.7	8.63e3	8.63e3	1.000	0.2432	4.41	4.33	10.0	41.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.87e3	8.87e3	1.000	0.2432	4.81	4.73	28.7	118	100.0

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-33.qld

Last Altered: Sunday, December 10, 2017 12:08:56 Pacific Standard Time

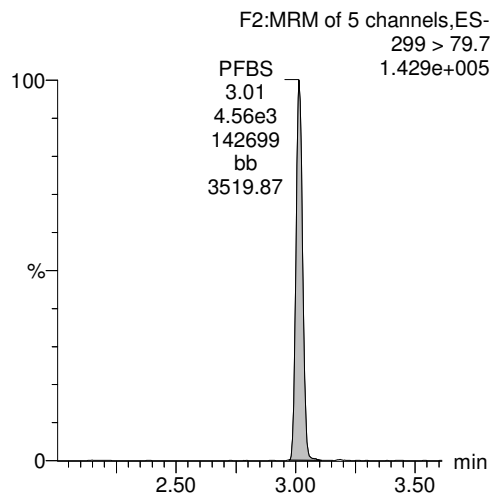
Printed: Sunday, December 10, 2017 12:09:19 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

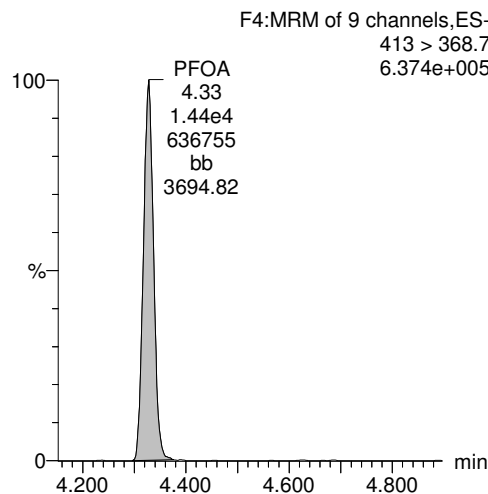
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_33, Date: 07-Dec-2017, Time: 20:50:11, ID: B7L0025-MS1 LFSM 0.24324, Description: LFSM

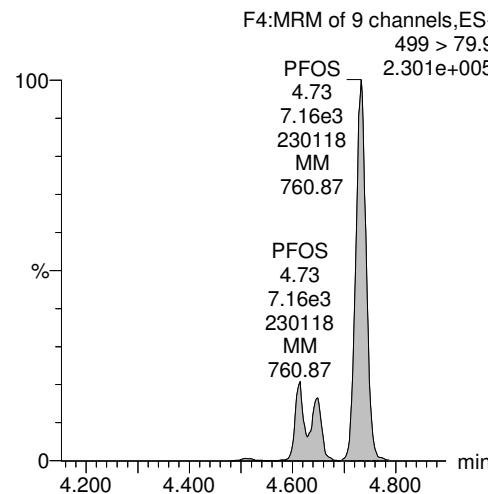
**PFBS**



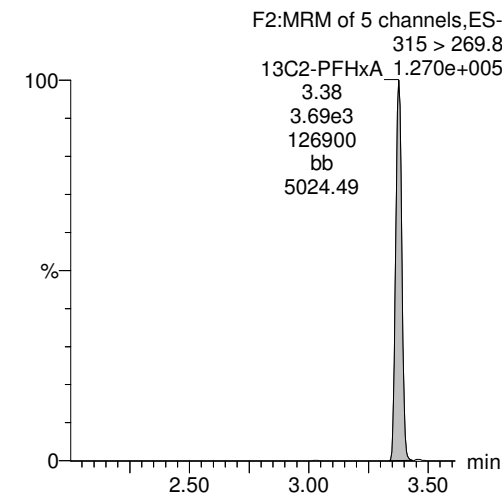
**PFOA**



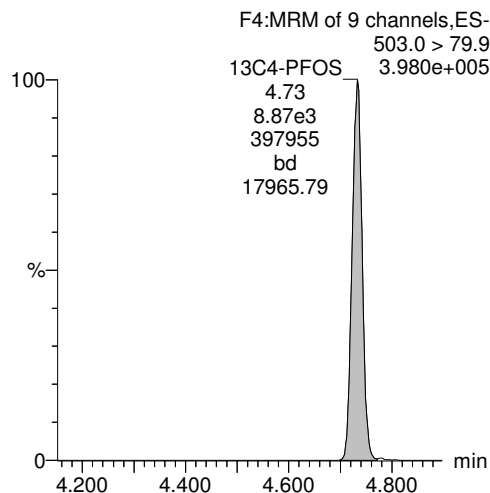
**PFOS**



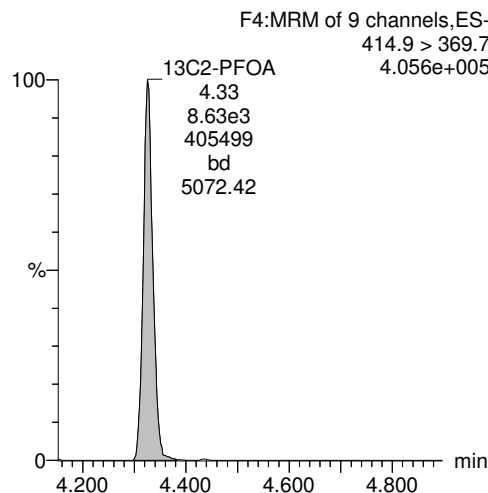
**13C2-PFHxA**



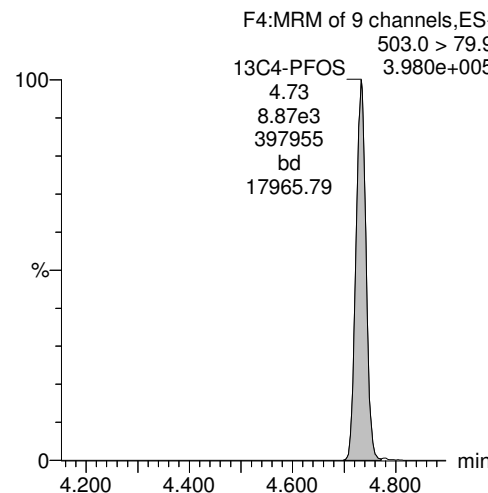
**13C4-PFOS**



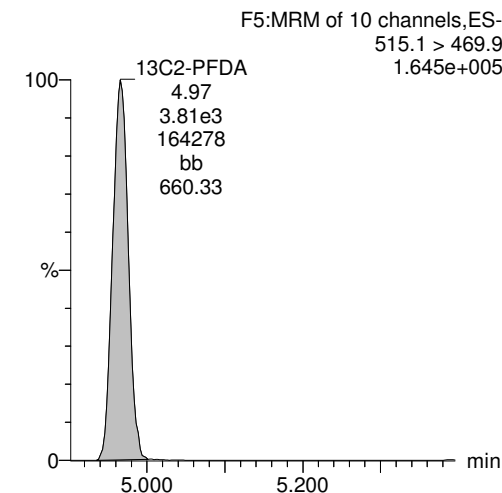
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-34.qld

Last Altered: Sunday, December 10, 2017 12:12:52 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:13:17 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_34, Date: 07-Dec-2017, Time: 21:02:37, ID: B7L0025-MSD1 LFSMD 0.25571, Description: LFSMD

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	5.77e3	1.02e4		0.2557	3.03	3.01	16.2	68.7	
2	2 PFOA	413 > 368.7	1.68e4	9.65e3		0.2557	4.33	4.33	17.5	88.4	
3	3 PFOS	499 > 79.9	8.32e3	1.02e4		0.2557	4.73	4.73	23.3	71.3	
4	4 13C2-PFHxA	315 > 269.8	4.29e3	9.65e3	0.424	0.2557	3.39	3.38	4.45	41.1	105.0
5	5 13C2-PFDA	515.1 > 469.9	4.14e3	9.65e3	0.478	0.2557	4.96	4.97	4.29	35.1	89.7
6	6 13C2-PFOA	414.9 > 369.7	9.65e3	9.65e3	1.000	0.2557	4.41	4.33	10.0	39.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	0.2557	4.81	4.73	28.7	112	100.0

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-34.qld

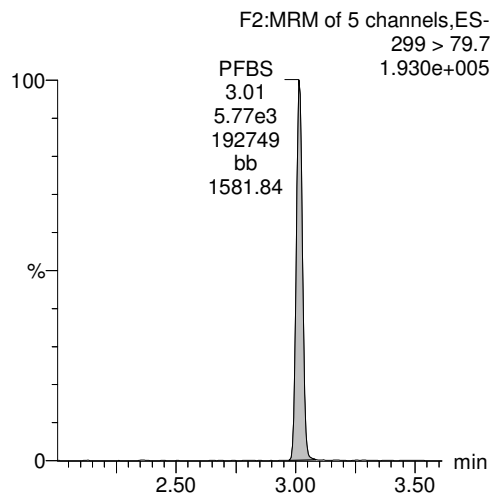
Last Altered: Sunday, December 10, 2017 12:12:52 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:13:17 Pacific Standard Time

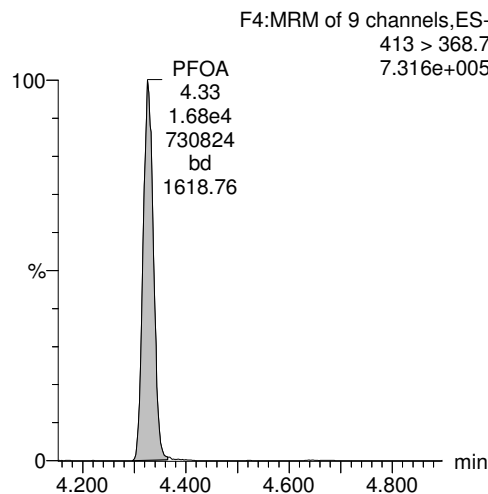
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_34, Date: 07-Dec-2017, Time: 21:02:37, ID: B7L0025-MSD1 LFSMD 0.25571, Description: LFSMD

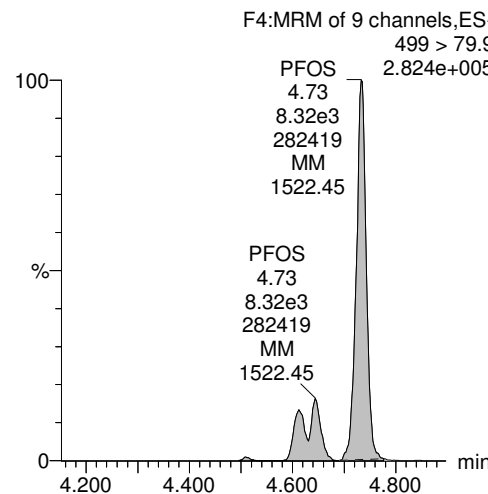
**PFBS**



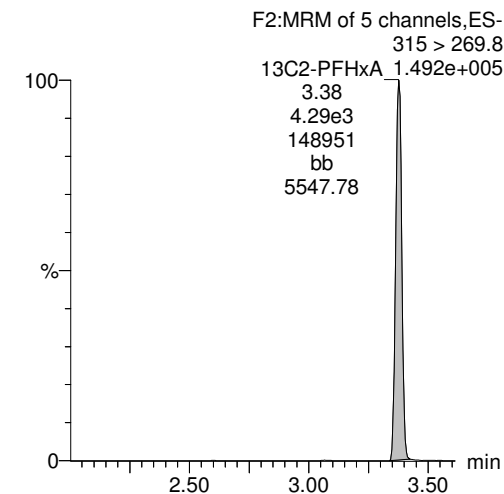
**PFOA**



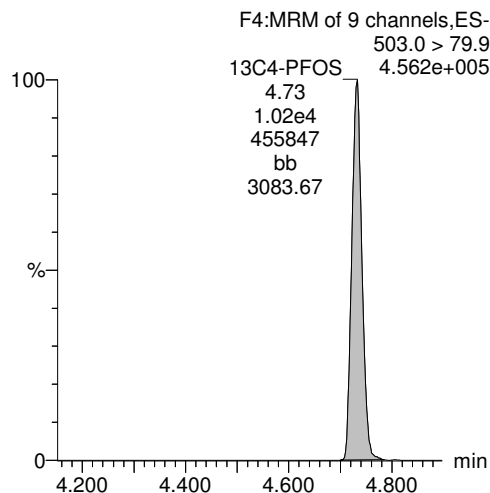
**PFOS**



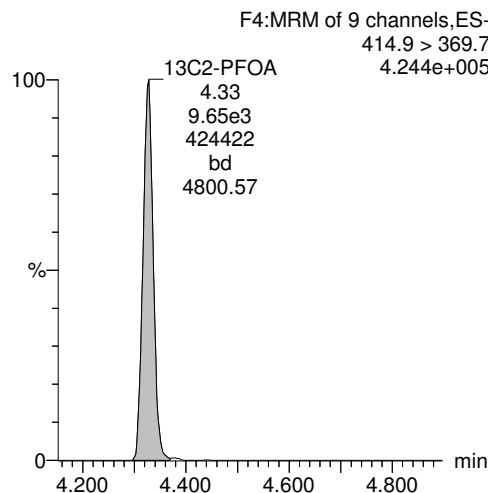
**13C2-PFHxA**



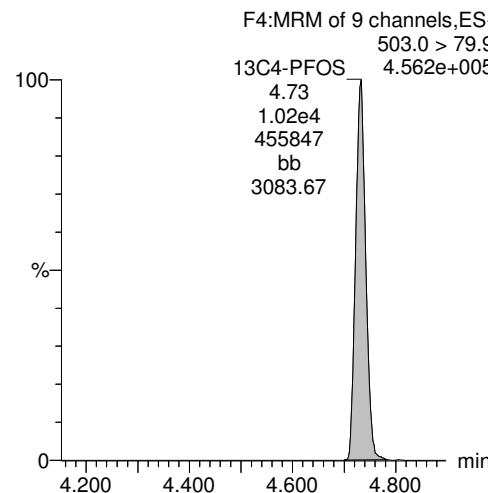
**13C4-PFOS**



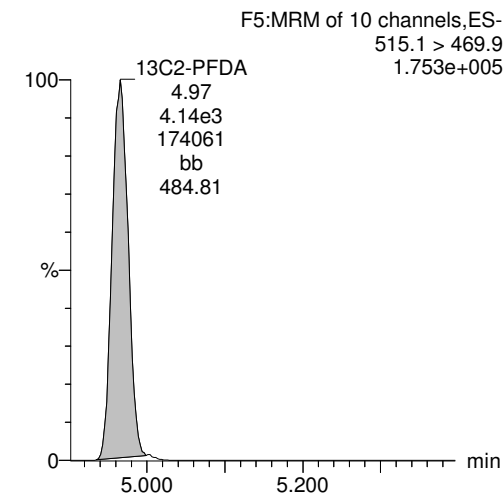
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-42.qld

Last Altered: Sunday, December 10, 2017 12:55:17 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:55:28 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_42, Date: 07-Dec-2017, Time: 22:41:59, ID: 1701814-08 CH-AT-1FB112-1117 0.262, Description: CH-AT-1FB112-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.31e3		0.2620	3.04				
2	2 PFOA	413 > 368.7	4.60e1	9.75e3		0.2620	4.33	4.33	0.0471	0.233	
3	3 PFOS	499 > 79.9	4.45e0	9.31e3		0.2620	4.74	4.74	0.0137	0.0390	
4	4 13C2-PFHxA	315 > 269.8	4.14e3	9.75e3	0.424	0.2620	3.39	3.38	4.24	38.2	100.1
5	5 13C2-PFDA	515.1 > 469.9	5.06e3	9.75e3	0.478	0.2620	4.96	4.97	5.19	41.5	108.6
6	6 13C2-PFOA	414.9 > 369.7	9.75e3	9.75e3	1.000	0.2620	4.41	4.33	10.0	38.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.31e3	9.31e3	1.000	0.2620	4.81	4.74	28.7	110	100.0

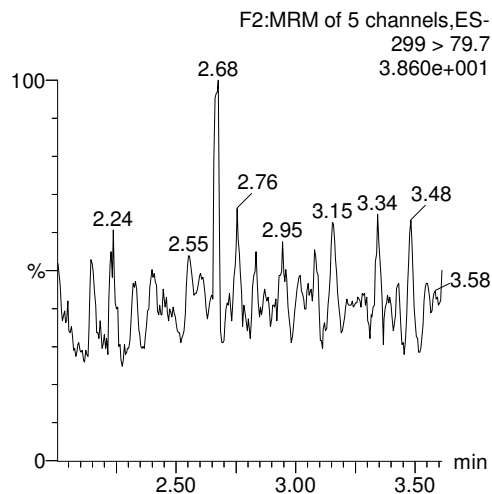
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-42.qld

Last Altered: Sunday, December 10, 2017 12:55:17 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:55:28 Pacific Standard Time

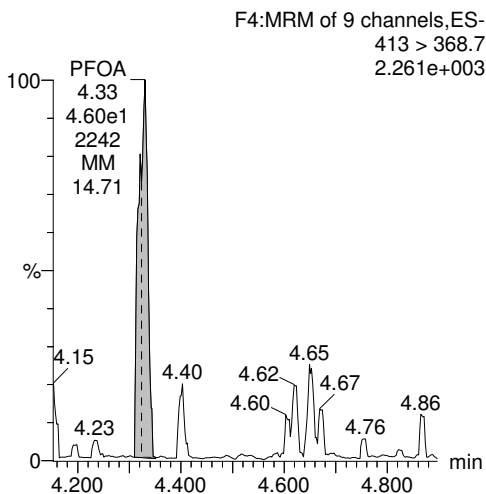
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_42, Date: 07-Dec-2017, Time: 22:41:59, ID: 1701814-08 CH-AT-1FB112-1117 0.262, Description: CH-AT-1FB112-1117

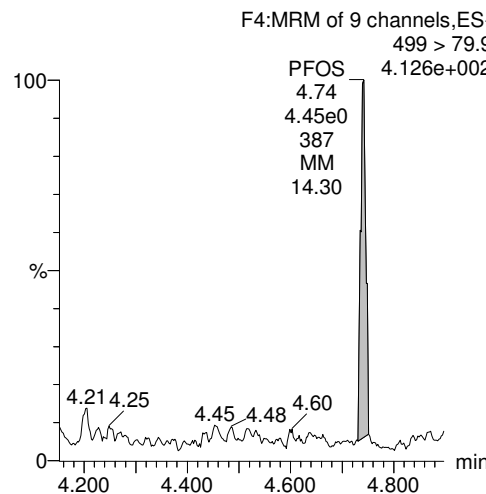
**PFBS**



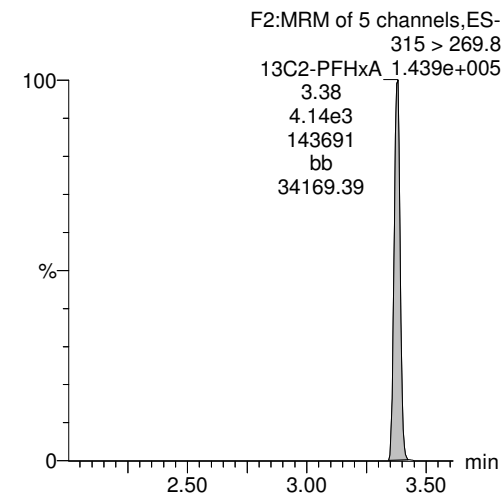
**PFOA**



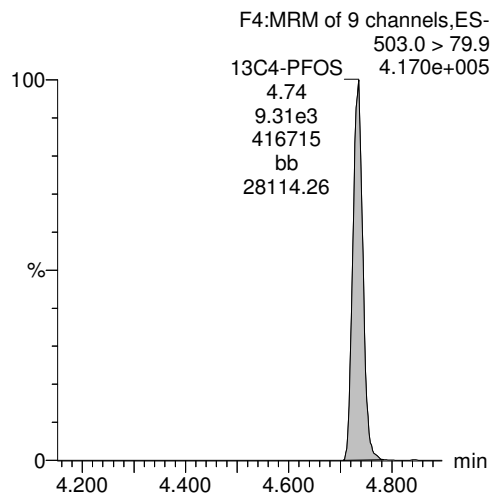
**PFOS**



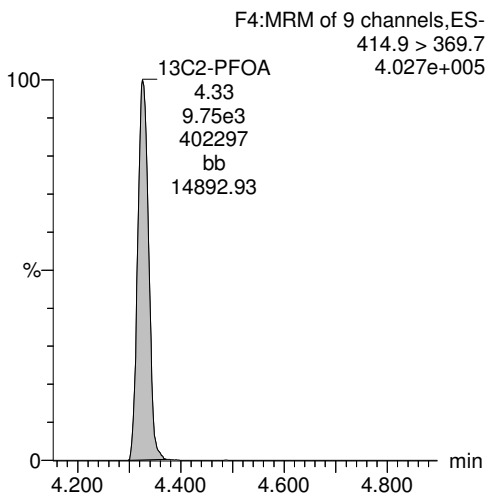
**13C2-PFHxA**



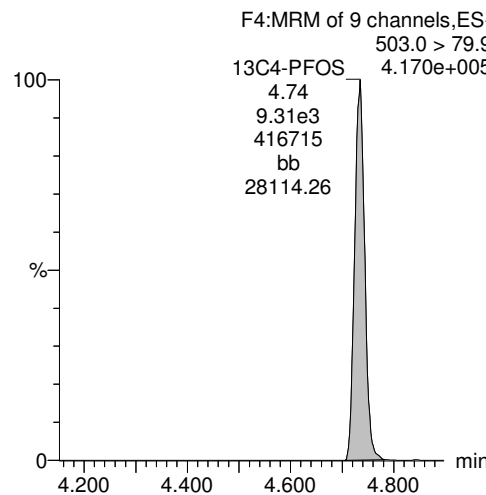
**13C4-PFOS**



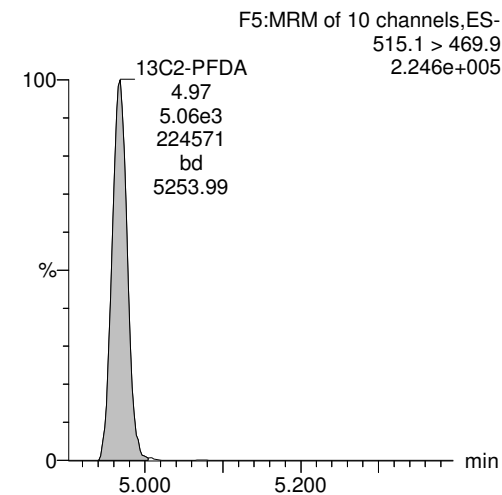
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-43.qld

Last Altered: Sunday, December 10, 2017 12:53:52 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:54:34 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_43, Date: 07-Dec-2017, Time: 22:54:26, ID: 1701814-09 CH-AT-1RW107-1117 0.26323, Description: CH-AT-1RW107-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.05e4		0.2632	3.04				
2	2 PFOA	413 > 368.7	6.49e1	9.50e3		0.2632	4.33	4.33	0.0683	0.335	
3	3 PFOS	499 > 79.9	1.82e0	1.05e4		0.2632	4.74	4.74	0.00499	0.0141	
4	4 13C2-PFHxA	315 > 269.8	4.17e3	9.50e3	0.424	0.2632	3.39	3.38	4.38	39.3	103.4
5	5 13C2-PFDA	515.1 > 469.9	4.56e3	9.50e3	0.478	0.2632	4.96	4.97	4.79	38.1	100.2
6	6 13C2-PFOA	414.9 > 369.7	9.50e3	9.50e3	1.000	0.2632	4.41	4.33	10.0	38.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2632	4.81	4.74	28.7	109	100.0

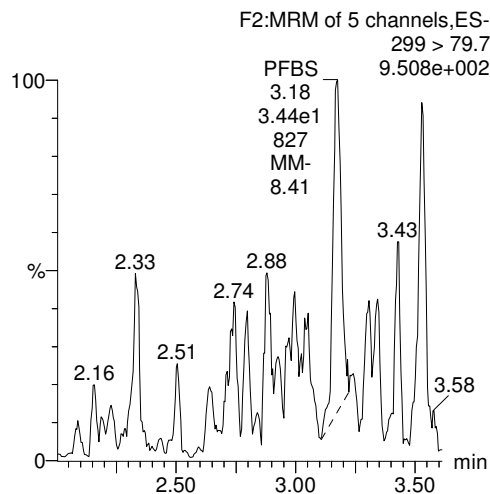
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-43.qld

Last Altered: Sunday, December 10, 2017 12:53:52 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:54:34 Pacific Standard Time

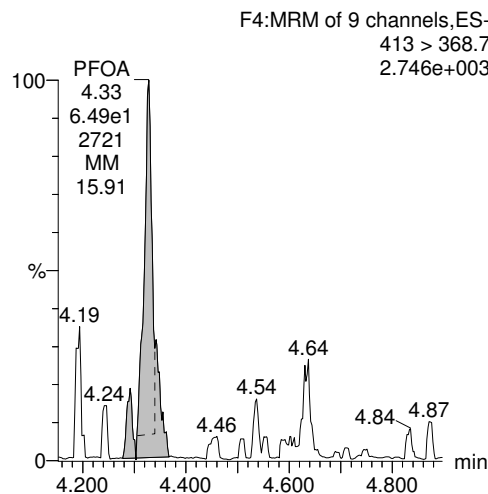
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_43, Date: 07-Dec-2017, Time: 22:54:26, ID: 1701814-09 CH-AT-1RW107-1117 0.26323, Description: CH-AT-1RW107-1117

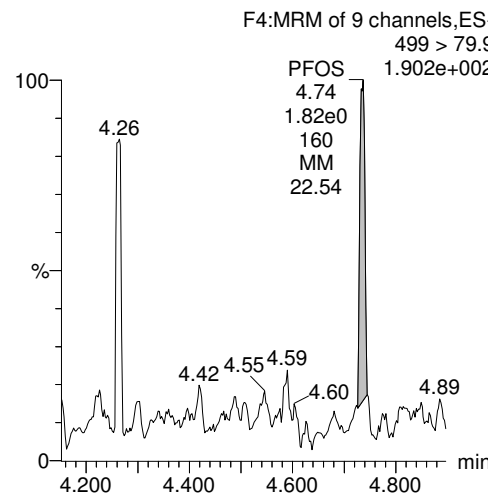
**PFBS**



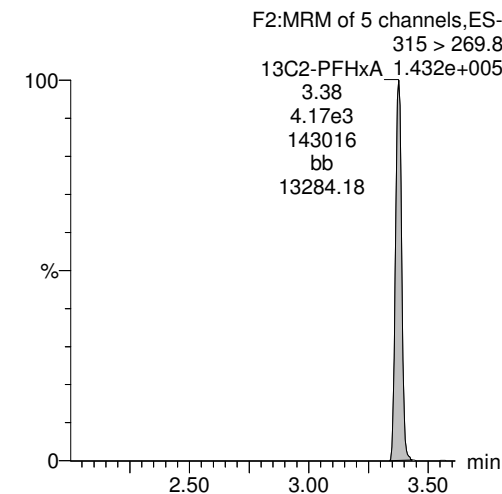
**PFOA**



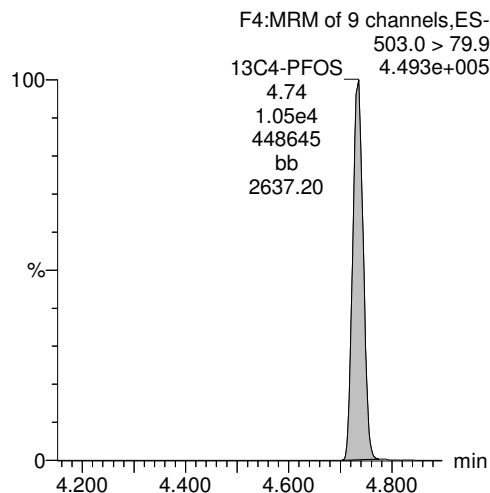
**PFOS**



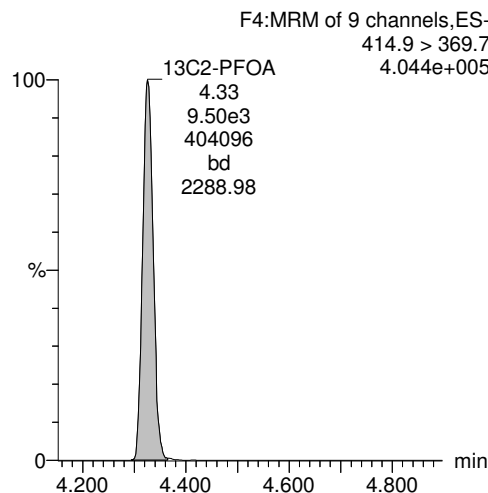
**13C2-PFHxA**



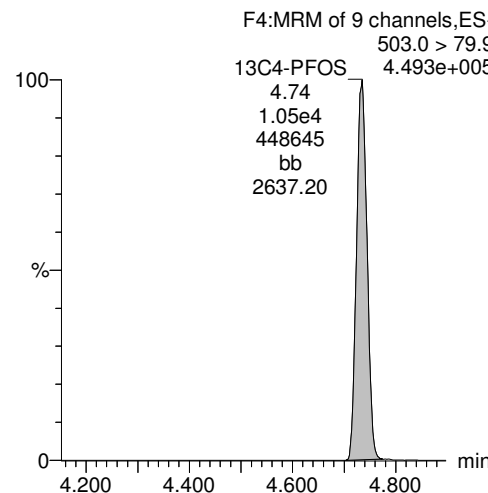
**13C4-PFOS**



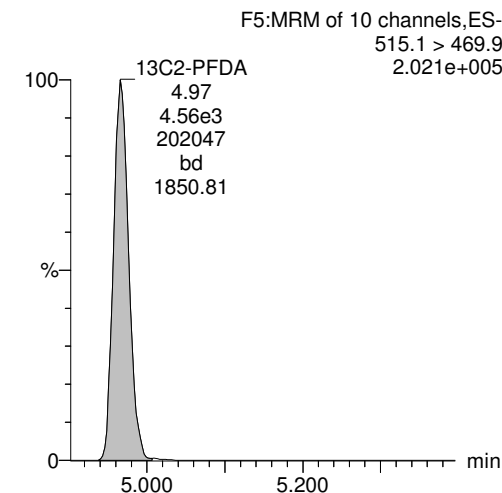
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**





Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-44.qld

Last Altered: Sunday, December 10, 2017 12:56:44 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:57:10 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_44, Date: 07-Dec-2017, Time: 23:06:54, ID: 1701814-10 CH-AT-1FB107-1117 0.26258, Description: CH-AT-1FB107-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.88e3		0.2626	3.03				
2	2 PFOA	413 > 368.7	9.05e1	9.73e3		0.2626	4.33	4.32	0.0930	0.458	
3	3 PFOS	499 > 79.9		9.88e3		0.2626	4.73				
4	4 13C2-PFHxA	315 > 269.8	4.25e3	9.73e3	0.424	0.2626	3.39	3.38	4.37	39.2	103.0
5	5 13C2-PFDA	515.1 > 469.9	4.84e3	9.73e3	0.478	0.2626	4.96	4.97	4.98	39.6	104.1
6	6 13C2-PFOA	414.9 > 369.7	9.73e3	9.73e3	1.000	0.2626	4.41	4.33	10.0	38.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.88e3	9.88e3	1.000	0.2626	4.81	4.73	28.7	109	100.0

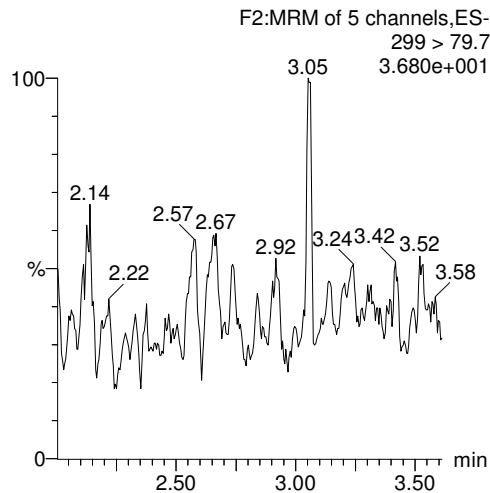
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-44.qld

Last Altered: Sunday, December 10, 2017 12:56:44 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:57:10 Pacific Standard Time

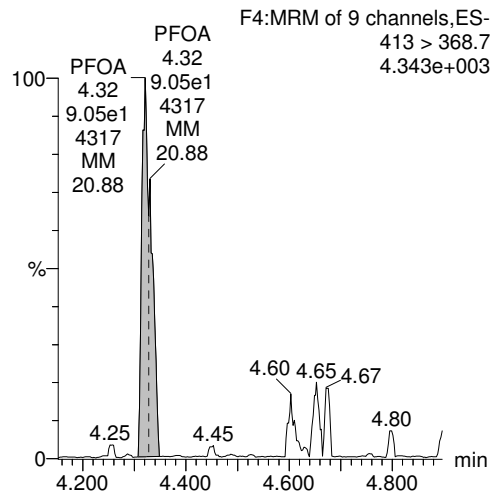
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_44, Date: 07-Dec-2017, Time: 23:06:54, ID: 1701814-10 CH-AT-1FB107-1117 0.26258, Description: CH-AT-1FB107-1117

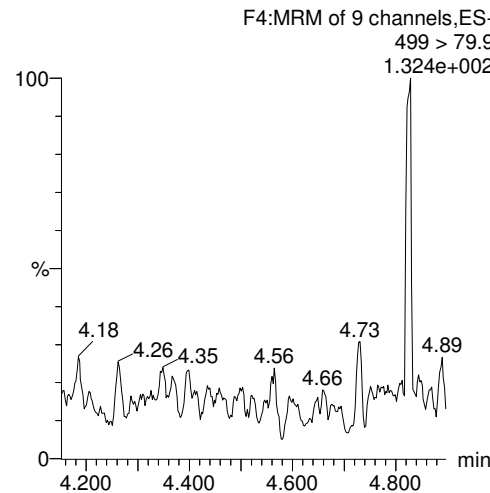
**PFBS**



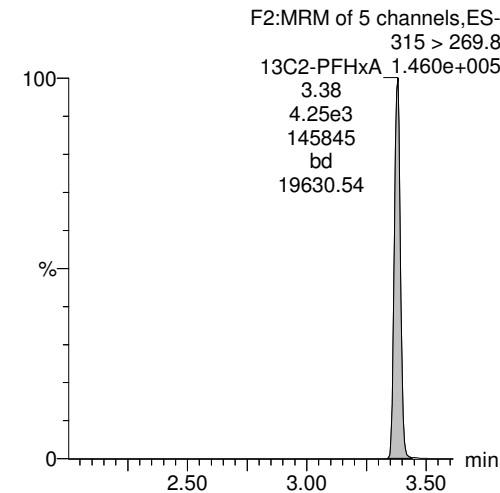
**PFOA**



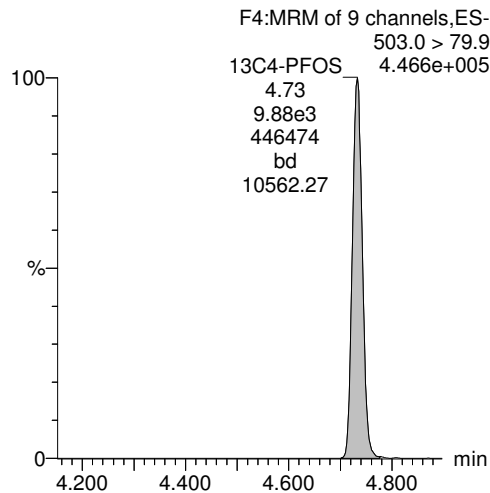
**PFOS**



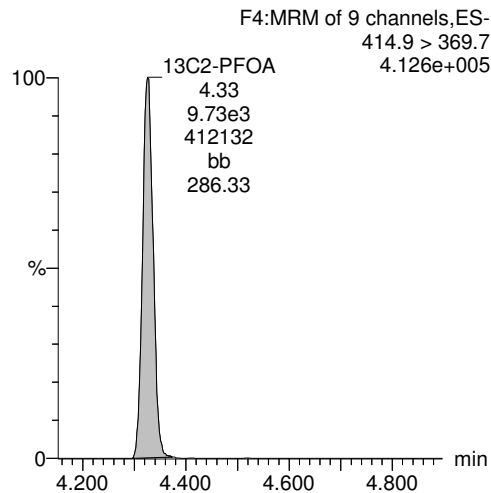
**13C2-PFHxA**



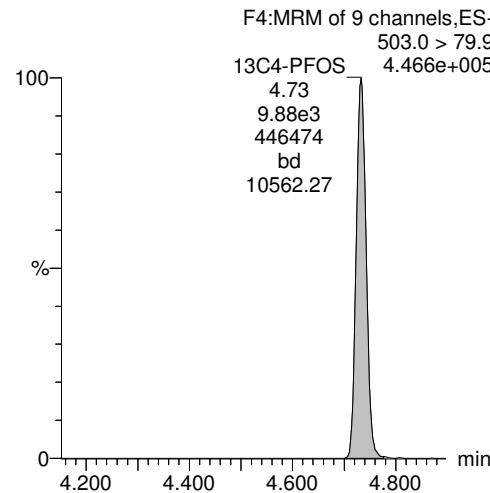
**13C4-PFOS**



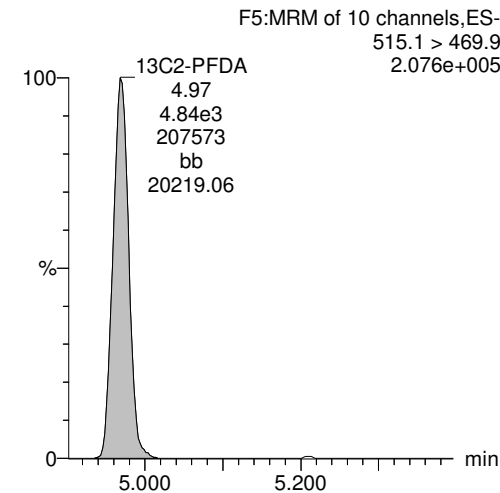
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-45.qld

Last Altered: Sunday, December 10, 2017 12:58:53 Pacific Standard Time

Printed: Sunday, December 10, 2017 12:59:19 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_45, Date: 07-Dec-2017, Time: 23:19:18, ID: 1701814-11 CH-AT-1RW108-1117 0.25898, Description: CH-AT-1RW108-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.60e3		0.2590	3.03				
2	2 PFOA	413 > 368.7	1.53e2	9.87e3		0.2590	4.32	4.33	0.155	0.774	
3	3 PFOS	499 > 79.9	2.84e1	9.60e3		0.2590	4.73	4.61	0.0849	0.244	
4	4 13C2-PFHxA	315 > 269.8	3.89e3	9.87e3	0.424	0.2590	3.38	3.38	3.94	35.9	93.0
5	5 13C2-PFDA	515.1 > 469.9	4.29e3	9.87e3	0.478	0.2590	4.95	4.97	4.35	35.1	90.9
6	6 13C2-PFOA	414.9 > 369.7	9.87e3	9.87e3	1.000	0.2590	4.41	4.32	10.0	38.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.60e3	9.60e3	1.000	0.2590	4.81	4.73	28.7	111	100.0

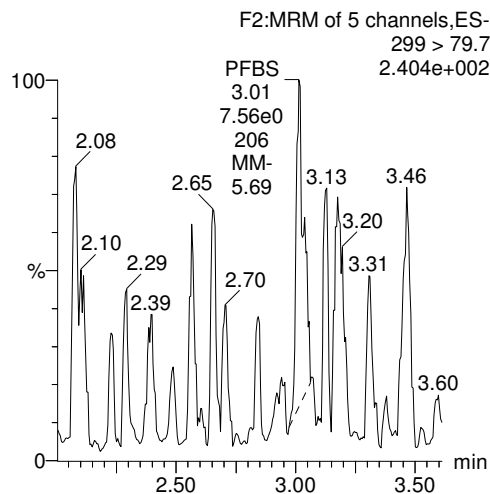
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-45.qld

Last Altered: Sunday, December 10, 2017 12:58:53 Pacific Standard Time  
Printed: Sunday, December 10, 2017 12:59:19 Pacific Standard Time

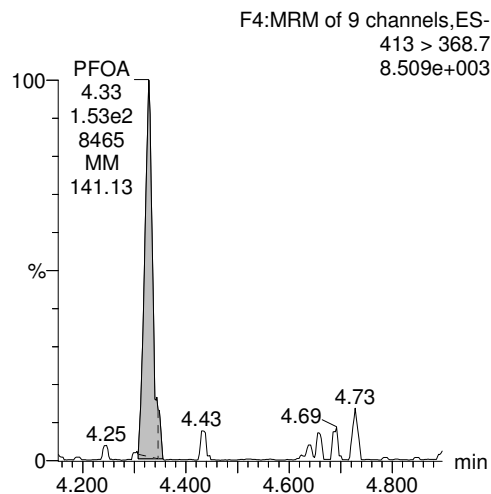
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_45, Date: 07-Dec-2017, Time: 23:19:18, ID: 1701814-11 CH-AT-1RW108-1117 0.25898, Description: CH-AT-1RW108-1117

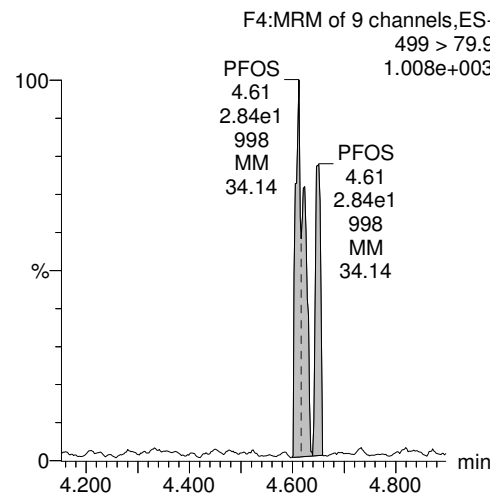
**PFBS**



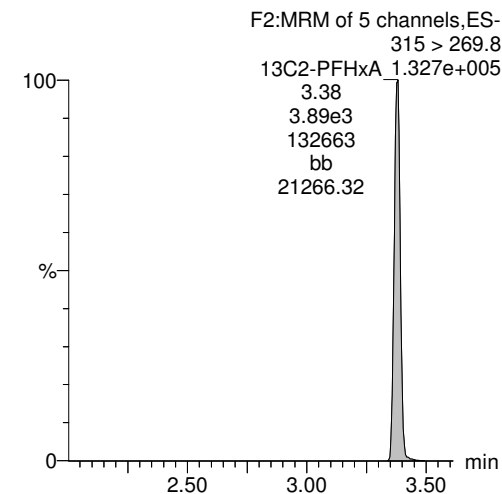
**PFOA**



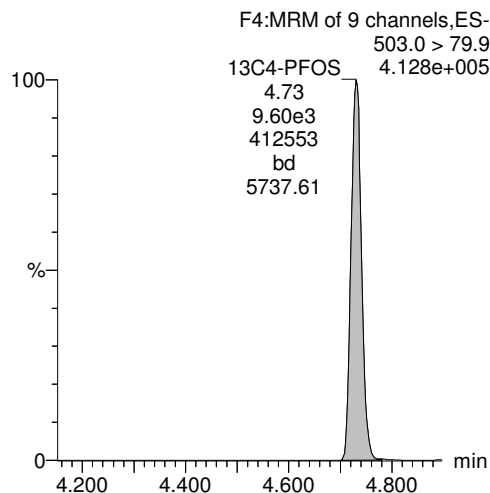
**PFOS**



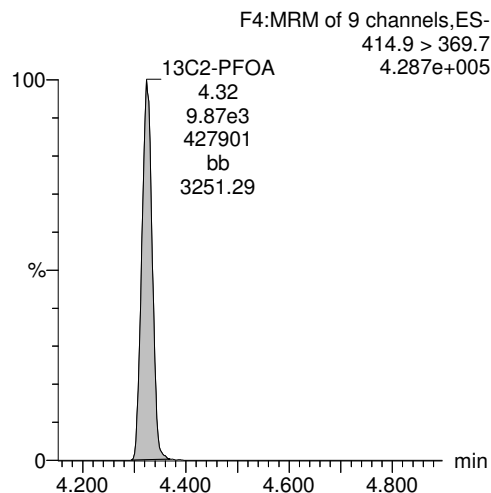
**13C2-PFHxA**



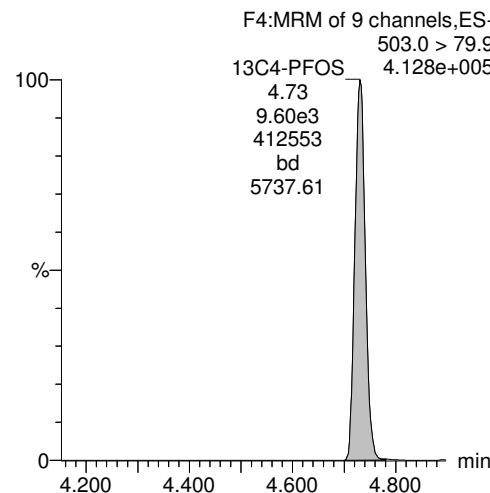
**13C4-PFOS**



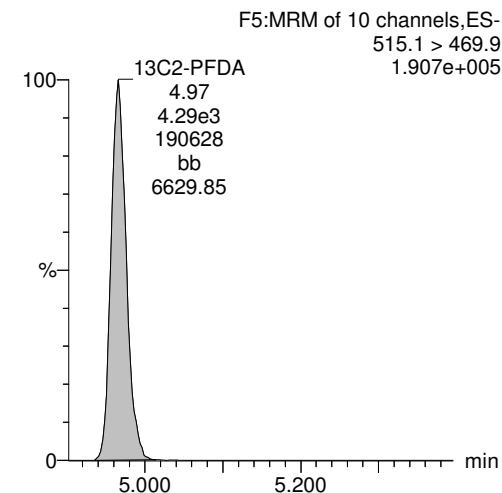
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-46.qld

Last Altered: Sunday, December 10, 2017 13:00:18 Pacific Standard Time

Printed: Sunday, December 10, 2017 13:01:34 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_46, Date: 07-Dec-2017, Time: 23:31:42, ID: 1701814-12 CH-AT-1FB108-1117 0.25727, Description: CH-AT-1FB108-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.09e4		0.2573	3.03				
2	2 PFOA	413 > 368.7	6.46e1	8.88e3		0.2573	4.33	4.32	0.0727	0.365	
3	3 PFOS	499 > 79.9	1.37e1	1.09e4		0.2573	4.73	4.73	0.0360	0.104	
4	4 13C2-PFHxA	315 > 269.8	4.23e3	8.88e3	0.424	0.2573	3.39	3.38	4.76	43.6	112.3
5	5 13C2-PFDA	515.1 > 469.9	4.74e3	8.88e3	0.478	0.2573	4.96	4.97	5.34	43.4	111.6
6	6 13C2-PFOA	414.9 > 369.7	8.88e3	8.88e3	1.000	0.2573	4.41	4.33	10.0	38.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.09e4	1.09e4	1.000	0.2573	4.81	4.73	28.7	112	100.0

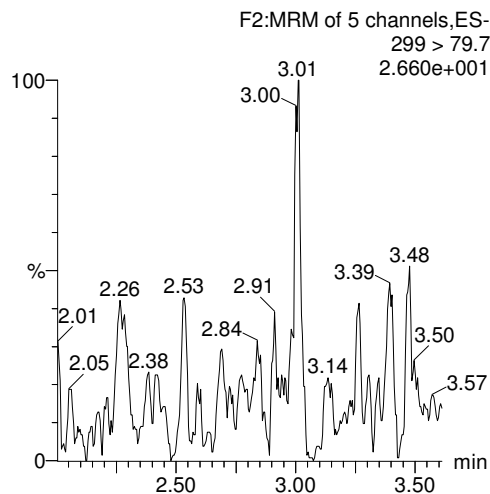
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-46.qld

Last Altered: Sunday, December 10, 2017 13:00:18 Pacific Standard Time  
Printed: Sunday, December 10, 2017 13:01:34 Pacific Standard Time

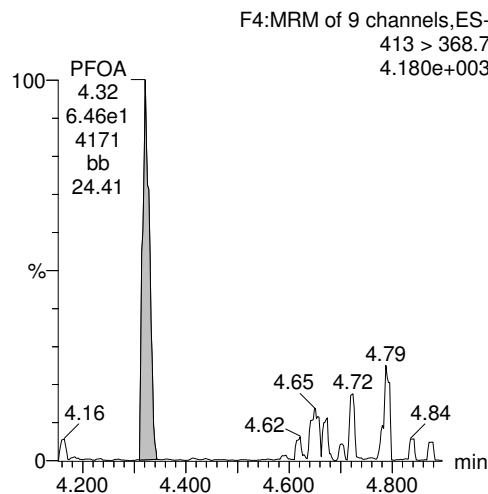
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_46, Date: 07-Dec-2017, Time: 23:31:42, ID: 1701814-12 CH-AT-1FB108-1117 0.25727, Description: CH-AT-1FB108-1117

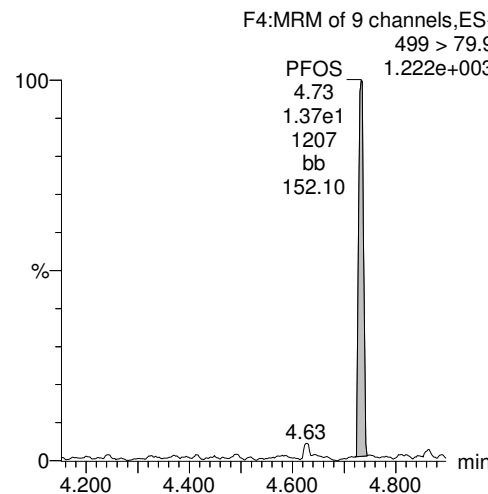
PFBS



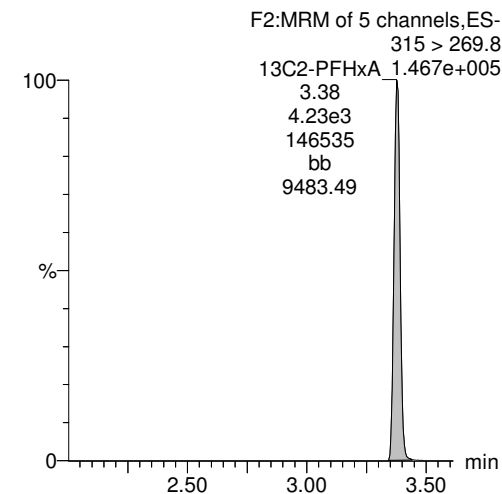
PFOA



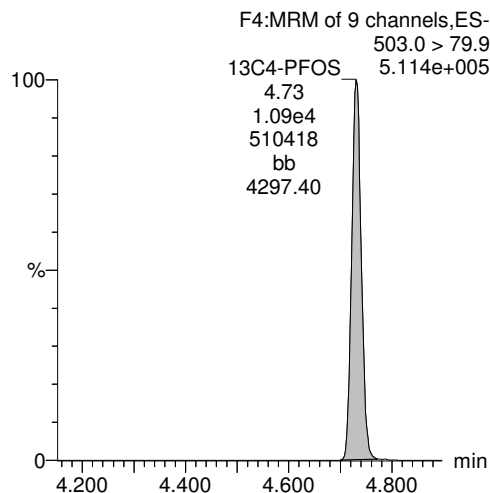
PFOS



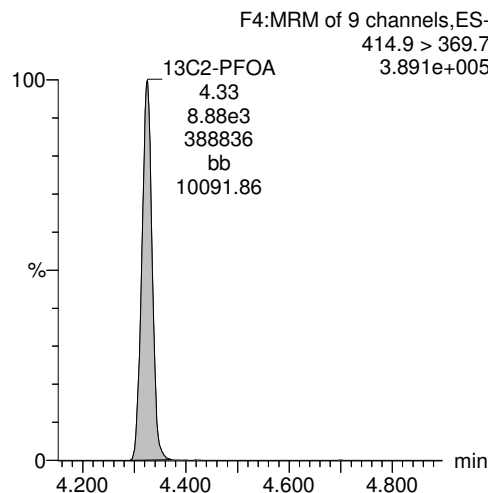
13C2-PFHxA



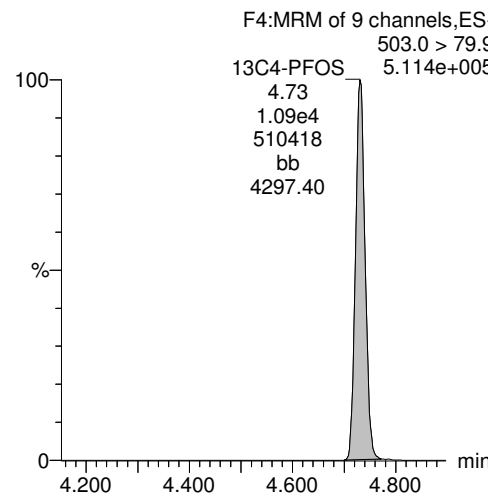
13C4-PFOS



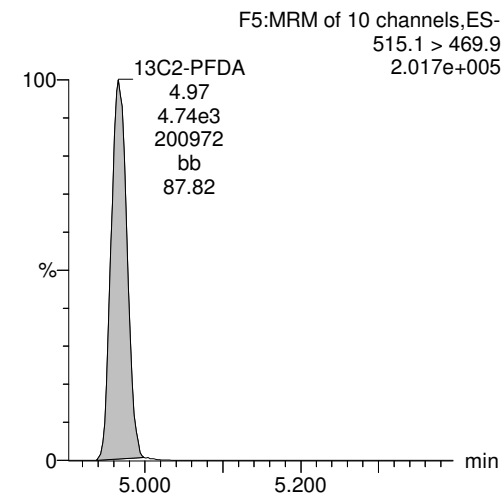
13C2-PFOA



13C4-PFOS



13C2-PFDA



**INJECTION INTERNAL STANDARD (IIS) AREAS,  
AND  
CONTINUING CALIBRATION VERIFICATIONS (CCV)**

IS Area

Ical

Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area%
1	ST171207G3-1 PFC CS-1 537 17K3024	171207G3_Analyte	10	4.33	12885.36	12885.36	11328.26	113.75
2	IPA	171207G3_Analyte	10				11328.26	0.00
3	B7L0015-BS1 LFB 0.25	171207G3_Analyte	10	4.33	9583.238	9583.238	11328.26	84.60
4	B7L0015-BLK1 LRB 0.25	171207G3_Analyte	10	4.33	9197.732	9197.732	11328.26	81.19
5	B7L0015-MS1 LFSM 0.24696	171207G3_Analyte	10	4.32	9622.813	9622.813	11328.26	84.95
6	B7L0015-MSD1 LFSMD 0.25064	171207G3_Analyte	10	4.33	9265.601	9265.601	11328.26	81.79
7	1701807-01 CH-AT-1RW94-1117 0.24509	171207G3_Analyte	10	4.33	9776.346	9776.346	11328.26	86.30
8	1701807-02 CH-AT-1FB94-1117 0.24508	171207G3_Analyte	10	4.32	8725.691	8725.691	11328.26	77.03
9	1701807-03 CH-AT-1RW95-1117 0.25193	171207G3_Analyte	10	4.32	9033.678	9033.678	11328.26	79.74
10	1701807-04 CH-AT-1FB95-1117 0.25155	171207G3_Analyte	10	4.32	8827.292	8827.292	11328.26	77.92
11	1701807-05 CH-AT-1RW96-1117 0.24236	171207G3_Analyte	10	4.33	8980.292	8980.292	11328.26	79.27
12	1701807-06 CH-AT-1FB96-1117 0.24957	171207G3_Analyte	10	4.32	10279.1	10279.1	11328.26	90.74
13	1701807-07 CH-AT-1RW97-1117 0.24262	171207G3_Analyte	10	4.32	9227.577	9227.577	11328.26	81.46
14	1701807-08 CH-AT-1FB97-1117 0.24757	171207G3_Analyte	10	4.33	9119.604	9119.604	11328.26	80.50
15	1701826-01 CH-AT-2RW40-1217 0.24324	171207G3_Analyte	10	4.32	9289.931	9289.931	11328.26	82.01
16	1701826-02 CH-AT-2FB40-1217 0.24836	171207G3_Analyte	10	4.32	8111.358	8111.358	11328.26	71.60
17	1701826-03 CH-AT-1RW115-1217 0.23578	171207G3_Analyte	10	4.32	8629.051	8629.051	11328.26	76.17
18	1701826-04 CH-AT-1FB115-1217 0.25059	171207G3_Analyte	10	4.32	9285.475	9285.475	11328.26	81.97
19	1701826-05 CH-AT-2RW41-1217 0.2433	171207G3_Analyte	10	4.32	9547.839	9547.839	11328.26	84.28
20	1701826-06 CH-AT-2FB41-1217 0.23928	171207G3_Analyte	10	4.32	9623.723	9623.723	11328.26	84.95
21	1701826-07 CH-AT-2RW39-1217 0.2471	171207G3_Analyte	10	4.32	9798.919	9798.919	11328.26	86.50
22	1701826-08 CH-AT-2FB39-1217 0.25321	171207G3_Analyte	10	4.32	9135.841	9135.841	11328.26	80.65
23	1701826-09 CH-AT-1RW114-1217 0.23828	171207G3_Analyte	10	4.33	9384.96	9384.96	11328.26	82.85
24	1701826-10 CH-AT-1FB114-1217 0.25812	171207G3_Analyte	10	4.33	8627.353	8627.353	11328.26	76.16
25	1701826-11 CH-AT-1RW113-1217 0.25187	171207G3_Analyte	10	4.32	10013.83	10013.83	11328.26	88.40
26	1701826-12 CH-AT-1FB113-1217 0.252	171207G3_Analyte	10	4.33	9343.38	9343.38	11328.26	82.48
27	IPA	171207G3_Analyte	10				11328.26	0.00



28	ST171207G3-2 PFC CS3 17K3027	171207G3_ Analyte	10	4.33	10795.81	10795.81	11328.26	95.30
29	IPA	171207G3_ Analyte	10				11328.26	0.00
30	B7L0025-BS1 LFB 0.25	171207G3_ Analyte	10	4.33	9831.949	9831.949	11328.26	86.79
31	B7L0025-BLK1 LRB 0.25	171207G3_ Analyte	10	4.33	8941.108	8941.108	11328.26	78.93
32	B7L0025-MS1 LFSM 0.24324	171207G3_ Analyte	10	4.33	8630.11	8630.11	11328.26	76.18
33	B7L0025-MSD1 LFSMD 0.25571	171207G3_ Analyte	10	4.33	9645.423	9645.423	11328.26	85.14
34	1701814-01 CH-AT-1RW109-1117 0.24963	171207G3_ Analyte	10	4.33	9574.236	9574.236	11328.26	84.52
35	1701814-02 CH-AT-1FB109-1117 0.25812	171207G3_ Analyte	10	4.33	10808.15	10808.15	11328.26	95.41
36	1701814-03 CH-AT-1RW110-1117 0.24886	171207G3_ Analyte	10	4.33	9586.044	9586.044	11328.26	84.62
37	1701814-04 CH-AT-1FB110-1117 0.24932	171207G3_ Analyte	10	4.33	9955.102	9955.102	11328.26	87.88
38	1701814-05 CH-AT-1RW111-1117 0.24827	171207G3_ Analyte	10	4.33	9818.604	9818.604	11328.26	86.67
39	1701814-06 CH-AT-1FB111-1117 0.2532	171207G3_ Analyte	10	4.33	9058.298	9058.298	11328.26	79.96
40	1701814-07 CH-AT-1RW112-1117 0.25353	171207G3_ Analyte	10	4.33	9091.133	9091.133	11328.26	80.25
41	1701814-08 CH-AT-1FB112-1117 0.262	171207G3_ Analyte	10	4.33	9752.02	9752.02	11328.26	86.09
42	1701814-09 CH-AT-1RW107-1117 0.26323	171207G3_ Analyte	10	4.33	9503.17	9503.17	11328.26	83.89
43	1701814-10 CH-AT-1FB107-1117 0.26258	171207G3_ Analyte	10	4.33	9725.189	9725.189	11328.26	85.85
44	1701814-11 CH-AT-1RW108-1117 0.25898	171207G3_ Analyte	10	4.32	9870.169	9870.169	11328.26	87.13
45	1701814-12 CH-AT-1FB108-1117 0.25727	171207G3_ Analyte	10	4.33	8884.244	8884.244	11328.26	78.43
46	IPA	171207G3_ Analyte	10	4.32	6.233	6.233	11328.26	0.06
47	B7L0016-BS1 LFB 0.25	171207G3_ Analyte	10	4.33	9704.101	9704.101	11328.26	85.66
48	B7L0016-BSD1 LFBD 0.25	171207G3_ Analyte	10	4.33	9055.565	9055.565	11328.26	79.94
49	B7L0016-BLK1 LRB 0.25	171207G3_ Analyte	10	4.32	9162.609	9162.609	11328.26	80.88
50	1701813-01 CH-AT-2RW20-1117 0.25836	171207G3_ Analyte	10	4.32	8643.122	8643.122	11328.26	76.30
51	1701813-02 CH-AT-2FB20-1117 0.2625	171207G3_ Analyte	10	4.32	9319.82	9319.82	11328.26	82.27
52	1701813-03 CH-AT-2RW21-1117 0.25745	171207G3_ Analyte	10	4.32	9469.031	9469.031	11328.26	83.59
53	1701813-04 CH-AT-2FB21-1117 0.25393	171207G3_ Analyte	10	4.32	9719.193	9719.193	11328.26	85.80
54	1701813-05 CH-AT-2RW22-1117 0.25543	171207G3_ Analyte	10	4.32	10031.35	10031.35	11328.26	88.55
55	1701813-06 CH-AT-2FB22-1117 0.25226	171207G3_ Analyte	10	4.33	9373.374	9373.374	11328.26	82.74
56	1701813-07 CH-AT-2RW23-1117 0.25821	171207G3_ Analyte	10	4.32	9521.089	9521.089	11328.26	84.05
57	1701813-08 CH-AT-2FB23-1117 0.24936	171207G3_ Analyte	10	4.32	9222.847	9222.847	11328.26	81.41
58	IPA	171207G3_ Analyte	10				11328.26	0.00
59	ST171207G3-3 PFC CS5 537 17K3029	171207G3_ Analyte	10	4.32	11546.32	11546.32	11328.26	101.92
60	IPA	171207G3_ Analyte	10				11328.26	0.00

## Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	ST171207G3-1 PFC CS-1 537 17K3024	171207G3_Analyte	28.7	4.73	14224.38	14224.38	11379.03	125.01
2	IPA	171207G3_Analyte	28.7				11379.03	0.00
3	B7L0015-BS1 LFB 0.25	171207G3_Analyte	28.7	4.73	10082.32	10082.32	11379.03	88.60
4	B7L0015-BLK1 LRB 0.25	171207G3_Analyte	28.7	4.73	9285.92	9285.92	11379.03	81.61
5	B7L0015-MS1 LFSM 0.24696	171207G3_Analyte	28.7	4.73	10850.02	10850.02	11379.03	95.35
6	B7L0015-MSD1 LFSMD 0.25064	171207G3_Analyte	28.7	4.73	9616.275	9616.275	11379.03	84.51
7	1701807-01 CH-AT-1RW94-1117 0.24509	171207G3_Analyte	28.7	4.74	10308.69	10308.69	11379.03	90.59
8	1701807-02 CH-AT-1FB94-1117 0.24508	171207G3_Analyte	28.7	4.74	9347.48	9347.48	11379.03	82.15
9	1701807-03 CH-AT-1RW95-1117 0.25193	171207G3_Analyte	28.7	4.73	10137.02	10137.02	11379.03	89.09
10	1701807-04 CH-AT-1FB95-1117 0.25155	171207G3_Analyte	28.7	4.73	10377.24	10377.24	11379.03	91.20
11	1701807-05 CH-AT-1RW96-1117 0.24236	171207G3_Analyte	28.7	4.73	9394.615	9394.615	11379.03	82.56
12	1701807-06 CH-AT-1FB96-1117 0.24957	171207G3_Analyte	28.7	4.73	10136.2	10136.2	11379.03	89.08
13	1701807-07 CH-AT-1RW97-1117 0.24262	171207G3_Analyte	28.7	4.73	10734.53	10734.53	11379.03	94.34
14	1701807-08 CH-AT-1FB97-1117 0.24757	171207G3_Analyte	28.7	4.73	9549.839	9549.839	11379.03	83.92
15	1701826-01 CH-AT-2RW40-1217 0.24324	171207G3_Analyte	28.7	4.73	10068.19	10068.19	11379.03	88.48
16	1701826-02 CH-AT-2FB40-1217 0.24836	171207G3_Analyte	28.7	4.73	9359.739	9359.739	11379.03	82.25
17	1701826-03 CH-AT-1RW115-1217 0.23578	171207G3_Analyte	28.7	4.73	9438.006	9438.006	11379.03	82.94
18	1701826-04 CH-AT-1FB115-1217 0.25059	171207G3_Analyte	28.7	4.73	10093.32	10093.32	11379.03	88.70
19	1701826-05 CH-AT-2RW41-1217 0.2433	171207G3_Analyte	28.7	4.73	10126.32	10126.32	11379.03	88.99
20	1701826-06 CH-AT-2FB41-1217 0.23928	171207G3_Analyte	28.7	4.73	9822.364	9822.364	11379.03	86.32
21	1701826-07 CH-AT-2RW39-1217 0.2471	171207G3_Analyte	28.7	4.73	10131.71	10131.71	11379.03	89.04
22	1701826-08 CH-AT-2FB39-1217 0.25321	171207G3_Analyte	28.7	4.73	10091.7	10091.7	11379.03	88.69
23	1701826-09 CH-AT-1RW114-1217 0.23828	171207G3_Analyte	28.7	4.74	9812.958	9812.958	11379.03	86.24
24	1701826-10 CH-AT-1FB114-1217 0.25812	171207G3_Analyte	28.7	4.73	9066.185	9066.185	11379.03	79.67
25	1701826-11 CH-AT-1RW113-1217 0.25187	171207G3_Analyte	28.7	4.73	10034.41	10034.41	11379.03	88.18
26	1701826-12 CH-AT-1FB113-1217 0.252	171207G3_Analyte	28.7	4.73	9830.374	9830.374	11379.03	86.39
27	IPA	171207G3_Analyte	28.7				11379.03	0.00
28	ST171207G3-2 PFC CS3 17K3027	171207G3_Analyte	28.7	4.73	10876.77	10876.77	11379.03	95.59
29	IPA	171207G3_Analyte	28.7				11379.03	0.00
30	B7L0025-BS1 LFB 0.25	171207G3_Analyte	28.7	4.73	9881.715	9881.715	11379.03	86.84

31	B7L0025-BLK1 LRB 0.25	171207G3_ Analyte	28.7	4.73	9023.005	9023.005	11379.03	79.30
32	B7L0025-MS1 LFSM 0.24324	171207G3_ Analyte	28.7	4.73	8871.453	8871.453	11379.03	77.96
33	B7L0025-MSD1 LFSMD 0.25571	171207G3_ Analyte	28.7	4.73	10228.98	10228.98	11379.03	89.89
34	1701814-01 CH-AT-1RW109-1117 0.24963	171207G3_ Analyte	28.7	4.73	10051.86	10051.86	11379.03	88.34
35	1701814-02 CH-AT-1FB109-1117 0.25812	171207G3_ Analyte	28.7	4.73	9997.502	9997.502	11379.03	87.86
36	1701814-03 CH-AT-1RW110-1117 0.24886	171207G3_ Analyte	28.7	4.73	9624.115	9624.115	11379.03	84.58
37	1701814-04 CH-AT-1FB110-1117 0.24932	171207G3_ Analyte	28.7	4.74	9882.266	9882.266	11379.03	86.85
38	1701814-05 CH-AT-1RW111-1117 0.24827	171207G3_ Analyte	28.7	4.73	10704.49	10704.49	11379.03	94.07
39	1701814-06 CH-AT-1FB111-1117 0.2532	171207G3_ Analyte	28.7	4.73	9627.133	9627.133	11379.03	84.60
40	1701814-07 CH-AT-1RW112-1117 0.25353	171207G3_ Analyte	28.7	4.73	10692.3	10692.3	11379.03	93.96
41	1701814-08 CH-AT-1FB112-1117 0.262	171207G3_ Analyte	28.7	4.74	9348.494	9348.494	11379.03	82.16
42	1701814-09 CH-AT-1RW107-1117 0.26323	171207G3_ Analyte	28.7	4.74	10485.2	10485.2	11379.03	92.14
43	1701814-10 CH-AT-1FB107-1117 0.26258	171207G3_ Analyte	28.7	4.73	9883.447	9883.447	11379.03	86.86
44	1701814-11 CH-AT-1RW108-1117 0.25898	171207G3_ Analyte	28.7	4.73	9600.3	9600.3	11379.03	84.37
45	1701814-12 CH-AT-1FB108-1117 0.25727	171207G3_ Analyte	28.7	4.73	10877.11	10877.11	11379.03	95.59
46	IPA	171207G3_ Analyte	28.7				11379.03	0.00
47	B7L0016-BS1 LFB 0.25	171207G3_ Analyte	28.7	4.73	9312.42	9312.42	11379.03	81.84
48	B7L0016-BSD1 LFBD 0.25	171207G3_ Analyte	28.7	4.73	9072.752	9072.752	11379.03	79.73
49	B7L0016-BLK1 LRB 0.25	171207G3_ Analyte	28.7	4.73	9805.952	9805.952	11379.03	86.18
50	1701813-01 CH-AT-2RW20-1117 0.25836	171207G3_ Analyte	28.7	4.73	9398.167	9398.167	11379.03	82.59
51	1701813-02 CH-AT-2FB20-1117 0.2625	171207G3_ Analyte	28.7	4.73	10054.08	10054.08	11379.03	88.36
52	1701813-03 CH-AT-2RW21-1117 0.25745	171207G3_ Analyte	28.7	4.73	10212.46	10212.46	11379.03	89.75
53	1701813-04 CH-AT-2FB21-1117 0.25393	171207G3_ Analyte	28.7	4.73	9620.399	9620.399	11379.03	84.54
54	1701813-05 CH-AT-2RW22-1117 0.25543	171207G3_ Analyte	28.7	4.73	9572.242	9572.242	11379.03	84.12
55	1701813-06 CH-AT-2FB22-1117 0.25226	171207G3_ Analyte	28.7	4.74	9707.207	9707.207	11379.03	85.31
56	1701813-07 CH-AT-2RW23-1117 0.25821	171207G3_ Analyte	28.7	4.73	10145.85	10145.85	11379.03	89.16
57	1701813-08 CH-AT-2FB23-1117 0.24936	171207G3_ Analyte	28.7	4.74	10387.99	10387.99	11379.03	91.29
58	IPA	171207G3_ Analyte	28.7				11379.03	0.00
59	ST171207G3-3 PFC CS5 537 17K3029	171207G3_ Analyte	28.7	4.73	10464.51	10464.51	11379.03	91.96
60	IPA	171207G3_ Analyte	28.7				11379.03	0.00

Ccal

Compound 6: 13C2-PFOA

ST171207G3-1 PFC CS-1 537 17K3024

GM 12/8/17

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area%
1	ST171207G3-1 PFC CS-1 537 17K3024	171207G3_Analyte	10	4.33	12885.36	12885.36	12885.36	100.00
2	IPA	171207G3_Analyte	10				12885.36	0.00
3	B7L0015-BS1 LFB 0.25	171207G3_Analyte	10	4.33	9583.238	9583.238	12885.36	74.37
4	B7L0015-BLK1 LRB 0.25	171207G3_Analyte	10	4.33	9197.732	9197.732	12885.36	71.38
5	B7L0015-MS1 LFSM 0.24696	171207G3_Analyte	10	4.32	9622.813	9622.813	12885.36	74.68
6	B7L0015-MSD1 LFSMD 0.25064	171207G3_Analyte	10	4.33	9265.601	9265.601	12885.36	71.91
7	1701807-01 CH-AT-1RW94-1117 0.24509	171207G3_Analyte	10	4.33	9776.346	9776.346	12885.36	75.87
8	1701807-02 CH-AT-1FB94-1117 0.24508	171207G3_Analyte	10	4.32	8725.691	8725.691	12885.36	67.72
9	1701807-03 CH-AT-1RW95-1117 0.25193	171207G3_Analyte	10	4.32	9033.678	9033.678	12885.36	70.11
10	1701807-04 CH-AT-1FB95-1117 0.25155	171207G3_Analyte	10	4.32	8827.292	8827.292	12885.36	68.51
11	1701807-05 CH-AT-1RW96-1117 0.24236	171207G3_Analyte	10	4.33	8980.292	8980.292	12885.36	69.69
12	1701807-06 CH-AT-1FB96-1117 0.24957	171207G3_Analyte	10	4.32	10279.1	10279.1	12885.36	79.77
13	1701807-07 CH-AT-1RW97-1117 0.24262	171207G3_Analyte	10	4.32	9227.577	9227.577	12885.36	71.61
14	1701807-08 CH-AT-1FB97-1117 0.24757	171207G3_Analyte	10	4.33	9119.604	9119.604	12885.36	70.77
15	1701826-01 CH-AT-2RW40-1217 0.24324	171207G3_Analyte	10	4.32	9289.931	9289.931	12885.36	72.10
16	1701826-02 CH-AT-2FB40-1217 0.24836	171207G3_Analyte	10	4.32	8111.358	8111.358	12885.36	62.95
17	1701826-03 CH-AT-1RW115-1217 0.23578	171207G3_Analyte	10	4.32	8629.051	8629.051	12885.36	66.97
18	1701826-04 CH-AT-1FB115-1217 0.25059	171207G3_Analyte	10	4.32	9285.475	9285.475	12885.36	72.06
19	1701826-05 CH-AT-2RW41-1217 0.2433	171207G3_Analyte	10	4.32	9547.839	9547.839	12885.36	74.10
20	1701826-06 CH-AT-2FB41-1217 0.23928	171207G3_Analyte	10	4.32	9623.723	9623.723	12885.36	74.69
21	1701826-07 CH-AT-2RW39-1217 0.2471	171207G3_Analyte	10	4.32	9798.919	9798.919	12885.36	76.05
22	1701826-08 CH-AT-2FB39-1217 0.25321	171207G3_Analyte	10	4.32	9135.841	9135.841	12885.36	70.90
23	1701826-09 CH-AT-1RW114-1217 0.23828	171207G3_Analyte	10	4.33	9384.96	9384.96	12885.36	72.83
24	1701826-10 CH-AT-1FB114-1217 0.25812	171207G3_Analyte	10	4.33	8627.353	8627.353	12885.36	66.95
25	1701826-11 CH-AT-1RW113-1217 0.25187	171207G3_Analyte	10	4.32	10013.83	10013.83	12885.36	77.71
26	1701826-12 CH-AT-1FB113-1217 0.252	171207G3_Analyte	10	4.33	9343.38	9343.38	12885.36	72.51
27	IPA	171207G3_Analyte	10				12885.36	0.00
28	ST171207G3-2 PFC CS3 17K3027	171207G3_Analyte	10	4.33	10795.81	10795.81	12885.36	83.78

ST171207G3-2 PFC CS3 17K3027

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area%
28	ST171207G3-2 PFC CS3 17K3027	171207G3_Analyte	10	4.33	10795.81	10795.81	10795.81	100.00

29	IPA	171207G3_	Analyte	10				10795.81	0.00
30	B7L0025-BS1 LFB 0.25	171207G3_	Analyte	10	4.33	9831.949	9831.949	10795.81	91.07
31	B7L0025-BLK1 LRB 0.25	171207G3_	Analyte	10	4.33	8969.35	8969.35	10795.81	83.08
32	B7L0025-MS1 LFSM 0.24324	171207G3_	Analyte	10	4.33	8630.11	8630.11	10795.81	79.94
33	B7L0025-MSD1 LFSMD 0.25571	171207G3_	Analyte	10	4.33	9645.423	9645.423	10795.81	89.34
34	1701814-01 CH-AT-1RW109-1117 0.24963	171207G3_	Analyte	10	4.33	9574.236	9574.236	10795.81	88.68
35	1701814-02 CH-AT-1FB109-1117 0.25812	171207G3_	Analyte	10	4.33	10808.15	10808.15	10795.81	100.11
36	1701814-03 CH-AT-1RW110-1117 0.24886	171207G3_	Analyte	10	4.33	9586.044	9586.044	10795.81	88.79
37	1701814-04 CH-AT-1FB110-1117 0.24932	171207G3_	Analyte	10	4.33	9955.102	9955.102	10795.81	92.21
38	1701814-05 CH-AT-1RW111-1117 0.24827	171207G3_	Analyte	10	4.33	9818.604	9818.604	10795.81	90.95
39	1701814-06 CH-AT-1FB111-1117 0.2532	171207G3_	Analyte	10	4.33	9058.298	9058.298	10795.81	83.91
40	1701814-07 CH-AT-1RW112-1117 0.25353	171207G3_	Analyte	10	4.33	9091.133	9091.133	10795.81	84.21
41	1701814-08 CH-AT-1FB112-1117 0.262	171207G3_	Analyte	10	4.33	9752.02	9752.02	10795.81	90.33
42	1701814-09 CH-AT-1RW107-1117 0.26323	171207G3_	Analyte	10	4.33	9503.17	9503.17	10795.81	88.03
43	1701814-10 CH-AT-1FB107-1117 0.26258	171207G3_	Analyte	10	4.33	9725.189	9725.189	10795.81	90.08
44	1701814-11 CH-AT-1RW108-1117 0.25898	171207G3_	Analyte	10	4.32	9870.169	9870.169	10795.81	91.43
45	1701814-12 CH-AT-1FB108-1117 0.25727	171207G3_	Analyte	10	4.33	8884.244	8884.244	10795.81	82.29
46	IPA	171207G3_	Analyte	10	4.32	6.233	6.233	10795.81	0.06
47	B7L0016-BS1 LFB 0.25	171207G3_	Analyte	10	4.33	9704.101	9704.101	10795.81	89.89
48	B7L0016-BSD1 LFBD 0.25	171207G3_	Analyte	10	4.33	9055.565	9055.565	10795.81	83.88
49	B7L0016-BLK1 LRB 0.25	171207G3_	Analyte	10	4.32	9162.609	9162.609	10795.81	84.87
50	1701813-01 CH-AT-2RW20-1117 0.25836	171207G3_	Analyte	10	4.32	8643.122	8643.122	10795.81	80.06
51	1701813-02 CH-AT-2FB20-1117 0.2625	171207G3_	Analyte	10	4.32	9319.82	9319.82	10795.81	86.33
52	1701813-03 CH-AT-2RW21-1117 0.25745	171207G3_	Analyte	10	4.32	9469.031	9469.031	10795.81	87.71
53	1701813-04 CH-AT-2FB21-1117 0.25393	171207G3_	Analyte	10	4.32	9719.193	9719.193	10795.81	90.03
54	1701813-05 CH-AT-2RW22-1117 0.25543	171207G3_	Analyte	10	4.32	10031.35	10031.35	10795.81	92.92
55	1701813-06 CH-AT-2FB22-1117 0.25226	171207G3_	Analyte	10	4.33	9373.374	9373.374	10795.81	86.82
56	1701813-07 CH-AT-2RW23-1117 0.25821	171207G3_	Analyte	10	4.32	9521.089	9521.089	10795.81	88.19
57	1701813-08 CH-AT-2FB23-1117 0.24936	171207G3_	Analyte	10	4.32	9222.847	9222.847	10795.81	85.43
58	IPA	171207G3_	Analyte	10				10795.81	0.00
59	ST171207G3-3 PFC CS5 537 17K3029	171207G3_	Analyte	10	4.32	11546.32	11546.32	10795.81	106.95
60	IPA	171207G3_	Analyte	10				10795.81	0.00

Compound 7: 13C4-PFOS

ST171207G3-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
1	ST171207G3-1 PFC CS-1 537 17K3024	171207G3_Analyte	28.7	4.73	14224.38	14224.38	14224.38	100.00
2	IPA	171207G3_Analyte	28.7				14224.38	0.00
3	B7L0015-BS1 LFB 0.25	171207G3_Analyte	28.7	4.73	10082.32	10082.32	14224.38	70.88
4	B7L0015-BLK1 LRB 0.25	171207G3_Analyte	28.7	4.73	9285.92	9285.92	14224.38	65.28
5	B7L0015-MS1 LFSM 0.24696	171207G3_Analyte	28.7	4.73	10850.02	10850.02	14224.38	76.28
6	B7L0015-MSD1 LFSMD 0.25064	171207G3_Analyte	28.7	4.73	9616.275	9616.275	14224.38	67.60
7	1701807-01 CH-AT-1RW94-1117 0.24509	171207G3_Analyte	28.7	4.74	10308.69	10308.69	14224.38	72.47
8	1701807-02 CH-AT-1FB94-1117 0.24508	171207G3_Analyte	28.7	4.74	9347.48	9347.48	14224.38	65.71
9	1701807-03 CH-AT-1RW95-1117 0.25193	171207G3_Analyte	28.7	4.73	10137.02	10137.02	14224.38	71.27
10	1701807-04 CH-AT-1FB95-1117 0.25155	171207G3_Analyte	28.7	4.73	10377.24	10377.24	14224.38	72.95
11	1701807-05 CH-AT-1RW96-1117 0.24236	171207G3_Analyte	28.7	4.73	9394.615	9394.615	14224.38	66.05
12	1701807-06 CH-AT-1FB96-1117 0.24957	171207G3_Analyte	28.7	4.73	10136.2	10136.2	14224.38	71.26
13	1701807-07 CH-AT-1RW97-1117 0.24262	171207G3_Analyte	28.7	4.73	10734.53	10734.53	14224.38	75.47
14	1701807-08 CH-AT-1FB97-1117 0.24757	171207G3_Analyte	28.7	4.73	9549.839	9549.839	14224.38	67.14
15	1701826-01 CH-AT-2RW40-1217 0.24324	171207G3_Analyte	28.7	4.73	10068.19	10068.19	14224.38	70.78
16	1701826-02 CH-AT-2FB40-1217 0.24836	171207G3_Analyte	28.7	4.73	9359.739	9359.739	14224.38	65.80
17	1701826-03 CH-AT-1RW115-1217 0.23578	171207G3_Analyte	28.7	4.73	9438.006	9438.006	14224.38	66.35
18	1701826-04 CH-AT-1FB115-1217 0.25059	171207G3_Analyte	28.7	4.73	10093.32	10093.32	14224.38	70.96
19	1701826-05 CH-AT-2RW41-1217 0.2433	171207G3_Analyte	28.7	4.73	10126.32	10126.32	14224.38	71.19
20	1701826-06 CH-AT-2FB41-1217 0.23928	171207G3_Analyte	28.7	4.73	9822.364	9822.364	14224.38	69.05
21	1701826-07 CH-AT-2RW39-1217 0.2471	171207G3_Analyte	28.7	4.73	10131.71	10131.71	14224.38	71.23
22	1701826-08 CH-AT-2FB39-1217 0.25321	171207G3_Analyte	28.7	4.73	10091.7	10091.7	14224.38	70.95
23	1701826-09 CH-AT-1RW114-1217 0.23828	171207G3_Analyte	28.7	4.74	9812.958	9812.958	14224.38	68.99
24	1701826-10 CH-AT-1FB114-1217 0.25812	171207G3_Analyte	28.7	4.73	9066.185	9066.185	14224.38	63.74
25	1701826-11 CH-AT-1RW113-1217 0.25187	171207G3_Analyte	28.7	4.73	10034.41	10034.41	14224.38	70.54
26	1701826-12 CH-AT-1FB113-1217 0.252	171207G3_Analyte	28.7	4.73	9830.374	9830.374	14224.38	69.11
27	IPA	171207G3_Analyte	28.7				14224.38	0.00
28	ST171207G3-2 PFC CS3 17K3027	171207G3_Analyte	28.7	4.73	10876.77	10876.77	14224.38	76.47

ST171207G3-2 PFC CS3 17K3027

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
28	ST171207G3-2 PFC CS3 17K3027	171207G3_Analyte	28.7	4.73	10876.77	10876.77	10876.77	100.00

29	IPA	171207G3_	Analyte	28.7				10876.77	0.00
30	B7L0025-BS1 LFB 0.25	171207G3_	Analyte	28.7	4.73	9881.715	9881.715	10876.77	90.85
31	B7L0025-BLK1 LRB 0.25	171207G3_	Analyte	28.7	4.73	9023.005	9023.005	10876.77	82.96
32	B7L0025-MS1 LFSM 0.24324	171207G3_	Analyte	28.7	4.73	8871.453	8871.453	10876.77	81.56
33	B7L0025-MSD1 LFSMD 0.25571	171207G3_	Analyte	28.7	4.73	10228.98	10228.98	10876.77	94.04
34	1701814-01 CH-AT-1RW109-1117 0.24963	171207G3_	Analyte	28.7	4.73	10051.86	10051.86	10876.77	92.42
35	1701814-02 CH-AT-1FB109-1117 0.25812	171207G3_	Analyte	28.7	4.73	9997.502	9997.502	10876.77	91.92
36	1701814-03 CH-AT-1RW110-1117 0.24886	171207G3_	Analyte	28.7	4.73	9624.115	9624.115	10876.77	88.48
37	1701814-04 CH-AT-1FB110-1117 0.24932	171207G3_	Analyte	28.7	4.74	9882.266	9882.266	10876.77	90.86
38	1701814-05 CH-AT-1RW111-1117 0.24827	171207G3_	Analyte	28.7	4.73	10704.49	10704.49	10876.77	98.42
39	1701814-06 CH-AT-1FB111-1117 0.2532	171207G3_	Analyte	28.7	4.73	9627.133	9627.133	10876.77	88.51
40	1701814-07 CH-AT-1RW112-1117 0.25353	171207G3_	Analyte	28.7	4.73	10692.3	10692.3	10876.77	98.30
41	1701814-08 CH-AT-1FB112-1117 0.262	171207G3_	Analyte	28.7	4.74	9348.494	9348.494	10876.77	85.95
42	1701814-09 CH-AT-1RW107-1117 0.26323	171207G3_	Analyte	28.7	4.74	10485.2	10485.2	10876.77	96.40
43	1701814-10 CH-AT-1FB107-1117 0.26258	171207G3_	Analyte	28.7	4.73	9883.447	9883.447	10876.77	90.87
44	1701814-11 CH-AT-1RW108-1117 0.25898	171207G3_	Analyte	28.7	4.73	9600.3	9600.3	10876.77	88.26
45	1701814-12 CH-AT-1FB108-1117 0.25727	171207G3_	Analyte	28.7	4.73	10877.11	10877.11	10876.77	100.00
46	IPA	171207G3_	Analyte	28.7				10876.77	0.00
47	B7L0016-BS1 LFB 0.25	171207G3_	Analyte	28.7	4.73	9312.42	9312.42	10876.77	85.62
48	B7L0016-BSD1 LFBD 0.25	171207G3_	Analyte	28.7	4.73	9072.752	9072.752	10876.77	83.41
49	B7L0016-BLK1 LRB 0.25	171207G3_	Analyte	28.7	4.73	9805.952	9805.952	10876.77	90.16
50	1701813-01 CH-AT-2RW20-1117 0.25836	171207G3_	Analyte	28.7	4.73	9398.167	9398.167	10876.77	86.41
51	1701813-02 CH-AT-2FB20-1117 0.2625	171207G3_	Analyte	28.7	4.73	10054.08	10054.08	10876.77	92.44
52	1701813-03 CH-AT-2RW21-1117 0.25745	171207G3_	Analyte	28.7	4.73	10212.46	10212.46	10876.77	93.89
53	1701813-04 CH-AT-2FB21-1117 0.25393	171207G3_	Analyte	28.7	4.73	9620.399	9620.399	10876.77	88.45
54	1701813-05 CH-AT-2RW22-1117 0.25543	171207G3_	Analyte	28.7	4.73	9572.242	9572.242	10876.77	88.01
55	1701813-06 CH-AT-2FB22-1117 0.25226	171207G3_	Analyte	28.7	4.74	9707.207	9707.207	10876.77	89.25
56	1701813-07 CH-AT-2RW23-1117 0.25821	171207G3_	Analyte	28.7	4.73	10145.85	10145.85	10876.77	93.28
57	1701813-08 CH-AT-2FB23-1117 0.24936	171207G3_	Analyte	28.7	4.74	10387.99	10387.99	10876.77	95.51
58	IPA	171207G3_	Analyte	28.7				10876.77	0.00
59	ST171207G3-3 PFC CS5 537 17K3029	171207G3_	Analyte	28.7	4.73	10464.51	10464.51	10876.77	96.21
60	IPA	171207G3_	Analyte	28.7				10876.77	0.00

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-2.qld

Last Altered: Friday, December 08, 2017 09:53:27 Pacific Standard Time

Printed: Friday, December 08, 2017 09:57:55 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_2, Date: 07-Dec-2017, Time: 14:24:26, ID: ST171207G3-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	6.87e2	1.44e4		1.0000	3.03	3.02	1.37	1.42	80.1
2	2 PFOA	413 > 368.7	2.14e3	1.30e4		1.0000	4.33	4.33	1.65	2.13	106.6
3	3 PFOS	499 > 79.9	1.02e3	1.44e4		1.0000	4.73	4.74	2.04	1.53	82.4
4	4 13C2-PFHxA	315 > 269.8	5.69e3	1.30e4	0.424	1.0000	3.39	3.38	4.38	10.3	103.4
5	5 13C2-PFDA	515.1 > 469.9	6.66e3	1.30e4	0.478	1.0000	4.96	4.97	5.13	10.7	107.2
6	6 13C2-PFOA	414.9 > 369.7	1.30e4	1.30e4	1.000	1.0000	4.41	4.33	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.44e4	1.44e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

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Last Altered: Friday, December 08, 2017 10:12:58 Pacific Standard Time

Printed: Friday, December 08, 2017 10:14:59 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171207G3_1	IPA	07-Dec-17	14:11:58
2	171207G3_2	ST171207G3-1 PFC CS-1 537 17K3024	07-Dec-17	14:24:26
3	171207G3_3	IPA	07-Dec-17	14:36:50
4	171207G3_4	B7L0015-BS1 LFB 0.25	07-Dec-17	14:49:20
5	171207G3_5	B7L0015-BLK1 LRB 0.25	07-Dec-17	15:01:46
6	171207G3_6	B7L0015-MS1 LFSM 0.24696	07-Dec-17	15:14:14
7	171207G3_7	B7L0015-MSD1 LFSMD 0.25064	07-Dec-17	15:26:41
8	171207G3_8	1701807-01 CH-AT-1RW94-1117 0.24509	07-Dec-17	15:39:08
9	171207G3_9	1701807-02 CH-AT-1FB94-1117 0.24508	07-Dec-17	15:51:37
10	171207G3_10	1701807-03 CH-AT-1RW95-1117 0.25193	07-Dec-17	16:04:02
11	171207G3_11	1701807-04 CH-AT-1FB95-1117 0.25155	07-Dec-17	16:16:26
12	171207G3_12	1701807-05 CH-AT-1RW96-1117 0.24236	07-Dec-17	16:29:04
13	171207G3_13	1701807-06 CH-AT-1FB96-1117 0.24957	07-Dec-17	16:41:30
14	171207G3_14	1701807-07 CH-AT-1RW97-1117 0.24262	07-Dec-17	16:53:56
15	171207G3_15	1701807-08 CH-AT-1FB97-1117 0.24757	07-Dec-17	17:06:26
16	171207G3_16	1701826-01 CH-AT-2RW40-1217 0.24324	07-Dec-17	17:18:54
17	171207G3_17	1701826-02 CH-AT-2FB40-1217 0.24836	07-Dec-17	17:31:22
18	171207G3_18	1701826-03 CH-AT-1RW115-1217 0.23578	07-Dec-17	17:43:46
19	171207G3_19	1701826-04 CH-AT-1FB115-1217 0.25059	07-Dec-17	17:56:10
20	171207G3_20	1701826-05 CH-AT-2RW41-1217 0.2433	07-Dec-17	18:08:35
21	171207G3_21	1701826-06 CH-AT-2FB41-1217 0.23928	07-Dec-17	18:21:01
22	171207G3_22	1701826-07 CH-AT-2RW39-1217 0.2471	07-Dec-17	18:33:26
23	171207G3_23	1701826-08 CH-AT-2FB39-1217 0.25321	07-Dec-17	18:45:53
24	171207G3_24	1701826-09 CH-AT-1RW114-1217 0.23828	07-Dec-17	18:58:20
25	171207G3_25	1701826-10 CH-AT-1FB114-1217 0.25812	07-Dec-17	19:10:48
26	171207G3_26	1701826-11 CH-AT-1RW113-1217 0.25187	07-Dec-17	19:23:11
27	171207G3_27	1701826-12 CH-AT-1FB113-1217 0.252	07-Dec-17	19:35:34
28	171207G3_28	IPA	07-Dec-17	19:47:59
29	171207G3_29	ST171207G3-2 PFC CS3 17K3027	07-Dec-17	20:00:25
30	171207G3_30	IPA	07-Dec-17	20:12:51
31	171207G3_31	B7L0025-BS1 LFB 0.25	07-Dec-17	20:25:20

Dataset: Untitled

Last Altered: Friday, December 08, 2017 10:12:58 Pacific Standard Time

Printed: Friday, December 08, 2017 10:14:59 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171207G3_32	B7L0025-BLK1 LRB 0.25	07-Dec-17	20:37:45
33	171207G3_33	B7L0025-MS1 LFSM 0.24324	07-Dec-17	20:50:11
34	171207G3_34	B7L0025-MSD1 LFSMD 0.25571	07-Dec-17	21:02:37
35	171207G3_35	1701814-01 CH-AT-1RW109-1117 0.24963	07-Dec-17	21:15:04
36	171207G3_36	1701814-02 CH-AT-1FB109-1117 0.25812	07-Dec-17	21:27:30
37	171207G3_37	1701814-03 CH-AT-1RW110-1117 0.24886	07-Dec-17	21:39:54
38	171207G3_38	1701814-04 CH-AT-1FB110-1117 0.24932	07-Dec-17	21:52:18
39	171207G3_39	1701814-05 CH-AT-1RW111-1117 0.24827	07-Dec-17	22:04:43
40	171207G3_40	1701814-06 CH-AT-1FB111-1117 0.2532	07-Dec-17	22:17:09
41	171207G3_41	1701814-07 CH-AT-1RW112-1117 0.25353	07-Dec-17	22:29:34
42	171207G3_42	1701814-08 CH-AT-1FB112-1117 0.262	07-Dec-17	22:41:59
43	171207G3_43	1701814-09 CH-AT-1RW107-1117 0.26323	07-Dec-17	22:54:26
44	171207G3_44	1701814-10 CH-AT-1FB107-1117 0.26258	07-Dec-17	23:06:54
45	171207G3_45	1701814-11 CH-AT-1RW108-1117 0.25898	07-Dec-17	23:19:18
46	171207G3_46	1701814-12 CH-AT-1FB108-1117 0.25727	07-Dec-17	23:31:42
47	171207G3_47	IPA	07-Dec-17	23:44:07
48	171207G3_48	B7L0016-BS1 LFB 0.25	07-Dec-17	23:56:35
49	171207G3_49	B7L0016-BSD1 LFB 0.25	08-Dec-17	00:09:00
50	171207G3_50	B7L0016-BLK1 LRB 0.25	08-Dec-17	00:21:26
51	171207G3_51	1701813-01 CH-AT-2RW20-1117 0.25836	08-Dec-17	00:33:52
52	171207G3_52	1701813-02 CH-AT-2FB20-1117 0.2625	08-Dec-17	00:46:19
53	171207G3_53	1701813-03 CH-AT-2RW21-1117 0.25745	08-Dec-17	00:58:45
54	171207G3_54	1701813-04 CH-AT-2FB21-1117 0.25393	08-Dec-17	01:11:11
55	171207G3_55	1701813-05 CH-AT-2RW22-1117 0.25543	08-Dec-17	01:23:39
56	171207G3_59	1701813-06 CH-AT-2FB22-1117 0.25226	08-Dec-17	01:36:08
57	171207G3_60	1701813-07 CH-AT-2RW23-1117 0.25821	08-Dec-17	01:48:36
58	171207G3_61	1701813-08 CH-AT-2FB23-1117 0.24936	08-Dec-17	02:01:00
59	171207G3_56	IPA	08-Dec-17	02:13:25
60	171207G3_57	ST171207G3-3 PFC CS5 537 17K3029	08-Dec-17	02:26:08
61	171207G3_58	IPA	08-Dec-17	02:38:38

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-2.qld

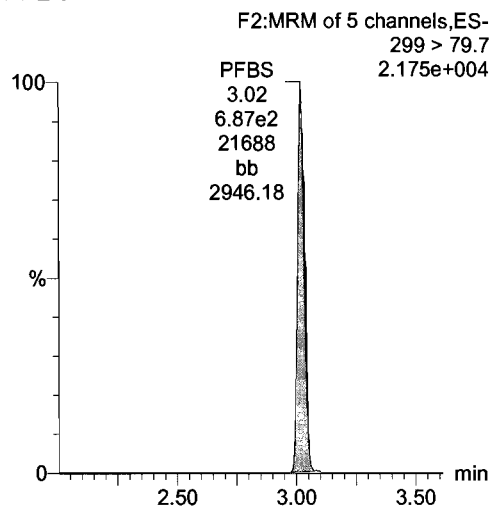
Last Altered: Friday, December 08, 2017 09:53:27 Pacific Standard Time

Printed: Friday, December 08, 2017 09:57:55 Pacific Standard Time

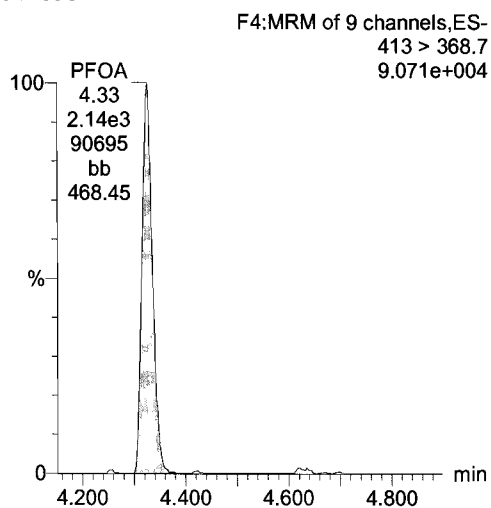
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_2, Date: 07-Dec-2017, Time: 14:24:26, ID: ST171207G3-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

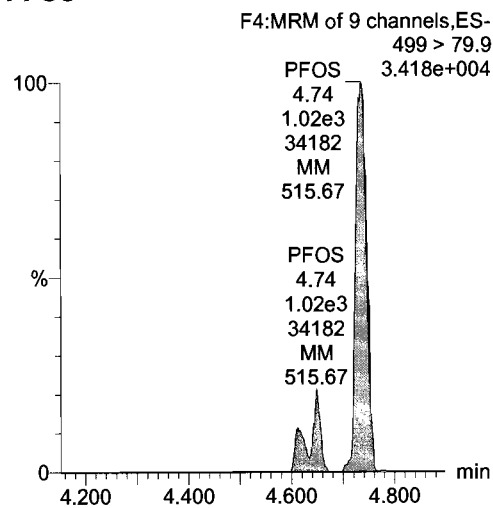
PFBS



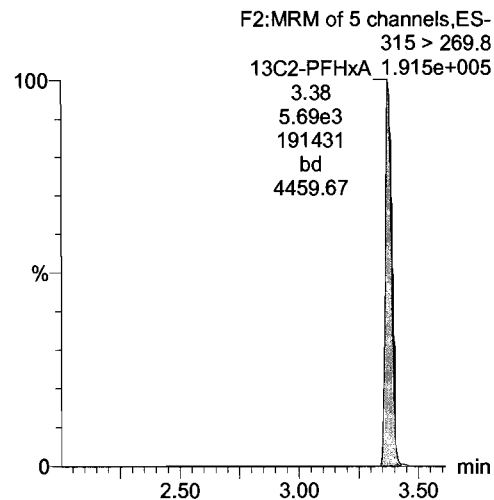
PFOA



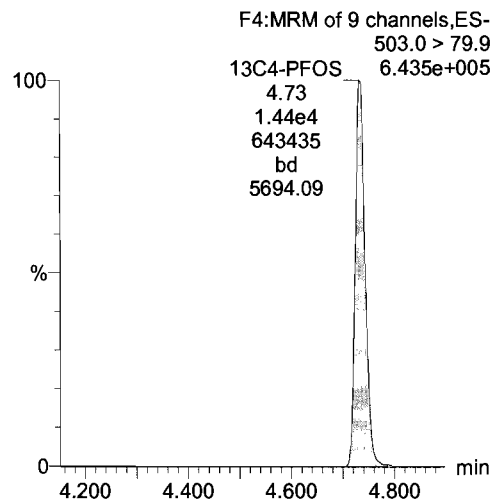
PFOS



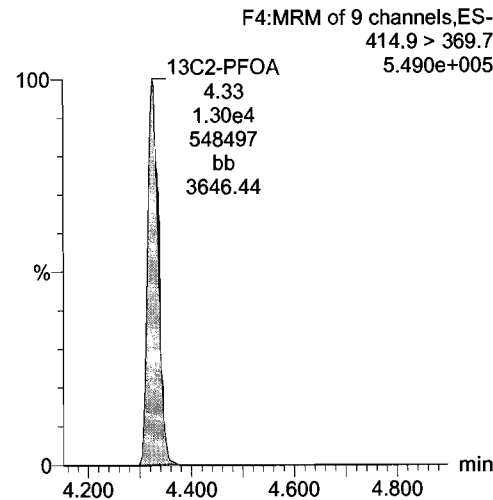
13C2-PFHxA



13C4-PFOS



13C2-PFOA



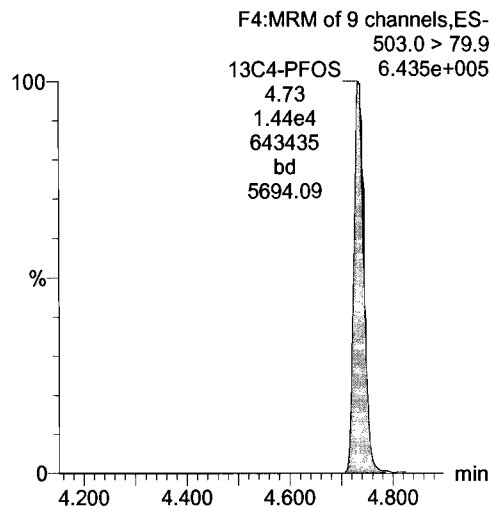
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Last Altered: Friday, December 08, 2017 09:53:27 Pacific Standard Time

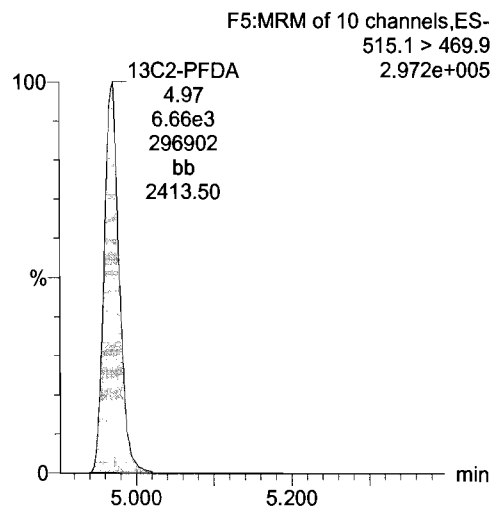
Printed: Friday, December 08, 2017 09:57:55 Pacific Standard Time

Name: 171207G3\_2, Date: 07-Dec-2017, Time: 14:24:26, ID: ST171207G3-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-29.qld

Last Altered: Friday, December 08, 2017 09:58:42 Pacific Standard Time

Printed: Friday, December 08, 2017 09:58:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_29, Date: 07-Dec-2017, Time: 20:00:25, ID: ST171207G3-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.43e4	1.09e4		1.0000	3.03	3.01	37.8	44.9	101.6
2	2 PFOA	413 > 368.7	4.41e4	1.08e4		1.0000	4.33	4.33	40.9	53.1	106.1
3	3 PFOS	499 > 79.9	2.06e4	1.09e4		1.0000	4.73	4.74	54.4	45.8	99.1
4	4 13C2-PFHxA	315 > 269.8	4.53e3	1.08e4	0.424	1.0000	3.39	3.38	4.19	9.90	99.0
5	5 13C2-PFDA	515.1 > 469.9	5.40e3	1.08e4	0.478	1.0000	4.96	4.97	5.00	10.5	104.6
6	6 13C2-PFOA	414.9 > 369.7	1.08e4	1.08e4	1.000	1.0000	4.41	4.33	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.09e4	1.09e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

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Last Altered: Friday, December 08, 2017 10:12:58 Pacific Standard Time

Printed: Friday, December 08, 2017 10:14:59 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171207G3_1	IPA	07-Dec-17	14:11:58
2	171207G3_2	ST171207G3-1 PFC CS-1 537 17K3024	07-Dec-17	14:24:26
3	171207G3_3	IPA	07-Dec-17	14:36:50
4	171207G3_4	B7L0015-BS1 LFB 0.25	07-Dec-17	14:49:20
5	171207G3_5	B7L0015-BLK1 LRB 0.25	07-Dec-17	15:01:46
6	171207G3_6	B7L0015-MS1 LFSM 0.24696	07-Dec-17	15:14:14
7	171207G3_7	B7L0015-MSD1 LFSMD 0.25064	07-Dec-17	15:26:41
8	171207G3_8	1701807-01 CH-AT-1RW94-1117 0.24509	07-Dec-17	15:39:08
9	171207G3_9	1701807-02 CH-AT-1FB94-1117 0.24508	07-Dec-17	15:51:37
10	171207G3_10	1701807-03 CH-AT-1RW95-1117 0.25193	07-Dec-17	16:04:02
11	171207G3_11	1701807-04 CH-AT-1FB95-1117 0.25155	07-Dec-17	16:16:26
12	171207G3_12	1701807-05 CH-AT-1RW96-1117 0.24236	07-Dec-17	16:29:04
13	171207G3_13	1701807-06 CH-AT-1FB96-1117 0.24957	07-Dec-17	16:41:30
14	171207G3_14	1701807-07 CH-AT-1RW97-1117 0.24262	07-Dec-17	16:53:56
15	171207G3_15	1701807-08 CH-AT-1FB97-1117 0.24757	07-Dec-17	17:06:26
16	171207G3_16	1701826-01 CH-AT-2RW40-1217 0.24324	07-Dec-17	17:18:54
17	171207G3_17	1701826-02 CH-AT-2FB40-1217 0.24836	07-Dec-17	17:31:22
18	171207G3_18	1701826-03 CH-AT-1RW115-1217 0.23578	07-Dec-17	17:43:46
19	171207G3_19	1701826-04 CH-AT-1FB115-1217 0.25059	07-Dec-17	17:56:10
20	171207G3_20	1701826-05 CH-AT-2RW41-1217 0.2433	07-Dec-17	18:08:35
21	171207G3_21	1701826-06 CH-AT-2FB41-1217 0.23928	07-Dec-17	18:21:01
22	171207G3_22	1701826-07 CH-AT-2RW39-1217 0.2471	07-Dec-17	18:33:26
23	171207G3_23	1701826-08 CH-AT-2FB39-1217 0.25321	07-Dec-17	18:45:53
24	171207G3_24	1701826-09 CH-AT-1RW114-1217 0.23828	07-Dec-17	18:58:20
25	171207G3_25	1701826-10 CH-AT-1FB114-1217 0.25812	07-Dec-17	19:10:48
26	171207G3_26	1701826-11 CH-AT-1RW113-1217 0.25187	07-Dec-17	19:23:11
27	171207G3_27	1701826-12 CH-AT-1FB113-1217 0.252	07-Dec-17	19:35:34
28	171207G3_28	IPA	07-Dec-17	19:47:59
29	171207G3_29	ST171207G3-2 PFC CS3 17K3027	07-Dec-17	20:00:25
30	171207G3_30	IPA	07-Dec-17	20:12:51
31	171207G3_31	B7L0025-BS1 LFB 0.25	07-Dec-17	20:25:20

Dataset: Untitled

Last Altered: Friday, December 08, 2017 10:12:58 Pacific Standard Time

Printed: Friday, December 08, 2017 10:14:59 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171207G3_32	B7L0025-BLK1 LRB 0.25	07-Dec-17	20:37:45
33	171207G3_33	B7L0025-MS1 LFSM 0.24324	07-Dec-17	20:50:11
34	171207G3_34	B7L0025-MSD1 LFSMD 0.25571	07-Dec-17	21:02:37
35	171207G3_35	1701814-01 CH-AT-1RW109-1117 0.24963	07-Dec-17	21:15:04
36	171207G3_36	1701814-02 CH-AT-1FB109-1117 0.25812	07-Dec-17	21:27:30
37	171207G3_37	1701814-03 CH-AT-1RW110-1117 0.24886	07-Dec-17	21:39:54
38	171207G3_38	1701814-04 CH-AT-1FB110-1117 0.24932	07-Dec-17	21:52:18
39	171207G3_39	1701814-05 CH-AT-1RW111-1117 0.24827	07-Dec-17	22:04:43
40	171207G3_40	1701814-06 CH-AT-1FB111-1117 0.2532	07-Dec-17	22:17:09
41	171207G3_41	1701814-07 CH-AT-1RW112-1117 0.25353	07-Dec-17	22:29:34
42	171207G3_42	1701814-08 CH-AT-1FB112-1117 0.262	07-Dec-17	22:41:59
43	171207G3_43	1701814-09 CH-AT-1RW107-1117 0.26323	07-Dec-17	22:54:26
44	171207G3_44	1701814-10 CH-AT-1FB107-1117 0.26258	07-Dec-17	23:06:54
45	171207G3_45	1701814-11 CH-AT-1RW108-1117 0.25898	07-Dec-17	23:19:18
46	171207G3_46	1701814-12 CH-AT-1FB108-1117 0.25727	07-Dec-17	23:31:42
47	171207G3_47	IPA	07-Dec-17	23:44:07
48	171207G3_48	B7L0016-BS1 LFB 0.25	07-Dec-17	23:56:35
49	171207G3_49	B7L0016-BSD1 LFB 0.25	08-Dec-17	00:09:00
50	171207G3_50	B7L0016-BLK1 LRB 0.25	08-Dec-17	00:21:26
51	171207G3_51	1701813-01 CH-AT-2RW20-1117 0.25836	08-Dec-17	00:33:52
52	171207G3_52	1701813-02 CH-AT-2FB20-1117 0.2625	08-Dec-17	00:46:19
53	171207G3_53	1701813-03 CH-AT-2RW21-1117 0.25745	08-Dec-17	00:58:45
54	171207G3_54	1701813-04 CH-AT-2FB21-1117 0.25393	08-Dec-17	01:11:11
55	171207G3_55	1701813-05 CH-AT-2RW22-1117 0.25543	08-Dec-17	01:23:39
56	171207G3_59	1701813-06 CH-AT-2FB22-1117 0.25226	08-Dec-17	01:36:08
57	171207G3_60	1701813-07 CH-AT-2RW23-1117 0.25821	08-Dec-17	01:48:36
58	171207G3_61	1701813-08 CH-AT-2FB23-1117 0.24936	08-Dec-17	02:01:00
59	171207G3_56	IPA	08-Dec-17	02:13:25
60	171207G3_57	ST171207G3-3 PFC CS5 537 17K3029	08-Dec-17	02:26:08
61	171207G3_58	IPA	08-Dec-17	02:38:38



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-29.qld

Last Altered: Friday, December 08, 2017 09:58:42 Pacific Standard Time

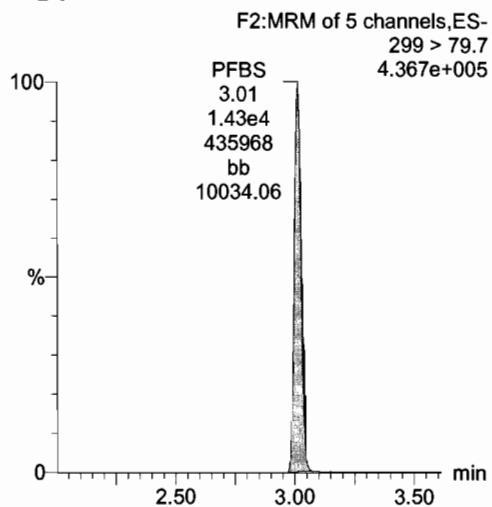
Printed: Friday, December 08, 2017 09:58:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

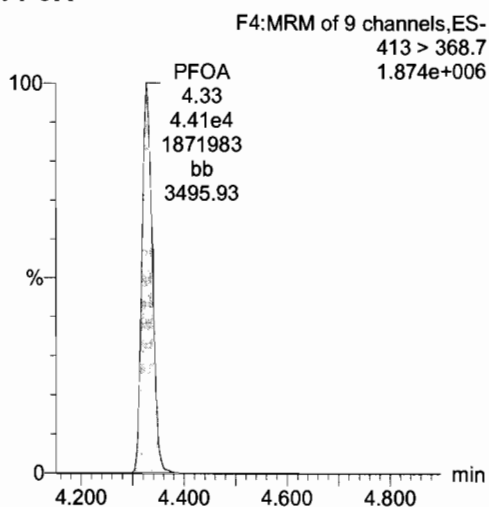
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_29, Date: 07-Dec-2017, Time: 20:00:25, ID: ST171207G3-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

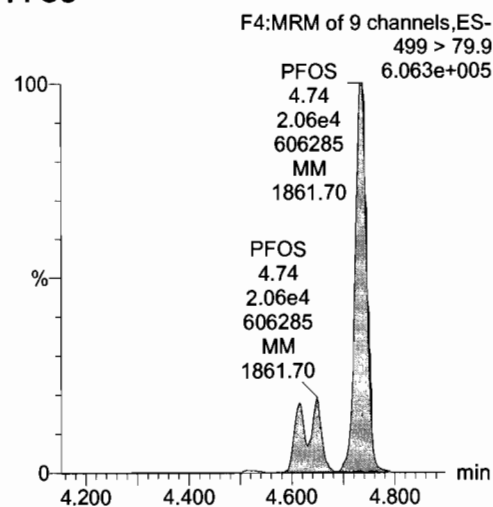
PFBS



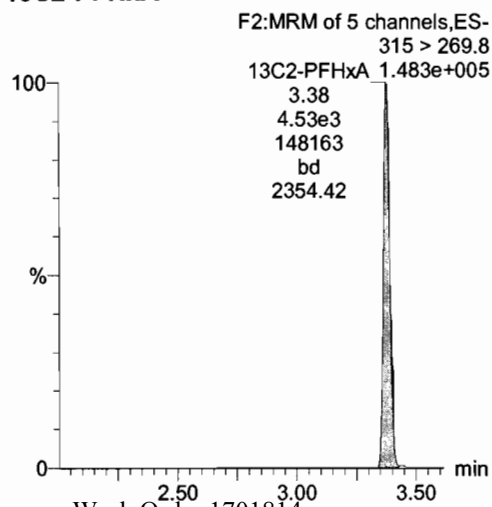
PFOA



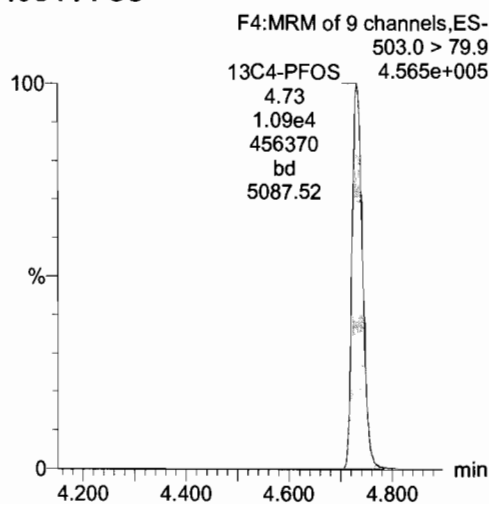
PFOS



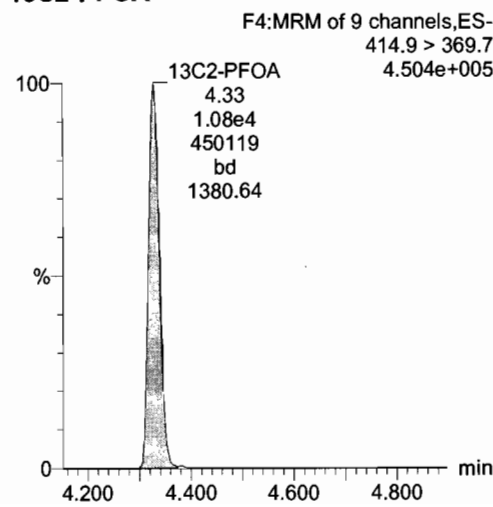
13C2-PFHxA



13C4-PFOS



13C2-PFOA



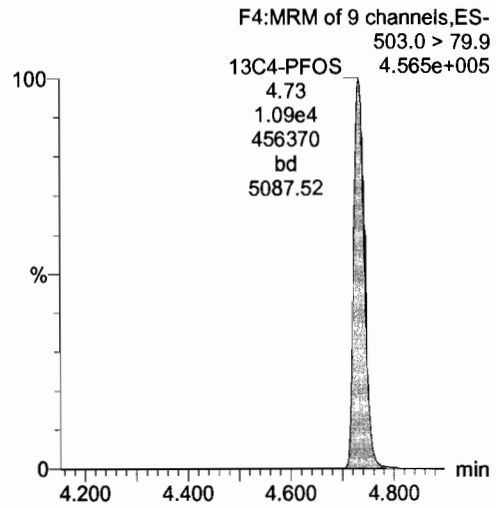
Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-29.qld

Last Altered: Friday, December 08, 2017 09:58:42 Pacific Standard Time

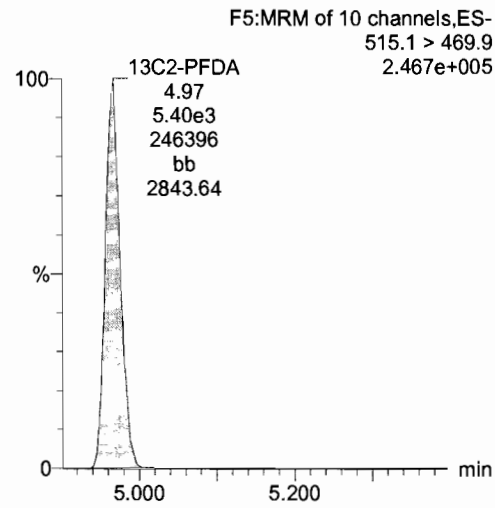
Printed: Friday, December 08, 2017 09:58:54 Pacific Standard Time

Name: 171207G3\_29, Date: 07-Dec-2017, Time: 20:00:25, ID: ST171207G3-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-57.qld

Last Altered: Friday, December 08, 2017 10:00:14 Pacific Standard Time

Printed: Friday, December 08, 2017 10:00:55 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

(A) Above limit criteria

Name: 171207G3\_57, Date: 08-Dec-2017, Time: 02:26:08, ID: ST171207G3-3 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp	Conc.	%Rec
1	1 PFBS	299 > 79.7	2.80e4	1.05e4		1.0000	3.03	3.02	76.5	126	(A) 143.1
2	2 PFOA	413 > 368.7	8.79e4	1.15e4		1.0000	4.32	4.32	76.1	99.2	99.2
3	3 PFOS	499 > 79.9	4.41e4	1.05e4		1.0000	4.73	4.73	120	137	(A) 148.8
4	4 13C2-PFHxA	315 > 269.8	4.97e3	1.15e4	0.424	1.0000	3.38	3.38	4.30	10.1	101.5
5	5 13C2-PFDA	515.1 > 469.9	4.99e3	1.15e4	0.478	1.0000	4.95	4.97	4.32	9.03	90.3
6	6 13C2-PFOA	414.9 > 369.7	1.15e4	1.15e4	1.000	1.0000	4.41	4.32	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	1.0000	4.81	4.73	28.7	28.7	100.0

70-130

GM  
12/01/17  
JWA.  
12/08/2017

Dataset: Untitled

Last Altered: Friday, December 08, 2017 10:12:58 Pacific Standard Time

Printed: Friday, December 08, 2017 10:14:59 Pacific Standard Time

Method: U:\G1.PROMethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171207G3_1	IPA	07-Dec-17	14:11:58
2	171207G3_2	ST171207G3-1 PFC CS-1 537 17K3024	07-Dec-17	14:24:26
3	171207G3_3	IPA	07-Dec-17	14:36:50
4	171207G3_4	B7L0015-BS1 LFB 0.25	07-Dec-17	14:49:20
5	171207G3_5	B7L0015-BLK1 LRB 0.25	07-Dec-17	15:01:46
6	171207G3_6	B7L0015-MS1 LFSM 0.24696	07-Dec-17	15:14:14
7	171207G3_7	B7L0015-MSD1 LFSMD 0.25064	07-Dec-17	15:26:41
8	171207G3_8	1701807-01 CH-AT-1RW94-1117 0.24509	07-Dec-17	15:39:08
9	171207G3_9	1701807-02 CH-AT-1FB94-1117 0.24508	07-Dec-17	15:51:37
10	171207G3_10	1701807-03 CH-AT-1RW95-1117 0.25193	07-Dec-17	16:04:02
11	171207G3_11	1701807-04 CH-AT-1FB95-1117 0.25155	07-Dec-17	16:16:26
12	171207G3_12	1701807-05 CH-AT-1RW96-1117 0.24236	07-Dec-17	16:29:04
13	171207G3_13	1701807-06 CH-AT-1FB96-1117 0.24957	07-Dec-17	16:41:30
14	171207G3_14	1701807-07 CH-AT-1RW97-1117 0.24262	07-Dec-17	16:53:56
15	171207G3_15	1701807-08 CH-AT-1FB97-1117 0.24757	07-Dec-17	17:06:26
16	171207G3_16	1701826-01 CH-AT-2RW40-1217 0.24324	07-Dec-17	17:18:54
17	171207G3_17	1701826-02 CH-AT-2FB40-1217 0.24836	07-Dec-17	17:31:22
18	171207G3_18	1701826-03 CH-AT-1RW115-1217 0.23578	07-Dec-17	17:43:46
19	171207G3_19	1701826-04 CH-AT-1FB115-1217 0.25059	07-Dec-17	17:56:10
20	171207G3_20	1701826-05 CH-AT-2RW41-1217 0.2433	07-Dec-17	18:08:35
21	171207G3_21	1701826-06 CH-AT-2FB41-1217 0.23928	07-Dec-17	18:21:01
22	171207G3_22	1701826-07 CH-AT-2RW39-1217 0.2471	07-Dec-17	18:33:26
23	171207G3_23	1701826-08 CH-AT-2FB39-1217 0.25321	07-Dec-17	18:45:53
24	171207G3_24	1701826-09 CH-AT-1RW114-1217 0.23828	07-Dec-17	18:58:20
25	171207G3_25	1701826-10 CH-AT-1FB114-1217 0.25812	07-Dec-17	19:10:48
26	171207G3_26	1701826-11 CH-AT-1RW113-1217 0.25187	07-Dec-17	19:23:11
27	171207G3_27	1701826-12 CH-AT-1FB113-1217 0.252	07-Dec-17	19:35:34
28	171207G3_28	IPA	07-Dec-17	19:47:59
29	171207G3_29	ST171207G3-2 PFC CS3 17K3027	07-Dec-17	20:00:25
30	171207G3_30	IPA	07-Dec-17	20:12:51
31	171207G3_31	B7L0025-BS1 LFB 0.25	07-Dec-17	20:25:20

Dataset: Untitled

Last Altered: Friday, December 08, 2017 10:12:58 Pacific Standard Time

Printed: Friday, December 08, 2017 10:14:59 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171207G3_32	B7L0025-BLK1 LRB 0.25	07-Dec-17	20:37:45
33	171207G3_33	B7L0025-MS1 LFSM 0.24324	07-Dec-17	20:50:11
34	171207G3_34	B7L0025-MSD1 LFSMD 0.25571	07-Dec-17	21:02:37
35	171207G3_35	1701814-01 CH-AT-1RW109-1117 0.24963	07-Dec-17	21:15:04
36	171207G3_36	1701814-02 CH-AT-1FB109-1117 0.25812	07-Dec-17	21:27:30
37	171207G3_37	1701814-03 CH-AT-1RW110-1117 0.24886	07-Dec-17	21:39:54
38	171207G3_38	1701814-04 CH-AT-1FB110-1117 0.24932	07-Dec-17	21:52:18
39	171207G3_39	1701814-05 CH-AT-1RW111-1117 0.24827	07-Dec-17	22:04:43
40	171207G3_40	1701814-06 CH-AT-1FB111-1117 0.2532	07-Dec-17	22:17:09
41	171207G3_41	1701814-07 CH-AT-1RW112-1117 0.25353	07-Dec-17	22:29:34
42	171207G3_42	1701814-08 CH-AT-1FB112-1117 0.262	07-Dec-17	22:41:59
43	171207G3_43	1701814-09 CH-AT-1RW107-1117 0.26323	07-Dec-17	22:54:26
44	171207G3_44	1701814-10 CH-AT-1FB107-1117 0.26258	07-Dec-17	23:06:54
45	171207G3_45	1701814-11 CH-AT-1RW108-1117 0.25898	07-Dec-17	23:19:18
46	171207G3_46	1701814-12 CH-AT-1FB108-1117 0.25727	07-Dec-17	23:31:42
47	171207G3_47	IPA	07-Dec-17	23:44:07
48	171207G3_48	B7L0016-BS1 LFB 0.25	07-Dec-17	23:56:35
49	171207G3_49	B7L0016-BSD1 LFB 0.25	08-Dec-17	00:09:00
50	171207G3_50	B7L0016-BLK1 LRB 0.25	08-Dec-17	00:21:26
51	171207G3_51	1701813-01 CH-AT-2RW20-1117 0.25836	08-Dec-17	00:33:52
52	171207G3_52	1701813-02 CH-AT-2FB20-1117 0.2625	08-Dec-17	00:46:19
53	171207G3_53	1701813-03 CH-AT-2RW21-1117 0.25745	08-Dec-17	00:58:45
54	171207G3_54	1701813-04 CH-AT-2FB21-1117 0.25393	08-Dec-17	01:11:11
55	171207G3_55	1701813-05 CH-AT-2RW22-1117 0.25543	08-Dec-17	01:23:39
56	171207G3_59	1701813-06 CH-AT-2FB22-1117 0.25226	08-Dec-17	01:36:08
57	171207G3_60	1701813-07 CH-AT-2RW23-1117 0.25821	08-Dec-17	01:48:36
58	171207G3_61	1701813-08 CH-AT-2FB23-1117 0.24936	08-Dec-17	02:01:00
59	171207G3_56	IPA	08-Dec-17	02:13:25
60	171207G3_57	ST171207G3-3 PFC CS5 537 17K3029	08-Dec-17	02:26:08
61	171207G3_58	IPA	08-Dec-17	02:38:38

Dataset: U:\G1.PRO\Results\2017\171207G3\171207G1-57.qld

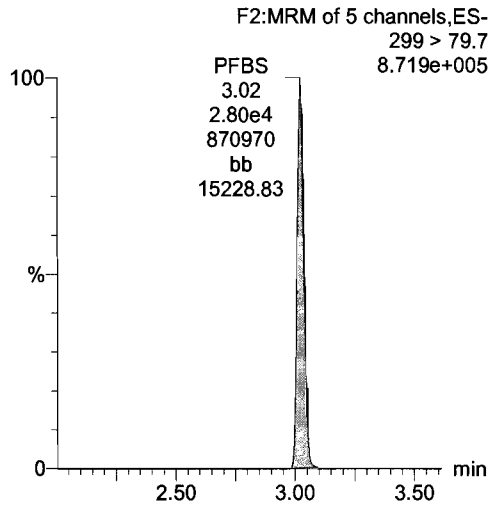
Last Altered: Friday, December 08, 2017 10:00:14 Pacific Standard Time

Printed: Friday, December 08, 2017 10:00:55 Pacific Standard Time

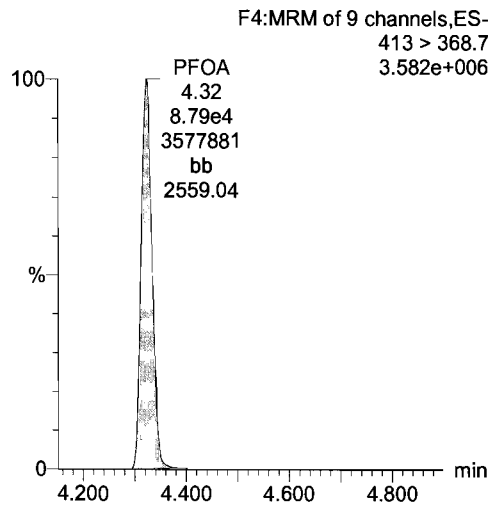
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Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

Name: 171207G3\_57, Date: 08-Dec-2017, Time: 02:26:08, ID: ST171207G3-3 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

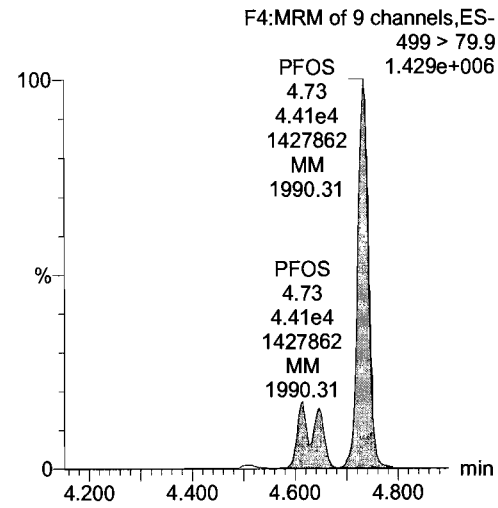
PFBS



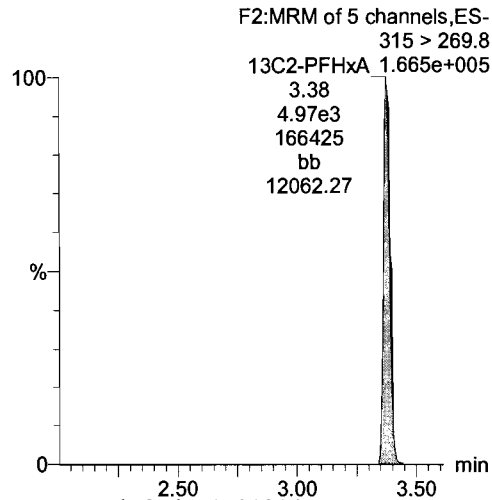
PFOA



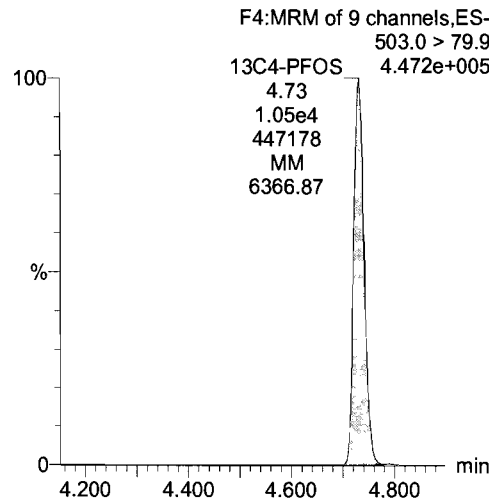
PFOS



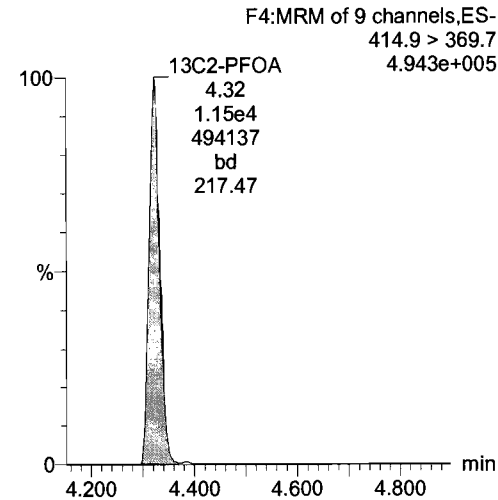
13C2-PFHxA



13C4-PFOS



13C2-PFOA



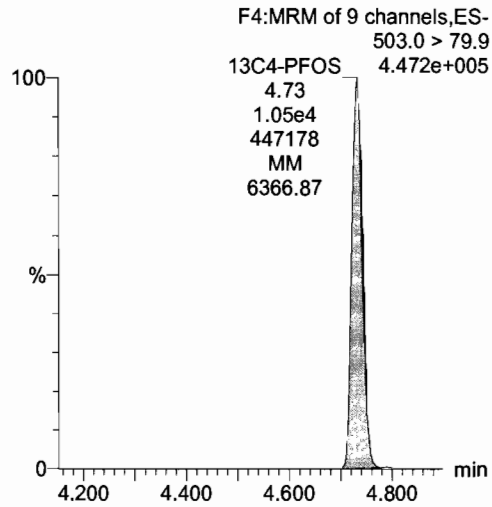
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Last Altered: Friday, December 08, 2017 10:00:14 Pacific Standard Time

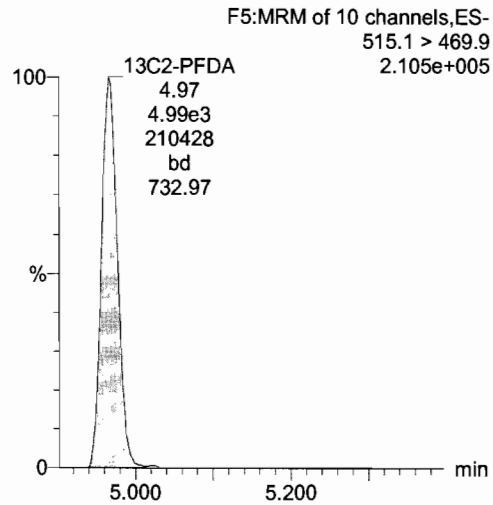
Printed: Friday, December 08, 2017 10:00:55 Pacific Standard Time

Name: 171207G3\_57, Date: 08-Dec-2017, Time: 02:26:08, ID: ST171207G3-3 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

13C4-PFOS



13C2-PFDA



**INITIAL CALIBRATION (ICAL)**  
**INCLUDING ASSOCIATED**  
**INITIAL CALIBRATION VERIFICATION (ICV)**



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

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

Method: C:\Projects\Q1.PRO\MethDB\PFAS\_L3\_DW\_1206.mdb 06 Dec 2017 11:11:24  
 Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

**Compound name: PFBS**

Coefficient of Determination:  $R^2 = 0.996569$

Calibration curve:  $-0.00290792 * x^2 + 0.97246 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

*DM*  
*12/6/17*  
*✓ JA-12/06/2017*

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

**Compound name: PFOA**

Coefficient of Determination:  $R^2 = 0.999044$

Calibration curve:  $-6.4601e-005 * x^2 + 0.773822 * x$

Response type: Internal Std ( Ref 6 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

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

Vista Analytical Laboratory

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

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

Printed: Wednesday, December 06, 2017 13:34:55 Pacific Standard Time

**Compound name: PFOS**

Coefficient of Determination: R<sup>2</sup> = 0.993252

Calibration curve: -0.00340189 \* x<sup>2</sup> + 1.34312 \* x

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

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

**Compound name: 13C2-PFHxA**

Response Factor: 0.423896

RRF SD: 0.0162686, Relative SD: 3.83787

Response type: Internal Std ( Ref 6 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

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

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

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

**Compound name: 13C2-PFDA**

Response Factor: 0.478193

RRF SD: 0.0266017, Relative SD: 5.56297

Response type: Internal Std ( Ref 6 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

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

**Compound name: 13C2-PFOA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 6 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

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

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

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

Printed: Wednesday, December 06, 2017 13:34:55 Pacific Standard Time

**Compound name: 13C4-PFOS**

Response Factor: 1

RRF SD: 7.85046e-017, Relative SD: 7.85046e-015

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

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

Dataset: Untitled

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

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

Method: C:\Projects\Q1.PRO\MethDB\PFAS\_L3\_DW\_1206.mdb 06 Dec 2017 11:11:24

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 13:27:38

Compound name: PFBS

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

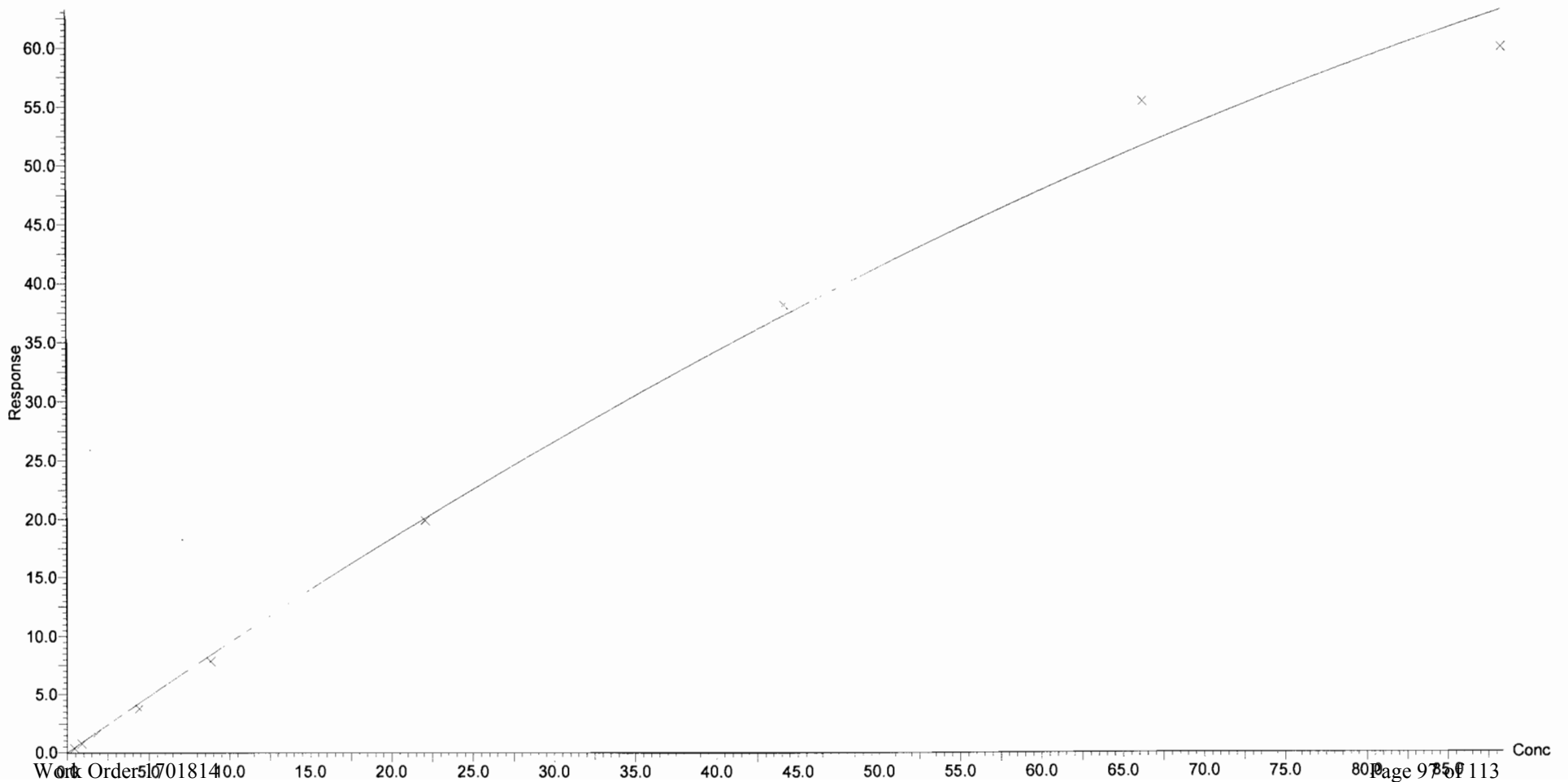
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Last Altered: Wednesday, December 06, 2017 15:37:11 Pacific Standard Time

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

Method: C:\Projects\Q1.PRO\MethDB\PFAS\_L3\_DW\_1206.mdb 06 Dec 2017 11:11:24  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

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



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

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

Printed: Wednesday, December 06, 2017 13:35:49 Pacific Standard Time

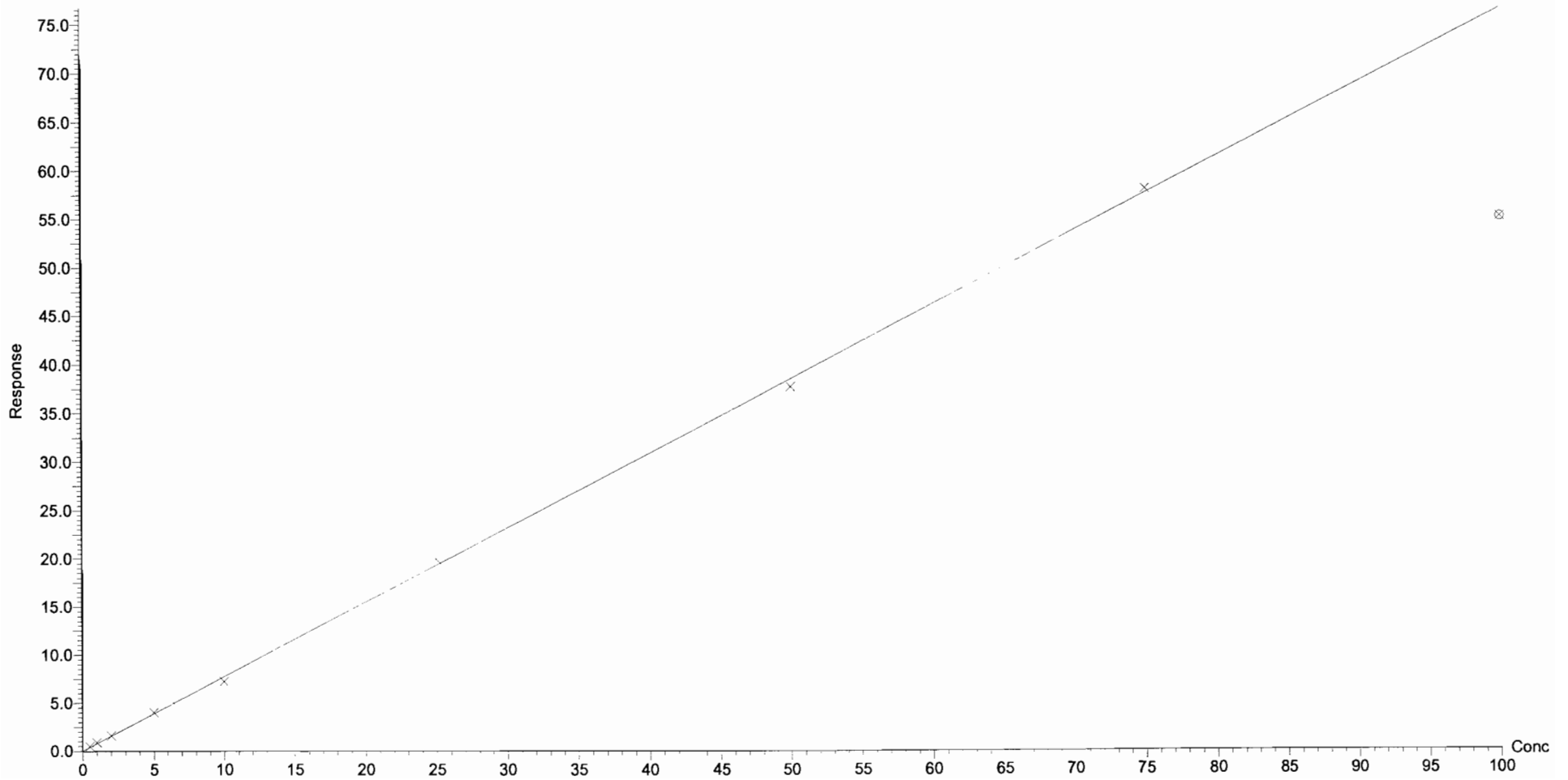
Compound name: PFOA

Coefficient of Determination:  $R^2 = 0.999044$

Calibration curve:  $-6.4601e-005 * x^2 + 0.773822 * x$

Response type: Internal Std ( Ref 6 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



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

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

Printed: Wednesday, December 06, 2017 13:35:49 Pacific Standard Time

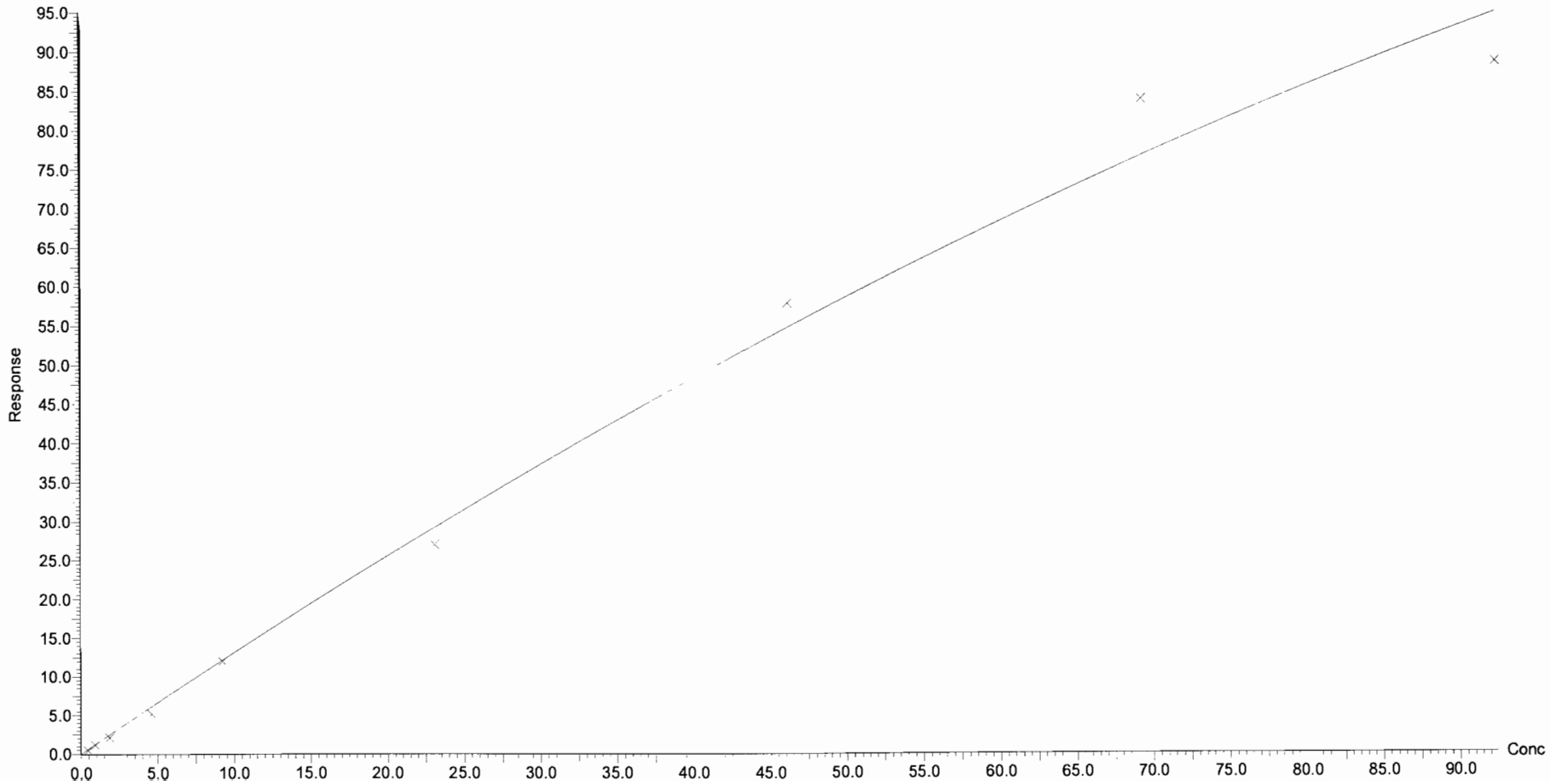
Compound name: PFOS

Coefficient of Determination:  $R^2 = 0.993252$

Calibration curve:  $-0.00340189 * x^2 + 1.34312 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

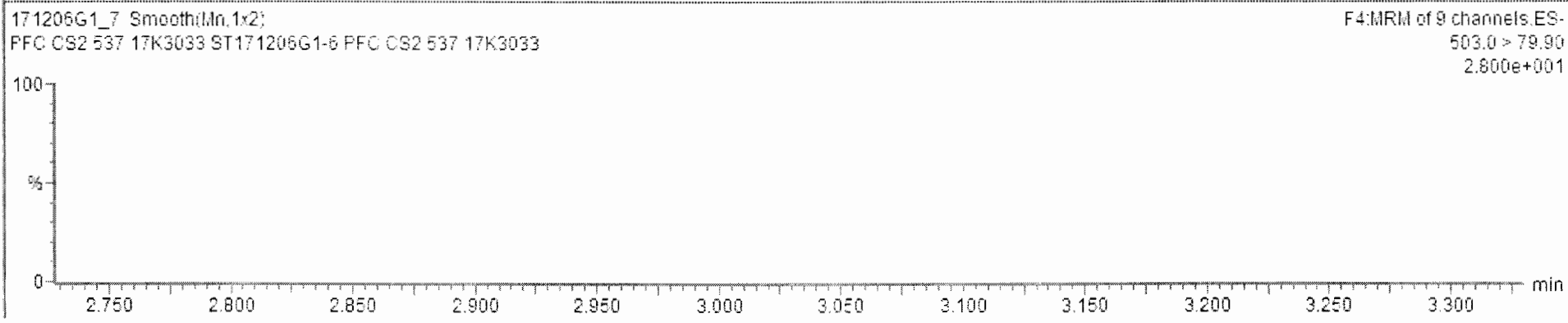
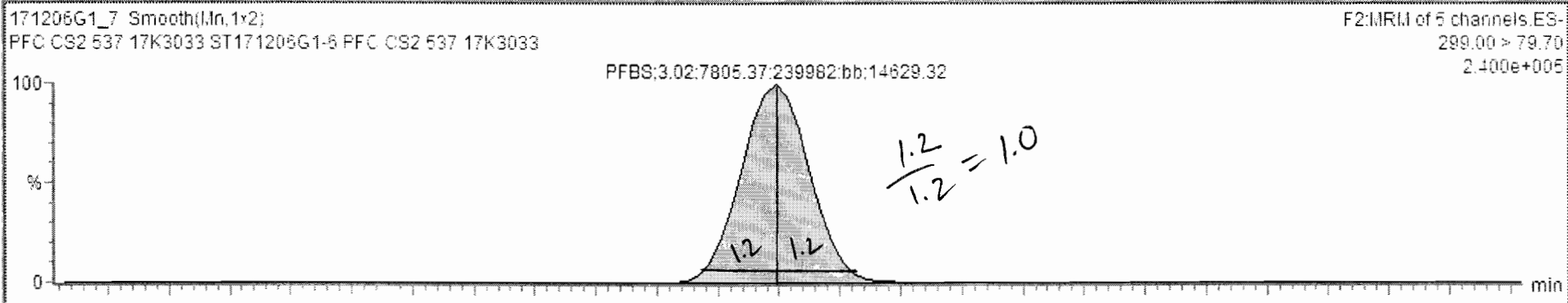






171206G1\_7 - ST171206G1-6 PFC CS2 537 17K3033 - PFC CS2 537 17K3033

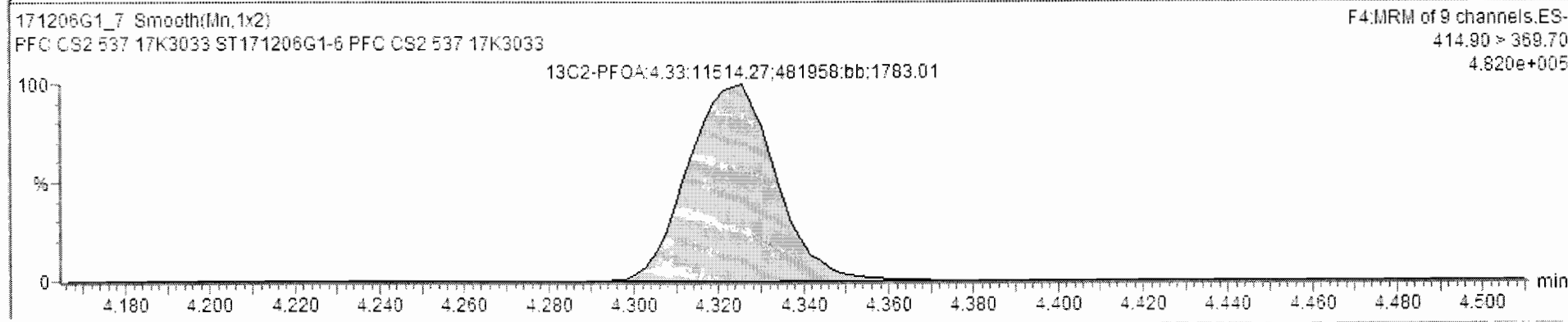
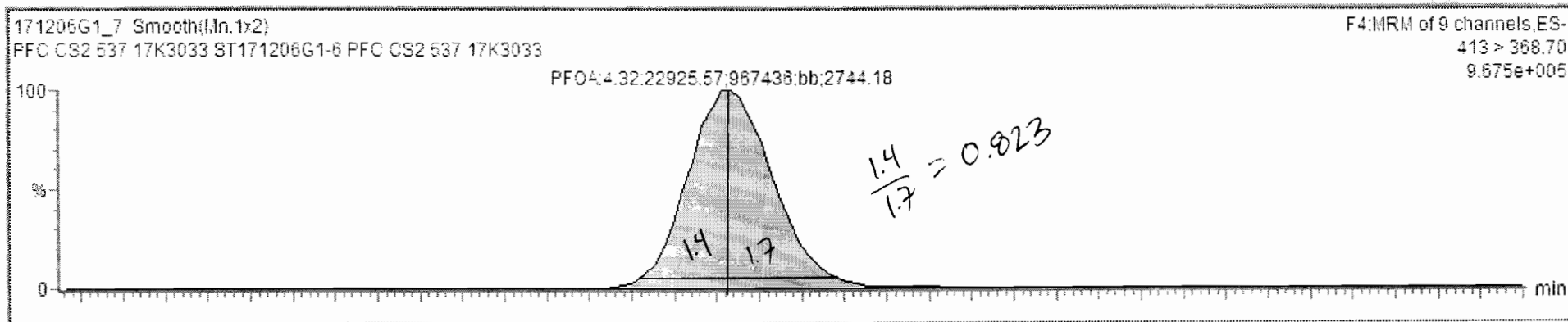
Name	Trace	Area	RRF	Wt/Vol	RT	RRT	Conc.	%Rec	DL	%RSD	Coeff. Of D...
1	PFBS	299.00 > 79...	7.61e3	1.0000	3.02	0.00	25.1	113.6	0.0000000		0.9866
2	PFOA	413 > 368.70	2.29e4	1.0000	4.32	0.00	25.8	103.1	0.0000000		0.9990
3	PFOS	499.00 > 79...	1.06e4	1.0000	4.73	0.00	21.3	92.0	0.0000000		0.9933
4	13C2-PFH...	315.0 > 269...	4.65e3	0.424	3.36	0.00	9.53	95.3	0.0000000	3.84	
5	13C2-PFDA	515.10 > 46...	5.69e3	0.478	4.97	0.00	10.3	103.3	0.0000000	5.56	
6	13C2-PFOA	414.90 > 36...	1.15e4	1.00	4.33	0.00	10.0	100.0	0.0000000	0.000	
7	13C4-PFOS	503.0 > 79.90	1.13e4	1.00	4.73	0.00	25.7	100.0	0.0000000	0.000000000000007...	





171206G1\_7 - ST171206G1-6 PFC CS2 537 17K3033 - PFC CS2 537 17K3033

Name	Trace	Area	RRF	WtVotL	RT	RRT	Conc.	%Rec	DL	%RSD	Coeff. Of D...
1	PFBS	299.00 > 79...	7.81e3	1.0000	3.02	0.00	25.1	113.6	0.0000000		0.9866
2	PFOA	413 > 368.70	2.29e4	1.0000	4.32	0.00	25.8	103.3	0.0000000		0.9990
3	PFOS	499.00 > 79...	1.06e4	1.0000	4.73	0.00	21.3	92.0	0.0000000		0.9933
4	13C2-PFH...	315.0 > 269...	4.65e3	0.424	1.0000	3.36	9.53	95.3	0.0000000	3.84	
5	13C2-PFDA	515.10 > 46...	5.69e3	0.478	1.0000	4.97	10.3	103.3	0.0000000	5.56	
6	13C2-PFOA	414.90 > 36...	1.15e4	1.00	1.0000	4.33	10.0	100.0	0.0000000	0.000	
7	13C4-PFOS	503.0 > 79.90	1.13e4	1.00	1.0000	4.73	26.7	100.0	0.0000000	0.000000000000007...	



Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171206G1-1 PFC CS-3 537 17K3022	171206G1_Standard	10	4.34	11108.17	11108.17	bb
2	ST171206G1-2 PFC CS-2 537 17K3023	171206G1_Standard	10	4.33	11418.65	11418.65	bb
3	ST171206G1-3 PFC CS-1 537 17K3024	171206G1_Standard	10	4.33	12142.07	12142.07	bb
4	ST171206G1-4 PFC CS0 537 17K3025	171206G1_Standard	10	4.32	11630.02	11630.02	bb
5	ST171206G1-5 PFC CS1 537 17K3026	171206G1_Standard	10	4.32	11552.98	11552.98	bb
6	ST171206G1-6 PFC CS2 537 17K3033	171206G1_Standard	10	4.33	11514.27	11514.27	bb
7	ST171206G1-7 PFC CS3 537 17K3027	171206G1_Standard	10	4.32	11232.53	11232.53	bb
8	ST171206G1-8 PFC CS4 537 17K3028	171206G1_Standard	10	4.32	10471.05	10471.05	bb
9	ST171206G1-9 PFC CS5 537 17K3029	171206G1_Standard	10	4.32	10884.58	10884.58	bb
					AVERAGE		RPD
					11328.26		14.77921174

Compound 7: 13C4-PFOS

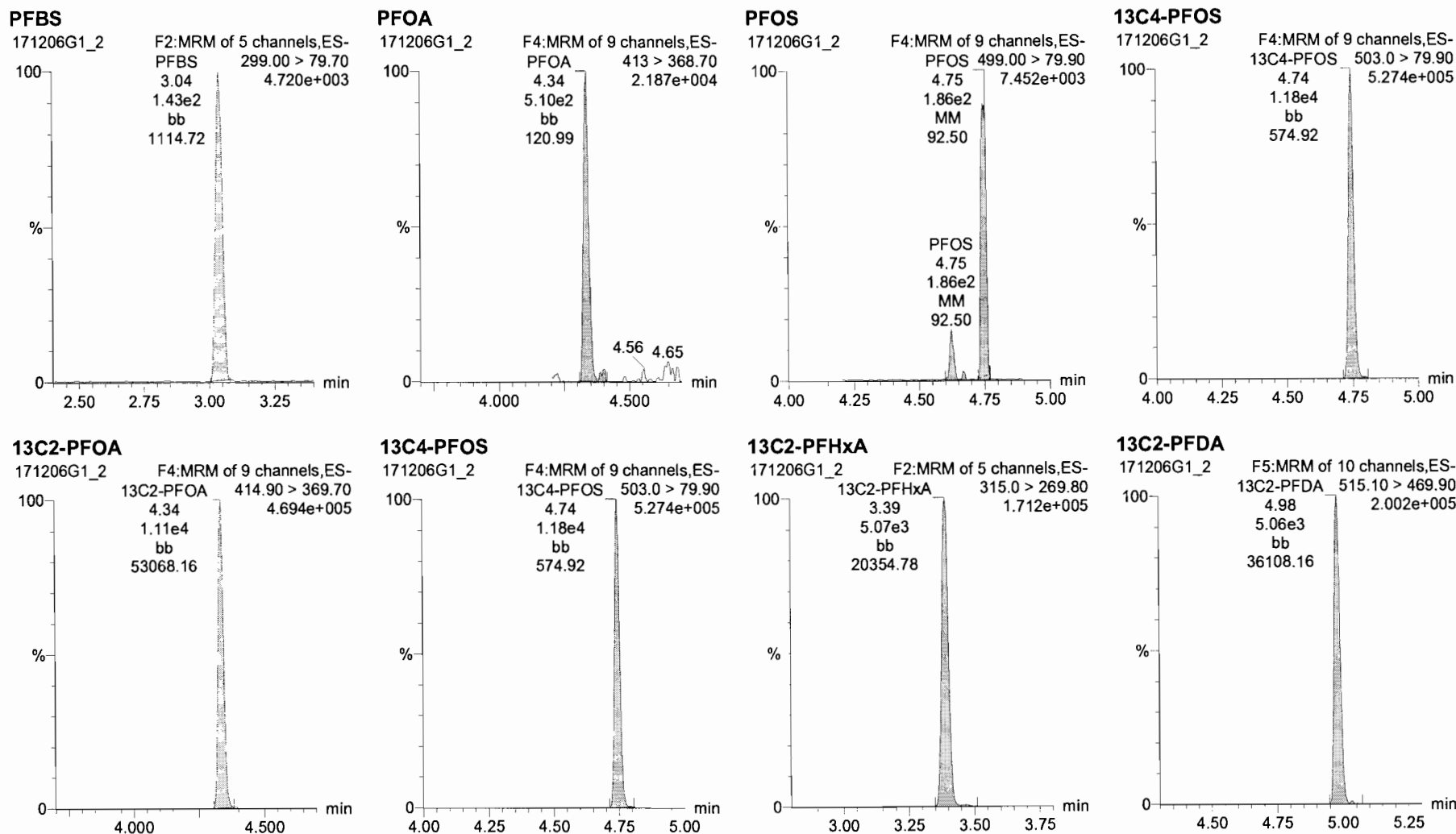
ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171206G1-1 PFC CS-3 537 17K3022	171206G1_Standard	28.7	4.74	11759.64	11759.64	bb
2	ST171206G1-2 PFC CS-2 537 17K3023	171206G1_Standard	28.7	4.74	12454.04	12454.04	bb
3	ST171206G1-3 PFC CS-1 537 17K3024	171206G1_Standard	28.7	4.74	12278.33	12278.33	bb
4	ST171206G1-4 PFC CS0 537 17K3025	171206G1_Standard	28.7	4.73	11838.26	11838.26	bb
5	ST171206G1-5 PFC CS1 537 17K3026	171206G1_Standard	28.7	4.73	10853.45	10853.45	bb
6	ST171206G1-6 PFC CS2 537 17K3033	171206G1_Standard	28.7	4.73	11267.23	11267.23	bb
7	ST171206G1-7 PFC CS3 537 17K3027	171206G1_Standard	28.7	4.74	10990.06	10990.06	bb
8	ST171206G1-8 PFC CS4 537 17K3028	171206G1_Standard	28.7	4.74	10653.78	10653.78	bb
9	ST171206G1-9 PFC CS5 537 17K3029	171206G1_Standard	28.7	4.74	10316.49	10316.49	bb
					AVERAGE		RPD
					11379.03		18.77475047

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

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS\_L3\_DW\_1206.mdb 06 Dec 2017 11:11:24  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 13:27:38

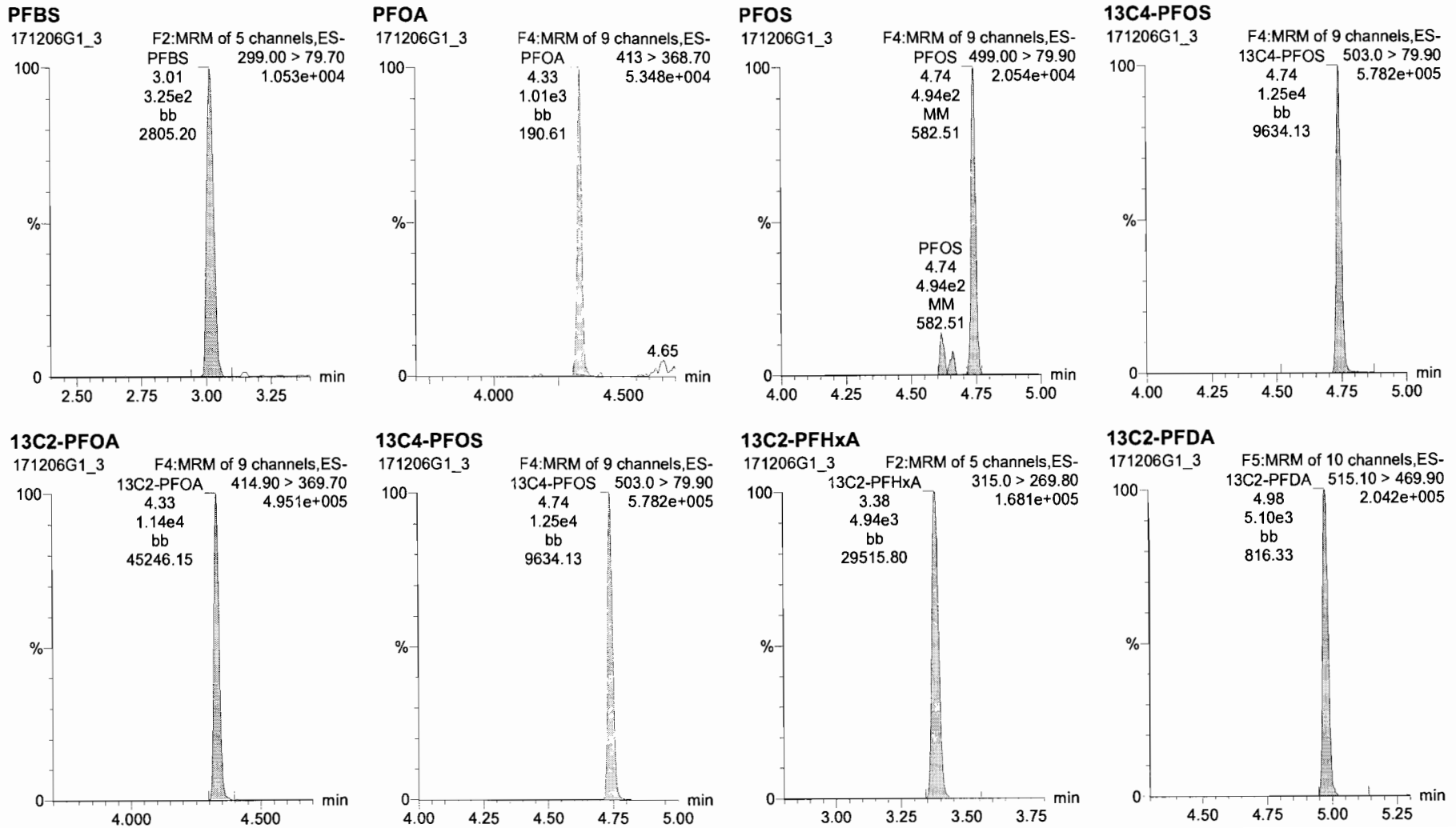
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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

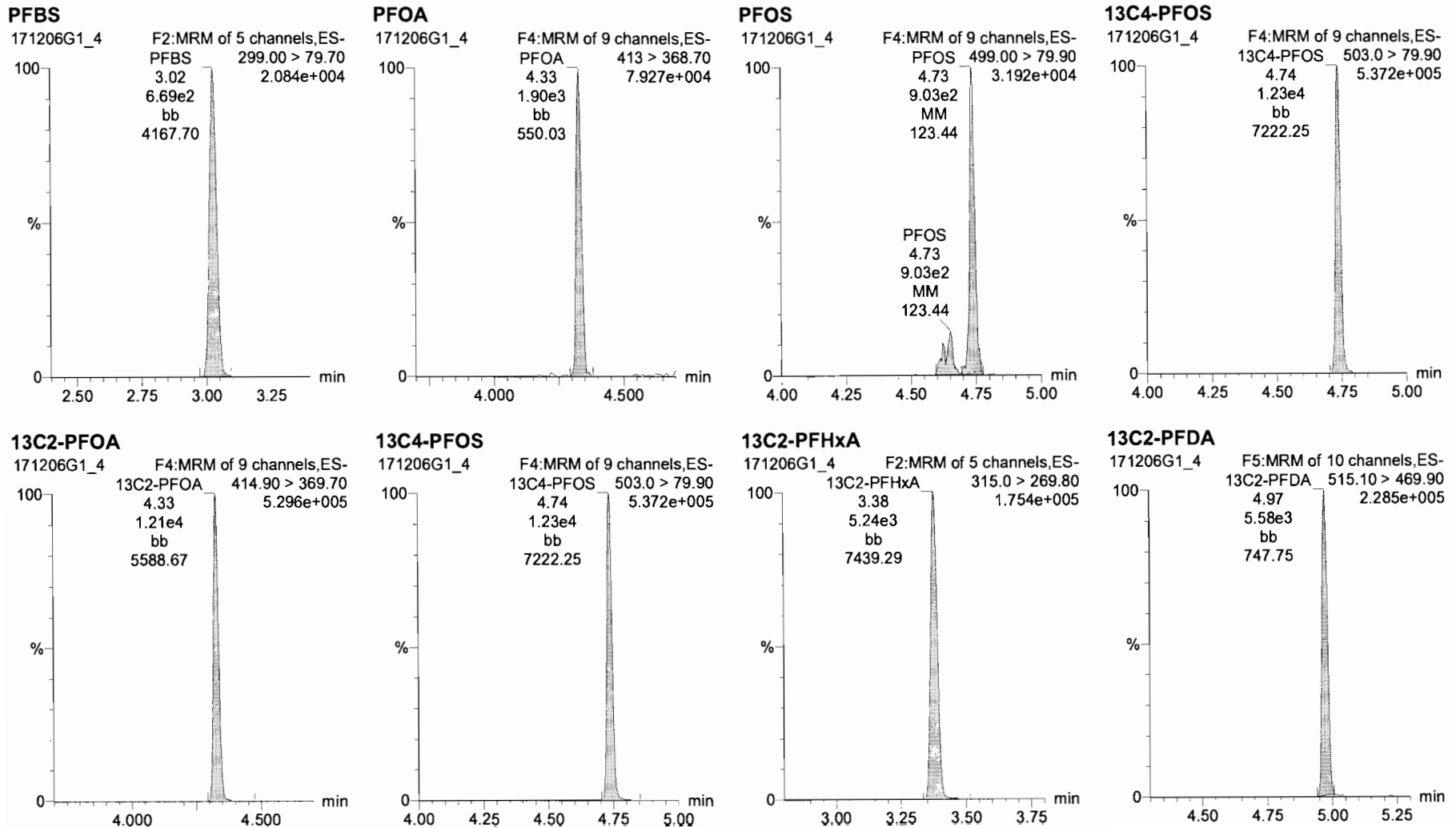
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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

ID: ST171206G1-3 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024, Name: 171206G1\_4, Date: 06-Dec-2017, Time: 11:41:21, Instrument: , Lab: , User:

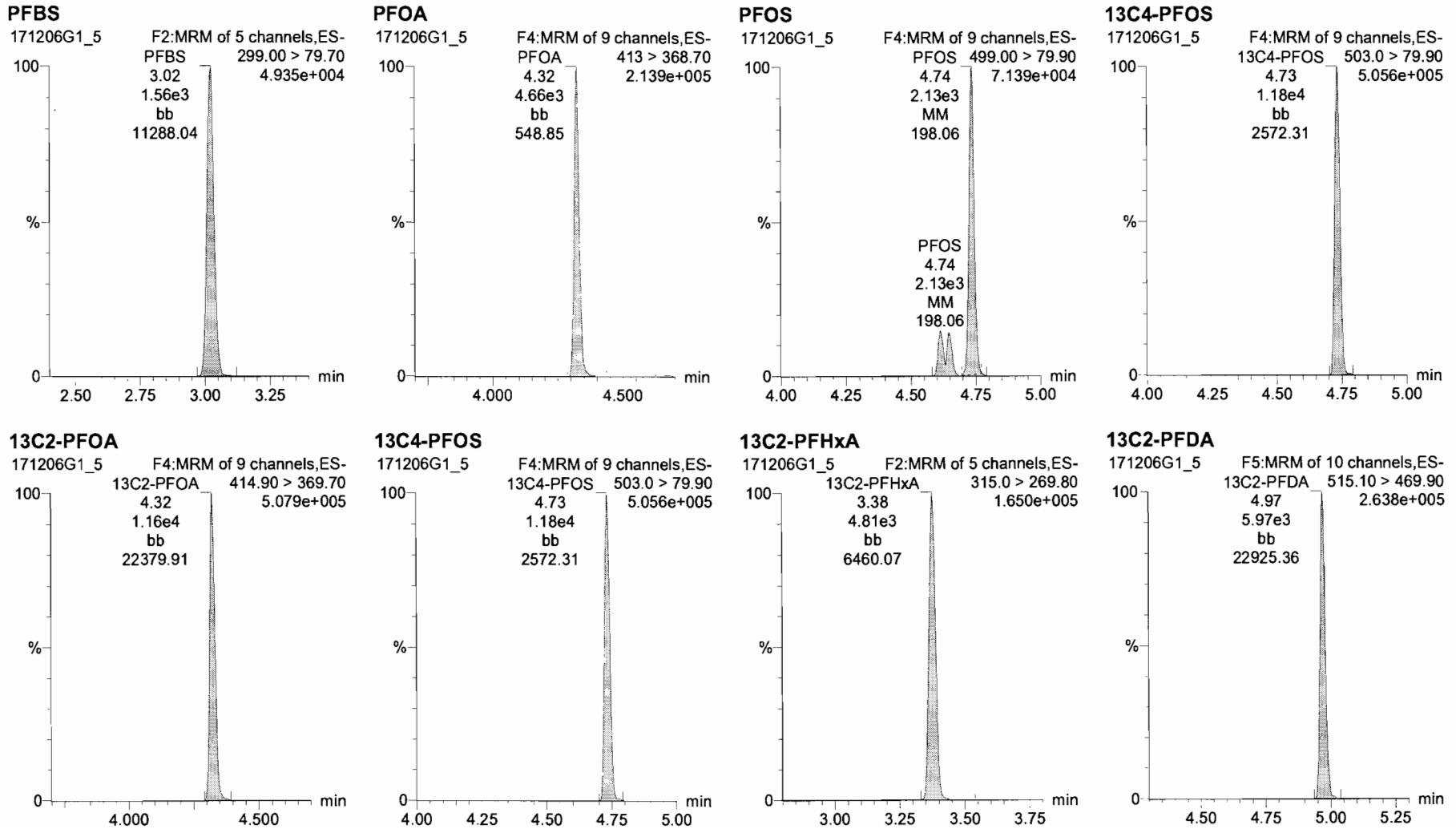


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Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time

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

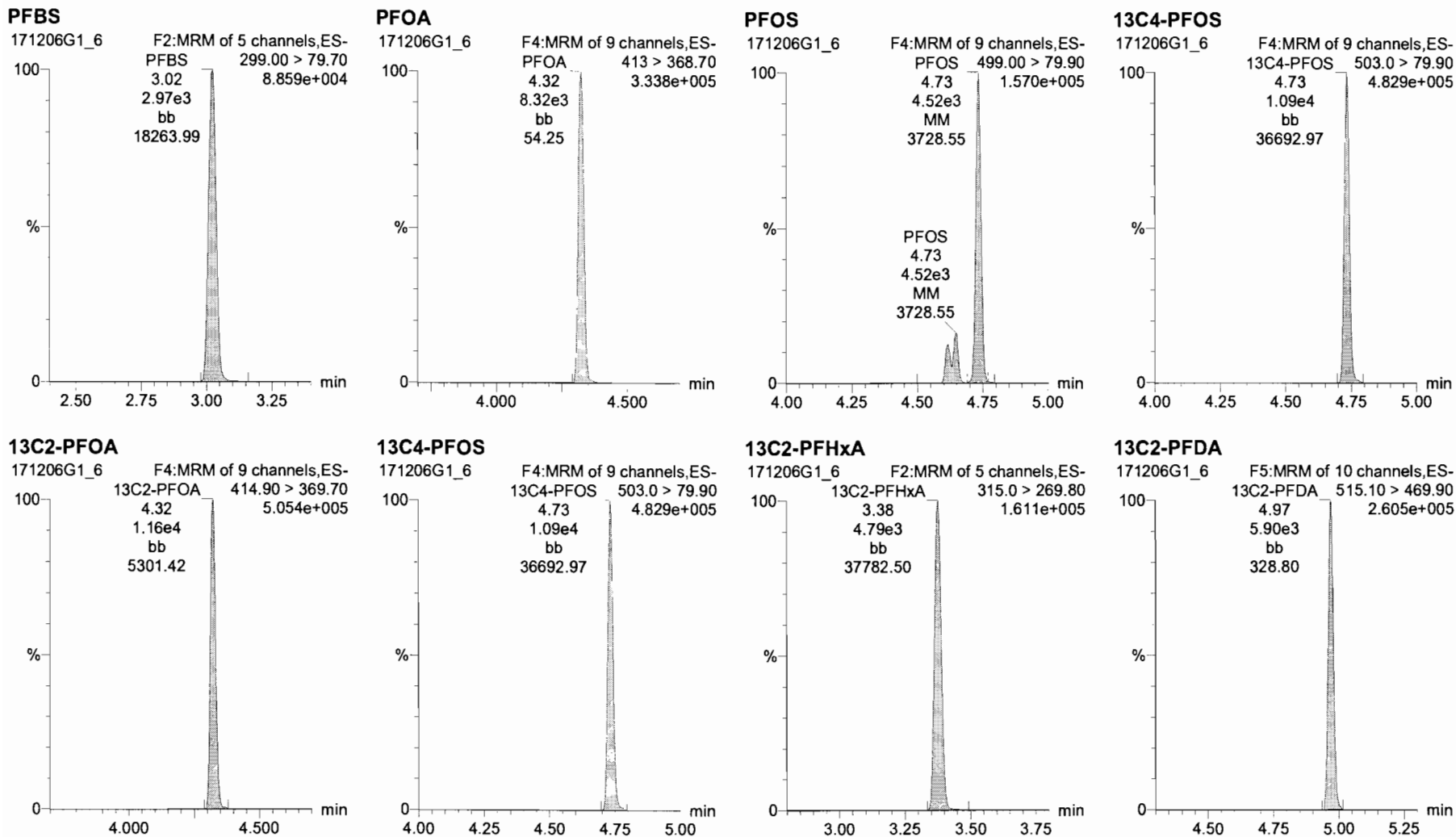
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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

ID: ST171206G1-5 PFC CS1 537 17K3026, Description: PFC CS1 537 17K3026, Name: 171206G1\_6, Date: 06-Dec-2017, Time: 12:06:11, Instrument: , Lab: , User:

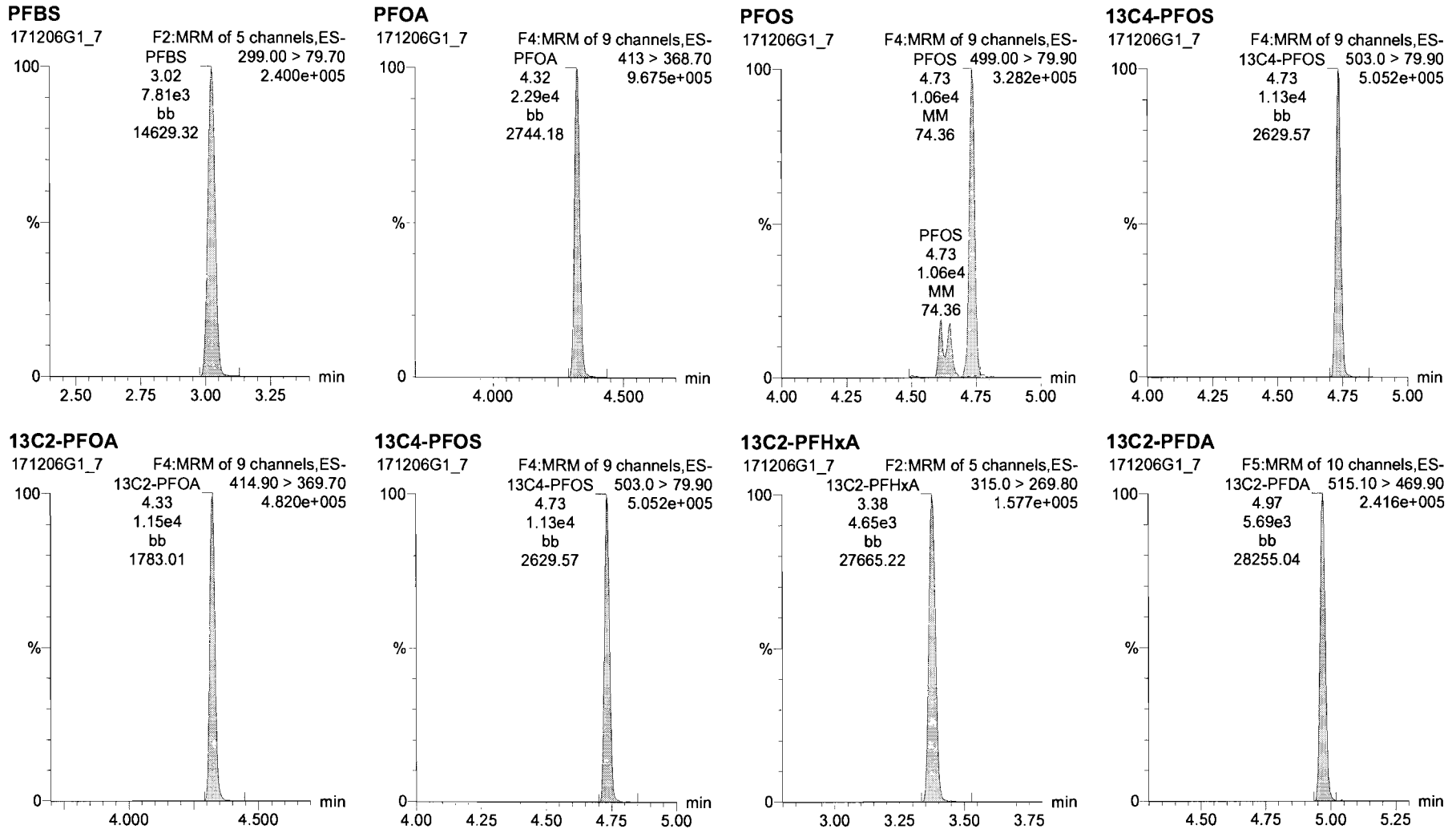




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Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

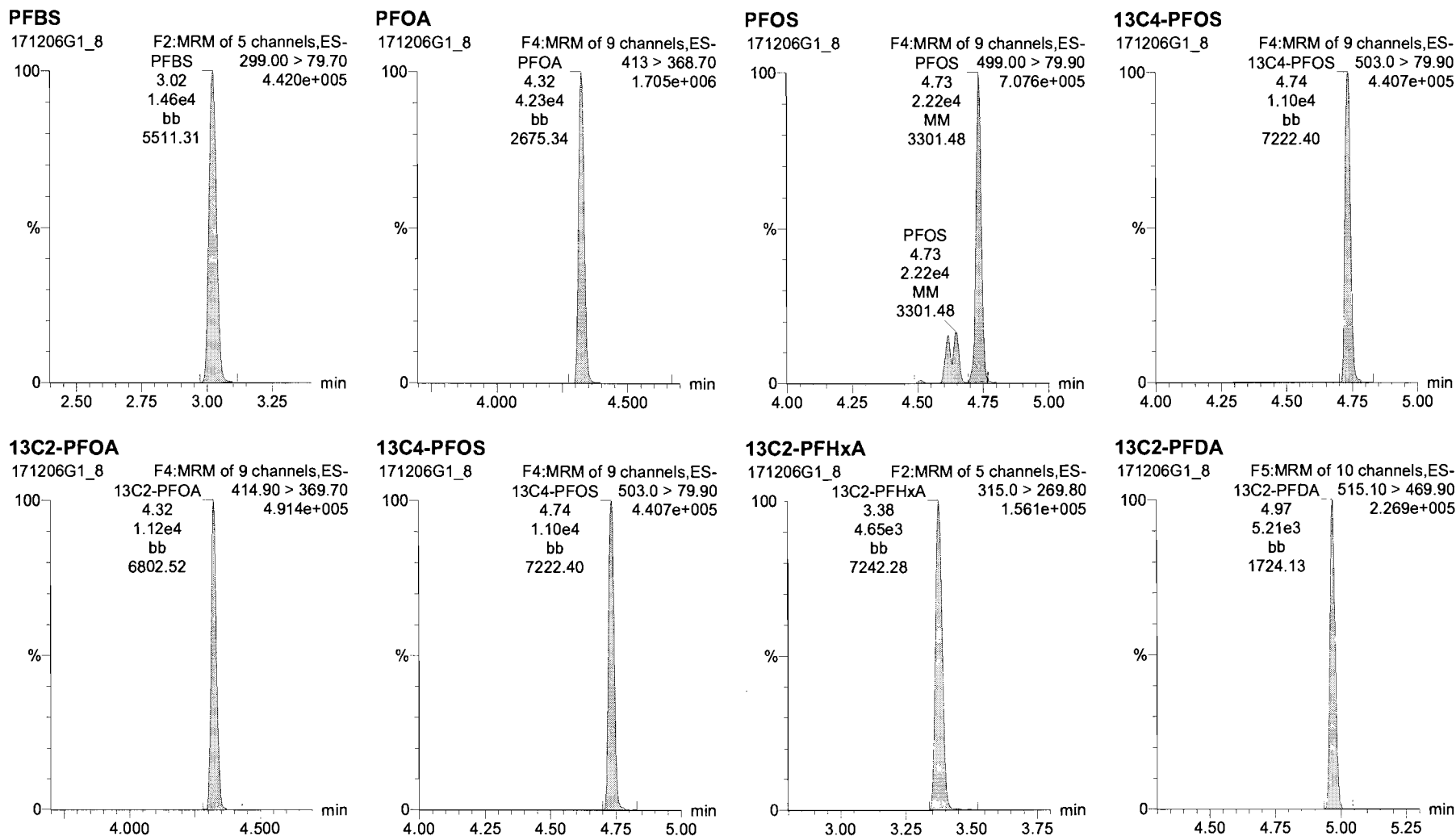
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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

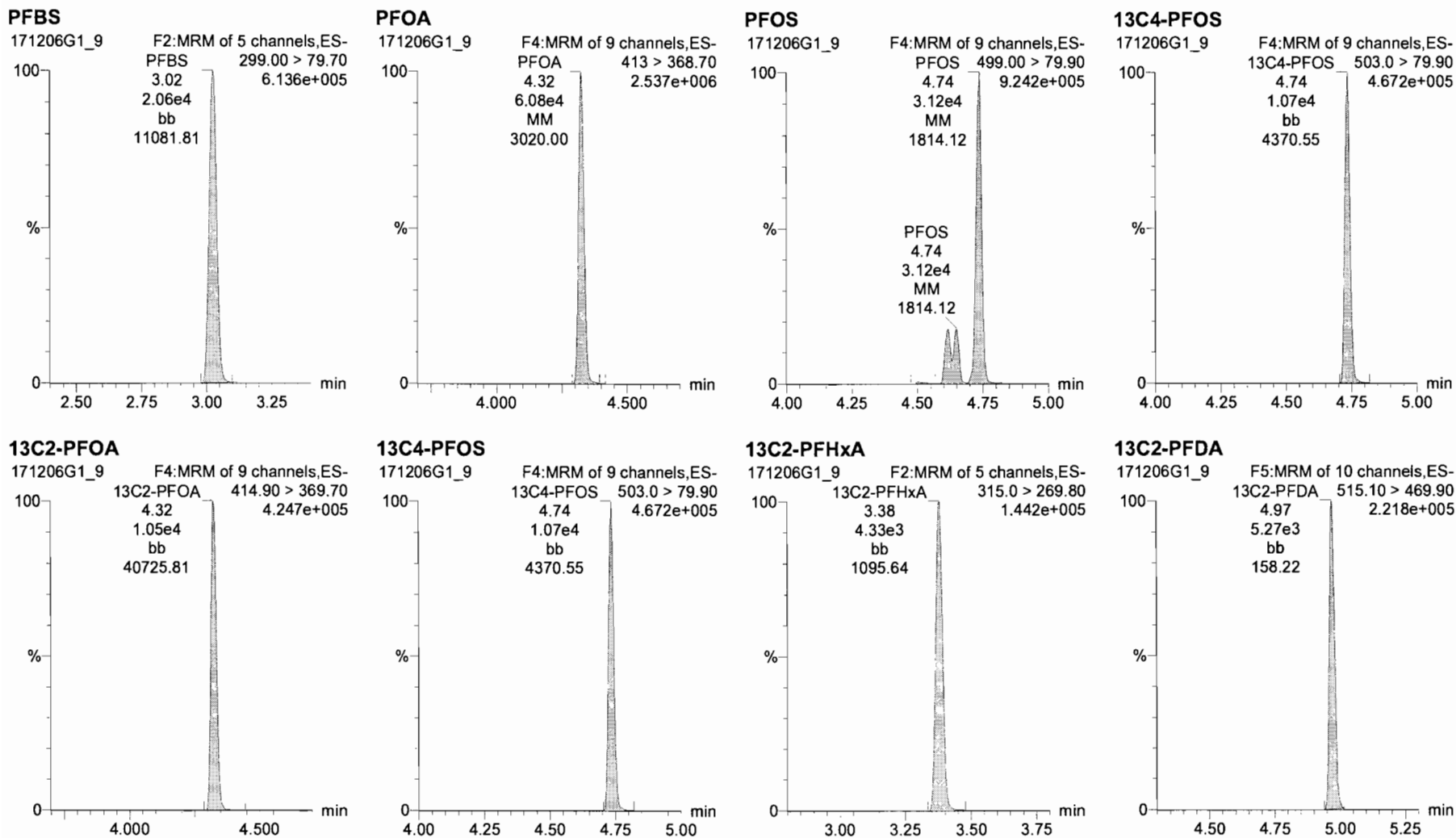
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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

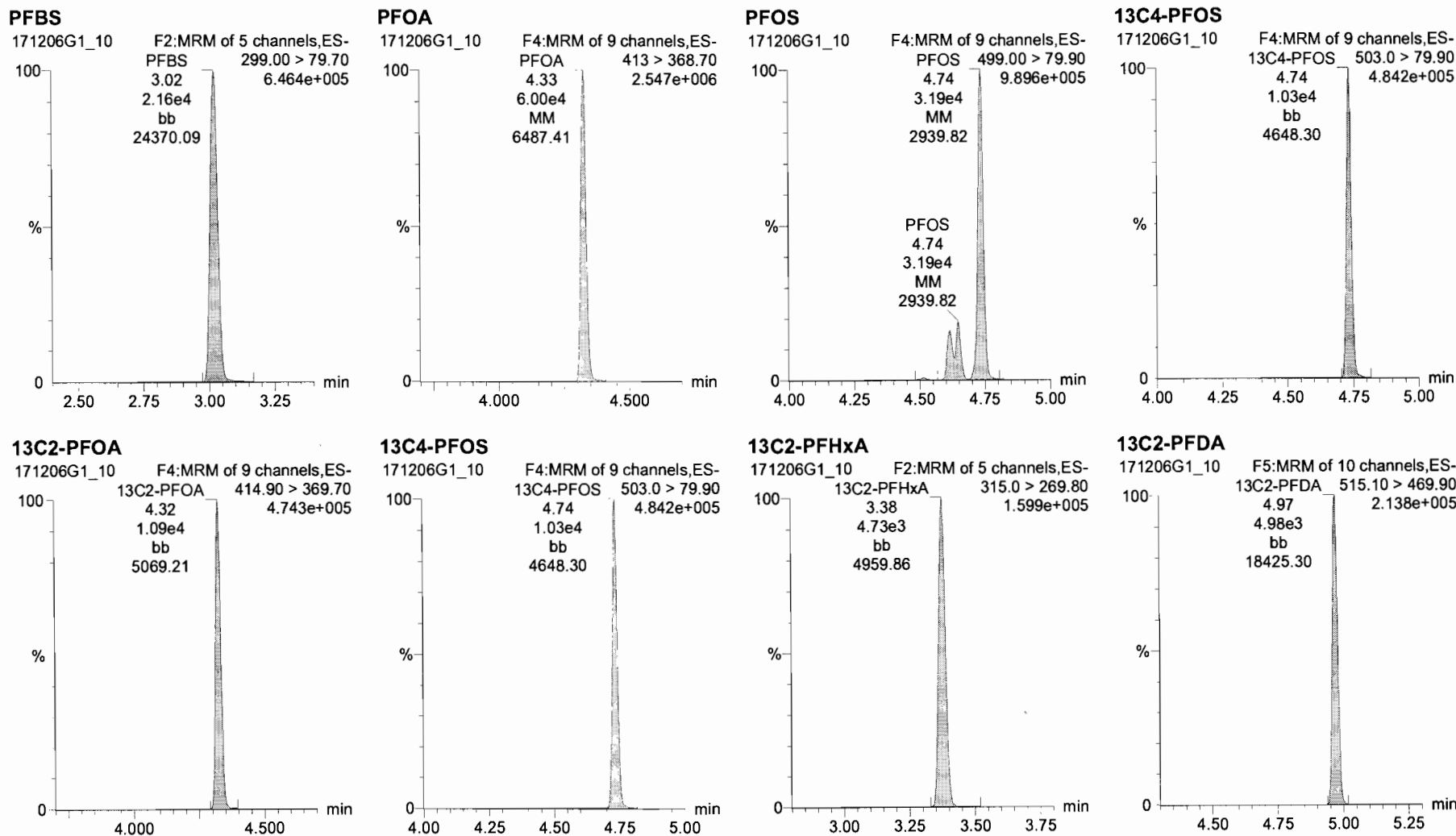
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Dataset: U:\G1.PRO\Results\2017\171206G1\171206G1-CRV.qld

Last Altered: Wednesday, December 06, 2017 13:27:38 Pacific Standard Time  
Printed: Wednesday, December 06, 2017 13:31:13 Pacific Standard Time

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

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Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-06-17\_L3.cdb 06 Dec 2017 15:37:11

ID: ICV171206G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030, Name: 171206G1\_12, Date: 06-Dec-2017, Time: 13:20:50

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

70-130  
↓

AM  
12/6/17

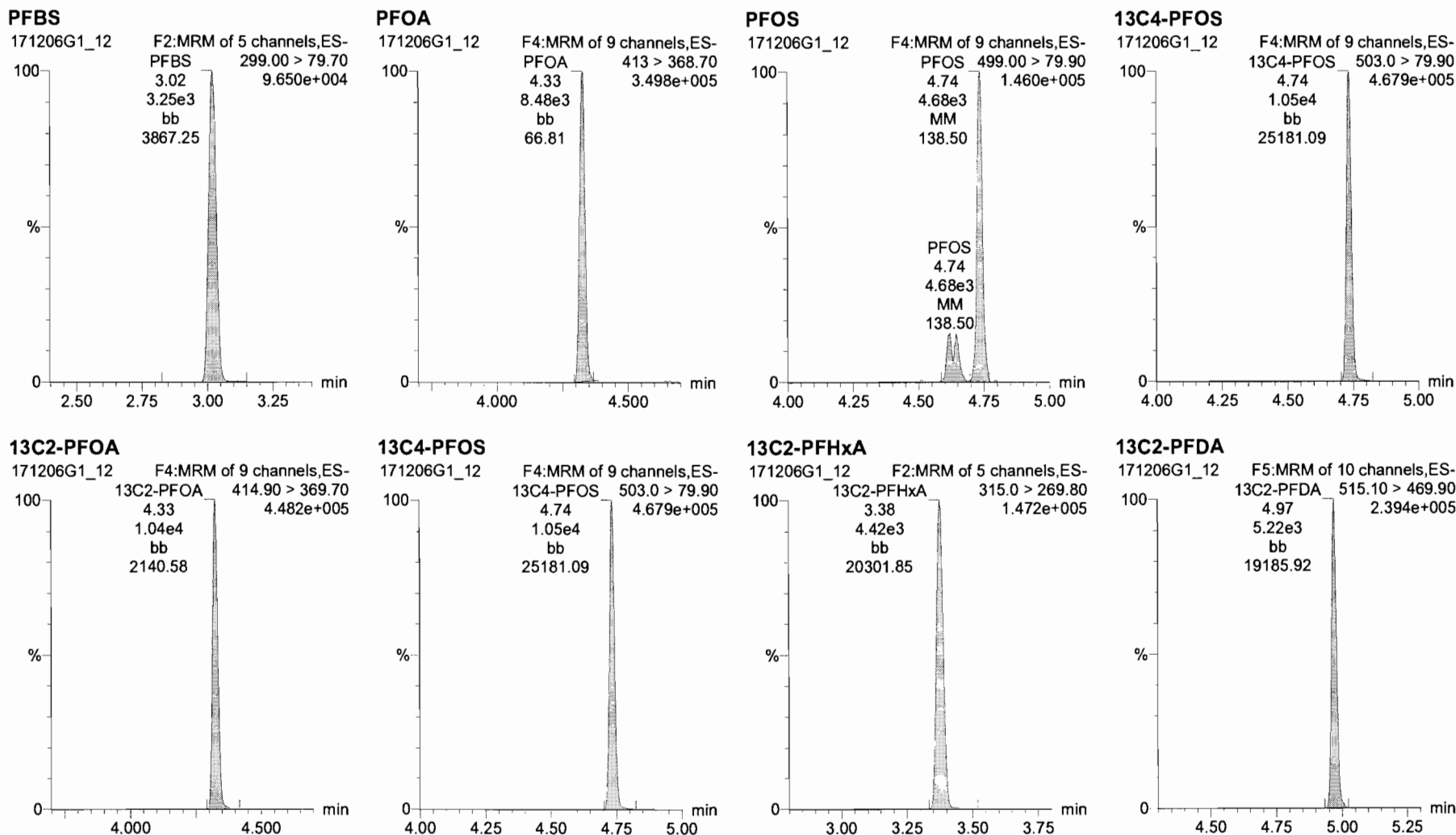
JHA.  
12/06/2017

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

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

Method: C:\Projects\Q1.PRO\MethDB\PFAS\_L3\_DW\_1206.mdb 06 Dec 2017 11:11:24  
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ID: ICV171206G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030, Name: 171206G1\_12, Date: 06-Dec-2017, Time: 13:20:50, Instrument: , Lab: , User:





## Results

Contract_ID	DO_CTO Number	Phase	Installation_ID	Analysis Time	Lab_Sample_ID	Dilution	Run_ Number	Percent_ Moisture	Percent_ Lipid	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier	Validator_ Qualifier	GC_ Column_ Type	Analysis_R esult_ Type	Result_ Narrative	QC_ Control_ Limit_Code	QC_ Accuracy _Upper	QC_ Accuracy _Lower	Control_L imit_ Date	QC_ Narrative	MDL
N6247016D9000	0008		CHERRY_POINT_MCAS	21:15:00	1701814-01	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.01	5.01	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:15:00	1701814-01	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.01	5.01	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:15:00	1701814-01	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.01	5.01	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:15:00	1701814-01	1	-999			13C2-PFHxA	13C2-PFHxA	104	104	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	21:27:00	1701814-02	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.84	4.84	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:27:00	1701814-02	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.84	4.84	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:27:00	1701814-02	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.84	4.84	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:27:00	1701814-02	1	-999			13C2-PFHxA	13C2-PFHxA	91.6	91.6	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	21:39:00	1701814-03	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.02	5.02	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:39:00	1701814-03	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.02	5.02	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:39:00	1701814-03	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.02	5.02	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:39:00	1701814-03	1	-999			13C2-PFHxA	13C2-PFHxA	101	101	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	21:52:00	1701814-04	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.01	5.01	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:52:00	1701814-04	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.01	5.01	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:52:00	1701814-04	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.01	5.01	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	21:52:00	1701814-04	1	-999			13C2-PFHxA	13C2-PFHxA	103	103	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	22:04:00	1701814-05	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.03	5.03	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:04:00	1701814-05	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.03	5.03	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:04:00	1701814-05	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.03	5.03	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:04:00	1701814-05	1	-999			13C2-PFHxA	13C2-PFHxA	102	102	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	22:17:00	1701814-06	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.94	4.94	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:17:00	1701814-06	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.94	4.94	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:17:00	1701814-06	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.94	4.94	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:17:00	1701814-06	1	-999			13C2-PFHxA	13C2-PFHxA	103	103	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	22:29:00	1701814-07	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.93	4.93	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:29:00	1701814-07	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.93	4.93	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:29:00	1701814-07	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.93	4.93	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:29:00	1701814-07	1	-999			13C2-PFHxA	13C2-PFHxA	107	107	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	22:41:00	1701814-08	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.77	4.77	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:41:00	1701814-08	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.77	4.77	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:41:00	1701814-08	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.77	4.77	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:41:00	1701814-08	1	-999			13C2-PFHxA	13C2-PFHxA	100	100	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	22:54:00	1701814-09	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.75	4.75	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:54:00	1701814-09	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.75	4.75	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:54:00	1701814-09	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.75	4.75	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	22:54:00	1701814-09	1	-999			13C2-PFHxA	13C2-PFHxA	103	103	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	23:06:00	1701814-10	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.76	4.76	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:06:00	1701814-10	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.76	4.76	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:06:00	1701814-10	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.76	4.76	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:06:00	1701814-10	1	-999			13C2-PFHxA	13C2-PFHxA	103	103	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	23:19:00	1701814-11	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.83	4.83	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:19:00	1701814-11	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.83	4.83	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:19:00	1701814-11	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.83	4.83	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:19:00	1701814-11	1	-999			13C2-PFHxA	13C2-PFHxA	93.0	93.0	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	23:31:00	1701814-12	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.86	4.86	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:31:00	1701814-12	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.86	4.86	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:31:00	1701814-12	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.86	4.86	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	23:31:00	1701814-12	1	-999			13C2-PFHxA	13C2-PFHxA	112	112	PCT_REC			PR		SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:37:00	B7L0025-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.00	5.00	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	20:37:00	B7L0025-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.00	5.00	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	20:37:00	B7L0025-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.00	5.00	NG_L	U		PR	TRG							
N6247016D9000	0008		CHERRY_POINT_MCAS	20:37:00	B7L0025-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA	96.9	96.9	PCT_REC			PR	SUR	SLSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:25:00	B7L0025-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	62.1	62.1	NG_L			PR	TRG	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:25:00	B7L0025-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	81.5	81.5	NG_L			PR	TRG	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:25:00	B7L0025-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	67.6	67.6	NG_L			PR	TRG	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:25:00	B7L0025-BS1	1	-999			13C2-PFHxA	13C2-PFHxA	93.4	93.4	PCT_REC			PR	SUR	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:50:00	B7L0025-MS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	65.4	65.4	NG_L			PR	TRG	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:50:00	B7L0025-MS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	88.5	88.5	NG_L			PR	TRG	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:50:00	B7L0025-MS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	74.3	74.3	NG_L			PR	TRG	LSA	130	70				
N6247016D9000	0008		CHERRY_POINT_MCAS	20:50:00	B7L0025-MS1	1	-999			13C2-PFHxA	13														





**DATA VALIDATION SUMMARY REPORT  
MCOLF ATLANTIC, NORTH CAROLINA**

Client: CH2M HILL, Inc., Corvallis, Oregon  
 SDG: 1701814  
 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-1RW109-1117	1701814-01	Water
2	CH-AT-1FB109-1117	1701814-02	Water
3	CH-AT-1RW110-1117	1701814-03	Water
4	CH-AT-1FB110-1117	1701814-04	Water
5	CH-AT-1RW111-1117	1701814-05	Water
6	CH-AT-1FB111-1117	1701814-06	Water
7	CH-AT-1RW112-1117	1701814-07	Water
7MS	CH-AT-1RW112-1117MS	1701814-07MS	Water
7MSD	CH-AT-1RW112-1117MSD	1701814-07MSD	Water
8	CH-AT-1FB112-1117	1701814-08	Water
9	CH-AT-1RW107-1117	1701814-09	Water
10	CH-AT-1FB107-1117	1701814-10	Water
11	CH-AT-1RW108-1117	1701814-11	Water
12	CH-AT-1FB108-1117	1701814-12	Water

A full data validation was performed on the analytical data for six water samples and six aqueous field blank samples collected on November 29-30, 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  
PFCs

Method References  
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-1FB109-1117	None - ND	-	-	-
CH-AT-1FB110-1117	None - ND	-	-	-
CH-AT-1FB111-1117	None - ND	-	-	-
CH-AT-1FB112-1117	None - ND	-	-	-
CH-AT-1FB107-1117	None - ND	-	-	-
CH-AT-1FB108-1117	None - ND	-	-	-

### Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

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

### Laboratory Control Samples

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

### Internal Standard (IS) Area Performance

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

**Target Compound Identification**

- All mass spectra and quantitation criteria were met.

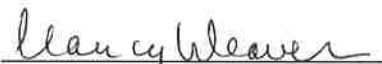
**Compound Quantitation**

- All criteria were met.

**Field Duplicate Sample Precision**

- Field duplicate samples were not collected.

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

Signed:   
Nancy Weaver  
Senior Chemist

Dated: 1/15/18

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



**Sample ID: CH-AT-1RW109-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-01
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	30-Nov-17 08:48		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
PFOA	ND	1.08	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
PFOS	ND	1.04	5.01	10.0		B7L0025	06-Dec-17	0.250 L	07-Dec-17 21:15	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	104	70 - 130								

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 11/31/18



**Sample ID: CH-AT-1FB109-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701814-02							
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Received:	01-Dec-17 09:40							
	Matrix: Drinking Water	Column:	BEH C18							
	Date Collected: 30-Nov-17 08:49									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
PFOA	ND	1.05	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
PFOS	ND	1.01	4.84	9.69		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	91.6		70 - 130		B7L0025	06-Dec-17	0.258 L	07-Dec-17 21:27	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL - Lower control limit - upper control limit

Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

nw 11,318

**Sample ID: CH-AT-1RW110-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-03
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	30-Nov-17 09:09		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.445	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
PFOA	ND	1.08	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
PFOS	ND	1.04	5.02	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:39	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	101	70 - 130								

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 11.31.18

**Sample ID: CH-AT-1FB110-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-04
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	30-Nov-17 09:10		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.444	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
PFOA	ND	1.08	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
PFOS	ND	1.04	5.01	10.0		B7L0025	06-Dec-17	0.249 L	07-Dec-17 21:52	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	103	70 - 130								

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.

Nov 13 11:18

**Sample ID: CH-AT-1RW111-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-05
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	30-Nov-17 09:21		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
PFOA	ND	1.09	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
PFOS	ND	1.05	5.03	10.1		B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0025	06-Dec-17	0.248 L	07-Dec-17 22:04	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

11/13/18

**Sample ID: CH-AT-1FB111-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-06
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	30-Nov-17 09:22		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
PFOA	ND	1.07	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
PFOS	ND	1.03	4.94	9.87		B7L0025	06-Dec-17	0.253 L	07-Dec-17 22:17	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	103	70 - 130								

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 11/31/18

**Sample ID: CH-AT-1RW112-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-07
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Received:	01-Dec-17 09:40
	Matrix: Drinking Water	Column:	BEH C18
	Date Collected: 30-Nov-17 10:11		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
PFOA	ND	1.06	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
PFOS	ND	1.03	4.93	9.86		B7L0025	06-Dec-17	0.254 L	07-Dec-17 22:29	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	107	70 - 130								

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

11/13/18

**Sample ID: CH-AT-1FB112-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-08
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	30-Nov-17 10:12		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
PFOA	ND	1.03	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
PFOS	ND	0.992	4.77	9.54		B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0025	06-Dec-17	0.262 L	07-Dec-17 22:41	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

11/13/18

**Sample ID: CH-AT-1RW107-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-09
Project:	CTO-08/MCOLF ATLANTIC PEAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	29-Nov-17 17:02		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
PFOA	ND	1.03	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
PFOS	ND	0.988	4.75	9.50		B7L0025	06-Dec-17	0.263 L	07-Dec-17 22:54	1
Labeled Standards	% Recovery	Limits								
13C2-PFHxA	103	70 - 130								

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes.

mw 11348



**Sample ID: CH-AT-1FB107-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-10
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	29-Nov-17 17:03		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
PFOA	ND	1.03	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
PFOS	ND	0.990	4.76	9.52		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	103	70 - 130		B7L0025	06-Dec-17	0.263 L	07-Dec-17 23:06	1	

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of Quantitation  
 LCL-UCL - Lower control limit - upper control limit  
 Results reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

11/13/18

**Sample ID: CH-AT-1RW108-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701814-11
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Received:	01-Dec-17 09:40
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	29-Nov-17 18:21		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
PFOA	ND	1.04	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
PFOS	ND	1.00	4.83	9.65		B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7L0025	06-Dec-17	0.259 L	07-Dec-17 23:19	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

*11/13/18*

Sample ID: CH-AT-1FB108-1117										EPA Method 537					
Client Data					Laboratory Data										
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701814-12	Batch:	B7L0025	Extracted:	06-Dec-17	Samp Size:	0.257 L	Analyzed:	07-Dec-17 23:31	Dilution:	1
Project:	CTO-08/MCOLF ATLANTIC PFAS INV.	Date Collected:	29-Nov-17 18:22	Date Received:	01-Dec-17 09:40	Batch:	B7L0025	Extracted:	06-Dec-17	Samp Size:	0.257 L	Analyzed:	07-Dec-17 23:31	Dilution:	1
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.430	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1					
PFOA	ND	1.05	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1					
PFOS	ND	1.01	4.86	9.72		B7L0025	06-Dec-17	0.257 L	07-Dec-17 23:31	1					
Labeled Standards	Type	% Recovery	Limits												
13C2-PFHxA	SURR	112	70 - 130												

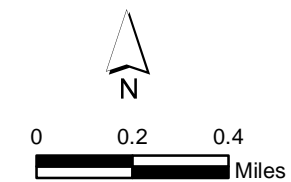
DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL.  
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

11/3/18





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



1 inch = 0.4 mile  
Imagery: Esri, 2016

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