



**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 1701751**

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

February 2019

December 04, 2017

**Vista Work Order No. 1701751**

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on November 21, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic / PFAS DW Investigation'.

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

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

Sincerely,

*Karen Volpendta*  
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. 1701751

### Case Narrative

#### Sample Condition on Receipt:

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

#### Analytical Notes:

#### EPA Method 537

The following samples contained particulate and were centrifuged prior to extraction:

<u>Laboratory ID</u>	<u>Sample Name</u>
1701751-06	CH-AT-1RW60-1117
1701751-08	CH-AT-1RW61-1117
1701751-12	CH-AT-1RW63-1117
1701751-14	CH-AT-1RW64-1117
1701751-16	CH-AT-1RW46-1117
1701751-18	CH-AT-1RW47-1117

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

#### Holding Times

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

#### Quality Control

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

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

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

## TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	27
Certifications.....	28
Sample Receipt.....	31

# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701751-01	CH-AT-1RW58-1117	17-Nov-17 17:21	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-02	CH-AT-1FB58-1117	17-Nov-17 17:22	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-03	CH-AT-1EB01-111717	17-Nov-17 13:57	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-04	CH-AT-1RW59-1117	18-Nov-17 09:07	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-05	CH-AT-1FB59-1117	18-Nov-17 09:08	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-06	CH-AT-1RW60-1117	18-Nov-17 09:33	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-07	CH-AT-1FB60-1117	18-Nov-17 09:34	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-08	CH-AT-1RW61-1117	18-Nov-17 10:07	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-09	CH-AT-1FB61-1117	18-Nov-17 10:08	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-10	CH-AT-1RW62-1117	18-Nov-17 10:22	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-11	CH-AT-1FB62-1117	18-Nov-17 10:23	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-12	CH-AT-1RW63-1117	18-Nov-17 10:40	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-13	CH-AT-1FB63-1117	18-Nov-17 10:41	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-14	CH-AT-1RW64-1117	18-Nov-17 11:29	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-15	CH-AT-1FB64-1117	18-Nov-17 11:30	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-16	CH-AT-1RW46-1117	17-Nov-17 11:05	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-17	CH-AT-1FB46-1117	17-Nov-17 11:06	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-18	CH-AT-1RW47-1117	17-Nov-17 11:20	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-19	CH-AT-1FB47-1117	17-Nov-17 11:21	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

**Sample ID: LRB** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	B7K0177-BLK1	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation									

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1
PFOA	ND	1.08	5.00	10.0		B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1
PFOS	ND	1.04	5.00	10.0		B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.1	70 - 130			B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

Sample ID: LFBD											EPA Method 537					
Name:	CH2M Hill				Lab Sample:	B7K0177-BS1/B7K0177-BSD1					Date Extracted:	30-Nov-17				
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigatio				QC Batch:	B7K0177					Column:	BEH C18				
Matrix:	Drinking Water				Samp Size:	0.250/0.250 L										
Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
PFBS	18.2	17.7	103		17.8	17.7	100	2.56		70-130	30	01-Dec-17 11:06	1	01-Dec-17 11:19	1	
PFOA	18.9	20.0	94.4		21.2	20.0	106	11.8		70-130	30	01-Dec-17 11:06	1	01-Dec-17 11:19	1	
PFOS	17.4	18.5	94.0		18.3	18.5	98.9	5.08		70-130	30	01-Dec-17 11:06	1	01-Dec-17 11:19	1	
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
13C2-PFHxA	SURR		84.1				83.1			70-130		01-Dec-17 11:06	1	01-Dec-17 11:19	1	



**Sample ID: CH-AT-1RW58-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-01	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 17:21	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
PFOA	ND	1.07	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
PFOS	ND	1.03	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.1	70 - 130		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB58-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-02		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17 17:22		Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
PFOA	ND	1.03	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
PFOS	ND	0.994	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.1	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1EB01-111717** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-03		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 13:57		Date Received:	21-Nov-17 10:13			

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.416	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	1
PFOA	ND	1.01	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	1
PFOS	ND	0.976	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	86.6	70 - 130		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	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-1RW59-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-04	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:07	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
PFOA	ND	1.04	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
PFOS	ND	1.00	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	81.8	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB59-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-05	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:08	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
PFOA	ND	1.02	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
PFOS	ND	0.985	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.8	70 - 130			B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1RW60-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-06	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:33	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
PFOA	ND	1.03	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
PFOS	ND	0.996	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.8	70 - 130			B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	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-1FB60-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-07	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:34	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
PFOA	ND	1.03	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
PFOS	ND	0.992	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	86.4	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1RW61-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-08	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:07	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
PFOA	ND	1.04	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
PFOS	ND	1.01	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.1	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	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-1FB61-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-09	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:08	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
PFOA	ND	1.02	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
PFOS	ND	0.986	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.6	70 - 130			B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	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-1RW62-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-10	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:22	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.432	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
PFOA	ND	1.05	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
PFOS	ND	1.02	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.1	70 - 130			B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	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-1FB62-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-11	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:23	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
PFOA	ND	1.03	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
PFOS	ND	0.993	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.4	70 - 130			B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	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-1RW63-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-12	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:40	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
PFOA	ND	1.04	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
PFOS	ND	1.00	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.2	70 - 130		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB63-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-13	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:41	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
PFOA	ND	1.04	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
PFOS	ND	1.00	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.1	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	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-1RW64-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-14		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 11:29		Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
PFOA	ND	1.05	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
PFOS	ND	1.01	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	87.3	70 - 130			B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	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-1FB64-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-15	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 11:30	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
PFOA	ND	1.09	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
PFOS	ND	1.05	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.3	70 - 130			B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	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-1RW46-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-16		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 11:05		Date Received:	21-Nov-17 10:13			

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
PFOA	ND	1.04	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
PFOS	ND	1.00	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	89.1	70 - 130			B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	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-1FB46-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-17	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17 11:06	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
PFOA	ND	1.03	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
PFOS	ND	0.994	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.7	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	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-1RW47-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-18	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17 11:20	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.51		B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
PFOA	2.80	1.03	4.75	9.51	J	B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
PFOS	3.27	0.989	4.75	9.51	J	B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.4	70 - 130		B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	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-1FB47-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-19	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17 11:21	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
PFOA	ND	1.04	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
PFOS	ND	0.999	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.3	70 - 130			B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	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.

## **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

*Codes 3- 1 of 2 pages*



**CHAIN OF CUSTODY**

**For Laboratory Use Only**  
 Work Order #: 1701751 Temp 0.5 °C  
 Storage ID WR-2 Storage Secured Yes  No

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

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

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

Relinquished by (printed name and signature) Kathryn Smith Date 10/20/17 Time 15:30 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 1027

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: FEDEX  
 ATTN: Martha Maier Tracking No. \_\_\_\_\_

Sample ID	Date	Time	Location/Sample Description	Quantity		Matrix	Add Analysis(es) Requested				Comments													
				Type			PFOA, PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26 Other: Please List Below		PFOA/PFOs/PFS	UCMR3 PFAS List 6	PFAS List: 14										
CH-AT-1RW58-1117	11/17/17	17:21		2	P	DW																TZ preservative		
CH-AT-1FB58-1117	11/17/17	17:22		2	P	DW																	TZ preservative	
CH-AT-1EB01-111717	11/17/17	13:57		2	P	DW																	TZ preservative	
CH-AT-1RW59-1117	11/18/17	09:07		2	P	DW																	TZ preservative	
CH-AT-1FB59-1117	11/18/17	09:08		2	P	DW																		TZ preservative
CH-AT-1RW60-1117	11/18/17	09:33		2	P	DW																		TZ preservative
CH-AT-1FB60-1117	11/18/17	09:34		2	P	DW																		TZ preservative
CH-AT-1RW61-1117	11/18/17	10:07		2	P	DW																		TZ preservative
CH-AT-1FB61-1117	11/18/17	10:08		2	P	DW																		TZ preservative
CH-AT-1RW62-1117	11/18/17	10:22		2	P	DW																		TZ preservative

Special Instructions/Comments: 7 DAY TAT  
Analysis of Drinking Water samples for PFOA/PFOS/PFS

SEND DOCUMENTATION AND RESULTS TO:

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

Container Types: P= HDPE, PJ= HDPE Jar  
 O = Other \_\_\_\_\_  
 Bottle Preservation Type: T = Thiosulfate,  
 TZ = Trizma: \_\_\_\_\_  
 Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,  
 SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: \_\_\_\_\_



*Coder 3-2 of 2 pages*



**CHAIN OF CUSTODY**

**For Laboratory Use Only**  
 Work Order #: 1701751 Temp 0.5 °C  
 Storage ID WF-2 Storage Secured Yes  No

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

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

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

Relinquished by (printed name and signature) Kathryn Smith Date 11/21/17 Time 10:27  
 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 10:27

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

Method of Shipment: FEDEX

ATTN: Martha Maier

Tracking No. \_\_\_\_\_

Sample ID	Date	Time	Location/Sample Description	Add Analysis(es) Requested										Comments		
				Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 26	Other Please List Below	Mod. EPA Method 537	EPA Method 537 (DW only)			
CH-AT-1FB62-1117	11/18/17	10:23		2	P	DW								X		TZ preservative
CH-AT-1RW63-1117	11/18/17	10:40		2	P	DW								X		TZ preservative
CH-AT-1FB63-1117	11/18/17	10:41		2	P	DW								X		TZ preservative
CH-AT-1RW64-1117	11/18/17	11:29		2	P	DW								X		TZ preservative
CH-AT-1FB64-1117	11/18/17	11:30		2	P	DW								X		TZ preservative
CH-AT-1RW46-1117	11/17/17	11:05		2	P	DW								X		TZ preservative
CH-AT-1FB46-1117	11/17/17	11:06		2	P	DW								X		TZ preservative
CH-AT-1RW47-1117	11/17/17	11:20		2	P	DW								X		TZ preservative
CH-AT-1FB47-1117	11/17/17	11:21		2	P	DW								X		TZ preservative

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

SEND DOCUMENTATION AND RESULTS TO:

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

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

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

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

Sample Log-in Checklist

Vista Work Order #: 1701751 TAT 7

Samples Arrival:	Date/Time 11/21/17 1013	Initials: WAB	Location: WR-2 Shelf/Rack: NA				
Logged In:	Date/Time 11/21/17 1549	Initials: SR WWS	Location: WR-2 Shelf/Rack: F7				
Delivered By:	<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
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice	<input type="checkbox"/> None			
Temp °C:	0.4 (uncorrected)	Time: 1027	Thermometer ID: IR-1				
Temp °C:	0.5 (corrected)	Probe used: 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 <u>2044</u> Trk # <u>7707 9375 1333</u>	✓					
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:	<input type="checkbox"/> 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	<input type="checkbox"/> NA
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain	<input type="checkbox"/> Return	<input type="checkbox"/> Dispose	

Comments:

December 04, 2017

**Vista Work Order No. 1701751**

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

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on November 21, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'CTO-08, MCOLF Atlantic / PFAS DW Investigation'.

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

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

Sincerely,



Martha Maier  
Laboratory Director



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

## Vista Work Order No. 1701751

### Case Narrative

#### Sample Condition on Receipt:

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

#### Analytical Notes:

#### EPA Method 537

The following samples contained particulate and were centrifuged prior to extraction:

<u>Laboratory ID</u>	<u>Sample Name</u>
1701751-06	CH-AT-1RW60-1117
1701751-08	CH-AT-1RW61-1117
1701751-12	CH-AT-1RW63-1117
1701751-14	CH-AT-1RW64-1117
1701751-16	CH-AT-1RW46-1117
1701751-18	CH-AT-1RW47-1117

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

#### Holding Times

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

#### Quality Control

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

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

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

## TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	27
Certifications.....	28
Sample Receipt.....	31
Extraction Information.....	34
Sample Data - EPA Method 537.....	39
IIS Areas and CCVs.....	84
ICAL with ICV.....	129

# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701751-01	CH-AT-1RW58-1117	17-Nov-17 17:21	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-02	CH-AT-1FB58-1117	17-Nov-17 17:22	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-03	CH-AT-1EB01-111717	17-Nov-17 13:57	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-04	CH-AT-1RW59-1117	18-Nov-17 09:07	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-05	CH-AT-1FB59-1117	18-Nov-17 09:08	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-06	CH-AT-1RW60-1117	18-Nov-17 09:33	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-07	CH-AT-1FB60-1117	18-Nov-17 09:34	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-08	CH-AT-1RW61-1117	18-Nov-17 10:07	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-09	CH-AT-1FB61-1117	18-Nov-17 10:08	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-10	CH-AT-1RW62-1117	18-Nov-17 10:22	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-11	CH-AT-1FB62-1117	18-Nov-17 10:23	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-12	CH-AT-1RW63-1117	18-Nov-17 10:40	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-13	CH-AT-1FB63-1117	18-Nov-17 10:41	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-14	CH-AT-1RW64-1117	18-Nov-17 11:29	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-15	CH-AT-1FB64-1117	18-Nov-17 11:30	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-16	CH-AT-1RW46-1117	17-Nov-17 11:05	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-17	CH-AT-1FB46-1117	17-Nov-17 11:06	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-18	CH-AT-1RW47-1117	17-Nov-17 11:20	21-Nov-17 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701751-19	CH-AT-1FB47-1117	17-Nov-17 11:21	21-Nov-17 10:13	HDPE Bottle, 250 mL 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 DW Investigation	Matrix: Drinking Water Lab Sample: B7K0177-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		B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1
PFOA	ND	1.08	5.00	10.0		B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1
PFOS	ND	1.04	5.00	10.0		B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.1	70 - 130			B7K0177	30-Nov-17	0.250 L	01-Dec-17 11:31	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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



Sample ID: LFBD											EPA Method 537					
Name:	CH2M Hill				Lab Sample:	B7K0177-BS1/B7K0177-BSD1					Date Extracted:	30-Nov-17				
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigatio				QC Batch:	B7K0177					Column:	BEH C18				
Matrix:	Drinking Water				Samp Size:	0.250/0.250 L										
Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
PFBS	18.2	17.7	103		17.8	17.7	100	2.56		70-130	30	01-Dec-17 11:06	1	01-Dec-17 11:19	1	
PFOA	18.9	20.0	94.4		21.2	20.0	106	11.8		70-130	30	01-Dec-17 11:06	1	01-Dec-17 11:19	1	
PFOS	17.4	18.5	94.0		18.3	18.5	98.9	5.08		70-130	30	01-Dec-17 11:06	1	01-Dec-17 11:19	1	
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
13C2-PFHxA	SURR		84.1				83.1			70-130		01-Dec-17 11:06	1	01-Dec-17 11:19	1	

**Sample ID: CH-AT-1RW58-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-01	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17 17:21	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
PFOA	ND	1.07	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
PFOS	ND	1.03	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.1	70 - 130			B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	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-1FB58-1117** **EPA Method 537**

Client Data					Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-02		Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 17:22		Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
PFOA	ND	1.03	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
PFOS	ND	0.994	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.1	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	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-1EB01-111717** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-03		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 13:57		Date Received:	21-Nov-17 10:13			

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.416	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	1
PFOA	ND	1.01	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	1
PFOS	ND	0.976	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	86.6	70 - 130			B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	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-1RW59-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-04	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	18-Nov-17 09:07	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
PFOA	ND	1.04	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
PFOS	ND	1.00	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	81.8	70 - 130		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB59-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-05	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	18-Nov-17 09:08	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
PFOA	ND	1.02	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
PFOS	ND	0.985	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.8	70 - 130		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1RW60-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-06	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:33	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
PFOA	ND	1.03	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
PFOS	ND	0.996	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	84.8	70 - 130			B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB60-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-07	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:34	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
PFOA	ND	1.03	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
PFOS	ND	0.992	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	86.4	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	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-1RW61-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-08	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:07	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
PFOA	ND	1.04	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
PFOS	ND	1.01	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.1	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB61-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-09	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:08	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
PFOA	ND	1.02	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
PFOS	ND	0.986	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.6	70 - 130		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	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-1RW62-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-10	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	18-Nov-17 10:22	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.432	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
PFOA	ND	1.05	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
PFOS	ND	1.02	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.1	70 - 130			B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB62-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-11	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:23	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
PFOA	ND	1.03	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
PFOS	ND	0.993	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	97.4	70 - 130			B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	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-1RW63-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-12	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:40	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
PFOA	ND	1.04	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
PFOS	ND	1.00	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.2	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	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-1FB63-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-13	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 10:41	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
PFOA	ND	1.04	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
PFOS	ND	1.00	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.1	70 - 130		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	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-1RW64-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-14	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 11:29	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
PFOA	ND	1.05	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
PFOS	ND	1.01	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	87.3	70 - 130			B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1

DL - Detection Limit

LOD - Limit of Detection  
LOQ - Limit of quantitation

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

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

**Sample ID: CH-AT-1FB64-1117** **EPA Method 537**

Client Data				Laboratory Data			
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701751-15	Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 11:30	Date Received:	21-Nov-17 10:13		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
PFOA	ND	1.09	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
PFOS	ND	1.05	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	83.3	70 - 130			B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	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-1RW46-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-16	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 11:05	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
PFOA	ND	1.04	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
PFOS	ND	1.00	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	89.1	70 - 130			B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	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-1FB46-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-17	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 11:06	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
PFOA	ND	1.03	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
PFOS	ND	0.994	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	94.7	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	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-1RW47-1117** **EPA Method 537**

<b>Client Data</b>					<b>Laboratory Data</b>					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-18	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 11:20	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.51		B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
PFOA	2.80	1.03	4.75	9.51	J	B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
PFOS	3.27	0.989	4.75	9.51	J	B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.4	70 - 130			B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	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-1FB47-1117** **EPA Method 537**

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701751-19		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 11:21	Date Received:	21-Nov-17 10:13				

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
PFOA	ND	1.04	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
PFOS	ND	0.999	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	92.3	70 - 130			B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	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.

## **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



*Codes 3- 1 of 2 pages*



**CHAIN OF CUSTODY**

**For Laboratory Use Only**  
 Work Order #: 1701751 Temp 0.5 °C  
 Storage ID WR-2 Storage Secured Yes  No

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

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

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

Relinquished by (printed name and signature) Kathryn Smith Date 10/20/17 Time 15:30 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 1027

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: FEDEX  
 ATTN: Martha Maier  
 Tracking No: \_\_\_\_\_

Sample ID	Date	Time	Location/Sample Description	Quantity		Matrix	Add Analysis(es) Requested				Comments									
				Type	Matrix		PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26		Other: Please List	PFOA/PFOS/PFS	UCMR3 PFAS List 6	PFAS List: 14					
CH-AT-1RW58-1117	11/17/17	17:21		2	P	DW														TZ preservative
CH-AT-1FB58-1117	11/17/17	17:22		2	P	DW														TZ preservative
CH-AT-1EB01-111717	11/17/17	13:57		2	P	DW														TZ preservative
CH-AT-1RW59-1117	11/18/17	09:07		2	P	DW														TZ preservative
CH-AT-1FB59-1117	11/18/17	09:08		2	P	DW														TZ preservative
CH-AT-1RW60-1117	11/18/17	09:33		2	P	DW														TZ preservative
CH-AT-1FB60-1117	11/18/17	09:34		2	P	DW														TZ preservative
CH-AT-1RW61-1117	11/18/17	10:07		2	P	DW														TZ preservative
CH-AT-1FB61-1117	11/18/17	10:08		2	P	DW														TZ preservative
CH-AT-1RW62-1117	11/18/17	10:22		2	P	DW														TZ preservative

Special Instructions/Comments: 7 DAY TAT  
Analysis of Drinking Water samples for PFOA/PFOS/PFS

SEND DOCUMENTATION AND RESULTS TO:

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

Container Types: P= HDPE, PJ= HDPE Jar  
 O = Other \_\_\_\_\_  
 Bottle Preservation Type: T = Thiosulfate,  
 TZ = Trizma: \_\_\_\_\_  
 Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,  
 SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: \_\_\_\_\_



*Order 3-2 of 2 pages*



**CHAIN OF CUSTODY**

**For Laboratory Use Only**  
 Work Order #: 1701751 Temp 0.5 °C  
 Storage ID WF-2 Storage Secured Yes  No

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

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

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

Relinquished by (printed name and signature) Kathryn Smith Date 11/21/17 Time 10:27  
 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 10:27

Sample ID	Date	Time	Location/Sample Description	Add Analysis(es) Requested										Comments			
				Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Full List of 26	Other Please List Below	Mod. EPA Method 537	EPA Method 537 (DW only)				
CH-AT-1FB62-1117	11/18/17	10:23		2	P	DW											TZ preservative
CH-AT-1RW63-1117	11/18/17	10:40		2	P	DW											TZ preservative
CH-AT-1FB63-1117	11/18/17	10:41		2	P	DW											TZ preservative
CH-AT-1RW64-1117	11/18/17	11:29		2	P	DW											TZ preservative
CH-AT-1FB64-1117	11/18/17	11:30		2	P	DW											TZ preservative
CH-AT-1RW46-1117	11/17/17	11:05		2	P	DW											TZ preservative
CH-AT-1FB46-1117	11/17/17	11:06		2	P	DW											TZ preservative
CH-AT-1RW47-1117	11/17/17	11:20		2	P	DW											TZ preservative
CH-AT-1FB47-1117	11/17/17	11:21		2	P	DW											TZ preservative

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: FEDEX  
 Tracking No: \_\_\_\_\_  
 ATTN: Martha Maier

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

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

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

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

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

### Sample Log-in Checklist

Vista Work Order #: 1701751 TAT 7

Samples Arrival:	Date/Time 11/21/17 1013		Initials: WAB		Location: WR-2		
	Shelf/Rack: NA						
Logged In:	Date/Time 11/21/17 1549		Initials: SR WWS		Location: WR-2		
	Shelf/Rack: F7						
Delivered By:	<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
Preservation:	<input checked="" type="checkbox"/> Ice		<input type="checkbox"/> Blue Ice		<input type="checkbox"/> Dry Ice		<input type="checkbox"/> None
Temp °C:	0.4 (uncorrected)	Time: 1027		Thermometer ID: IR-1			
Temp °C:	0.5 (corrected)	Probe used: 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 <u>2044</u> Trk # <u>7707 9375 1333</u>	✓					
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:	<input type="checkbox"/> 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	<input type="checkbox"/> NA
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain	<input type="checkbox"/> Return	<input type="checkbox"/> Dispose	

Comments:

## **EXTRACTION INFORMATION**

Process Sheet  
 Workorder: 1701751



Prep Expiration: 2017-Dec-01  
 Client: CH2M Hill

Workorder Due: 30-Nov-17 00:00

TAT: 9

Method: 537 PFAS DW DoD Unmodified  
 Matrix: Drinking Water

Prep Batch: B7K0177

Prep Data Entered: 12/11/17 DM  
 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
1701751-01	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW58-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB58-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1EB01-111717		WR-2 F-7	HDPE Bottle, 250 mL
1701751-04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW59-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-05		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB59-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-06		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW60-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-07		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB60-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-08		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW61-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-09		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB61-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-10		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW62-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB62-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-12		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW63-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-13		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB63-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-14		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW64-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-15		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB64-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-16		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW46-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-17		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB46-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-18		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1RW47-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701751-19		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CH-AT-1FB47-1117		WR-2 F-7	HDPE Bottle, 250 mL

LCS/LCSD

Pre-Prep Check Out: 11/29/17 ST

Prep Check Out: N/A MC 11-30-17

Prep Reconciled Initials/Date: 11/28/17 ST

Pre-Prep Check In: N/A  
11-28-17 MC

Prep Check In: NA

Spike Reconciled Initials/Date: MC 11-30-17

VialBoxID: Phrasing

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7K0177

Chemist: HC

Prep Date/Time: 28-Nov-17 09:21

11-30-17 11:00  
HC

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"/>	B7K0177-BLK1 (A)	N/A	N/A	(0.250) ✓	HC KC 11-30-17	HC	11-30-17
<input type="checkbox"/>	B7K0177-BS1	↓	↓	(0.250) ✓	↓	↓	↓
<input type="checkbox"/>	B7K0177-BSD1	↓	↓	(0.250) ✓	↓	↓	↓
<input type="checkbox"/>	1701751-01	279.33	28.12	0.25121 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-02	289.30	27.63	0.26167 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-03	294.13	27.65	0.26648 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-04	287.12	28.35	0.25877 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-05	291.33	27.50	0.26388 ✓	↓	↓	↓
<input checked="" type="checkbox"/>	1701751-06	289.86 11/28/17 ST 289.67	27.84	0.26163 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-07	290.63 11/29/17 ST 289.86	27.72	0.26214 ✓	↓	↓	↓
<input checked="" type="checkbox"/>	1701751-08	284.28 11/28/17 ST 286.72	28.12	0.25861 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-09	290.63	26.97	0.26366 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-10	284.22	28.10	0.25612 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-11	288.89	27.14	0.26175 ✓	↓	↓	↓
<input checked="" type="checkbox"/>	1701751-12	286.41	27.32	0.25909 ✓	↓	↓	↓
<input type="checkbox"/>	1701751-13	287.01	27.68	0.25933 ✓	↓	↓	↓

SS/IS: 17K2804, 50µL (V2) SPE Chem: STAN X33, 500mg/bmL Notes: 1.25g of Trizma added to QC. 11/28/17 ST  
 NS: 17I2602, 2µL Lot#: 517-001946  
 IS/RS: 17J3102, 50µL (V1) Ele SOLV: MeOH Lot#: JR2654409  
 Final Volume(s): 1mL

Comments: Assume 1 g = 1 mL

Cen = Centrifuged  
Work Order 1701751

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7K0177

Chemist: HTC  
 Prep Date/Time: 28-Nov-17 09:21  
11:30-17 11:00  
HTC

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 checked="" type="checkbox"/>	1701751-14 <u>(B)</u>	284.63	26.82	0.25781	<u>HTC KC 11-30-17</u>	<u>HTC 11-30-17</u>	<u>HTC KC 11/30/17</u>
<input type="checkbox"/>	1701751-15	275.93	27.59	0.24834	↓	↓	↓
<input checked="" type="checkbox"/>	1701751-16	288.28	28.45	0.25983	↓	↓	↓
<input type="checkbox"/>	1701751-17	288.40	26.79	0.26161	↓	↓	↓
<input checked="" type="checkbox"/>	1701751-18	291.39	28.41	0.26298	↓	↓	↓
<input type="checkbox"/>	1701751-19	287.70	27.42	0.26028	↓	↓	↓

SS/IS: <u>17K2804, 50µL (u)</u>	SPE Chem: <u>Strata X-33µm 500mg/6mL</u>	Notes:
NS: <u>17J2602, 20µL</u>	Lot#: _____	
IS/RS: <u>17J3102, 50µL (u)</u>	Ele SOLV: <u>MeOH</u>	
<u>(V2) (B)</u>	Lot#: <u>57054909</u>	
	Final Volume(s) <u>1mL</u>	

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Work Order 1701751



Batch: B7K0177

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701751-01	0.25121 ✓	NA	NA	1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-02	0.26167 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-03	0.26648 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-04	0.25877 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-05	0.26383 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-06	0.26103 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-07	0.26214 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-08	0.25861 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-09	0.26366 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-10	0.25612 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-11	0.26175 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-12	0.25909 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-13	0.25933 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-14	0.25781 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-15	0.24834 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-16	0.25983 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-17	0.26161 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-18	0.26298 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701751-19	0.26028 ✓			1000	28-Nov-17 09:21	HAC			Drinking Water	537 PFAS DW DoD Unmod
B7K0177-BLK1	0.25			1000	28-Nov-17 09:21	HAC				QC
B7K0177-BS1	0.25			1000	28-Nov-17 09:21	HAC	17I2602 ✓	10		QC
B7K0177-BSD1	0.25			1000	28-Nov-17 09:21	HAC	17I2602 ✓	10		QC

DM 12/1/17



**SAMPLE DATA –EPA METHOD 537**

Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-6.qld

Last Altered: Saturday, December 02, 2017 05:12:47 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:16:37 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_6, Date: 01-Dec-2017, Time: 11:31:42, ID: B7K0177-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	7.73e0	1.20e4		0.2500	3.07	3.06	0.0185	0.0914	
2	2 PFOA	413 > 368.7	3.48e1	1.04e4		0.2500	4.36	4.38	0.0335	0.164	
3	3 PFOS	499 > 79.9	2.04e1	1.20e4		0.2500	4.77	4.79	0.0489	0.165	
4	4 13C2-PFHxA	315 > 269.8	3.69e3	1.04e4	0.429	0.2500	3.42	3.43	3.56	33.2	83.1
5	5 13C2-PFDA	515.1 > 469.9	4.89e3	1.04e4	0.548	0.2500	4.99	5.00	4.72	34.4	86.1
6	6 13C2-PFOA	414.9 > 369.7	1.04e4	1.04e4	1.000	0.2500	4.41	4.36	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.20e4	1.20e4	1.000	0.2500	4.81	4.77	28.7	115	100.0

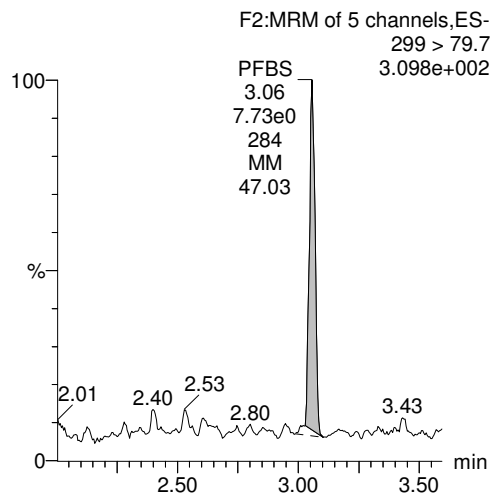
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-6.qld

Last Altered: Saturday, December 02, 2017 05:12:47 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:16:37 Pacific Standard Time

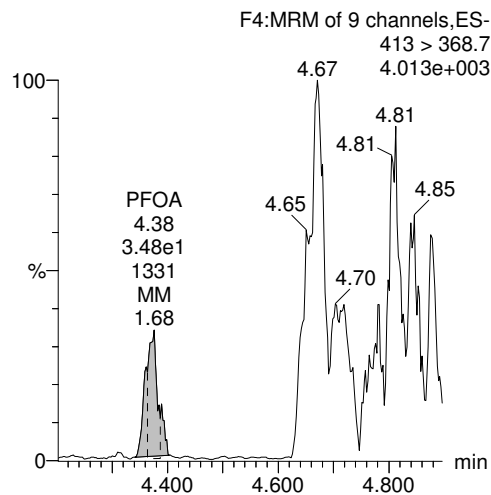
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_6, Date: 01-Dec-2017, Time: 11:31:42, ID: B7K0177-BLK1 LRB 0.25, Description: LRB

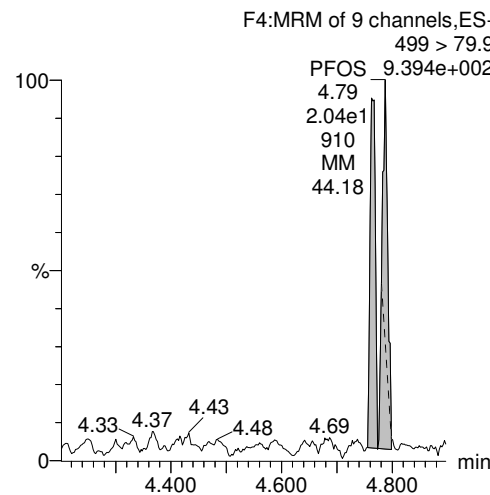
**PFBS**



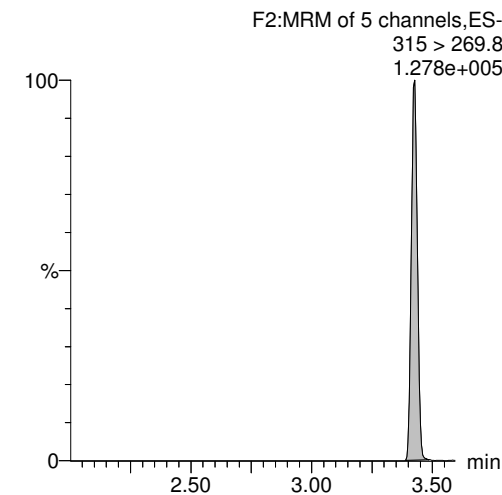
**PFOA**



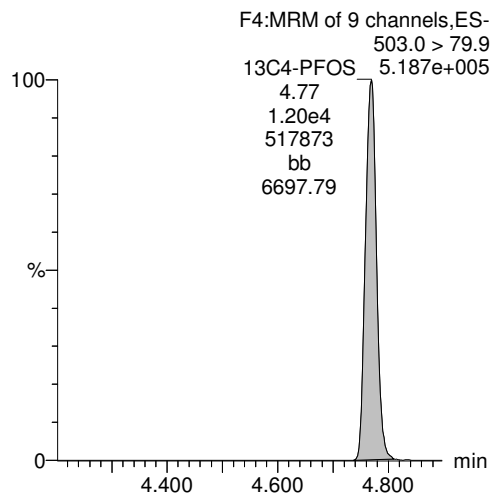
**PFOS**



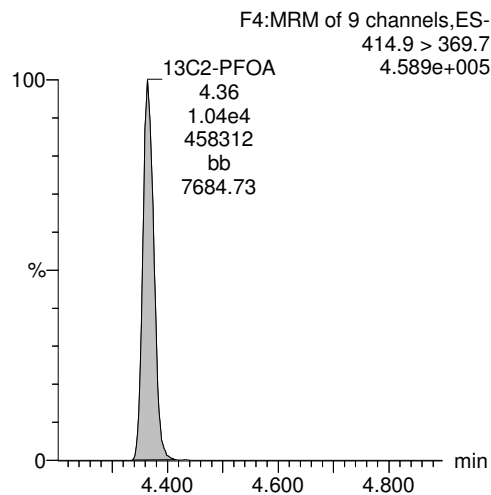
**13C2-PFHxA**



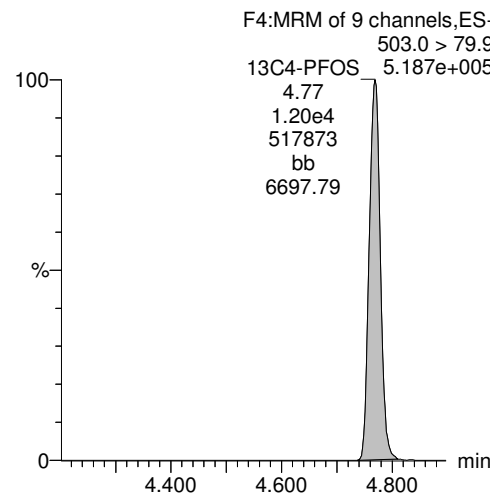
**13C4-PFOS**



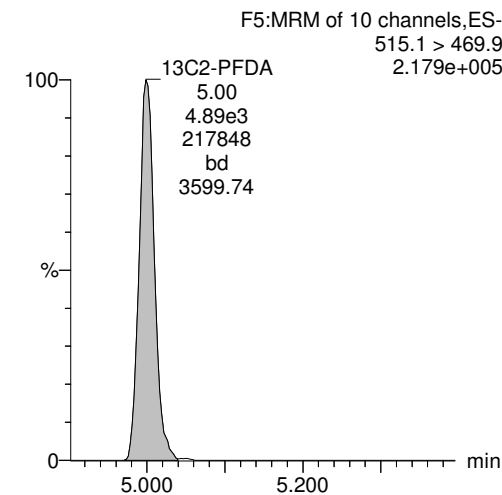
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-4.qld

Last Altered: Saturday, December 02, 2017 04:39:49 Pacific Standard Time

Printed: Saturday, December 02, 2017 04:45:43 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_4, Date: 01-Dec-2017, Time: 11:06:51, ID: B7K0177-BS1 LFB 0.25, Description: LFB

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.34e3	1.05e4		0.2500	3.07	3.06	3.68	18.2	103.1
2	2 PFOA	413 > 368.7	3.91e3	1.01e4		0.2500	4.36	4.36	3.86	18.9	94.4
3	3 PFOS	499 > 79.9	1.88e3	1.05e4		0.2500	4.77	4.77	5.14	17.4	93.9
4	4 13C2-PFHxA	315 > 269.8	3.65e3	1.01e4	0.429	0.2500	3.42	3.42	3.61	33.7	84.1
5	5 13C2-PFDA	515.1 > 469.9	4.77e3	1.01e4	0.548	0.2500	4.99	5.00	4.72	34.4	86.1
6	6 13C2-PFOA	414.9 > 369.7	1.01e4	1.01e4	1.000	0.2500	4.41	4.36	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	0.2500	4.81	4.77	28.7	115	100.0

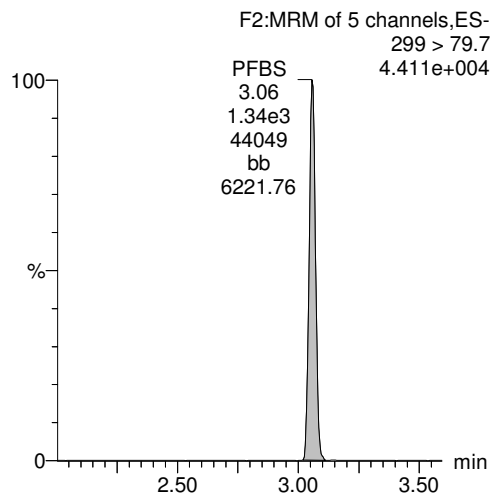
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-4.qld

Last Altered: Saturday, December 02, 2017 04:39:49 Pacific Standard Time  
Printed: Saturday, December 02, 2017 04:45:43 Pacific Standard Time

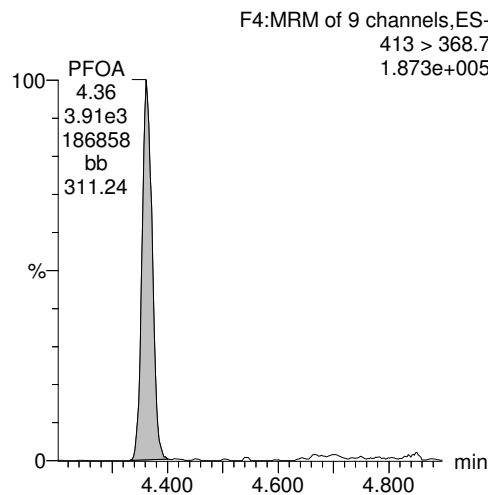
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_4, Date: 01-Dec-2017, Time: 11:06:51, ID: B7K0177-BS1 LFB 0.25, Description: LFB

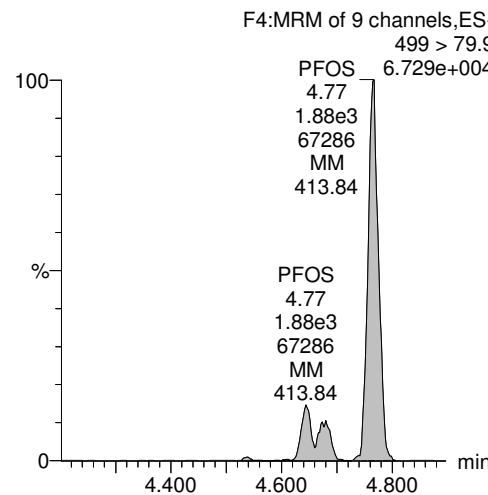
**PFBS**



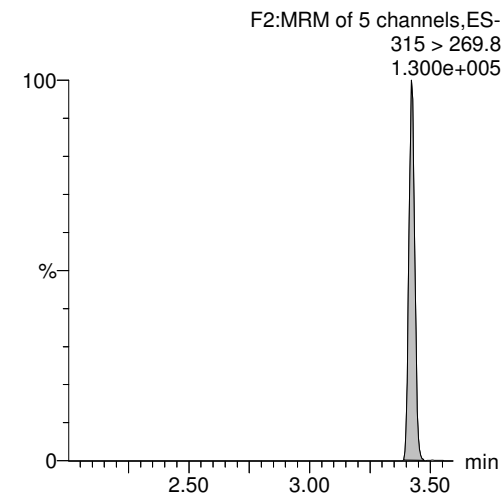
**PFOA**



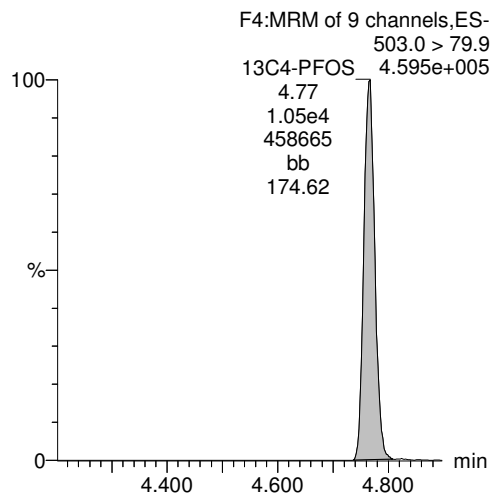
**PFOS**



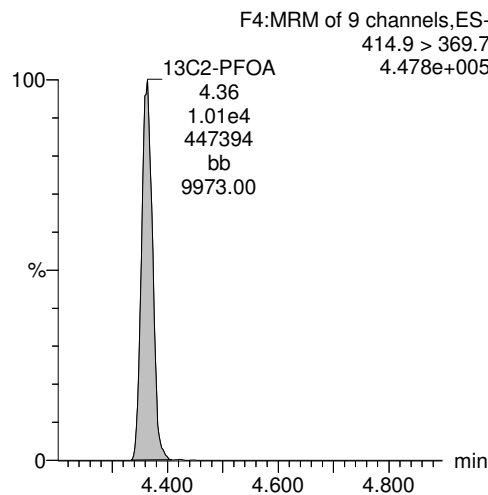
**13C2-PFHxA**



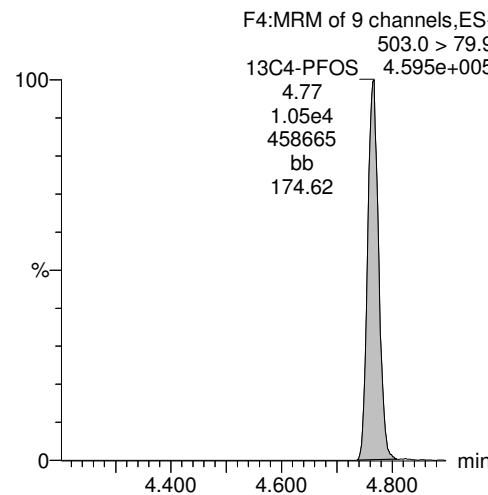
**13C4-PFOS**



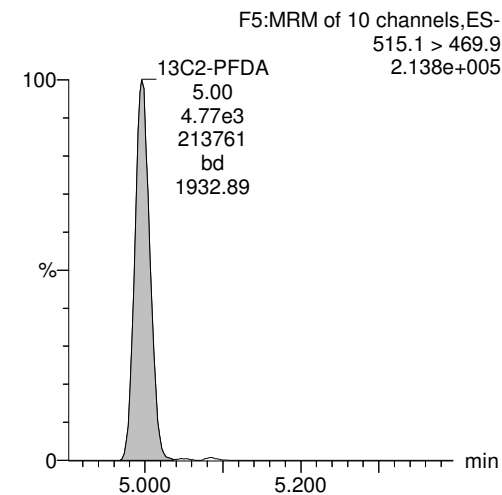
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-5.qld

Last Altered: Saturday, December 02, 2017 05:05:02 Pacific Standard Time

Printed: Saturday, December 02, 2017 05:05:35 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_5, Date: 01-Dec-2017, Time: 11:19:16, ID: B7K0177-BSD1 LFBD 0.25, Description: LFBD

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.30e3	1.04e4		0.2500	3.07	3.06	3.59	17.8	100.5
2	2 PFOA	413 > 368.7	4.14e3	9.53e3		0.2500	4.36	4.36	4.34	21.2	106.2
3	3 PFOS	499 > 79.9	1.96e3	1.04e4		0.2500	4.77	4.77	5.41	18.3	98.8
4	4 13C2-PFHxA	315 > 269.8	3.40e3	9.53e3	0.429	0.2500	3.42	3.42	3.56	33.3	83.1
5	5 13C2-PFDA	515.1 > 469.9	4.36e3	9.53e3	0.548	0.2500	4.99	5.00	4.57	33.4	83.5
6	6 13C2-PFOA	414.9 > 369.7	9.53e3	9.53e3	1.000	0.2500	4.41	4.36	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.04e4	1.04e4	1.000	0.2500	4.81	4.77	28.7	115	100.0

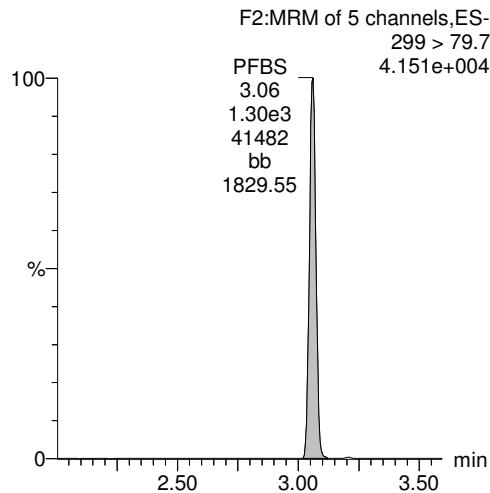
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-5.qld

Last Altered: Saturday, December 02, 2017 05:05:02 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:05:35 Pacific Standard Time

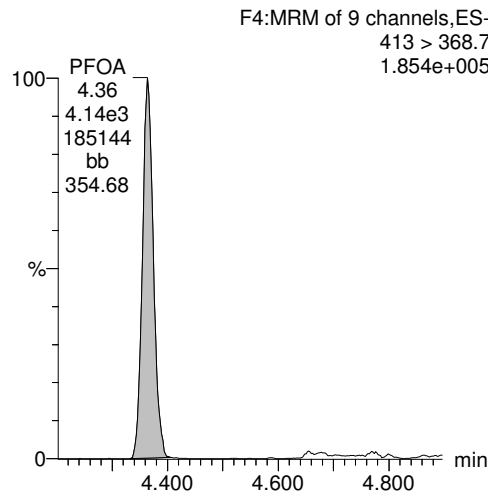
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_5, Date: 01-Dec-2017, Time: 11:19:16, ID: B7K0177-BSD1 LFB0.25, Description: LFB0

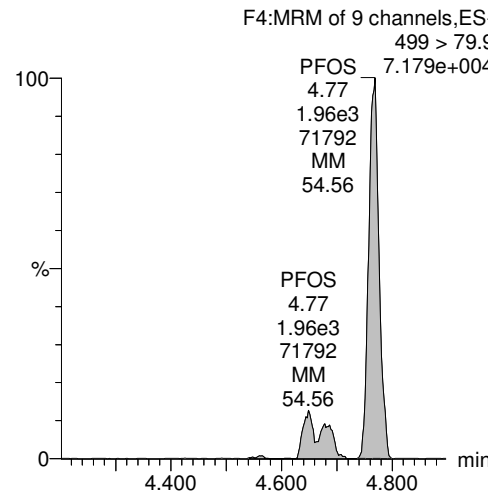
**PFBS**



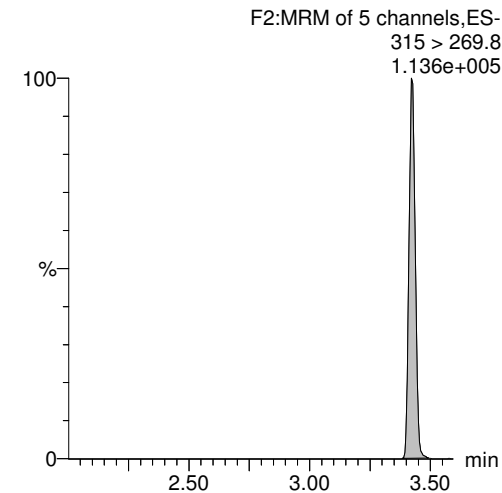
**PFOA**



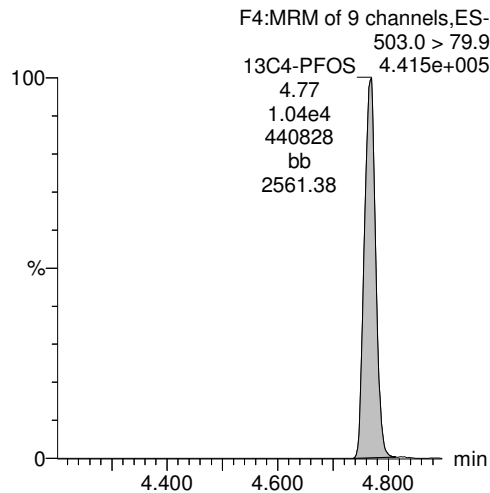
**PFOS**



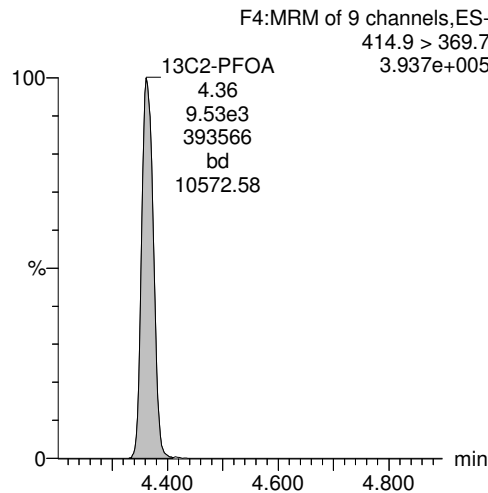
**13C2-PFHxA**



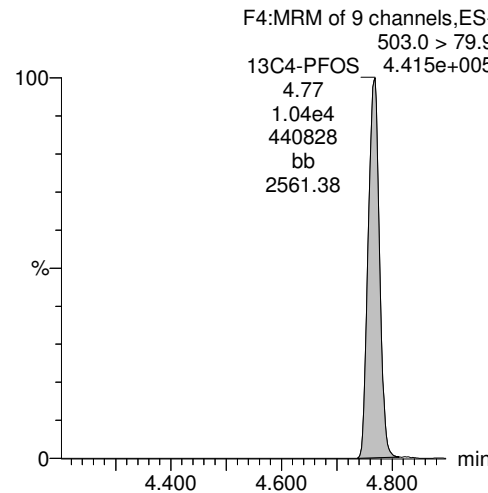
**13C4-PFOS**



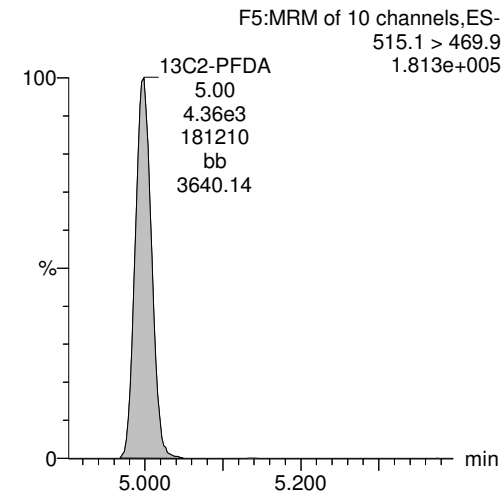
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-7.qld

Last Altered: Saturday, December 02, 2017 05:26:24 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:26:59 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_7, Date: 01-Dec-2017, Time: 11:44:09, ID: 1701751-01 CH-AT-1RW58-1117 0.25, Description: CH-AT-1RW58-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.14e4		0.2512	3.07				
2	2 PFOA	413 > 368.7	4.55e1	1.07e4		0.2512	4.36	4.36	0.0426	0.207	
3	3 PFOS	499 > 79.9		1.14e4		0.2512	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.86e3	1.07e4	0.429	0.2512	3.42	3.42	3.61	33.5	84.1
5	5 13C2-PFDA	515.1 > 469.9	5.45e3	1.07e4	0.548	0.2512	4.99	5.00	5.09	37.0	93.0
6	6 13C2-PFOA	414.9 > 369.7	1.07e4	1.07e4	1.000	0.2512	4.41	4.36	10.0	39.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.14e4	1.14e4	1.000	0.2512	4.81	4.77	28.7	114	100.0



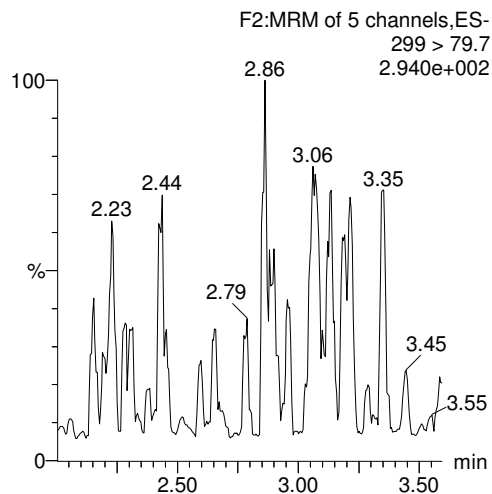
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-7.qld

Last Altered: Saturday, December 02, 2017 05:26:24 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:26:59 Pacific Standard Time

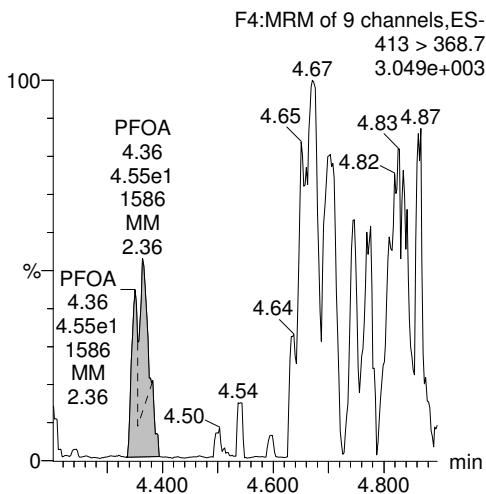
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_7, Date: 01-Dec-2017, Time: 11:44:09, ID: 1701751-01 CH-AT-1RW58-1117 0.25, Description: CH-AT-1RW58-1117

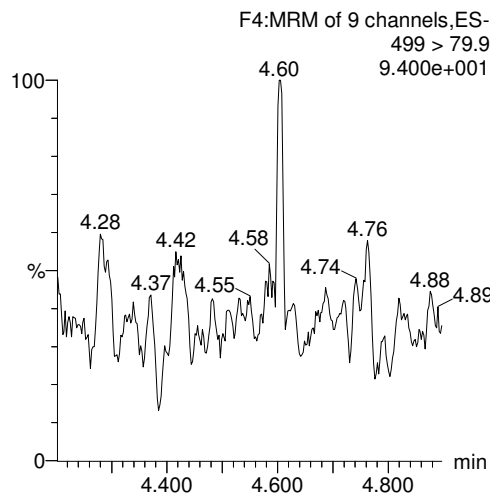
**PFBS**



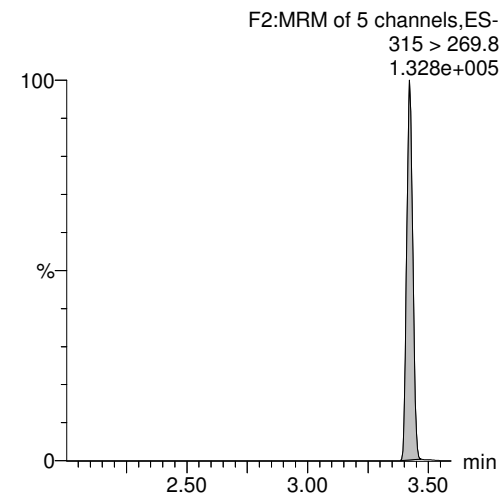
**PFOA**



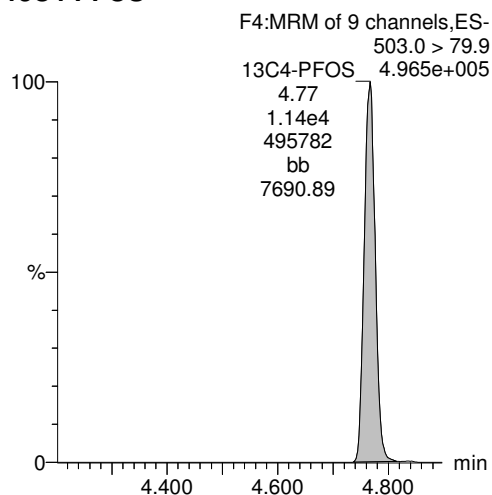
**PFOS**



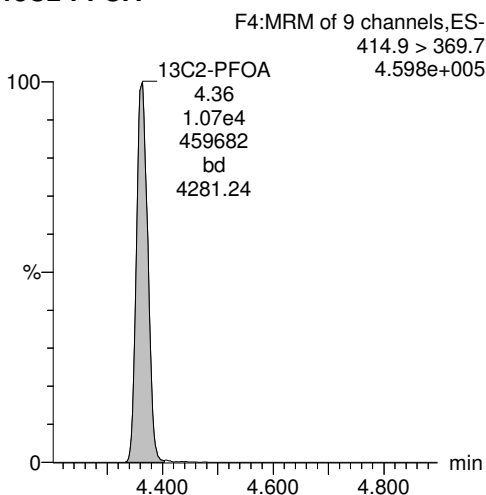
**13C2-PFHxA**



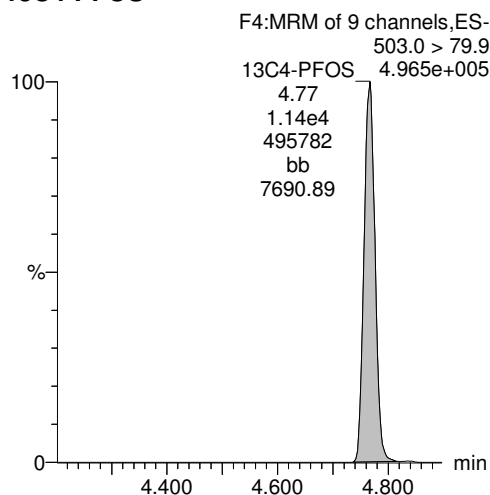
**13C4-PFOS**



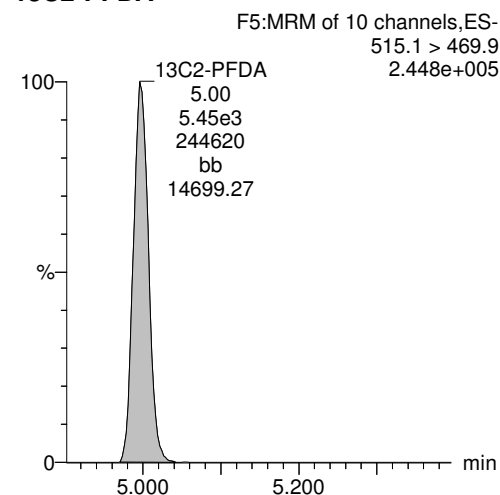
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-8.qld

Last Altered: Saturday, December 02, 2017 05:28:12 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:29:28 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_8, Date: 01-Dec-2017, Time: 11:56:36, ID: 1701751-02 CH-AT-1FB58-1117 0.25, Description: CH-AT-1FB58-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.16e4		0.2617	3.07				
2	2 PFOA	413 > 368.7	5.78e1	1.05e4		0.2617	4.37	4.37	0.0550	0.257	
3	3 PFOS	499 > 79.9		1.16e4		0.2617	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.78e3	1.05e4	0.429	0.2617	3.43	3.43	3.60	32.1	84.1
5	5 13C2-PFDA	515.1 > 469.9	4.72e3	1.05e4	0.548	0.2617	5.00	5.00	4.49	31.3	82.0
6	6 13C2-PFOA	414.9 > 369.7	1.05e4	1.05e4	1.000	0.2617	4.41	4.37	10.0	38.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.16e4	1.16e4	1.000	0.2617	4.81	4.77	28.7	110	100.0

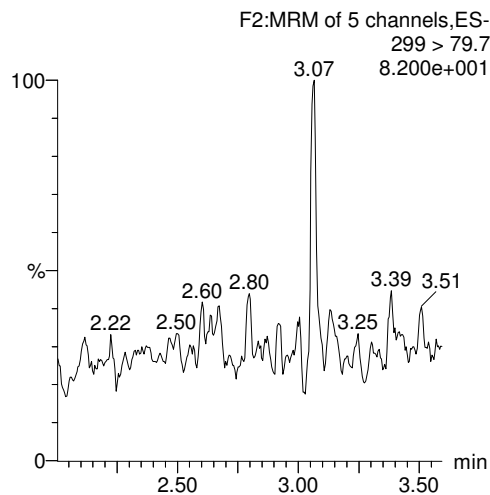
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-8.qld

Last Altered: Saturday, December 02, 2017 05:28:12 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:29:28 Pacific Standard Time

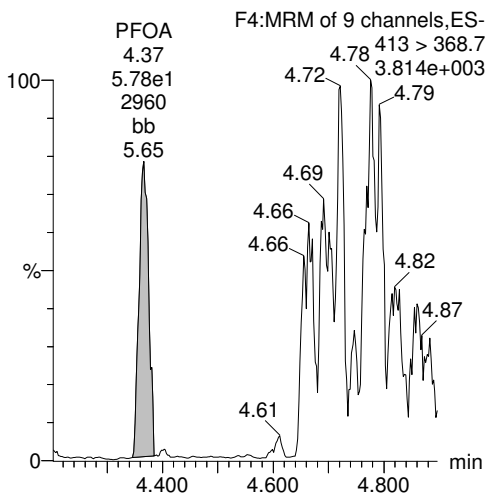
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_8, Date: 01-Dec-2017, Time: 11:56:36, ID: 1701751-02 CH-AT-1FB58-1117 0.25, Description: CH-AT-1FB58-1117

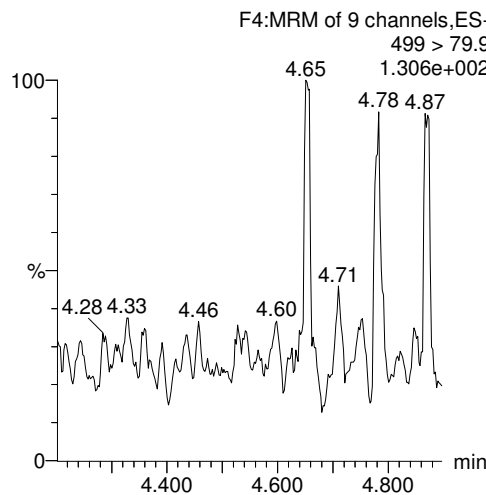
**PFBS**



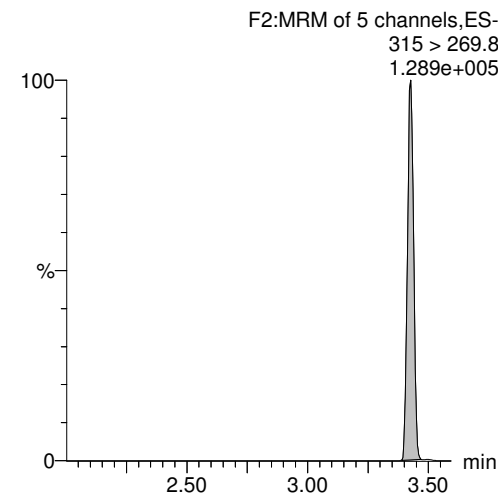
**PFOA**



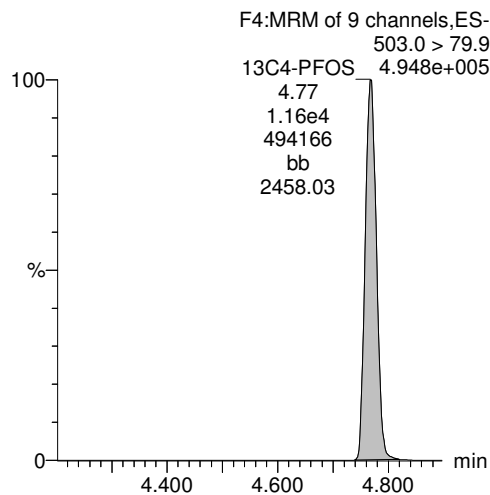
**PFOS**



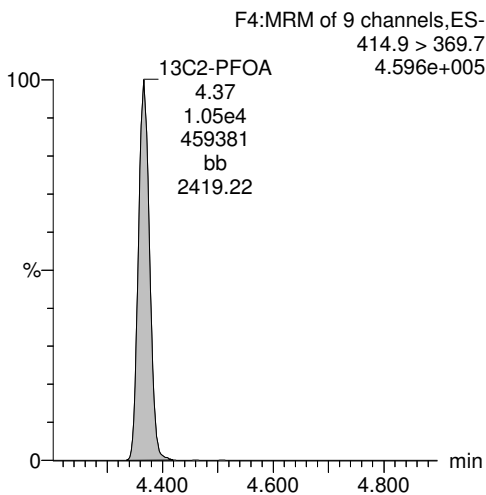
**13C2-PFHxA**



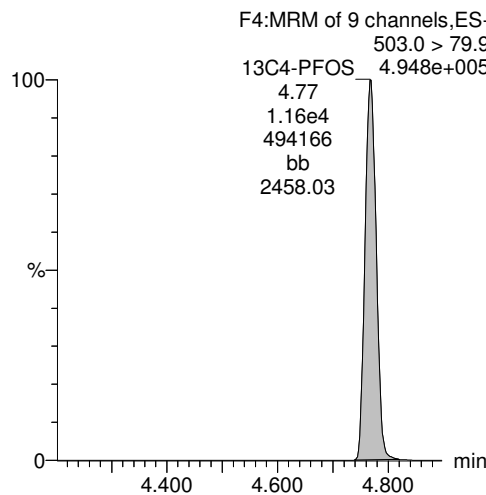
**13C4-PFOS**



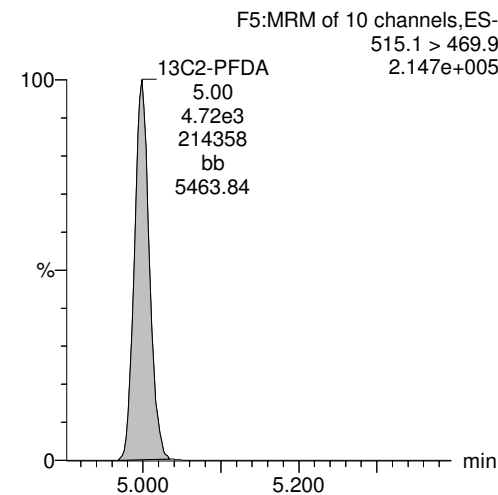
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-9.qld

Last Altered: Saturday, December 02, 2017 05:30:50 Pacific Standard Time

Printed: Saturday, December 02, 2017 05:31:45 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_9, Date: 01-Dec-2017, Time: 12:09:05, ID: 1701751-03 CH-AT-1EB01-111717 0.25, Description: CH-AT-1EB01-111717

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.16e4		0.2665	3.07				
2	2 PFOA	413 > 368.7	3.83e1	1.03e4		0.2665	4.37	4.36	0.0372	0.171	
3	3 PFOS	499 > 79.9		1.16e4		0.2665	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.82e3	1.03e4	0.429	0.2665	3.43	3.42	3.71	32.5	86.6
5	5 13C2-PFDA	515.1 > 469.9	4.79e3	1.03e4	0.548	0.2665	5.00	5.00	4.65	31.9	84.9
6	6 13C2-PFOA	414.9 > 369.7	1.03e4	1.03e4	1.000	0.2665	4.41	4.37	10.0	37.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.16e4	1.16e4	1.000	0.2665	4.81	4.77	28.7	108	100.0

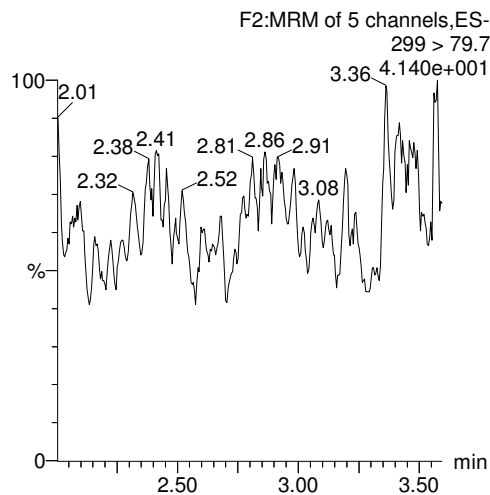
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-9.qld

Last Altered: Saturday, December 02, 2017 05:30:50 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:31:45 Pacific Standard Time

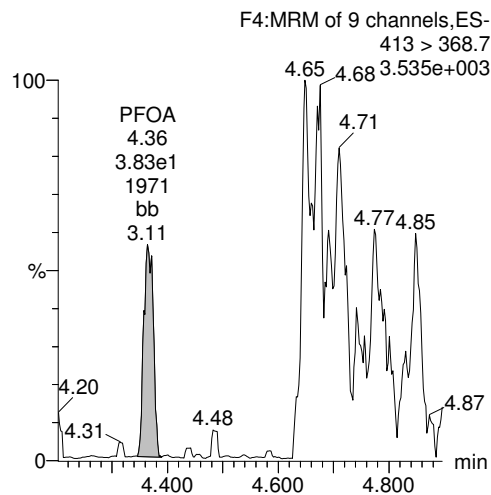
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_9, Date: 01-Dec-2017, Time: 12:09:05, ID: 1701751-03 CH-AT-1EB01-111717 0.25, Description: CH-AT-1EB01-111717

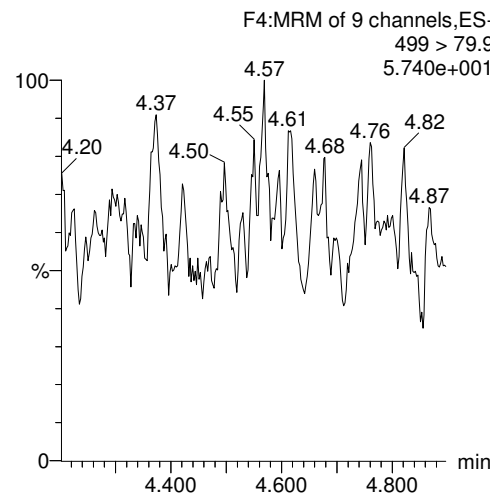
**PFBS**



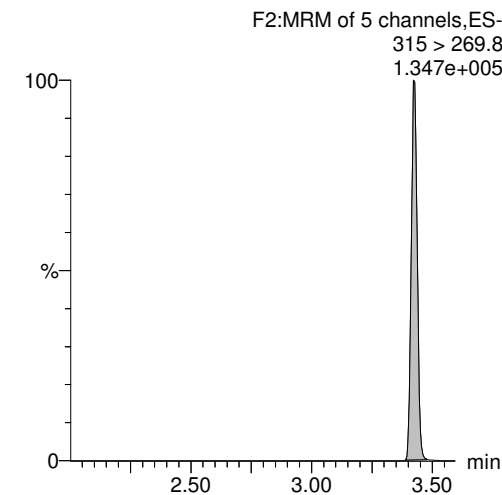
**PFOA**



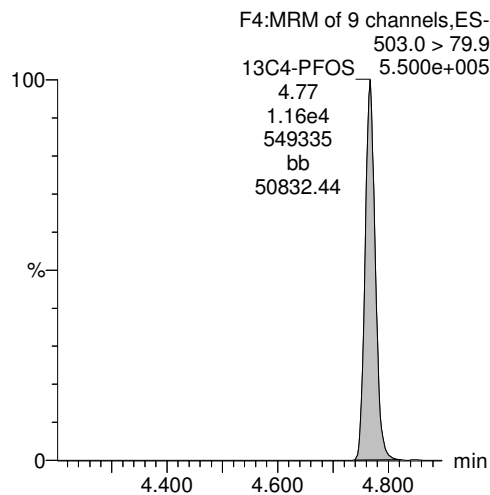
**PFOS**



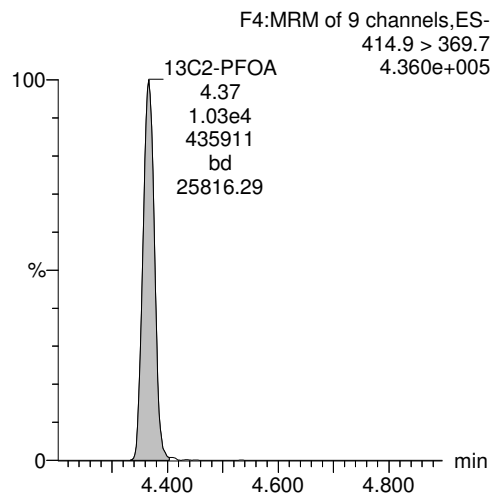
**13C2-PFHxA**



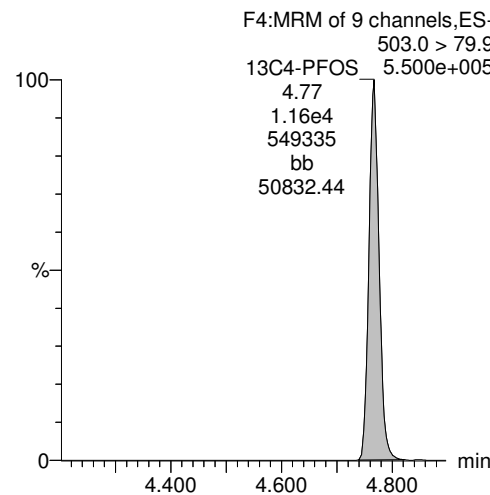
**13C4-PFOS**



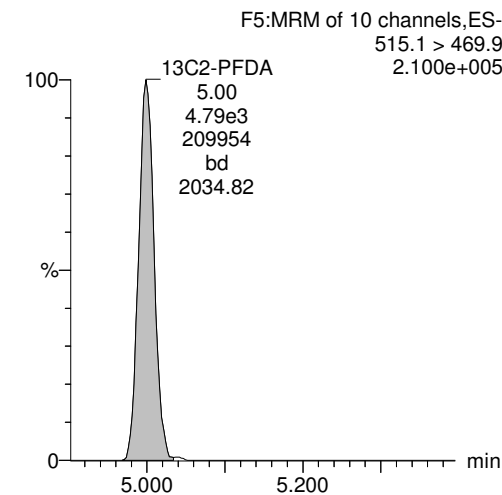
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-10.qld

Last Altered: Saturday, December 02, 2017 05:33:12 Pacific Standard Time

Printed: Saturday, December 02, 2017 05:33:49 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_10, Date: 01-Dec-2017, Time: 12:21:30, ID: 1701751-04 CH-AT-1RW59-1117 0.25, Description: CH-AT-1RW59-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.16e4		0.2588	3.07				
2	2 PFOA	413 > 368.7	1.02e2	1.04e4		0.2588	4.36	4.37	0.0979	0.463	
3	3 PFOS	499 > 79.9		1.16e4		0.2588	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.64e3	1.04e4	0.429	0.2588	3.42	3.42	3.51	31.6	81.8
5	5 13C2-PFDA	515.1 > 469.9	4.62e3	1.04e4	0.548	0.2588	4.99	5.00	4.45	31.4	81.2
6	6 13C2-PFOA	414.9 > 369.7	1.04e4	1.04e4	1.000	0.2588	4.41	4.36	10.0	38.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.16e4	1.16e4	1.000	0.2588	4.81	4.77	28.7	111	100.0

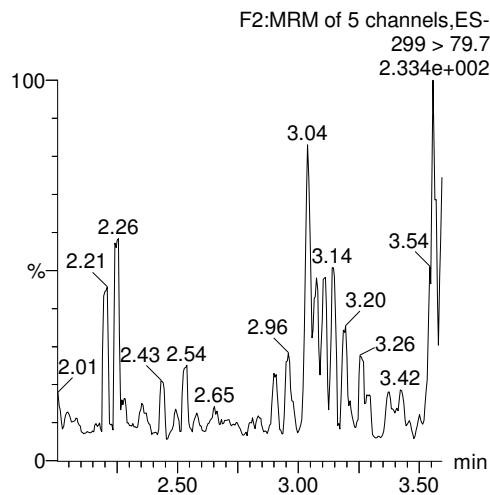
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-10.qld

Last Altered: Saturday, December 02, 2017 05:33:12 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:33:49 Pacific Standard Time

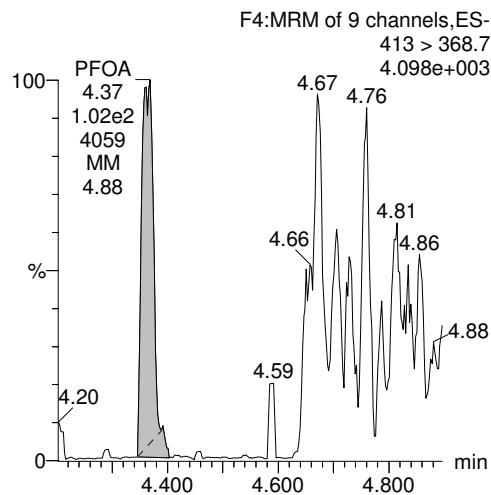
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_10, Date: 01-Dec-2017, Time: 12:21:30, ID: 1701751-04 CH-AT-1RW59-1117 0.25, Description: CH-AT-1RW59-1117

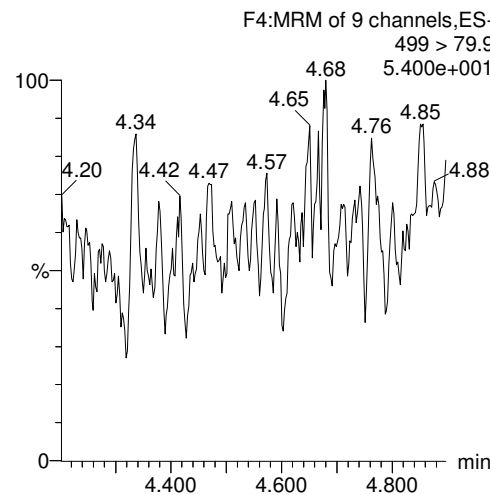
**PFBS**



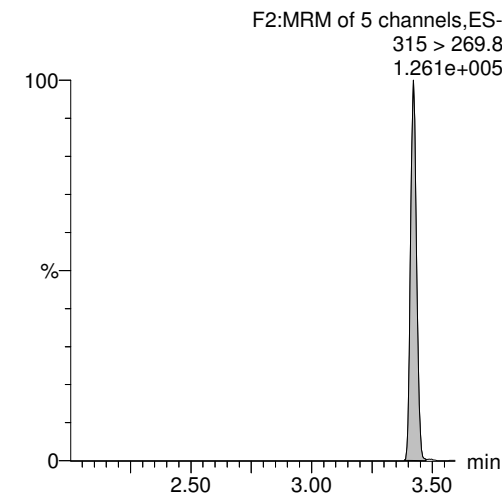
**PFOA**



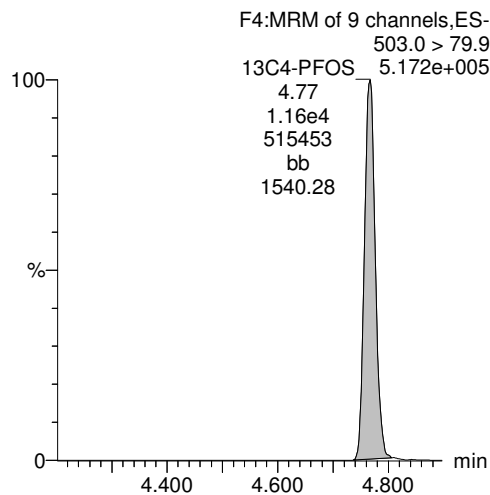
**PFOS**



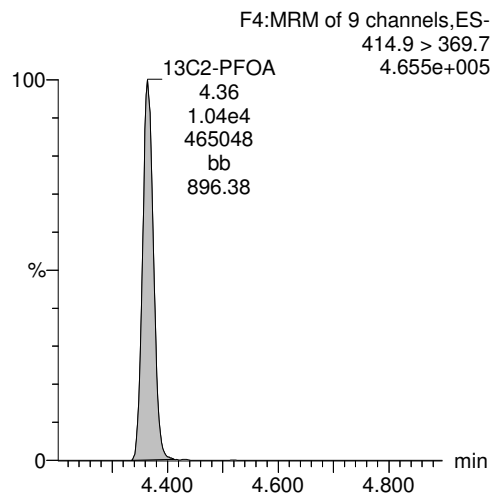
**13C2-PFHxA**



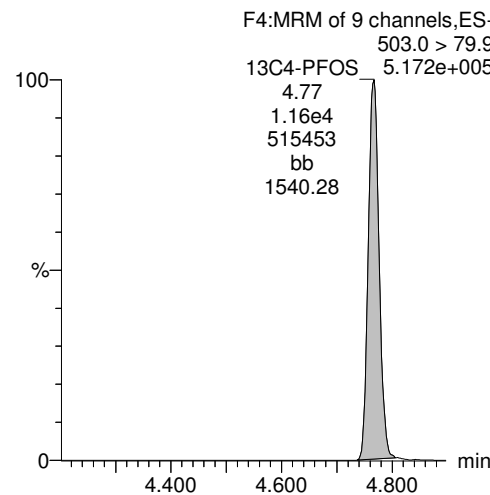
**13C4-PFOS**



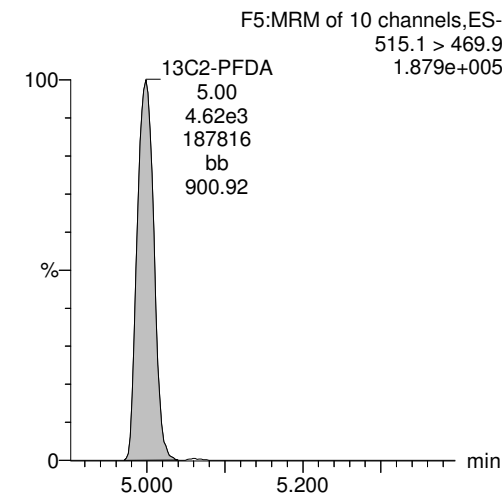
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-11.qld

Last Altered: Saturday, December 02, 2017 05:40:03 Pacific Standard Time

Printed: Saturday, December 02, 2017 05:40:21 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_11, Date: 01-Dec-2017, Time: 12:33:54, ID: 1701751-05 CH-AT-1FB59-1117 0.25, Description: CH-AT-1FB59-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.50e0	1.17e4		0.2638	3.07	3.06	0.00858	0.0403	
2	2 PFOA	413 > 368.7	7.90e1	9.60e3		0.2638	4.37	4.37	0.0824	0.382	
3	3 PFOS	499 > 79.9		1.17e4		0.2638	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.81e3	9.60e3	0.429	0.2638	3.43	3.42	3.98	35.2	92.8
5	5 13C2-PFDA	515.1 > 469.9	5.34e3	9.60e3	0.548	0.2638	5.00	5.00	5.57	38.5	101.6
6	6 13C2-PFOA	414.9 > 369.7	9.60e3	9.60e3	1.000	0.2638	4.41	4.37	10.0	37.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.17e4	1.17e4	1.000	0.2638	4.81	4.77	28.7	109	100.0



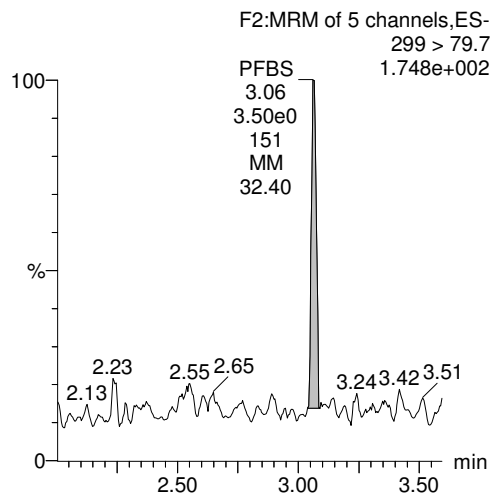
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-11.qld

Last Altered: Saturday, December 02, 2017 05:40:03 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:40:21 Pacific Standard Time

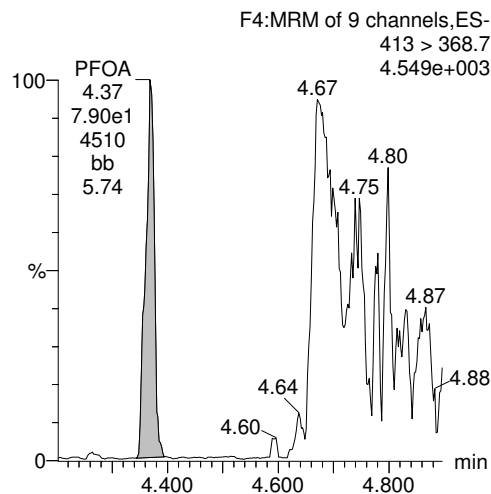
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_11, Date: 01-Dec-2017, Time: 12:33:54, ID: 1701751-05 CH-AT-1FB59-1117 0.25, Description: CH-AT-1FB59-1117

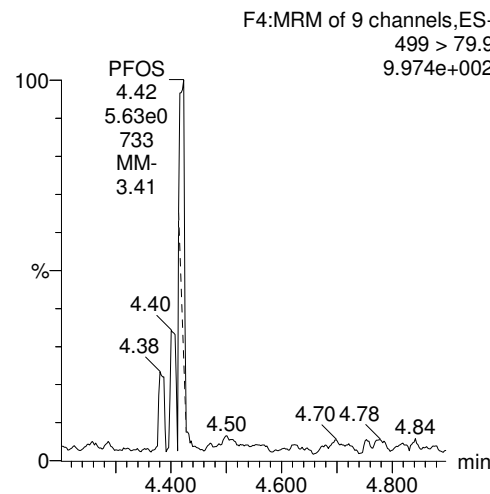
**PFBS**



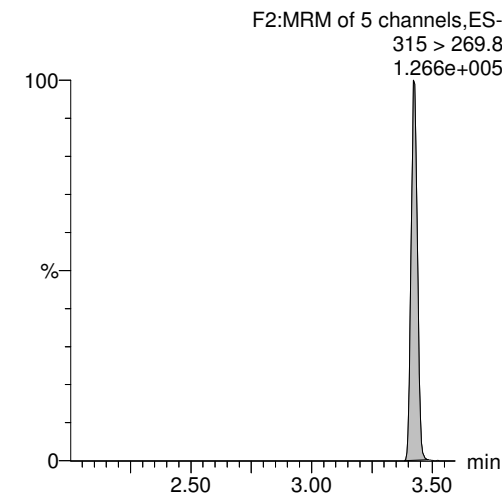
**PFOA**



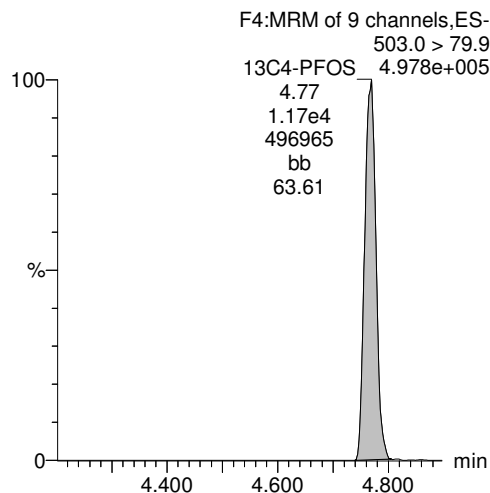
**PFOS**



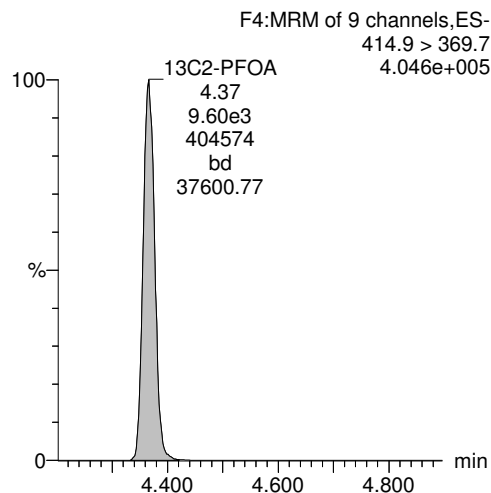
**13C2-PFHxA**



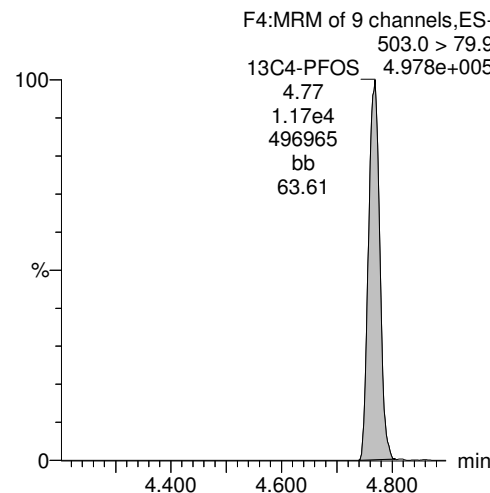
**13C4-PFOS**



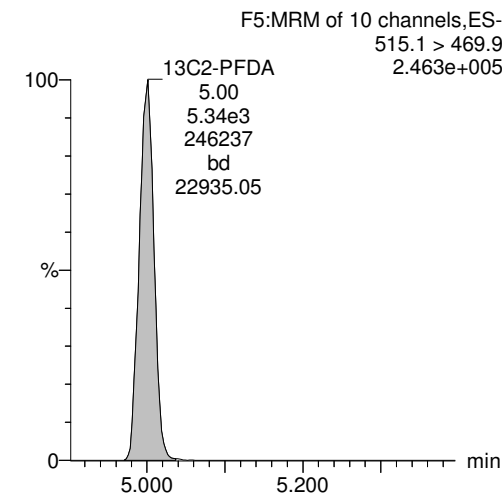
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-48.qld

Last Altered: Saturday, December 02, 2017 05:23:39 Pacific Standard Time

Printed: Saturday, December 02, 2017 05:24:14 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_48, Date: 01-Dec-2017, Time: 04:02:44, ID: 1701751-06 CH-AT-1RW60-1117 0.25, Description: CH-AT-1RW60-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.13e4		0.2610	3.08				
2	2 PFOA	413 > 368.7	9.00e1	1.05e4		0.2610	4.38	4.37	0.0856	0.401	
3	3 PFOS	499 > 79.9		1.13e4		0.2610	4.78				
4	4 13C2-PFHxA	315 > 269.8	3.82e3	1.05e4	0.429	0.2610	3.44	3.44	3.64	32.5	84.8
5	5 13C2-PFDA	515.1 > 469.9	4.54e3	1.05e4	0.548	0.2610	5.01	5.01	4.32	30.2	78.9
6	6 13C2-PFOA	414.9 > 369.7	1.05e4	1.05e4	1.000	0.2610	4.41	4.38	10.0	38.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.13e4	1.13e4	1.000	0.2610	4.81	4.78	28.7	110	100.0

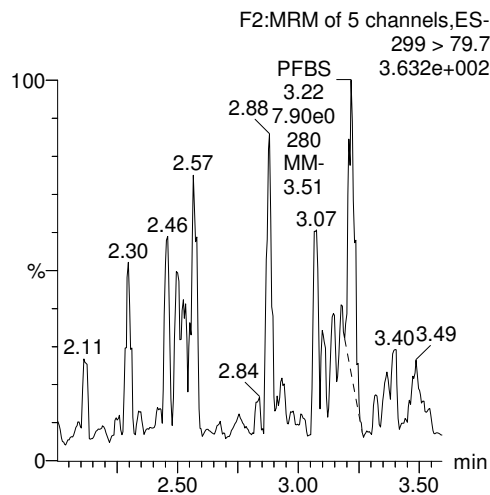
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-48.qld

Last Altered: Saturday, December 02, 2017 05:23:39 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:24:14 Pacific Standard Time

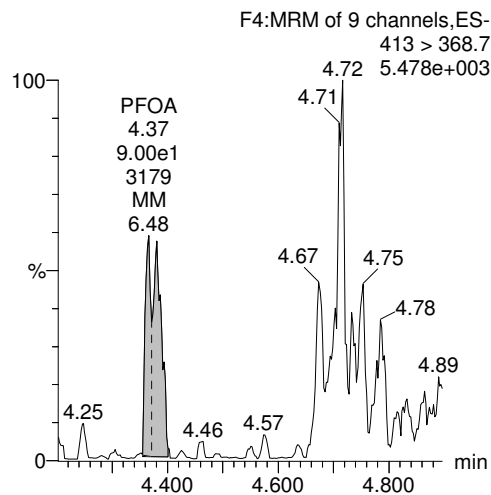
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_48, Date: 01-Dec-2017, Time: 04:02:44, ID: 1701751-06 CH-AT-1RW60-1117 0.25, Description: CH-AT-1RW60-1117

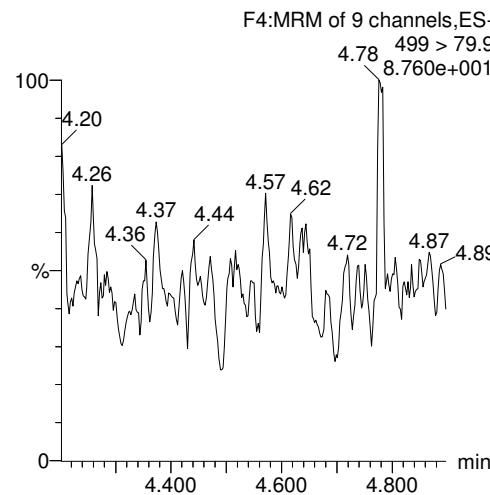
**PFBS**



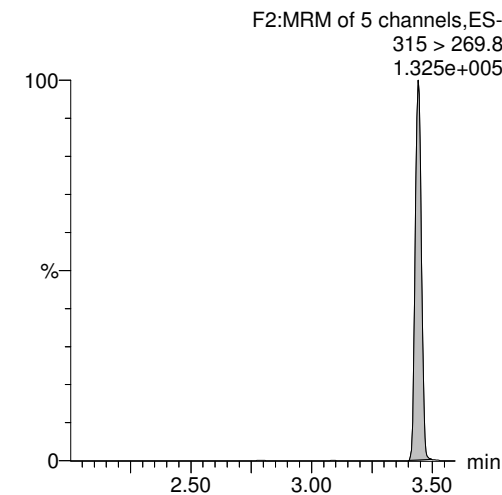
**PFOA**



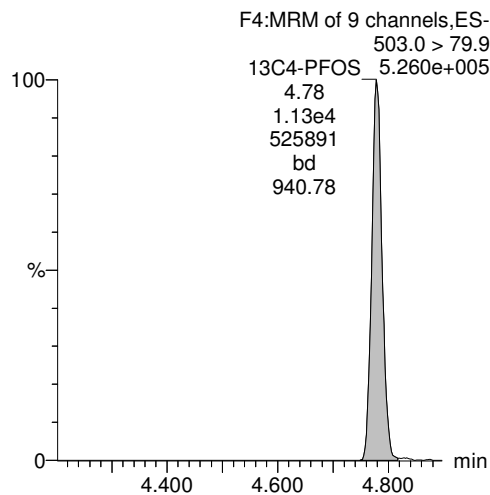
**PFOS**



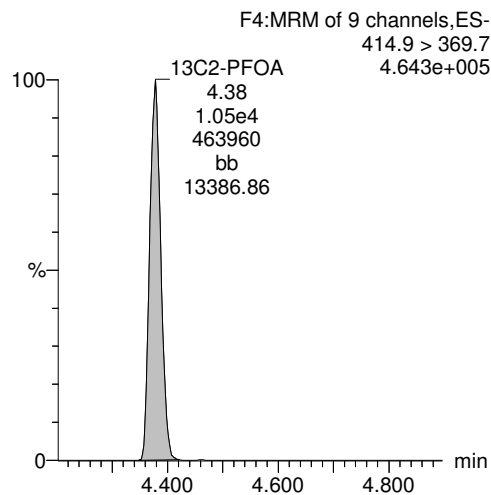
**13C2-PFHxA**



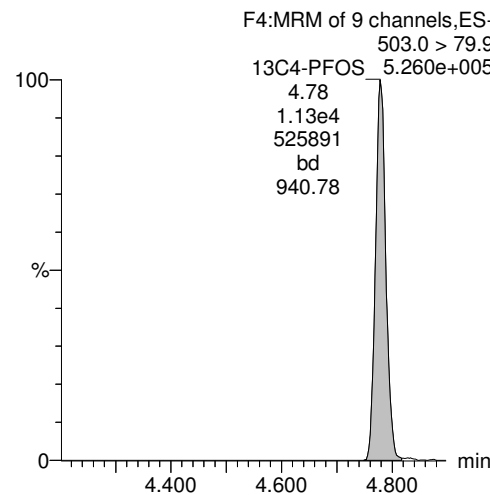
**13C4-PFOS**



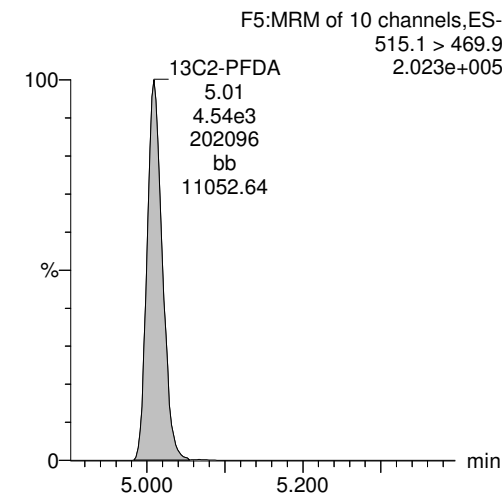
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-13.qld

Last Altered: Saturday, December 02, 2017 14:32:57 Pacific Standard Time

Printed: Saturday, December 02, 2017 14:33:30 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_13, Date: 01-Dec-2017, Time: 12:46:19, ID: 1701751-07 CH-AT-1FB60-1117 0.25, Description: CH-AT-1FB60-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.16e4		0.2621	3.06				
2	2 PFOA	413 > 368.7	6.68e1	1.04e4		0.2621	4.36	4.36	0.0640	0.299	
3	3 PFOS	499 > 79.9		1.16e4		0.2621	4.76				
4	4 13C2-PFHxA	315 > 269.8	3.87e3	1.04e4	0.429	0.2621	3.42	3.43	3.70	33.0	86.4
5	5 13C2-PFDA	515.1 > 469.9	4.58e3	1.04e4	0.548	0.2621	4.99	5.00	4.38	30.5	80.0
6	6 13C2-PFOA	414.9 > 369.7	1.04e4	1.04e4	1.000	0.2621	4.41	4.36	10.0	38.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.16e4	1.16e4	1.000	0.2621	4.81	4.76	28.7	110	100.0

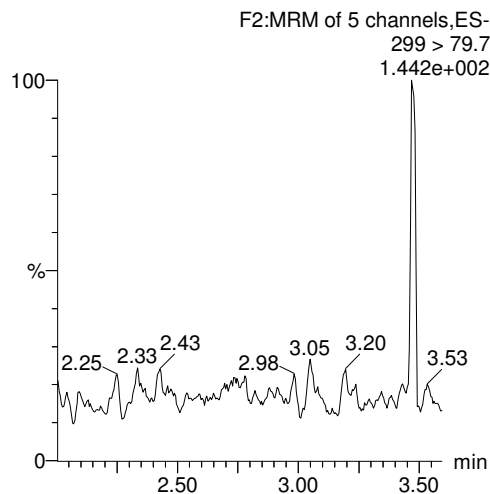
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-13.qld

Last Altered: Saturday, December 02, 2017 14:32:57 Pacific Standard Time  
Printed: Saturday, December 02, 2017 14:33:30 Pacific Standard Time

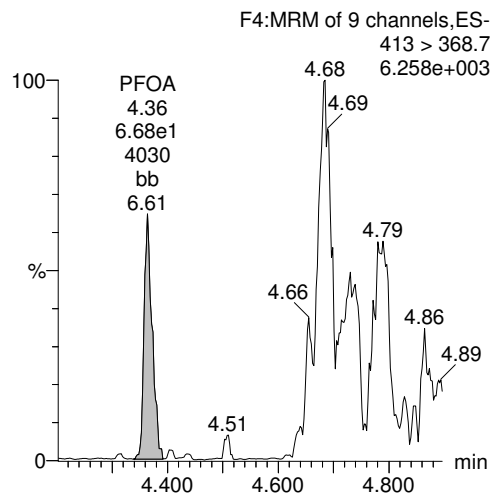
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_13, Date: 01-Dec-2017, Time: 12:46:19, ID: 1701751-07 CH-AT-1FB60-1117 0.25, Description: CH-AT-1FB60-1117

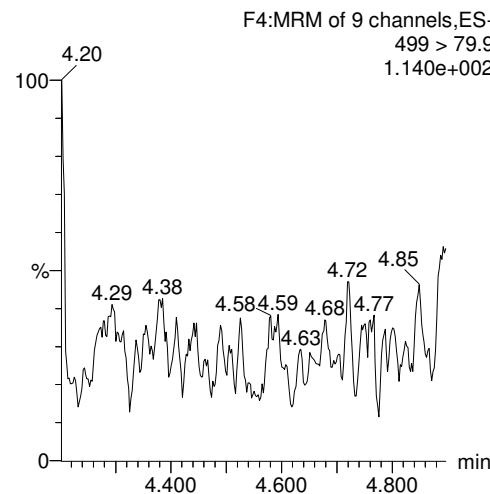
**PFBS**



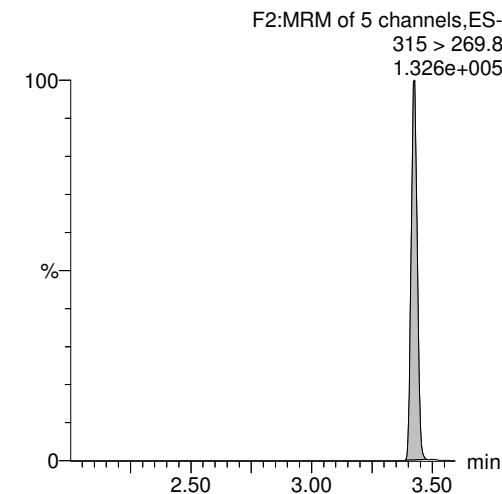
**PFOA**



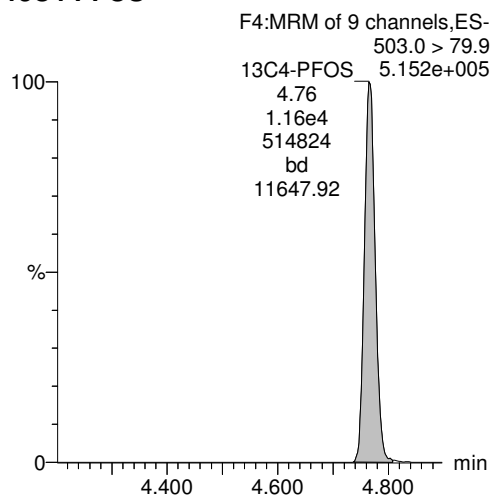
**PFOS**



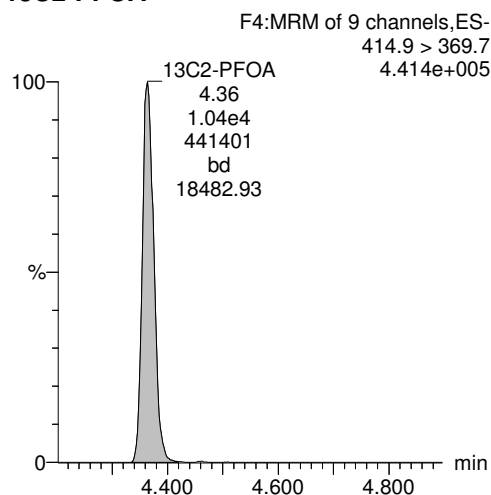
**13C2-PFHxA**



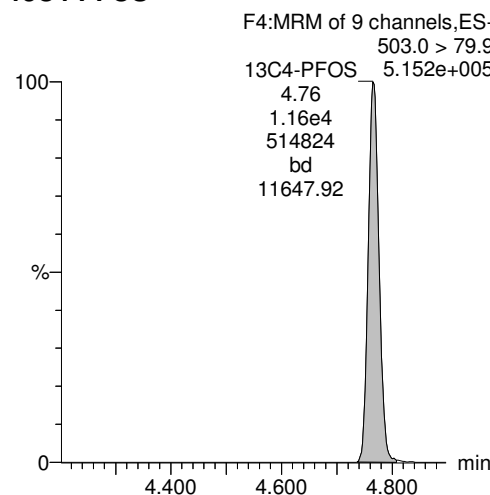
**13C4-PFOS**



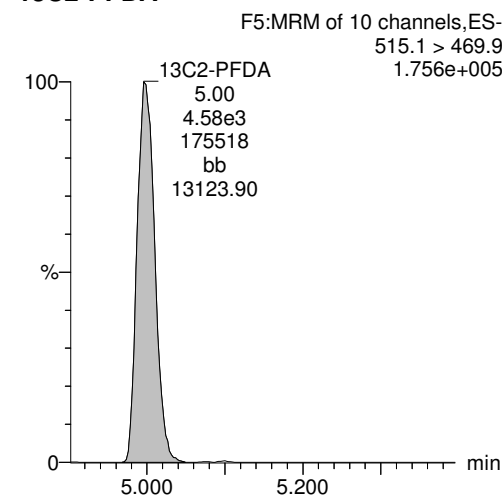
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-14.qld

Last Altered: Saturday, December 02, 2017 05:55:17 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:55:45 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_14, Date: 01-Dec-2017, Time: 12:58:45, ID: 1701751-08 CH-AT-1RW61-1117 0.25, Description: CH-AT-1RW61-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.06e4		0.2586	3.07				
2	2 PFOA	413 > 368.7	4.91e1	9.29e3		0.2586	4.36	4.37	0.0528	0.250	
3	3 PFOS	499 > 79.9		1.06e4		0.2586	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.59e3	9.29e3	0.429	0.2586	3.42	3.42	3.86	34.8	90.1
5	5 13C2-PFDA	515.1 > 469.9	4.77e3	9.29e3	0.548	0.2586	4.99	5.00	5.13	36.2	93.6
6	6 13C2-PFOA	414.9 > 369.7	9.29e3	9.29e3	1.000	0.2586	4.41	4.36	10.0	38.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2586	4.81	4.77	28.7	111	100.0

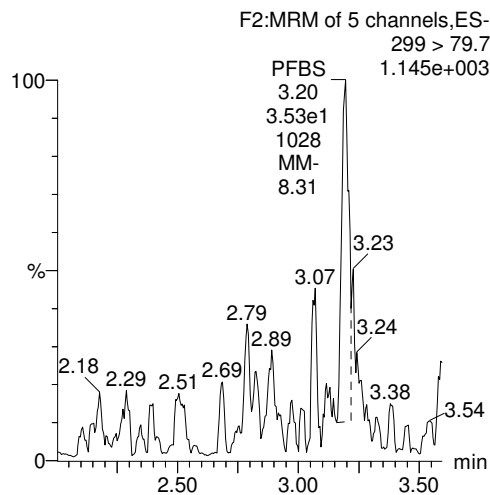
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-14.qld

Last Altered: Saturday, December 02, 2017 05:55:17 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:55:45 Pacific Standard Time

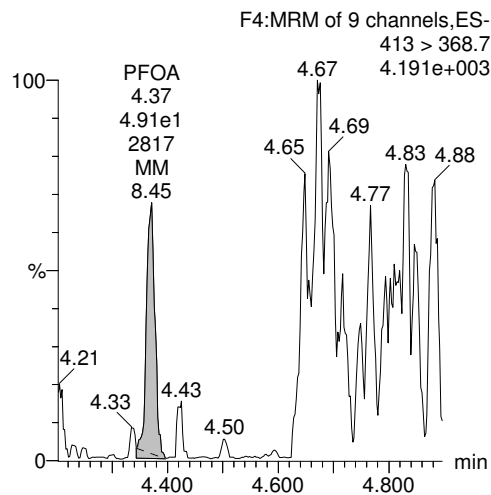
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_14, Date: 01-Dec-2017, Time: 12:58:45, ID: 1701751-08 CH-AT-1RW61-1117 0.25, Description: CH-AT-1RW61-1117

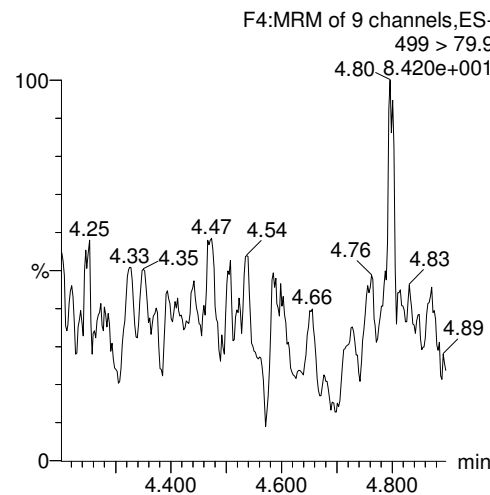
**PFBS**



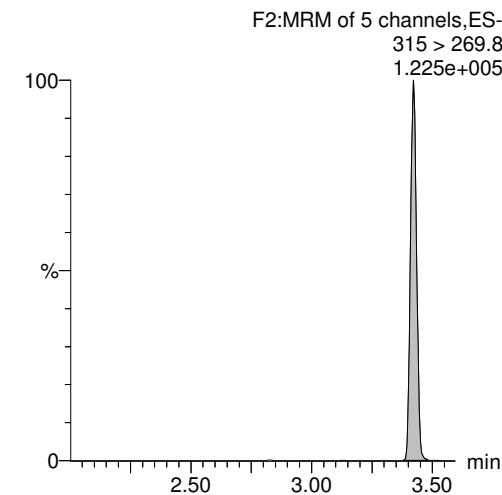
**PFOA**



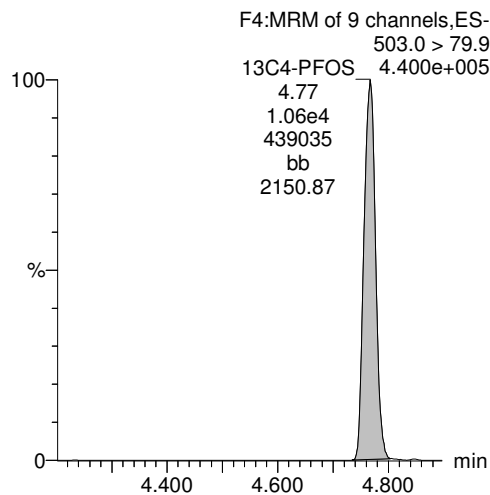
**PFOS**



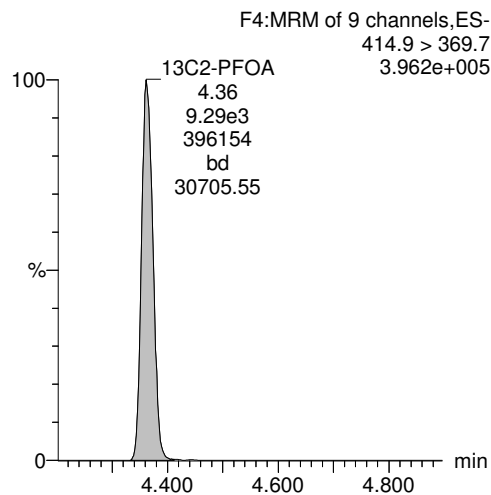
**13C2-PFHxA**



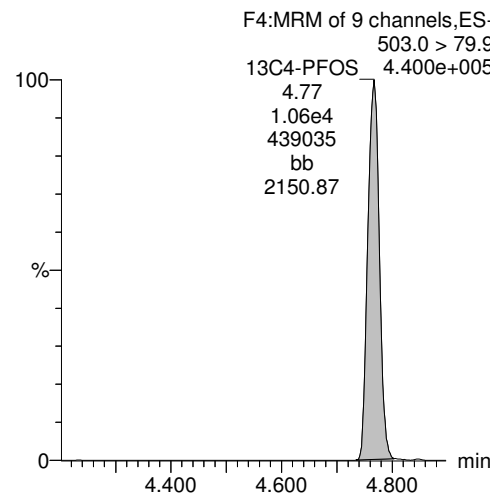
**13C4-PFOS**



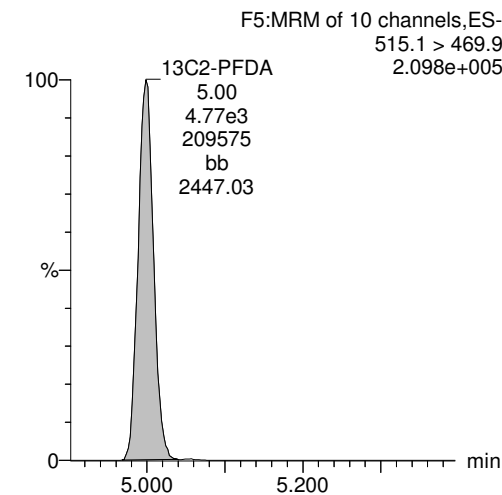
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-15.qld

Last Altered: Saturday, December 02, 2017 05:58:21 Pacific Standard Time

Printed: Saturday, December 02, 2017 05:58:46 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_15, Date: 01-Dec-2017, Time: 13:11:13, ID: 1701751-09 CH-AT-1FB61-1117 0.25, Description: CH-AT-1FB61-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.10e4		0.2637	3.07				
2	2 PFOA	413 > 368.7	7.47e1	9.95e3		0.2637	4.37	4.37	0.0751	0.348	
3	3 PFOS	499 > 79.9	1.69e0	1.10e4		0.2637	4.77	4.76	0.00441	0.0141	
4	4 13C2-PFHxA	315 > 269.8	3.57e3	9.95e3	0.429	0.2637	3.43	3.43	3.58	31.7	83.6
5	5 13C2-PFDA	515.1 > 469.9	4.96e3	9.95e3	0.548	0.2637	5.00	5.00	4.98	34.5	90.9
6	6 13C2-PFOA	414.9 > 369.7	9.95e3	9.95e3	1.000	0.2637	4.41	4.37	10.0	37.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.10e4	1.10e4	1.000	0.2637	4.81	4.77	28.7	109	100.0



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-15.qld

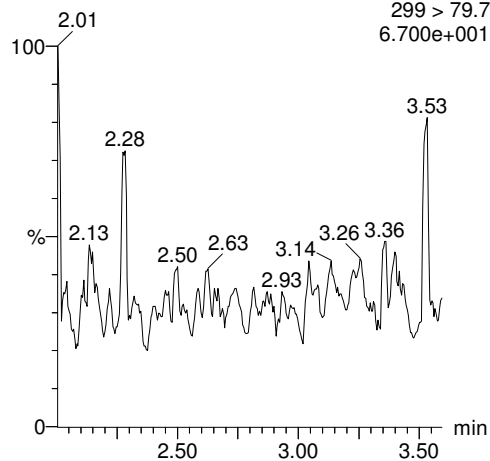
Last Altered: Saturday, December 02, 2017 05:58:21 Pacific Standard Time  
Printed: Saturday, December 02, 2017 05:58:46 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_15, Date: 01-Dec-2017, Time: 13:11:13, ID: 1701751-09 CH-AT-1FB61-1117 0.25, Description: CH-AT-1FB61-1117

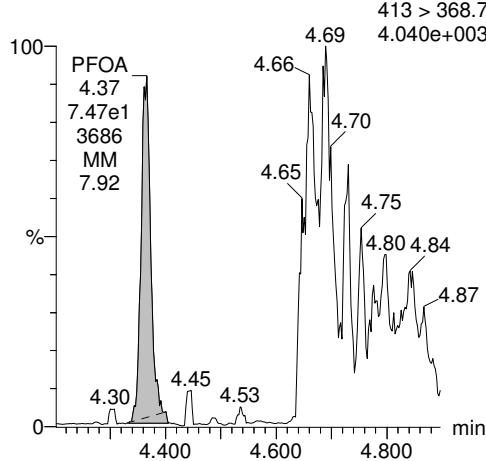
**PFBS**

F2:MRM of 5 channels,ES-  
299 > 79.7  
6.700e+001



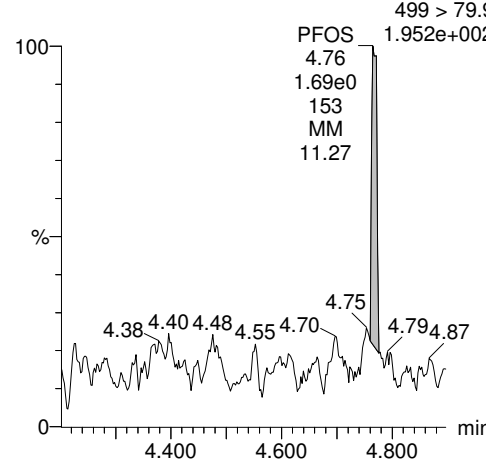
**PFOA**

F4:MRM of 9 channels,ES-  
413 > 368.7  
4.040e+003



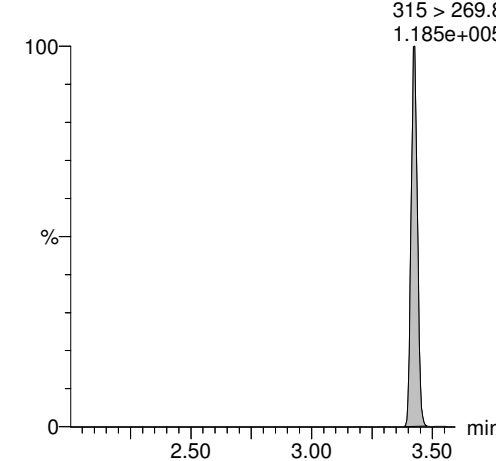
**PFOS**

F4:MRM of 9 channels,ES-  
499 > 79.9  
1.952e+002



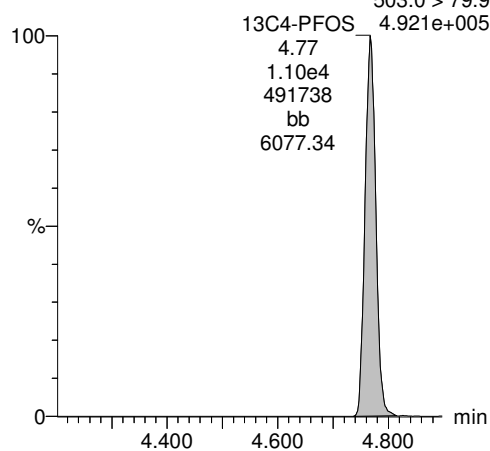
**13C2-PFHxA**

F2:MRM of 5 channels,ES-  
315 > 269.8  
1.185e+005



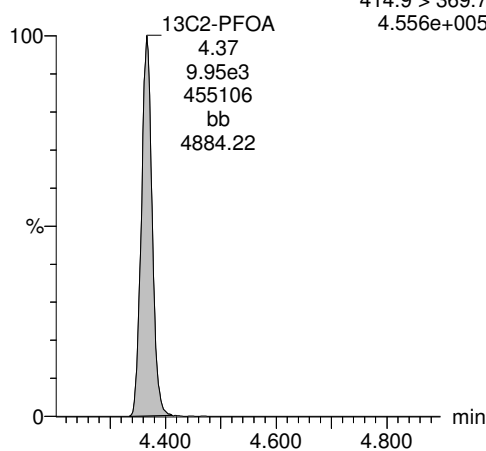
**13C4-PFOS**

F4:MRM of 9 channels,ES-  
503.0 > 79.9  
4.921e+005



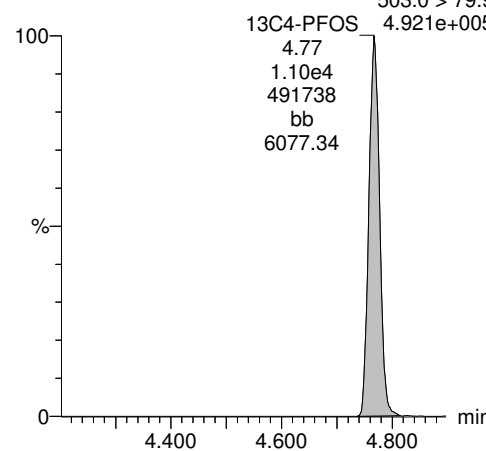
**13C2-PFOA**

F4:MRM of 9 channels,ES-  
414.9 > 369.7  
4.556e+005



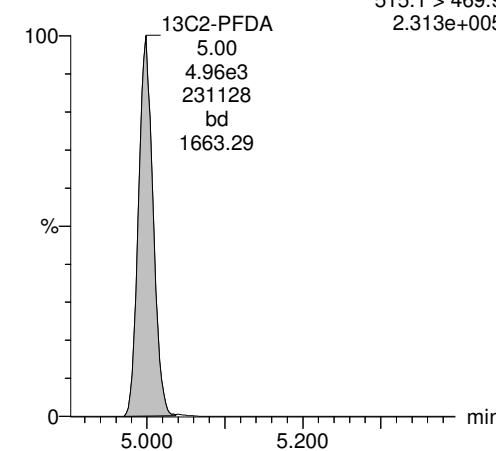
**13C4-PFOS**

F4:MRM of 9 channels,ES-  
503.0 > 79.9  
4.921e+005



**13C2-PFDA**

F5:MRM of 10 channels,ES-  
515.1 > 469.9  
2.313e+005



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-16.qld

Last Altered: Saturday, December 02, 2017 06:11:24 Pacific Standard Time  
Printed: Saturday, December 02, 2017 06:12:03 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_16, Date: 01-Dec-2017, Time: 13:23:40, ID: 1701751-10 CH-AT-1RW62-1117 0.25, Description: CH-AT-1RW62-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.14e4		0.2561	3.07				
2	2 PFOA	413 > 368.7	9.26e1	1.02e4		0.2561	4.37	4.36	0.0904	0.432	
3	3 PFOS	499 > 79.9		1.14e4		0.2561	4.77				
4	4 13C2-PFHxA	315 > 269.8	4.08e3	1.02e4	0.429	0.2561	3.43	3.42	3.99	36.3	93.1
5	5 13C2-PFDA	515.1 > 469.9	4.75e3	1.02e4	0.548	0.2561	5.00	5.00	4.64	33.0	84.6
6	6 13C2-PFOA	414.9 > 369.7	1.02e4	1.02e4	1.000	0.2561	4.41	4.37	10.0	39.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.14e4	1.14e4	1.000	0.2561	4.81	4.77	28.7	112	100.0

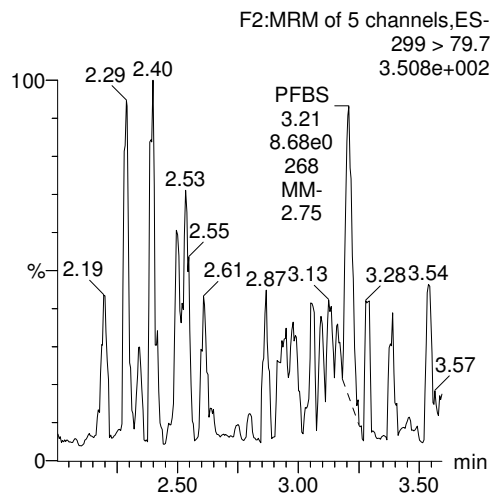
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-16.qld

Last Altered: Saturday, December 02, 2017 06:11:24 Pacific Standard Time  
Printed: Saturday, December 02, 2017 06:12:03 Pacific Standard Time

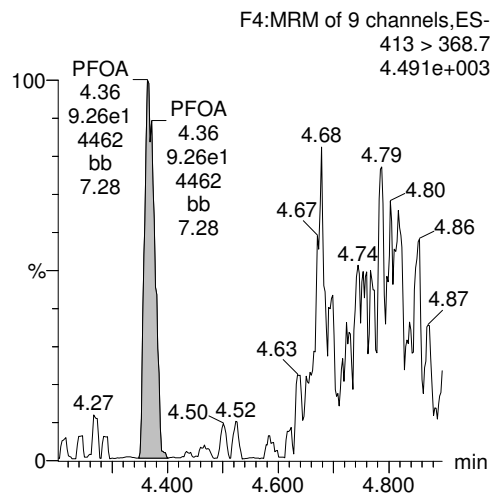
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_16, Date: 01-Dec-2017, Time: 13:23:40, ID: 1701751-10 CH-AT-1RW62-1117 0.25, Description: CH-AT-1RW62-1117

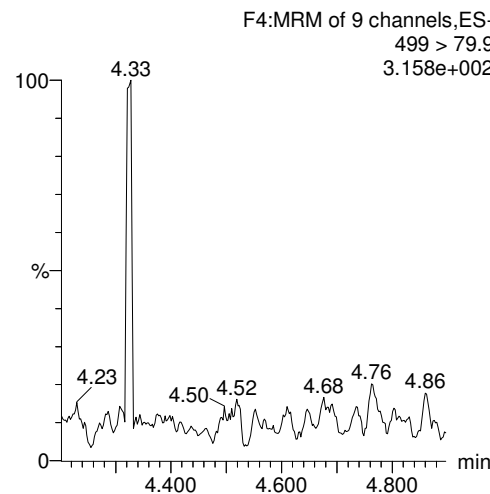
**PFBS**



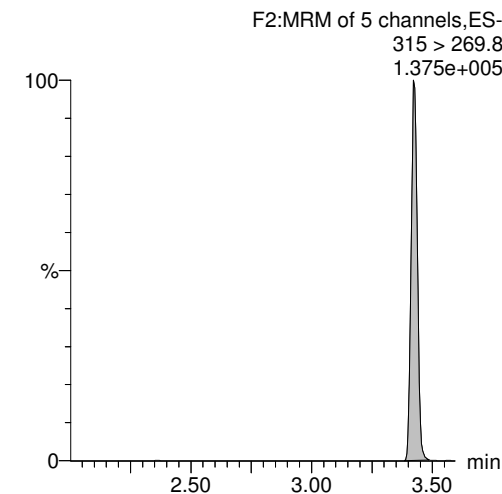
**PFOA**



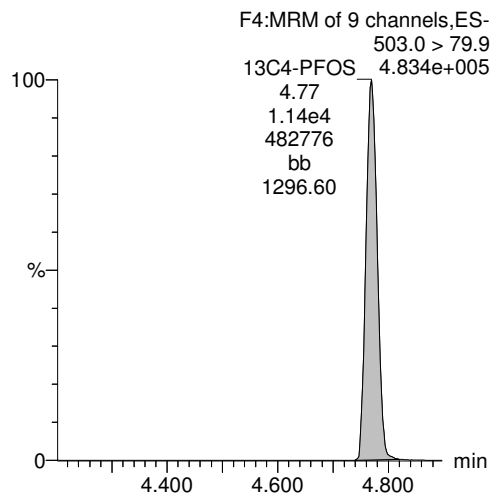
**PFOS**



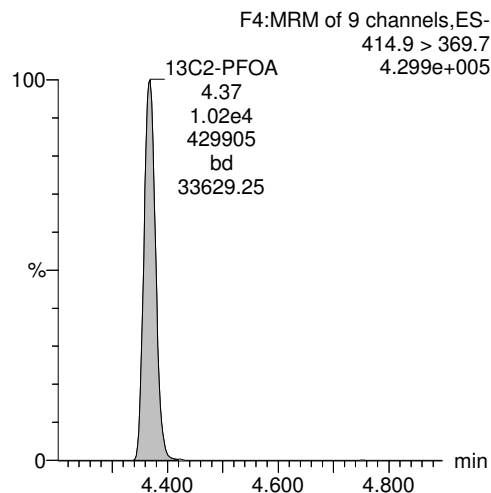
**13C2-PFHxA**



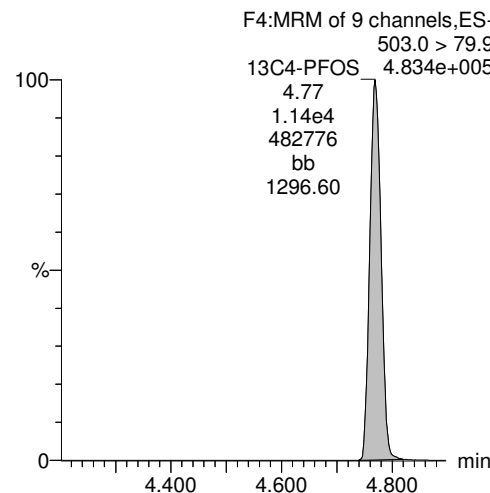
**13C4-PFOS**



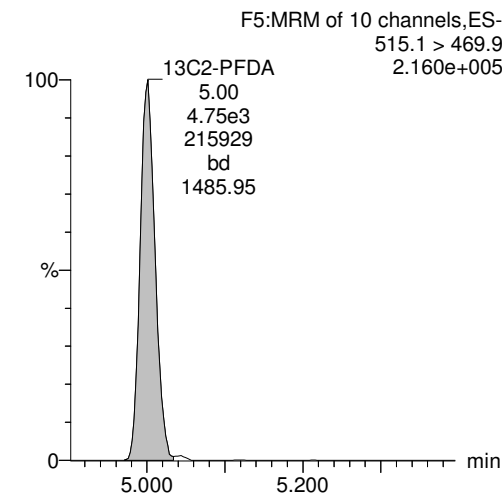
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-4.qld

Last Altered: Saturday, December 02, 2017 16:46:32 Pacific Standard Time

Printed: Saturday, December 02, 2017 16:47:25 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171202G1\_4, Date: 02-Dec-2017, Time: 14:45:03, ID: 1701751-11 CH-AT-1FB62-1117 0.25, Description: CH-AT-1FB62-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.35e4		0.2617	3.07				
2	2 PFOA	413 > 368.7	4.04e1	1.09e4		0.2617	4.37	4.38	0.0369	0.172	
3	3 PFOS	499 > 79.9		1.35e4		0.2617	4.77				
4	4 13C2-PFHxA	315 > 269.8	4.57e3	1.09e4	0.429	0.2617	3.43	3.43	4.18	37.2	97.4
5	5 13C2-PFDA	515.1 > 469.9	6.01e3	1.09e4	0.548	0.2617	5.00	5.00	5.50	38.3	100.3
6	6 13C2-PFOA	414.9 > 369.7	1.09e4	1.09e4	1.000	0.2617	4.41	4.37	10.0	38.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.35e4	1.35e4	1.000	0.2617	4.81	4.77	28.7	110	100.0

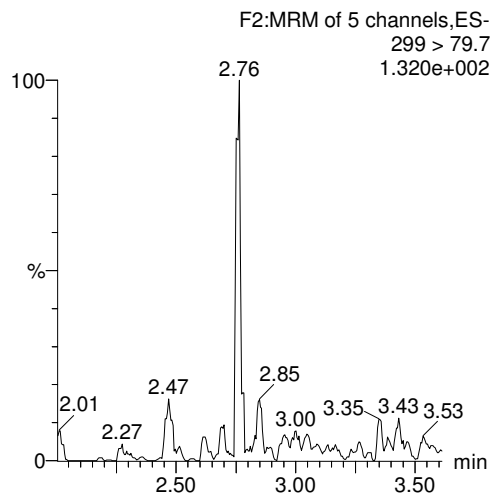
Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-4.qld

Last Altered: Saturday, December 02, 2017 16:46:32 Pacific Standard Time  
Printed: Saturday, December 02, 2017 16:47:25 Pacific Standard Time

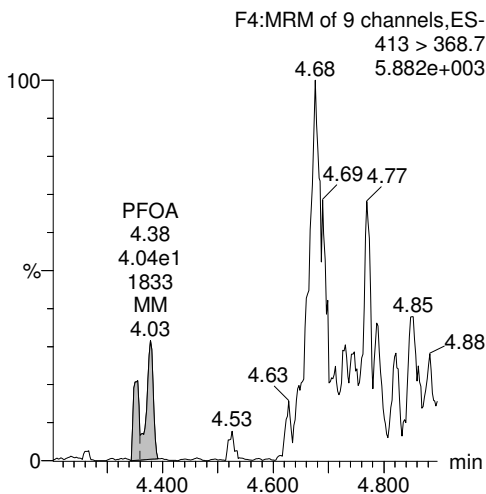
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171202G1\_4, Date: 02-Dec-2017, Time: 14:45:03, ID: 1701751-11 CH-AT-1FB62-1117 0.25, Description: CH-AT-1FB62-1117

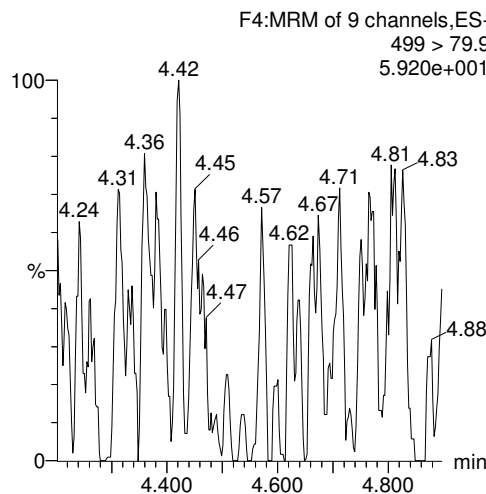
**PFBS**



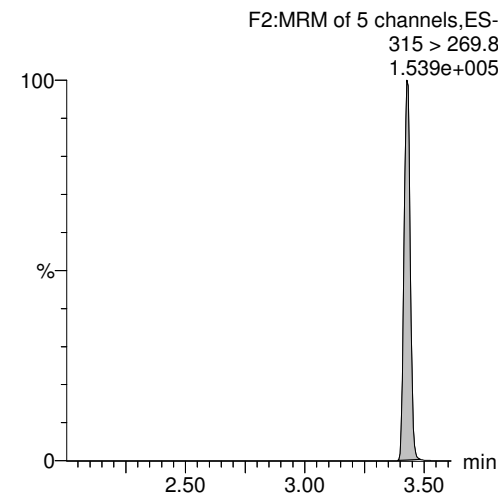
**PFOA**



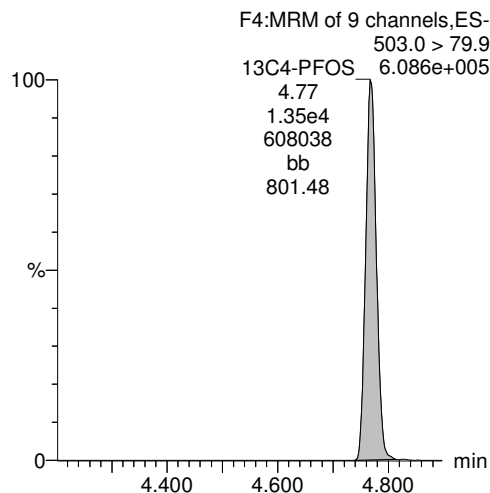
**PFOS**



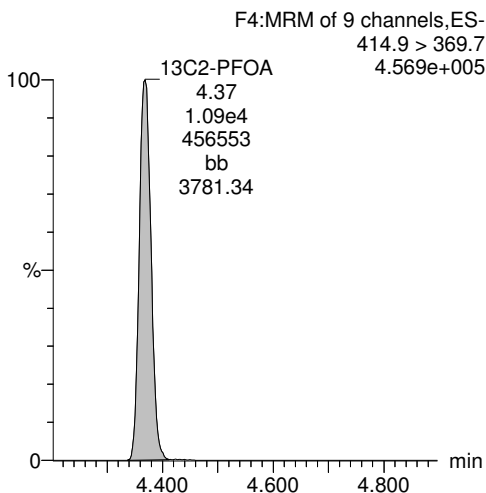
**13C2-PFHxA**



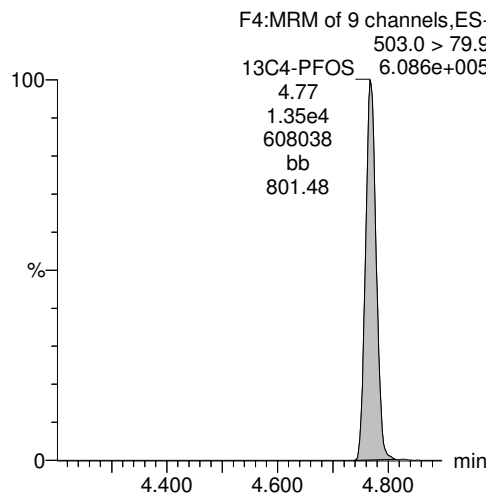
**13C4-PFOS**



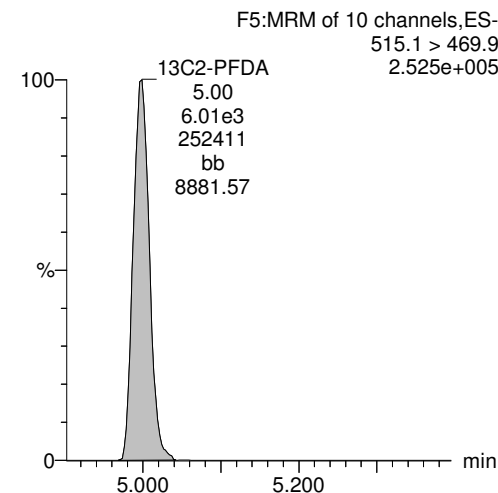
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-17.qld

Last Altered: Saturday, December 02, 2017 14:34:24 Pacific Standard Time

Printed: Saturday, December 02, 2017 14:34:55 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_17, Date: 01-Dec-2017, Time: 13:48:34, ID: 1701751-12 CH-AT-1RW63-1117 0.25, Description: CH-AT-1RW63-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.06e4		0.2591	3.07				
2	2 PFOA	413 > 368.7	3.55e1	9.82e3		0.2591	4.37	4.36	0.0361	0.170	
3	3 PFOS	499 > 79.9		1.06e4		0.2591	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.97e3	9.82e3	0.429	0.2591	3.43	3.43	4.04	36.4	94.2
5	5 13C2-PFDA	515.1 > 469.9	4.60e3	9.82e3	0.548	0.2591	5.00	5.00	4.68	33.0	85.5
6	6 13C2-PFOA	414.9 > 369.7	9.82e3	9.82e3	1.000	0.2591	4.41	4.37	10.0	38.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2591	4.81	4.77	28.7	111	100.0

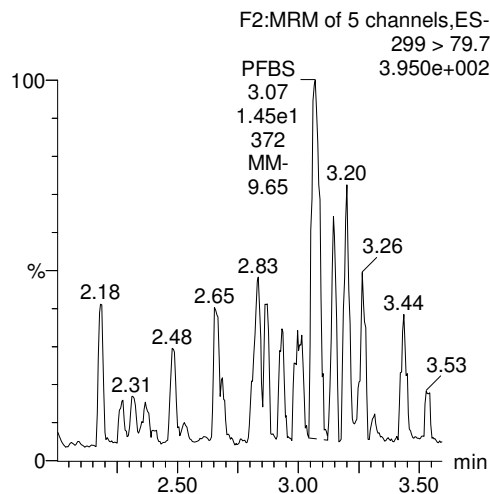
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-17.qld

Last Altered: Saturday, December 02, 2017 14:34:24 Pacific Standard Time  
Printed: Saturday, December 02, 2017 14:34:55 Pacific Standard Time

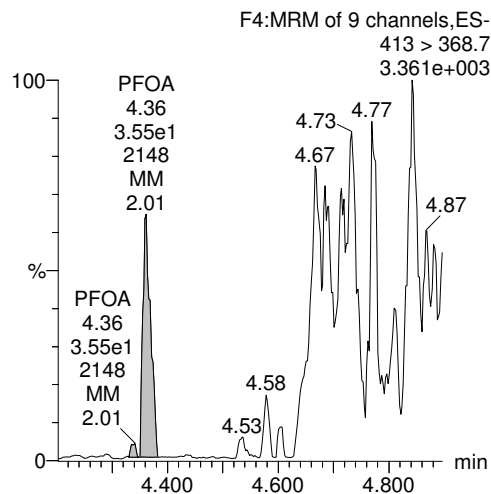
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_17, Date: 01-Dec-2017, Time: 13:48:34, ID: 1701751-12 CH-AT-1RW63-1117 0.25, Description: CH-AT-1RW63-1117

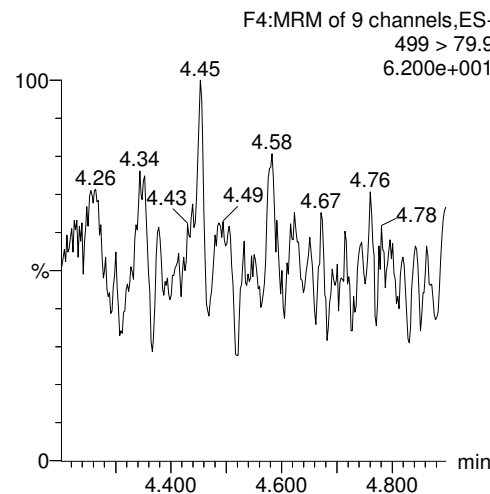
**PFBS**



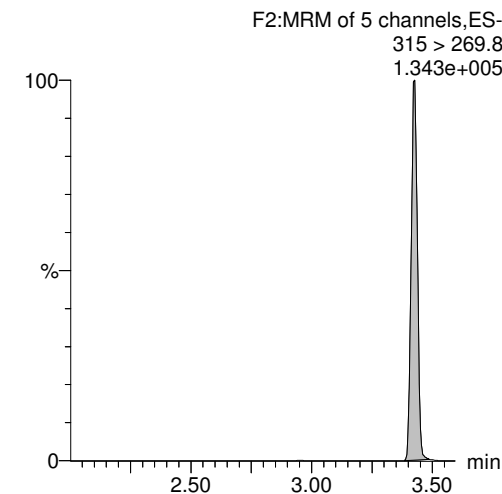
**PFOA**



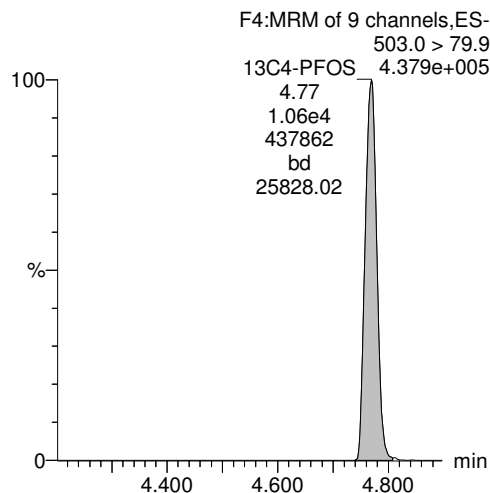
**PFOS**



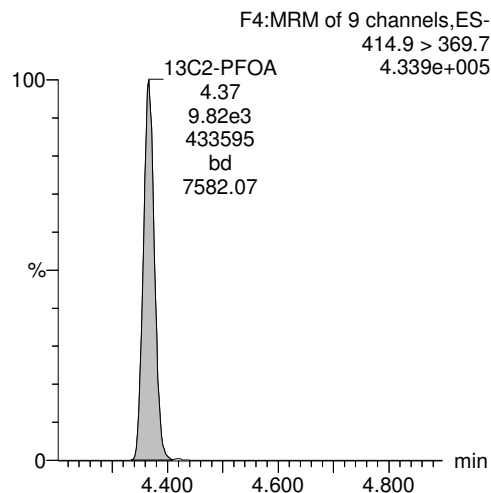
**13C2-PFHxA**



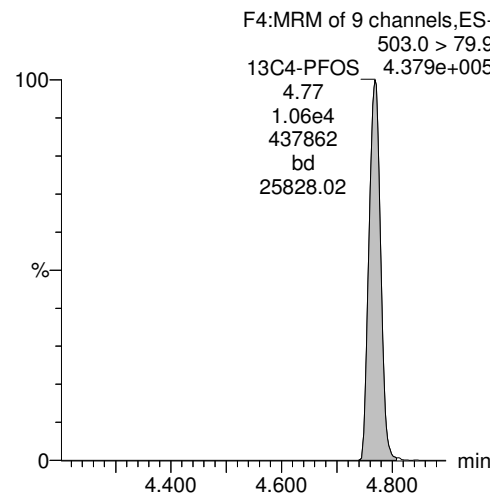
**13C4-PFOS**



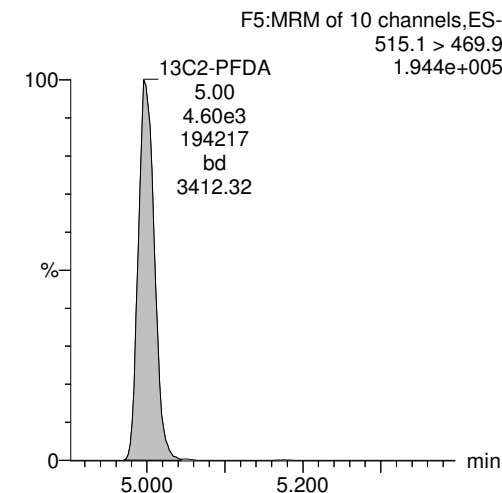
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-18.qld

Last Altered: Saturday, December 02, 2017 12:37:21 Pacific Standard Time

Printed: Saturday, December 02, 2017 12:37:33 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_18, Date: 01-Dec-2017, Time: 14:00:59, ID: 1701751-13 CH-AT-1FB63-1117 0.25, Description: CH-AT-1FB63-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.12e4		0.2593	3.07				
2	2 PFOA	413 > 368.7	2.54e1	1.02e4		0.2593	4.36	4.37	0.0251	0.118	
3	3 PFOS	499 > 79.9		1.12e4		0.2593	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.83e3	1.02e4	0.429	0.2593	3.42	3.42	3.77	34.0	88.1
5	5 13C2-PFDA	515.1 > 469.9	5.08e3	1.02e4	0.548	0.2593	4.99	5.00	5.01	35.2	91.4
6	6 13C2-PFOA	414.9 > 369.7	1.02e4	1.02e4	1.000	0.2593	4.41	4.36	10.0	38.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	0.2593	4.81	4.77	28.7	111	100.0



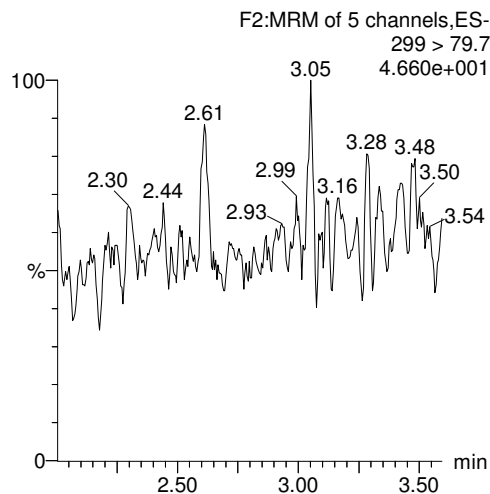
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-18.qld

Last Altered: Saturday, December 02, 2017 12:37:21 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:37:33 Pacific Standard Time

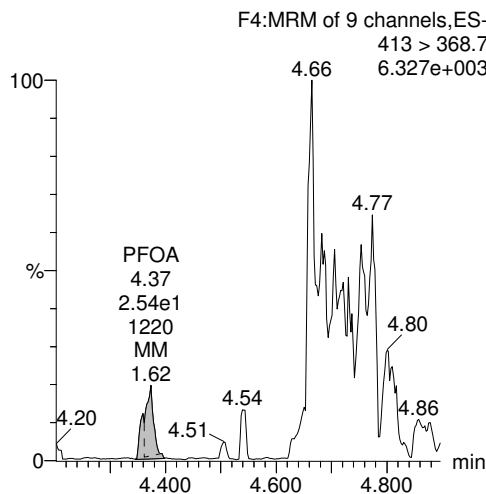
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_18, Date: 01-Dec-2017, Time: 14:00:59, ID: 1701751-13 CH-AT-1FB63-1117 0.25, Description: CH-AT-1FB63-1117

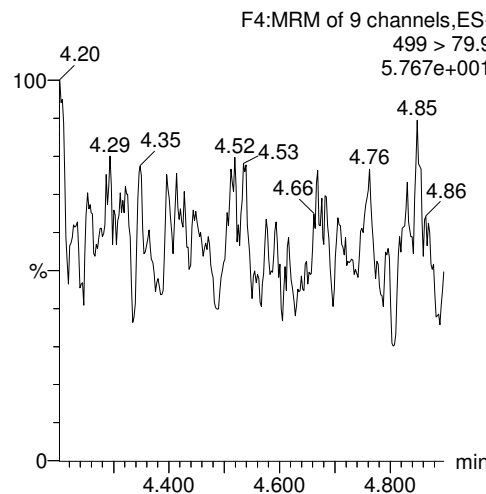
**PFBS**



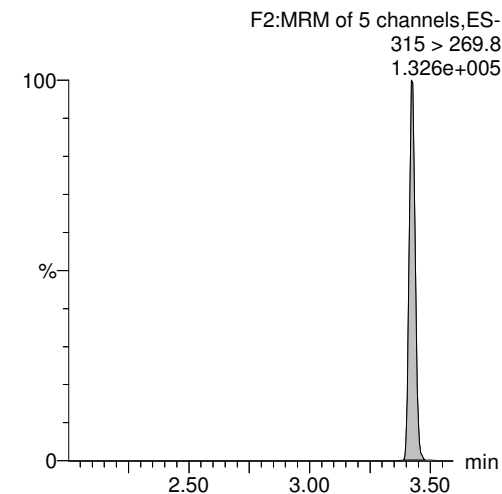
**PFOA**



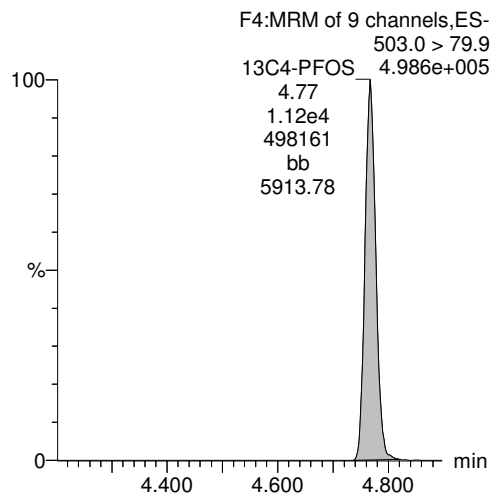
**PFOS**



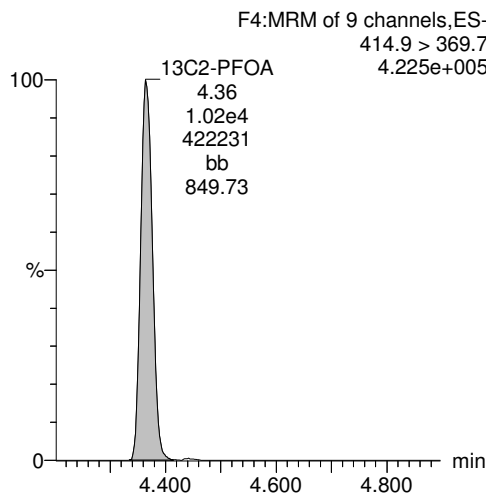
**13C2-PFHxA**



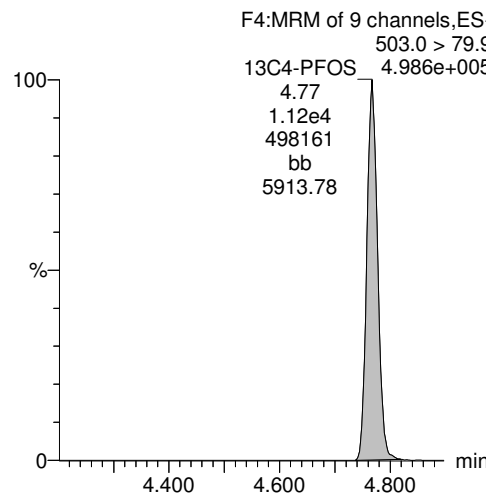
**13C4-PFOS**



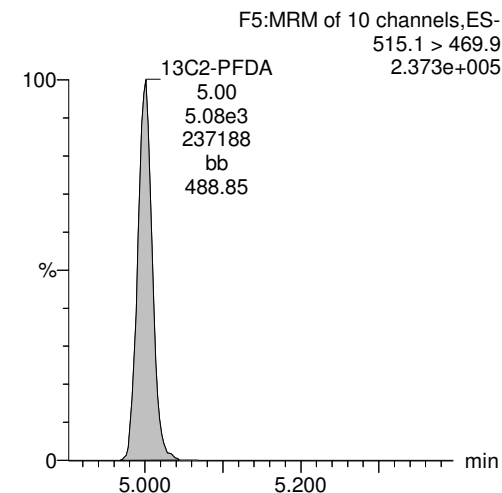
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-19.qld

Last Altered: Saturday, December 02, 2017 12:38:29 Pacific Standard Time

Printed: Saturday, December 02, 2017 12:38:50 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_19, Date: 01-Dec-2017, Time: 14:13:24, ID: 1701751-14 CH-AT-1RW64-1117 0.25, Description: CH-AT-1RW64-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.10e4		0.2578	3.07				
2	2 PFOA	413 > 368.7	3.95e1	1.00e4		0.2578	4.37	4.36	0.0394	0.187	
3	3 PFOS	499 > 79.9		1.10e4		0.2578	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.75e3	1.00e4	0.429	0.2578	3.43	3.42	3.74	33.8	87.3
5	5 13C2-PFDA	515.1 > 469.9	4.61e3	1.00e4	0.548	0.2578	5.00	5.00	4.59	32.5	83.8
6	6 13C2-PFOA	414.9 > 369.7	1.00e4	1.00e4	1.000	0.2578	4.41	4.37	10.0	38.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.10e4	1.10e4	1.000	0.2578	4.81	4.77	28.7	111	100.0

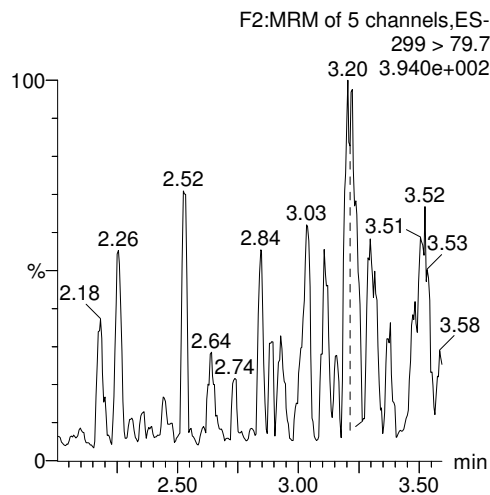
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-19.qld

Last Altered: Saturday, December 02, 2017 12:38:29 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:38:50 Pacific Standard Time

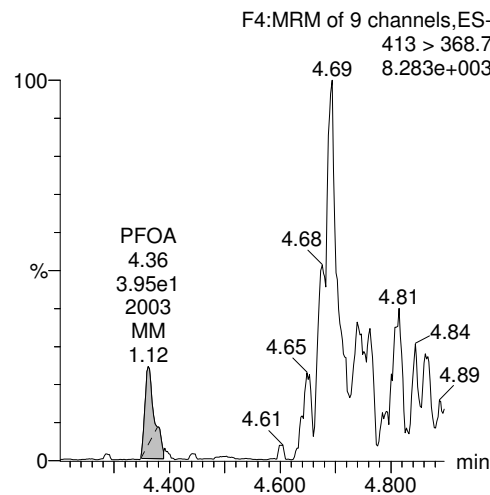
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_19, Date: 01-Dec-2017, Time: 14:13:24, ID: 1701751-14 CH-AT-1RW64-1117 0.25, Description: CH-AT-1RW64-1117

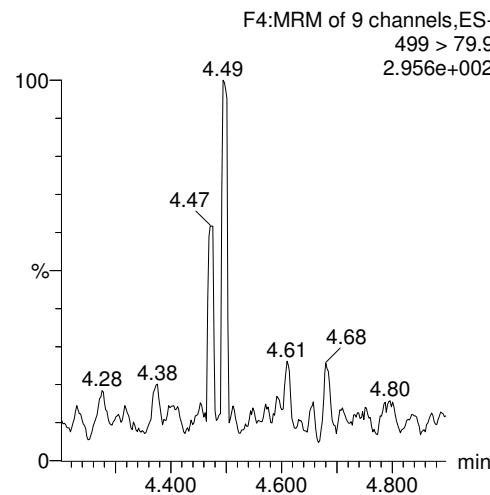
**PFBS**



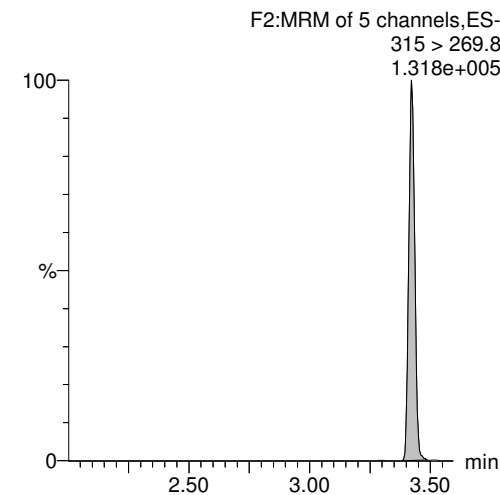
**PFOA**



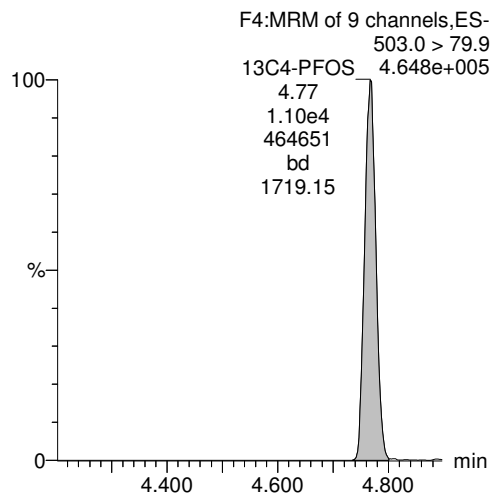
**PFOS**



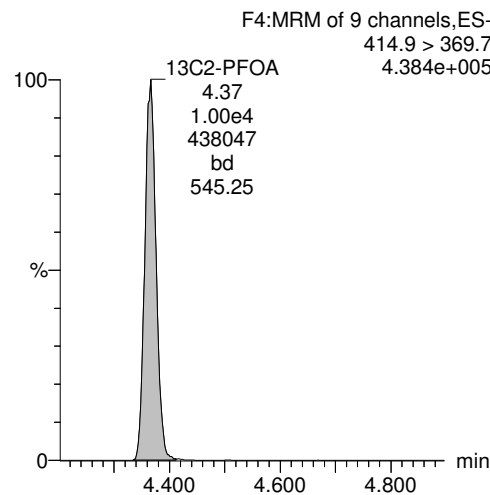
**13C2-PFHxA**



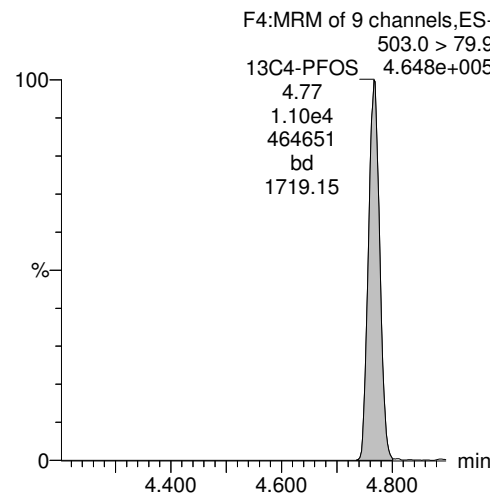
**13C4-PFOS**



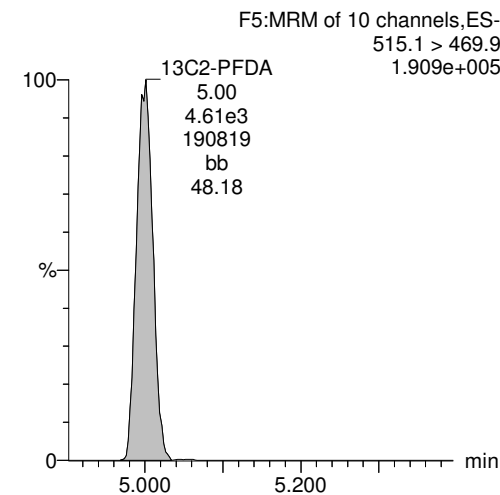
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-20.qld

Last Altered: Saturday, December 02, 2017 12:39:28 Pacific Standard Time

Printed: Saturday, December 02, 2017 12:39:58 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_20, Date: 01-Dec-2017, Time: 14:25:49, ID: 1701751-15 CH-AT-1FB64-1117 0.25, Description: CH-AT-1FB64-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.12e4		0.2483	3.07				
2	2 PFOA	413 > 368.7	7.40e1	1.03e4		0.2483	4.37	4.37	0.0718	0.354	
3	3 PFOS	499 > 79.9		1.12e4		0.2483	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.68e3	1.03e4	0.429	0.2483	3.43	3.42	3.57	33.5	83.3
5	5 13C2-PFDA	515.1 > 469.9	4.69e3	1.03e4	0.548	0.2483	5.00	5.00	4.54	33.4	82.9
6	6 13C2-PFOA	414.9 > 369.7	1.03e4	1.03e4	1.000	0.2483	4.41	4.37	10.0	40.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.12e4	1.12e4	1.000	0.2483	4.81	4.77	28.7	116	100.0

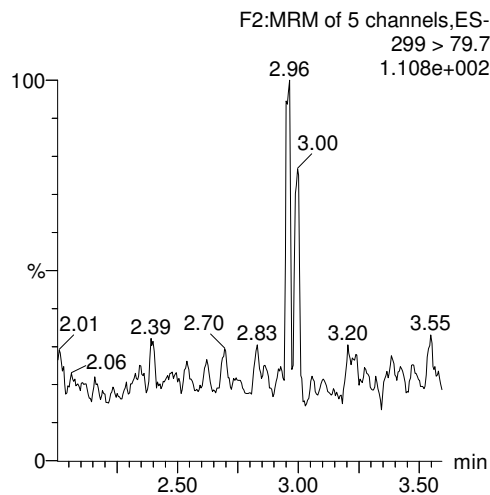
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-20.qld

Last Altered: Saturday, December 02, 2017 12:39:28 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:39:58 Pacific Standard Time

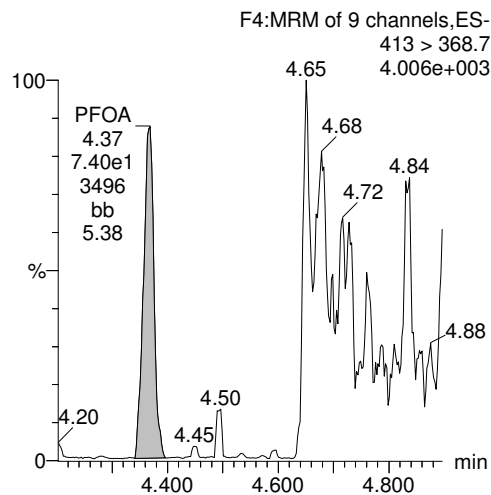
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_20, Date: 01-Dec-2017, Time: 14:25:49, ID: 1701751-15 CH-AT-1FB64-1117 0.25, Description: CH-AT-1FB64-1117

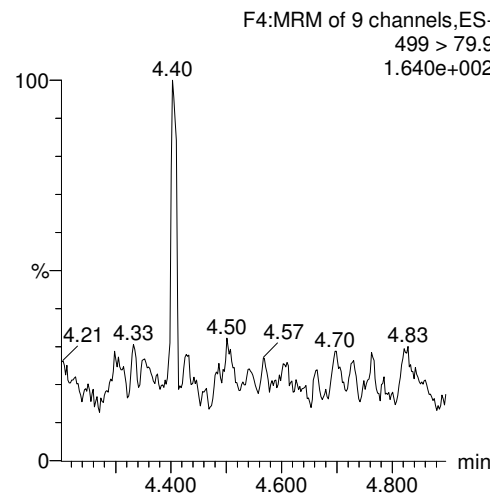
PFBS



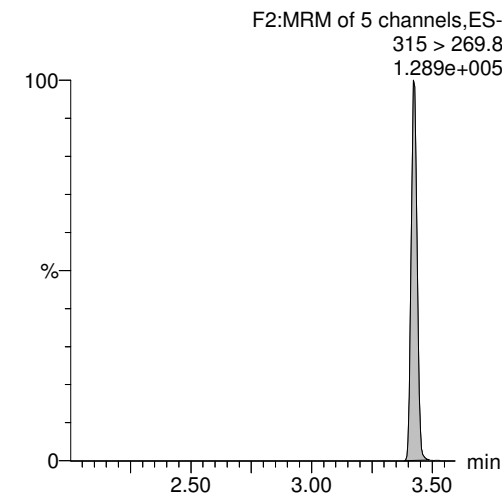
PFOA



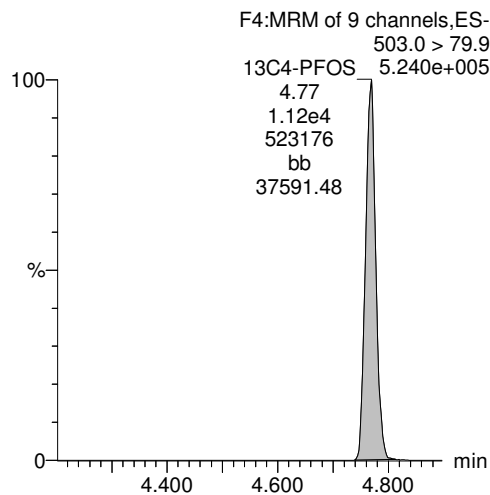
PFOS



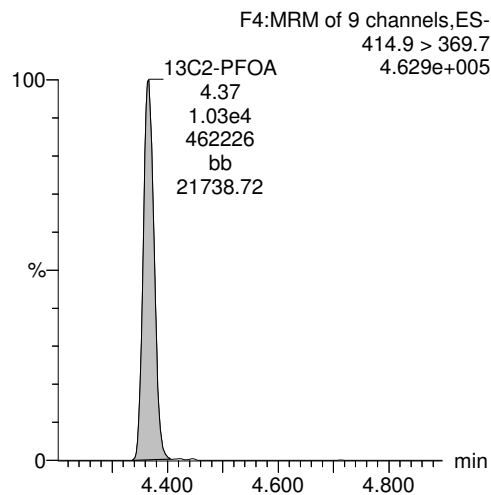
13C2-PFHxA



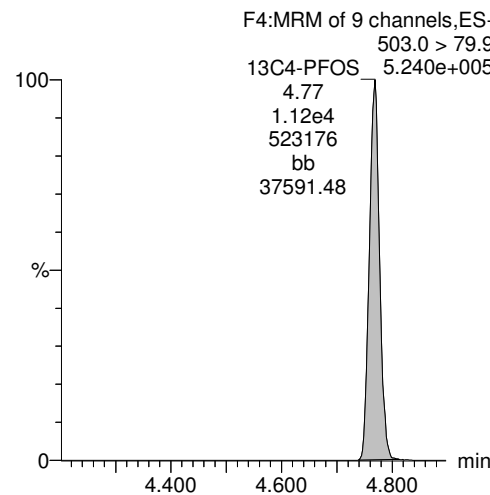
13C4-PFOS



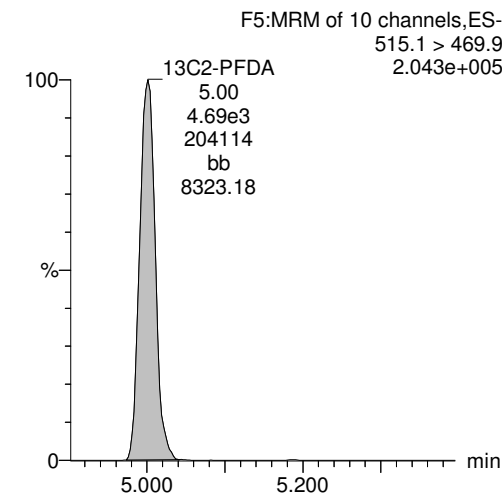
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-21.qld

Last Altered: Saturday, December 02, 2017 12:43:40 Pacific Standard Time

Printed: Saturday, December 02, 2017 12:43:50 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_21, Date: 01-Dec-2017, Time: 14:38:15, ID: 1701751-16 CH-AT-1RW46-1117 0.25, Description: CH-AT-1RW46-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.10e4		0.2598	3.07				
2	2 PFOA	413 > 368.7	8.97e1	9.87e3		0.2598	4.36	4.36	0.0909	0.428	
3	3 PFOS	499 > 79.9	1.98e0	1.10e4		0.2598	4.77	4.76	0.00516	0.0168	
4	4 13C2-PFHxA	315 > 269.8	3.77e3	9.87e3	0.429	0.2598	3.42	3.42	3.82	34.3	89.1
5	5 13C2-PFDA	515.1 > 469.9	4.48e3	9.87e3	0.548	0.2598	4.99	5.00	4.55	31.9	83.0
6	6 13C2-PFOA	414.9 > 369.7	9.87e3	9.87e3	1.000	0.2598	4.41	4.36	10.0	38.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.10e4	1.10e4	1.000	0.2598	4.81	4.77	28.7	110	100.0



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-22.qld

Last Altered: Saturday, December 02, 2017 12:44:45 Pacific Standard Time

Printed: Saturday, December 02, 2017 12:45:01 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_22, Date: 01-Dec-2017, Time: 14:50:41, ID: 1701751-17 CH-AT-1FB46-1117 0.25, Description: CH-AT-1FB46-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.17e4		0.2616	3.07				
2	2 PFOA	413 > 368.7	6.61e1	9.77e3		0.2616	4.37	4.37	0.0677	0.316	
3	3 PFOS	499 > 79.9		1.17e4		0.2616	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.96e3	9.77e3	0.429	0.2616	3.43	3.42	4.06	36.2	94.7
5	5 13C2-PFDA	515.1 > 469.9	4.66e3	9.77e3	0.548	0.2616	5.00	5.00	4.77	33.3	87.0
6	6 13C2-PFOA	414.9 > 369.7	9.77e3	9.77e3	1.000	0.2616	4.41	4.37	10.0	38.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.17e4	1.17e4	1.000	0.2616	4.81	4.77	28.7	110	100.0



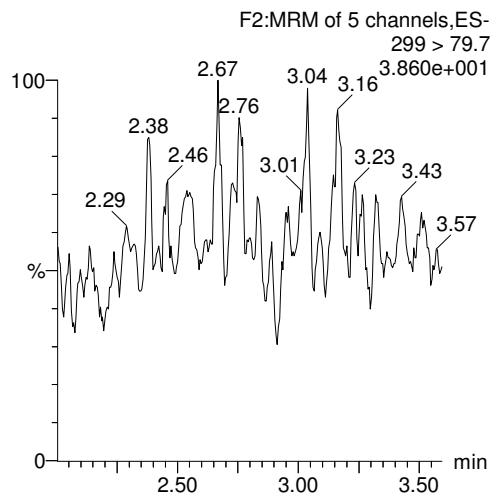
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-22.qld

Last Altered: Saturday, December 02, 2017 12:44:45 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:45:01 Pacific Standard Time

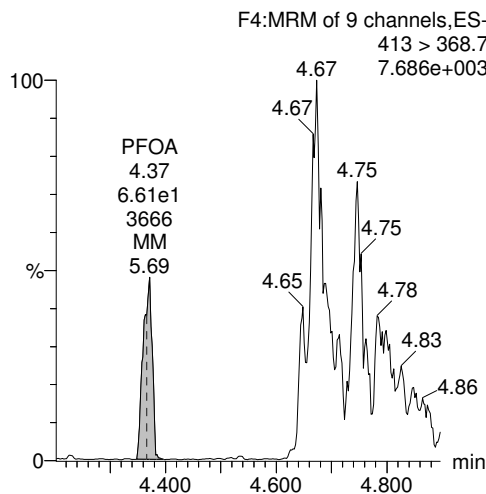
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_22, Date: 01-Dec-2017, Time: 14:50:41, ID: 1701751-17 CH-AT-1FB46-1117 0.25, Description: CH-AT-1FB46-1117

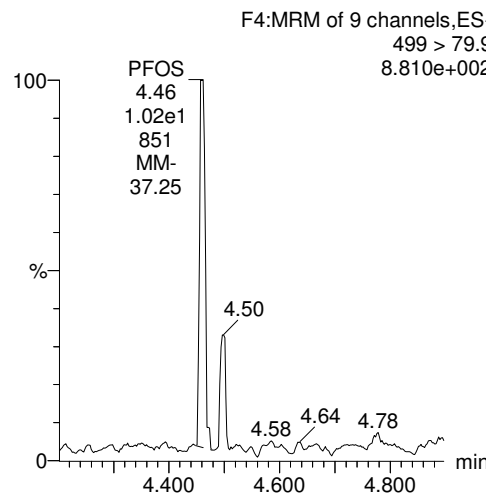
**PFBS**



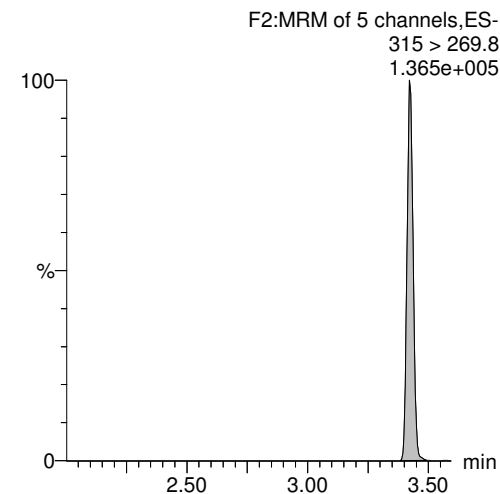
**PFOA**



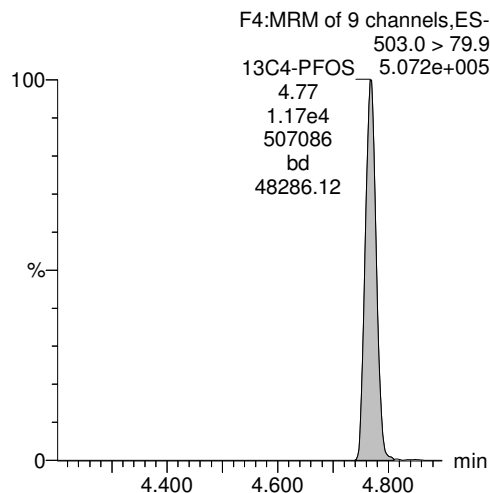
**PFOS**



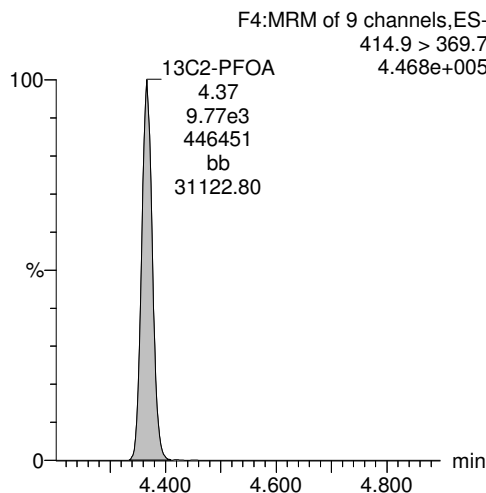
**13C2-PFHxA**



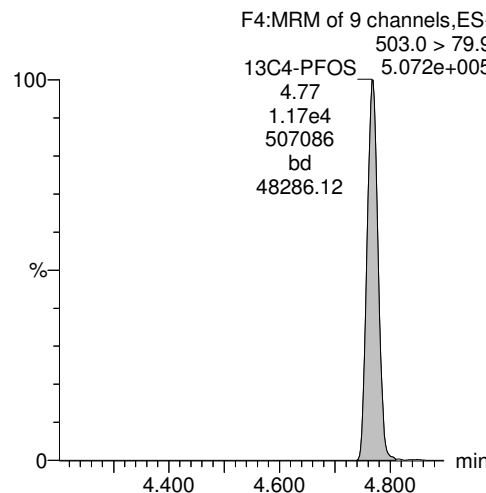
**13C4-PFOS**



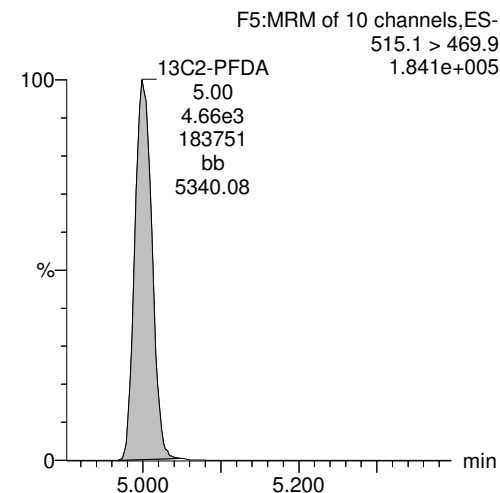
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-23.qld

Last Altered: Saturday, December 02, 2017 12:45:51 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:46:10 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_23, Date: 01-Dec-2017, Time: 15:03:08, ID: 1701751-18 CH-AT-1RW47-1117 0.25, Description: CH-AT-1RW47-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.06e4		0.2630	3.07				
2	2 PFOA	413 > 368.7	5.71e2	9.47e3		0.2630	4.36	4.37	0.603	2.80	
3	3 PFOS	499 > 79.9	3.74e2	1.06e4		0.2630	4.77	4.76	1.02	3.27	
4	4 13C2-PFHxA	315 > 269.8	3.75e3	9.47e3	0.429	0.2630	3.42	3.42	3.96	35.1	92.4
5	5 13C2-PFDA	515.1 > 469.9	4.16e3	9.47e3	0.548	0.2630	4.99	5.00	4.40	30.5	80.3
6	6 13C2-PFOA	414.9 > 369.7	9.47e3	9.47e3	1.000	0.2630	4.41	4.36	10.0	38.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	0.2630	4.81	4.77	28.7	109	100.0

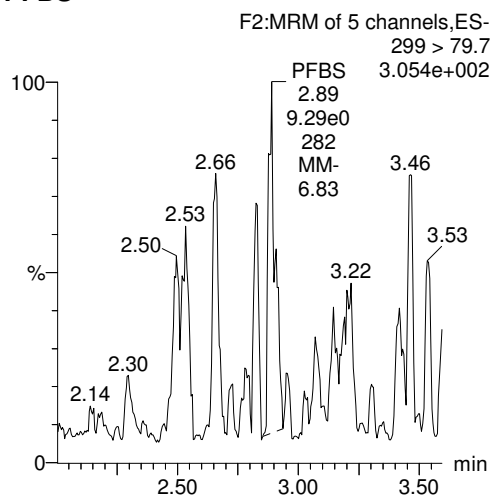
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-23.qld

Last Altered: Saturday, December 02, 2017 12:45:51 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:46:10 Pacific Standard Time

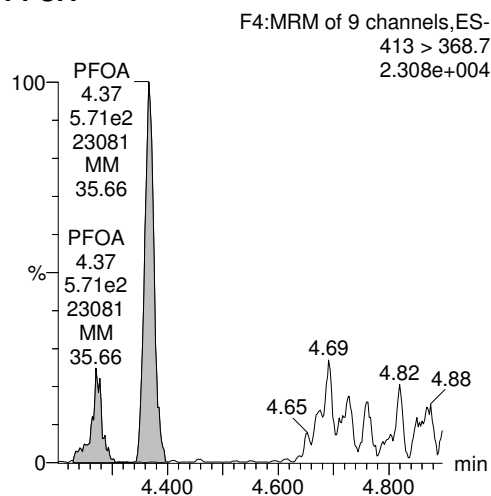
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_23, Date: 01-Dec-2017, Time: 15:03:08, ID: 1701751-18 CH-AT-1RW47-1117 0.25, Description: CH-AT-1RW47-1117

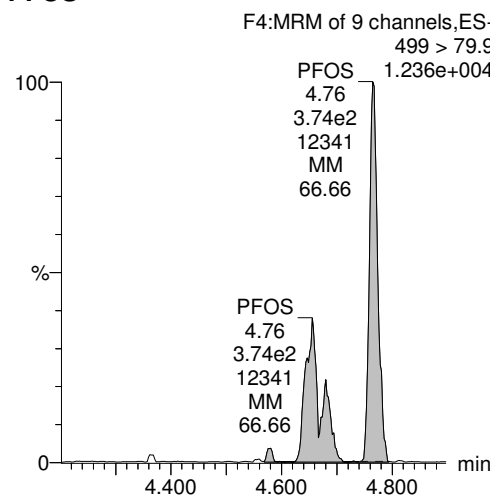
**PFBS**



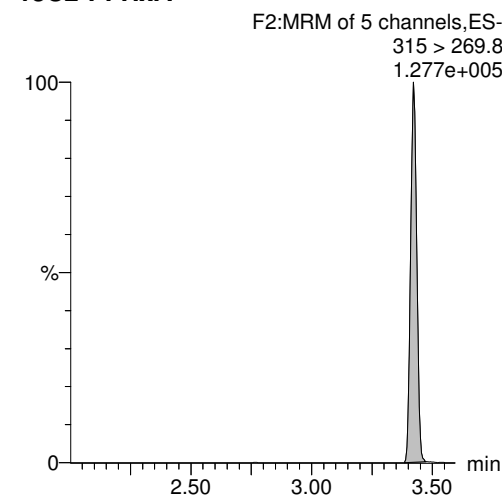
**PFOA**



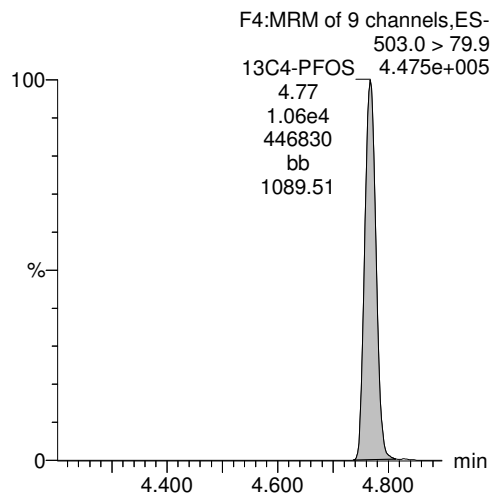
**PFOS**



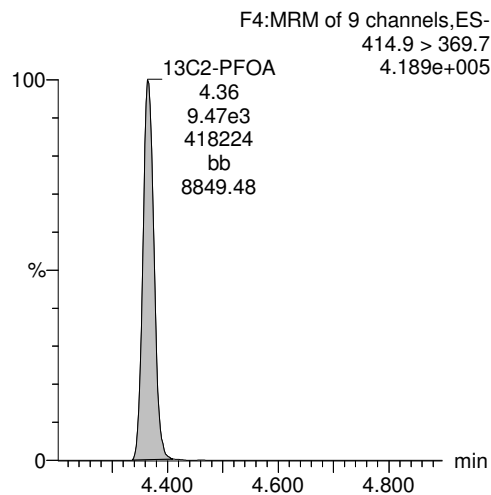
**13C2-PFHxA**



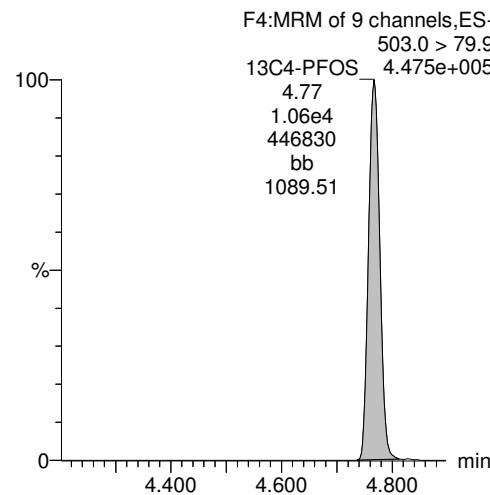
**13C4-PFOS**



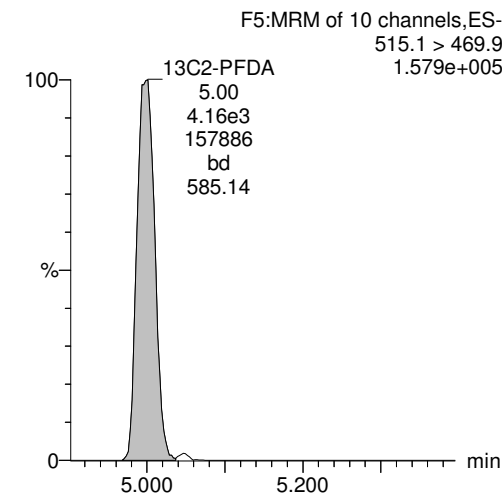
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-24.qld

Last Altered: Saturday, December 02, 2017 12:46:47 Pacific Standard Time

Printed: Saturday, December 02, 2017 12:47:06 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_24, Date: 01-Dec-2017, Time: 15:15:36, ID: 1701751-19 CH-AT-1FB47-1117 0.25, Description: CH-AT-1FB47-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		1.13e4		0.2603	3.07				
2	2 PFOA	413 > 368.7	6.99e1	9.59e3		0.2603	4.37	4.36	0.0729	0.343	
3	3 PFOS	499 > 79.9		1.13e4		0.2603	4.77				
4	4 13C2-PFHxA	315 > 269.8	3.79e3	9.59e3	0.429	0.2603	3.43	3.42	3.96	35.5	92.3
5	5 13C2-PFDA	515.1 > 469.9	4.63e3	9.59e3	0.548	0.2603	5.00	5.00	4.83	33.9	88.2
6	6 13C2-PFOA	414.9 > 369.7	9.59e3	9.59e3	1.000	0.2603	4.41	4.37	10.0	38.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.13e4	1.13e4	1.000	0.2603	4.81	4.77	28.7	110	100.0

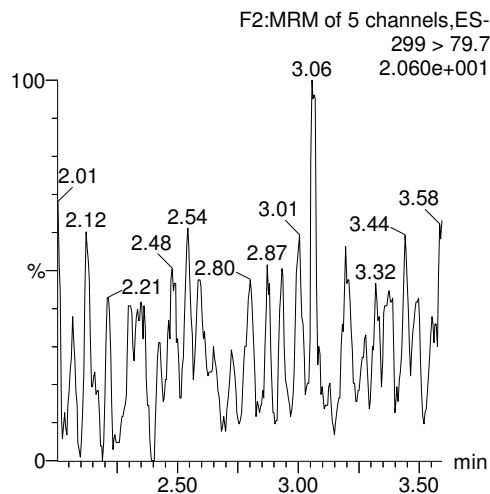
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-24.qld

Last Altered: Saturday, December 02, 2017 12:46:47 Pacific Standard Time  
Printed: Saturday, December 02, 2017 12:47:06 Pacific Standard Time

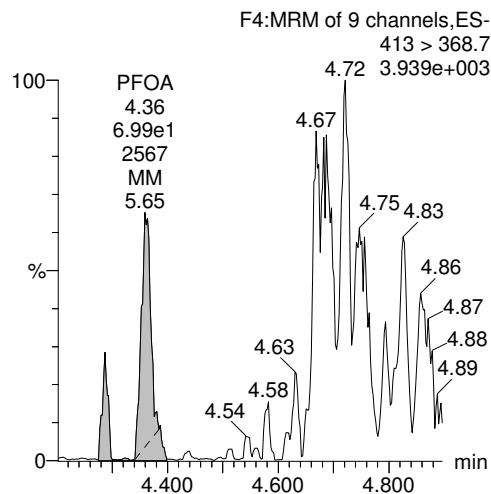
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_24, Date: 01-Dec-2017, Time: 15:15:36, ID: 1701751-19 CH-AT-1FB47-1117 0.25, Description: CH-AT-1FB47-1117

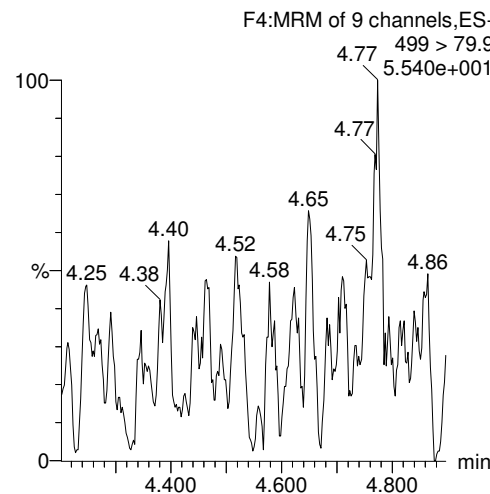
**PFBS**



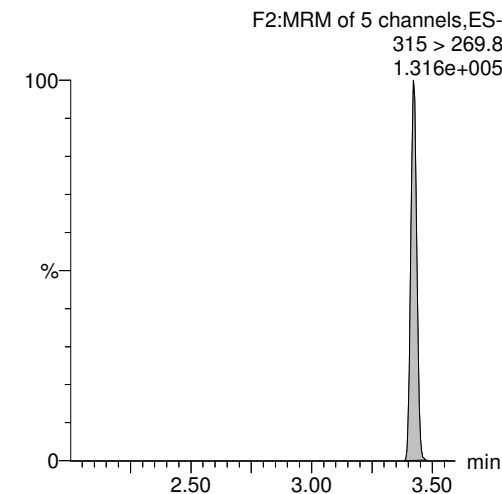
**PFOA**



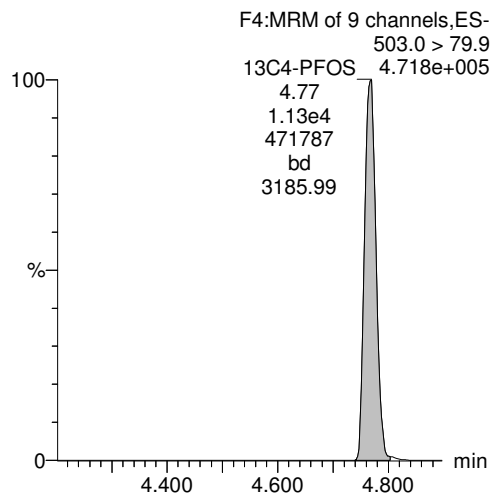
**PFOS**



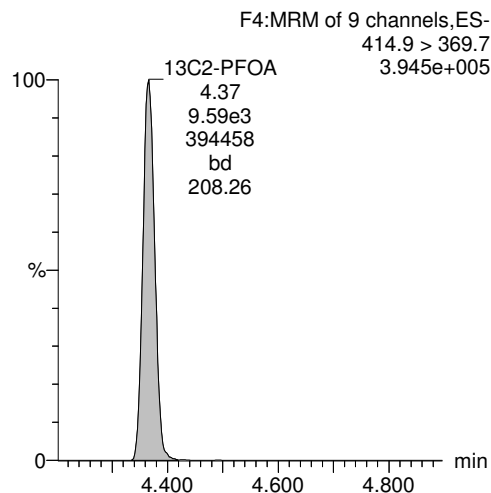
**13C2-PFHxA**



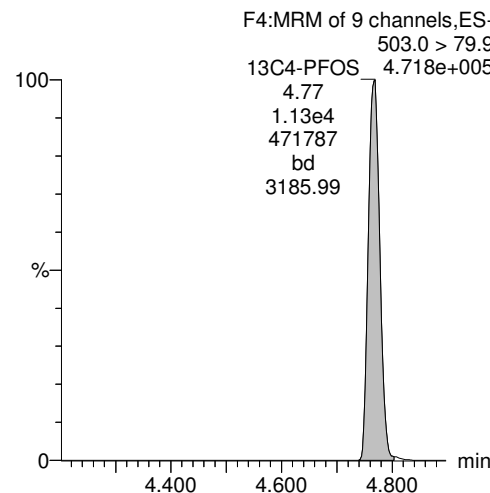
**13C4-PFOS**



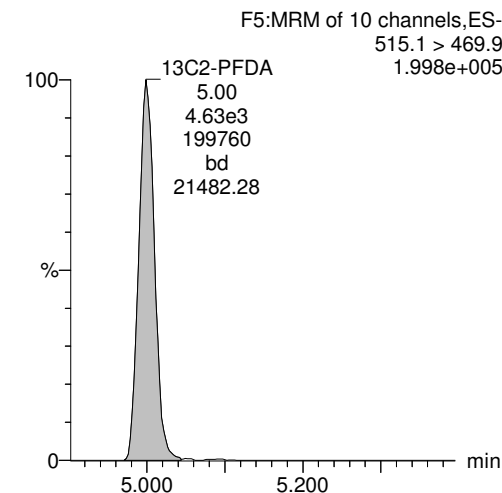
**13C2-PFOA**



**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	B7K0172-BS1 LFB 0.25	171130G1_Analyte	10	4.37	10884.1	10884.1	10177.82	106.9394
2	B7K0172-BSD1 LFBD 0.25	171130G1_Analyte	10	4.37	9886.447	9886.447	10177.82	97.13716
3	B7K0172-BLK1 LRB 0.25	171130G1_Analyte	10	4.37	10128.43	10128.43	10177.82	99.5147
4	1701750-01 CH-AT-1RW48-1117 0.25	171130G1_Analyte	10	4.38	10289.85	10289.85	10177.82	101.1007
5	1701750-02 CH-AT-1FB48-1117 0.25	171130G1_Analyte	10	4.37	10078.04	10078.04	10177.82	99.01958
6	1701750-03 CH-AT-1RW49-1117 0.25	171130G1_Analyte	10	4.38	10230.13	10230.13	10177.82	100.514
7	1701750-04 CH-AT-1FB49-1117 0.25	171130G1_Analyte	10	4.37	10224.93	10224.93	10177.82	100.4629
8	1701750-05 CH-AT-1RW50-1117 0.25	171130G1_Analyte	10	4.37	10739.43	10739.43	10177.82	105.5179
9	1701750-06 CH-AT-1FB50-1117 0.25	171130G1_Analyte	10	4.37	9958.209	9958.209	10177.82	97.84225
10	1701750-07 CH-AT-1RW51-1117 0.25	171130G1_Analyte	10	4.37	9607.267	9607.267	10177.82	94.39414
11	1701750-08 CH-AT-1FB51-1117 0.25	171130G1_Analyte	10	4.38	10051.58	10051.58	10177.82	98.75964
12	1701750-09 CH-AT-1RW52-1117 0.25	171130G1_Analyte	10	4.37	10405.02	10405.02	10177.82	102.2323
13	1701750-10 CH-AT-1FB52-1117 0.25	171130G1_Analyte	10	4.38	10108.76	10108.76	10177.82	99.32144
14	1701750-11 CH-AT-1RW53-1117 0.25	171130G1_Analyte	10	4.37	10676.19	10676.19	10177.82	104.8966
15	1701750-12 CH-AT-1FB53-1117 0.25	171130G1_Analyte	10	4.38	10589.78	10589.78	10177.82	104.0476
16	1701750-13 CH-AT-1RW54-1117 0.25	171130G1_Analyte	10	4.38	9633.482	9633.482	10177.82	94.65171
17	1701750-14 CH-AT-1FB54-1117 0.25	171130G1_Analyte	10	4.37	9468.073	9468.073	10177.82	93.02652
18	1701750-15 CH-AT-1RW55-1117 0.25	171130G1_Analyte	10	4.38	9507.149	9507.149	10177.82	93.41045
19	1701750-16 CH-AT-1FB55-1117 0.25	171130G1_Analyte	10	4.38	9689.038	9689.038	10177.82	95.19756
20	1701750-17 CH-AT-1RW56-1117 0.25	171130G1_Analyte	10	4.38	8302.079	8302.079	10177.82	81.5703
21	1701750-18 CH-AT-1FB56-1117 0.25	171130G1_Analyte	10	4.38	10440.16	10440.16	10177.82	102.5775
22	1701750-19 CH-AT-1FB57-1117 0.25	171130G1_Analyte	10	4.38	10011.94	10011.94	10177.82	98.37015
23	1701750-20 CH-AT-1RW57-1117 0.25	171130G1_Analyte	10	4.38	9713.852	9713.852	10177.82	95.44137
24	IPA	171130G1_Analyte	10				10177.82	0
25	ST171130G1-10 PFC CS3 17K3027	171130G1_Analyte	10	4.38	14752.8	14752.8	10177.82	144.9505
26	IPA	171130G1_Analyte	10				10177.82	0
27	B7K0177-BS1 LFB 0.25	171130G1_Analyte	10	4.38	9162.974	9162.974	10177.82	90.02883
28	B7K0177-BSD1 LFBD 0.25	171130G1_Analyte	10	4.38	10041.11	10041.11	10177.82	98.65675

29	B7K0177-BLK1 LRB 0.25	171130G1_Analyte	10	4.38	9539.413	9539.413	10177.82	93.72746
30	1701751-01 CH-AT-1RW58-1117 0.25	171130G1_Analyte	10	4.38	10139.91	10139.91	10177.82	99.62752
31	1701751-02 CH-AT-1FB58-1117 0.25	171130G1_Analyte	10	4.38	10102.47	10102.47	10177.82	99.25968
32	1701751-03 CH-AT-1EB01-111717 0.25	171130G1_Analyte	10	4.38	10062.9	10062.9	10177.82	98.87086
33	1701751-04 CH-AT-1RW59-1117 0.25	171130G1_Analyte	10	4.38	9489.777	9489.777	10177.82	93.23977
34	1701751-05 CH-AT-1FB59-1117 0.25	171130G1_Analyte	10	4.38	10036.1	10036.1	10177.82	98.60757
35	1701751-06 CH-AT-1RW60-1117 0.25	171130G1_Analyte	10	4.38	10513.49	10513.49	10177.82	103.298
36	1701751-07 CH-AT-1FB60-1117 0.25	171130G1_Analyte	10	4.38	9802.494	9802.494	10177.82	96.3123
37	1701751-08 CH-AT-1RW61-1117 0.25	171130G1_Analyte	10	4.38	9154.165	9154.165	10177.82	89.94228
38	1701751-09 CH-AT-1FB61-1117 0.25	171130G1_Analyte	10	4.38	9689.5	9689.5	10177.82	95.2021
39	1701751-10 CH-AT-1RW62-1117 0.25	171130G1_Analyte	10	4.38	10054.72	10054.72	10177.82	98.79049
40	1701751-11 CH-AT-1FB62-1117 0.25	171130G1_Analyte	10	4.38	10142.54	10142.54	10177.82	99.65338
41	IPA	171130G1_Analyte	10				10177.82	0
42	ST171130G1-11 PFC CS5 537 17K3029	171130G1_Analyte	10	4.38	13996.81	13996.81	10177.82	137.5226

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	B7K0172-BS1 LFB 0.25	171130G1_Analyte	28.7	4.78	11633.96	11633.96	10632.15	109.4224
2	B7K0172-BSD1 LFB 0.25	171130G1_Analyte	28.7	4.78	11207.18	11207.18	10632.15	105.4084
3	B7K0172-BLK1 LRB 0.25	171130G1_Analyte	28.7	4.78	11586.79	11586.79	10632.15	108.9787
4	1701750-01 CH-AT-1RW48-1117 0.25	171130G1_Analyte	28.7	4.77	11284.4	11284.4	10632.15	106.1346
5	1701750-02 CH-AT-1FB48-1117 0.25	171130G1_Analyte	28.7	4.78	9892.63	9892.63	10632.15	93.04445
6	1701750-03 CH-AT-1RW49-1117 0.25	171130G1_Analyte	28.7	4.77	12116.88	12116.88	10632.15	113.9644
7	1701750-04 CH-AT-1FB49-1117 0.25	171130G1_Analyte	28.7	4.78	10586.79	10586.79	10632.15	99.57328
8	1701750-05 CH-AT-1RW50-1117 0.25	171130G1_Analyte	28.7	4.77	11368.51	11368.51	10632.15	106.9257
9	1701750-06 CH-AT-1FB50-1117 0.25	171130G1_Analyte	28.7	4.78	11020.09	11020.09	10632.15	103.6487
10	1701750-07 CH-AT-1RW51-1117 0.25	171130G1_Analyte	28.7	4.78	10243.2	10243.2	10632.15	96.34174
11	1701750-08 CH-AT-1FB51-1117 0.25	171130G1_Analyte	28.7	4.78	10982.29	10982.29	10632.15	103.2931
12	1701750-09 CH-AT-1RW52-1117 0.25	171130G1_Analyte	28.7	4.77	11591.13	11591.13	10632.15	109.0196
13	1701750-10 CH-AT-1FB52-1117 0.25	171130G1_Analyte	28.7	4.78	10897.19	10897.19	10632.15	102.4928
14	1701750-11 CH-AT-1RW53-1117 0.25	171130G1_Analyte	28.7	4.78	10256.69	10256.69	10632.15	96.46857
15	1701750-12 CH-AT-1FB53-1117 0.25	171130G1_Analyte	28.7	4.78	10648.94	10648.94	10632.15	100.1579



16	1701750-13 CH-AT-1RW54-1117 0.25	171130G1_Analyte	28.7	4.78	11124.39	11124.39	10632.15	104.6297
17	1701750-14 CH-AT-1FB54-1117 0.25	171130G1_Analyte	28.7	4.78	10492.58	10492.58	10632.15	98.68724
18	1701750-15 CH-AT-1RW55-1117 0.25	171130G1_Analyte	28.7	4.78	9936.595	9936.595	10632.15	93.45796
19	1701750-16 CH-AT-1FB55-1117 0.25	171130G1_Analyte	28.7	4.78	9972.192	9972.192	10632.15	93.79276
20	1701750-17 CH-AT-1RW56-1117 0.25	171130G1_Analyte	28.7	4.78	11208.33	11208.33	10632.15	105.4192
21	1701750-18 CH-AT-1FB56-1117 0.25	171130G1_Analyte	28.7	4.78	10103.88	10103.88	10632.15	95.03135
22	1701750-19 CH-AT-1FB57-1117 0.25	171130G1_Analyte	28.7	4.78	9217.348	9217.348	10632.15	86.69313
23	1701750-20 CH-AT-1RW57-1117 0.25	171130G1_Analyte	28.7	4.78	10343.89	10343.89	10632.15	97.28876
24	IPA	171130G1_Analyte	28.7				10632.15	0
25	ST171130G1-10 PFC CS3 17K3027	171130G1_Analyte	28.7	4.78	15689.35	15689.35	10632.15	147.5651
26	IPA	171130G1_Analyte	28.7				10632.15	0
27	B7K0177-BS1 LFB 0.25	171130G1_Analyte	28.7	4.78	9979.289	9979.289	10632.15	93.85952
28	B7K0177-BSD1 LFB 0.25	171130G1_Analyte	28.7	4.78	9799.573	9799.573	10632.15	92.16921
29	B7K0177-BLK1 LRB 0.25	171130G1_Analyte	28.7	4.78	10066.06	10066.06	10632.15	94.67562
30	1701751-01 CH-AT-1RW58-1117 0.25	171130G1_Analyte	28.7	4.78	10549.27	10549.27	10632.15	99.22045
31	1701751-02 CH-AT-1FB58-1117 0.25	171130G1_Analyte	28.7	4.77	11070.11	11070.11	10632.15	104.1192
32	1701751-03 CH-AT-1EB01-111717 0.25	171130G1_Analyte	28.7	4.78	10438.17	10438.17	10632.15	98.17548
33	1701751-04 CH-AT-1RW59-1117 0.25	171130G1_Analyte	28.7	4.78	10808.08	10808.08	10632.15	101.6547
34	1701751-05 CH-AT-1FB59-1117 0.25	171130G1_Analyte	28.7	4.78	10611.29	10611.29	10632.15	99.80379
35	1701751-06 CH-AT-1RW60-1117 0.25	171130G1_Analyte	28.7	4.78	11343.5	11343.5	10632.15	106.6905
36	1701751-07 CH-AT-1FB60-1117 0.25	171130G1_Analyte	28.7	4.78	10190.04	10190.04	10632.15	95.84167
37	1701751-08 CH-AT-1RW61-1117 0.25	171130G1_Analyte	28.7	4.78	9846.619	9846.619	10632.15	92.6117
38	1701751-09 CH-AT-1FB61-1117 0.25	171130G1_Analyte	28.7	4.78	9750.364	9750.364	10632.15	91.70638
39	1701751-10 CH-AT-1RW62-1117 0.25	171130G1_Analyte	28.7	4.78	11253.6	11253.6	10632.15	105.8449
40	1701751-11 CH-AT-1FB62-1117 0.25	171130G1_Analyte	28.7	4.78	10218.28	10218.28	10632.15	96.10736
41	IPA	171130G1_Analyte	28.7				10632.15	0
42	ST171130G1-11 PFC CS5 537 17K3029	171130G1_Analyte	28.7	4.78	13729.75	13729.75	10632.15	129.1342

Ccals

Compound 6: 13C2-PFOA

ST171130G1-10 PFC CS3 17K3027

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
25	ST171130G1-10 PFC CS3 17K3027	171130G1_Analyte	10	4.38	14752.8	14752.8	14752.8	100
26	IPA	171130G1_Analyte	10				14752.8	0

27	B7K0177-BS1 LFB 0.25	171130G1_Analyte	10	4.38	9162.974	9162.974	14752.8	62.11008
28	B7K0177-BSD1 LFBD 0.25	171130G1_Analyte	10	4.38	10041.11	10041.11	14752.8	68.0624
29	B7K0177-BLK1 LRB 0.25	171130G1_Analyte	10	4.38	9539.413	9539.413	14752.8	64.66172
30	1701751-01 CH-AT-1RW58-1117 0.25	171130G1_Analyte	10	4.38	10139.91	10139.91	14752.8	68.73212
31	1701751-02 CH-AT-1FB58-1117 0.25	171130G1_Analyte	10	4.38	10102.47	10102.47	14752.8	68.47835
32	1701751-03 CH-AT-1EB01-111717 0.25	171130G1_Analyte	10	4.38	10062.9	10062.9	14752.8	68.21011
33	1701751-04 CH-AT-1RW59-1117 0.25	171130G1_Analyte	10	4.38	9489.777	9489.777	14752.8	64.32527
34	1701751-05 CH-AT-1FB59-1117 0.25	171130G1_Analyte	10	4.38	10036.1	10036.1	14752.8	68.02846
35	1701751-06 CH-AT-1RW60-1117 0.25	171130G1_Analyte	10	4.38	10513.49	10513.49	14752.8	71.26435
36	1701751-07 CH-AT-1FB60-1117 0.25	171130G1_Analyte	10	4.38	9802.494	9802.494	14752.8	66.44498
37	1701751-08 CH-AT-1RW61-1117 0.25	171130G1_Analyte	10	4.38	9154.165	9154.165	14752.8	62.05036
38	1701751-09 CH-AT-1FB61-1117 0.25	171130G1_Analyte	10	4.38	9689.5	9689.5	14752.8	65.67907
39	1701751-10 CH-AT-1RW62-1117 0.25	171130G1_Analyte	10	4.38	10054.72	10054.72	14752.8	68.15466
40	1701751-11 CH-AT-1FB62-1117 0.25	171130G1_Analyte	10	4.38	10142.54	10142.54	14752.8	68.74996
41	IPA	171130G1_Analyte	10				14752.8	0
42	ST171130G1-11 PFC CS5 537 17K3029	171130G1_Analyte	10	4.38	13996.81	13996.81	14752.8	94.87562

Compound 7: 13C4-PFOS

ST171130G1-10 PFC CS3 17K3027

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
25	ST171130G1-10 PFC CS3 17K3027	171130G1_Analyte	28.7	4.78	15689.35	15689.35	15689.35	100
26	IPA	171130G1_Analyte	28.7				15689.35	0
27	B7K0177-BS1 LFB 0.25	171130G1_Analyte	28.7	4.78	9979.289	9979.289	15689.35	63.6055
28	B7K0177-BSD1 LFBD 0.25	171130G1_Analyte	28.7	4.78	9799.573	9799.573	15689.35	62.46004
29	B7K0177-BLK1 LRB 0.25	171130G1_Analyte	28.7	4.78	10066.06	10066.06	15689.35	64.15855
30	1701751-01 CH-AT-1RW58-1117 0.25	171130G1_Analyte	28.7	4.78	10549.27	10549.27	15689.35	67.23843
31	1701751-02 CH-AT-1FB58-1117 0.25	171130G1_Analyte	28.7	4.77	11070.11	11070.11	15689.35	70.55812
32	1701751-03 CH-AT-1EB01-111717 0.25	171130G1_Analyte	28.7	4.78	10438.17	10438.17	15689.35	66.53029
33	1701751-04 CH-AT-1RW59-1117 0.25	171130G1_Analyte	28.7	4.78	10808.08	10808.08	15689.35	68.88803
34	1701751-05 CH-AT-1FB59-1117 0.25	171130G1_Analyte	28.7	4.78	10611.29	10611.29	15689.35	67.63374
35	1701751-06 CH-AT-1RW60-1117 0.25	171130G1_Analyte	28.7	4.78	11343.5	11343.5	15689.35	72.30062
36	1701751-07 CH-AT-1FB60-1117 0.25	171130G1_Analyte	28.7	4.78	10190.04	10190.04	15689.35	64.94874
37	1701751-08 CH-AT-1RW61-1117 0.25	171130G1_Analyte	28.7	4.78	9846.619	9846.619	15689.35	62.7599
38	1701751-09 CH-AT-1FB61-1117 0.25	171130G1_Analyte	28.7	4.78	9750.364	9750.364	15689.35	62.14639

39	1701751-10 CH-AT-1RW62-1117 0.25	171130G1_Analyte	28.7	4.78	11253.6	11253.6	15689.35	71.72761
40	1701751-11 CH-AT-1FB62-1117 0.25	171130G1_Analyte	28.7	4.78	10218.28	10218.28	15689.35	65.12879
41	IPA	171130G1_Analyte	28.7				15689.35	0
42	ST171130G1-11 PFC CS5 537 17K3029	171130G1_Analyte	28.7	4.78	13729.75	13729.75	15689.35	87.51

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-38.qld

Last Altered: Friday, December 01, 2017 09:47:50 Pacific Standard Time

Printed: Friday, December 01, 2017 09:48:04 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_38, Date: 01-Dec-2017, Time: 01:58:26, ID: ST171130G1-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	2.06e4	1.57e4		1.0000	3.08	3.07	37.6	46.6	105.4
2	2 PFOA	413 > 368.7	6.14e4	1.48e4		1.0000	4.38	4.38	41.6	50.9	101.8
3	3 PFOS	499 > 79.9	2.79e4	1.57e4		1.0000	4.78	4.78	51.1	43.2	93.5
4	4 13C2-PFHxA	315 > 269.8	6.88e3	1.48e4	0.429	1.0000	3.44	3.44	4.66	10.9	108.7
5	5 13C2-PFDA	515.1 > 469.9	7.52e3	1.48e4	0.548	1.0000	5.01	5.01	5.10	9.30	93.0
6	6 13C2-PFOA	414.9 > 369.7	1.48e4	1.48e4	1.000	1.0000	4.41	4.38	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.57e4	1.57e4	1.000	1.0000	4.81	4.78	28.7	28.7	100.0

70-130  
↓

AM  
12/1/17  
rja.  
12/01/2017

Dataset: Untitled

Last Altered: Friday, December 01, 2017 09:51:01 Pacific Standard Time

Printed: Friday, December 01, 2017 09:54:28 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171130G1_1	IPA	30-Nov-17	18:18:31
2	171130G1_2	ST171130G1-1 PFC CS-3 537 17K3022	30-Nov-17	18:30:58
3	171130G1_3	ST171130G1-2 PFC CS-2 537 17K3023	30-Nov-17	18:43:22
4	171130G1_4	ST171130G1-3 PFC CS-1 537 17K3024	30-Nov-17	18:55:46
5	171130G1_5	ST171130G1-4 PFC CS0 537 17K3025	30-Nov-17	19:08:12
6	171130G1_6	ST171130G1-5 PFC CS1 537 17K3026	30-Nov-17	19:20:37
7	171130G1_7	ST171130G1-6 PFC CS2 537 17K3033	30-Nov-17	19:33:04
8	171130G1_8	ST171130G1-7 PFC CS3 537 17K3027	30-Nov-17	19:45:30
9	171130G1_9	ST171130G1-8 PFC CS4 537 17K3028	30-Nov-17	19:57:58
10	171130G1_10	ST171130G1-9 PFC CS5 537 17K3029	30-Nov-17	20:10:26
11	171130G1_11	IPA	30-Nov-17	20:22:49
12	171130G1_12	ICV171130G1-1 PFC ICV 537 17K3030	30-Nov-17	20:35:17
13	171130G1_13	IPA	30-Nov-17	20:47:42
14	171130G1_14	B7K0172-BS1 LFB 0.25	30-Nov-17	21:00:09
15	171130G1_15	B7K0172-BSD1 LFB 0.25	30-Nov-17	21:12:34
16	171130G1_16	B7K0172-BLK1 LRB 0.25	30-Nov-17	21:24:59
17	171130G1_17	1701750-01 CH-AT-1RW48-1117 0.25	30-Nov-17	21:37:26
18	171130G1_18	1701750-02 CH-AT-1FB48-1117 0.25	30-Nov-17	21:49:52
19	171130G1_19	1701750-03 CH-AT-1RW49-1117 0.25	30-Nov-17	22:02:20
20	171130G1_20	1701750-04 CH-AT-1FB49-1117 0.25	30-Nov-17	22:14:47
21	171130G1_21	1701750-05 CH-AT-1RW50-1117 0.25	30-Nov-17	22:27:11
22	171130G1_22	1701750-06 CH-AT-1FB50-1117 0.25	30-Nov-17	22:39:35
23	171130G1_23	1701750-07 CH-AT-1RW51-1117 0.25	30-Nov-17	22:51:59
24	171130G1_24	1701750-08 CH-AT-1FB51-1117 0.25	30-Nov-17	23:04:25
25	171130G1_25	1701750-09 CH-AT-1RW52-1117 0.25	30-Nov-17	23:16:50
26	171130G1_26	1701750-10 CH-AT-1FB52-1117 0.25	30-Nov-17	23:29:17
27	171130G1_27	1701750-11 CH-AT-1RW53-1117 0.25	30-Nov-17	23:41:45
28	171130G1_28	1701750-12 CH-AT-1FB53-1117 0.25	30-Nov-17	23:54:12
29	171130G1_29	1701750-13 CH-AT-1RW54-1117 0.25	01-Dec-17	00:06:36
30	171130G1_30	1701750-14 CH-AT-1FB54-1117 0.25	01-Dec-17	00:19:01
31	171130G1_31	1701750-15 CH-AT-1RW55-1117 0.25	01-Dec-17	00:31:25

Dataset: Untitled

Last Altered: Friday, December 01, 2017 09:51:01 Pacific Standard Time

Printed: Friday, December 01, 2017 09:54:28 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171130G1_32	1701750-16 CH-AT-1FB55-1117 0.25	01-Dec-17	00:43:49
33	171130G1_33	1701750-17 CH-AT-1RW56-1117 0.25	01-Dec-17	00:56:15
34	171130G1_34	1701750-18 CH-AT-1FB56-1117 0.25	01-Dec-17	01:08:41
35	171130G1_35	1701750-19 CH-AT-1FB57-1117 0.25	01-Dec-17	01:21:08
36	171130G1_36	1701750-20 CH-AT-1RW57-1117 0.25	01-Dec-17	01:33:35
37	171130G1_37	IPA	01-Dec-17	01:45:59
38	171130G1_38	ST171130G1-10 PFC CS3 17K3027	01-Dec-17	01:58:26
39	171130G1_39	IPA	01-Dec-17	02:10:53
40	171130G1_40	B7K0177-BS1 LFB 0.25	01-Dec-17	02:23:21
41	171130G1_41	B7K0177-BSD1 LFB 0.25	01-Dec-17	02:35:46
42	171130G1_42	B7K0177-BLK1 LRB 0.25	01-Dec-17	02:48:11
43	171130G1_43	1701751-01 CH-AT-1RW58-1117 0.25	01-Dec-17	03:00:35
44	171130G1_44	1701751-02 CH-AT-1FB58-1117 0.25	01-Dec-17	03:13:01
45	171130G1_45	1701751-03 CH-AT-1EB01-111717 0.25	01-Dec-17	03:25:27
46	171130G1_46	1701751-04 CH-AT-1RW59-1117 0.25	01-Dec-17	03:37:53
47	171130G1_47	1701751-05 CH-AT-1FB59-1117 0.25	01-Dec-17	03:50:21
48	171130G1_48	1701751-06 CH-AT-1RW60-1117 0.25	01-Dec-17	04:02:44
49	171130G1_49	1701751-07 CH-AT-1FB60-1117 0.25	01-Dec-17	04:15:09
50	171130G1_50	1701751-08 CH-AT-1RW61-1117 0.25	01-Dec-17	04:27:33
51	171130G1_51	1701751-09 CH-AT-1FB61-1117 0.25	01-Dec-17	04:39:57
52	171130G1_52	1701751-10 CH-AT-1RW62-1117 0.25	01-Dec-17	04:52:23
53	171130G1_53	1701751-11 CH-AT-1FB62-1117 0.25	01-Dec-17	05:04:50
54	171130G1_54	IPA	01-Dec-17	05:17:17
55	171130G1_55	ST171130G1-11 PFC CS5 537 17K3029	01-Dec-17	05:29:45
56	171130G1_56	IPA	01-Dec-17	05:42:09

**LC Calibration Standards Review Checklist**

Q1

Calibration ID:	L M H	ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
<u>ST17113061-10</u>	<u>(L M H)</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>-11</u>	<u>(L M H)</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NA  
↓

Full Mass Cal. Date: 4/5/17

Run Log Present:

# of Samples per Sequence Checked:

Reviewed By: JA 12/01/2017  
Initials/Date

Comments: DU-L3

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-38.qld

Last Altered: Friday, December 01, 2017 09:47:50 Pacific Standard Time

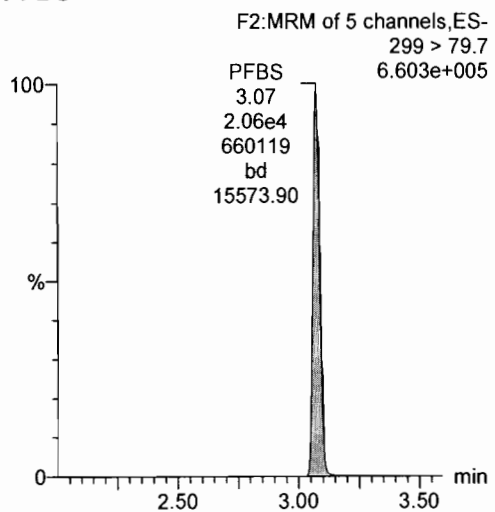
Printed: Friday, December 01, 2017 09:48:04 Pacific Standard Time

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

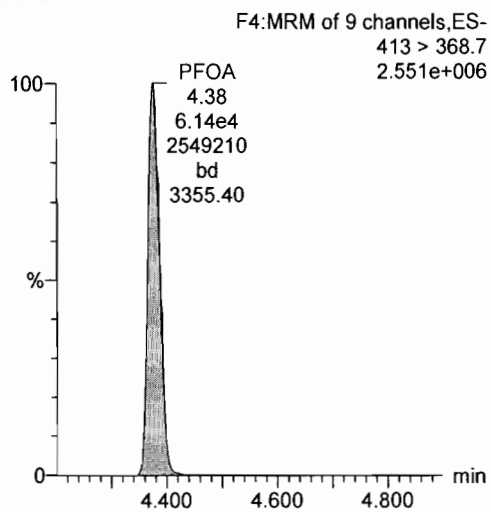
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_38, Date: 01-Dec-2017, Time: 01:58:26, ID: ST171130G1-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

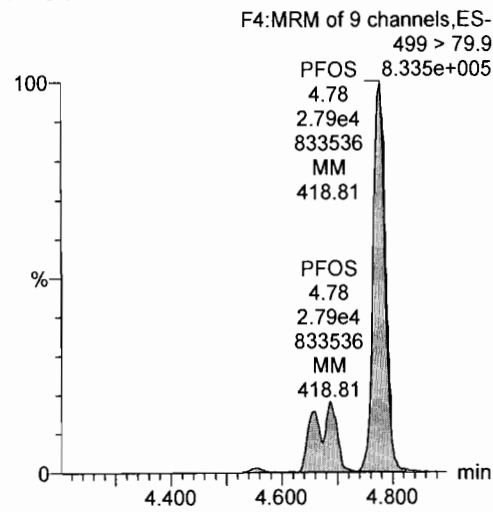
**PFBS**



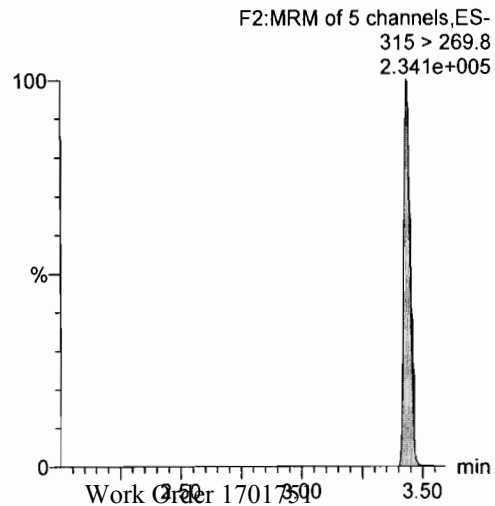
**PFOA**



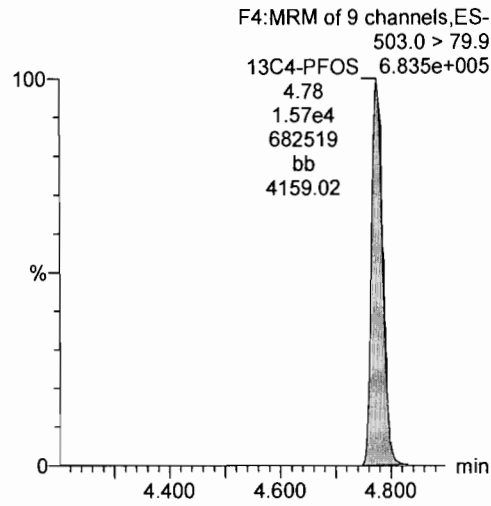
**PFOS**



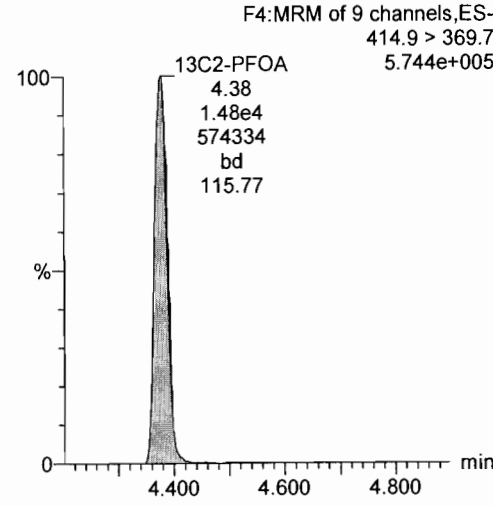
**13C2-PFHxA**



**13C4-PFOS**



**13C2-PFOA**





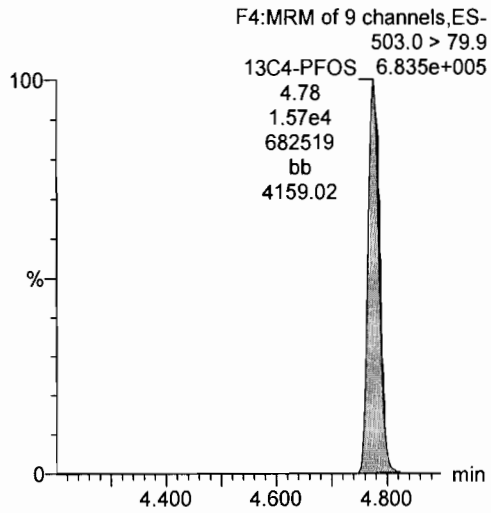
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-38.qld

Last Altered: Friday, December 01, 2017 09:47:50 Pacific Standard Time

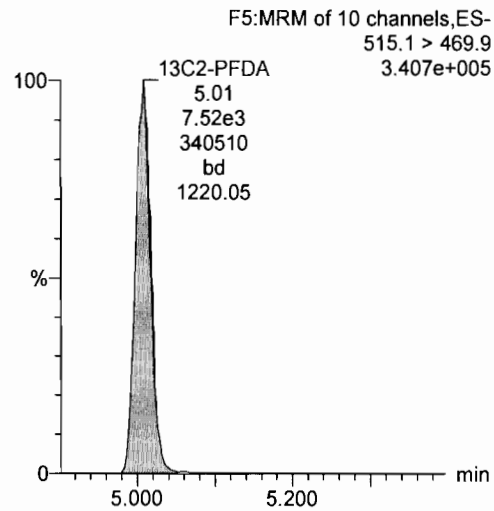
Printed: Friday, December 01, 2017 09:48:04 Pacific Standard Time

Name: 171130G1\_38, Date: 01-Dec-2017, Time: 01:58:26, ID: ST171130G1-10 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-55.qld

Last Altered: Friday, December 01, 2017 09:49:08 Pacific Standard Time

Printed: Friday, December 01, 2017 09:49:47 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_55, Date: 01-Dec-2017, Time: 05:29:45, ID: ST171130G1-11 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.43e4	1.37e4		1.0000	3.08	3.07	71.7	88.8	100.4
2	2 PFOA	413 > 368.7	1.08e5	1.40e4		1.0000	4.38	4.38	77.5	94.8	94.8
3	3 PFOS	499 > 79.9	5.63e4	1.37e4		1.0000	4.78	4.78	118	99.5	107.7
4	4 13C2-PFHxA	315 > 269.8	6.29e3	1.40e4	0.429	1.0000	3.44	3.44	4.50	10.5	104.9
5	5 13C2-PFDA	515.1 > 469.9	6.96e3	1.40e4	0.548	1.0000	5.01	5.01	4.97	9.07	90.7
6	6 13C2-PFOA	414.9 > 369.7	1.40e4	1.40e4	1.000	1.0000	4.41	4.38	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.37e4	1.37e4	1.000	1.0000	4.81	4.78	28.7	28.7	100.0

70-130  
↓

DM 12/1/17  
-12/1/17  
rja.  
12/01/2017

Dataset: Untitled

Last Altered: Friday, December 01, 2017 09:51:01 Pacific Standard Time

Printed: Friday, December 01, 2017 09:54:23 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171130G1_1	IPA	30-Nov-17	18:18:31
2	171130G1_2	ST171130G1-1 PFC CS-3 537 17K3022	30-Nov-17	18:30:58
3	171130G1_3	ST171130G1-2 PFC CS-2 537 17K3023	30-Nov-17	18:43:22
4	171130G1_4	ST171130G1-3 PFC CS-1 537 17K3024	30-Nov-17	18:55:46
5	171130G1_5	ST171130G1-4 PFC CS0 537 17K3025	30-Nov-17	19:08:12
6	171130G1_6	ST171130G1-5 PFC CS1 537 17K3026	30-Nov-17	19:20:37
7	171130G1_7	ST171130G1-6 PFC CS2 537 17K3033	30-Nov-17	19:33:04
8	171130G1_8	ST171130G1-7 PFC CS3 537 17K3027	30-Nov-17	19:45:30
9	171130G1_9	ST171130G1-8 PFC CS4 537 17K3028	30-Nov-17	19:57:58
10	171130G1_10	ST171130G1-9 PFC CS5 537 17K3029	30-Nov-17	20:10:26
11	171130G1_11	IPA	30-Nov-17	20:22:49
12	171130G1_12	ICV171130G1-1 PFC ICV 537 17K3030	30-Nov-17	20:35:17
13	171130G1_13	IPA	30-Nov-17	20:47:42
14	171130G1_14	B7K0172-BS1 LFB 0.25	30-Nov-17	21:00:09
15	171130G1_15	B7K0172-BSD1 LFB 0.25	30-Nov-17	21:12:34
16	171130G1_16	B7K0172-BLK1 LRB 0.25	30-Nov-17	21:24:59
17	171130G1_17	1701750-01 CH-AT-1RW48-1117 0.25	30-Nov-17	21:37:26
18	171130G1_18	1701750-02 CH-AT-1FB48-1117 0.25	30-Nov-17	21:49:52
19	171130G1_19	1701750-03 CH-AT-1RW49-1117 0.25	30-Nov-17	22:02:20
20	171130G1_20	1701750-04 CH-AT-1FB49-1117 0.25	30-Nov-17	22:14:47
21	171130G1_21	1701750-05 CH-AT-1RW50-1117 0.25	30-Nov-17	22:27:11
22	171130G1_22	1701750-06 CH-AT-1FB50-1117 0.25	30-Nov-17	22:39:35
23	171130G1_23	1701750-07 CH-AT-1RW51-1117 0.25	30-Nov-17	22:51:59
24	171130G1_24	1701750-08 CH-AT-1FB51-1117 0.25	30-Nov-17	23:04:25
25	171130G1_25	1701750-09 CH-AT-1RW52-1117 0.25	30-Nov-17	23:16:50
26	171130G1_26	1701750-10 CH-AT-1FB52-1117 0.25	30-Nov-17	23:29:17
27	171130G1_27	1701750-11 CH-AT-1RW53-1117 0.25	30-Nov-17	23:41:45
28	171130G1_28	1701750-12 CH-AT-1FB53-1117 0.25	30-Nov-17	23:54:12
29	171130G1_29	1701750-13 CH-AT-1RW54-1117 0.25	01-Dec-17	00:06:36
30	171130G1_30	1701750-14 CH-AT-1FB54-1117 0.25	01-Dec-17	00:19:01
31	171130G1_31	1701750-15 CH-AT-1RW55-1117 0.25	01-Dec-17	00:31:25

Dataset: Untitled

Last Altered: Friday, December 01, 2017 09:51:01 Pacific Standard Time

Printed: Friday, December 01, 2017 09:54:23 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171130G1_32	1701750-16 CH-AT-1FB55-1117 0.25	01-Dec-17	00:43:49
33	171130G1_33	1701750-17 CH-AT-1RW56-1117 0.25	01-Dec-17	00:56:15
34	171130G1_34	1701750-18 CH-AT-1FB56-1117 0.25	01-Dec-17	01:08:41
35	171130G1_35	1701750-19 CH-AT-1FB57-1117 0.25	01-Dec-17	01:21:08
36	171130G1_36	1701750-20 CH-AT-1RW57-1117 0.25	01-Dec-17	01:33:35
37	171130G1_37	IPA	01-Dec-17	01:45:59
38	171130G1_38	ST171130G1-10 PFC CS3 17K3027	01-Dec-17	01:58:26
39	171130G1_39	IPA	01-Dec-17	02:10:53
40	171130G1_40	B7K0177-BS1 LFB 0.25	01-Dec-17	02:23:21
41	171130G1_41	B7K0177-BSD1 LFBD 0.25	01-Dec-17	02:35:46
42	171130G1_42	B7K0177-BLK1 LRB 0.25	01-Dec-17	02:48:11
43	171130G1_43	1701751-01 CH-AT-1RW58-1117 0.25	01-Dec-17	03:00:35
44	171130G1_44	1701751-02 CH-AT-1FB58-1117 0.25	01-Dec-17	03:13:01
45	171130G1_45	1701751-03 CH-AT-1EB01-111717 0.25	01-Dec-17	03:25:27
46	171130G1_46	1701751-04 CH-AT-1RW59-1117 0.25	01-Dec-17	03:37:53
47	171130G1_47	1701751-05 CH-AT-1FB59-1117 0.25	01-Dec-17	03:50:21
48	171130G1_48	1701751-06 CH-AT-1RW60-1117 0.25	01-Dec-17	04:02:44
49	171130G1_49	1701751-07 CH-AT-1FB60-1117 0.25	01-Dec-17	04:15:09
50	171130G1_50	1701751-08 CH-AT-1RW61-1117 0.25	01-Dec-17	04:27:33
51	171130G1_51	1701751-09 CH-AT-1FB61-1117 0.25	01-Dec-17	04:39:57
52	171130G1_52	1701751-10 CH-AT-1RW62-1117 0.25	01-Dec-17	04:52:23
53	171130G1_53	1701751-11 CH-AT-1FB62-1117 0.25	01-Dec-17	05:04:50
54	171130G1_54	IPA	01-Dec-17	05:17:17
55	171130G1_55	ST171130G1-11 PFC CS5 537 17K3029	01-Dec-17	05:29:45
56	171130G1_56	IPA	01-Dec-17	05:42:09

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-55.qld

Last Altered: Friday, December 01, 2017 09:49:08 Pacific Standard Time

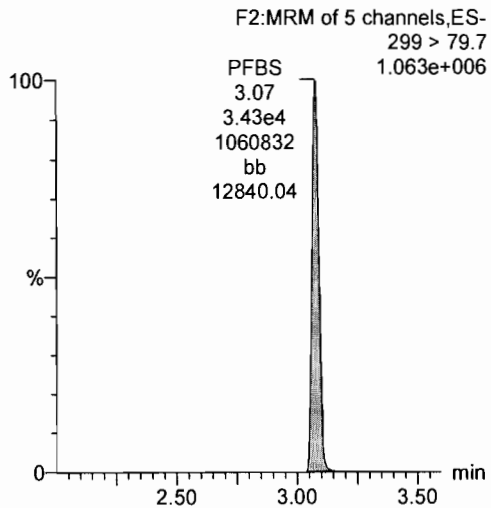
Printed: Friday, December 01, 2017 09:49:47 Pacific Standard Time

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

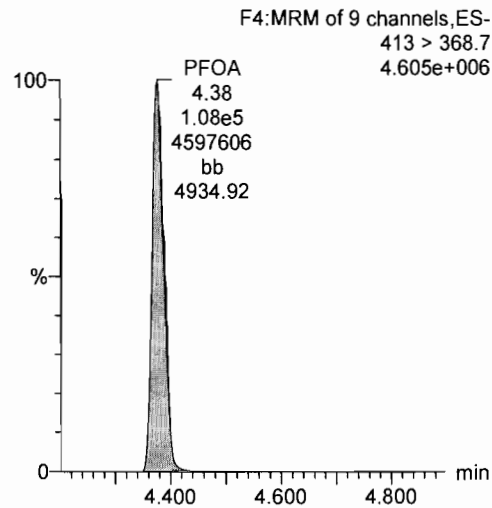
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_55, Date: 01-Dec-2017, Time: 05:29:45, ID: ST171130G1-11 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

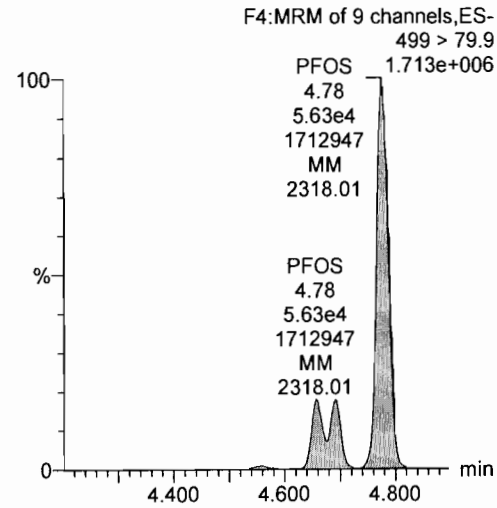
PFBS



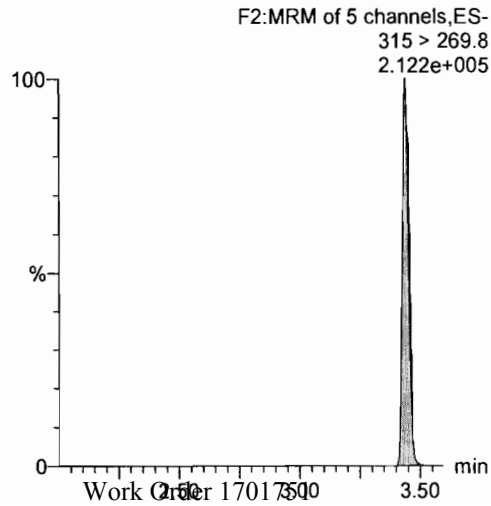
PFOA



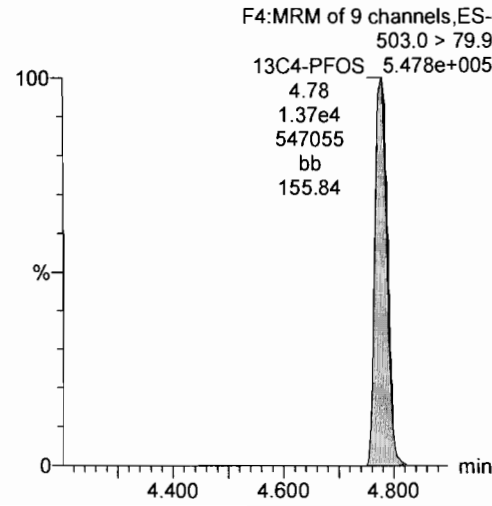
PFOS



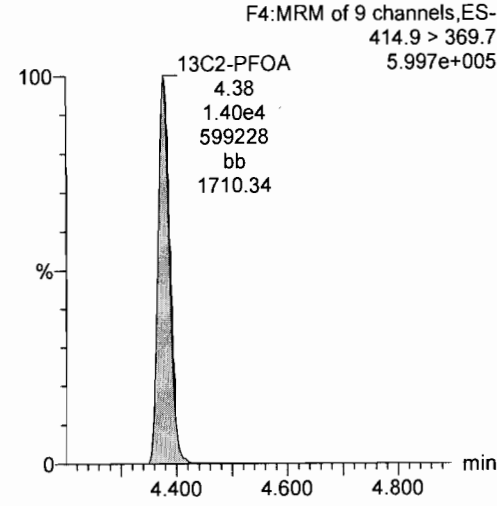
13C2-PFHxA



13C4-PFOS



13C2-PFOA



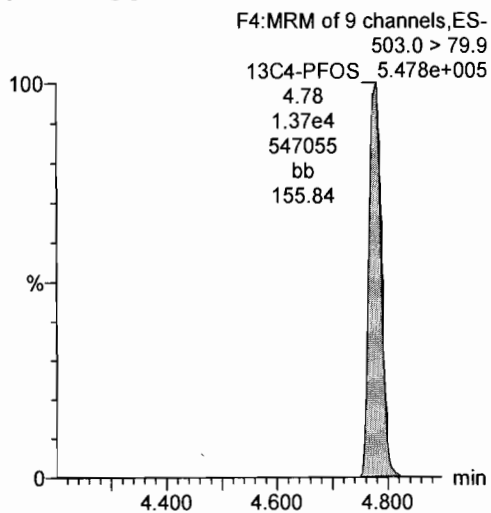
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-55.qld

Last Altered: Friday, December 01, 2017 09:49:08 Pacific Standard Time

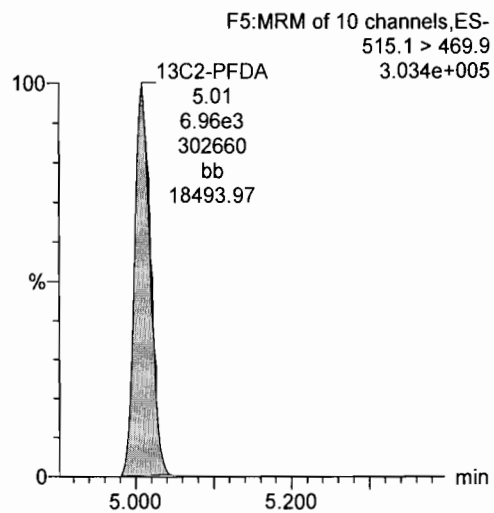
Printed: Friday, December 01, 2017 09:49:47 Pacific Standard Time

Name: 171130G1\_55, Date: 01-Dec-2017, Time: 05:29:45, ID: ST171130G1-11 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029

13C4-PFOS



13C2-PFDA



IIS Area

Ical

Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %	
1	ST171201G1-1 PFC CS-1 537 17K3024	171201G1_2	Analyte	10	4.38	10246.87	10246.87	10177.82	100.6784
2	IPA	171201G1_3	Analyte	10				10177.82	0
3	B7K0177-BS1 LFB 0.25	171201G1_4	Analyte	10	4.36	10120.64	10120.64	10177.82	99.43814
4	B7K0177-BSD1 LFBD 0.25	171201G1_5	Analyte	10	4.36	9534	9534	10177.82	93.67427
5	B7K0177-BLK1 LRB 0.25	171201G1_6	Analyte	10	4.36	10364.79	10364.79	10177.82	101.837
6	1701751-01 CH-AT-1RW58-1117 0.25	171201G1_7	Analyte	10	4.36	10695.21	10695.21	10177.82	105.0835
7	1701751-02 CH-AT-1FB58-1117 0.25	171201G1_8	Analyte	10	4.37	10499.33	10499.33	10177.82	103.1589
8	1701751-03 CH-AT-1EB01-111717 0.25	171201G1_9	Analyte	10	4.37	10296.32	10296.32	10177.82	101.1643
9	1701751-04 CH-AT-1RW59-1117 0.25	171201G1_10	Analyte	10	4.36	10387.54	10387.54	10177.82	102.0605
10	1701751-05 CH-AT-1FB59-1117 0.25	171201G1_11	Analyte	10	4.37	9595.106	9595.106	10177.82	94.27466
11	IPA	171201G1_12	Analyte	10				10177.82	0
12	1701751-07 CH-AT-1FB60-1117 0.25	171201G1_13	Analyte	10	4.36	10436.06	10436.06	10177.82	102.5373
13	1701751-08 CH-AT-1RW61-1117 0.25	171201G1_14	Analyte	10	4.36	9293.446	9293.446	10177.82	91.31076
14	1701751-09 CH-AT-1FB61-1117 0.25	171201G1_15	Analyte	10	4.37	9952.973	9952.973	10177.82	97.7908
15	1701751-10 CH-AT-1RW62-1117 0.25	171201G1_16	Analyte	10	4.37	10240.24	10240.24	10177.82	100.6133
16	1701751-12 CH-AT-1RW63-1117 0.25	171201G1_17	Analyte	10	4.37	9822.839	9822.839	10177.82	96.5122
17	1701751-13 CH-AT-1FB63-1117 0.25	171201G1_18	Analyte	10	4.36	10151.89	10151.89	10177.82	99.74518
18	1701751-14 CH-AT-1RW64-1117 0.25	171201G1_19	Analyte	10	4.37	10030.44	10030.44	10177.82	98.55197
19	1701751-15 CH-AT-1FB64-1117 0.25	171201G1_20	Analyte	10	4.37	10311.65	10311.65	10177.82	101.3149
20	1701751-16 CH-AT-1RW46-1117 0.25	171201G1_21	Analyte	10	4.36	9865.41	9865.41	10177.82	96.93047
21	1701751-17 CH-AT-1FB46-1117 0.25	171201G1_22	Analyte	10	4.37	9772.003	9772.003	10177.82	96.01272
22	1701751-18 CH-AT-1RW47-1117 0.25	171201G1_23	Analyte	10	4.36	9465.215	9465.215	10177.82	92.99844
23	1701751-19 CH-AT-1FB47-1117 0.25	171201G1_24	Analyte	10	4.37	9588.32	9588.32	10177.82	94.20798
24	B7K0189-BS1 LFB 0.25	171201G1_25	Analyte	10	4.37	9137.972	9137.972	10177.82	89.78318
25	B7K0189-BSD1 LFBD 0.25	171201G1_26	Analyte	10	4.37	8589.176	8589.176	10177.82	84.39111
26	IPA	171201G1_27	Analyte	10				10177.82	0
27	B7K0189-BLK1 LRB 0.25	171201G1_28	Analyte	10	4.37	9231.883	9231.883	10177.82	90.70589

28	1701770-01 CH-AT-1RW74-1117-A 0.25	171201G1_29	Analyte	10	4.37	8938.361	8938.361	10177.82	87.82195
29	1701770-02 CH-AT-1FB74-1117-A 0.25	171201G1_30	Analyte	10	4.36	9731.751	9731.751	10177.82	95.61723
30	1701770-03 CH-AT-1RW74-1117-B 0.25	171201G1_31	Analyte	10	4.37	9411.892	9411.892	10177.82	92.47453
31	IPA	171201G1_32	Analyte	10	4.36	8.63	8.63	10177.82	0.084792
32	ST171201G1-2 PFC CS3 17K3027	171201G1_33	Analyte	10	4.37	10647.01	10647.01	10177.82	104.6099
33	IPA	171201G1_34	Analyte	10				10177.82	0
34	1701770-04 CH-AT-1FB74-1117-B 0.25	171201G1_35	Analyte	10	4.36	9677.573	9677.573	10177.82	95.08492
35	1701770-05 CH-AT-1RW75-1117 0.25	171201G1_36	Analyte	10	4.36	9892.82	9892.82	10177.82	97.19978
36	1701770-06 CH-AT-1FB75-1117 0.25	171201G1_37	Analyte	10	4.36	9644.109	9644.109	10177.82	94.75612
37	1701770-07 CH-AT-1RW76-1117 0.25	171201G1_38	Analyte	10	4.36	9467.841	9467.841	10177.82	93.02424
38	1701770-08 CH-AT-1FB76-1117 0.25	171201G1_39	Analyte	10	4.36	10217.99	10217.99	10177.82	100.3946
39	1701770-09 CH-AT-1RW77-1117 0.25	171201G1_40	Analyte	10	4.36	9130.026	9130.026	10177.82	89.70511
40	1701770-10 CH-AT-1FB77-1117 0.25	171201G1_41	Analyte	10	4.36	9820.692	9820.692	10177.82	96.4911
41	IPA	171201G1_42	Analyte	10				10177.82	0
42	ST171201G1-3 PFC CS5 537 17K3029	171201G1_43	Analyte	10	4.36	8082.667	8082.667	10177.82	79.41451

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %	
1	ST171201G1-1 PFC CS-1 537 17K3024	171201G1_2	Analyte	28.7	4.77	11472.84	11472.84	10632.15	107.907
2	IPA	171201G1_3	Analyte	28.7				10632.15	0
3	B7K0177-BS1 LFB 0.25	171201G1_4	Analyte	28.7	4.77	10492.37	10492.37	10632.15	98.68522
4	B7K0177-BSD1 LFBD 0.25	171201G1_5	Analyte	28.7	4.77	10395.72	10395.72	10632.15	97.77618
5	B7K0177-BLK1 LRB 0.25	171201G1_6	Analyte	28.7	4.77	12010.18	12010.18	10632.15	112.9609
6	1701751-01 CH-AT-1RW58-1117 0.25	171201G1_7	Analyte	28.7	4.77	11394.02	11394.02	10632.15	107.1657
7	1701751-02 CH-AT-1FB58-1117 0.25	171201G1_8	Analyte	28.7	4.77	11583.38	11583.38	10632.15	108.9467
8	1701751-03 CH-AT-1EB01-111717 0.25	171201G1_9	Analyte	28.7	4.77	11628.05	11628.05	10632.15	109.3668
9	1701751-04 CH-AT-1RW59-1117 0.25	171201G1_10	Analyte	28.7	4.77	11647.67	11647.67	10632.15	109.5513
10	1701751-05 CH-AT-1FB59-1117 0.25	171201G1_11	Analyte	28.7	4.77	11705.86	11705.86	10632.15	110.0987
11	IPA	171201G1_12	Analyte	28.7				10632.15	0
12	1701751-07 CH-AT-1FB60-1117 0.25	171201G1_13	Analyte	28.7	4.76	11581.07	11581.07	10632.15	108.9249
13	1701751-08 CH-AT-1RW61-1117 0.25	171201G1_14	Analyte	28.7	4.77	10598.01	10598.01	10632.15	99.67883
14	1701751-09 CH-AT-1FB61-1117 0.25	171201G1_15	Analyte	28.7	4.77	10996.04	10996.04	10632.15	103.4225



15	1701751-10 CH-AT-1RW62-1117 0.25	171201G1_16	Analyte	28.7	4.77	11360.94	11360.94	10632.15	106.8545
16	1701751-12 CH-AT-1RW63-1117 0.25	171201G1_17	Analyte	28.7	4.77	10637.4	10637.4	10632.15	100.0494
17	1701751-13 CH-AT-1FB63-1117 0.25	171201G1_18	Analyte	28.7	4.77	11203.27	11203.27	10632.15	105.3716
18	1701751-14 CH-AT-1RW64-1117 0.25	171201G1_19	Analyte	28.7	4.77	10994.18	10994.18	10632.15	103.405
19	1701751-15 CH-AT-1FB64-1117 0.25	171201G1_20	Analyte	28.7	4.77	11156.77	11156.77	10632.15	104.9342
20	1701751-16 CH-AT-1RW46-1117 0.25	171201G1_21	Analyte	28.7	4.77	11005.35	11005.35	10632.15	103.5101
21	1701751-17 CH-AT-1FB46-1117 0.25	171201G1_22	Analyte	28.7	4.77	11666.4	11666.4	10632.15	109.7275
22	1701751-18 CH-AT-1RW47-1117 0.25	171201G1_23	Analyte	28.7	4.77	10551.03	10551.03	10632.15	99.23702
23	1701751-19 CH-AT-1FB47-1117 0.25	171201G1_24	Analyte	28.7	4.77	11340.44	11340.44	10632.15	106.6617
24	B7K0189-BS1 LFB 0.25	171201G1_25	Analyte	28.7	4.77	10200.96	10200.96	10632.15	95.94444
25	B7K0189-BS1 LFB 0.25	171201G1_26	Analyte	28.7	4.77	9515.736	9515.736	10632.15	89.4996
26	IPA	171201G1_27	Analyte	28.7				10632.15	0
27	B7K0189-BLK1 LRB 0.25	171201G1_28	Analyte	28.7	4.77	10473.88	10473.88	10632.15	98.51135
28	1701770-01 CH-AT-1RW74-1117-A 0.25	171201G1_29	Analyte	28.7	4.77	10481.63	10481.63	10632.15	98.58423
29	1701770-02 CH-AT-1FB74-1117-A 0.25	171201G1_30	Analyte	28.7	4.77	10862.19	10862.19	10632.15	102.1636
30	1701770-03 CH-AT-1RW74-1117-B 0.25	171201G1_31	Analyte	28.7	4.77	10255.89	10255.89	10632.15	96.46108
31	IPA	171201G1_32	Analyte	28.7				10632.15	0
32	ST171201G1-2 PFC CS3 17K3027	171201G1_33	Analyte	28.7	4.77	10843.78	10843.78	10632.15	101.9904
33	IPA	171201G1_34	Analyte	28.7				10632.15	0
34	1701770-04 CH-AT-1FB74-1117-B 0.25	171201G1_35	Analyte	28.7	4.77	10309.08	10309.08	10632.15	96.9613
35	1701770-05 CH-AT-1RW75-1117 0.25	171201G1_36	Analyte	28.7	4.76	10870.29	10870.29	10632.15	102.2397
36	1701770-06 CH-AT-1FB75-1117 0.25	171201G1_37	Analyte	28.7	4.76	11160.61	11160.61	10632.15	104.9704
37	1701770-07 CH-AT-1RW76-1117 0.25	171201G1_38	Analyte	28.7	4.76	10307.03	10307.03	10632.15	96.94208
38	1701770-08 CH-AT-1FB76-1117 0.25	171201G1_39	Analyte	28.7	4.76	10771.22	10771.22	10632.15	101.308
39	1701770-09 CH-AT-1RW77-1117 0.25	171201G1_40	Analyte	28.7	4.77	11219.92	11219.92	10632.15	105.5282
40	1701770-10 CH-AT-1FB77-1117 0.25	171201G1_41	Analyte	28.7	4.76	11117.21	11117.21	10632.15	104.5622
41	IPA	171201G1_42	Analyte	28.7				10632.15	0
42	ST171201G1-3 PFC CS5 537 17K3029	171201G1_43	Analyte	28.7	4.77	8591.051	8591.051	10632.15	80.80254

Ccals

Compound 6: 13C2-PFOA

ST171201G1-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	CCal Area	Area %	
1	ST171201G1-1 PFC CS-1 537 17K3024	171201G1_2	Analyte	10	4.38	10246.87	10246.87	10246.87	100

2	IPA	171201G1_3	Analyte	10				10246.87	0
3	B7K0177-BS1 LFB 0.25	171201G1_4	Analyte	10	4.36	10120.64	10120.64	10246.87	98.76812
4	B7K0177-BSD1 LFB 0.25	171201G1_5	Analyte	10	4.36	9534	9534	10246.87	93.04309
5	B7K0177-BLK1 LRB 0.25	171201G1_6	Analyte	10	4.36	10364.79	10364.79	10246.87	101.1508
6	1701751-01 CH-AT-1RW58-1117 0.25	171201G1_7	Analyte	10	4.36	10695.21	10695.21	10246.87	104.3755
7	1701751-02 CH-AT-1FB58-1117 0.25	171201G1_8	Analyte	10	4.37	10499.33	10499.33	10246.87	102.4638
8	1701751-03 CH-AT-1EB01-111717 0.25	171201G1_9	Analyte	10	4.37	10296.32	10296.32	10246.87	100.4827
9	1701751-04 CH-AT-1RW59-1117 0.25	171201G1_10	Analyte	10	4.36	10387.54	10387.54	10246.87	101.3729
10	1701751-05 CH-AT-1FB59-1117 0.25	171201G1_11	Analyte	10	4.37	9595.106	9595.106	10246.87	93.63943
11	IPA	171201G1_12	Analyte	10				10246.87	0
12	1701751-07 CH-AT-1FB60-1117 0.25	171201G1_13	Analyte	10	4.36	10436.06	10436.06	10246.87	101.8464
13	1701751-08 CH-AT-1RW61-1117 0.25	171201G1_14	Analyte	10	4.36	9293.446	9293.446	10246.87	90.69551
14	1701751-09 CH-AT-1FB61-1117 0.25	171201G1_15	Analyte	10	4.37	9952.973	9952.973	10246.87	97.13188
15	1701751-10 CH-AT-1RW62-1117 0.25	171201G1_16	Analyte	10	4.37	10240.24	10240.24	10246.87	99.93537
16	1701751-12 CH-AT-1RW63-1117 0.25	171201G1_17	Analyte	10	4.37	9822.839	9822.839	10246.87	95.8619
17	1701751-13 CH-AT-1FB63-1117 0.25	171201G1_18	Analyte	10	4.36	10151.89	10151.89	10246.87	99.07309
18	1701751-14 CH-AT-1RW64-1117 0.25	171201G1_19	Analyte	10	4.37	10030.44	10030.44	10246.87	97.88792
19	1701751-15 CH-AT-1FB64-1117 0.25	171201G1_20	Analyte	10	4.37	10311.65	10311.65	10246.87	100.6322
20	1701751-16 CH-AT-1RW46-1117 0.25	171201G1_21	Analyte	10	4.36	9865.41	9865.41	10246.87	96.27735
21	1701751-17 CH-AT-1FB46-1117 0.25	171201G1_22	Analyte	10	4.37	9772.003	9772.003	10246.87	95.36578
22	1701751-18 CH-AT-1RW47-1117 0.25	171201G1_23	Analyte	10	4.36	9465.215	9465.215	10246.87	92.37181
23	1701751-19 CH-AT-1FB47-1117 0.25	171201G1_24	Analyte	10	4.37	9588.32	9588.32	10246.87	93.57321
24	B7K0189-BS1 LFB 0.25	171201G1_25	Analyte	10	4.37	9137.972	9137.972	10246.87	89.17822
25	B7K0189-BSD1 LFB 0.25	171201G1_26	Analyte	10	4.37	8589.176	8589.176	10246.87	83.82248
26	IPA	171201G1_27	Analyte	10				10246.87	0
27	B7K0189-BLK1 LRB 0.25	171201G1_28	Analyte	10	4.37	9231.883	9231.883	10246.87	90.09471
28	1701770-01 CH-AT-1RW74-1117-A 0.25	171201G1_29	Analyte	10	4.37	8938.361	8938.361	10246.87	87.2302
29	1701770-02 CH-AT-1FB74-1117-A 0.25	171201G1_30	Analyte	10	4.36	9731.751	9731.751	10246.87	94.97296
30	1701770-03 CH-AT-1RW74-1117-B 0.25	171201G1_31	Analyte	10	4.37	9411.892	9411.892	10246.87	91.85143
31	IPA	171201G1_32	Analyte	10	4.36	8.63	8.63	10246.87	0.084221
32	ST171201G1-2 PFC CS3 17K3027	171201G1_33	Analyte	10	4.37	10647.01	10647.01	10246.87	103.9051

ST171201G1-2 PFC CS3 17K3027

ID	Name	Type	Std. Conc	RT	Area	IS Area	CCal Area	Area %	
32	ST171201G1-2 PFC CS3 17K3027	171201G1_33	Analyte	10	4.37	10647.01	10647.01	10647.01	100
33	IPA	171201G1_34	Analyte	10				10647.01	0
34	1701770-04 CH-AT-1FB74-1117-B 0.25	171201G1_35	Analyte	10	4.36	9677.573	9677.573	10647.01	90.89472
35	1701770-05 CH-AT-1RW75-1117 0.25	171201G1_36	Analyte	10	4.36	9892.82	9892.82	10647.01	92.91639
36	1701770-06 CH-AT-1FB75-1117 0.25	171201G1_37	Analyte	10	4.36	9644.109	9644.109	10647.01	90.58042
37	1701770-07 CH-AT-1RW76-1117 0.25	171201G1_38	Analyte	10	4.36	9467.841	9467.841	10647.01	88.92486
38	1701770-08 CH-AT-1FB76-1117 0.25	171201G1_39	Analyte	10	4.36	10217.99	10217.99	10647.01	95.97046
39	1701770-09 CH-AT-1RW77-1117 0.25	171201G1_40	Analyte	10	4.36	9130.026	9130.026	10647.01	85.75199
40	1701770-10 CH-AT-1FB77-1117 0.25	171201G1_41	Analyte	10	4.36	9820.692	9820.692	10647.01	92.23894
41	IPA	171201G1_42	Analyte	10				10647.01	0
42	ST171201G1-3 PFC CS5 537 17K3029	171201G1_43	Analyte	10	4.36	8082.667	8082.667	10647.01	75.91488

Compound 7: 13C4-PFOS

ST171201G1-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %	
1	ST171201G1-1 PFC CS-1 537 17K3024	171201G1_2	Analyte	28.7	4.77	11472.84	11472.84	11472.84	100
2	IPA	171201G1_3	Analyte	28.7				11472.84	0
3	B7K0177-BS1 LFB 0.25	171201G1_4	Analyte	28.7	4.77	10492.37	10492.37	11472.84	91.45397
4	B7K0177-BSD1 LFBD 0.25	171201G1_5	Analyte	28.7	4.77	10395.72	10395.72	11472.84	90.61155
5	B7K0177-BLK1 LRB 0.25	171201G1_6	Analyte	28.7	4.77	12010.18	12010.18	11472.84	104.6836
6	1701751-01 CH-AT-1RW58-1117 0.25	171201G1_7	Analyte	28.7	4.77	11394.02	11394.02	11472.84	99.31301
7	1701751-02 CH-AT-1FB58-1117 0.25	171201G1_8	Analyte	28.7	4.77	11583.38	11583.38	11472.84	100.9635
8	1701751-03 CH-AT-1EB01-111717 0.25	171201G1_9	Analyte	28.7	4.77	11628.05	11628.05	11472.84	101.3529
9	1701751-04 CH-AT-1RW59-1117 0.25	171201G1_10	Analyte	28.7	4.77	11647.67	11647.67	11472.84	101.5239
10	1701751-05 CH-AT-1FB59-1117 0.25	171201G1_11	Analyte	28.7	4.77	11705.86	11705.86	11472.84	102.0311
11	IPA	171201G1_12	Analyte	28.7				11472.84	0
12	1701751-07 CH-AT-1FB60-1117 0.25	171201G1_13	Analyte	28.7	4.76	11581.07	11581.07	11472.84	100.9433
13	1701751-08 CH-AT-1RW61-1117 0.25	171201G1_14	Analyte	28.7	4.77	10598.01	10598.01	11472.84	92.37478
14	1701751-09 CH-AT-1FB61-1117 0.25	171201G1_15	Analyte	28.7	4.77	10996.04	10996.04	11472.84	95.8441
15	1701751-10 CH-AT-1RW62-1117 0.25	171201G1_16	Analyte	28.7	4.77	11360.94	11360.94	11472.84	99.02464
16	1701751-12 CH-AT-1RW63-1117 0.25	171201G1_17	Analyte	28.7	4.77	10637.4	10637.4	11472.84	92.71817
17	1701751-13 CH-AT-1FB63-1117 0.25	171201G1_18	Analyte	28.7	4.77	11203.27	11203.27	11472.84	97.65042

18	1701751-14 CH-AT-1RW64-1117 0.25	171201G1_19	Analyte	28.7	4.77	10994.18	10994.18	11472.84	95.8279
19	1701751-15 CH-AT-1FB64-1117 0.25	171201G1_20	Analyte	28.7	4.77	11156.77	11156.77	11472.84	97.24508
20	1701751-16 CH-AT-1RW46-1117 0.25	171201G1_21	Analyte	28.7	4.77	11005.35	11005.35	11472.84	95.92528
21	1701751-17 CH-AT-1FB46-1117 0.25	171201G1_22	Analyte	28.7	4.77	11666.4	11666.4	11472.84	101.6871
22	1701751-18 CH-AT-1RW47-1117 0.25	171201G1_23	Analyte	28.7	4.77	10551.03	10551.03	11472.84	91.96534
23	1701751-19 CH-AT-1FB47-1117 0.25	171201G1_24	Analyte	28.7	4.77	11340.44	11340.44	11472.84	98.84598
24	B7K0189-BS1 LFB 0.25	171201G1_25	Analyte	28.7	4.77	10200.96	10200.96	11472.84	88.91402
25	B7K0189-BSD1 LFB 0.25	171201G1_26	Analyte	28.7	4.77	9515.736	9515.736	11472.84	82.94144
26	IPA	171201G1_27	Analyte	28.7				11472.84	0
27	B7K0189-BLK1 LRB 0.25	171201G1_28	Analyte	28.7	4.77	10473.88	10473.88	11472.84	91.29284
28	1701770-01 CH-AT-1RW74-1117-A 0.25	171201G1_29	Analyte	28.7	4.77	10481.63	10481.63	11472.84	91.36038
29	1701770-02 CH-AT-1FB74-1117-A 0.25	171201G1_30	Analyte	28.7	4.77	10862.19	10862.19	11472.84	94.67747
30	1701770-03 CH-AT-1RW74-1117-B 0.25	171201G1_31	Analyte	28.7	4.77	10255.89	10255.89	11472.84	89.39281
31	IPA	171201G1_32	Analyte	28.7				11472.84	0
32	ST171201G1-2 PFC CS3 17K3027	171201G1_33	Analyte	28.7	4.77	10843.78	10843.78	11472.84	94.51695

ST171201G1-2 PFC CS3 17K3027

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %	
32	ST171201G1-2 PFC CS3 17K3027	171201G1_33	Analyte	28.7	4.77	10843.78	10843.78	10843.78	100
33	IPA	171201G1_34	Analyte	28.7				10843.78	0
34	1701770-04 CH-AT-1FB74-1117-B 0.25	171201G1_35	Analyte	28.7	4.77	10309.08	10309.08	10843.78	95.06906
35	1701770-05 CH-AT-1RW75-1117 0.25	171201G1_36	Analyte	28.7	4.76	10870.29	10870.29	10843.78	100.2445
36	1701770-06 CH-AT-1FB75-1117 0.25	171201G1_37	Analyte	28.7	4.76	11160.61	11160.61	10843.78	102.9218
37	1701770-07 CH-AT-1RW76-1117 0.25	171201G1_38	Analyte	28.7	4.76	10307.03	10307.03	10843.78	95.05021
38	1701770-08 CH-AT-1FB76-1117 0.25	171201G1_39	Analyte	28.7	4.76	10771.22	10771.22	10843.78	99.33092
39	1701770-09 CH-AT-1RW77-1117 0.25	171201G1_40	Analyte	28.7	4.77	11219.92	11219.92	10843.78	103.4687
40	1701770-10 CH-AT-1FB77-1117 0.25	171201G1_41	Analyte	28.7	4.76	11117.21	11117.21	10843.78	102.5216
41	IPA	171201G1_42	Analyte	28.7				10843.78	0
42	ST171201G1-3 PFC CS5 537 17K3029	171201G1_43	Analyte	28.7	4.77	8591.051	8591.051	10843.78	79.22564

Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-2.qld

Last Altered: Saturday, December 02, 2017 04:13:41 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:42:13 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_2, Date: 01-Dec-2017, Time: 10:42:00, ID: ST171201G1-1 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	6.03e2	1.15e4		1.0000	3.07	3.07	1.51	1.87	105.6
2	2 PFOA	413 > 368.7	1.85e3	1.02e4		1.0000	4.38	4.38	1.80	2.20	110.1
3	3 PFOS	499 > 79.9	8.51e2	1.15e4		1.0000	4.77	4.77	2.13	1.80	97.2
4	4 13C2-PFHxA	315 > 269.8	4.51e3	1.02e4	0.429	1.0000	3.44	3.44	4.40	10.3	102.7
5	5 13C2-PFDA	515.1 > 469.9	5.46e3	1.02e4	0.548	1.0000	5.01	5.01	5.32	9.72	97.2
6	6 13C2-PFOA	414.9 > 369.7	1.02e4	1.02e4	1.000	1.0000	4.41	4.38	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.15e4	1.15e4	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

70-130  
↓

AM  
12/2/17

JJA.  
12/04/2017

Dataset: Untitled

Last Altered: Saturday, December 02, 2017 15:43:40 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:51:12 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171201G1_1	IPA	01-Dec-17	10:28:51
2	171201G1_2	ST171201G1-1 PFC CS-1 537 17K3024	01-Dec-17	10:42:00
3	171201G1_3	IPA	01-Dec-17	10:54:24
4	171201G1_4	B7K0177-BS1 LFB 0.25	01-Dec-17	11:06:51
5	171201G1_5	B7K0177-BSD1 LFB 0.25	01-Dec-17	11:19:16
6	171201G1_6	B7K0177-BLK1 LRB 0.25	01-Dec-17	11:31:42
7	171201G1_7	1701751-01 CH-AT-1RW58-1117 0.25	01-Dec-17	11:44:09
8	171201G1_8	1701751-02 CH-AT-1FB58-1117 0.25	01-Dec-17	11:56:36
9	171201G1_9	1701751-03 CH-AT-1EB01-111717 0.25	01-Dec-17	12:09:05
10	171201G1_10	1701751-04 CH-AT-1RW59-1117 0.25	01-Dec-17	12:21:30
11	171201G1_11	1701751-05 CH-AT-1FB59-1117 0.25	01-Dec-17	12:33:54
12	171201G1_12	IPA	(A)	
13	171201G1_13	1701751-07 CH-AT-1FB60-1117 0.25	01-Dec-17	12:46:19
14	171201G1_14	1701751-08 CH-AT-1RW61-1117 0.25	01-Dec-17	12:58:45
15	171201G1_15	1701751-09 CH-AT-1FB61-1117 0.25	01-Dec-17	13:11:13
16	171201G1_16	1701751-10 CH-AT-1RW62-1117 0.25	01-Dec-17	13:23:40
17	171201G1_17	1701751-12 CH-AT-1RW63-1117 0.25	01-Dec-17	13:48:34
18	171201G1_18	1701751-13 CH-AT-1FB63-1117 0.25	01-Dec-17	14:00:59
19	171201G1_19	1701751-14 CH-AT-1RW64-1117 0.25	01-Dec-17	14:13:24
20	171201G1_20	1701751-15 CH-AT-1FB64-1117 0.25	01-Dec-17	14:25:49
21	171201G1_21	1701751-16 CH-AT-1RW46-1117 0.25	01-Dec-17	14:38:15
22	171201G1_22	1701751-17 CH-AT-1FB46-1117 0.25	01-Dec-17	14:50:41
23	171201G1_23	1701751-18 CH-AT-1RW47-1117 0.25	01-Dec-17	15:03:08
24	171201G1_24	1701751-19 CH-AT-1FB47-1117 0.25	01-Dec-17	15:15:36
25	171201G1_25	B7K0189-BS1 LFB 0.25	01-Dec-17	15:28:02
26	171201G1_26	B7K0189-BSD1 LFB 0.25	01-Dec-17	15:40:26
27	171201G1_27	IPA	01-Dec-17	15:52:50
28	171201G1_28	B7K0189-BLK1 LRB 0.25	01-Dec-17	16:05:18
29	171201G1_29	1701770-01 CH-AT-1RW74-1117-A 0.25	01-Dec-17	16:17:43
30	171201G1_30	1701770-02 CH-AT-1FB74-1117-A 0.25	01-Dec-17	16:30:08
31	171201G1_31	1701770-03 CH-AT-1RW74-1117-B 0.25	01-Dec-17	16:42:34

(A) Not required

Dataset: Untitled

Last Altered: Saturday, December 02, 2017 15:43:40 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:51:12 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171201G1_32	IPA	01-Dec-17	16:55:01
33	171201G1_33	ST171201G1-2 PFC CS3 17K3027	01-Dec-17	17:07:29
34	171201G1_34	IPA	01-Dec-17	17:19:53
35	171201G1_35	1701770-04 CH-AT-1FB74-1117-B 0.25	01-Dec-17	17:32:22
36	171201G1_36	1701770-05 CH-AT-1RW75-1117 0.25	01-Dec-17	17:44:49
37	171201G1_37	1701770-06 CH-AT-1FB75-1117 0.25	01-Dec-17	17:57:12
38	171201G1_38	1701770-07 CH-AT-1RW76-1117 0.25	01-Dec-17	18:09:37
39	171201G1_39	1701770-08 CH-AT-1FB76-1117 0.25	01-Dec-17	18:22:01
40	171201G1_40	1701770-09 CH-AT-1RW77-1117 0.25	01-Dec-17	18:34:26
41	171201G1_41	1701770-10 CH-AT-1FB77-1117 0.25	01-Dec-17	18:46:52
42	171201G1_42	IPA	01-Dec-17	18:59:18
43	171201G1_43	ST171201G1-3 PFC CS5 537 17K3029	01-Dec-17	19:11:46
44	171201G1_44	IPA	01-Dec-17	19:24:11

# LC Calibration Standards Review Checklist

B1

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
Calibration ID: <u>ST171201G1-10</u>	<u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>NA</u>
Calibration ID: <u>-2</u>	<u>LMH</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>NA</u>
Calibration ID: <u>-3</u>	<u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>
Calibration ID: _____	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA</u>

*em 12/17*

Full Mass Cal. Date: 4/15/17

Run Log Present:

# of Samples per Sequence Checked:

Reviewed By: JA 12/04/2012  
Initials/Date

Comments: DW-L3



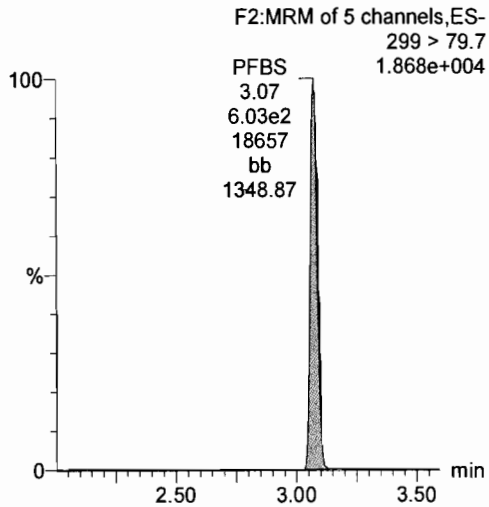
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-2.qld

Last Altered: Saturday, December 02, 2017 04:13:41 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:42:13 Pacific Standard Time

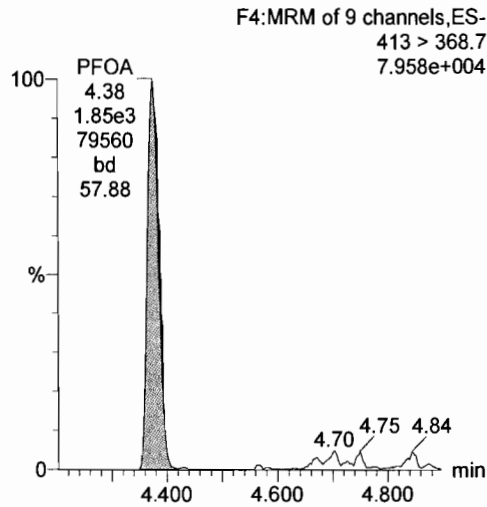
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_2, Date: 01-Dec-2017, Time: 10:42:00, ID: ST171201G1-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

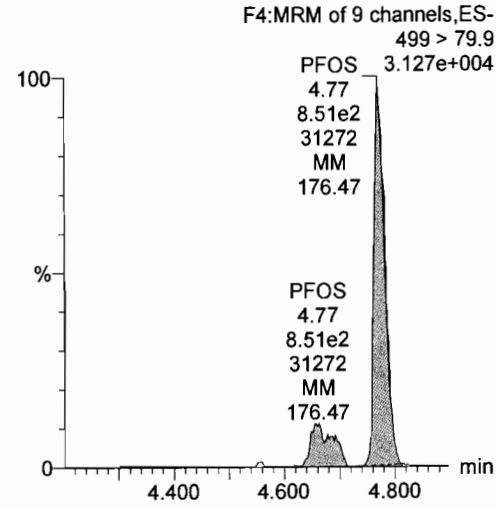
PFBS



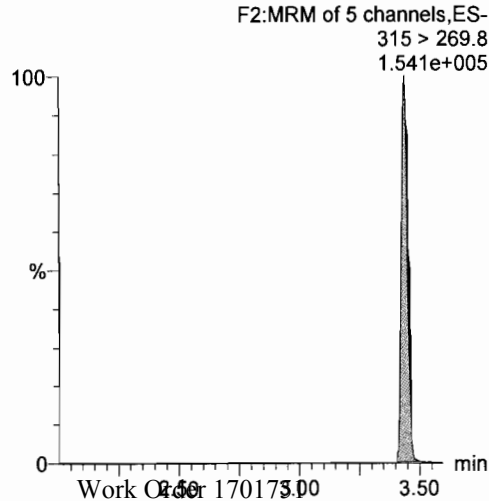
PFOA



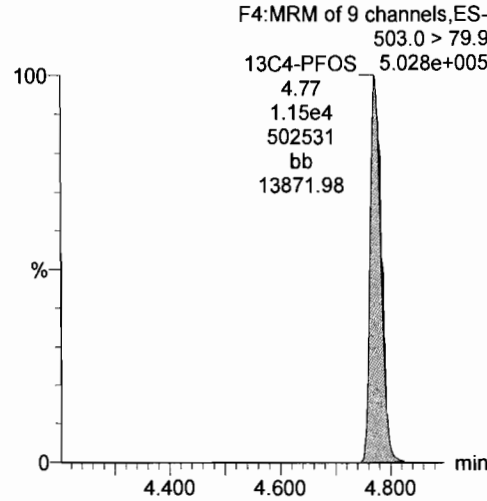
PFOS



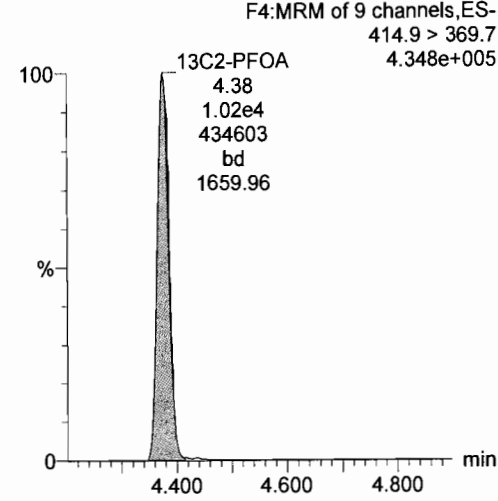
13C2-PFHxA



13C4-PFOS



13C2-PFOA

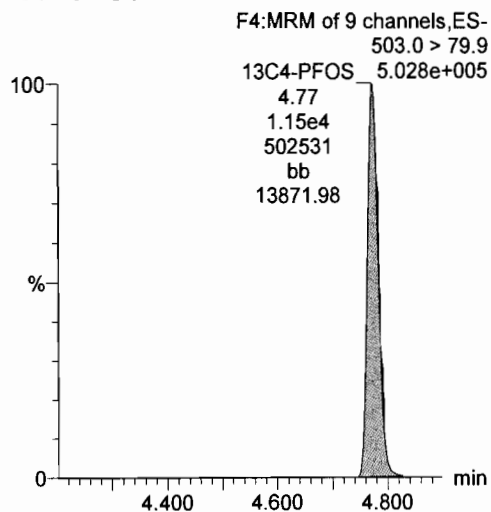


Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-2.qld

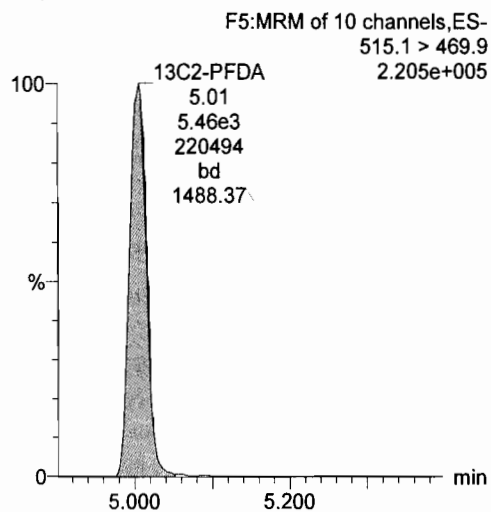
Last Altered: Saturday, December 02, 2017 04:13:41 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:42:13 Pacific Standard Time

Name: 171201G1\_2, Date: 01-Dec-2017, Time: 10:42:00, ID: ST171201G1-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-33.qld

Last Altered: Saturday, December 02, 2017 04:15:57 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:43:02 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_33, Date: 01-Dec-2017, Time: 17:07:29, ID: ST171201G1-2 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	1.24e4	1.08e4		1.0000	3.07	3.06	32.7	40.5	91.6
2	2 PFOA	413 > 368.7	4.03e4	1.06e4		1.0000	4.37	4.37	37.9	46.3	92.7
3	3 PFOS	499 > 79.9	1.98e4	1.08e4		1.0000	4.77	4.77	52.5	44.4	96.1
4	4 13C2-PFHxA	315 > 269.8	4.29e3	1.06e4	0.429	1.0000	3.43	3.42	4.03	9.41	94.1
5	5 13C2-PFDA	515.1 > 469.9	5.70e3	1.06e4	0.548	1.0000	5.00	5.00	5.35	9.77	97.7
6	6 13C2-PFOA	414.9 > 369.7	1.06e4	1.06e4	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

70-36  
↓

AM  
12/2/17

VJA  
12/04/2017

Dataset: Untitled

Last Altered: Saturday, December 02, 2017 15:43:40 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:51:12 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

*(A) Not acquired.*

	Name	ID	Acq.Date	Acq.Time
1	171201G1_1	IPA	01-Dec-17	10:28:51
2	171201G1_2	ST171201G1-1 PFC CS-1 537 17K3024	01-Dec-17	10:42:00
3	171201G1_3	IPA	01-Dec-17	10:54:24
4	171201G1_4	B7K0177-BS1 LFB 0.25	01-Dec-17	11:06:51
5	171201G1_5	B7K0177-BSD1 LFB 0.25	01-Dec-17	11:19:16
6	171201G1_6	B7K0177-BLK1 LRB 0.25	01-Dec-17	11:31:42
7	171201G1_7	1701751-01 CH-AT-1RW58-1117 0.25	01-Dec-17	11:44:09
8	171201G1_8	1701751-02 CH-AT-1FB58-1117 0.25	01-Dec-17	11:56:36
9	171201G1_9	1701751-03 CH-AT-1EB01-111717 0.25	01-Dec-17	12:09:05
10	171201G1_10	1701751-04 CH-AT-1RW59-1117 0.25	01-Dec-17	12:21:30
11	171201G1_11	1701751-05 CH-AT-1FB59-1117 0.25	01-Dec-17	12:33:54
12	171201G1_12	IPA	(A)	
13	171201G1_13	1701751-07 CH-AT-1FB60-1117 0.25	01-Dec-17	12:46:19
14	171201G1_14	1701751-08 CH-AT-1RW61-1117 0.25	01-Dec-17	12:58:45
15	171201G1_15	1701751-09 CH-AT-1FB61-1117 0.25	01-Dec-17	13:11:13
16	171201G1_16	1701751-10 CH-AT-1RW62-1117 0.25	01-Dec-17	13:23:40
17	171201G1_17	1701751-12 CH-AT-1RW63-1117 0.25	01-Dec-17	13:48:34
18	171201G1_18	1701751-13 CH-AT-1FB63-1117 0.25	01-Dec-17	14:00:59
19	171201G1_19	1701751-14 CH-AT-1RW64-1117 0.25	01-Dec-17	14:13:24
20	171201G1_20	1701751-15 CH-AT-1FB64-1117 0.25	01-Dec-17	14:25:49
21	171201G1_21	1701751-16 CH-AT-1RW46-1117 0.25	01-Dec-17	14:38:15
22	171201G1_22	1701751-17 CH-AT-1FB46-1117 0.25	01-Dec-17	14:50:41
23	171201G1_23	1701751-18 CH-AT-1RW47-1117 0.25	01-Dec-17	15:03:08
24	171201G1_24	1701751-19 CH-AT-1FB47-1117 0.25	01-Dec-17	15:15:36
25	171201G1_25	B7K0189-BS1 LFB 0.25	01-Dec-17	15:28:02
26	171201G1_26	B7K0189-BSD1 LFB 0.25	01-Dec-17	15:40:26
27	171201G1_27	IPA	01-Dec-17	15:52:50
28	171201G1_28	B7K0189-BLK1 LRB 0.25	01-Dec-17	16:05:18
29	171201G1_29	1701770-01 CH-AT-1RW74-1117-A 0.25	01-Dec-17	16:17:43
30	171201G1_30	1701770-02 CH-AT-1FB74-1117-A 0.25	01-Dec-17	16:30:08
31	171201G1_31	1701770-03 CH-AT-1RW74-1117-B 0.25	01-Dec-17	16:42:34

Dataset: Untitled

Last Altered: Saturday, December 02, 2017 15:43:40 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:51:12 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171201G1_32	IPA	01-Dec-17	16:55:01
33	171201G1_33	ST171201G1-2 PFC CS3 17K3027	01-Dec-17	17:07:29
34	171201G1_34	IPA	01-Dec-17	17:19:53
35	171201G1_35	1701770-04 CH-AT-1FB74-1117-B 0.25	01-Dec-17	17:32:22
36	171201G1_36	1701770-05 CH-AT-1RW75-1117 0.25	01-Dec-17	17:44:49
37	171201G1_37	1701770-06 CH-AT-1FB75-1117 0.25	01-Dec-17	17:57:12
38	171201G1_38	1701770-07 CH-AT-1RW76-1117 0.25	01-Dec-17	18:09:37
39	171201G1_39	1701770-08 CH-AT-1FB76-1117 0.25	01-Dec-17	18:22:01
40	171201G1_40	1701770-09 CH-AT-1RW77-1117 0.25	01-Dec-17	18:34:26
41	171201G1_41	1701770-10 CH-AT-1FB77-1117 0.25	01-Dec-17	18:46:52
42	171201G1_42	IPA	01-Dec-17	18:59:18
43	171201G1_43	ST171201G1-3 PFC CS5 537 17K3029	01-Dec-17	19:11:46
44	171201G1_44	IPA	01-Dec-17	19:24:11

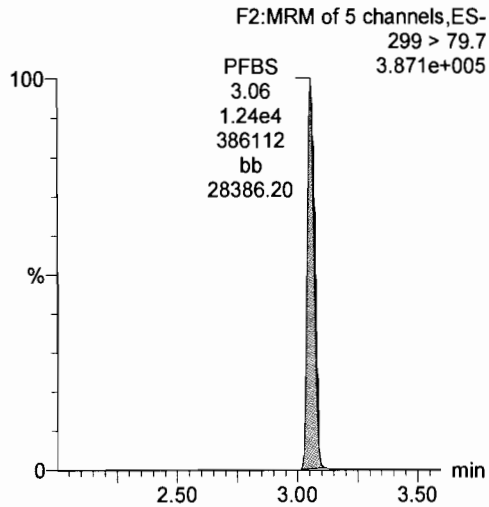
Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-33.qld

Last Altered: Saturday, December 02, 2017 04:15:57 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:43:02 Pacific Standard Time

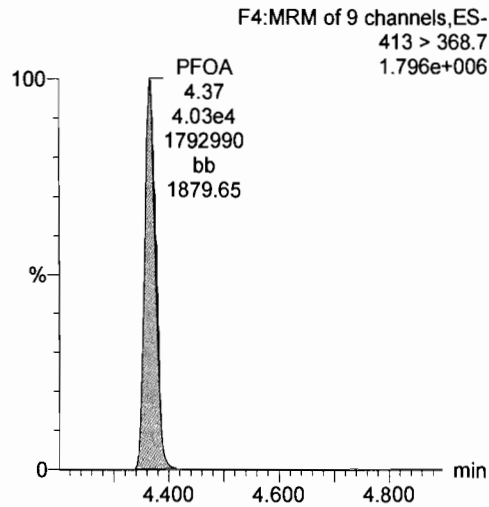
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171201G1\_33, Date: 01-Dec-2017, Time: 17:07:29, ID: ST171201G1-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

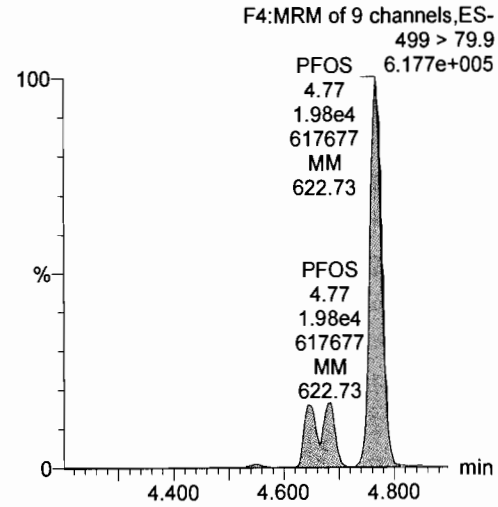
PFBS



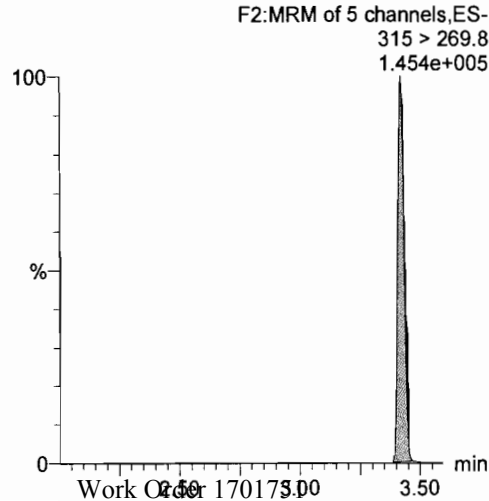
PFOA



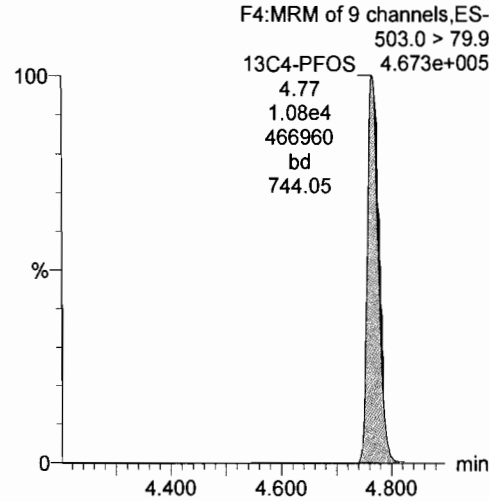
PFOS



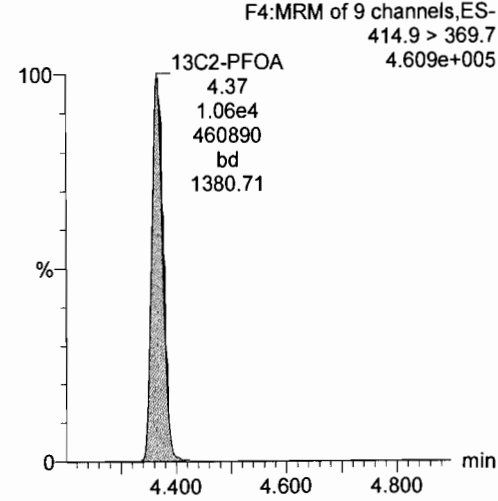
13C2-PFHxA



13C4-PFOS



13C2-PFOA

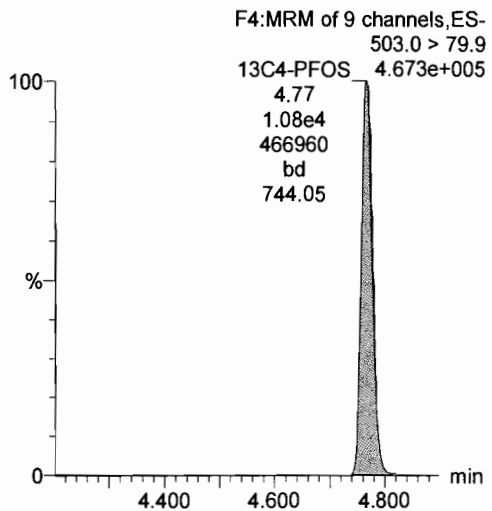


Dataset: U:\G1.PRO\Results\2017\171201G1\171201G1-33.qld

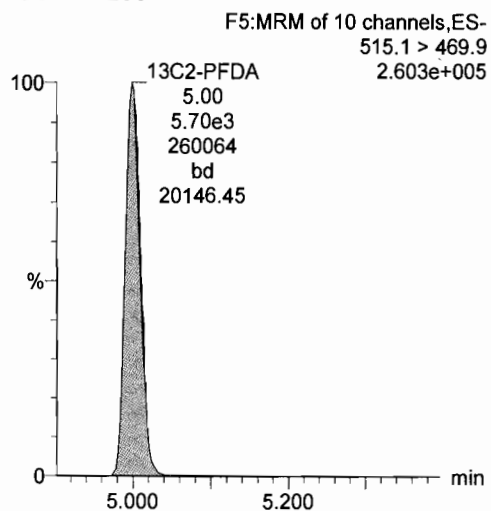
Last Altered: Saturday, December 02, 2017 04:15:57 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:43:02 Pacific Standard Time

Name: 171201G1\_33, Date: 01-Dec-2017, Time: 17:07:29, ID: ST171201G1-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



## IS AREA

## Ical

## Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	IPA	171202G1_Analyte	10				10177.82	0
2	ST171202G1-1 PFC CS-1 537 17K3024	171202G1_Analyte	10	4.37	9744.846	9744.846	10177.82	95.74591
3	IPA	171202G1_Analyte	10				10177.82	0
4	1701751-11 CH-AT-1FB62-1117 0.25	171202G1_Analyte	10	4.37	10941.15	10941.15	10177.82	107.4999
5	IPA	171202G1_Analyte	10				10177.82	0
6	ST171202G1-2 PFC CS3 17K3027	171202G1_Analyte	10	4.37	9494.423	9494.423	10177.82	93.28543

## Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
1	IPA	171202G1_Analyte	28.7				10632.15	0
2	ST171202G1-1 PFC CS-1 537 17K3024	171202G1_Analyte	28.7	4.77	11117.21	11117.21	10632.15	104.5622
3	IPA	171202G1_Analyte	28.7				10632.15	0
4	1701751-11 CH-AT-1FB62-1117 0.25	171202G1_Analyte	28.7	4.77	13528.07	13528.07	10632.15	127.2373
5	IPA	171202G1_Analyte	28.7				10632.15	0
6	ST171202G1-2 PFC CS3 17K3027	171202G1_Analyte	28.7	4.77	10248.47	10248.47	10632.15	96.39132

## Ccal

## Compound 6: 13C2-PFOA

## ST171202G1-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ccal Area	Area %
2	ST171202G1-1 PFC CS-1 537 17K3024	171202G1_Analyte	10	4.37	9744.846	9744.846	9744.846	100
3	IPA	171202G1_Analyte	10				9744.846	0
4	1701751-11 CH-AT-1FB62-1117 0.25	171202G1_Analyte	10	4.37	10941.15	10941.15	9744.846	112.2762
5	IPA	171202G1_Analyte	10				9744.846	0
6	ST171202G1-2 PFC CS3 17K3027	171202G1_Analyte	10	4.37	9494.423	9494.423	9744.846	97.4302



Compound 7: 13C4-PFOS

ST171202G1-1 PFC CS-1 537 17K3024

ID	Name	Type	Std. Conc	RT	Area	IS Area	Ical Area	Area %
2	ST171202G1-1 PFC CS-1 537 17K3024	171202G1_Analyte	28.7	4.77	11117.21	11117.21	11117.21	100
3	IPA	171202G1_Analyte	28.7				11117.21	0
4	1701751-11 CH-AT-1FB62-1117 0.25	171202G1_Analyte	28.7	4.77	13528.07	13528.07	11117.21	121.6858
5	IPA	171202G1_Analyte	28.7				11117.21	0
6	ST171202G1-2 PFC CS3 17K3027	171202G1_Analyte	28.7	4.77	10248.47	10248.47	11117.21	92.18562

Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-2.qld

Last Altered: Saturday, December 02, 2017 15:41:41 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:41:58 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171202G1\_2, Date: 02-Dec-2017, Time: 14:20:13, ID: ST171202G1-1 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	5.54e2	1.11e4		1.0000	3.07	3.06	1.43	1.77	100.1
2	2 PFOA	413 > 368.7	1.73e3	9.74e3		1.0000	4.37	4.37	1.77	2.17	108.3
3	3 PFOS	499 > 79.9	7.46e2	1.11e4		1.0000	4.77	4.77	1.93	1.63	88.0
4	4 13C2-PFHxA	315 > 269.8	4.31e3	9.74e3	0.429	1.0000	3.43	3.43	4.42	10.3	103.2
5	5 13C2-PFDA	515.1 > 469.9	6.14e3	9.74e3	0.548	1.0000	5.00	5.00	6.30	11.5	114.9
6	6 13C2-PFOA	414.9 > 369.7	9.74e3	9.74e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.11e4	1.11e4	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

7-130  
↓

AM  
12/2/17

vll  
12/04/2017

Dataset: Untitled

Last Altered: Saturday, December 02, 2017 15:53:17 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:53:25 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171202G1_1	IPA	02-Dec-17	14:07:45
2	171202G1_2	ST171202G1-1 PFC CS-1 537 17K3024	02-Dec-17	14:20:13
3	171202G1_3	IPA	02-Dec-17	14:32:36
4	171202G1_4	1701751-11 CH-AT-1FB62-1117 0.25	02-Dec-17	14:45:03
5	171202G1_5	IPA	02-Dec-17	14:57:28
6	171202G1_6	ST171202G1-2 PFC CS3 17K3027	02-Dec-17	15:09:56
7	171202G1_7	IPA	02-Dec-17	15:22:21

**LC Calibration Standards Review Checklist** 01

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
<u>5117120251-1</u>	<u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>J-2</u>	<u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	LMH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Full Mass Cal. Date: 4/5/17

Run Log Present:

# of Samples per Sequence Checked:

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

Comments: HWL3

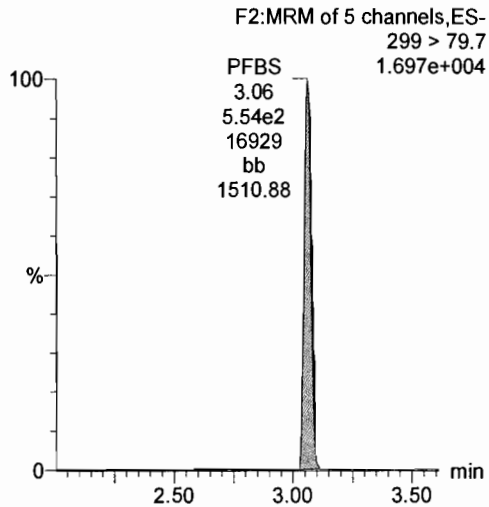
Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-2.qld

Last Altered: Saturday, December 02, 2017 15:41:41 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:41:58 Pacific Standard Time

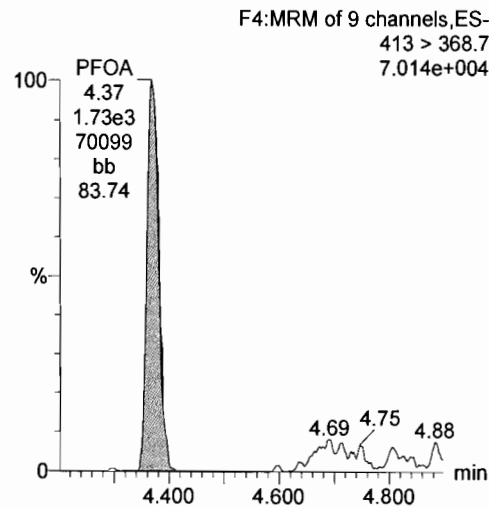
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171202G1\_2, Date: 02-Dec-2017, Time: 14:20:13, ID: ST171202G1-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

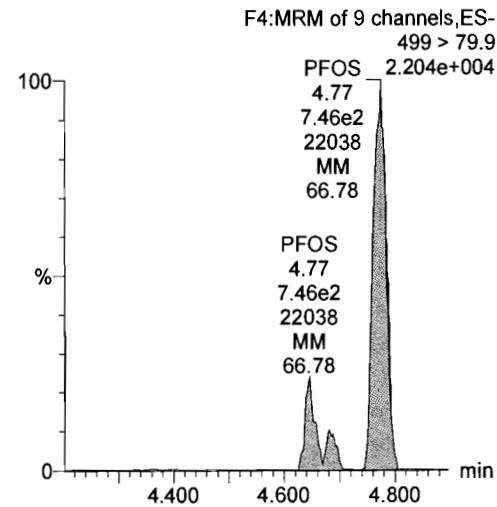
PFBS



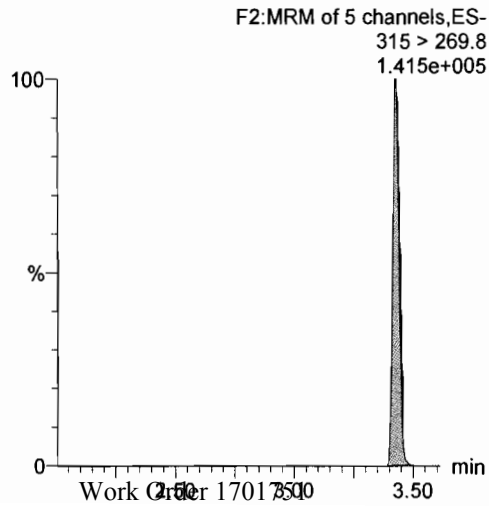
PFOA



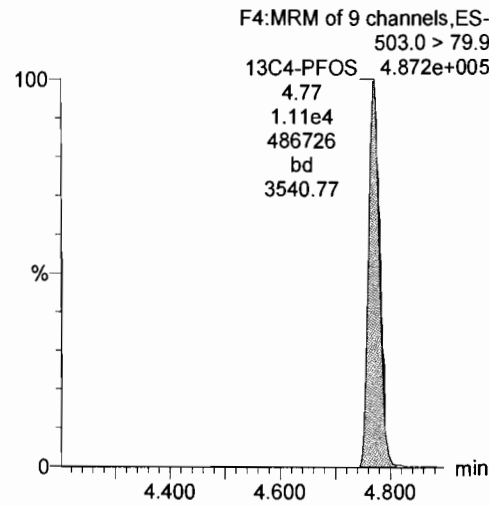
PFOS



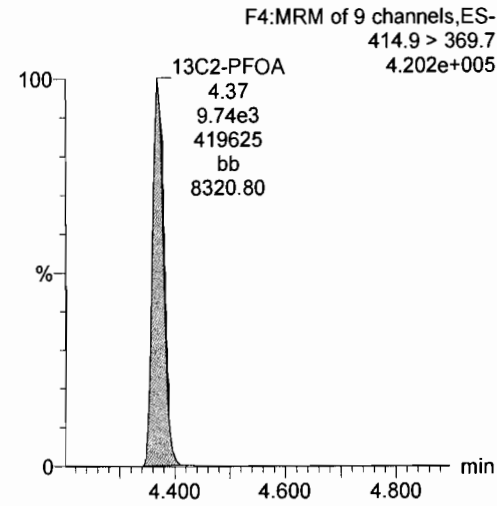
13C2-PFHxA



13C4-PFOS



13C2-PFOA

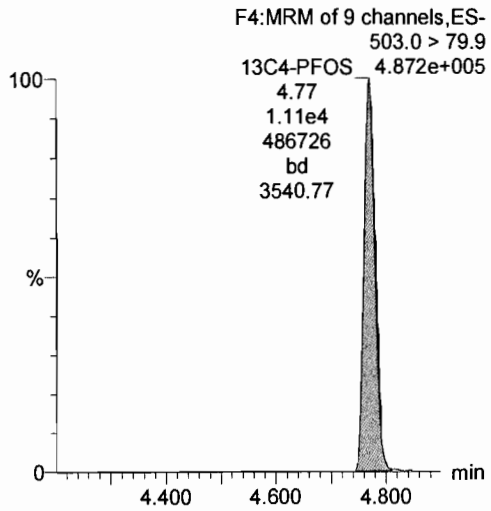


Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-2.qld

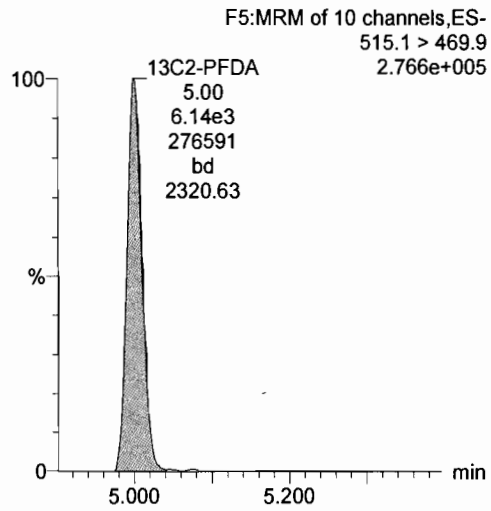
Last Altered: Saturday, December 02, 2017 15:41:41 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:41:58 Pacific Standard Time

Name: 171202G1\_2, Date: 02-Dec-2017, Time: 14:20:13, ID: ST171202G1-1 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-6.qld

Last Altered: Saturday, December 02, 2017 15:40:56 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:42:03 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171202G1\_6, Date: 02-Dec-2017, Time: 15:09:56, ID: ST171202G1-2 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	1.36e4	1.02e4		1.0000	3.07	3.07	38.1	47.2	106.7
2	2 PFOA	413 > 368.7	4.03e4	9.49e3		1.0000	4.37	4.37	42.4	51.9	103.7
3	3 PFOS	499 > 79.9	1.96e4	1.02e4		1.0000	4.77	4.77	55.0	46.5	100.6
4	4 13C2-PFHxA	315 > 269.8	4.15e3	9.49e3	0.429	1.0000	3.43	3.43	4.38	10.2	102.1
5	5 13C2-PFDA	515.1 > 469.9	4.61e3	9.49e3	0.548	1.0000	5.00	5.00	4.86	8.86	88.6
6	6 13C2-PFOA	414.9 > 369.7	9.49e3	9.49e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.02e4	1.02e4	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

70-130  
↓

AM  
12/2/17

v J.A.  
12/04/2017

Dataset: Untitled

Last Altered: Saturday, December 02, 2017 15:53:17 Pacific Standard Time

Printed: Saturday, December 02, 2017 15:53:25 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171202G1_1	IPA	02-Dec-17	14:07:45
2	171202G1_2	ST171202G1-1 PFC CS-1 537 17K3024	02-Dec-17	14:20:13
3	171202G1_3	IPA	02-Dec-17	14:32:36
4	171202G1_4	1701751-11 CH-AT-1FB62-1117 0.25	02-Dec-17	14:45:03
5	171202G1_5	IPA	02-Dec-17	14:57:28
6	171202G1_6	ST171202G1-2 PFC CS3 17K3027	02-Dec-17	15:09:56
7	171202G1_7	IPA	02-Dec-17	15:22:21



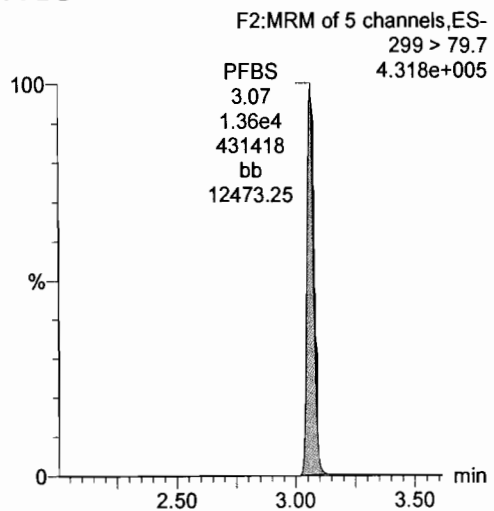
Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-6.qld

Last Altered: Saturday, December 02, 2017 15:40:56 Pacific Standard Time  
Printed: Saturday, December 02, 2017 15:42:03 Pacific Standard Time

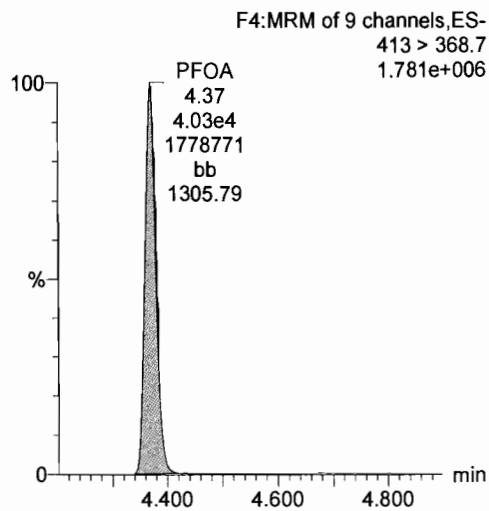
Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171202G1\_6, Date: 02-Dec-2017, Time: 15:09:56, ID: ST171202G1-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

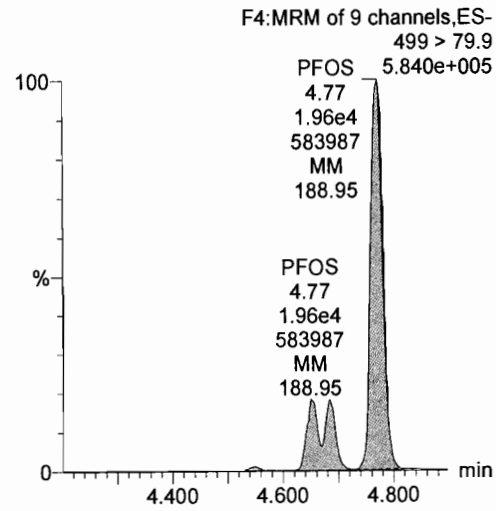
PFBS



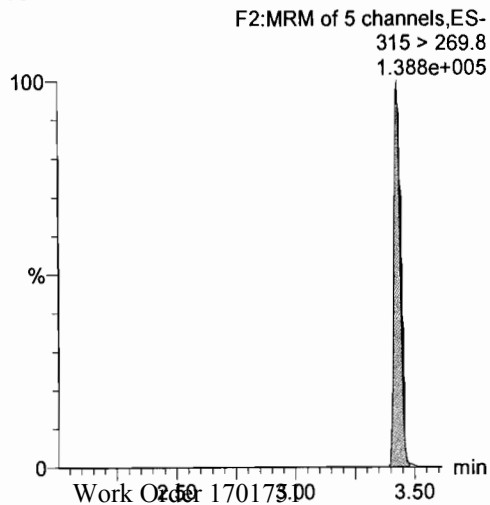
PFOA



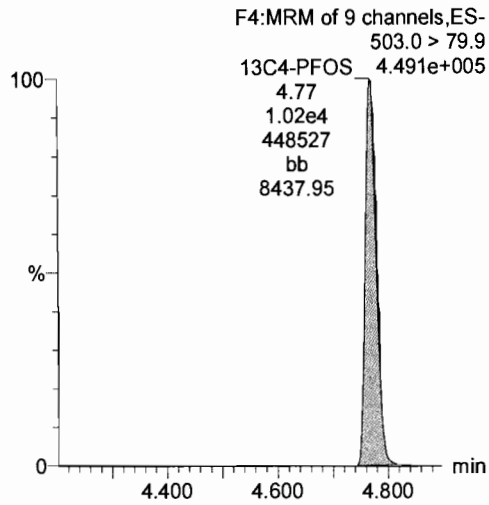
PFOS



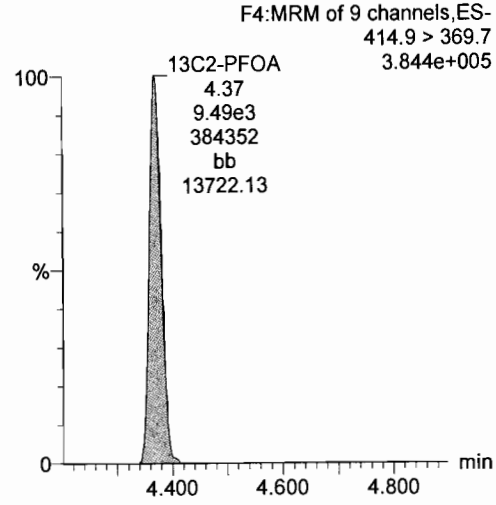
13C2-PFHxA



13C4-PFOS



13C2-PFOA



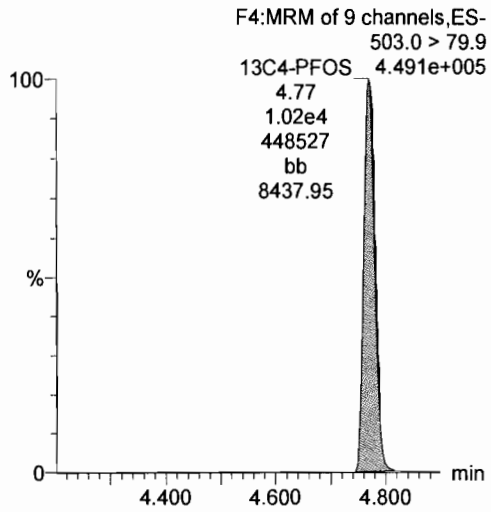
Dataset: U:\G1.PRO\Results\2017\171202G1\171202G1-6.qld

Last Altered: Saturday, December 02, 2017 15:40:56 Pacific Standard Time

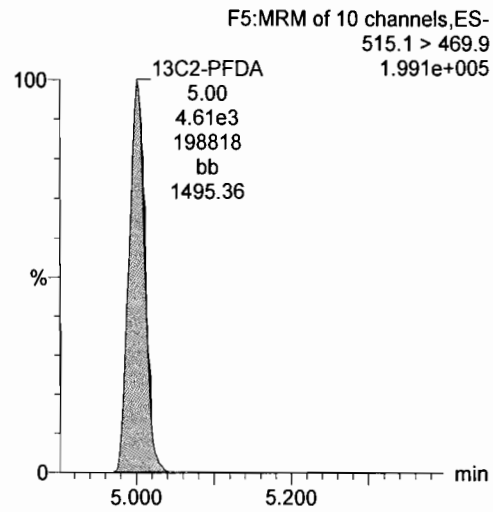
Printed: Saturday, December 02, 2017 15:42:03 Pacific Standard Time

Name: 171202G1\_6, Date: 02-Dec-2017, Time: 15:09:56, ID: ST171202G1-2 PFC CS3 17K3027, Description: PFC CS3 17K3027

13C4-PFOS



13C2-PFDA



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

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 09:09:28 Pacific Standard Time  
 Printed: Friday, December 01, 2017 09:44:51 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
 Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

**Compound name: PFBS**

Coefficient of Determination: R<sup>2</sup> = 0.995316

Calibration curve: 0.807573 \* x

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

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

*DM*  
*12/1/17* *JA*  
*12/01/2017*

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	0.443	3.06	148.378	11909.380	0.358	0.4	0.1	NO	0.995	NO	bbX
2	2 171130G1_3	Standard	0.885	3.06	254.168	11442.778	0.637	0.8	-10.8	NO	0.995	NO	bb
3	3 171130G1_4	Standard	1.770	3.06	521.902	11478.244	1.305	1.6	-8.7	NO	0.995	NO	bb
4	4 171130G1_5	Standard	4.420	3.07	1438.862	10553.214	3.913	4.8	9.6	NO	0.995	NO	bb
5	5 171130G1_6	Standard	8.850	3.07	2910.137	11620.608	7.187	8.9	0.6	NO	0.995	NO	bb
6	6 171130G1_7	Standard	22.100	3.07	6509.534	10482.663	17.822	22.1	-0.1	NO	0.995	NO	bd
7	7 171130G1_8	Standard	44.200	3.07	12419.074	10138.133	35.157	43.5	-1.5	NO	0.995	NO	bd
8	8 171130G1_9	Standard	66.300	3.07	19601.131	9629.363	58.421	72.3	9.1	NO	0.995	NO	bb
9	9 171130G1_10	Standard	88.400	3.07	22636.490	9712.236	66.892	82.8	-6.3	NO	0.995	NO	bd

**Compound name: PFOA**

Coefficient of Determination: R<sup>2</sup> = 0.998609

Calibration curve: 0.81771 \* x

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

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	0.500	4.36	543.490	9926.858	0.547	0.7	33.9	NO	0.999	NO	bb
2	2 171130G1_3	Standard	1.000	4.36	868.204	10558.032	0.822	1.0	0.6	NO	0.999	NO	bd
3	3 171130G1_4	Standard	2.000	4.37	1652.044	10699.872	1.544	1.9	-5.6	NO	0.999	NO	bb
4	4 171130G1_5	Standard	5.000	4.37	4369.930	10771.267	4.057	5.0	-0.8	NO	0.999	NO	bb
5	5 171130G1_6	Standard	10.000	4.37	8525.979	10417.228	8.184	10.0	0.1	NO	0.999	NO	bb
6	6 171130G1_7	Standard	25.000	4.37	20170.291	9735.661	20.718	25.3	1.3	NO	0.999	NO	bd
7	7 171130G1_8	Standard	50.000	4.37	40959.543	10479.243	39.086	47.8	-4.4	NO	0.999	NO	bb
8	8 171130G1_9	Standard	75.000	4.37	55501.742	8834.410	62.825	76.8	2.4	NO	0.999	NO	bb
9	9 171130G1_10	Standard	100.000	4.37	69701.703	8214.188	84.855	103.8	3.8	NO	0.999	NO	bbX

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 09:09:28 Pacific Standard Time  
 Printed: Friday, December 01, 2017 09:09:46 Pacific Standard Time

**Compound name: PFOS**

Coefficient of Determination: R^2 = 0.997655

Calibration curve: 1.18337 \* x

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

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	0.464	4.76	157.341	11909.380	0.379	0.3	-30.9	NO	0.998	NO	MMX
2	2 171130G1_3	Standard	0.925	4.77	426.020	11442.778	1.069	0.9	-2.4	NO	0.998	NO	MM
3	3 171130G1_4	Standard	1.850	4.77	827.162	11478.244	2.068	1.7	-5.5	NO	0.998	NO	MM
4	4 171130G1_5	Standard	4.625	4.77	2076.757	10553.214	5.648	4.8	3.2	NO	0.998	NO	MM
5	5 171130G1_6	Standard	9.250	4.77	4280.277	11620.608	10.571	8.9	-3.4	NO	0.998	NO	MM
6	6 171130G1_7	Standard	23.100	4.77	10074.306	10482.663	27.582	23.3	0.9	NO	0.998	NO	MM
7	7 171130G1_8	Standard	46.200	4.77	19838.158	10138.133	56.160	47.5	2.7	NO	0.998	NO	MM
8	8 171130G1_9	Standard	69.300	4.78	28978.148	9629.363	86.368	73.0	5.3	NO	0.998	NO	MM
9	9 171130G1_10	Standard	92.400	4.78	35057.734	9712.236	103.597	87.5	-5.3	NO	0.998	NO	MM

**Compound name: 13C2-PFHxA**

Response Factor: 0.428591

RRF SD: 0.0172725, Relative SD: 4.03006

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

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	10.000	3.43	4281.697	9926.858	4.313	10.1	0.6	NO		NO	bd
2	2 171130G1_3	Standard	10.000	3.43	4315.057	10558.032	4.087	9.5	-4.6	NO		NO	bb
3	3 171130G1_4	Standard	10.000	3.43	4559.187	10699.872	4.261	9.9	-0.6	NO		NO	bb
4	4 171130G1_5	Standard	10.000	3.43	4496.875	10771.267	4.175	9.7	-2.6	NO		NO	bd
5	5 171130G1_6	Standard	10.000	3.43	4532.288	10417.228	4.351	10.2	1.5	NO		NO	bb
6	6 171130G1_7	Standard	10.000	3.43	4368.974	9735.661	4.488	10.5	4.7	NO		NO	bb
7	7 171130G1_8	Standard	10.000	3.43	4267.189	10479.243	4.072	9.5	-5.0	NO		NO	bb
8	8 171130G1_9	Standard	10.000	3.44	4011.489	8834.410	4.541	10.6	5.9	NO		NO	bb
9	9 171130G1_10	Standard	10.000	3.43	3798.677	8214.188	4.625	10.8	7.9	NO		NO	bdX

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 09:09:28 Pacific Standard Time  
 Printed: Friday, December 01, 2017 09:09:46 Pacific Standard Time

**Compound name: 13C2-PFDA**

Response Factor: 0.547878

RRF SD: 0.0413645, Relative SD: 7.54995

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

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	10.000	5.00	6370.964	9926.858	6.418	11.7	17.1	NO		NO	bb
2	2 171130G1_3	Standard	10.000	5.00	5724.157	10558.032	5.422	9.9	-1.0	NO		NO	bd
3	3 171130G1_4	Standard	10.000	5.00	5798.319	10699.872	5.419	9.9	-1.1	NO		NO	bb
4	4 171130G1_5	Standard	10.000	5.00	5604.895	10771.267	5.204	9.5	-5.0	NO		NO	bb
5	5 171130G1_6	Standard	10.000	5.00	5772.324	10417.228	5.541	10.1	1.1	NO		NO	bb
6	6 171130G1_7	Standard	10.000	5.00	4955.320	9735.661	5.090	9.3	-7.1	NO		NO	bd
7	7 171130G1_8	Standard	10.000	5.00	5454.072	10479.243	5.205	9.5	-5.0	NO		NO	bb
8	8 171130G1_9	Standard	10.000	5.01	4887.635	8834.410	5.532	10.1	1.0	NO		NO	bb
9	9 171130G1_10	Standard	10.000	5.01	4363.032	8214.188	5.312	9.7	-3.1	NO		NO	bbX

**Compound name: 13C2-PFOA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

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

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	10.000	4.36	9926.858	9926.858	10.000	10.0	0.0	NO		NO	bb
2	2 171130G1_3	Standard	10.000	4.37	10558.032	10558.032	10.000	10.0	0.0	NO		NO	bb
3	3 171130G1_4	Standard	10.000	4.37	10699.872	10699.872	10.000	10.0	0.0	NO		NO	bb
4	4 171130G1_5	Standard	10.000	4.37	10771.267	10771.267	10.000	10.0	0.0	NO		NO	bd
5	5 171130G1_6	Standard	10.000	4.37	10417.228	10417.228	10.000	10.0	0.0	NO		NO	bd
6	6 171130G1_7	Standard	10.000	4.37	9735.661	9735.661	10.000	10.0	0.0	NO		NO	bd
7	7 171130G1_8	Standard	10.000	4.37	10479.243	10479.243	10.000	10.0	0.0	NO		NO	bd
8	8 171130G1_9	Standard	10.000	4.37	8834.410	8834.410	10.000	10.0	0.0	NO		NO	bb
9	9 171130G1_10	Standard	10.000	4.37	8214.188	8214.188	10.000	10.0	0.0	NO		NO	bbX

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 09:09:28 Pacific Standard Time

Printed: Friday, December 01, 2017 09:09:46 Pacific Standard Time

**Compound name: 13C4-PFOS**

Response Factor: 1

RRF SD: 8.3925e-017, Relative SD: 8.3925e-015

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

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171130G1_2	Standard	28.700	4.76	11909.380	11909.380	28.700	28.7	0.0	NO		NO	bbX
2	2 171130G1_3	Standard	28.700	4.77	11442.778	11442.778	28.700	28.7	0.0	NO		NO	bd
3	3 171130G1_4	Standard	28.700	4.77	11478.244	11478.244	28.700	28.7	0.0	NO		NO	bb
4	4 171130G1_5	Standard	28.700	4.77	10553.214	10553.214	28.700	28.7	0.0	NO		NO	bd
5	5 171130G1_6	Standard	28.700	4.77	11620.608	11620.608	28.700	28.7	0.0	NO		NO	bb
6	6 171130G1_7	Standard	28.700	4.77	10482.663	10482.663	28.700	28.7	0.0	NO		NO	bd
7	7 171130G1_8	Standard	28.700	4.77	10138.133	10138.133	28.700	28.7	0.0	NO		NO	bd
8	8 171130G1_9	Standard	28.700	4.77	9629.363	9629.363	28.700	28.7	0.0	NO		NO	bd
9	9 171130G1_10	Standard	28.700	4.78	9712.236	9712.236	28.700	28.7	0.0	NO		NO	bd

Dataset: Untitled

Last Altered: Friday, December 01, 2017 09:16:30 Pacific Standard Time  
Printed: Friday, December 01, 2017 09:16:48 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS\_DW\_L3\_1126.mdb 27 Nov 2017 14:32:15  
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-01-17\_L3.cdb 01 Dec 2017 09:09:28

Compound name: PFBS

11 50  
On 12/1/17

	Name	ID	Acq.Date	Acq.Time
1	171130G1_1	IPA	30-Nov-17	18:18:31
2	171130G1_2	ST171130G1-1 PFC CS-3 537 17K3022	30-Nov-17	18:30:58
3	171130G1_3	ST171130G1-2 PFC CS-2 537 17K3023	30-Nov-17	18:43:22
4	171130G1_4	ST171130G1-3 PFC CS-1 537 17K3024	30-Nov-17	18:55:46
5	171130G1_5	ST171130G1-4 PFC CS0 537 17K3025	30-Nov-17	19:08:12
6	171130G1_6	ST171130G1-5 PFC CS1 537 17K3026	30-Nov-17	19:20:37
7	171130G1_7	ST171130G1-6 PFC CS2 537 17K3033	30-Nov-17	19:33:04
8	171130G1_8	ST171130G1-7 PFC CS3 537 17K3027	30-Nov-17	19:45:30
9	171130G1_9	ST171130G1-8 PFC CS4 537 17K3028	30-Nov-17	19:57:58
10	171130G1_10	ST171130G1-9 PFC CS5 537 17K3029	30-Nov-17	20:10:26
11	171130G1_11	IPA	30-Nov-17	20:22:49
12	171130G1_12	ICV171130G1-1 PFC ICV 537 17K3030	30-Nov-17	20:35:17
13	171130G1_13	IPA	30-Nov-17	20:47:42
14	171130G1_14	B7K0172-BS1 LFB 0.25	30-Nov-17	21:00:09
15	171130G1_15	B7K0172-BSD1 LFB 0.25	30-Nov-17	21:12:34
16	171130G1_16	B7K0172-BLK1 LRB 0.25	30-Nov-17	21:24:59
17	171130G1_17	1701750-01 CH-AT-1RW48-1117 0.25	30-Nov-17	21:37:26
18	171130G1_18	1701750-02 CH-AT-1FB48-1117 0.25	30-Nov-17	21:49:52
19	171130G1_19	1701750-03 CH-AT-1RW49-1117 0.25	30-Nov-17	22:02:20
20	171130G1_20	1701750-04 CH-AT-1FB49-1117 0.25	30-Nov-17	22:14:47
21	171130G1_21	1701750-05 CH-AT-1RW50-1117 0.25	30-Nov-17	22:27:11
22	171130G1_22	1701750-06 CH-AT-1FB50-1117 0.25	30-Nov-17	22:39:35
23	171130G1_23	1701750-07 CH-AT-1RW51-1117 0.25	30-Nov-17	22:51:59
24	171130G1_24	1701750-08 CH-AT-1FB51-1117 0.25	30-Nov-17	23:04:25
25	171130G1_25	1701750-09 CH-AT-1RW52-1117 0.25	30-Nov-17	23:16:50
26	171130G1_26	1701750-10 CH-AT-1FB52-1117 0.25	30-Nov-17	23:29:17
27	171130G1_27	1701750-11 CH-AT-1RW53-1117 0.25	30-Nov-17	23:41:45
28	171130G1_28	1701750-12 CH-AT-1FB53-1117 0.25	30-Nov-17	23:54:12
29	171130G1_29	1701750-13 CH-AT-1RW54-1117 0.25	01-Dec-17	00:06:36
30	171130G1_30	1701750-14 CH-AT-1FB54-1117 0.25	01-Dec-17	00:19:01
31	171130G1_31	1701750-15 CH-AT-1RW55-1117 0.25	01-Dec-17	00:31:25



Dataset: Untitled

Last Altered: Friday, December 01, 2017 09:16:30 Pacific Standard Time

Printed: Friday, December 01, 2017 09:16:48 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171130G1_32	1701750-16 CH-AT-1FB55-1117 0.25	01-Dec-17	00:43:49
33	171130G1_33	1701750-17 CH-AT-1RW56-1117 0.25	01-Dec-17	00:56:15
34	171130G1_34	1701750-18 CH-AT-1FB56-1117 0.25	01-Dec-17	01:08:41
35	171130G1_35	1701750-19 CH-AT-1FB57-1117 0.25	01-Dec-17	01:21:08
36	171130G1_36	1701750-20 CH-AT-1RW57-1117 0.25	01-Dec-17	01:33:35
37	171130G1_37	IPA	01-Dec-17	01:45:59
38	171130G1_38	ST171130G1-10 PFC CS3 17K3027	01-Dec-17	01:58:26
39	171130G1_39	IPA	01-Dec-17	02:10:53
40	171130G1_40	B7K0177-BS1 LFB 0.25	01-Dec-17	02:23:21
41	171130G1_41	B7K0177-BSD1 LFBD 0.25	01-Dec-17	02:35:46
42	171130G1_42	B7K0177-BLK1 LRB 0.25	01-Dec-17	02:48:11
43	171130G1_43	1701751-01 CH-AT-1RW58-1117 0.25	01-Dec-17	03:00:35
44	171130G1_44	1701751-02 CH-AT-1FB58-1117 0.25	01-Dec-17	03:13:01
45	171130G1_45	1701751-03 CH-AT-1EB01-111717 0.25	01-Dec-17	03:25:27
46	171130G1_46	1701751-04 CH-AT-1RW59-1117 0.25	01-Dec-17	03:37:53
47	171130G1_47	1701751-05 CH-AT-1FB59-1117 0.25	01-Dec-17	03:50:21
48	171130G1_48	1701751-06 CH-AT-1RW60-1117 0.25	01-Dec-17	04:02:44
49	171130G1_49	1701751-07 CH-AT-1FB60-1117 0.25	01-Dec-17	04:15:09
50	171130G1_50	1701751-08 CH-AT-1RW61-1117 0.25	01-Dec-17	04:27:33
51	171130G1_51	1701751-09 CH-AT-1FB61-1117 0.25	01-Dec-17	04:39:57
52	171130G1_52	1701751-10 CH-AT-1RW62-1117 0.25	01-Dec-17	04:52:23
53	171130G1_53	1701751-11 CH-AT-1FB62-1117 0.25	01-Dec-17	05:04:50
54	171130G1_54	IPA	01-Dec-17	05:17:17
55	171130G1_55	ST171130G1-11 PFC CS5 537 17K3029	01-Dec-17	05:29:45
56	171130G1_56	IPA	01-Dec-17	05:42:09

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 09:09:28 Pacific Standard Time

Printed: Friday, December 01, 2017 09:44:07 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\_11-30-17\_L3.cdb 01 Dec 2017 09:09:28

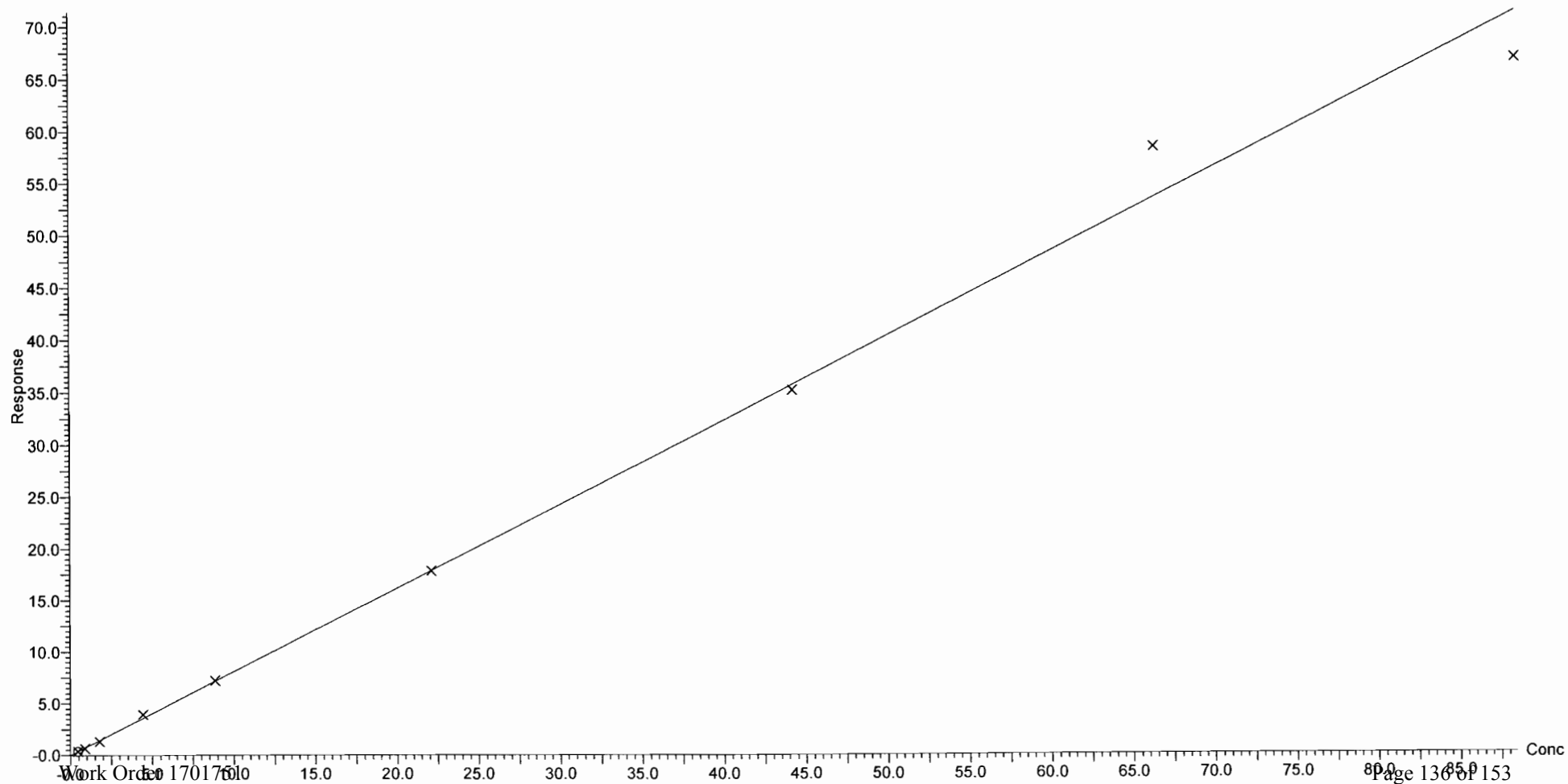
Compound name: PFBS

Coefficient of Determination:  $R^2 = 0.995316$

Calibration curve:  $0.807573 * x$

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

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

Printed: Friday, December 01, 2017 09:06:38 Pacific Standard Time

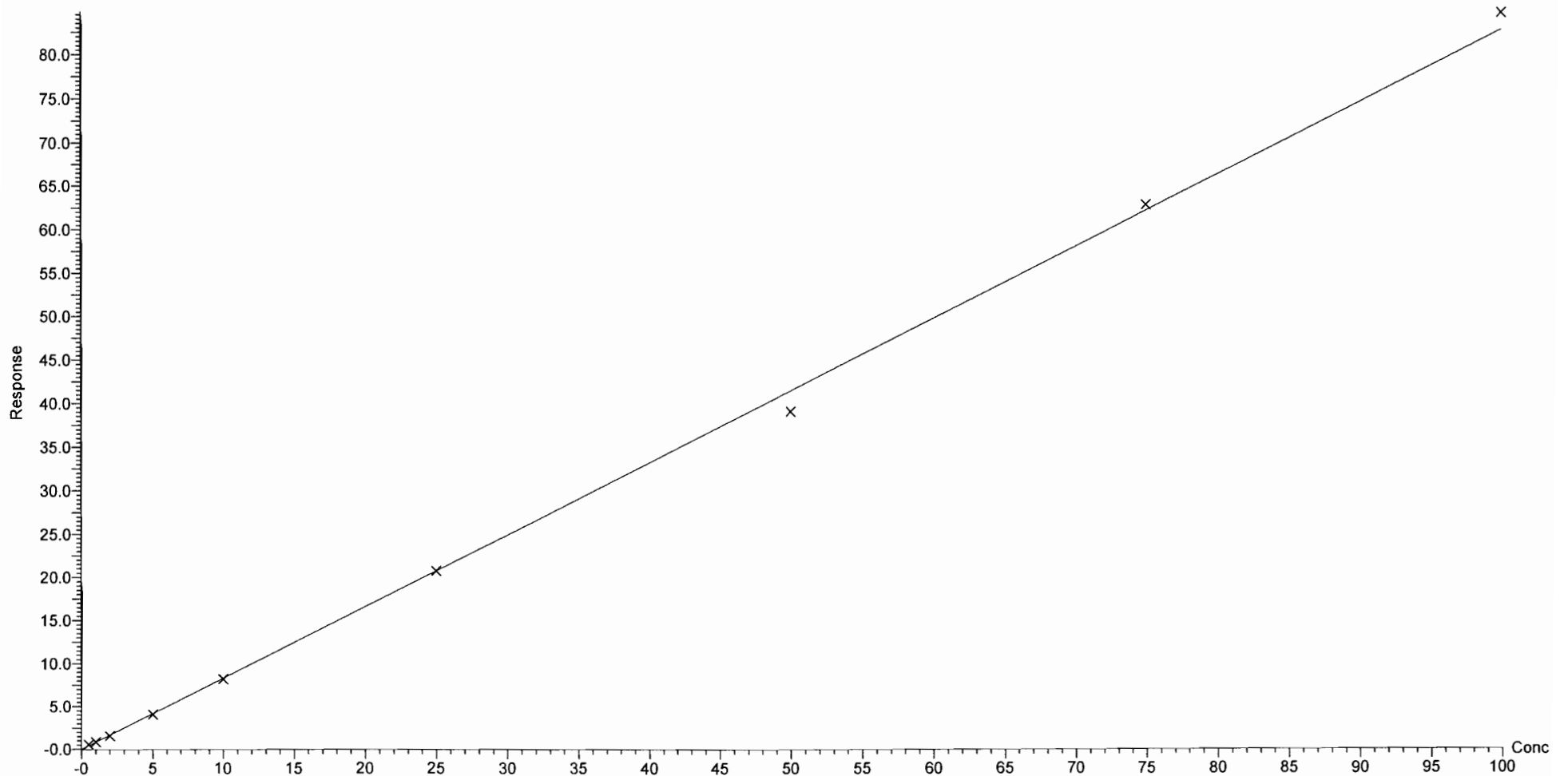
Compound name: PFOA

Coefficient of Determination:  $R^2 = 0.998822$

Calibration curve:  $0.829197 * x$

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

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

Printed: Friday, December 01, 2017 09:06:38 Pacific Standard Time

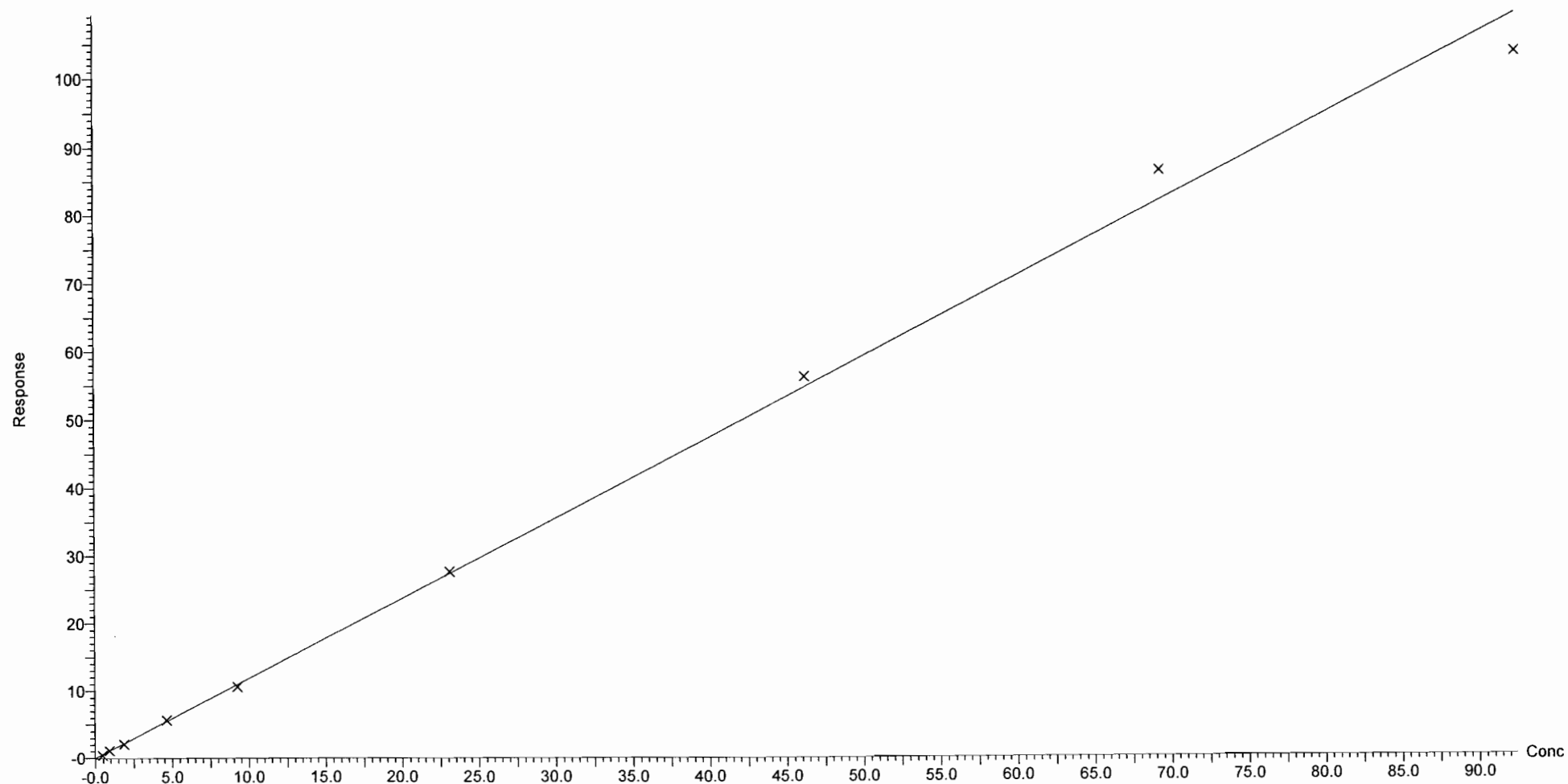
Compound name: PFOS

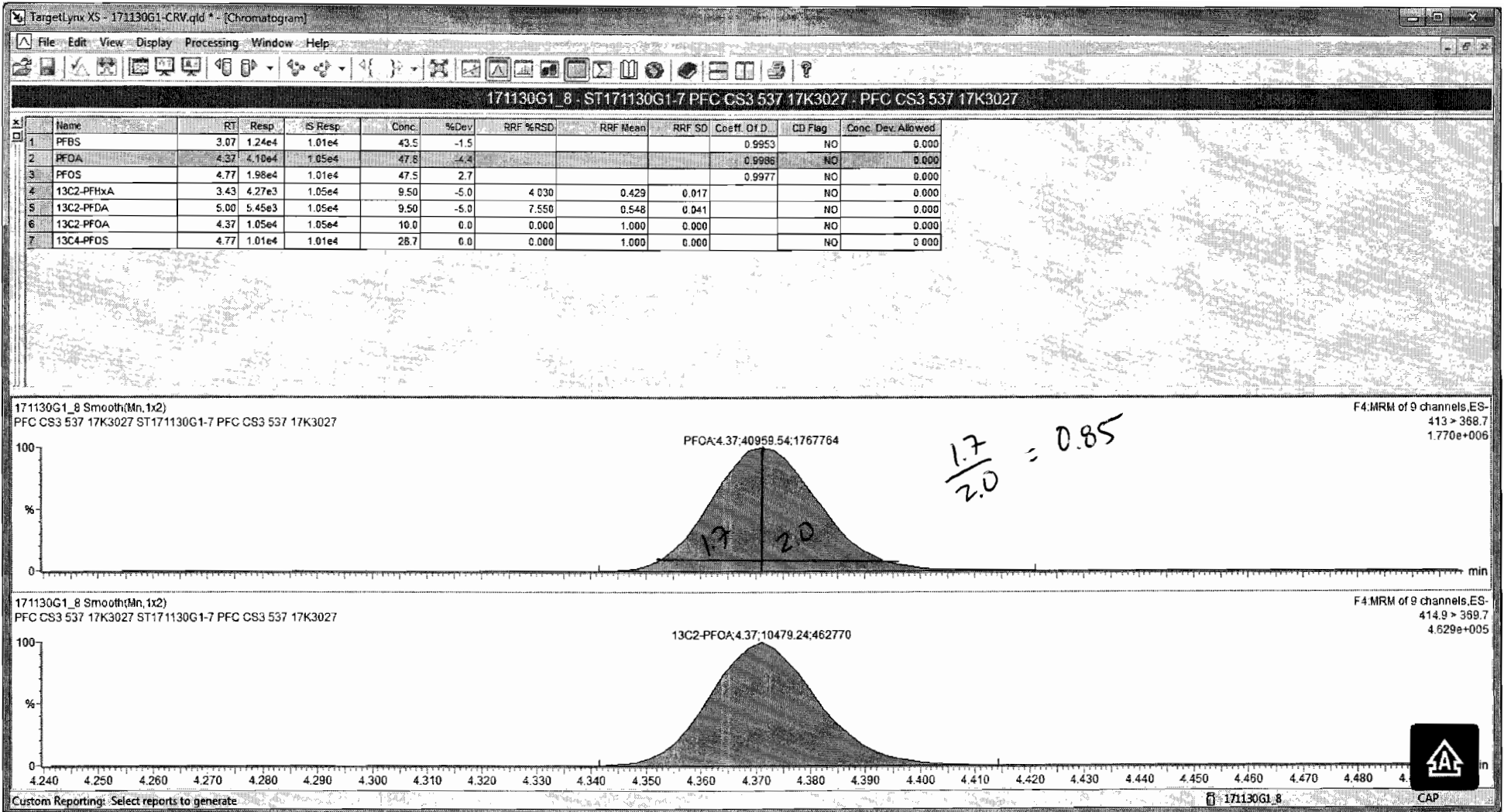
Coefficient of Determination:  $R^2 = 0.997600$

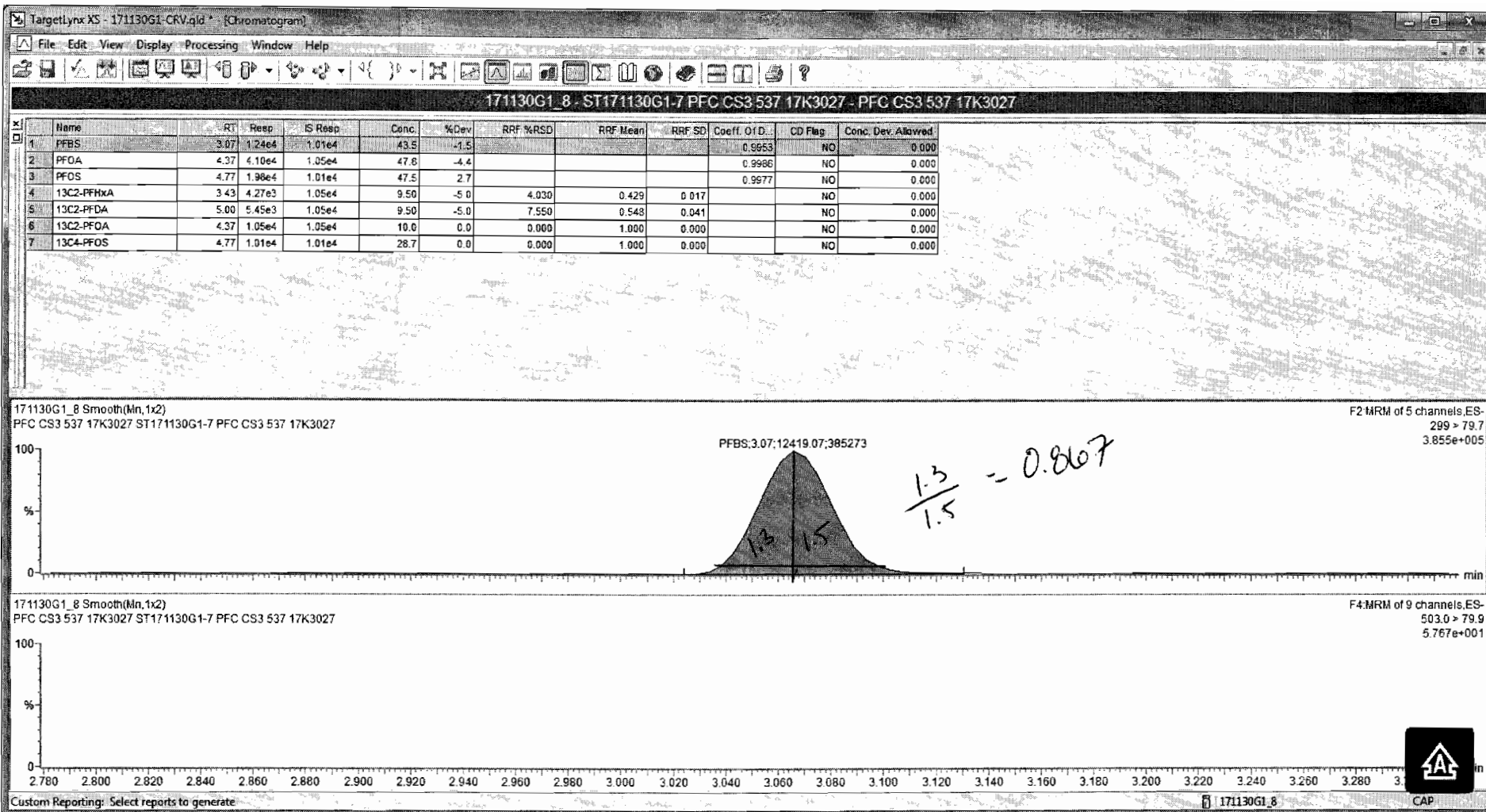
Calibration curve:  $1.18269 * x$

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

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None







Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171130G1-1 PFC CS-3 537 17K3022	171130G1_Standard	10	4.36	9926.858	9926.858	bb
2	ST171130G1-2 PFC CS-2 537 17K3023	171130G1_Standard	10	4.37	10558.03	10558.03	bb
3	ST171130G1-3 PFC CS-1 537 17K3024	171130G1_Standard	10	4.37	10699.87	10699.87	bb
4	ST171130G1-4 PFC CS0 537 17K3025	171130G1_Standard	10	4.37	10771.27	10771.27	bd
5	ST171130G1-5 PFC CS1 537 17K3026	171130G1_Standard	10	4.37	10417.23	10417.23	bd
6	ST171130G1-6 PFC CS2 537 17K3033	171130G1_Standard	10	4.37	9735.661	9735.661	bd
7	ST171130G1-7 PFC CS3 537 17K3027	171130G1_Standard	10	4.37	10479.24	10479.24	bd
8	ST171130G1-8 PFC CS4 537 17K3028	171130G1_Standard	10	4.37	8834.41	8834.41	bb
9	ST171130G1-9 PFC CS5 537 17K3029	171130G1_Standard	10	4.37	8214.188	8214.188	bbX
						AVERAGE	RPD
						10177.82	19.75812414

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	Primary Flags
1	ST171130G1-1 PFC CS-3 537 17K3022	171130G1_Standard	28.7	4.76	11909.38	11909.38	bbX
2	ST171130G1-2 PFC CS-2 537 17K3023	171130G1_Standard	28.7	4.77	11442.78	11442.78	bd
3	ST171130G1-3 PFC CS-1 537 17K3024	171130G1_Standard	28.7	4.77	11478.24	11478.24	bb
4	ST171130G1-4 PFC CS0 537 17K3025	171130G1_Standard	28.7	4.77	10553.21	10553.21	bd
5	ST171130G1-5 PFC CS1 537 17K3026	171130G1_Standard	28.7	4.77	11620.61	11620.61	bb
6	ST171130G1-6 PFC CS2 537 17K3033	171130G1_Standard	28.7	4.77	10482.66	10482.66	bd
7	ST171130G1-7 PFC CS3 537 17K3027	171130G1_Standard	28.7	4.77	10138.13	10138.13	bd
8	ST171130G1-8 PFC CS4 537 17K3028	171130G1_Standard	28.7	4.77	9629.363	9629.363	bd
9	ST171130G1-9 PFC CS5 537 17K3029	171130G1_Standard	28.7	4.78	9712.236	9712.236	bd
						AVERAGE	RPD
						10632.15	18.74115499

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

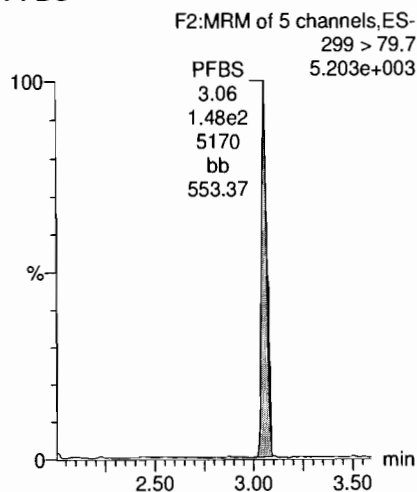
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

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

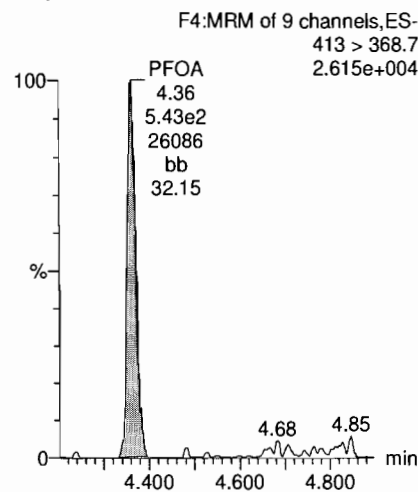
Calibration: 01 Dec 2017 08:53:53

Name: 171130G1\_2, Date: 30-Nov-2017, Time: 18:30:58, ID: ST171130G1-1 PFC CS-3 537 17K3022, Description: PFC CS-3 537 17K3022

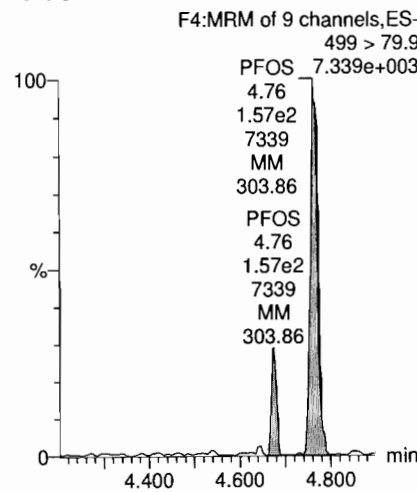
PFBS



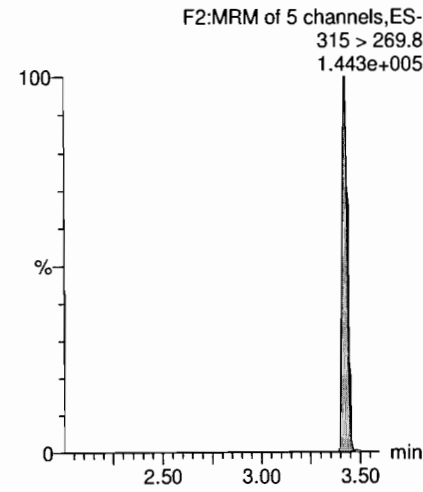
PFOA



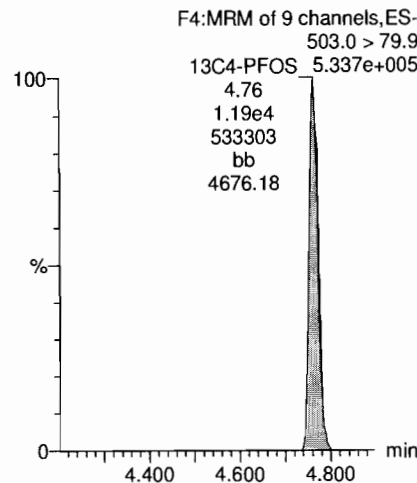
PFOS



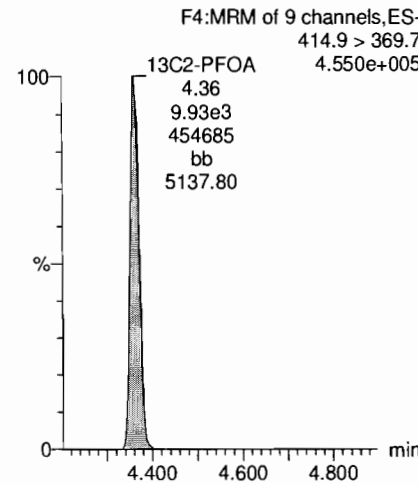
13C2-PFHxA



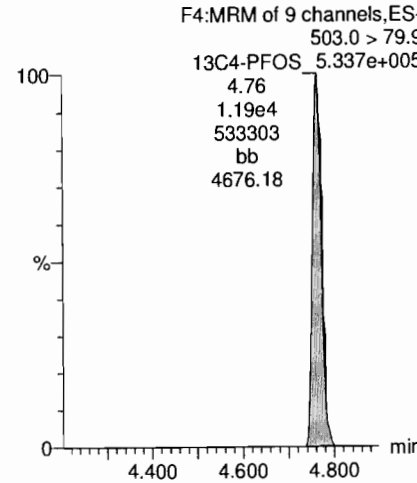
13C4-PFOS



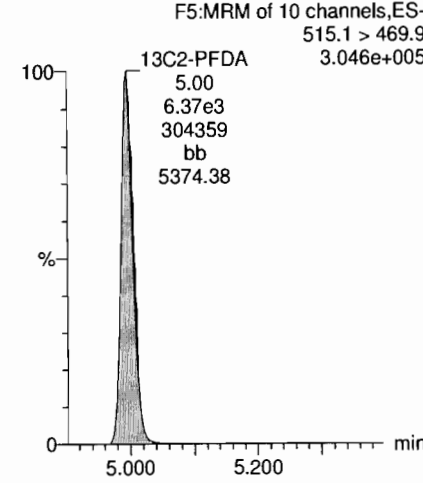
13C2-PFOA



13C4-PFOS



13C2-PFDA





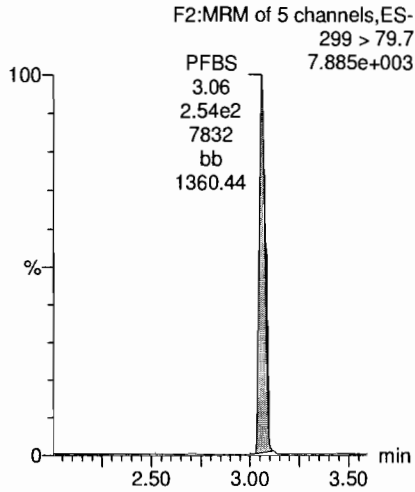
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

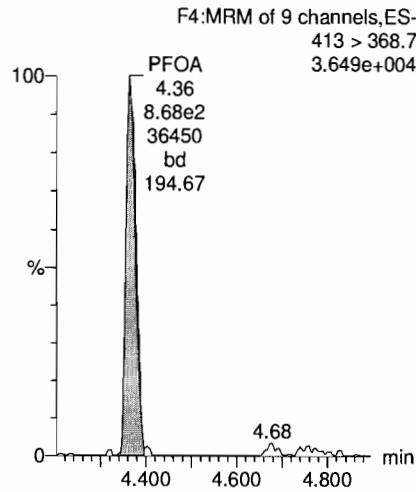
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_3, Date: 30-Nov-2017, Time: 18:43:22, ID: ST171130G1-2 PFC CS-2 537 17K3023, Description: PFC CS-2 537 17K3023

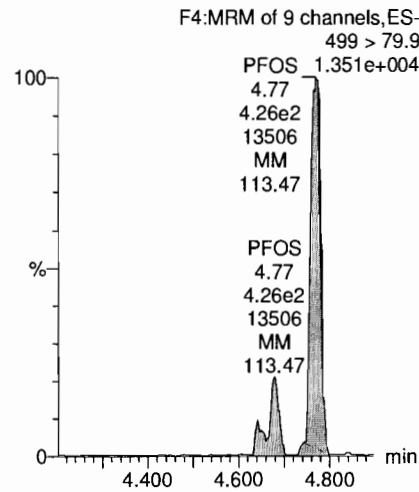
**PFBS**



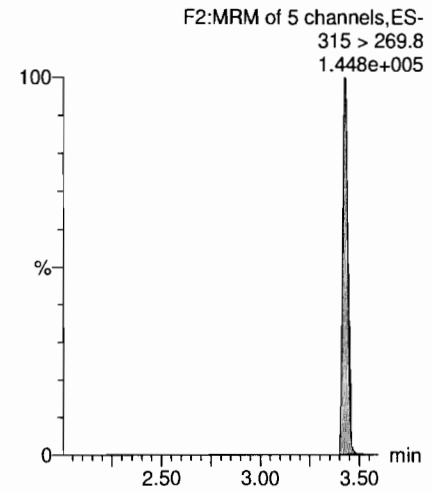
**PFOA**



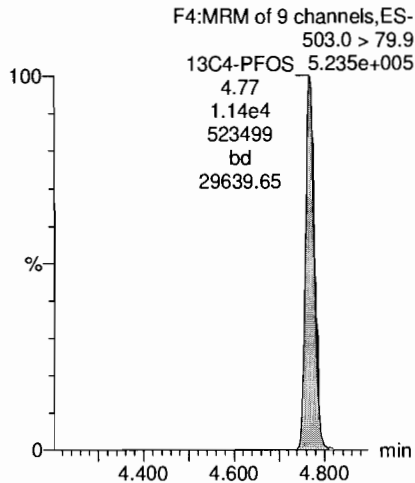
**PFOS**



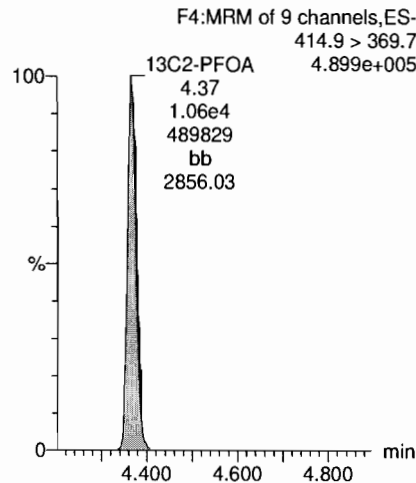
**13C2-PFHxA**



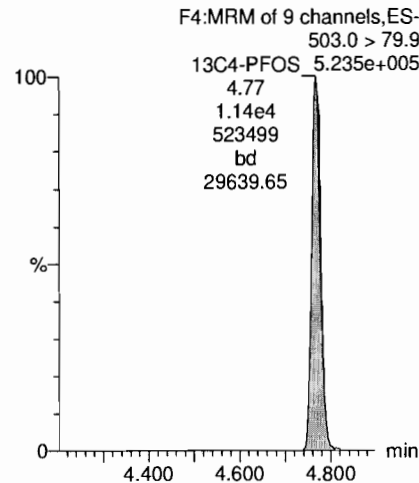
**13C4-PFOS**



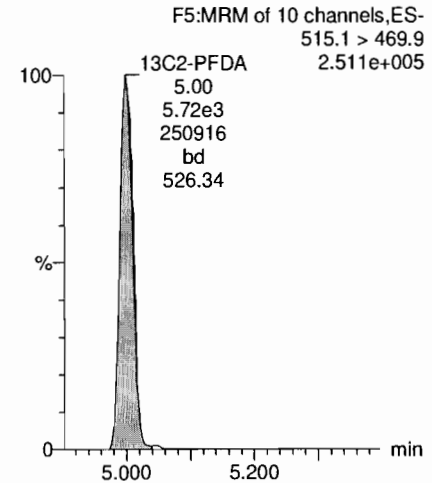
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



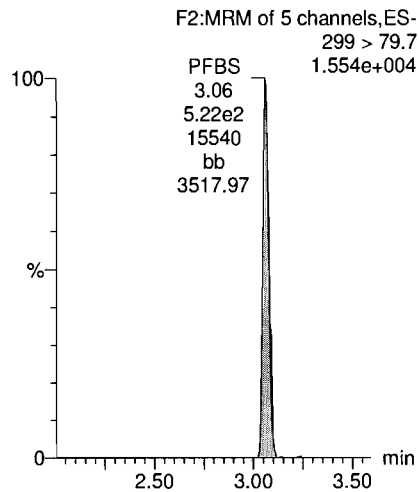
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

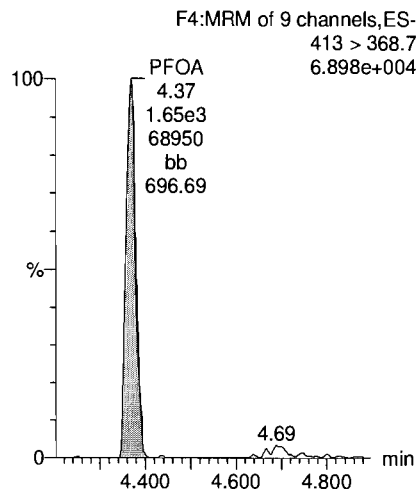
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_4, Date: 30-Nov-2017, Time: 18:55:46, ID: ST171130G1-3 PFC CS-1 537 17K3024, Description: PFC CS-1 537 17K3024

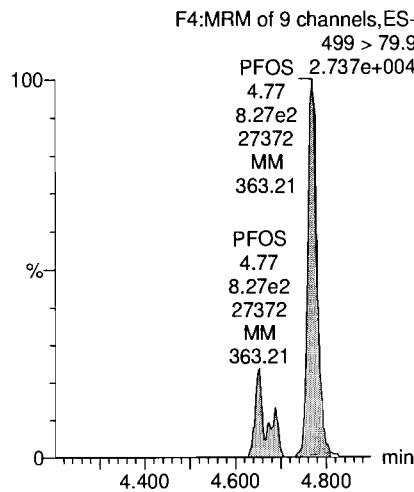
PFBS



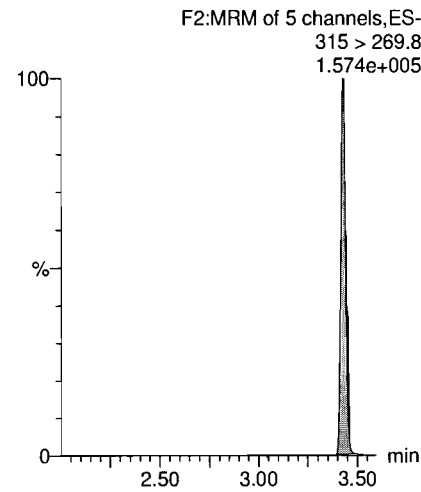
PFOA



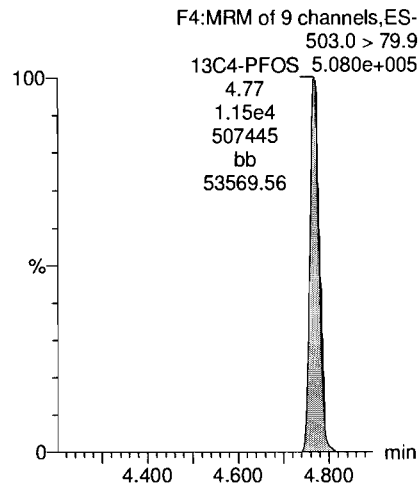
PFOS



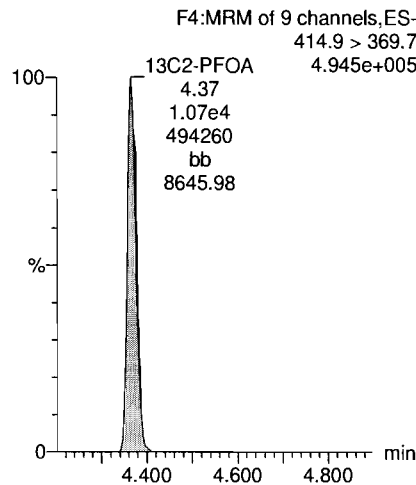
13C2-PFHxA



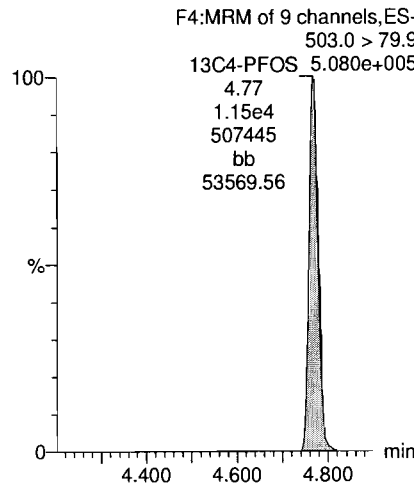
13C4-PFOS



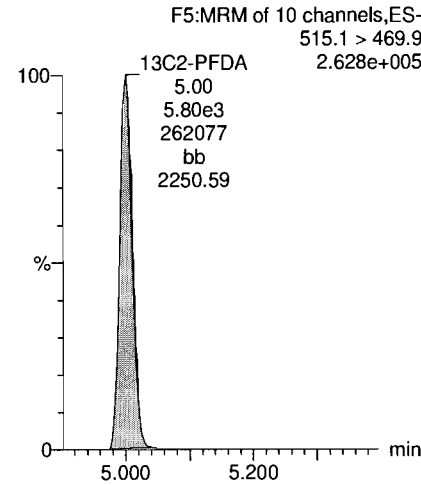
13C2-PFOA



13C4-PFOS



13C2-PFDA



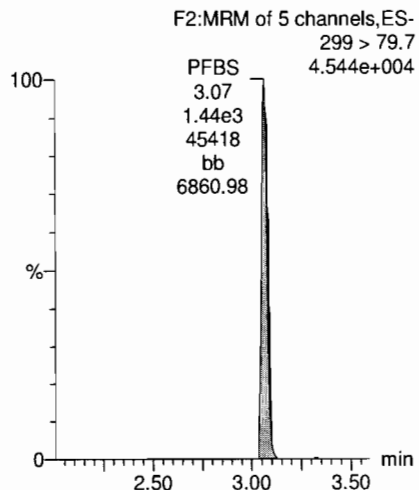
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

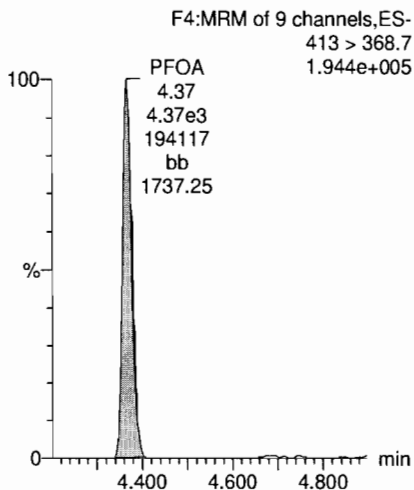
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_5, Date: 30-Nov-2017, Time: 19:08:12, ID: ST171130G1-4 PFC CS0 537 17K3025, Description: PFC CS0 537 17K3025

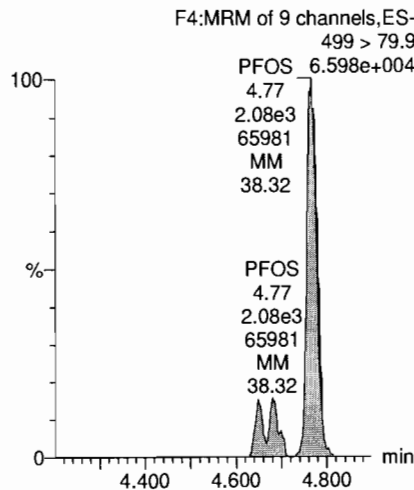
PFBS



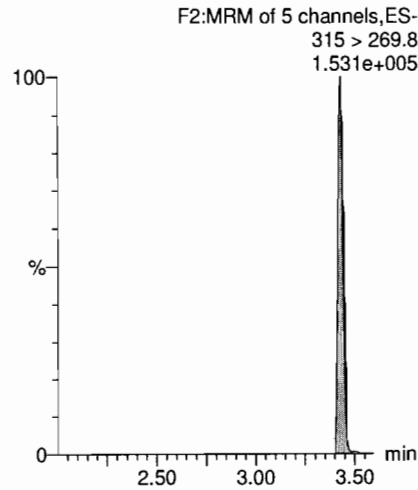
PFOA



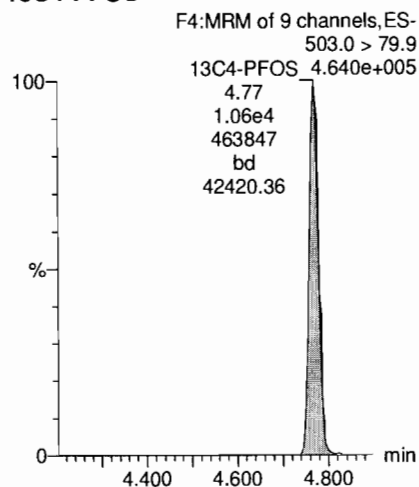
PFOS



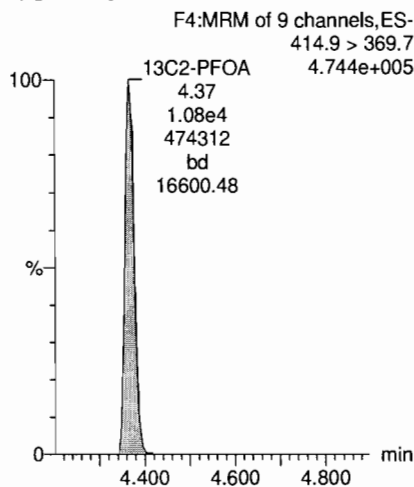
13C2-PFHxA



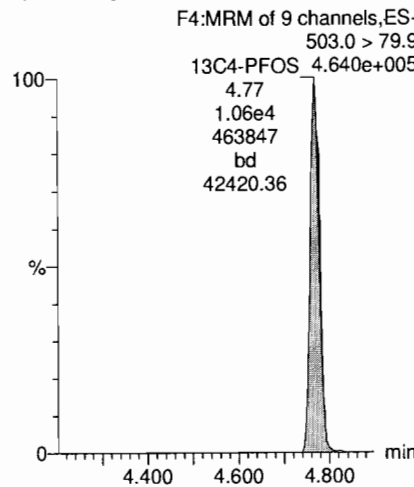
13C4-PFOS



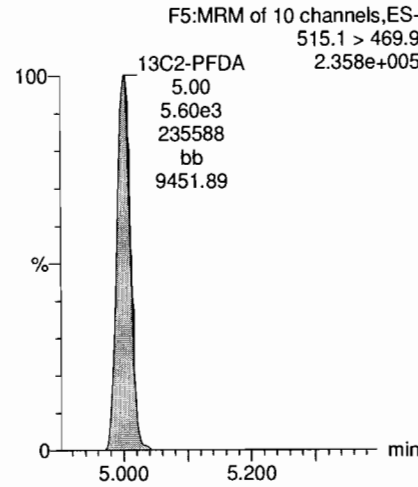
13C2-PFOA



13C4-PFOS



13C2-PFDA



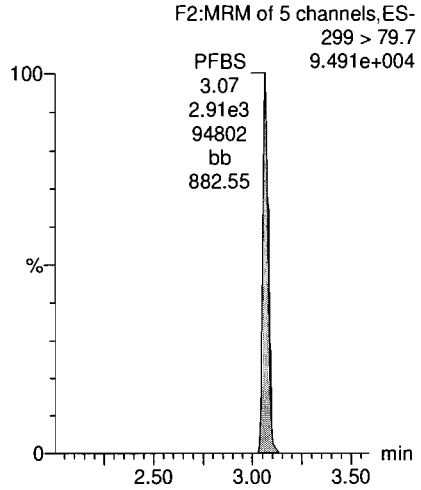
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

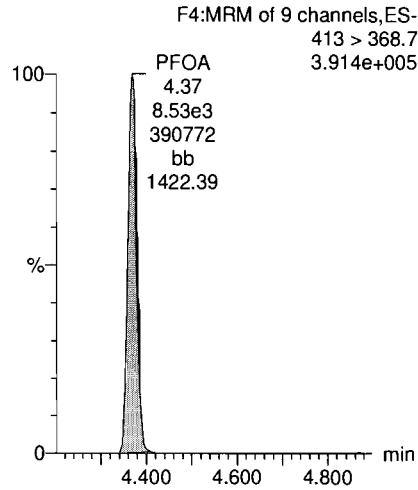
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_6, Date: 30-Nov-2017, Time: 19:20:37, ID: ST171130G1-5 PFC CS1 537 17K3026, Description: PFC CS1 537 17K3026

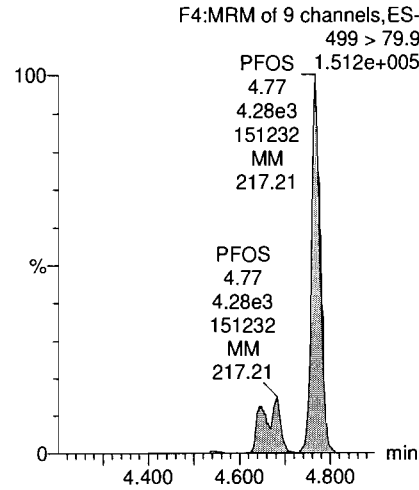
**PFBS**



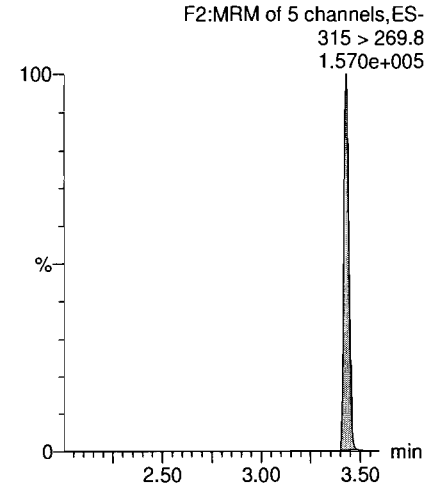
**PFOA**



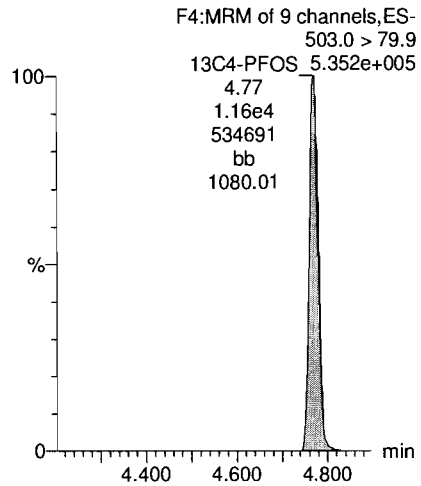
**PFOS**



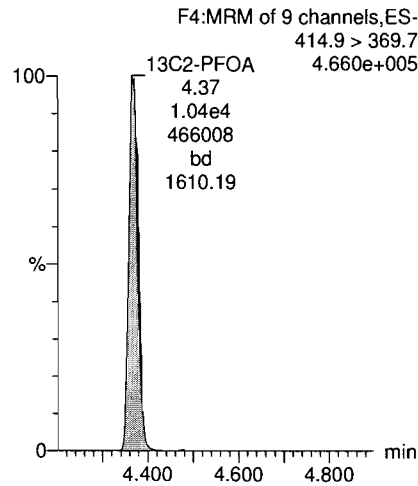
**13C2-PFHxA**



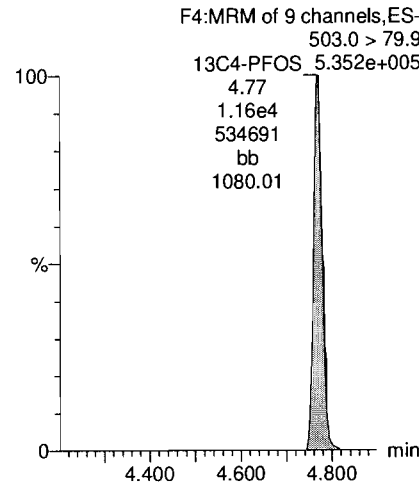
**13C4-PFOS**



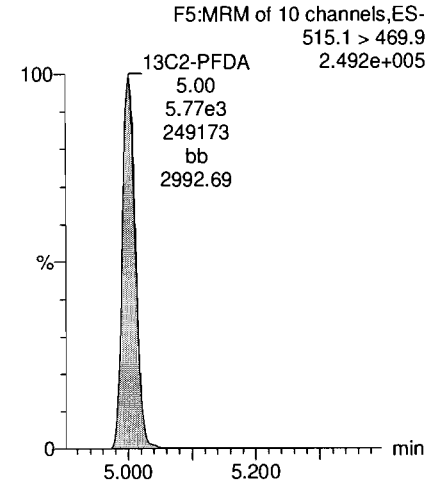
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



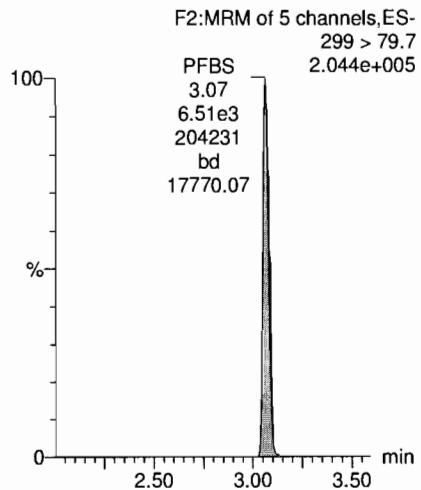
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

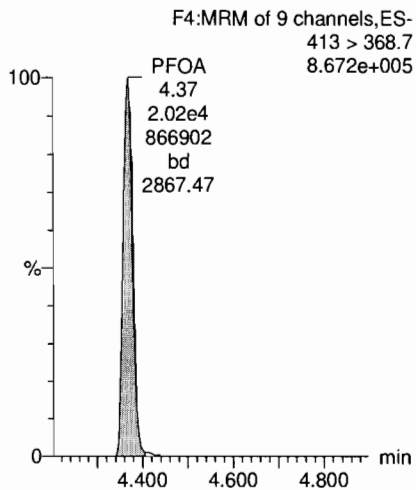
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_7, Date: 30-Nov-2017, Time: 19:33:04, ID: ST171130G1-6 PFC CS2 537 17K3033, Description: PFC CS2 537 17K3033

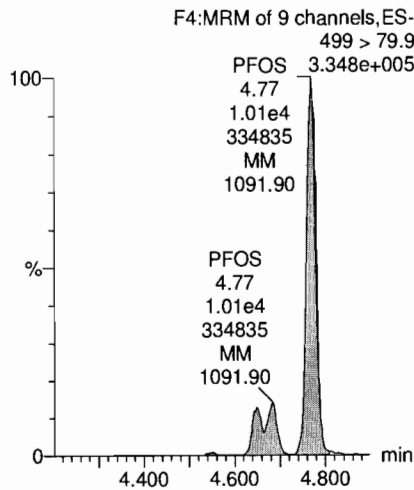
PFBS



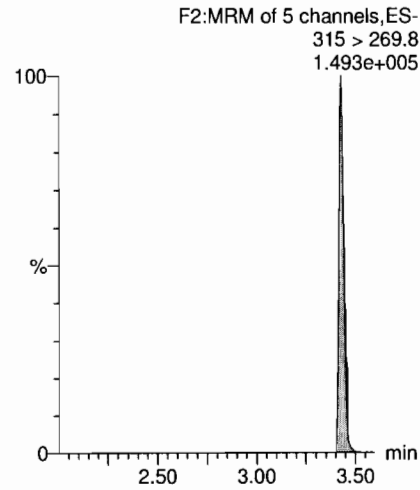
PFOA



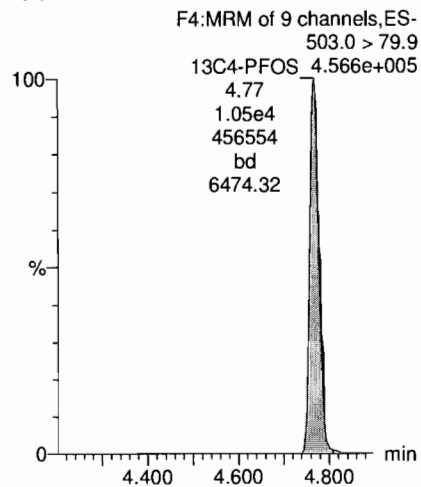
PFOS



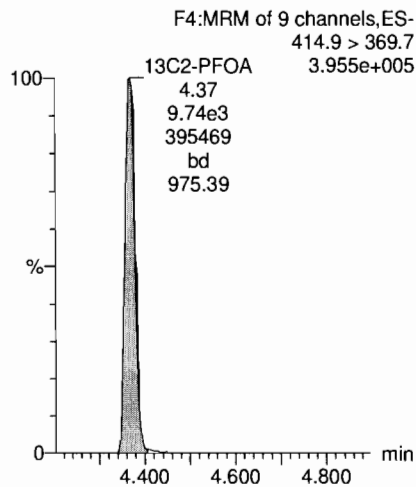
13C2-PFHxA



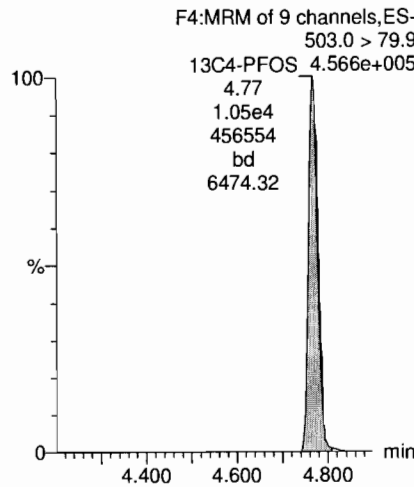
13C4-PFOS



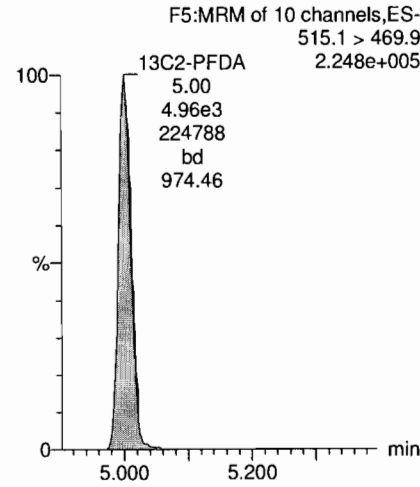
13C2-PFOA



13C4-PFOS



13C2-PFDA



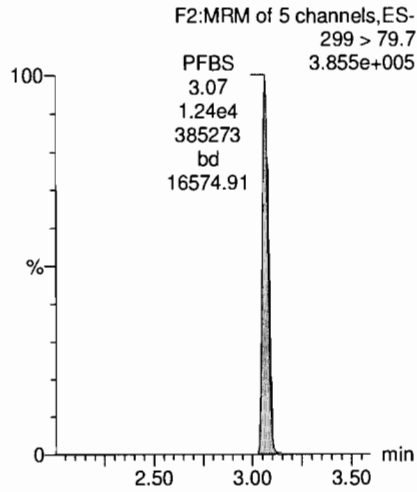
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

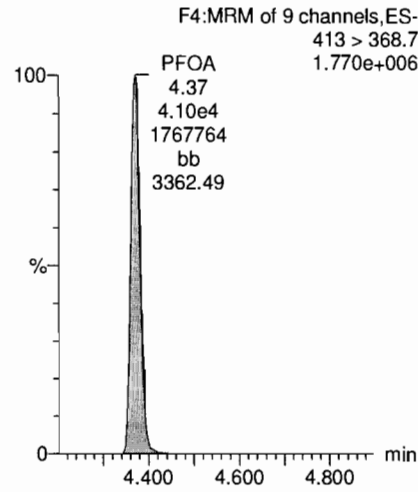
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_8, Date: 30-Nov-2017, Time: 19:45:30, ID: ST171130G1-7 PFC CS3 537 17K3027, Description: PFC CS3 537 17K3027

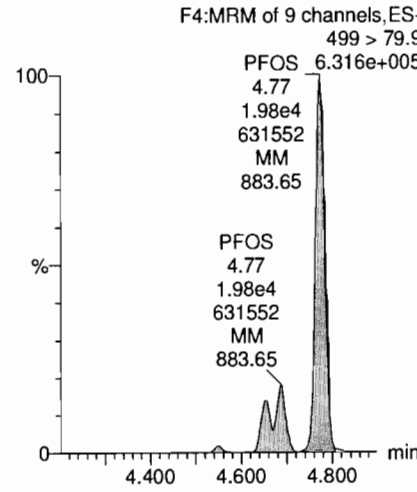
**PFBS**



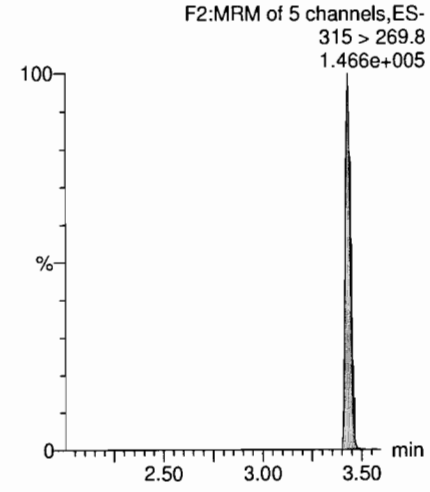
**PFOA**



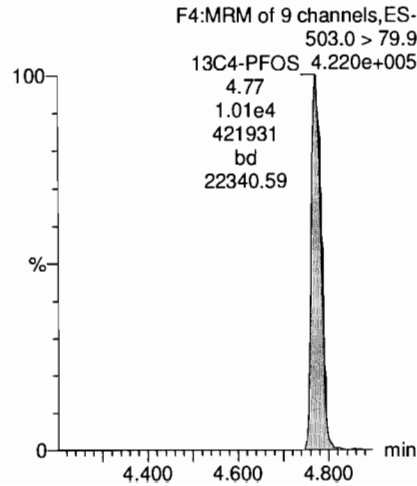
**PFOS**



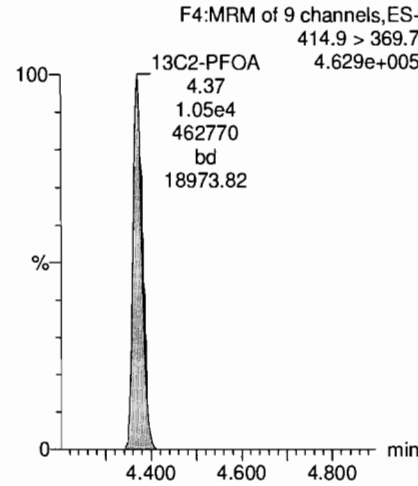
**13C2-PFHxA**



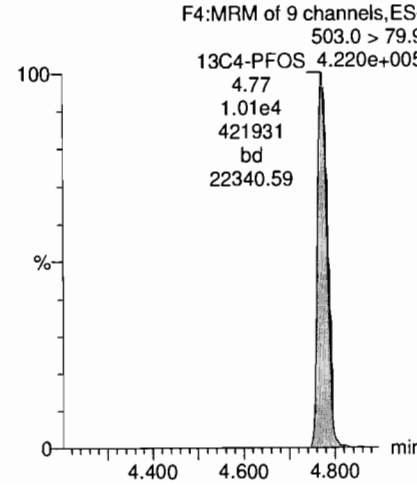
**13C4-PFOS**



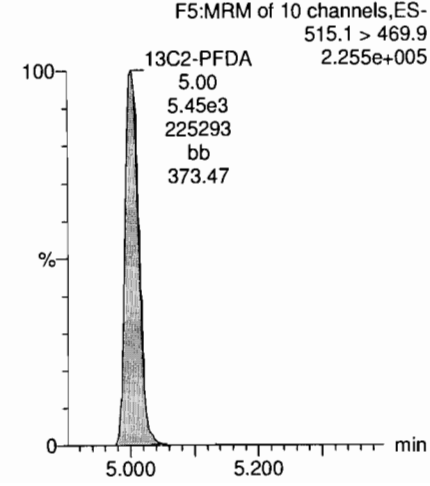
**13C2-PFOA**



**13C4-PFOS**



**13C2-PFDA**



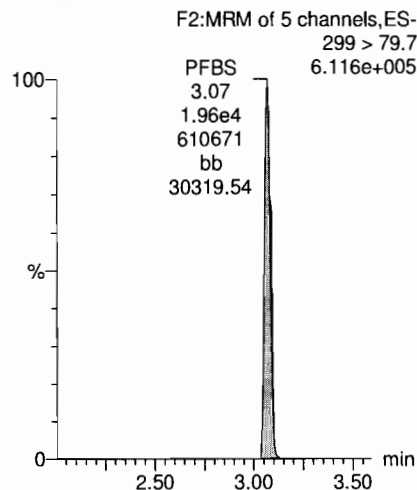
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

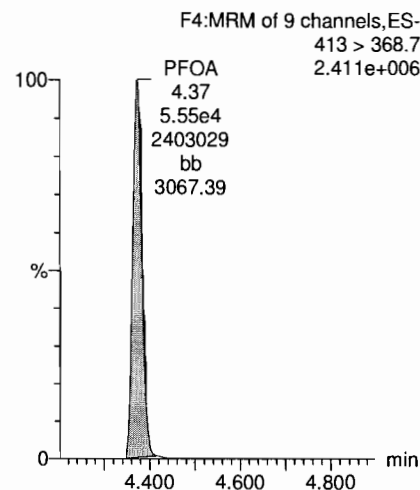
Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_9, Date: 30-Nov-2017, Time: 19:57:58, ID: ST171130G1-8 PFC CS4 537 17K3028, Description: PFC CS4 537 17K3028

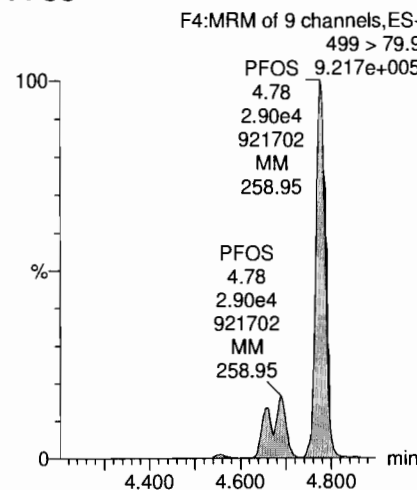
PFBS



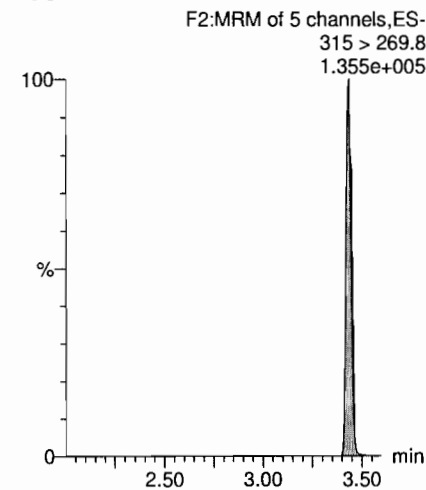
PFOA



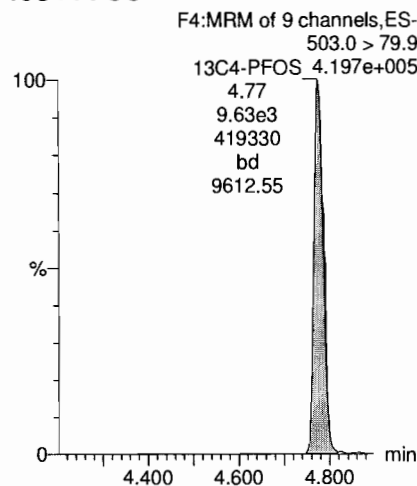
PFOS



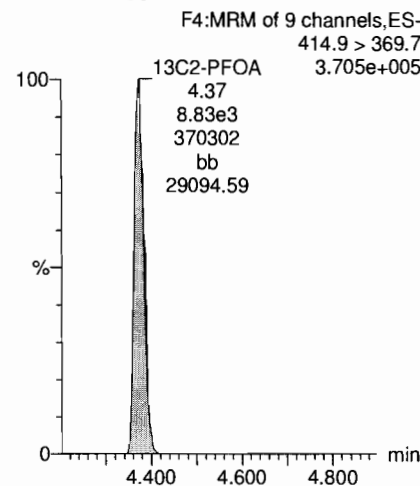
13C2-PFHxA



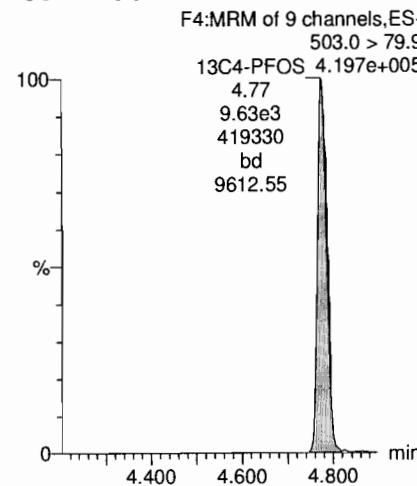
13C4-PFOS



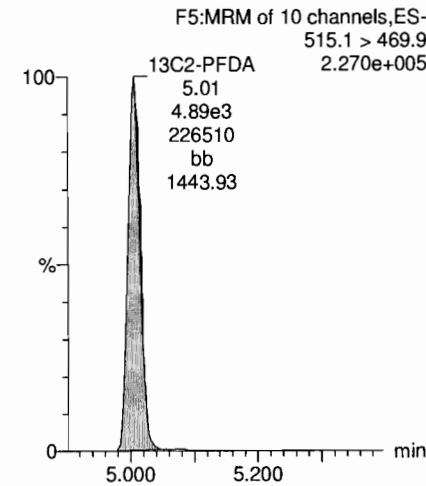
13C2-PFOA



13C4-PFOS



13C2-PFDA

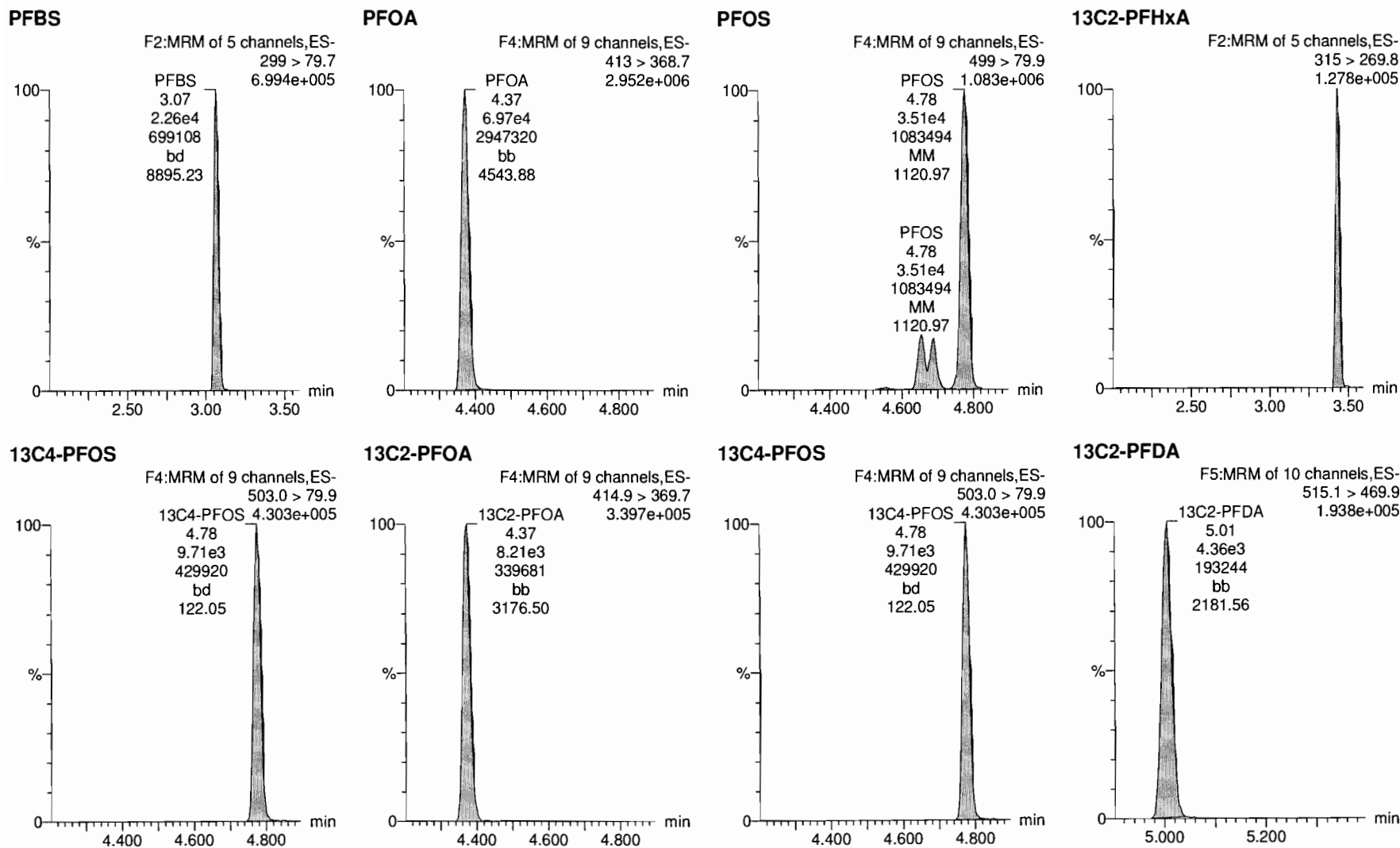


Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-CRV.qld

Last Altered: Friday, December 01, 2017 08:53:53 Pacific Standard Time

Printed: Friday, December 01, 2017 08:58:21 Pacific Standard Time

Name: 171130G1\_10, Date: 30-Nov-2017, Time: 20:10:26, ID: ST171130G1-9 PFC CS5 537 17K3029, Description: PFC CS5 537 17K3029





Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-12.qld

Last Altered: Friday, December 01, 2017 09:17:50 Pacific Standard Time

Printed: Friday, December 01, 2017 09:18:13 Pacific Standard Time

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

Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-01-17\_L3.cdb 01 Dec 2017 09:09:28

*11 30 QM 12/1/17*

Name: 171130G1\_12, Date: 30-Nov-2017, Time: 20:35:17, ID: ICV171130G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.14e3	9.84e3		1.0000	3.07	3.07	9.15	11.3	113.4
2	2 PFOA	413 > 368.7	8.01e3	9.10e3		1.0000	4.37	4.37	8.80	10.8	107.6
3	3 PFOS	499 > 79.9	4.73e3	9.84e3		1.0000	4.77	4.77	13.8	11.7	116.6
4	4 13C2-PFHxA	315 > 269.8	3.94e3	9.10e3	0.429	1.0000	3.43	3.43	4.33	10.1	101.0
5	5 13C2-PFDA	515.1 > 469.9	5.31e3	9.10e3	0.548	1.0000	5.00	5.00	5.83	10.6	106.5
6	6 13C2-PFOA	414.9 > 369.7	9.10e3	9.10e3	1.000	1.0000	4.41	4.37	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.84e3	9.84e3	1.000	1.0000	4.81	4.77	28.7	28.7	100.0

*70-130*  
↓

*QM  
12/1/17*

*JJA  
12/01/2017*

Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-12.qld

Last Altered: Friday, December 01, 2017 09:17:50 Pacific Standard Time

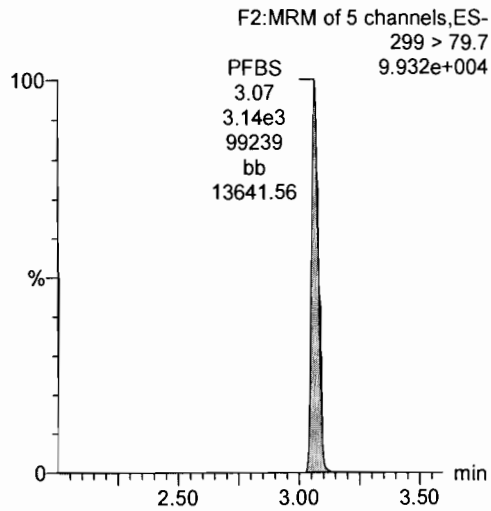
Printed: Friday, December 01, 2017 09:18:13 Pacific Standard Time

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

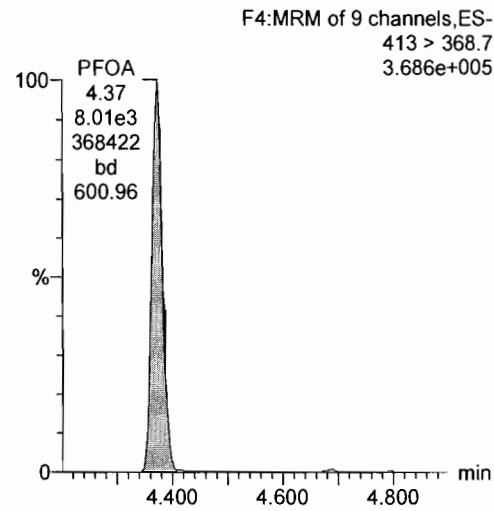
Calibration: U:\G1.PRO\CurveDB\C18\_537\_Q1\_12-01-17\_L3.cdb 01 Dec 2017 09:09:28

Name: 171130G1\_12, Date: 30-Nov-2017, Time: 20:35:17, ID: ICV171130G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

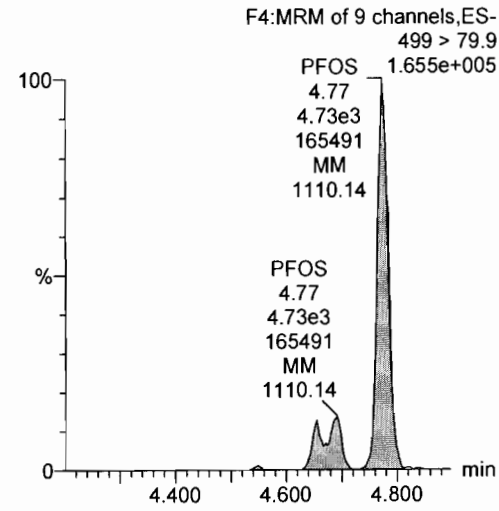
PFBS



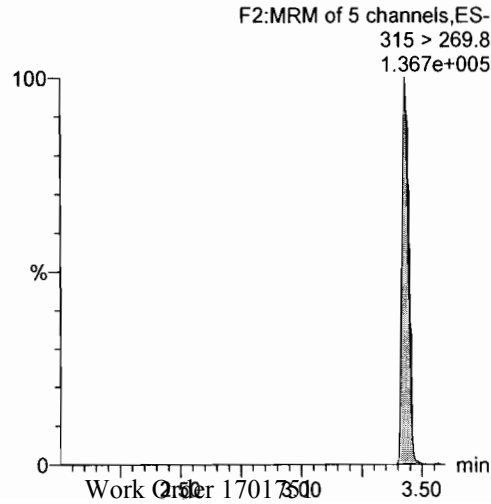
PFOA



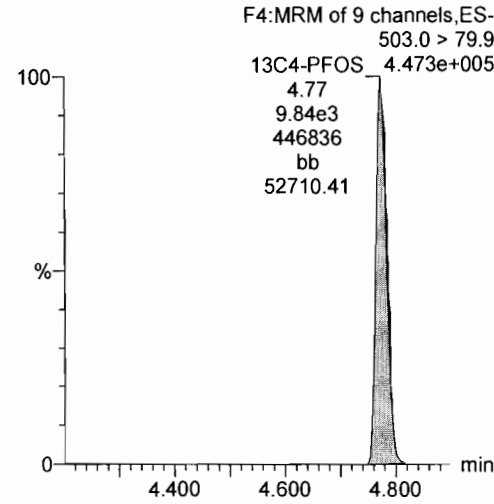
PFOS



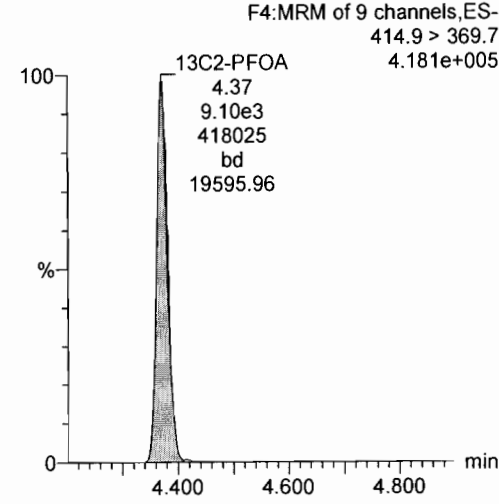
13C2-PFHxA



13C4-PFOS



13C2-PFOA



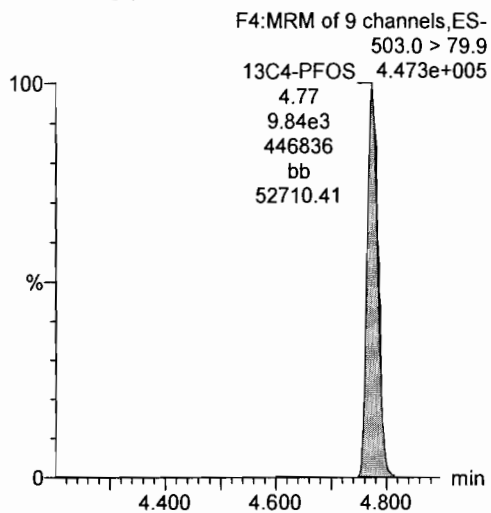
Dataset: U:\G1.PRO\Results\2017\171130G1\171130G1-12.qld

Last Altered: Friday, December 01, 2017 09:17:50 Pacific Standard Time

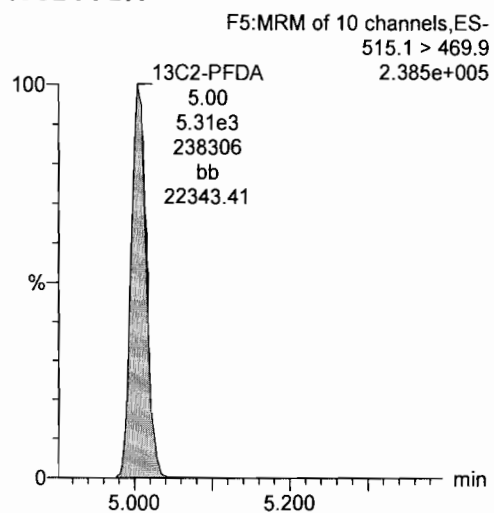
Printed: Friday, December 01, 2017 09:18:13 Pacific Standard Time

Name: 171130G1\_12, Date: 30-Nov-2017, Time: 20:35:17, ID: ICV171130G1-1 PFC ICV 537 17K3030, Description: PFC ICV 537 17K3030

13C4-PFOS



13C2-PFDA







Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Sample_Name	CH2M_ Code	Analysis_ Group	Analytical_ Method	PRC_ Code	Lab_ Code	Lab_Name	Leachate_ Method	Sample_ Basis	Extraction_ Method	Result_T ype	Lab_QC_ Type	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received	Leachate_ Date	Leachate_ Time	Extraction_ Date	Extraction_ Time	Analysis_ Date	Analysis_T ime
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB47-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/17/2017 11:21	11/21/2017			20171130	11:00:00	20171201	15:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB47-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/17/2017 11:21	11/21/2017			20171130	11:00:00	20171201	15:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB47-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/17/2017 11:21	11/21/2017			20171130	11:00:00	20171201	15:15:00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:31:00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:31:00
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:31:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:06:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:06:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:06:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:06:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:19:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:19:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:19:00
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/30/2017 11:00	11/30/2017			20171130	11:00:00	20171201	11:19:00

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	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_ Result_Ty pe	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy_ Upper	QC_ Accuracy_ Lower
N6247016D9000	0008		CHERRY_POINT_MCAS	1701751-19	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	4.80	4.80	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701751-19	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.80	4.80	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	1701751-19	1	-999			13C2-PFHxA	13C2-PFHxA	92.3	92.3	PCT_REC			PR		SLSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.00	5.00	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	5.00	5.00	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.00	5.00	NG_L	U		PR	TRG				
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA	83.1	83.1	PCT_REC			PR	SUR	SLSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	18.2	18.2	NG_L			PR	TRG	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	18.9	18.9	NG_L			PR	TRG	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	17.4	17.4	NG_L			PR	TRG	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BS1	1	-999			13C2-PFHxA	13C2-PFHxA	84.1	84.1	PCT_REC			PR	SUR	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	17.8	17.8	NG_L			PR	TRG	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1	21.2	21.2	NG_L			PR	TRG	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	18.3	18.3	NG_L			PR	TRG	LSA	130	70	
N6247016D9000	0008		CHERRY_POINT_MCAS	B7K0177-BSD1	1	-999			13C2-PFHxA	13C2-PFHxA	83.1	83.1	PCT_REC			PR	SUR	LSA	130	70	

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

Client: CH2M HILL, Inc., Corvallis, Oregon  
 SDG: 1701751  
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California  
 Site: MCOLF Atlantic, North Carolina  
 Date: January 3, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CH-AT-1RW58-1117	1701751-01	Water
2	CH-AT-1FB58-1117	1701751-02	Water
3	CH-AT-1EB01-111717	1701751-03	Water
4	CH-AT-1RW59-1117	1701751-04	Water
5	CH-AT-1FB59-1117	1701751-05	Water
6	CH-AT-1RW60-1117	1701751-06	Water
7	CH-AT-1FB60-1117	1701751-07	Water
8	CH-AT-1RW61-1117	1701751-08	Water
9	CH-AT-1FB61-1117	1701751-09	Water
10	CH-AT-1RW62-1117	1701751-10	Water
11	CH-AT-1FB62-1117	1701751-11	Water
12	CH-AT-1RW63-1117	1701751-12	Water
13	CH-AT-1FB63-1117	1701751-13	Water
14	CH-AT-1RW64-1117	1701751-14	Water
15	CH-AT-1FB64-1117	1701751-15	Water
16	CH-AT-1RW46-1117	1701751-16	Water
17	CH-AT-1FB46-1117	1701751-17	Water
18	CH-AT-1RW47-1117	1701751-18	Water
19	CH-AT-1FB47-1117	1701751-19	Water

A full data validation was performed on the analytical data for nine water samples, one aqueous equipment blank sample, and nine aqueous field blank samples collected on November 17-18, 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-1FB58-1117	None - ND	-	-	-
CH-AT-1EB01-111717	None - ND	-	-	-
CH-AT-1FB59-1117	None - ND	-	-	-
CH-AT-1FB60-1117	None - ND	-	-	-
CH-AT-1FB61-1117	None - ND	-	-	-
CH-AT-1FB62-1117	None - ND	-	-	-
CH-AT-1FB63-1117	None - ND	-	-	-
CH-AT-1FB64-1117	None - ND	-	-	-
CH-AT-1FB46-1117	None - ND	-	-	-
CH-AT-1FB47-1117	None - ND	-	-	-

### Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- MS/MSD samples were not analyzed.

### Laboratory Control Samples

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

### Internal Standard (IS) Area Performance

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

### Target Compound Identification

- All mass spectra and quantitation criteria were met.

### Compound Quantitation

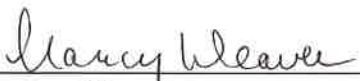
- All criteria were met.

### Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed:



Nancy Weaver  
Senior Chemist

Dated: 11/5/18

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



**Sample ID: CH-AT-1RW58-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-01
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	17-Nov-17 17:21		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.441	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
PFOA	ND	1.07	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
PFOS	ND	1.03	4.98	9.95		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	84.1	70 - 130		B7K0177	30-Nov-17	0.251 L	01-Dec-17 11:44	1	

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

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

11/31/18

**Sample ID: CH-AT-1FB58-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-02							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	17-Nov-17 17:22									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
PFOA	ND	1.03	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
PFOS	ND	0.994	4.78	9.55		B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 11:56	1	

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

ND 131.8

**Sample ID: CH-AT-1EB01-111717**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-03
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	17-Nov-17 13:57		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.416	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	I
PFOA	ND	1.01	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	I
PFOS	ND	0.976	4.69	9.38		B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	I
Labeled Standards	% Recovery	Limits			Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	86.6	70 - 130				B7K0177	30-Nov-17	0.266 L	01-Dec-17 12:09	I

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

11318



Sample ID: CH-AT-1RW59-1117

EPA Method 537

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-04							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	18-Nov-17 09:07									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
PFOA	ND	1.04	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
PFOS	ND	1.00	4.83	9.66		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:21	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

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

Only the linear isomer is reported for all other analytes

new 1131.8

**Sample ID: CH-AT-1FB59-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-05	Column:	BEH C18					
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:08	Date Received:	21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
PFOA	ND	1.02	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
PFOS	ND	0.985	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.264 L	01-Dec-17 12:33	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

When reported, PFExS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes

**Sample ID: CH-AT-1RW60-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-06	Batch:	B7K0177					
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	18-Nov-17 09:33	Extracted:	30-Nov-17					
		Matrix:	Drinking Water	Samp Size:	0.261 L					
		Date Collected:	18-Nov-17 09:33	Batch:	B7K0177					
		Date Received:	21-Nov-17 10:13	Extracted:	30-Nov-17					
		Column:	BEH C18	Samp Size:	0.261 L					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.424	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
PFOA	ND	1.03	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
PFOS	ND	0.996	4.79	9.58		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	84.8	70 - 130		B7K0177	30-Nov-17	0.261 L	01-Dec-17 04:02	1	

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation

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

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

see 113118

**Sample ID: CH-AT-1FB60-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-07
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	18-Nov-17 09:34		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.422	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
PFOA	ND	1.03	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
PFOS	ND	0.992	4.77	9.54		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	86.4	70 - 130		B7K0177	30-Nov-17	0.262 L	01-Dec-17 12:46	1	

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

11/31/18

**Sample ID: CH-AT-1RW61-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-08
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	18-Nov-17 10:07		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
PFOA	ND	1.04	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1
PFOS	ND	1.01	4.83	9.67		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	90.1	70 - 130		B7K0177	30-Nov-17	0.259 L	01-Dec-17 12:58	1

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

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

11/3/18

**Sample ID: CH-AT-1F61-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name: CH2M Hill	Matrix: Drinking Water	Lab Sample: 1701751-09	Column: BEH C18							
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected: 18-Nov-17 10:08	Date Received: 21-Nov-17 10:13								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
PFOA	ND	1.02	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
PFOS	ND	0.986	4.74	9.48		B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.264 L	01-Dec-17 13:11	1	

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

11/23/17

**Sample ID: CH-AT-1RW62-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name: CH2M Hill	Matrix: Drinking Water	Lab Sample: 1701751-10	Column: BEH C18							
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected: 18-Nov-17 10:22	Date Received: 21-Nov-17 10:13								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.432	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
PFOA	ND	1.05	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
PFOS	ND	1.02	4.88	9.76		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.1		70 - 130		B7K0177	30-Nov-17	0.256 L	01-Dec-17 13:23	1

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

*new 113/1.8*

**Sample ID: CH-AT-1FB62-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-11
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	18-Nov-17 10:23		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
PFOA	ND	1.03	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
PFOS	ND	0.993	4.78	9.55		B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
L3C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.262 L	02-Dec-17 14:45	1	

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

*new 13118*



**Sample ID: CH-AT-1RW63-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name: CH2M Hill	Matrix: Drinking Water	Lab Sample: 1701751-12	Column: BEH C18							
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected: 18-Nov-17 10:40	Date Received: 21-Nov-17 10:13								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
PFOA	ND	1.04	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
PFOS	ND	1.00	4.82	9.65		B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.259 L	01-Dec-17 13:48	1	

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

113118

**Sample ID: CH-AT-1FB63-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-13
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	18-Nov-17 10:41		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.427	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
PFOA	ND	1.04	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1
PFOS	ND	1.00	4.82	9.64		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.1	70 - 130		B7K0177	30-Nov-17	0.259 L	01-Dec-17 14:00	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

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

Only the linear isomer is reported for all other analytes

1701751-13

**Sample ID: CH-AT-1RW64-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-14							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	18-Nov-17 11:29									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
PFOA	ND	1.05	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
PFOS	ND	1.01	4.85	9.70		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	87.3		70 - 130		B7K0177	30-Nov-17	0.258 L	01-Dec-17 14:13	1

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation  
 LCL-UCL- Lower control limit - upper control limit  
 Results reported to the DL  
 When reported, PFHx3, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

11/3/18

**Sample ID: CH-AT-1FB64-1117**

**EPA Method 537**

Client Data		Laboratory Data	
Name:	CH2M Hill	Lab Sample:	1701751-15
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13
Matrix:	Drinking Water	Column:	BEH C18
Date Collected:	18-Nov-17 11:30		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.446	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
PFOA	ND	1.09	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
PFOS	ND	1.05	5.03	10.1		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	83.3	70 - 130		B7K0177	30-Nov-17	0.248 L	01-Dec-17 14:25	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

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

Only the linear isomer is reported for all other analytes

*mw13118*

**Sample ID: CH-AT-1RW46-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-16							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	17-Nov-17 11:05									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
PFOA	ND	1.04	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
PFOS	ND	1.00	4.81	9.62		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	89.1		70 - 130		B7K0177	30-Nov-17	0.260 L	01-Dec-17 14:38	1

DL - Detection Limit  
 LOD - Limit of Detection  
 LOQ - Limit of quantitation

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

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

1701751

**Sample ID: CH-AT-1FB46-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-17							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	17-Nov-17 11:06									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
PFOA	ND	1.03	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
PFOA	ND	0.994	4.78	9.56		B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.262 L	01-Dec-17 14:50	1	

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of Quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

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

Only the linear isomer is reported for all other analytes

11/3/18

**Sample ID: CH-AT-1RW47-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-18							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	17-Nov-17 11:20									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.51		B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
PFOA	2.80	1.03	4.75	9.51	J	B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
PFOA	3.27	0.989	4.75	9.51	J	B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	1
Labeled Standards	Type	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	70 - 130			B7K0177	30-Nov-17	0.263 L	01-Dec-17 15:03	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

1701751-18

**Sample ID: CH-AT-IFB47-1117**

**EPA Method 537**

Client Data		Laboratory Data								
Name:	CH2M Hill	Lab Sample:	1701751-19							
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Received:	21-Nov-17 10:13							
Matrix:	Drinking Water	Column:	BEH C18							
Date Collected:	17-Nov-17 11:21									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.426	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
PFOA	ND	1.04	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
PFOS	ND	0.999	4.80	9.61		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	92.3	70 - 130		B7K0177	30-Nov-17	0.260 L	01-Dec-17 15:15	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

with 31.6





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

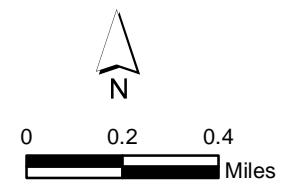


Figure 3  
Proposed Sampling Locations  
Marine Corps Outlying Landing Field Atlantic  
Atlantic Beach, North Carolina