



**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 1701749**

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

February 2019



November 28, 2017

Vista Work Order No. 1701749

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.

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

Sincerely,

Karen J. Volpenko
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. 1701749

Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

EPA Method 537

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

<u>Laboratory ID</u>	<u>Sample Name</u>
1701749-01	CH-AT-1RW37-1117
1701749-03	CH-AT-1RW38-1117
1701749-09	CH-AT-1RW41-1117
1701749-13	CH-AT-1RW43-1117

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.

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

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were prepared and analyzed using sample "CH-AT-1RW41-1117".

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701749-01	CH-AT-1RW37-1117	16-Nov-17 13:31	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-02	CH-AT-1FB37-1117	16-Nov-17 13:32	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-03	CH-AT-1RW38-1117	16-Nov-17 13:58	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-04	CH-AT-1FB38-1117	16-Nov-17 13:59	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-05	CH-AT-1RW39-1117	16-Nov-17 14:07	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-06	CH-AT-1FB39-1117	16-Nov-17 14:08	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-07	CH-AT-1RW40-1117	16-Nov-17 14:29	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-08	CH-AT-1FB40-1117	16-Nov-17 14:30	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-09	CH-AT-1RW41-1117	MS/MSD17-Nov-17 09:05	21-Nov-17 10:13	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701749-10	CH-AT-1FB41-1117	17-Nov-17 09:06	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-11	CH-AT-1RW42-1117	17-Nov-17 09:28	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-12	CH-AT-1FB42-1117	17-Nov-17 09:29	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-13	CH-AT-1RW43-1117	17-Nov-17 10:22	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-14	CH-AT-1FB43-1117	17-Nov-17 10:23	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-15	CH-AT-1RW44-1117	17-Nov-17 10:41	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-16	CH-AT-1FB44-1117	17-Nov-17 10:42	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-17	CH-AT-1RW45-1117	17-Nov-17 10:51	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-18	CH-AT-1FB45-1117	17-Nov-17 10:52	21-Nov-17 10:13	HDPE Bottle, 250 mL

Vista Project: 1701749

Client Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701749-18	CH-AT-1FB45-1117	17-Nov-17 10:52	21-Nov-17 10:13	HDPE Bottle, 250 mL

ANALYTICAL RESULTS

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

Only the linear isomer is reported for all other analytes.

Sample ID: LFB					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigatic					Laboratory Data Lab Sample: B7K0145-BS1 Column: BEH C18					
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	13.1	17.7	74.3	70-130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1
PFOA	17.1	20.0	85.7	70-130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1
PFOS	18.4	18.5	99.7	70-130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR		105	70- 130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1

Sample ID: CH-AT-1RW37-1117										EPA Method 537
Client Data Name: CH2M Hill										

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-1FB37-1117					EPA Method 537					
Client Data Name: CH2M Hill										

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-1RW38-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 16-Nov-17 13:58					Laboratory Data Lab Sample: 1701749-03 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1
PFOA	ND	1.05	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1
PFOS	ND	1.02	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130			B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Sample ID: CH-AT-1FB38-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 16-Nov-17 13:59					Laboratory Data Lab Sample: 1701749-04 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.417	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1
PFOA	ND	1.02	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1
PFOS	ND	0.979	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	118	70 - 130			B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	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-1RW39-1117										EPA Method 537
Client Data Name: CH2M Hill										

DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.
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Sample ID: CH-AT-1FB39-1117					EPA Method 537					
Client Data Name: CH2M Hill										

DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.
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Sample ID: CH-AT-1RW40-1117					EPA Method 537					
Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-07	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	16-Nov-17 14:29	Date Received:	21-Nov-17 10:13				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.48		B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1
PFOA	12.5	1.02	4.74	9.48		B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1
PFOS	1.91	0.986	4.74	9.48	J	B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	120	70 - 130			B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB40-1117					EPA Method 537					
Client Data Name: CH2M Hill										

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-1RW41-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Nov-17 09:05					Laboratory Data Lab Sample: 1701749-09 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.407	4.60	9.20		B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1
PFOA	ND	0.993	4.60	9.20		B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1
PFOS	ND	0.957	4.60	9.20		B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	121	70 - 130			B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW41-1117													EPA Method 537			
Name: CH2M Hill					Lab Sample: B7K0145-MS1/B7K0145-MSD1					Source Lab Sample: 1701749-09						
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigatio					QC Batch: B7K0145					Date Extracted: 25-Nov-17						
Matrix: Drinking Water					Samp Size: 0.268/0.277 L					Column: BEH C18						
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	14.1	16.5	85.4		16.0	15.9	101	16.7		70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1
PFOA	ND	19.7	18.6	104		19.1	18.0	104	0		70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1
PFOS	ND	18.1	17.2	105		16.0	16.7	96.0	8.96		70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1
Labeled Standards		Type		MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA		SURR		104				109			70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1

Sample ID: CH-AT-1FB41-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Nov-17 09:06					Laboratory Data Lab Sample: 1701749-10 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.410	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	1
PFOA	ND	0.998	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	1
PFOS	ND	0.961	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	117	70 - 130			B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	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-1RW42-1117					EPA Method 537					
Client Data Name: CH2M Hill										

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-1FB42-1117					EPA Method 537					
Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701749-12	Column:	BEH C18			
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 09:29	Date Received:	21-Nov-17 10:13				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.416	4.69	9.38		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1
PFOA	ND	1.01	4.69	9.38		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1
PFOS	ND	0.976	4.69	9.38		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	123	70 - 130			B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW43-1117										EPA Method 537
Client Data Name: CH2M Hill										

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-1FB43-1117					EPA Method 537					
Client Data Name: CH2M Hill										

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-1RW44-1117					EPA Method 537					
Client Data Name:CH2M Hill Matrix:Drinking Water Project:CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected:17-Nov-17 10:41					Laboratory Data Lab Sample:1701749-15 Column:BEH C18 Date Received:21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.418	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44	1
PFOA	ND	1.02	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44	1
PFOS	ND	0.981	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	125	70 - 130			B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44	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-1FB44-1117					EPA Method 537					
Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701749-16	Column:	BEH C18			
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 10:42	Date Received:	21-Nov-17 10:13				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.413	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	1
PFOA	ND	1.01	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	1
PFOS	ND	0.970	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	119	70 - 130		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	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-1FB45-1117										EPA Method 537	
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Nov-17 10:52					Laboratory Data Lab Sample: 1701749-18 Date Received: 21-Nov-17 10:13 Column: BEH C18						
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.418	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	1	
PFOA	ND	1.02	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	1	
PFOS	ND	0.981	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	115	70 - 130			B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	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.

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

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

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

NELAP Accredited Test Methods

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

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

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

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

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

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

Order 1 - 1 of 2 pages

CTO-08 679580.15.FI.FS

ID: LR - 537COC



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701749 Temp: 0.7 °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 (check one): ☐ Standard ☐ 21 days
☐ 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 11/29/17 Time 15:30 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 1032
Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

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

ATTN: Martha Maier

Method of Shipment:
FEDEX

Tracking No.: _____

Add Analysis(es) Requested

Container(s)

Mod. EPA
Method 537

EPA Method
537(DW only)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 28	Other Please List Below	PFOA/PFOS/PFS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-1RW37-1117	11/16/17	13:31		2	P	DW						X			TZ preservative
CH-AT-1FB37-1117	11/16/17	13:32		2	P	DW						X			TZ preservative
CH-AT-1RW38-1117	11/16/17	13:58		2	P	DW						X			TZ preservative
CH-AT-1FB38-1117	11/16/17	13:59		2	P	DW						X			TZ preservative
CH-AT-1RW39-1117	11/16/17	14:07		2	P	DW						X			TZ preservative
CH-AT-1FB39-1117	11/16/17	14:08		2	P	DW						X			TZ preservative
CH-AT-1RW40-1117	11/16/17	14:29		2	P	DW						X			TZ preservative
CH-AT-1FB40-1117	11/16/17	14:30		2	P	DW						X			TZ preservative
CH-AT-1RW41-1117	11/17/17	09:05		2	P	DW						X			TZ preservative
CH-AT-1RW41-1117-MS	11/17/17	09:05		2	P	DW						X			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 1 - 2 of 2 pages

CTO-08 679580.15.FI.FS

ID: LR - 537COC



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701749 Temp 0.7 °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 (check one): ☐ Standard ☐ 21 days ☐ 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 11/20/17 Time 15:30 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 1032
Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

SHIP TO: Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 (916) 673-1520 * Fax (916) 673-0106				Method of Shipment: <u>FEDEX</u>		Tracking No: _____		Add Analysis(es) Requested				Mod EPA Method 537				EPA Method 537(DW only)			
ATTN: <u>Martha Maier</u>				Container(s)															
Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other, Please List	PFOA/PFOS/PFS	UCMR3 PFAS List 6	PFAS List: 14					Comments
CH-AT-1RW41-1117-SD	11/17/17	09:05		2	P	DW						X							TZ preservative
CH-AT-1FB41-1117	11/17/17	09:06		2	P	DW						X							TZ preservative
CH-AT-1RW42-1117	11/17/17	09:28		2	P	DW						X							TZ preservative
CH-AT-1FB42-1117	11/17/17	09:29		2	P	DW						X							TZ preservative
CH-AT-1RW43-1117	11/17/17	10:22		2	P	DW						X							TZ preservative
CH-AT-1FB43-1117	11/17/17	10:23		2	P	DW						X							TZ preservative
CH-AT-1RW44-1117	11/17/17	10:41		2	P	DW						X							TZ preservative
CH-AT-1FB44-1117	11/17/17	10:42		2	P	DW						X							TZ preservative
CH-AT-1RW45-1117	11/17/17	10:51		2	P	DW						X							TZ preservative
CH-AT-1FB45-1117	11/17/17	10:52		2	P	DW						X							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: _____

Sample Log-in Checklist

Vista Work Order #: 1701749 TAT 7

Samples Arrival:	Date/Time 11/21/17 1013	Initials: JBB	Location: WR-2 Shelf/Rack: NA
Logged In:	Date/Time 11/21/17 1417	Initials: SR KV MS	Location: WR-2 Shelf/Rack: F7
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac
	☐ GSO	☐ DHL	☐ Hand Delivered
	☐ Other		
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice
	☐ None		
Temp °C: 0.7 (uncorrected)	Time: 1045	Thermometer ID: DT-3	
Temp °C: 0.7 (corrected)	Probe used: Yes ☒ No ☐		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill 3014 Trk # 7707 9375 1079	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
Preservation Documented:	Na ₂ S ₂ O ₃	Trizma	None
	☒ Yes	☐ No	☐ NA
Shipping Container	Vista	Client	Retain
	Return	Dispose	

Comments:



November 28, 2017

Vista Work Order No. 1701749

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.

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

Sincerely,

Karen J. Volpe
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. 1701749

Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

EPA Method 537

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

<u>Laboratory ID</u>	<u>Sample Name</u>
1701749-01	CH-AT-1RW37-1117
1701749-03	CH-AT-1RW38-1117
1701749-09	CH-AT-1RW41-1117
1701749-13	CH-AT-1RW43-1117

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.

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

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were prepared and analyzed using sample "CH-AT-1RW41-1117".

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701749-01	CH-AT-1RW37-1117	16-Nov-17 13:31	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-02	CH-AT-1FB37-1117	16-Nov-17 13:32	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-03	CH-AT-1RW38-1117	16-Nov-17 13:58	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-04	CH-AT-1FB38-1117	16-Nov-17 13:59	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-05	CH-AT-1RW39-1117	16-Nov-17 14:07	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-06	CH-AT-1FB39-1117	16-Nov-17 14:08	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-07	CH-AT-1RW40-1117	16-Nov-17 14:29	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-08	CH-AT-1FB40-1117	16-Nov-17 14:30	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-09	CH-AT-1RW41-1117	MS/MSD17-Nov-17 09:05	21-Nov-17 10:13	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1701749-10	CH-AT-1FB41-1117	17-Nov-17 09:06	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-11	CH-AT-1RW42-1117	17-Nov-17 09:28	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-12	CH-AT-1FB42-1117	17-Nov-17 09:29	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-13	CH-AT-1RW43-1117	17-Nov-17 10:22	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-14	CH-AT-1FB43-1117	17-Nov-17 10:23	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-15	CH-AT-1RW44-1117	17-Nov-17 10:41	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-16	CH-AT-1FB44-1117	17-Nov-17 10:42	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-17	CH-AT-1RW45-1117	17-Nov-17 10:51	21-Nov-17 10:13	HDPE Bottle, 250 mL
1701749-18	CH-AT-1FB45-1117	17-Nov-17 10:52	21-Nov-17 10:13	HDPE Bottle, 250 mL

Vista Project: 1701749

Client Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701749-18	CH-AT-1FB45-1117	17-Nov-17 10:52	21-Nov-17 10:13	HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water					Laboratory Data Lab Sample: B7K0145-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		B7K0145	25-Nov-17	0.250 L	27-Nov-17 17:12	1
PFOA	ND	1.08	5.00	10.0		B7K0145	25-Nov-17	0.250 L	27-Nov-17 17:12	1
PFOS	ND	1.04	5.00	10.0		B7K0145	25-Nov-17	0.250 L	27-Nov-17 17:12	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7K0145	25-Nov-17	0.250 L	27-Nov-17 17:12	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: LFB					EPA Method 537					
Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	B7K0145-BS1	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigatic									
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	13.1	17.7	74.3	70-130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1
PFOA	17.1	20.0	85.7	70-130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1
PFOS	18.4	18.5	99.7	70-130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR		105	70- 130		B7K0145	25-Nov-17	0.250 L	27-Nov-17 16:47	1

Sample ID: CH-AT-1RW37-1117										EPA Method 537
Client Data Name: CH2M Hill										

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-1FB37-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 16-Nov-17 13:32					Laboratory Data Lab Sample: 1701749-02 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.414	4.67	9.35		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02	1
PFOA	ND	1.01	4.67	9.35		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02	1
PFOS	ND	0.972	4.67	9.35		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.2	70 - 130			B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02	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-1RW38-1117					EPA Method 537					
Client Data Name:CH2M Hill Matrix:Drinking Water Project:CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected:16-Nov-17 13:58					Laboratory Data Lab Sample:1701749-03 Column:BEH C18 Date Received:21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1
PFOA	ND	1.05	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1
PFOS	ND	1.02	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	113	70 - 130			B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB38-1117					EPA Method 537					
Client Data Name: CH2M HillMatrix: Drinking WaterProject: CTO-08, MCOLF Atlantic / PFAS DW InvestigationDate Collected: 16-Nov-17 13:59					Laboratory Data Lab Sample: 1701749-04Column: BEH C18Date Received: 21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.417	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1
PFOA	ND	1.02	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1
PFOS	ND	0.979	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	118	70 - 130			B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: CH-AT-1RW39-1117										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 16-Nov-17 14:07					Laboratory Data Lab Sample: 1701749-05 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.423	4.77	9.54		B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39	1
PFOA	ND	1.03	4.77	9.54		B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39	1
PFOS	ND	0.992	4.77	9.54		B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130			B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB39-1117					EPA Method 537					
Client Data Name: CH2M Hill										

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-1RW40-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 16-Nov-17 14:29					Laboratory Data Lab Sample: 1701749-07 Column: BEH C18 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		B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1
PFOA	12.5	1.02	4.74	9.48		B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1
PFOS	1.91	0.986	4.74	9.48	J	B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	120	70 - 130			B7K0145	25-Nov-17	0.264 L	27-Nov-17 19:04	1

DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.
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Sample ID: CH-AT-1FB40-1117					EPA Method 537					
Client Data Name: CH2M Hill										

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-1RW41-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 17-Nov-17 09:05					Laboratory Data Lab Sample: 1701749-09 Column: BEH C18 Date Received: 21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.407	4.60	9.20		B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1
PFOA	ND	0.993	4.60	9.20		B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1
PFOS	ND	0.957	4.60	9.20		B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	121	70 - 130			B7K0145	25-Nov-17	0.272 L	27-Nov-17 19:29	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW41-1117															EPA Method 537	
Name: CH2M Hill					Lab Sample: B7K0145-MS1/B7K0145-MSD1					Source Lab Sample: 1701749-09						
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigatio					QC Batch: B7K0145					Date Extracted: 25-Nov-17						
Matrix: Drinking Water					Samp Size: 0.268/0.277 L					Column: BEH C18						
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	14.1	16.5	85.4		16.0	15.9	101	16.7		70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1
PFOA	ND	19.7	18.6	104		19.1	18.0	104	0		70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1
PFOS	ND	18.1	17.2	105		16.0	16.7	96.0	8.96		70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1
Labeled Standards		Type		MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA		SURR		104				109			70-130		27-Nov-17 17:25	1	27-Nov-17 17:37	1

Sample ID: CH-AT-1FB41-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Nov-17 09:06					Laboratory Data Lab Sample: 1701749-10 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.410	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	1
PFOA	ND	0.998	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	1
PFOS	ND	0.961	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	117	70 - 130			B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	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-1RW42-1117					EPA Method 537					
Client Data Name: CH2M HillMatrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW InvestigationDate Collected: 17-Nov-17 09:28					Laboratory Data Lab Sample: 1701749-11Column: BEH C18 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	9.65		B7K0145	25-Nov-17	0.259 L	27-Nov-17 19:54	1
PFOA	ND	1.04	4.83	9.65		B7K0145	25-Nov-17	0.259 L	27-Nov-17 19:54	1
PFOS	ND	1.00	4.83	9.65		B7K0145	25-Nov-17	0.259 L	27-Nov-17 19:54	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	112	70 - 130		B7K0145	25-Nov-17	0.259 L	27-Nov-17 19:54	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: CH-AT-1FB42-1117										EPA Method 537
Client Data Name: CH2M Hill										

DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.
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Sample ID: CH-AT-1RW43-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 17-Nov-17 10:22					Laboratory Data Lab Sample: 1701749-13 Column: BEH C18 Date Received: 21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.413	4.66	9.31		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1
PFOA	ND	1.01	4.66	9.31		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1
PFOS	ND	0.969	4.66	9.31		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130			B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Sample ID: CH-AT-1FB43-1117										EPA Method 537
Client Data Name: CH2M Hill										

DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.
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Sample ID: CH-AT-1RW44-1117										EPA Method 537
Client Data Name: CH2M Hill										

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-1FB44-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Nov-17 10:42					Laboratory Data Lab Sample: 1701749-16 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.413	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	1
PFOA	ND	1.01	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	1
PFOS	ND	0.970	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	119	70 - 130			B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:56	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-1RW45-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 17-Nov-17 10:51					Laboratory Data Lab Sample: 1701749-17 Date Received: 21-Nov-17 10:13 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.47		B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1
PFOA	ND	1.02	4.73	9.47		B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1
PFOS	ND	0.984	4.73	9.47		B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130			B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: CH-AT-1FB45-1117					EPA Method 537					
Client Data Name: CH2M Hill										

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

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

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

NELAP Accredited Test Methods

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

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

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

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

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

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

Coder 1 - 1 of 2 pages

CTO-08 679580.15.FI.FS

ID: LR - 537COC



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701749 Temp: 0.7 °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 (check one): ☐ Standard ☐ 21 days
☐ 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 11/29/17 Time 15:30 Received by (printed name and signature) B. Benedict Date 11/21/17 Time 1032
Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

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

ATTN: Martha Maier

Method of Shipment:
FEDEX

Tracking No.: _____

Add Analysis(es) Requested

Container(s)

Mod. EPA
Method 537

EPA Method
537(DW only)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 28	Other Please List Below	PFOA/PFOS/PFS	UCMR3 PFAS List 6	PFAS List: 14	Comments
CH-AT-1RW37-1117	11/16/17	13:31		2	P	DW						X			TZ preservative
CH-AT-1FB37-1117	11/16/17	13:32		2	P	DW						X			TZ preservative
CH-AT-1RW38-1117	11/16/17	13:58		2	P	DW						X			TZ preservative
CH-AT-1FB38-1117	11/16/17	13:59		2	P	DW						X			TZ preservative
CH-AT-1RW39-1117	11/16/17	14:07		2	P	DW						X			TZ preservative
CH-AT-1FB39-1117	11/16/17	14:08		2	P	DW						X			TZ preservative
CH-AT-1RW40-1117	11/16/17	14:29		2	P	DW						X			TZ preservative
CH-AT-1FB40-1117	11/16/17	14:30		2	P	DW						X			TZ preservative
CH-AT-1RW41-1117	11/17/17	09:05		2	P	DW						X			TZ preservative
CH-AT-1RW41-1117-MS	11/17/17	09:05		2	P	DW						X			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 1 - 2 of 2 pages

CTO-08 679580.15.FI.FS

ID: LR - 537C0C



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701749 Temp 0.7 °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 (check one): Standard ☐ 21 days
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 11/20/17 Time 15:30
Received by (printed name and signature) B. Benedict Date 11/21/17 Time 1032

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.:		Add Analysis(es) Requested										Mod EPA Method 537		EPA Method 537(DW only)			
ATTN: Martha Maier								Container(s)															
Sample ID				Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOs	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other, please list below	PFOA/PFOs/PFS	UCMR3 PFAS List 6	PFAS List 14	Comments					
CH-AT-1RW41-1117-SD				11/17/17	09:05		2	P	DW						X			TZ preservative					
CH-AT-1FB41-1117				11/17/17	09:06		2	P	DW						X			TZ preservative					
CH-AT-1RW42-1117				11/17/17	09:28		2	P	DW						X			TZ preservative					
CH-AT-1FB42-1117				11/17/17	09:29		2	P	DW						X			TZ preservative					
CH-AT-1RW43-1117				11/17/17	10:22		2	P	DW						X			TZ preservative					
CH-AT-1FB43-1117				11/17/17	10:23		2	P	DW						X			TZ preservative					
CH-AT-1RW44-1117				11/17/17	10:41		2	P	DW						X			TZ preservative					
CH-AT-1FB44-1117				11/17/17	10:42		2	P	DW						X			TZ preservative					
CH-AT-1RW45-1117				11/17/17	10:51		2	P	DW						X			TZ preservative					
CH-AT-1FB45-1117				11/17/17	10:52		2	P	DW						X			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: _____

Sample Log-in Checklist

Vista Work Order #: 1701749 TAT 7

Samples Arrival:	Date/Time 11/21/17 1013	Initials: JBB	Location: WR-2 Shelf/Rack: NA
Logged In:	Date/Time 11/21/17 1417	Initials: SR KV MS	Location: WR-2 Shelf/Rack: F7
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac
	☐ GSO	☐ DHL	☐ Hand Delivered
	☐ Other		
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice
	☐ None		
Temp °C: 0.7 (uncorrected)	Time: 1045	Thermometer ID: DT-3	
Temp °C: 0.7 (corrected)	Probe used: Yes ☒ No ☐		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill 3014 Trk # 7707 9375 1079	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓		
Preservation Documented:	Na ₂ S ₂ O ₃	Trizma	None
	☒ Yes	☐ No	☐ NA
Shipping Container	Vista	Client	Retain
	Return	Dispose	

Comments:

EXTRACTION INFORMATION

Process Sheet
Workorder: 1701749



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: B7K0145

Prep Data Entered: 11-27-17 HC
Date and Initials

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

Initial Sequence:

LabSampleID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701749-01	Ⓢ	☒	☒	CH-AT-1RW37-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-02		☒	☒	CH-AT-1FB37-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-03		☒	☒	CH-AT-1RW38-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-04		☒	☒	CH-AT-1FB38-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-05		☒	☒	CH-AT-1RW39-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-06		☒	☒	CH-AT-1FB39-1117		WR-2 F-1	HDPE Bottle, 250 mL
1701749-07		☒	☒	CH-AT-1RW40-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-08		☒	☒	CH-AT-1FB40-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-09	Ⓢ	☒	☒	CH-AT-1RW41-1117	MS/MSD	WR-2 F-7	HDPE Bottle, 250 mL
1701749-10		☒	☒	CH-AT-1FB41-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-11		☒	☒	CH-AT-1RW42-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-12		☒	☒	CH-AT-1FB42-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-13		☒	☒	CH-AT-1RW43-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-14		☒	☒	CH-AT-1FB43-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-15		☒	☒	CH-AT-IRW44-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-16		☒	☒	CH-AT-1FB44-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-17		☒	☒	CH-AT-1RW45-1117		WR-2 F-7	HDPE Bottle, 250 mL
1701749-18		☒	☒	CH-AT-1FB45-1117		WR-2 F-7	HDPE Bottle, 250 mL

Pre-Prep Check Out: 11/22/17 ST
Pre-Prep Check In: 11/22/17 ST

Prep Check Out: HC 11-25-17
Prep Check In: NA

Prep Reconciled Initials/Date: 11/22/17 ST
Spike Reconciled Initials/Date: HC 11-25-17
VialBoxID: Cheryl

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7K0145

Chemist: HC

Prep Date/Time: 22-Nov-17 12:18

Prepared using: LCMS - SPE Extraction-LCMS

11-25-17 11:30

HC

BalanceID: <u>HRMS-8</u>								
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE	
☐	B7K0145-BLK1 <u>(A)</u>	<u>N/A</u>	<u>N/A</u>	<u>0.250</u> ✓	<u>HC</u> <u>KL</u> <u>11-25-17</u>	<u>HC</u> <u>11-25-17</u>	<u>HC</u> <u>HN</u> <u>11-27-17</u>	
☐	B7K0145-BS1 <u>↓</u>	<u>↓</u>	<u>↓</u>	<u>0.250</u> ✓				
☒	B7K0145-MS1 1701749-09	<u>296.71</u>	<u>28.23</u>	<u>0.26848</u> ✓				
☒	B7K0145-MSD1 1701749-09	<u>305.03</u>	<u>27.73</u>	<u>0.27730</u> ✓				
☒	1701749-01	<u>289.08</u>	<u>27.87</u>	<u>0.26121</u> ✓				
☐	1701749-02	<u>294.71</u>	<u>27.20</u>	<u>0.26751</u> ✓				
☒	1701749-03	<u>284.47</u>	<u>28.42</u>	<u>0.25605</u> ✓				
☐	1701749-04	<u>293.06</u>	<u>27.40</u>	<u>0.26566</u> ✓				
☐	1701749-05	<u>289.47</u>	<u>27.47</u>	<u>0.26200</u> ✓				
☐	1701749-06	<u>290.72</u>	<u>27.62</u>	<u>0.26310</u> ✓				
☐	1701749-07	<u>291.89</u>	<u>28.13</u>	<u>0.26376</u> ✓				
☐	1701749-08	<u>292.96</u>	<u>27.58</u>	<u>0.26538</u> ✓				
☒	1701749-09	<u>299.97</u>	<u>28.17</u>	<u>0.27180</u> ✓				
☐	1701749-10	<u>297.37</u>	<u>26.94</u>	<u>0.27043</u> ✓				
☐	1701749-11	<u>287.02</u>	<u>28.07</u>	<u>0.25895</u> ✓				
☐	1701749-12	<u>293.40</u>	<u>26.97</u>	<u>0.26643</u> ✓				

SS/IS: <u>17J3101, 50µL (U2)</u>	SPE Chem: <u>Strata X33 500mg</u>	Notes: <u>(A) 1.25g of Trizma added to QC 11/22/17 ST</u>
NS: <u>17I2602, 20µL</u>	Lot#: <u>517-001946</u>	
IS/RS: <u>17J3102, 50µL (U)</u>	Ele SOLV: <u>MeOH</u>	
	Lot#: <u>DT006</u>	
Final Volume(s): <u>1mL</u>		

Comments: Assume 1 g = 1 mL

Cen = Centrifuged
Work Order 1701749

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7K0145

Chemist: JTC

Prep Date/Time: 22-Nov-17 12:18

11-25-17 11:30
JTC

Prepared using: LCMS - SPE Extraction-LCMS

		BalanceID: <u>HRMS-8</u>						
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE	
☒	1701749-13	296.75	28.31	0.26844 ✓	JTC KC 11-25-17	JTC 11-25-17	JTC HN 11-27-17	
☐	1701749-14	297.89	27.62	0.27027 ✓	↓	↓	↓	
☐	1701749-15	293.12	28.20	0.26492 ✓				
☐	1701749-16	295.88	27.75	0.26813 ✓				
☐	1701749-17	292.43	28.31	0.26412 ✓				
☐	1701749-18	291.86	26.95	0.26491				

SS/IS: <u>17J3101, 59µL (V2)</u> NS: <u>17I2602, 20µL</u> IS/RS: <u>17J3102, 59µL (V1)</u>	SPE Chem: <u>Strata X-33µm 80Å</u> Lot#: <u>S17-001946</u> Ele SOLV: <u>MeOH</u> Lot#: <u>DT006</u> Final Volume(s): <u>1mL</u>	Notes:
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Comments: Assume 1 g = 1 mL

Cen = Centrifuged
Work Order 1701749

Batch: B7K0145

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701749-01	0.26121 ✓	NA	MA	1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-02	0.26751 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-03	0.25605 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-04	0.26566 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-05	0.262 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-06	0.2631 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-07	0.26376 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-08	0.26538 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-09	0.2718 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-10	0.27043 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-11	0.25895 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-12	0.26643 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-13	0.26844 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-14	0.27027 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-15	0.26492 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-16	0.26813 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-17	0.26412 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
1701749-18	0.26491 ✓			1000	25-Nov-17 11:30	HAC			Drinking Water	537 PFAS DW DoD Unmoc
B7K0145-BLK1	0.25			1000	25-Nov-17 11:30	HAC				QC
B7K0145-BS1	0.25			1000	25-Nov-17 11:30	HAC	1712602	20		QC
B7K0145-MS1	0.26848 ✓			1000	25-Nov-17 11:30	HAC	1712602	20		QC
B7K0145-MSD1	0.2773 ✓			1000	25-Nov-17 11:30	HAC	1712602	20		QC

HC
11-27-17

SAMPLE DATA –EPA METHOD 537

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-31.qld

Last Altered: Tuesday, November 28, 2017 11:50:05 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:50:24 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_31, Date: 27-Nov-2017, Time: 17:12:40, ID: B7K0145-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		9.28e3		0.2500	3.11				
2	2 PFOA	413 > 368.7	1.36e1	8.44e3		0.2500	4.41	4.41	0.0161	0.0764	
3	3 PFOS	499 >79.9		9.28e3		0.2500	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.91e3	8.44e3	0.451	0.2500	3.47	3.48	4.64	41.1	102.8
5	5 13C2-PFDA	515.1 > 469.9	4.16e3	8.44e3	0.590	0.2500	5.04	5.04	4.93	33.4	83.5
6	6 13C2-PFOA	414.9 > 369.7	8.44e3	8.44e3	1.000	0.2500	4.41	4.41	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.28e3	9.28e3	1.000	0.2500	4.81	4.81	28.7	115	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-31.qld

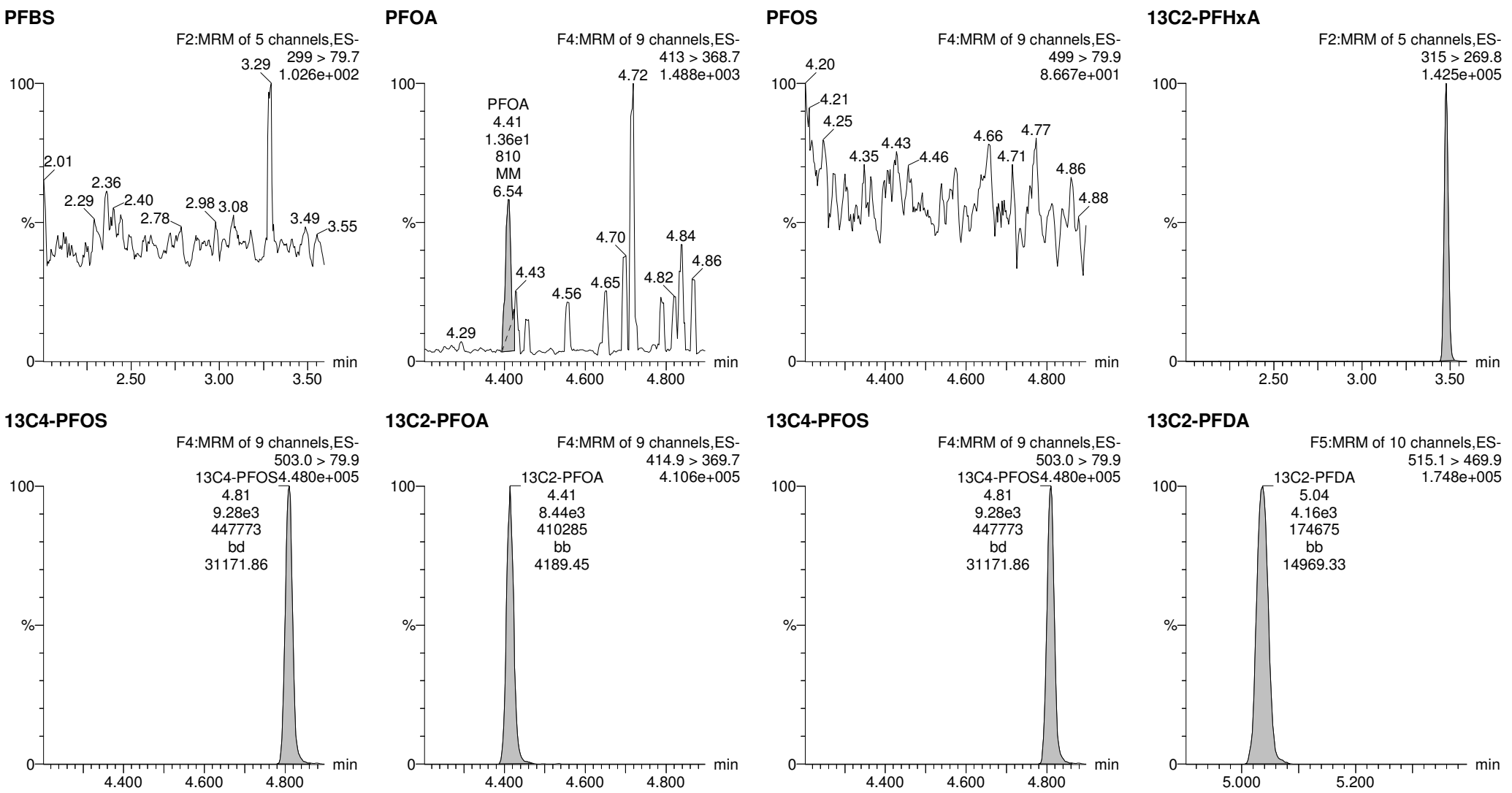
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_31, Date: 27-Nov-2017, Time: 17:12:40, ID: B7K0145-BLK1 LRB 0.25, Description: LRB



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-29.qld

Last Altered: Tuesday, November 28, 2017 11:45:38 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:48:36 Pacific Standard Time

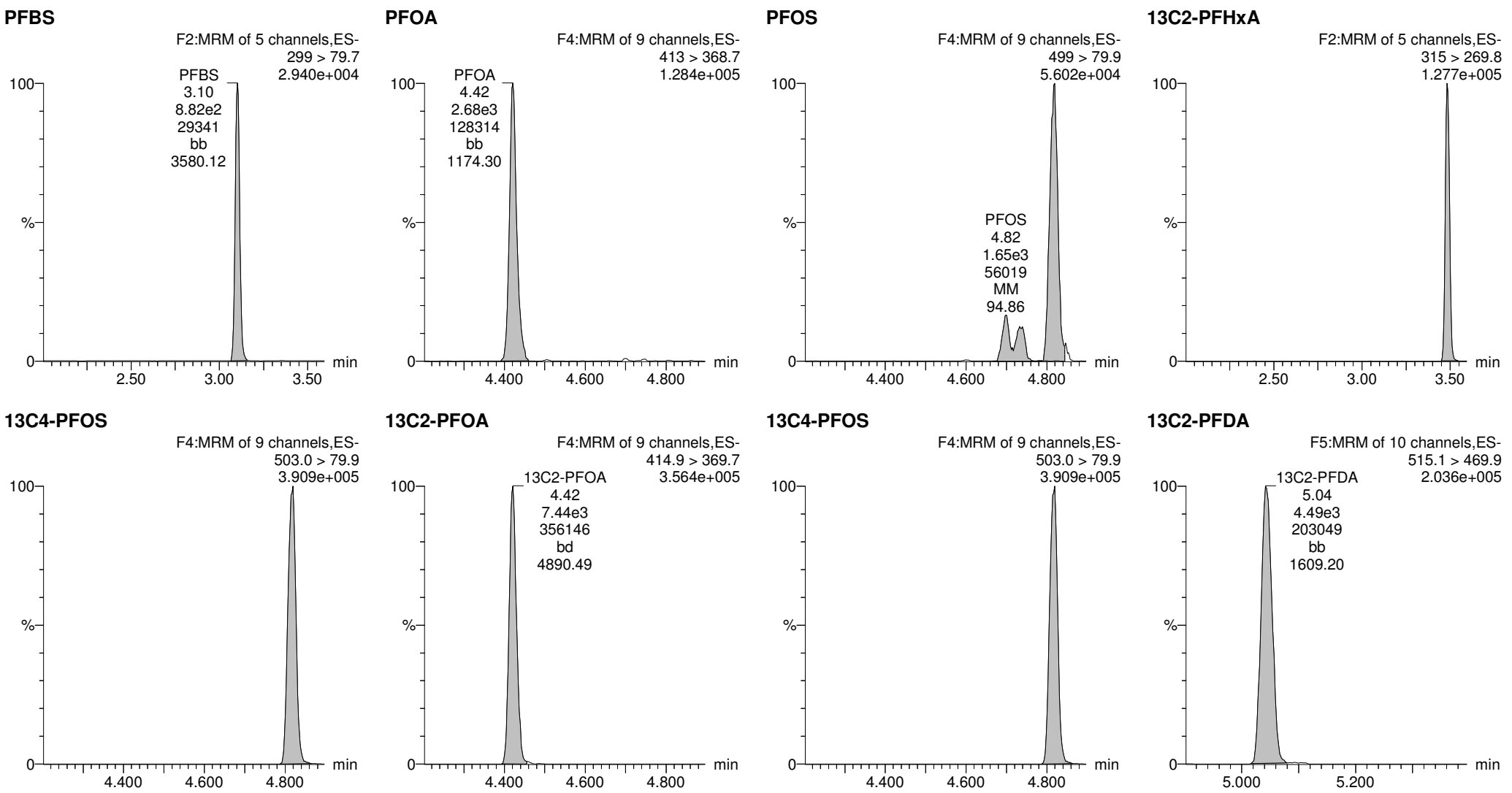
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_29, **Date:** 27-Nov-2017, **Time:** 16:47:45, **ID:** B7K0145-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	8.82e2	8.70e3		0.2500	3.12	3.10	2.91	13.1	74.3
2	2	PFOA	413 > 368.7	2.68e3	7.44e3		0.2500	4.42	4.42	3.60	17.1	85.7
3	3	PFOS	499 >79.9	1.65e3	8.70e3		0.2500	4.82	4.82	5.45	18.4	99.7
4	4	13C2-PFHxA	315 > 269.8	3.53e3	7.44e3	0.451	0.2500	3.48	3.48	4.75	42.1	105.4
5	5	13C2-PFDA	515.1 > 469.9	4.49e3	7.44e3	0.590	0.2500	5.05	5.04	6.03	40.9	102.2
6	6	13C2-PFOA	414.9 > 369.7	7.44e3	7.44e3	1.000	0.2500	4.41	4.42	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	8.70e3	8.70e3	1.000	0.2500	4.81	4.82	28.7	115	100.0

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30
Name: 171127G1_29, **Date:** 27-Nov-2017, **Time:** 16:47:45, **ID:** B7K0145-BS1 LFB 0.25, **Description:** LFB



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-34.qld

Last Altered: Tuesday, November 28, 2017 11:55:33 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:55:53 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_34, Date: 27-Nov-2017, Time: 17:50:02, ID: 1701749-01 CH-AT-1RW37-1117 0.26121, Description: CH-AT-1RW37-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.55e3		0.2612	3.11				
2	2 PFOA	413 > 368.7	5.98e1	8.14e3		0.2612	4.41	4.41	0.0734	0.334	
3	3 PFOS	499 >79.9		8.55e3		0.2612	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.18e3	8.14e3	0.451	0.2612	3.47	3.47	5.14	43.6	113.9
5	5 13C2-PFDA	515.1 > 469.9	4.42e3	8.14e3	0.590	0.2612	5.04	5.04	5.43	35.2	92.0
6	6 13C2-PFOA	414.9 > 369.7	8.14e3	8.14e3	1.000	0.2612	4.41	4.41	10.0	38.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.55e3	8.55e3	1.000	0.2612	4.81	4.81	28.7	110	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-34.qld

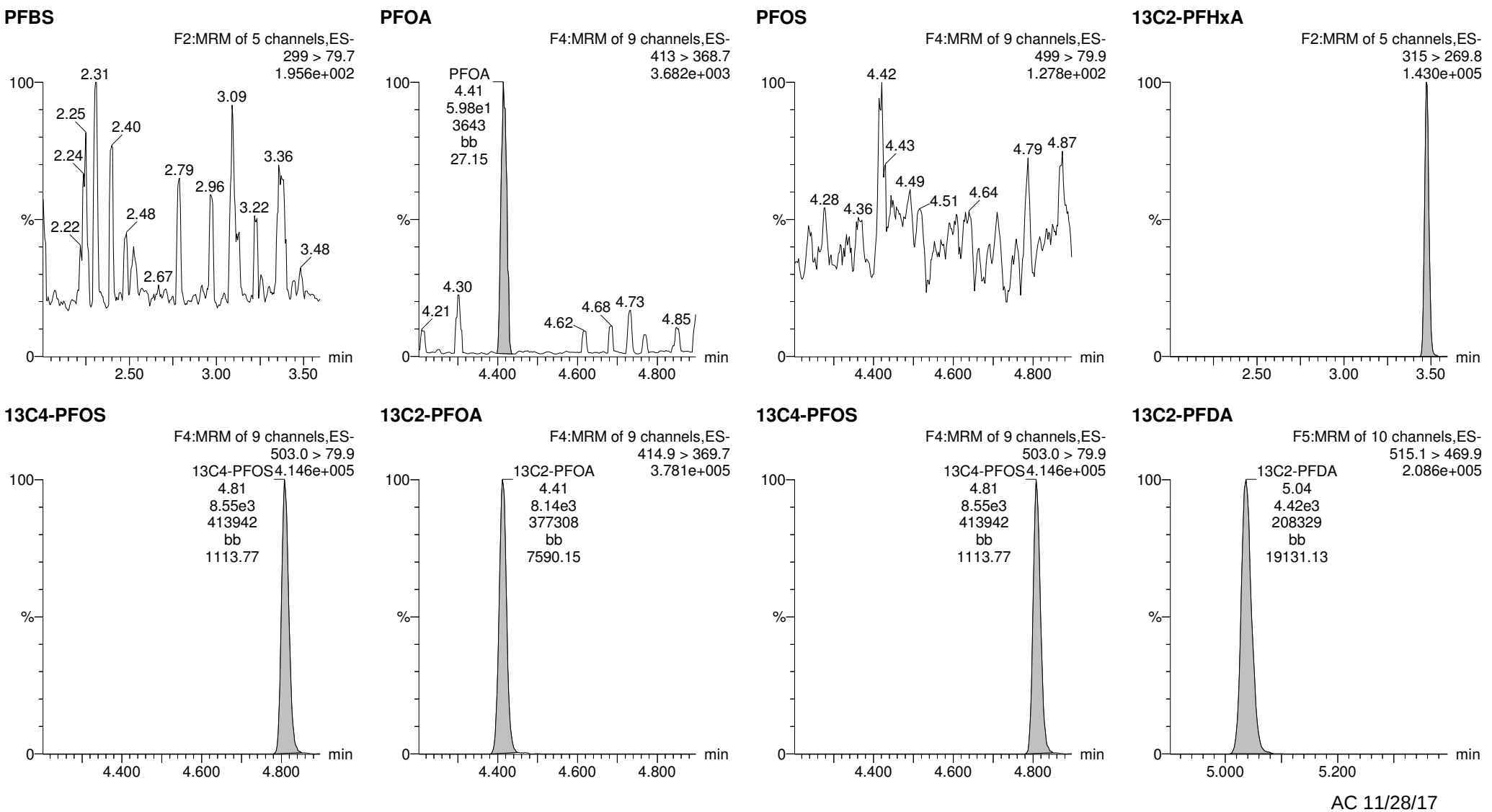
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Printed: Tuesday, November 28, 2017 11:55:53 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_34, Date: 27-Nov-2017, Time: 17:50:02, ID: 1701749-01 CH-AT-1RW37-1117 0.26121, Description: CH-AT-1RW37-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-35.qld

Last Altered: Tuesday, November 28, 2017 11:57:02 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:57:21 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_35, Date: 27-Nov-2017, Time: 18:02:30, ID: 1701749-02 CH-AT-1FB37-1117 0.26751, Description: CH-AT-1FB37-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.65e3		0.2675	3.11				
2	2 PFOA	413 > 368.7	5.75e1	8.74e3		0.2675	4.41	4.41	0.0657	0.292	
3	3 PFOS	499 >79.9		9.65e3		0.2675	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.91e3	8.74e3	0.451	0.2675	3.47	3.47	4.47	37.1	99.2
5	5 13C2-PFDA	515.1 > 469.9	4.71e3	8.74e3	0.590	0.2675	5.04	5.04	5.39	34.1	91.3
6	6 13C2-PFOA	414.9 > 369.7	8.74e3	8.74e3	1.000	0.2675	4.41	4.41	10.0	37.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.65e3	9.65e3	1.000	0.2675	4.81	4.81	28.7	107	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-35.qld

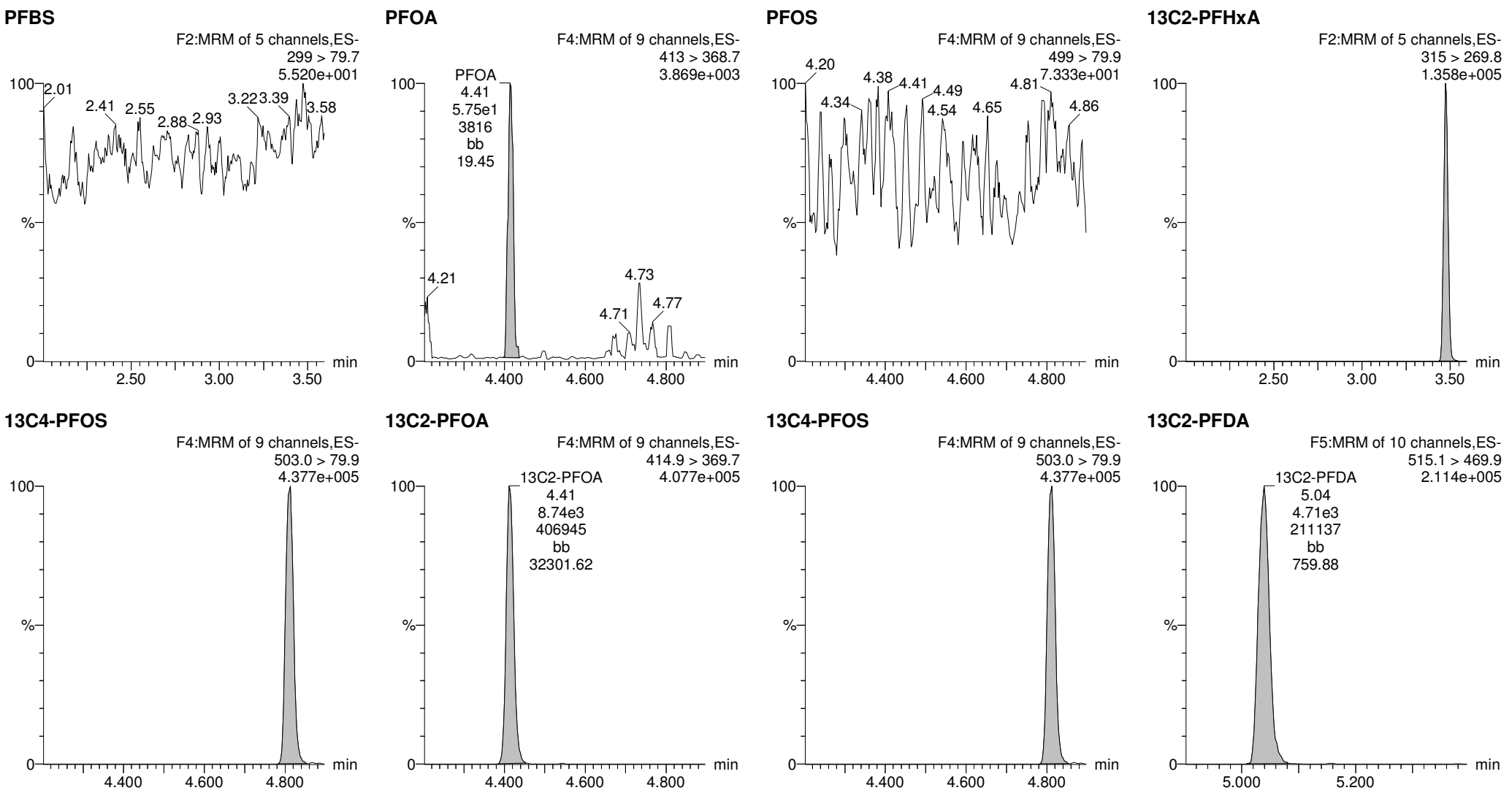
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Printed: Tuesday, November 28, 2017 11:57:21 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_35, Date: 27-Nov-2017, Time: 18:02:30, ID: 1701749-02 CH-AT-1FB37-1117 0.26751, Description: CH-AT-1FB37-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-36.qld

Last Altered: Tuesday, November 28, 2017 11:58:08 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:58:24 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_36, Date: 27-Nov-2017, Time: 18:14:54, ID: 1701749-03 CH-AT-1RW38-1117 0.25605, Description: CH-AT-1RW38-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.26e3		0.2561	3.11				
2	2 PFOA	413 > 368.7	2.62e1	7.42e3		0.2561	4.41	4.42	0.0353	0.164	
3	3 PFOS	499 >79.9		8.26e3		0.2561	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.78e3	7.42e3	0.451	0.2561	3.47	3.47	5.10	44.1	113.0
5	5 13C2-PFDA	515.1 > 469.9	3.99e3	7.42e3	0.590	0.2561	5.04	5.04	5.37	35.6	91.1
6	6 13C2-PFOA	414.9 > 369.7	7.42e3	7.42e3	1.000	0.2561	4.41	4.41	10.0	39.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.26e3	8.26e3	1.000	0.2561	4.81	4.81	28.7	112	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-36.qld

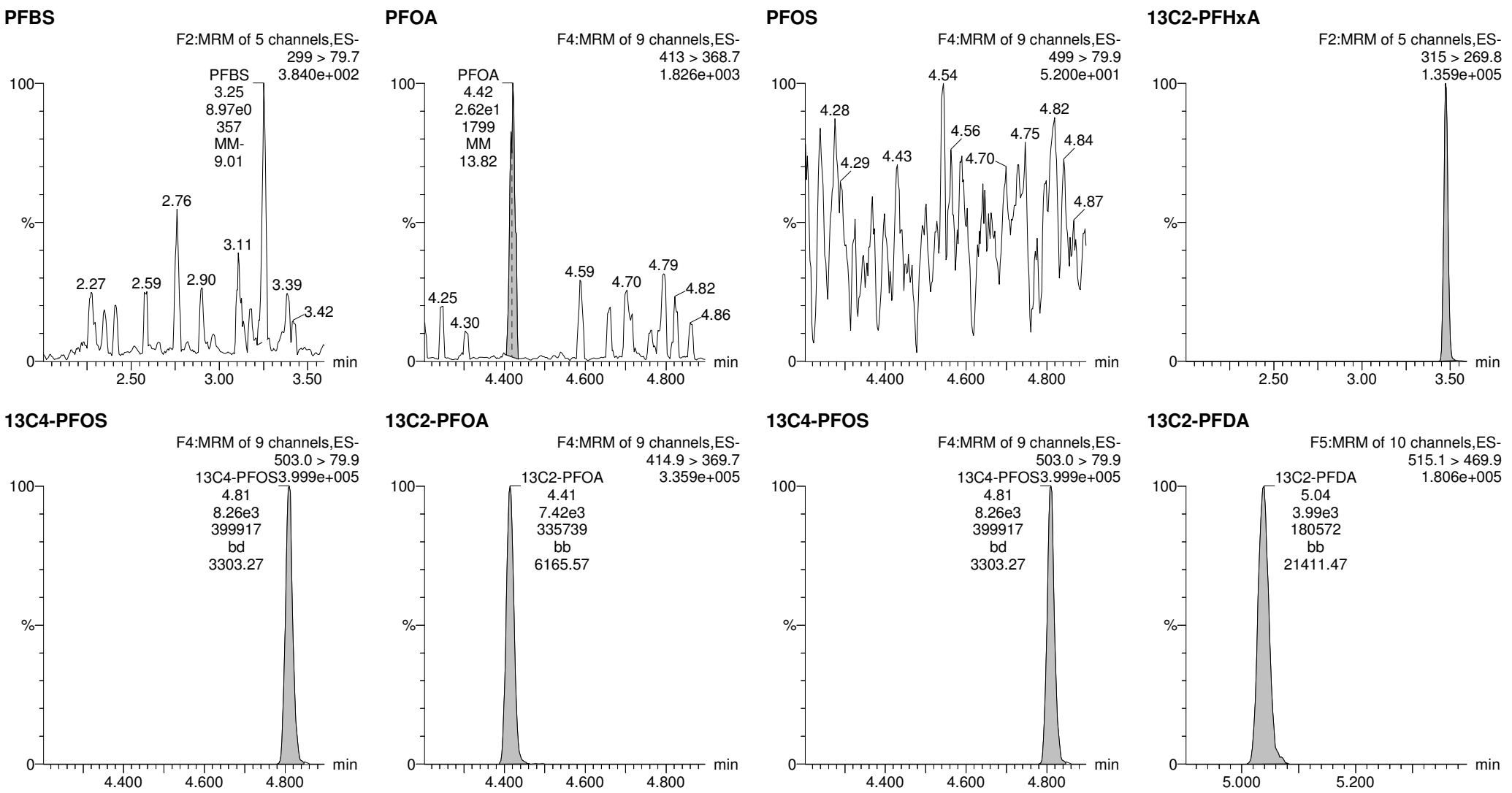
Last Altered: Tuesday, November 28, 2017 11:58:08 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:58:24 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_36, Date: 27-Nov-2017, Time: 18:14:54, ID: 1701749-03 CH-AT-1RW38-1117 0.25605, Description: CH-AT-1RW38-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-37.qld

Last Altered: Tuesday, November 28, 2017 11:59:18 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:59:37 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_37, Date: 27-Nov-2017, Time: 18:27:19, ID: 1701749-04 CH-AT-1FB38-1117 0.26566, Description: CH-AT-1FB38-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.34e3		0.2657	3.11				
2	2 PFOA	413 > 368.7		8.01e3		0.2657	4.41				
3	3 PFOS	499 >79.9		8.34e3		0.2657	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.25e3	8.01e3	0.451	0.2657	3.47	3.48	5.31	44.3	117.8
5	5 13C2-PFDA	515.1 > 469.9	4.14e3	8.01e3	0.590	0.2657	5.04	5.04	5.17	33.0	87.6
6	6 13C2-PFOA	414.9 > 369.7	8.01e3	8.01e3	1.000	0.2657	4.41	4.41	10.0	37.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.34e3	8.34e3	1.000	0.2657	4.81	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-37.qld

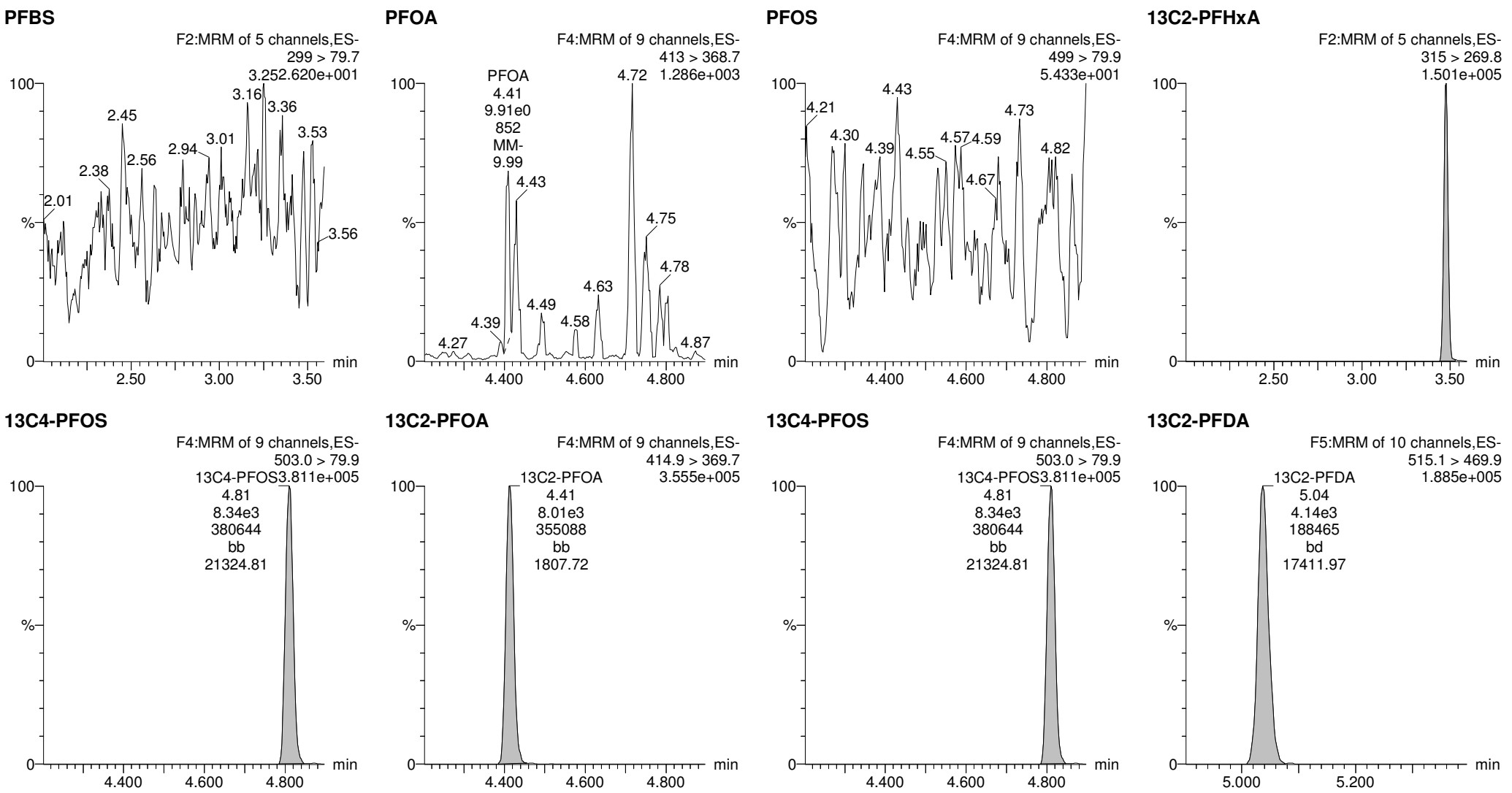
Last Altered: Tuesday, November 28, 2017 11:59:18 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:59:37 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_37, Date: 27-Nov-2017, Time: 18:27:19, ID: 1701749-04 CH-AT-1FB38-1117 0.26566, Description: CH-AT-1FB38-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-38.qld

Last Altered: Tuesday, November 28, 2017 12:03:51 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:04:06 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_38, Date: 27-Nov-2017, Time: 18:39:44, ID: 1701749-05 CH-AT-1RW39-1117 0.262, Description: CH-AT-1RW39-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.53e3		0.2620	3.11				
2	2 PFOA	413 > 368.7		8.98e3		0.2620	4.41				
3	3 PFOS	499 >79.9		9.53e3		0.2620	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.32e3	8.98e3	0.451	0.2620	3.47	3.47	4.81	40.7	106.6
5	5 13C2-PFDA	515.1 > 469.9	4.76e3	8.98e3	0.590	0.2620	5.04	5.04	5.31	34.3	89.9
6	6 13C2-PFOA	414.9 > 369.7	8.98e3	8.98e3	1.000	0.2620	4.41	4.41	10.0	38.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.53e3	9.53e3	1.000	0.2620	4.81	4.81	28.7	110	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-38.qld

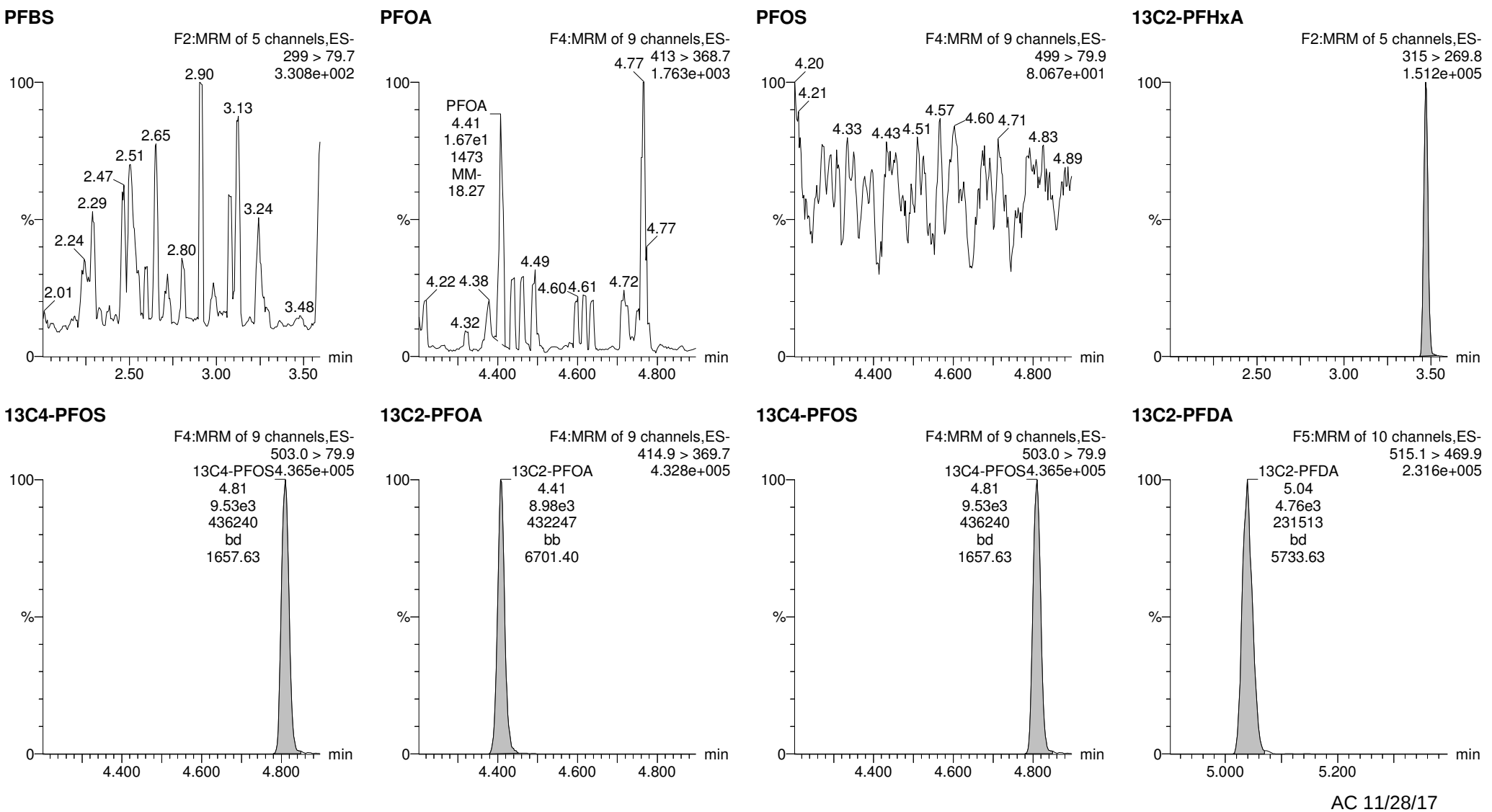
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Printed: Tuesday, November 28, 2017 12:04:06 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_38, Date: 27-Nov-2017, Time: 18:39:44, ID: 1701749-05 CH-AT-1RW39-1117 0.262, Description: CH-AT-1RW39-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-39.qld

Last Altered: Tuesday, November 28, 2017 12:05:32 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:05:48 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_39, Date: 27-Nov-2017, Time: 18:52:10, ID: 1701749-06 CH-AT-1FB39-1117 0.2631, Description: CH-AT-1FB39-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.30e3		0.2631	3.11				
2	2 PFOA	413 > 368.7	2.08e1	8.44e3		0.2631	4.41	4.40	0.0247	0.112	
3	3 PFOS	499 >79.9		8.30e3		0.2631	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.97e3	8.44e3	0.451	0.2631	3.47	3.47	4.70	39.6	104.3
5	5 13C2-PFDA	515.1 > 469.9	4.67e3	8.44e3	0.590	0.2631	5.04	5.04	5.54	35.7	93.8
6	6 13C2-PFOA	414.9 > 369.7	8.44e3	8.44e3	1.000	0.2631	4.41	4.41	10.0	38.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.30e3	8.30e3	1.000	0.2631	4.81	4.81	28.7	109	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-39.qld

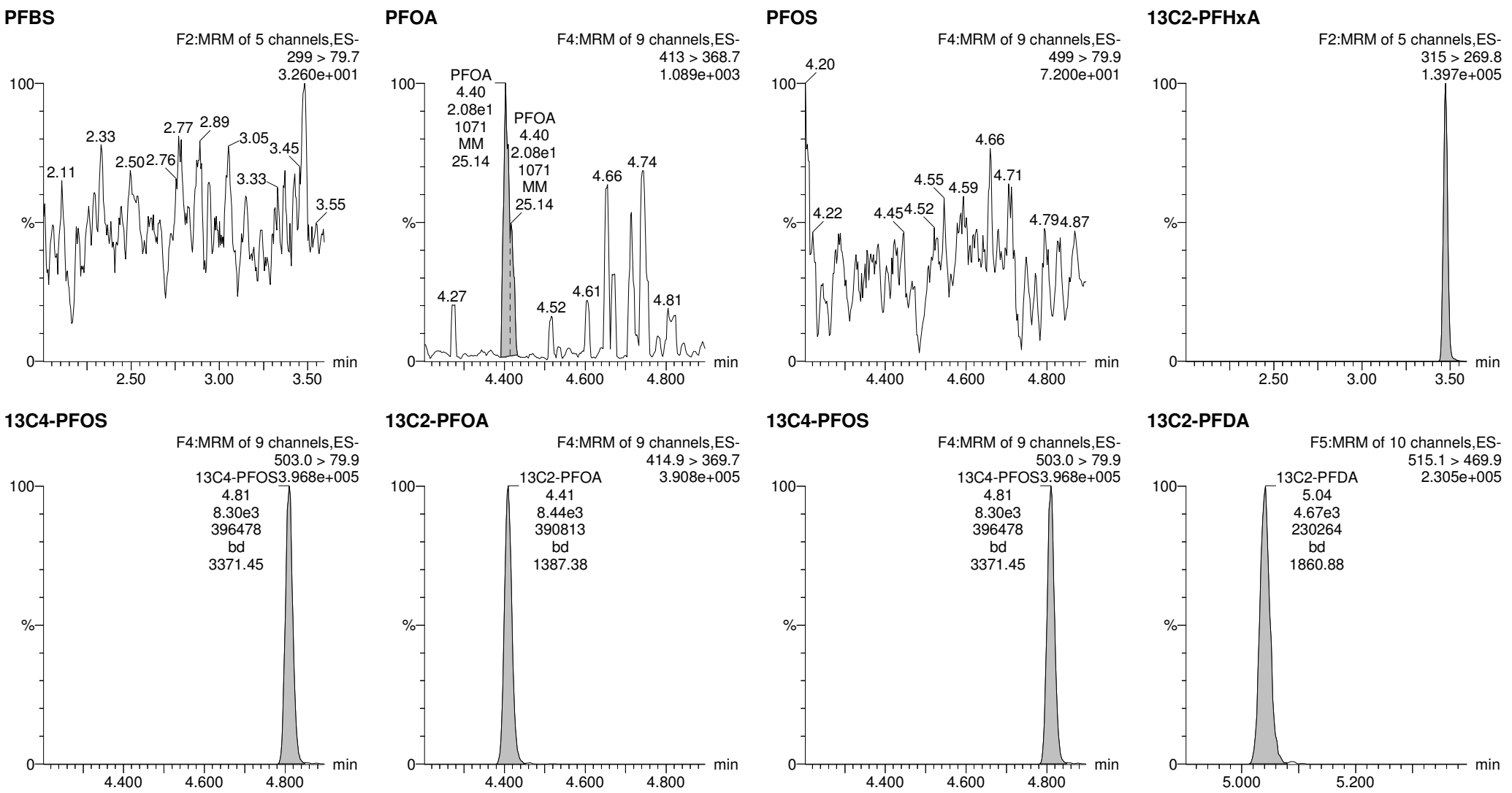
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_39, Date: 27-Nov-2017, Time: 18:52:10, ID: 1701749-06 CH-AT-1FB39-1117 0.2631, Description: CH-AT-1FB39-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-40.qld

Last Altered: Tuesday, November 28, 2017 12:06:55 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:07:11 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_40, Date: 27-Nov-2017, Time: 19:04:36, ID: 1701749-07 CH-AT-1RW40-1117 0.26376, Description: CH-AT-1RW40-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.40e3		0.2638	3.11				
2	2 PFOA	413 > 368.7	2.43e3	8.73e3		0.2638	4.41	4.41	2.78	12.5	
3	3 PFOS	499 >79.9	1.95e2	9.40e3		0.2638	4.81	4.81	0.596	1.91	
4	4 13C2-PFHxA	315 > 269.8	4.71e3	8.73e3	0.451	0.2638	3.47	3.47	5.40	45.4	119.6
5	5 13C2-PFDA	515.1 > 469.9	4.57e3	8.73e3	0.590	0.2638	5.04	5.04	5.23	33.6	88.7
6	6 13C2-PFOA	414.9 > 369.7	8.73e3	8.73e3	1.000	0.2638	4.41	4.41	10.0	37.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.40e3	9.40e3	1.000	0.2638	4.81	4.81	28.7	109	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-40.qld

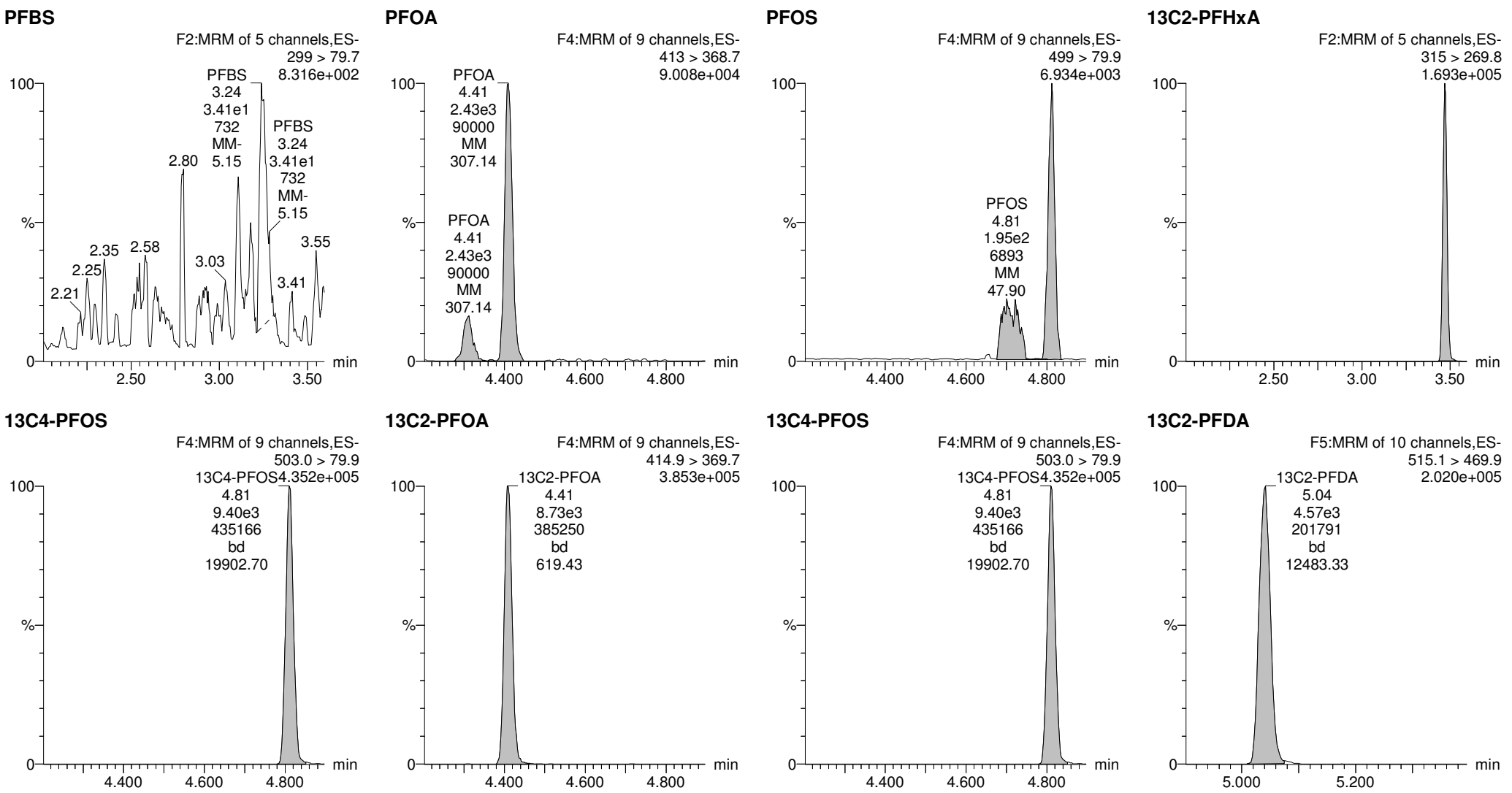
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_40, Date: 27-Nov-2017, Time: 19:04:36, ID: 1701749-07 CH-AT-1RW40-1117 0.26376, Description: CH-AT-1RW40-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-41.qld

Last Altered: Tuesday, November 28, 2017 12:07:57 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:08:15 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_41, Date: 27-Nov-2017, Time: 19:17:03, ID: 1701749-08 CH-AT-1FB40-1117 0.26538, Description: CH-AT-1FB40-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.63e3		0.2654	3.11				
2	2 PFOA	413 > 368.7	3.61e1	7.70e3		0.2654	4.41	4.41	0.0469	0.210	
3	3 PFOS	499 >79.9		8.63e3		0.2654	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.18e3	7.70e3	0.451	0.2654	3.47	3.47	5.43	45.4	120.4
5	5 13C2-PFDA	515.1 > 469.9	4.19e3	7.70e3	0.590	0.2654	5.04	5.04	5.45	34.8	92.3
6	6 13C2-PFOA	414.9 > 369.7	7.70e3	7.70e3	1.000	0.2654	4.41	4.41	10.0	37.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.63e3	8.63e3	1.000	0.2654	4.81	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-41.qld

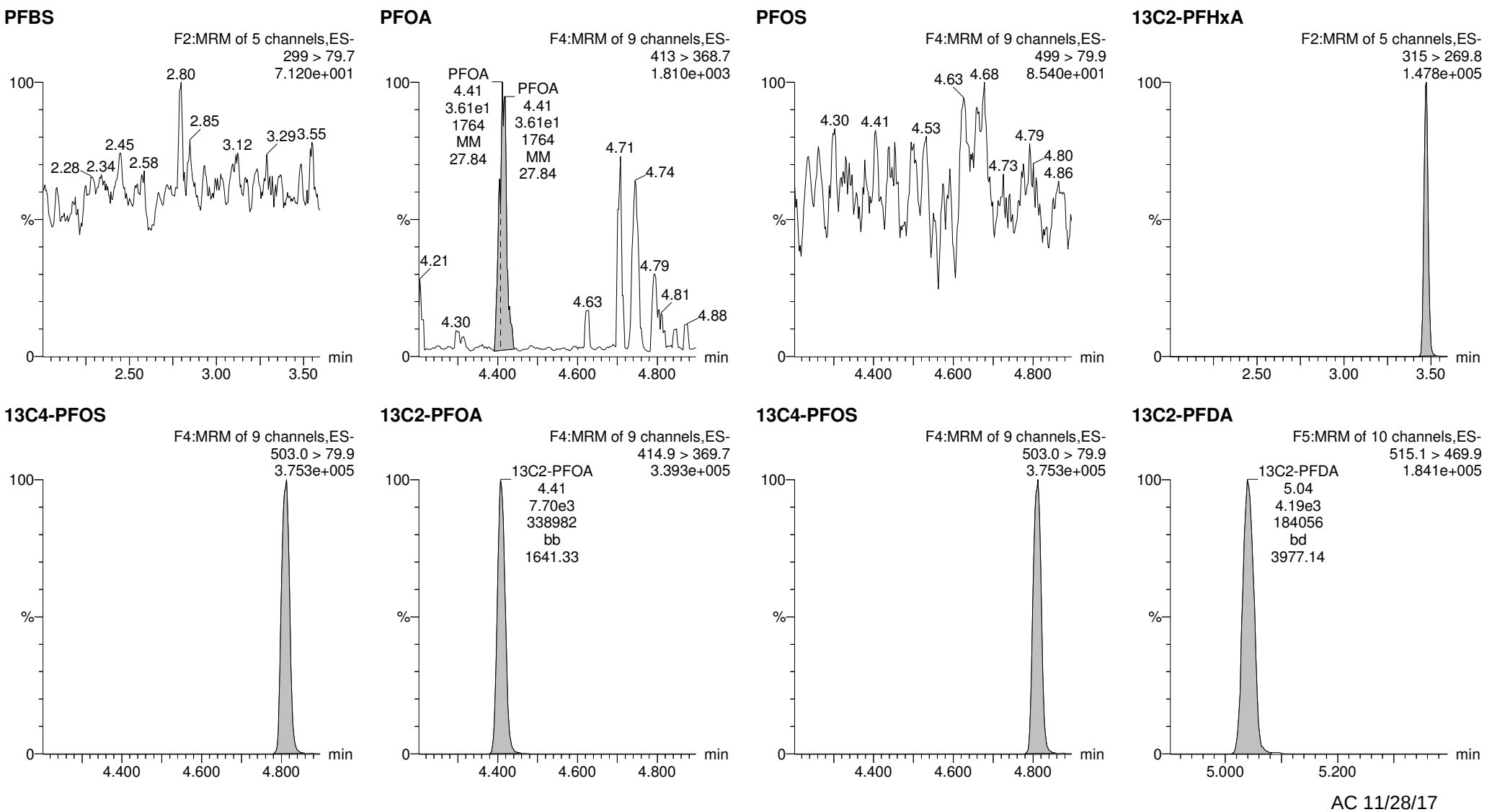
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_41, Date: 27-Nov-2017, Time: 19:17:03, ID: 1701749-08 CH-AT-1FB40-1117 0.26538, Description: CH-AT-1FB40-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-42.qld

Last Altered: Tuesday, November 28, 2017 12:09:05 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:09:46 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_42, Date: 27-Nov-2017, Time: 19:29:31, ID: 1701749-09 CH-AT-1RW41-1117 0.2718, Description: CH-AT-1RW41-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.85e3		0.2718	3.11				
2	2 PFOA	413 > 368.7	6.28e1	8.51e3		0.2718	4.41	4.41	0.0737	0.323	
3	3 PFOS	499 >79.9		8.85e3		0.2718	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.64e3	8.51e3	0.451	0.2718	3.47	3.47	5.45	44.5	120.9
5	5 13C2-PFDA	515.1 > 469.9	4.42e3	8.51e3	0.590	0.2718	5.04	5.04	5.19	32.4	88.0
6	6 13C2-PFOA	414.9 > 369.7	8.51e3	8.51e3	1.000	0.2718	4.41	4.41	10.0	36.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.85e3	8.85e3	1.000	0.2718	4.81	4.81	28.7	106	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-42.qld

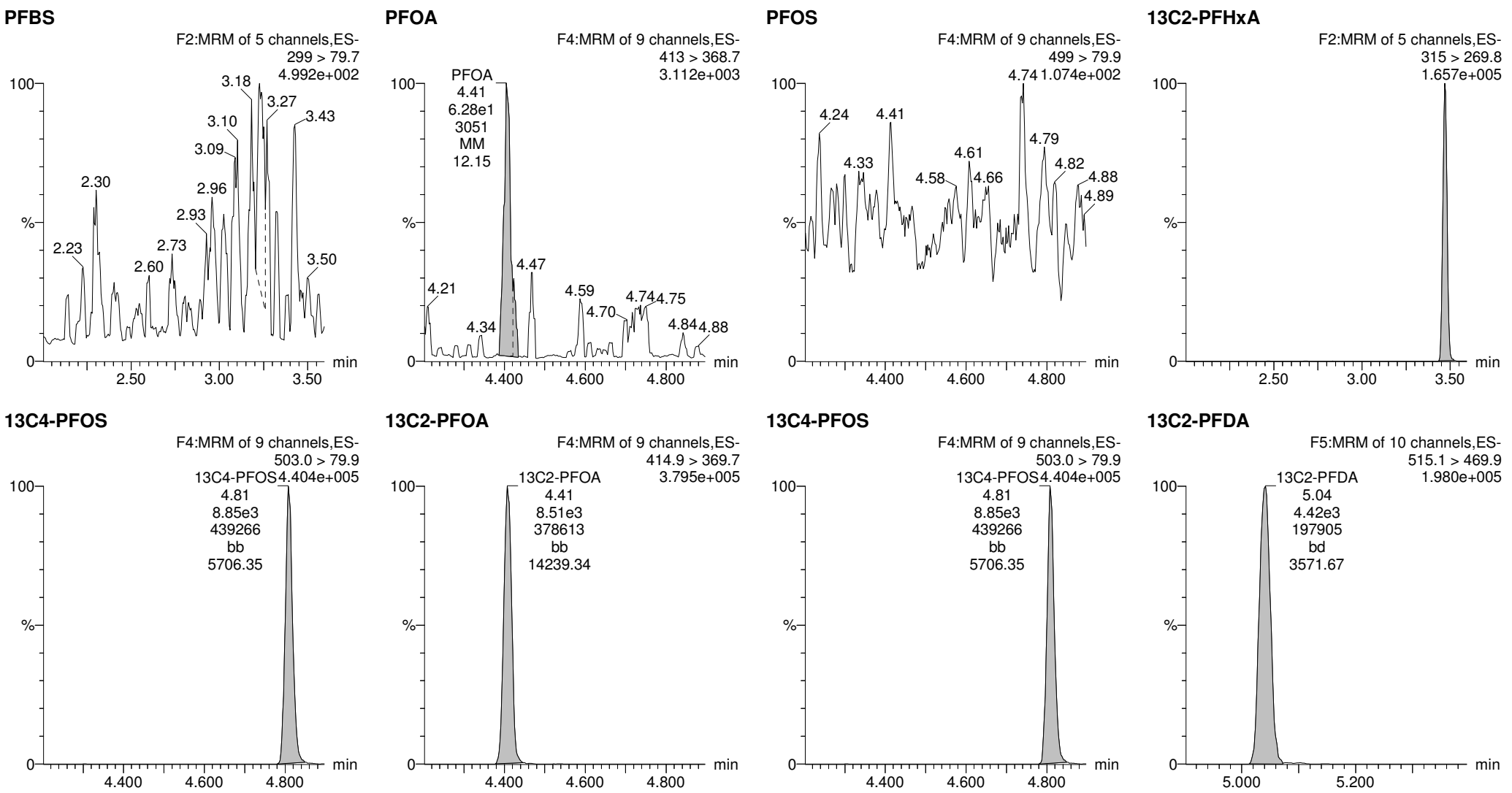
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Printed: Tuesday, November 28, 2017 12:09:46 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_42, Date: 27-Nov-2017, Time: 19:29:31, ID: 1701749-09 CH-AT-1RW41-1117 0.2718, Description: CH-AT-1RW41-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-32.qld

Last Altered: Tuesday, November 28, 2017 11:52:18 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:52:36 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_32, Date: 27-Nov-2017, Time: 17:25:07, ID: B7K0145-MS1 LFSM 0.26848, Description: LFSM

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	9.47e2	8.11e3		0.2685	3.11	3.11	3.35	14.1	
2	2 PFOA	413 > 368.7	3.75e3	8.44e3		0.2685	4.42	4.42	4.44	19.7	
3	3 PFOS	499 >79.9	1.62e3	8.11e3		0.2685	4.81	4.81	5.74	18.1	
4	4 13C2-PFHxA	315 > 269.8	3.96e3	8.44e3	0.451	0.2685	3.48	3.47	4.69	38.8	104.1
5	5 13C2-PFDA	515.1 > 469.9	4.10e3	8.44e3	0.590	0.2685	5.05	5.04	4.85	30.6	82.2
6	6 13C2-PFOA	414.9 > 369.7	8.44e3	8.44e3	1.000	0.2685	4.41	4.42	10.0	37.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.11e3	8.11e3	1.000	0.2685	4.81	4.81	28.7	107	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-32.qld

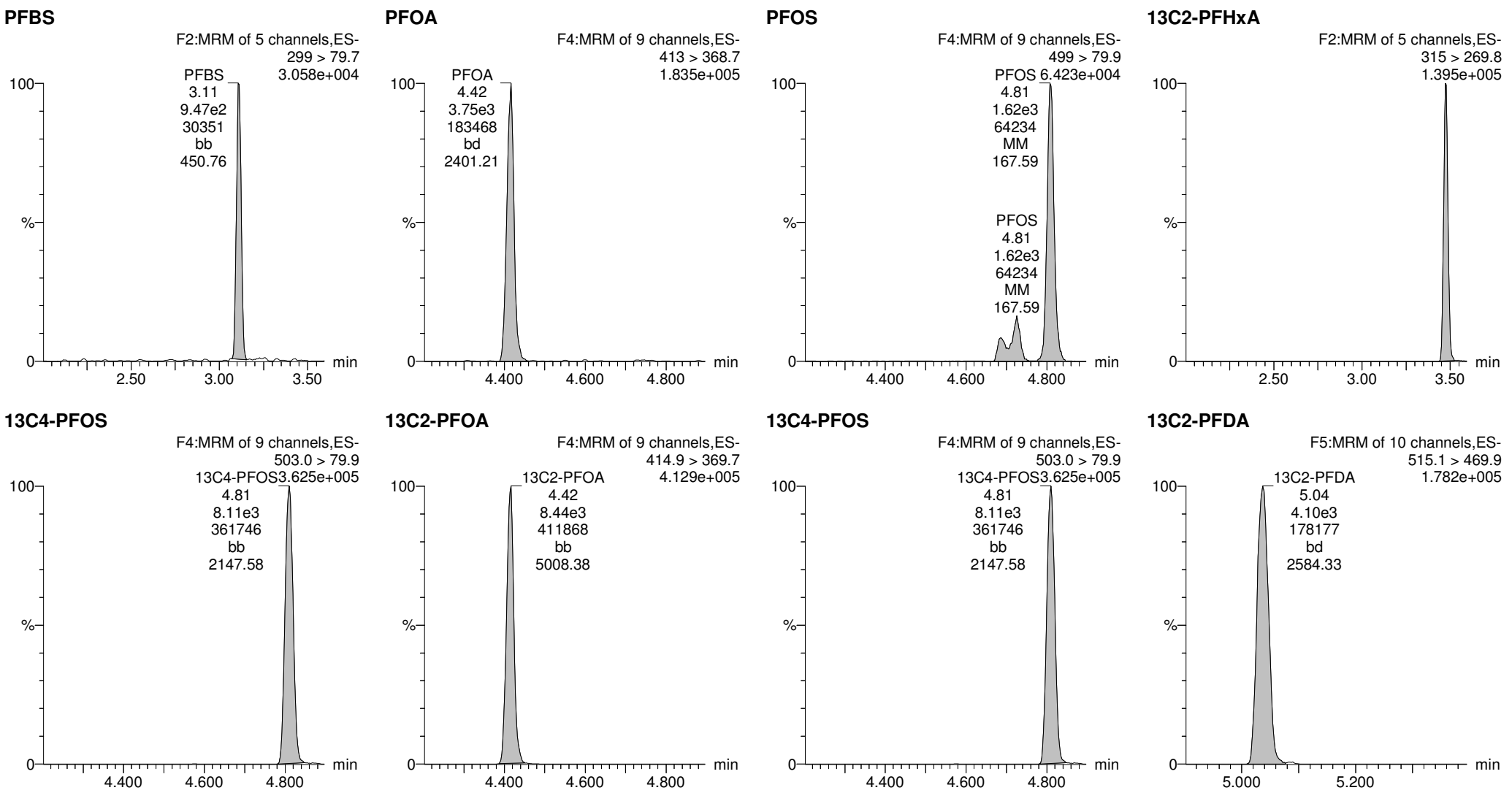
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Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_32, Date: 27-Nov-2017, Time: 17:25:07, ID: B7K0145-MS1 LFSM 0.26848, Description: LFSM



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-33.qld

Last Altered: Tuesday, November 28, 2017 11:53:40 Pacific Standard Time

Printed: Tuesday, November 28, 2017 11:54:03 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_33, Date: 27-Nov-2017, Time: 17:37:34, ID: B7K0145-MSD1 LFSMD 0.2773, Description: LFSMD

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.20e3	8.72e3		0.2773	3.11	3.11	3.94	16.0	
2	2 PFOA	413 > 368.7	3.77e3	8.49e3		0.2773	4.41	4.41	4.45	19.1	
3	3 PFOS	499 >79.9	1.60e3	8.72e3		0.2773	4.81	4.81	5.26	16.0	
4	4 13C2-PFHxA	315 > 269.8	4.16e3	8.49e3	0.451	0.2773	3.47	3.47	4.91	39.2	108.8
5	5 13C2-PFDA	515.1 > 469.9	4.28e3	8.49e3	0.590	0.2773	5.04	5.04	5.04	30.8	85.4
6	6 13C2-PFOA	414.9 > 369.7	8.49e3	8.49e3	1.000	0.2773	4.41	4.41	10.0	36.1	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.72e3	8.72e3	1.000	0.2773	4.81	4.81	28.7	103	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-33.qld

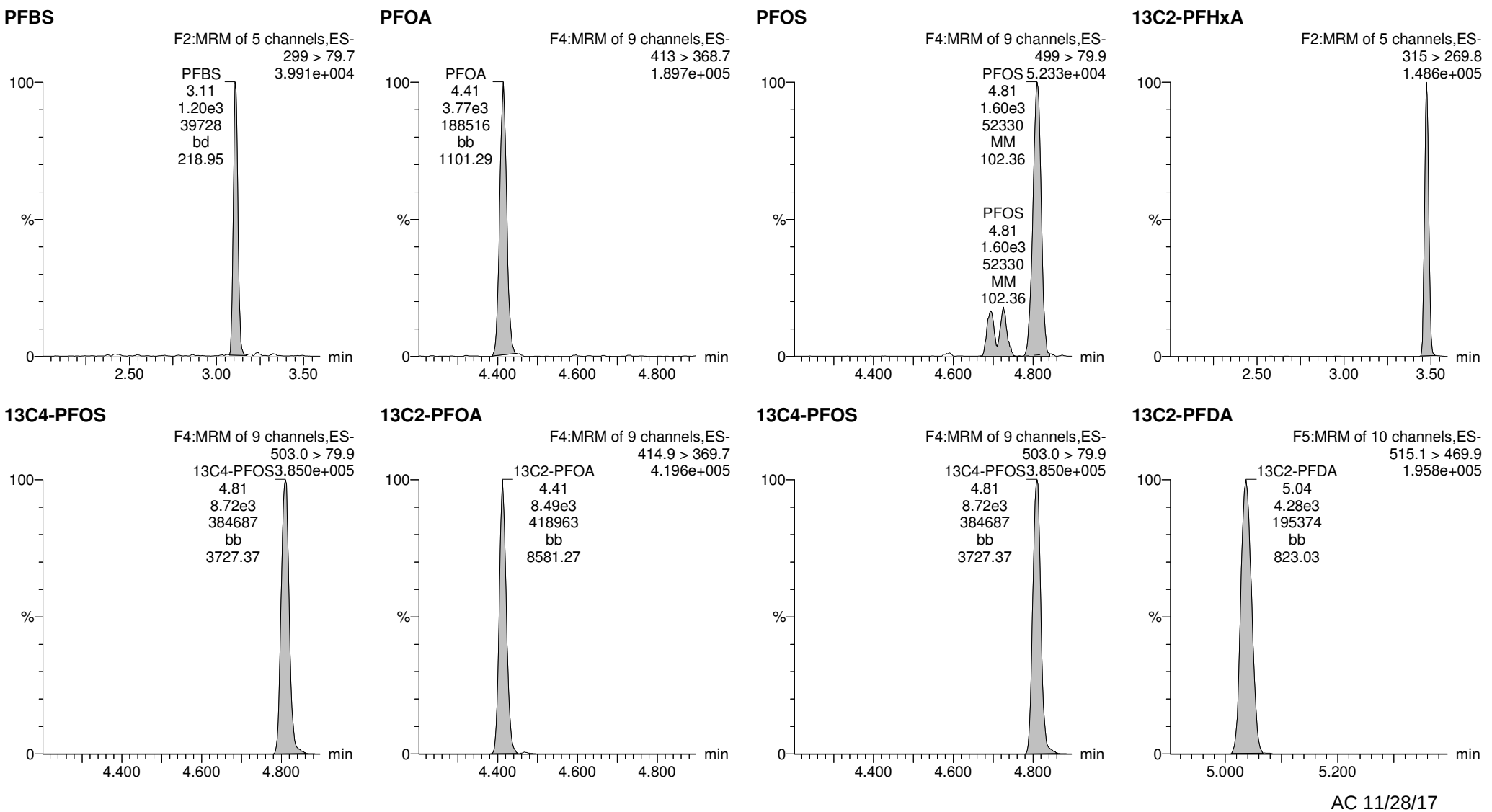
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Printed: Tuesday, November 28, 2017 11:54:03 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_33, Date: 27-Nov-2017, Time: 17:37:34, ID: B7K0145-MSD1 LFSMD 0.2773, Description: LFSMD



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-43.qld

Last Altered: Tuesday, November 28, 2017 12:10:35 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:10:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_43, Date: 27-Nov-2017, Time: 19:42:00, ID: 1701749-10 CH-AT-1FB41-1117 0.27043, Description: CH-AT-1FB41-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.77e3		0.2704	3.11				
2	2 PFOA	413 > 368.7	4.40e1	8.30e3		0.2704	4.41	4.41	0.0530	0.233	
3	3 PFOS	499 >79.9	1.75e0	8.77e3		0.2704	4.81	4.81	0.00571	0.0178	
4	4 13C2-PFHxA	315 > 269.8	4.37e3	8.30e3	0.451	0.2704	3.47	3.47	5.27	43.2	116.8
5	5 13C2-PFDA	515.1 > 469.9	4.16e3	8.30e3	0.590	0.2704	5.04	5.04	5.02	31.4	85.0
6	6 13C2-PFOA	414.9 > 369.7	8.30e3	8.30e3	1.000	0.2704	4.41	4.41	10.0	37.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.77e3	8.77e3	1.000	0.2704	4.81	4.81	28.7	106	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-43.qld

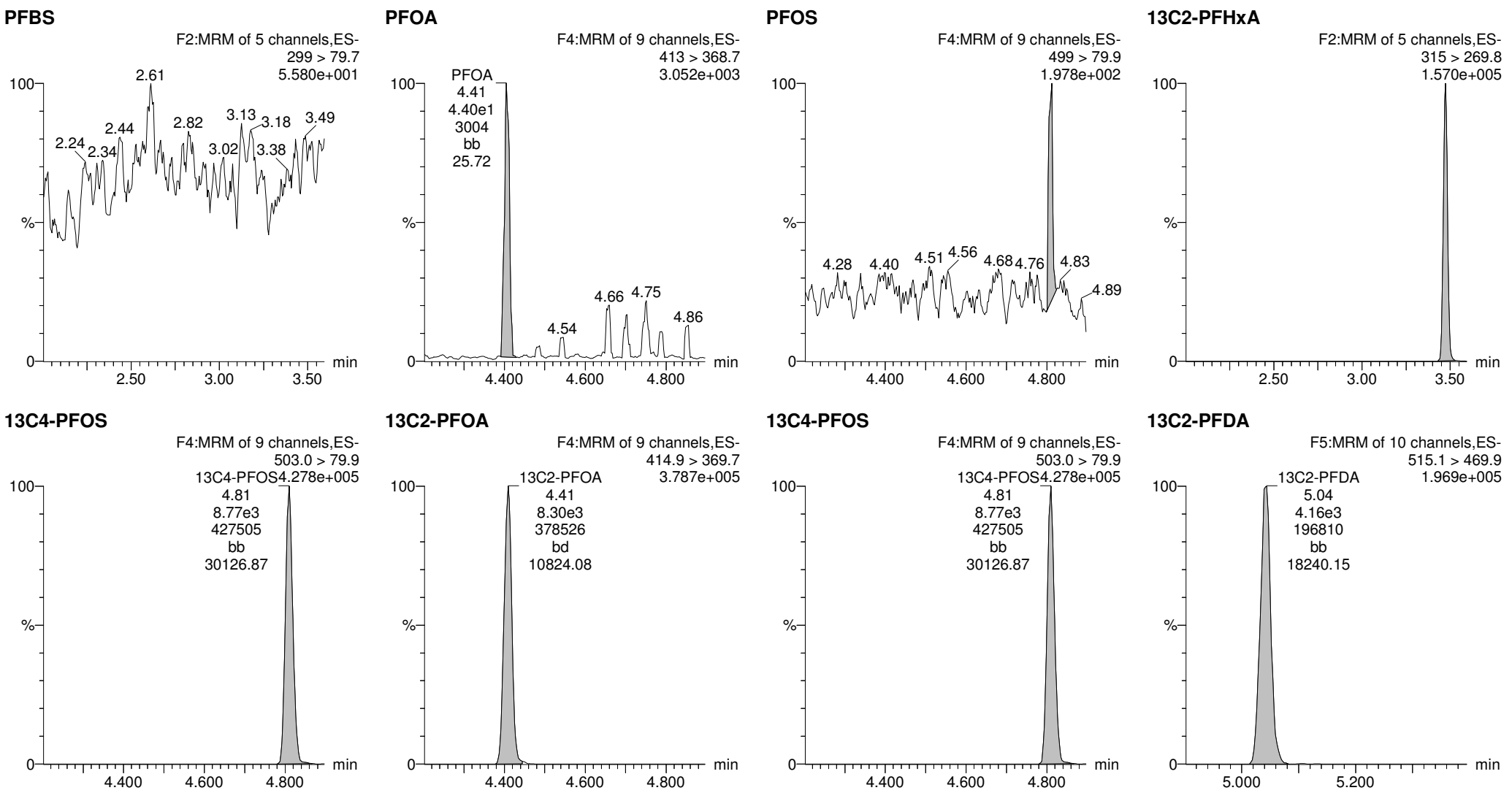
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_43, Date: 27-Nov-2017, Time: 19:42:00, ID: 1701749-10 CH-AT-1FB41-1117 0.27043, Description: CH-AT-1FB41-1117



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Last Altered: Tuesday, November 28, 2017 12:18:16 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:18:41 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_44, Date: 27-Nov-2017, Time: 19:54:23, ID: 1701749-11 CH-AT-1RW42-1117 0.25895, Description: CH-AT-1RW42-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.43e3		0.2590	3.11				
2	2 PFOA	413 > 368.7	8.96e1	8.24e3		0.2590	4.41	4.41	0.109	0.499	
3	3 PFOS	499 >79.9	1.01e1	9.43e3		0.2590	4.81	4.81	0.0307	0.100	
4	4 13C2-PFHxA	315 > 269.8	4.15e3	8.24e3	0.451	0.2590	3.47	3.47	5.04	43.1	111.7
5	5 13C2-PFDA	515.1 > 469.9	4.67e3	8.24e3	0.590	0.2590	5.04	5.04	5.66	37.1	96.0
6	6 13C2-PFOA	414.9 > 369.7	8.24e3	8.24e3	1.000	0.2590	4.41	4.41	10.0	38.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.43e3	9.43e3	1.000	0.2590	4.81	4.81	28.7	111	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-44.qld

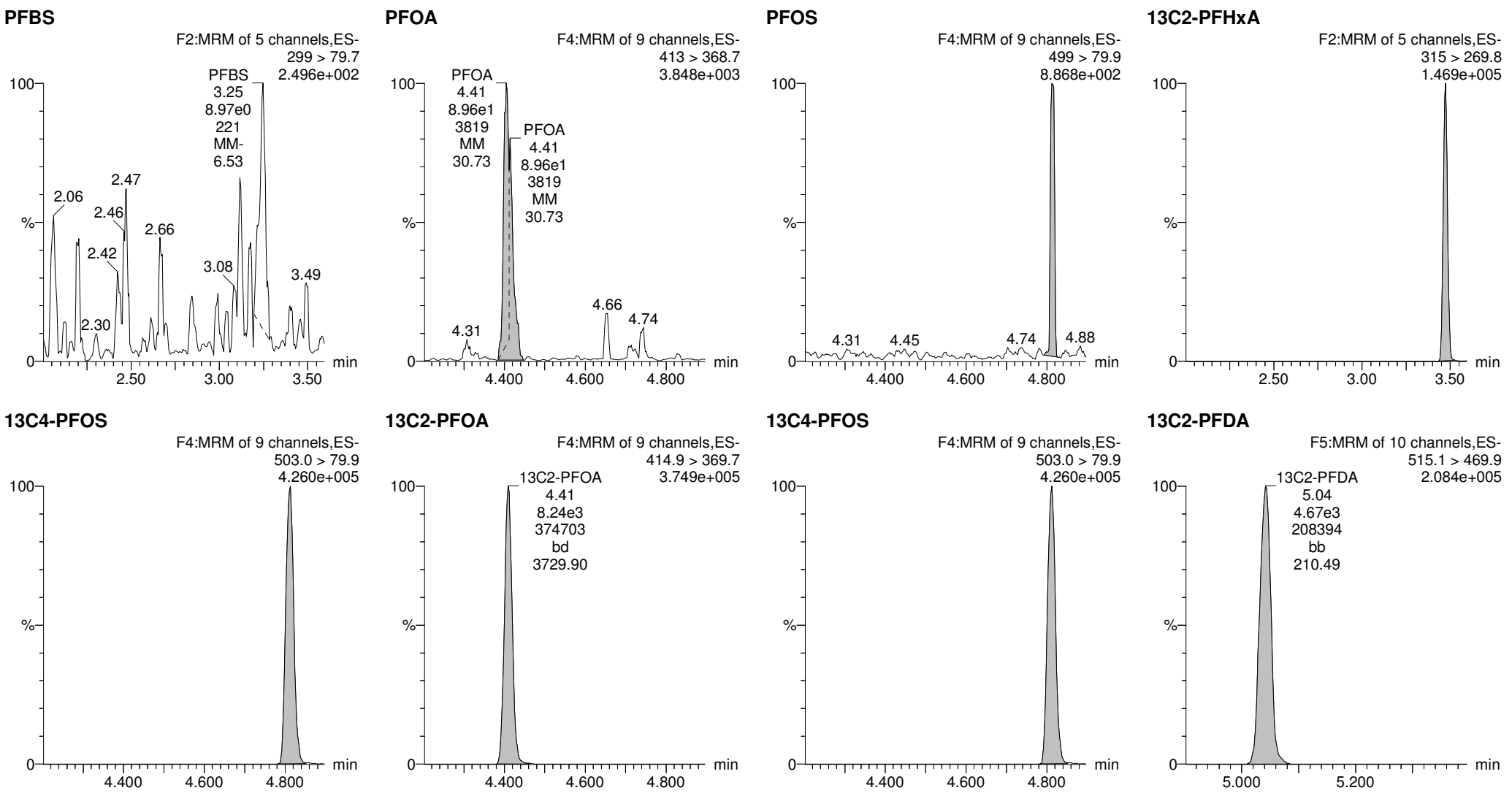
Last Altered: Tuesday, November 28, 2017 12:18:16 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:18:41 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_44, Date: 27-Nov-2017, Time: 19:54:23, ID: 1701749-11 CH-AT-1RW42-1117 0.25895, Description: CH-AT-1RW42-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-45.qld

Last Altered: Tuesday, November 28, 2017 12:20:03 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:20:19 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_45, Date: 27-Nov-2017, Time: 20:06:48, ID: 1701749-12 CH-AT-1FB42-1117 0.26643, Description: CH-AT-1FB42-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.18e3		0.2664	3.11				
2	2 PFOA	413 > 368.7	2.09e1	8.11e3		0.2664	4.41	4.41	0.0257	0.115	
3	3 PFOS	499 >79.9	1.65e0	9.18e3		0.2664	4.81	4.81	0.00516	0.0164	
4	4 13C2-PFHxA	315 > 269.8	4.49e3	8.11e3	0.451	0.2664	3.47	3.47	5.54	46.1	122.8
5	5 13C2-PFDA	515.1 > 469.9	4.78e3	8.11e3	0.590	0.2664	5.04	5.04	5.89	37.5	99.9
6	6 13C2-PFOA	414.9 > 369.7	8.11e3	8.11e3	1.000	0.2664	4.41	4.41	10.0	37.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.18e3	9.18e3	1.000	0.2664	4.81	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-45.qld

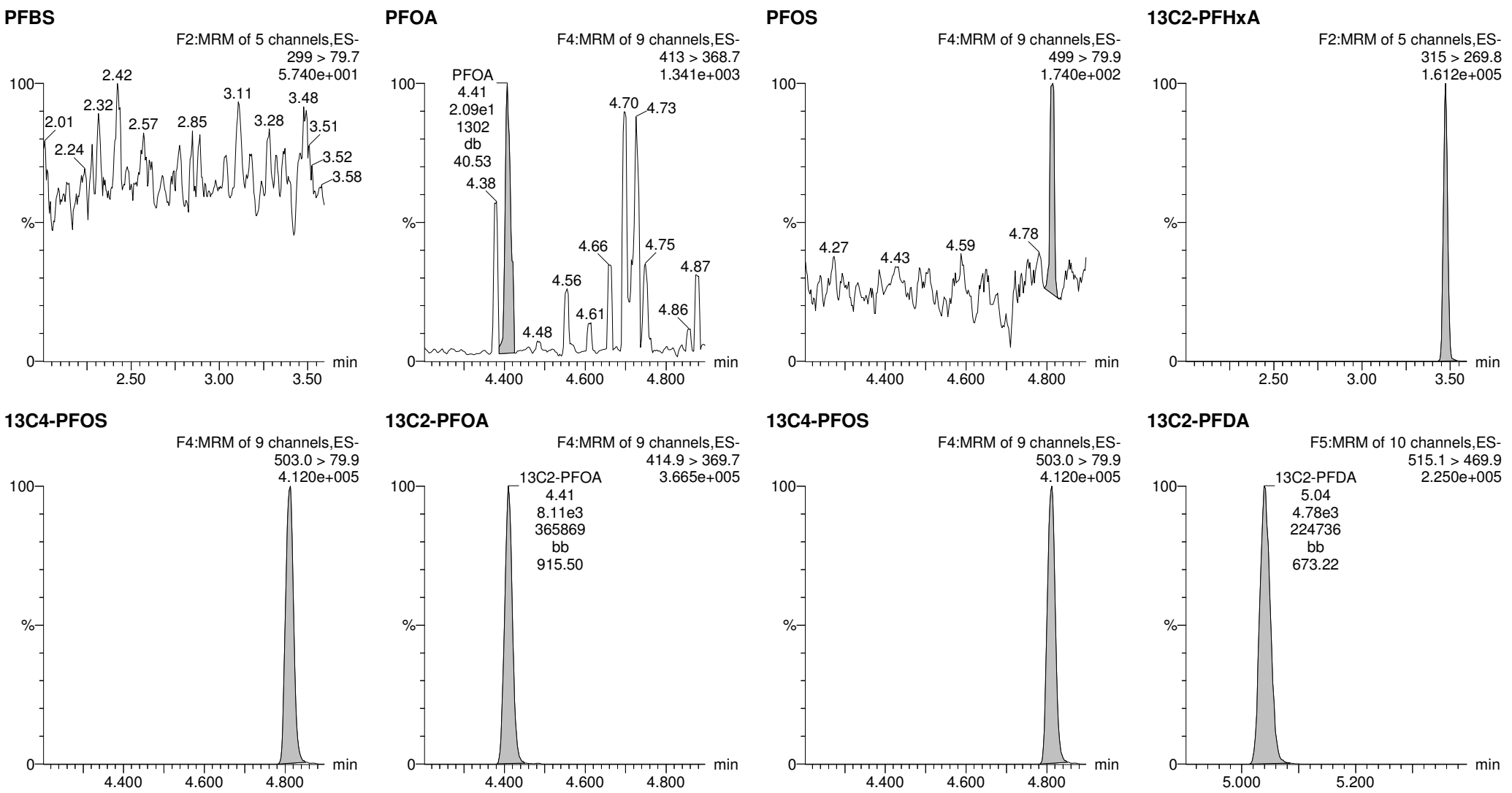
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Printed: Tuesday, November 28, 2017 12:20:19 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_45, Date: 27-Nov-2017, Time: 20:06:48, ID: 1701749-12 CH-AT-1FB42-1117 0.26643, Description: CH-AT-1FB42-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-46.qld

Last Altered: Tuesday, November 28, 2017 12:21:11 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:21:29 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_46, Date: 27-Nov-2017, Time: 20:19:12, ID: 1701749-13 CH-AT-1RW43-1117 0.26844, Description: CH-AT-1RW43-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.76e3		0.2684	3.11				
2	2 PFOA	413 > 368.7	5.15e1	8.62e3		0.2684	4.41	4.41	0.0597	0.264	
3	3 PFOS	499 >79.9	2.55e1	9.76e3		0.2684	4.81	4.81	0.0751	0.236	
4	4 13C2-PFHxA	315 > 269.8	4.25e3	8.62e3	0.451	0.2684	3.47	3.47	4.93	40.7	109.3
5	5 13C2-PFDA	515.1 > 469.9	4.48e3	8.62e3	0.590	0.2684	5.04	5.04	5.19	32.8	88.0
6	6 13C2-PFOA	414.9 > 369.7	8.62e3	8.62e3	1.000	0.2684	4.41	4.41	10.0	37.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.76e3	9.76e3	1.000	0.2684	4.81	4.81	28.7	107	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-46.qld

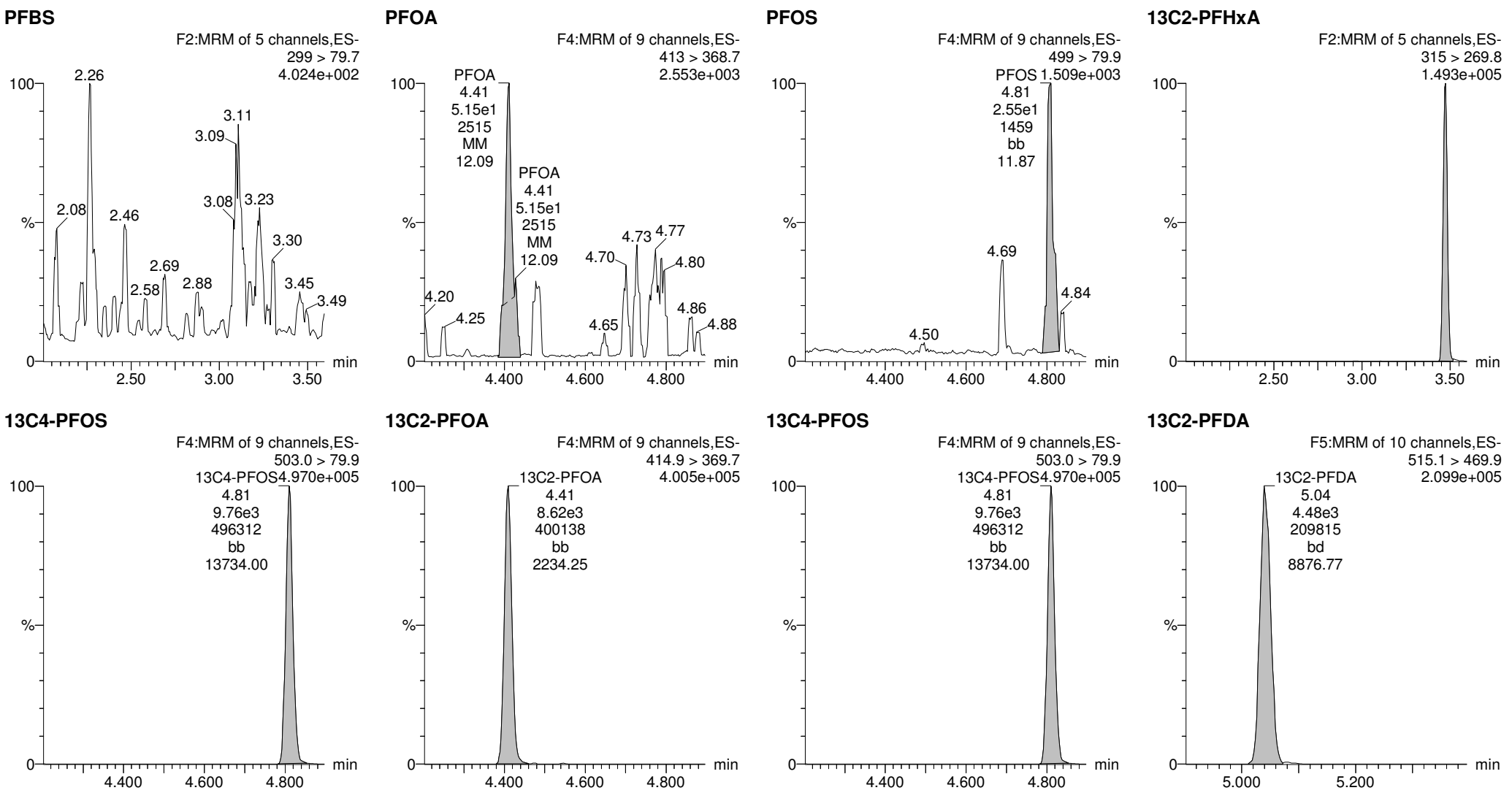
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Printed: Tuesday, November 28, 2017 12:21:29 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_46, Date: 27-Nov-2017, Time: 20:19:12, ID: 1701749-13 CH-AT-1RW43-1117 0.26844, Description: CH-AT-1RW43-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-47.qld

Last Altered: Tuesday, November 28, 2017 12:22:14 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:22:32 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_47, Date: 27-Nov-2017, Time: 20:31:38, ID: 1701749-14 CH-AT-1FB43-1117 0.27027, Description: CH-AT-1FB43-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.46e3		0.2703	3.11				
2	2 PFOA	413 > 368.7	6.65e1	9.03e3		0.2703	4.41	4.41	0.0736	0.324	
3	3 PFOS	499 >79.9		9.46e3		0.2703	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.88e3	9.03e3	0.451	0.2703	3.47	3.47	5.40	44.3	119.8
5	5 13C2-PFDA	515.1 > 469.9	5.41e3	9.03e3	0.590	0.2703	5.04	5.04	5.99	37.5	101.5
6	6 13C2-PFOA	414.9 > 369.7	9.03e3	9.03e3	1.000	0.2703	4.41	4.41	10.0	37.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.46e3	9.46e3	1.000	0.2703	4.81	4.81	28.7	106	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-47.qld

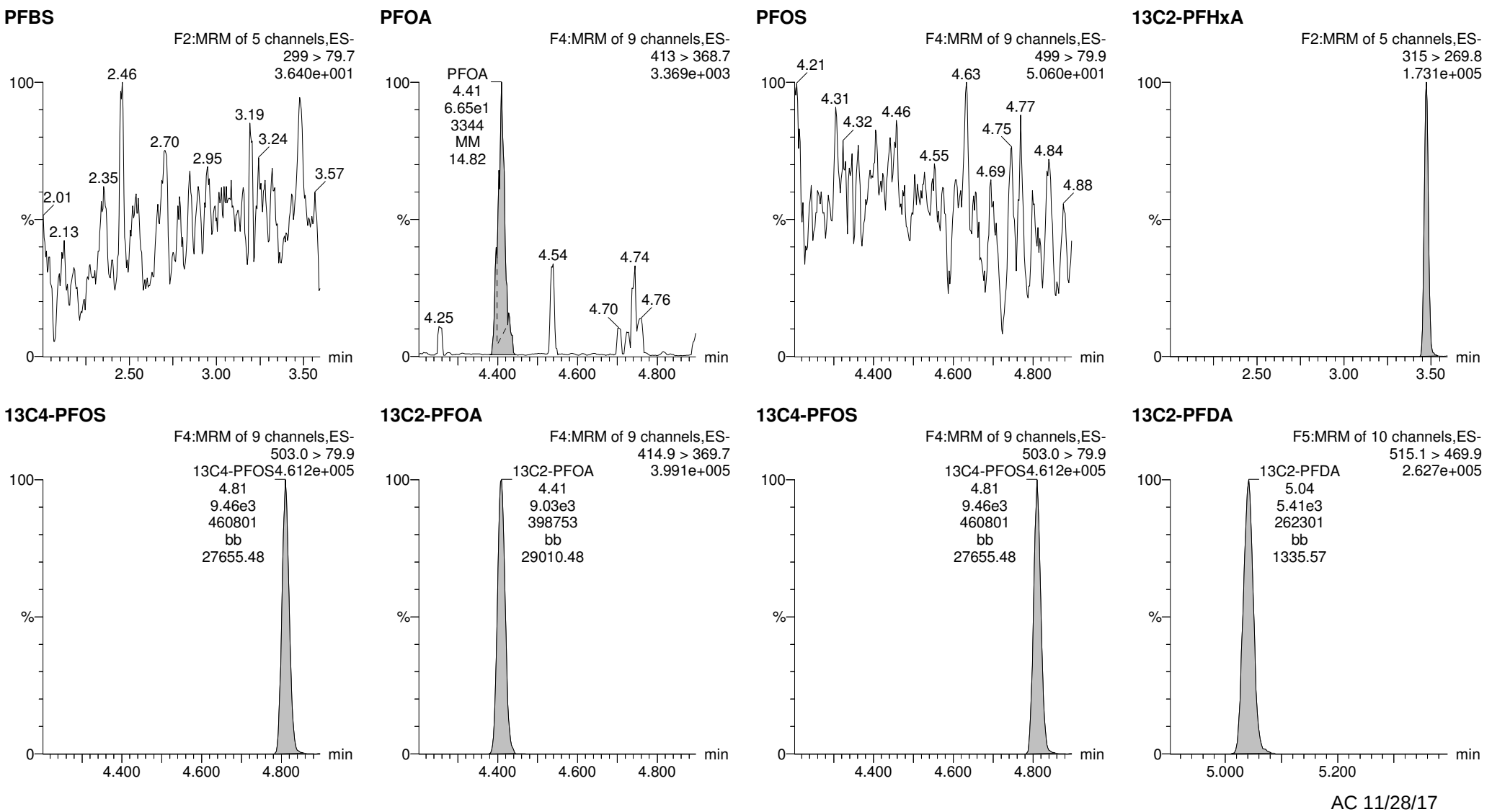
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Printed: Tuesday, November 28, 2017 12:22:32 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_47, Date: 27-Nov-2017, Time: 20:31:38, ID: 1701749-14 CH-AT-1FB43-1117 0.27027, Description: CH-AT-1FB43-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-48.qld

Last Altered: Tuesday, November 28, 2017 12:23:15 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:23:33 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_48, Date: 27-Nov-2017, Time: 20:44:04, ID: 1701749-15 CH-AT-IRW44-1117 0.26492, Description: CH-AT-IRW44-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.04e3		0.2649	3.11				
2	2 PFOA	413 > 368.7	5.81e1	6.97e3		0.2649	4.41	4.41	0.0833	0.374	
3	3 PFOS	499 >79.9		8.04e3		0.2649	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.92e3	6.97e3	0.451	0.2649	3.47	3.47	5.62	47.0	124.6
5	5 13C2-PFDA	515.1 > 469.9	4.35e3	6.97e3	0.590	0.2649	5.04	5.04	6.25	40.0	105.8
6	6 13C2-PFOA	414.9 > 369.7	6.97e3	6.97e3	1.000	0.2649	4.41	4.41	10.0	37.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.04e3	8.04e3	1.000	0.2649	4.81	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-48.qld

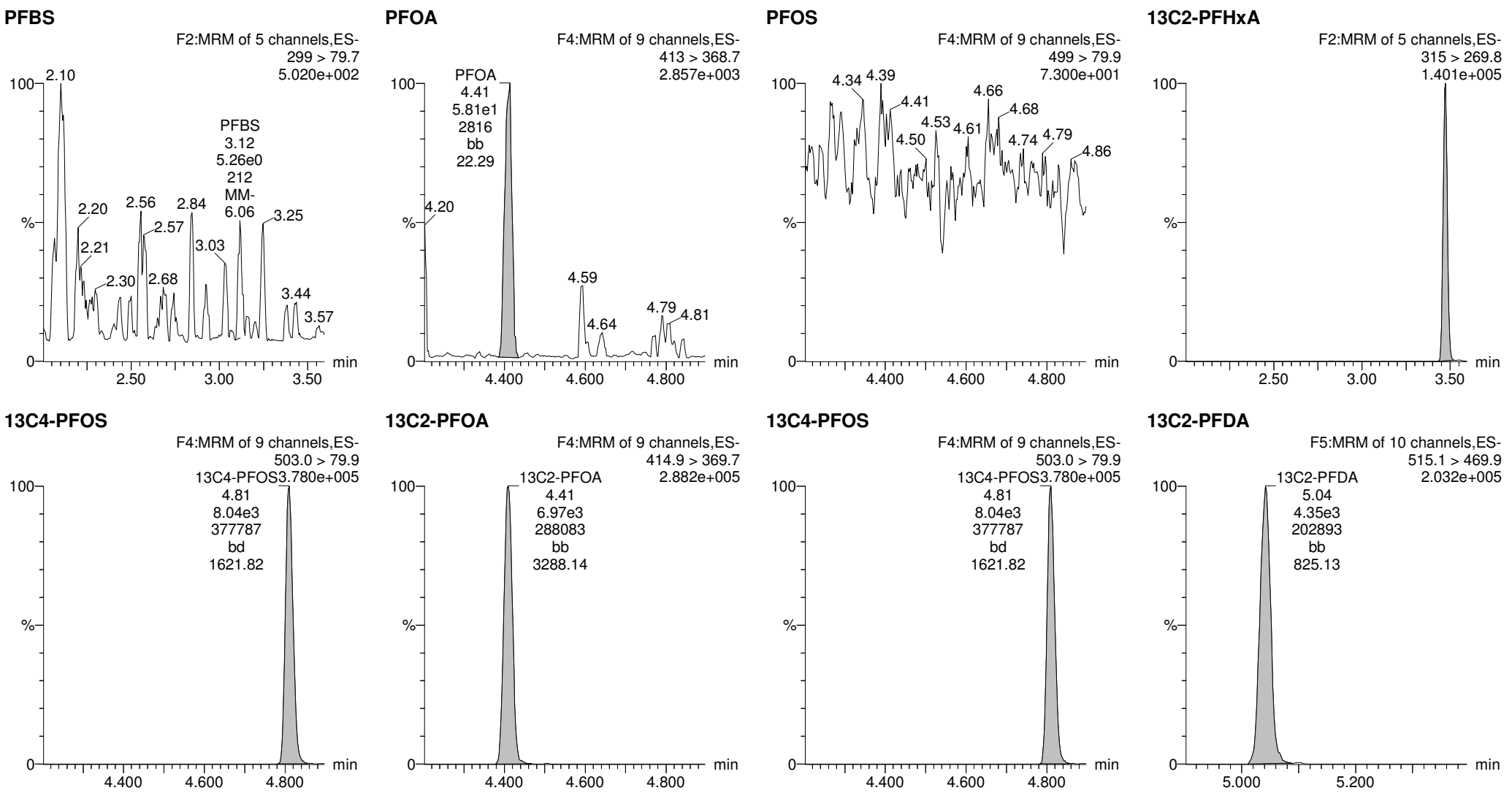
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Printed: Tuesday, November 28, 2017 12:23:33 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_48, Date: 27-Nov-2017, Time: 20:44:04, ID: 1701749-15 CH-AT-IRW44-1117 0.26492, Description: CH-AT-IRW44-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-49.qld

Last Altered: Tuesday, November 28, 2017 12:24:12 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:24:33 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_49, Date: 27-Nov-2017, Time: 20:56:32, ID: 1701749-16 CH-AT-1FB44-1117 0.26813, Description: CH-AT-1FB44-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.70e3		0.2681	3.11				
2	2 PFOA	413 > 368.7	5.62e1	9.08e3		0.2681	4.41	4.41	0.0619	0.274	
3	3 PFOS	499 >79.9		9.70e3		0.2681	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.87e3	9.08e3	0.451	0.2681	3.47	3.47	5.37	44.4	119.0
5	5 13C2-PFDA	515.1 > 469.9	5.09e3	9.08e3	0.590	0.2681	5.04	5.04	5.61	35.4	95.0
6	6 13C2-PFOA	414.9 > 369.7	9.08e3	9.08e3	1.000	0.2681	4.41	4.41	10.0	37.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.70e3	9.70e3	1.000	0.2681	4.81	4.81	28.7	107	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-49.qld

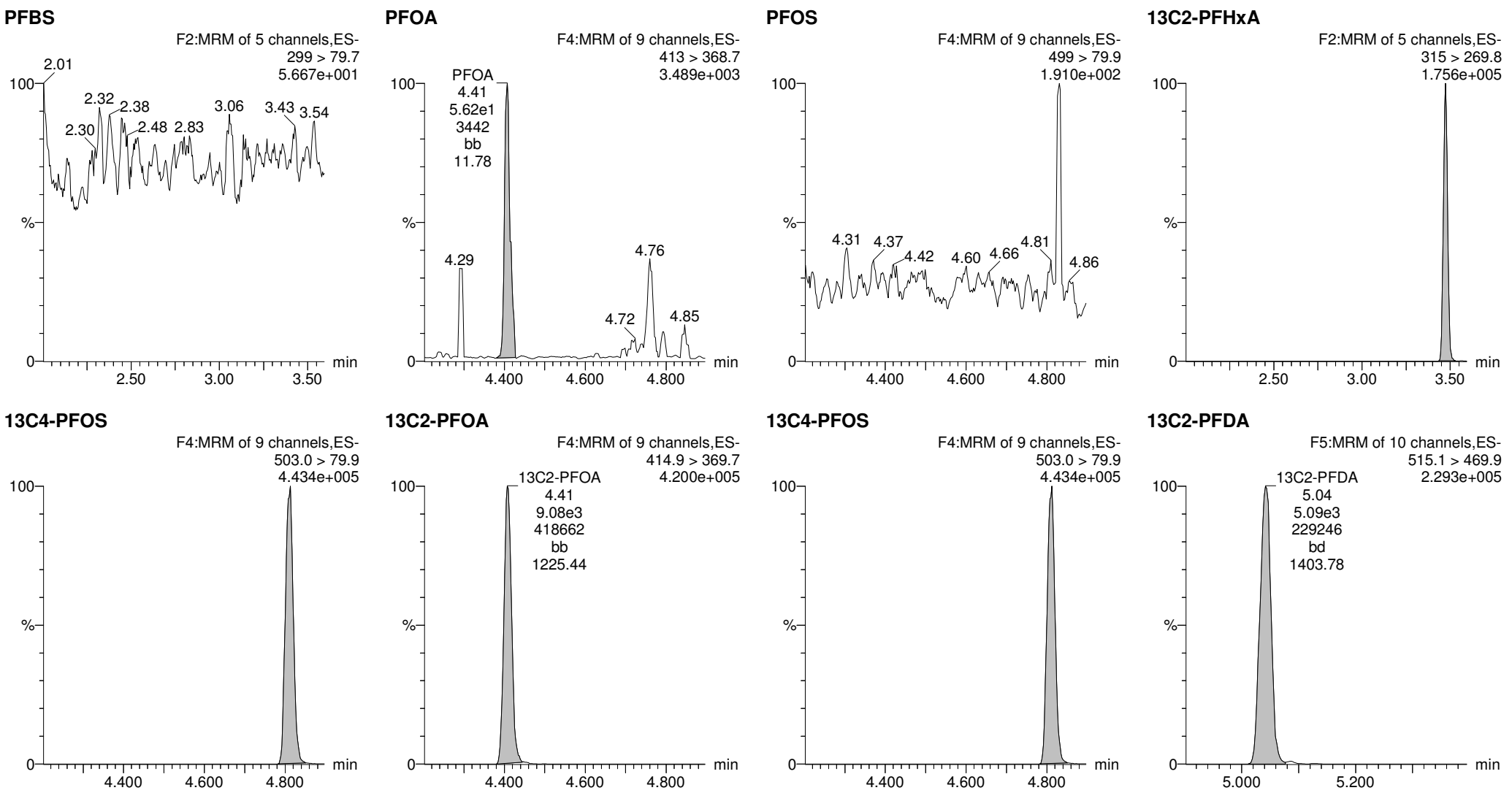
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Printed: Tuesday, November 28, 2017 12:24:33 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_49, Date: 27-Nov-2017, Time: 20:56:32, ID: 1701749-16 CH-AT-1FB44-1117 0.26813, Description: CH-AT-1FB44-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-50.qld

Last Altered: Tuesday, November 28, 2017 12:25:34 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:25:50 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_50, **Date:** 27-Nov-2017, **Time:** 21:08:59, **ID:** 1701749-17 CH-AT-1RW45-1117 0.26412, **Description:** CH-AT-1RW45-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		7.68e3		0.2641	3.11				
2	2 PFOA	413 > 368.7	5.66e1	8.17e3		0.2641	4.41	4.41	0.0692	0.312	
3	3 PFOS	499 >79.9	1.16e1	7.68e3		0.2641	4.81	4.71	0.0433	0.139	
4	4 13C2-PFHxA	315 > 269.8	4.06e3	8.17e3	0.451	0.2641	3.47	3.47	4.97	41.7	110.2
5	5 13C2-PFDA	515.1 > 469.9	4.28e3	8.17e3	0.590	0.2641	5.04	5.04	5.23	33.6	88.7
6	6 13C2-PFOA	414.9 > 369.7	8.17e3	8.17e3	1.000	0.2641	4.41	4.41	10.0	37.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	7.68e3	7.68e3	1.000	0.2641	4.81	4.81	28.7	109	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-50.qld

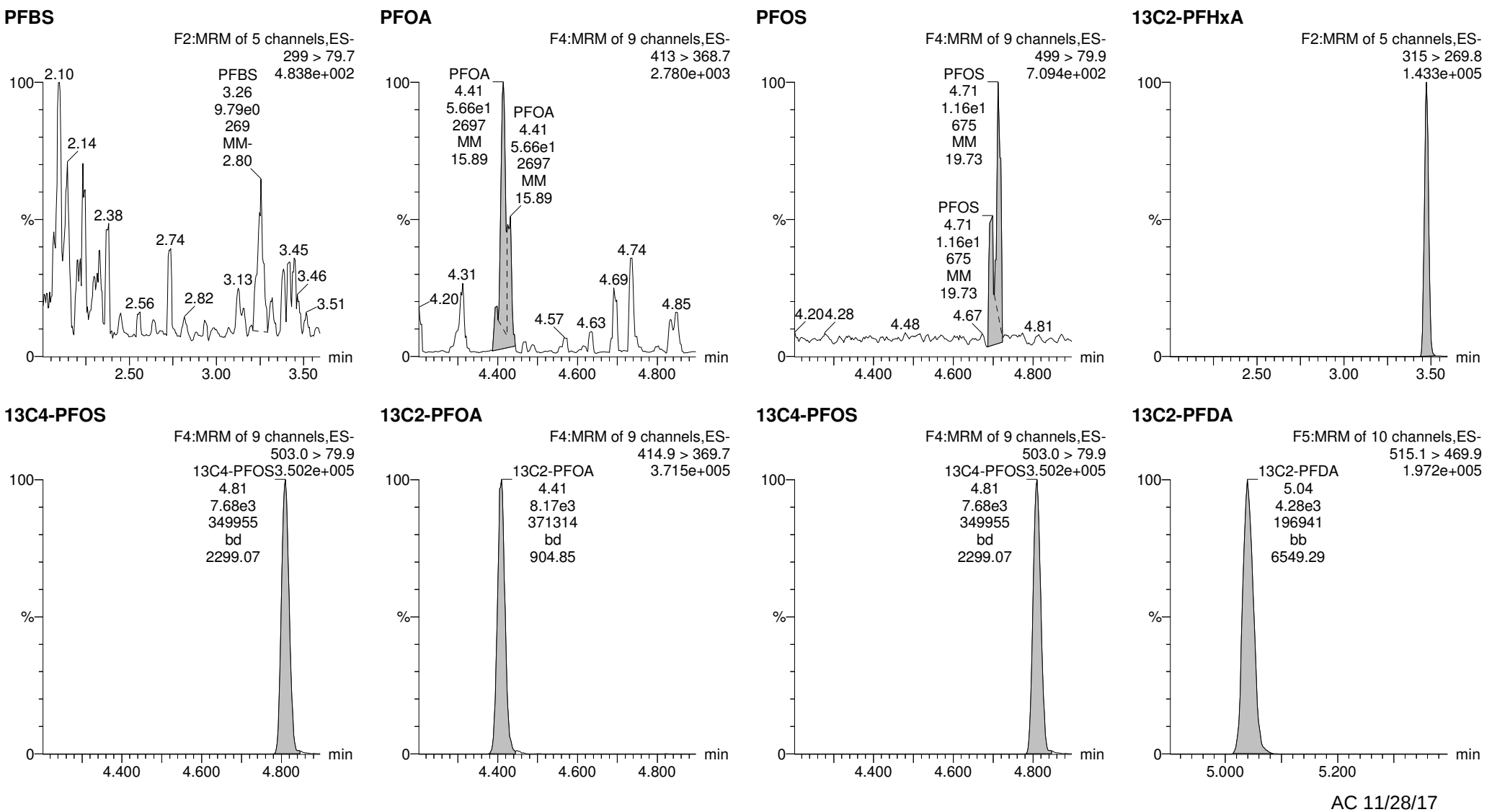
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Printed: Tuesday, November 28, 2017 12:25:50 Pacific Standard Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_50, Date: 27-Nov-2017, Time: 21:08:59, ID: 1701749-17 CH-AT-1RW45-1117 0.26412, Description: CH-AT-1RW45-1117



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-51.qld

Last Altered: Tuesday, November 28, 2017 13:58:33 Pacific Standard Time

Printed: Tuesday, November 28, 2017 13:59:13 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_51, Date: 27-Nov-2017, Time: 21:21:27, ID: 1701749-18 CH-AT-1FB45-1117 0.26491, Description: CH-AT-1FB45-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.85e3		0.2649	3.11				
2	2 PFOA	413 > 368.7	3.20e1	8.68e3		0.2649	4.41	4.42	0.0368	0.165	
3	3 PFOS	499 >79.9		8.85e3		0.2649	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.52e3	8.68e3	0.451	0.2649	3.47	3.47	5.20	43.6	115.4
5	5 13C2-PFDA	515.1 > 469.9	5.00e3	8.68e3	0.590	0.2649	5.04	5.04	5.77	36.9	97.7
6	6 13C2-PFOA	414.9 > 369.7	8.68e3	8.68e3	1.000	0.2649	4.41	4.41	10.0	37.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.85e3	8.85e3	1.000	0.2649	4.81	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-51.qld

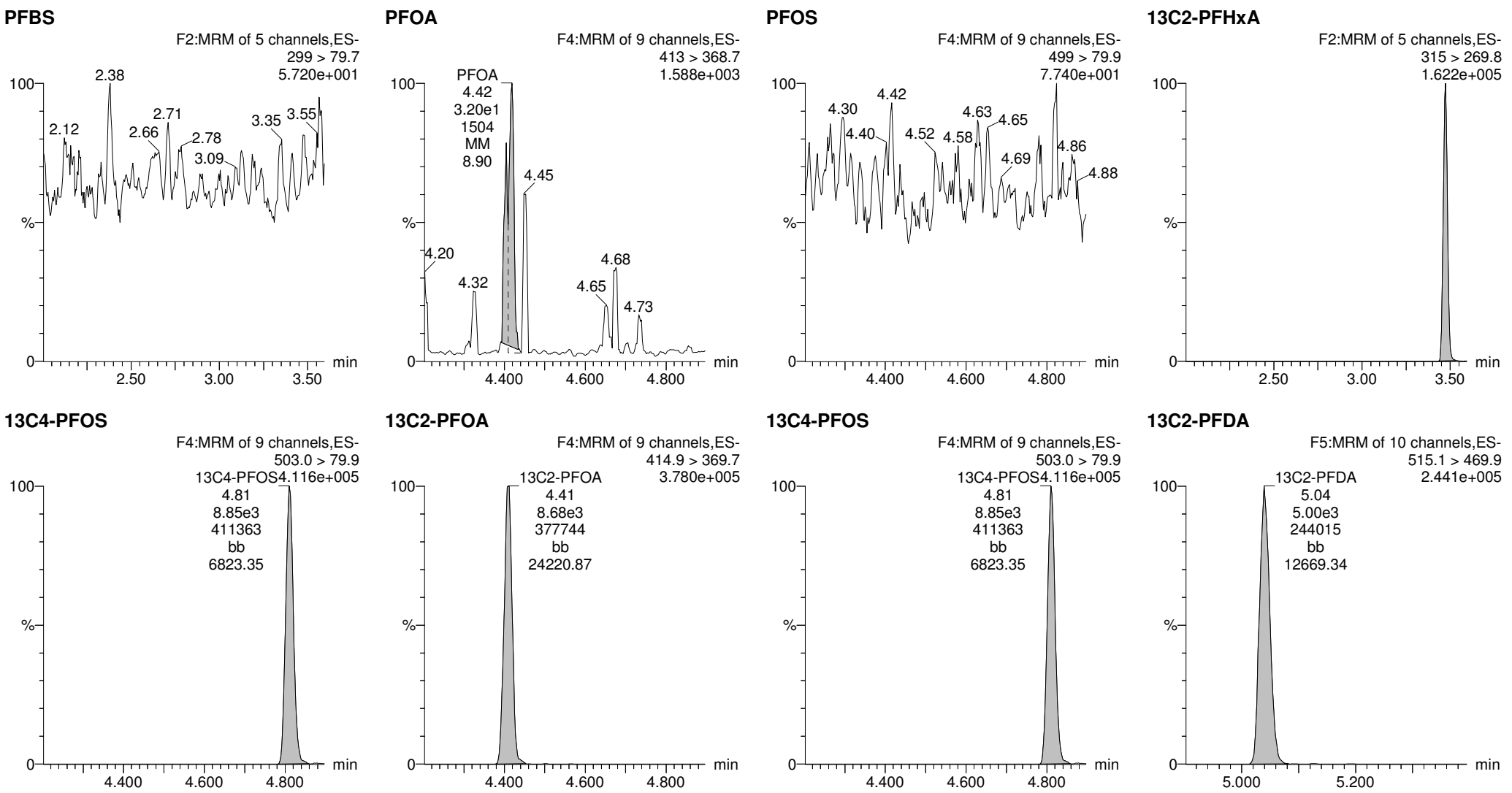
Rev'd: MM 11/28/17

Last Altered: Tuesday, November 28, 2017 13:58:33 Pacific Standard Time

Printed: Tuesday, November 28, 2017 13:59:13 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_51, Date: 27-Nov-2017, Time: 21:21:27, ID: 1701749-18 CH-AT-1FB45-1117 0.26491, Description: CH-AT-1FB45-1117



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

Compound 6: 13C2-PFOA

ID	Name	IS Area	CCAL AREA	area %
1 ST171127G1-2 PFC CS3 537 17K2009	171127G1_27	8965.833	8965.833	100
2 IPA	171127G1_28		8965.833	0
3 B7K0145-BS1 LFB 0.25	171127G1_29	7438.334	8965.833	82.96311
4 IPA	171127G1_30		8965.833	0
5 B7K0145-BLK1 LRB 0.25	171127G1_31	8441.961	8965.833	94.15702
6 B7K0145-MS1 LFSM 0.26848	171127G1_32	8444.343	8965.833	94.18359
7 B7K0145-MSD1 LFSMD 0.2773	171127G1_33	8486.807	8965.833	94.65721
8 1701749-01 CH-AT-1RW37-1117 0.26121	171127G1_34	8141.5	8965.833	90.80584
9 1701749-02 CH-AT-1FB37-1117 0.26751	171127G1_35	8739.679	8965.833	97.4776
10 1701749-03 CH-AT-1RW38-1117 0.25605	171127G1_36	7415.83	8965.833	82.71211
11 1701749-04 CH-AT-1FB38-1117 0.26566	171127G1_37	8010.107	8965.833	89.34035
12 1701749-05 CH-AT-1RW39-1117 0.262	171127G1_38	8980.02	8965.833	100.1582
13 1701749-06 CH-AT-1FB39-1117 0.2631	171127G1_39	8443.151	8965.833	94.17029
14 1701749-07 CH-AT-1RW40-1117 0.26376	171127G1_40	8730.197	8965.833	97.37184
15 1701749-08 CH-AT-1FB40-1117 0.26538	171127G1_41	7696.514	8965.833	85.84271
16 1701749-09 CH-AT-1RW41-1117 0.2718	171127G1_42	8513.323	8965.833	94.95295
17 1701749-10 CH-AT-1FB41-1117 0.27043	171127G1_43	8295.692	8965.833	92.52561
18 1701749-11 CH-AT-1RW42-1117 0.25895	171127G1_44	8240.744	8965.833	91.91275
19 1701749-12 CH-AT-1FB42-1117 0.26643	171127G1_45	8106.712	8965.833	90.41783
20 1701749-13 CH-AT-1RW43-1117 0.26844	171127G1_46	8621.47	8965.833	96.15916
21 1701749-14 CH-AT-1FB43-1117 0.27027	171127G1_47	9029.142	8965.833	100.7061
22 1701749-15 CH-AT-1RW44-1117 0.26492	171127G1_48	6969.968	8965.833	77.73921
23 1701749-16 CH-AT-1FB44-1117 0.26813	171127G1_49	9075.996	8965.833	101.2287
24 1701749-17 CH-AT-1RW45-1117 0.26412	171127G1_50	8174.629	8965.833	91.17534
1701749-18 CH-AT-1FB45-1117 0.26491	171127G1_51	8681.528	8965.833	96.82902
IPA	171127G1_52		8965.833	0
ST171127G1-3 PFC CS5 537 17K2011	171127G1_53	8496.703	8965.833	94.76758

IPA	171127G1_54	8965.833	0
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Compound 7: 13C4-PFOS

ID	Name	IS Area	Ccal area	area %
1 ST171127G1-2 PFC CS3 537 17K2009	171127G1_27	10045.09	10045.088	100
2 IPA	171127G1_28		10045.088	0
3 B7K0145-BS1 LFB 0.25	171127G1_29	8701.5	10045.088	86.62443
4 IPA	171127G1_30		10045.088	0
5 B7K0145-BLK1 LRB 0.25	171127G1_31	9282.571	10045.088	92.40906
6 B7K0145-MS1 LFSM 0.26848	171127G1_32	8105.832	10045.088	80.69448
7 B7K0145-MSD1 LFSMD 0.2773	171127G1_33	8718.499	10045.088	86.79365
8 1701749-01 CH-AT-1RW37-1117 0.26121	171127G1_34	8553.062	10045.088	85.14671
9 1701749-02 CH-AT-1FB37-1117 0.26751	171127G1_35	9654.346	10045.088	96.11012
10 1701749-03 CH-AT-1RW38-1117 0.25605	171127G1_36	8259.24	10045.088	82.22168
11 1701749-04 CH-AT-1FB38-1117 0.26566	171127G1_37	8343.902	10045.088	83.0645
12 1701749-05 CH-AT-1RW39-1117 0.262	171127G1_38	9528.563	10045.088	94.85793
13 1701749-06 CH-AT-1FB39-1117 0.2631	171127G1_39	8295.73	10045.088	82.58494
14 1701749-07 CH-AT-1RW40-1117 0.26376	171127G1_40	9398.24	10045.088	93.56055
15 1701749-08 CH-AT-1FB40-1117 0.26538	171127G1_41	8633.67	10045.088	85.94917
16 1701749-09 CH-AT-1RW41-1117 0.2718	171127G1_42	8849.909	10045.088	88.10186
17 1701749-10 CH-AT-1FB41-1117 0.27043	171127G1_43	8772.095	10045.088	87.32721
18 1701749-11 CH-AT-1RW42-1117 0.25895	171127G1_44	9426.87	10045.088	93.84557
19 1701749-12 CH-AT-1FB42-1117 0.26643	171127G1_45	9182.092	10045.088	91.40878
20 1701749-13 CH-AT-1RW43-1117 0.26844	171127G1_46	9756.839	10045.088	97.13045
21 1701749-14 CH-AT-1FB43-1117 0.27027	171127G1_47	9462.319	10045.088	94.19847
22 1701749-15 CH-AT-1RW44-1117 0.26492	171127G1_48	8041.642	10045.088	80.05547
23 1701749-16 CH-AT-1FB44-1117 0.26813	171127G1_49	9696.942	10045.088	96.53417
24 1701749-17 CH-AT-1RW45-1117 0.26412	171127G1_50	7678.811	10045.088	76.44344
1701749-18 CH-AT-1FB45-1117 0.26491	171127G1_51	8851.517	10045.088	88.11786
IPA	171127G1_52		10045.088	0
ST171127G1-3 PFC CS5 537 17K2011	171127G1_53	8120.848	10045.088	80.84397
IPA	171127G1_54		10045.088	0

Quantify Compound Summary Report

Printed Sun Nov 26 20:11:08 2017

Compound 6: 13C2-PFOA

ID	Name	IS Area	ICAL AREA	area %
1 ST171127G1-2 PFC CS3 537 17K2009	171127G1_27	8965.833	9795.802778	91.52729
2 IPA	171127G1_28		9795.802778	0
3 B7K0145-BS1 LFB 0.25	171127G1_29	7438.334	9795.802778	75.93389
4 IPA	171127G1_30		9795.802778	0
5 B7K0145-BLK1 LRB 0.25	171127G1_31	8441.961	9795.802778	86.17937
6 B7K0145-MS1 LFSM 0.26848	171127G1_32	8444.343	9795.802778	86.20369
7 B7K0145-MSD1 LFSMD 0.2773	171127G1_33	8486.807	9795.802778	86.63718
8 1701749-01 CH-AT-1RW37-1117 0.26121	171127G1_34	8141.5	9795.802778	83.11213
9 1701749-02 CH-AT-1FB37-1117 0.26751	171127G1_35	8739.679	9795.802778	89.21861
10 1701749-03 CH-AT-1RW38-1117 0.25605	171127G1_36	7415.83	9795.802778	75.70416
11 1701749-04 CH-AT-1FB38-1117 0.26566	171127G1_37	8010.107	9795.802778	81.77081
12 1701749-05 CH-AT-1RW39-1117 0.262	171127G1_38	8980.02	9795.802778	91.67212
13 1701749-06 CH-AT-1FB39-1117 0.2631	171127G1_39	8443.151	9795.802778	86.19152
14 1701749-07 CH-AT-1RW40-1117 0.26376	171127G1_40	8730.197	9795.802778	89.12181
15 1701749-08 CH-AT-1FB40-1117 0.26538	171127G1_41	7696.514	9795.802778	78.56951
16 1701749-09 CH-AT-1RW41-1117 0.2718	171127G1_42	8513.323	9795.802778	86.90786
17 1701749-10 CH-AT-1FB41-1117 0.27043	171127G1_43	8295.692	9795.802778	84.68619
18 1701749-11 CH-AT-1RW42-1117 0.25895	171127G1_44	8240.744	9795.802778	84.12525
19 1701749-12 CH-AT-1FB42-1117 0.26643	171127G1_45	8106.712	9795.802778	82.75699
20 1701749-13 CH-AT-1RW43-1117 0.26844	171127G1_46	8621.47	9795.802778	88.01188
21 1701749-14 CH-AT-1FB43-1117 0.27027	171127G1_47	9029.142	9795.802778	92.17358
22 1701749-15 CH-AT-1RW44-1117 0.26492	171127G1_48	6969.968	9795.802778	71.1526
23 1701749-16 CH-AT-1FB44-1117 0.26813	171127G1_49	9075.996	9795.802778	92.65189
24 1701749-17 CH-AT-1RW45-1117 0.26412	171127G1_50	8174.629	9795.802778	83.45032
1701749-18 CH-AT-1FB45-1117 0.26491	171127G1_51	8681.528	9795.802778	88.62498
IPA	171127G1_52		9795.802778	0
ST171127G1-3 PFC CS5 537 17K2011	171127G1_53	8496.703	9795.802778	86.7382

Quantify Compound Summary Report

Printed Sun Nov 26 20:18:27 2017

Compound 7: 13C4-PFOS

ID	Name	IS Area	ical area	area %
1 ST171127G1-2 PFC CS3 537 17K2009	171127G1_27	10045.09	10884.5595	92.2875
2 IPA	171127G1_28		10884.5595	0
3 B7K0145-BS1 LFB 0.25	171127G1_29	8701.5	10884.5595	79.94352
4 IPA	171127G1_30		10884.5595	0
5 B7K0145-BLK1 LRB 0.25	171127G1_31	9282.571	10884.5595	85.28201
6 B7K0145-MS1 LFSM 0.26848	171127G1_32	8105.832	10884.5595	74.47092
7 B7K0145-MSD1 LFSMD 0.2773	171127G1_33	8718.499	10884.5595	80.0997
8 1701749-01 CH-AT-1RW37-1117 0.26121	171127G1_34	8553.062	10884.5595	78.57977
9 1701749-02 CH-AT-1FB37-1117 0.26751	171127G1_35	9654.346	10884.5595	88.69763
10 1701749-03 CH-AT-1RW38-1117 0.25605	171127G1_36	8259.24	10884.5595	75.88033
11 1701749-04 CH-AT-1FB38-1117 0.26566	171127G1_37	8343.902	10884.5595	76.65815
12 1701749-05 CH-AT-1RW39-1117 0.262	171127G1_38	9528.563	10884.5595	87.54202
13 1701749-06 CH-AT-1FB39-1117 0.2631	171127G1_39	8295.73	10884.5595	76.21558
14 1701749-07 CH-AT-1RW40-1117 0.26376	171127G1_40	9398.24	10884.5595	86.3447
15 1701749-08 CH-AT-1FB40-1117 0.26538	171127G1_41	8633.67	10884.5595	79.32034
16 1701749-09 CH-AT-1RW41-1117 0.2718	171127G1_42	8849.909	10884.5595	81.307
17 1701749-10 CH-AT-1FB41-1117 0.27043	171127G1_43	8772.095	10884.5595	80.5921
18 1701749-11 CH-AT-1RW42-1117 0.25895	171127G1_44	9426.87	10884.5595	86.60773
19 1701749-12 CH-AT-1FB42-1117 0.26643	171127G1_45	9182.092	10884.5595	84.35888
20 1701749-13 CH-AT-1RW43-1117 0.26844	171127G1_46	9756.839	10884.5595	89.63926
21 1701749-14 CH-AT-1FB43-1117 0.27027	171127G1_47	9462.319	10884.5595	86.93341
22 1701749-15 CH-AT-1RW44-1117 0.26492	171127G1_48	8041.642	10884.5595	73.88119
23 1701749-16 CH-AT-1FB44-1117 0.26813	171127G1_49	9696.942	10884.5595	89.08897
24 1701749-17 CH-AT-1RW45-1117 0.26412	171127G1_50	7678.811	10884.5595	70.54774
1701749-18 CH-AT-1FB45-1117 0.26491	171127G1_51	8851.517	10884.5595	81.32178
IPA	171127G1_52		10884.5595	0
ST171127G1-3 PFC CS5 537 17K2011	171127G1_53	8120.848	10884.5595	74.60888

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-2.qld

Last Altered: Monday, November 27, 2017 14:32:34 Pacific Standard Time

Printed: Monday, November 27, 2017 14:33:28 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_2, Date: 27-Nov-2017, Time: 11:02:22, ID: ST171127G1-1 PFC CS-1 537 17K2005, Description: PFC CS-1 537 17K2005

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	5.51e2	1.08e4		1.0000	3.11	3.11	1.46	1.65	93.3
2	2 PFOA	413 > 368.7	1.80e3	9.81e3		1.0000	4.41	4.41	1.84	2.18	109.1
3	3 PFOS	499 > 79.9	7.00e2	1.08e4		1.0000	4.81	4.81	1.86	1.57	84.9
4	4 13C2-PFHxA	315 > 269.8	4.58e3	9.81e3	0.451	1.0000	3.47	3.47	4.67	10.4	103.5
5	5 13C2-PFDA	515.1 > 469.9	5.19e3	9.81e3	0.590	1.0000	5.04	5.04	5.29	8.96	89.6
6	6 13C2-PFOA	414.9 > 369.7	9.81e3	9.81e3	1.000	1.0000	4.41	4.41	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.08e4	1.08e4	1.000	1.0000	4.81	4.81	28.7	28.7	100.0

Sam
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Dataset: Untitled

Last Altered: Monday, November 27, 2017 16:34:20 Pacific Standard Time

Printed: Monday, November 27, 2017 16:34:59 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171127G1_1	IPA	27-Nov-17	10:49:55
2	171127G1_2	ST171127G1-1 PFC CS-1 537 17K2005	27-Nov-17	11:02:22
3	171127G1_3	B7K0131-BS1 LFB 0.25	27-Nov-17	11:14:47
4	171127G1_4	IPA	27-Nov-17	11:27:12
5	171127G1_5	B7K0131-BLK1 LRB 0.25	27-Nov-17	11:39:39
6	171127G1_6	B7K0131-MS1 LFSM 0.21131	27-Nov-17	11:52:05
7	171127G1_7	B7K0131-MSD1 LFSMD 0.23448	27-Nov-17	12:04:32
8	171127G1_8	1701716-01 CH-AT-1RW01-1117 0.22923	27-Nov-17	12:16:59
9	171127G1_9	1701716-02 CH-AT-1FB01-1117 0.25032	27-Nov-17	12:29:26
10	171127G1_10	1701716-03 CH-AT-1RW02-1117 0.2226	27-Nov-17	12:41:54
11	171127G1_11	1701716-04 CH-AT-1FB02-1117 0.24851	27-Nov-17	12:54:18
12	171127G1_12	1701716-05 CH-AT-1RW03-1117 0.23393	27-Nov-17	13:06:43
13	171127G1_13	1701716-06 CH-AT-1FB03-1117 0.2361	27-Nov-17	13:19:08
14	171127G1_14	1701716-07 CH-AT-1RW04-1117 0.23307	27-Nov-17	13:31:34
15	171127G1_15	1701716-08 CH-AT-1FB04-1117 0.25394	27-Nov-17	13:44:00
16	171127G1_16	1701716-09 CH-AT-1RW05-1117 0.22609	27-Nov-17	13:56:26
17	171127G1_17	1701716-10 CH-AT-1FB05-1117 0.25417	27-Nov-17	14:08:53
18	171127G1_18	1701716-11 CH-AT-1RW06-1117 0.22984	27-Nov-17	14:21:20
19	171127G1_19	1701716-12 CH-AT-1FB06-1117 0.25719	27-Nov-17	14:33:45
20	171127G1_20	1701716-13 CH-AT-1RW07-1117 0.22118	27-Nov-17	14:46:09
21	171127G1_21	1701716-14 CH-AT-1FB07-1117 0.24183	27-Nov-17	14:58:33
22	171127G1_22	1701716-15 CH-AT-1RW08-1117 0.23563	27-Nov-17	15:10:59
23	171127G1_23	1701716-16 CH-AT-1FB08-1117 0.23846	27-Nov-17	15:23:25
24	171127G1_24	1701716-17 CH-AT-1RW09-1117 0.21629	27-Nov-17	15:35:51
25	171127G1_25	1701716-18 CH-AT-1FB09-1117 0.23079	27-Nov-17	15:48:17
26	171127G1_26	IPA	27-Nov-17	16:00:45
27	171127G1_27	ST171127G1-2 PFC CS3 537 17K2009	27-Nov-17	16:13:12
28	171127G1_28	IPA	27-Nov-17	16:25:37

LC Calibration Standards Review Checklist

Q1

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
ST71127G1-1	LMH	N/A	☐	☐	☐	☐	☐	N/A
-2	LMH	☒	☐	☐	☐	☐	☐	☒
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐
	LMH	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/5/17

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Reviewed By: Am 11/27/17
Initials/Date

Comments:
DW L3

Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-2.qld

Last Altered: Monday, November 27, 2017 14:32:34 Pacific Standard Time

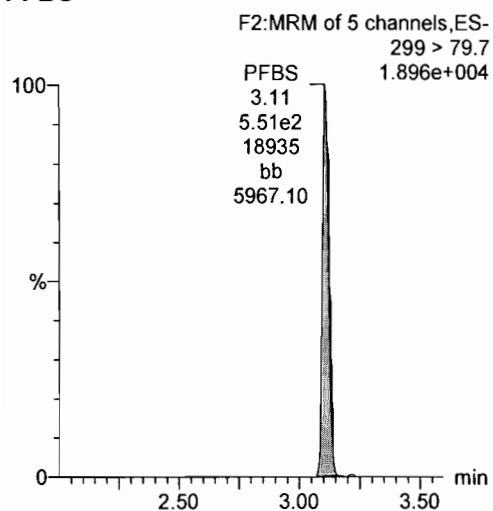
Printed: Monday, November 27, 2017 14:33:28 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

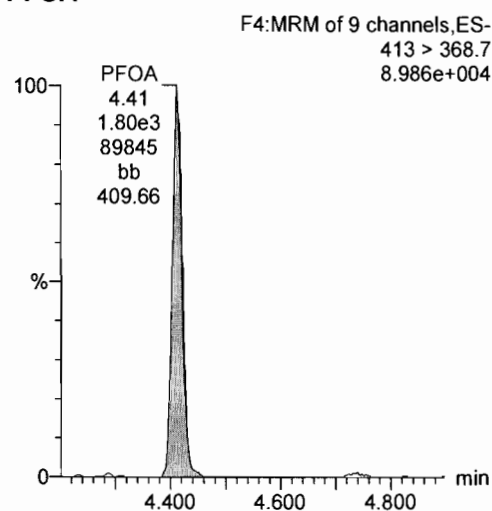
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

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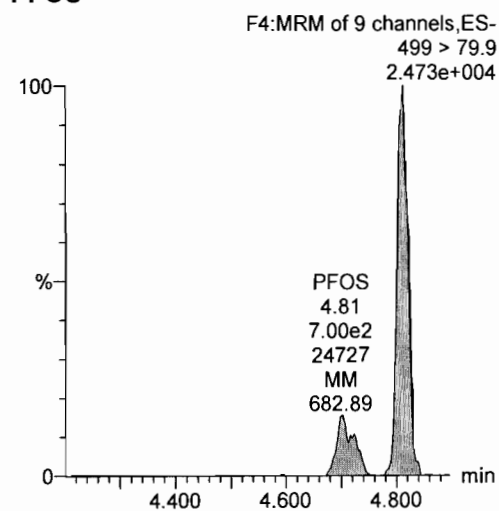
PFBS



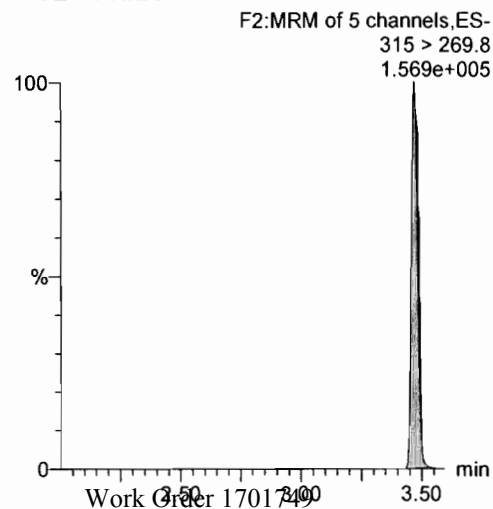
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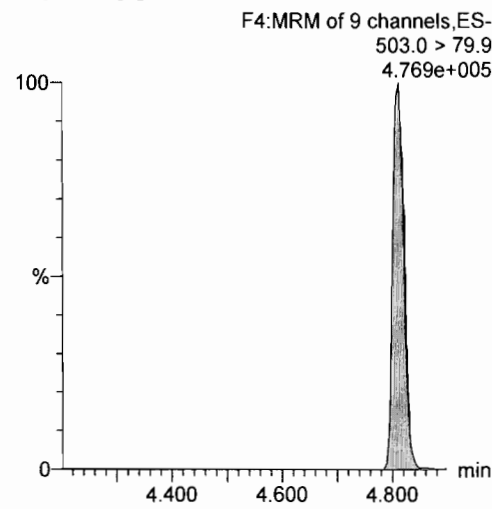
PFOS



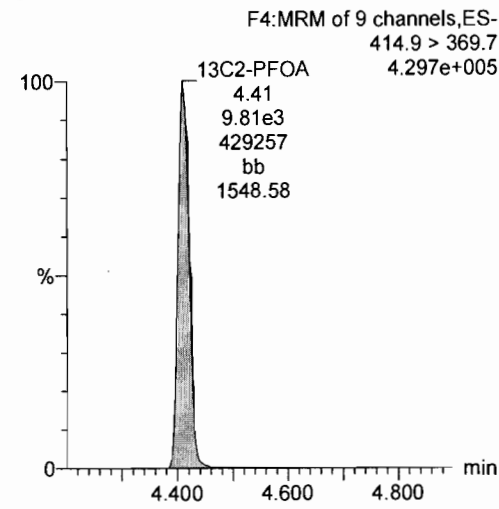
13C2-PFHxA



13C4-PFOS



13C2-PFOA



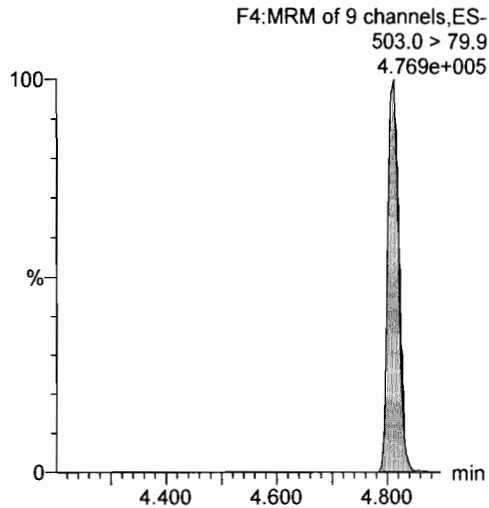
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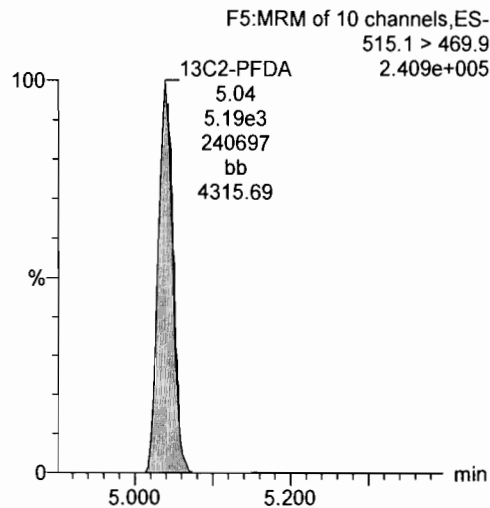
Printed: Monday, November 27, 2017 14:33:28 Pacific Standard Time

Name: 171127G1_2, Date: 27-Nov-2017, Time: 11:02:22, ID: ST171127G1-1 PFC CS-1 537 17K2005, Description: PFC CS-1 537 17K2005

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-27.qld

Last Altered: Monday, November 27, 2017 16:25:15 Pacific Standard Time

Printed: Monday, November 27, 2017 16:28:01 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

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Name: 171127G1_27, Date: 27-Nov-2017, Time: 16:13:12, ID: ST171127G1-2 PFC CS3 537 17K2009, Description: PFC CS3 537 17K2009

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.26e4	1.00e4		1.0000	3.11	3.12	36.1	40.7	92.1
2	2 PFOA	413 > 368.7	4.00e4	8.97e3		1.0000	4.41	4.41	44.6	53.0	106.1
3	3 PFOS	499 > 79.9	1.83e4	1.00e4		1.0000	4.81	4.81	52.2	44.1	95.5
4	4 13C2-PFHxA	315 > 269.8	4.30e3	8.97e3	0.451	1.0000	3.47	3.48	4.80	10.6	106.4
5	5 13C2-PFDA	515.1 > 469.9	4.50e3	8.97e3	0.590	1.0000	5.04	5.04	5.02	8.51	85.1
6	6 13C2-PFOA	414.9 > 369.7	8.97e3	8.97e3	1.000	1.0000	4.41	4.41	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.00e4	1.00e4	1.000	1.0000	4.81	4.81	28.7	28.7	100.0

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Dataset: Untitled

Last Altered: Monday, November 27, 2017 16:34:20 Pacific Standard Time

Printed: Monday, November 27, 2017 16:34:59 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171127G1_1	IPA	27-Nov-17	10:49:55
2	171127G1_2	ST171127G1-1 PFC CS-1 537 17K2005	27-Nov-17	11:02:22
3	171127G1_3	B7K0131-BS1 LFB 0.25	27-Nov-17	11:14:47
4	171127G1_4	IPA	27-Nov-17	11:27:12
5	171127G1_5	B7K0131-BLK1 LRB 0.25	27-Nov-17	11:39:39
6	171127G1_6	B7K0131-MS1 LFSM 0.21131	27-Nov-17	11:52:05
7	171127G1_7	B7K0131-MSD1 LFSMD 0.23448	27-Nov-17	12:04:32
8	171127G1_8	1701716-01 CH-AT-1RW01-1117 0.22923	27-Nov-17	12:16:59
9	171127G1_9	1701716-02 CH-AT-1FB01-1117 0.25032	27-Nov-17	12:29:26
10	171127G1_10	1701716-03 CH-AT-1RW02-1117 0.2226	27-Nov-17	12:41:54
11	171127G1_11	1701716-04 CH-AT-1FB02-1117 0.24851	27-Nov-17	12:54:18
12	171127G1_12	1701716-05 CH-AT-1RW03-1117 0.23393	27-Nov-17	13:06:43
13	171127G1_13	1701716-06 CH-AT-1FB03-1117 0.2361	27-Nov-17	13:19:08
14	171127G1_14	1701716-07 CH-AT-1RW04-1117 0.23307	27-Nov-17	13:31:34
15	171127G1_15	1701716-08 CH-AT-1FB04-1117 0.25394	27-Nov-17	13:44:00
16	171127G1_16	1701716-09 CH-AT-1RW05-1117 0.22609	27-Nov-17	13:56:26
17	171127G1_17	1701716-10 CH-AT-1FB05-1117 0.25417	27-Nov-17	14:08:53
18	171127G1_18	1701716-11 CH-AT-1RW06-1117 0.22984	27-Nov-17	14:21:20
19	171127G1_19	1701716-12 CH-AT-1FB06-1117 0.25719	27-Nov-17	14:33:45
20	171127G1_20	1701716-13 CH-AT-1RW07-1117 0.22118	27-Nov-17	14:46:09
21	171127G1_21	1701716-14 CH-AT-1FB07-1117 0.24183	27-Nov-17	14:58:33
22	171127G1_22	1701716-15 CH-AT-1RW08-1117 0.23563	27-Nov-17	15:10:59
23	171127G1_23	1701716-16 CH-AT-1FB08-1117 0.23846	27-Nov-17	15:23:25
24	171127G1_24	1701716-17 CH-AT-1RW09-1117 0.21629	27-Nov-17	15:35:51
25	171127G1_25	1701716-18 CH-AT-1FB09-1117 0.23079	27-Nov-17	15:48:17
26	171127G1_26	IPA	27-Nov-17	16:00:45
27	171127G1_27	ST171127G1-2 PFC CS3 537 17K2009	27-Nov-17	16:13:12
28	171127G1_28	IPA	27-Nov-17	16:25:37

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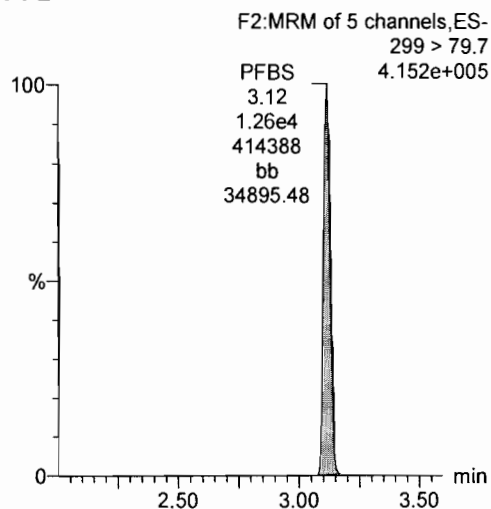
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Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

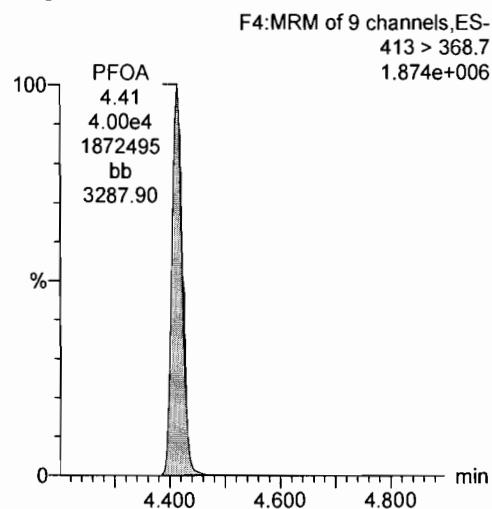
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

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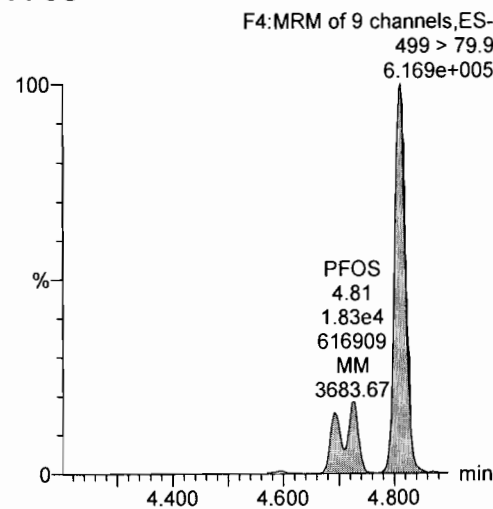
PFBS



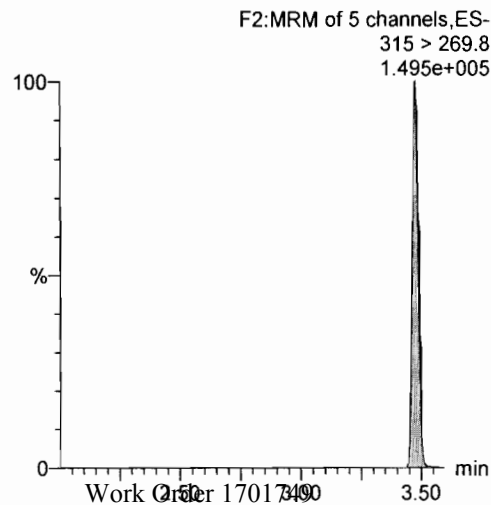
PFOA



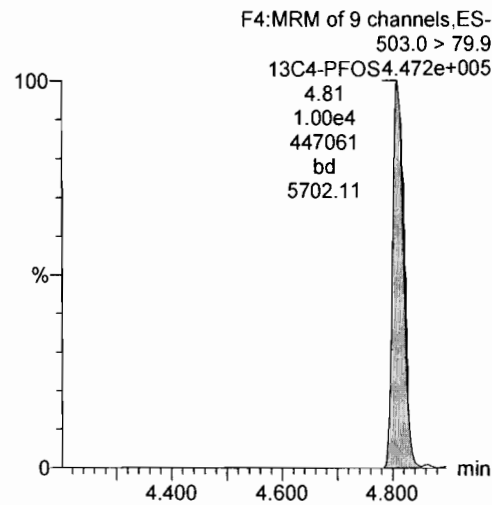
PFOS



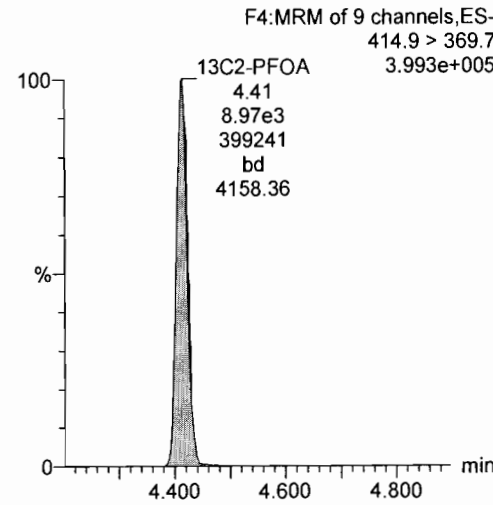
13C2-PFHxA



13C4-PFOS



13C2-PFOA



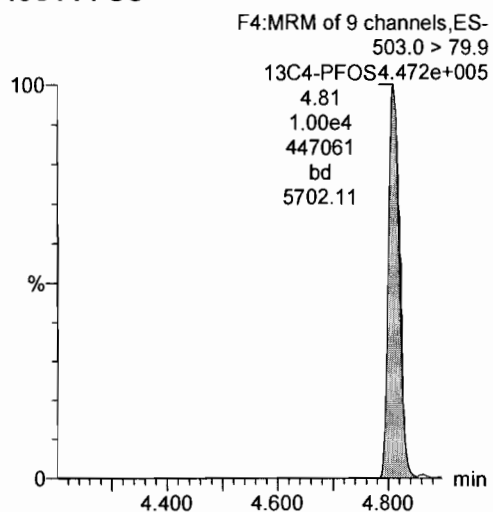
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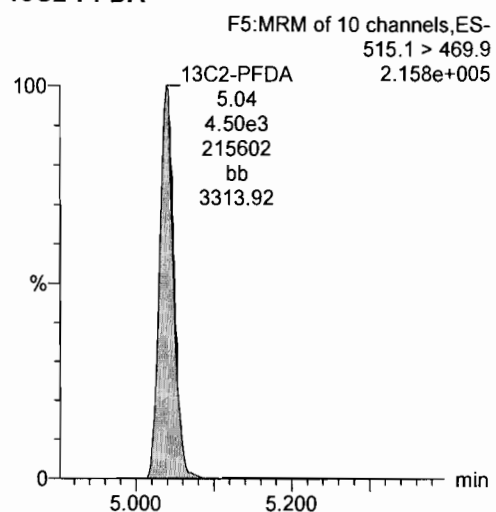
Printed: Monday, November 27, 2017 16:28:01 Pacific Standard Time

Name: 171127G1_27, Date: 27-Nov-2017, Time: 16:13:12, ID: ST171127G1-2 PFC CS3 537 17K2009, Description: PFC CS3 537 17K2009

13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171127G1\171127G1-53.qld

Last Altered: Tuesday, November 28, 2017 12:27:58 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:28:18 Pacific Standard Time

AC

11/28/17

✓JA 11/28/2017

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171127G1_53, Date: 27-Nov-2017, Time: 21:46:19, ID: ST171127G1-3 PFC CS5 537 17K2011, Description: PFC CS5 537 17K2011

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	2.35e4	8.12e3		1.0000	3.11	3.12	83.0	93.7	106.0
2	2 PFOA	413 > 368.7	6.99e4	8.50e3		1.0000	4.41	4.41	82.3	97.9	97.9
3	3 PFOS	499 > 79.9	3.44e4	8.12e3		1.0000	4.81	4.81	122	103	111.3
4	4 13C2-PFHxA	315 > 269.8	4.28e3	8.50e3	0.451	1.0000	3.47	3.47	5.03	11.2	111.6
5	5 13C2-PFDA	515.1 > 469.9	4.71e3	8.50e3	0.590	1.0000	5.04	5.04	5.55	9.40	94.0
6	6 13C2-PFOA	414.9 > 369.7	8.50e3	8.50e3	1.000	1.0000	4.41	4.41	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.12e3	8.12e3	1.000	1.0000	4.81	4.81	28.7	28.7	100.0

70-130
↓

LC Calibration Standards Review Checklist

Q1

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
ST7112761-3	L M H	N/A	☒	☒	☒	☒	☒	N/A
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/5/17

Run Log Present:



of Samples per Sequence Checked:



Reviewed By:

JA - 11/28/2017
Initials/Date

Comments:

L3 - DW

Dataset: Untitled

Last Altered: Tuesday, November 28, 2017 12:29:33 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:30:51 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_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171127G1_1	IPA	27-Nov-17	10:49:55
2	171127G1_2	ST171127G1-1 PFC CS-1 537 17K2005	27-Nov-17	11:02:22
3	171127G1_3	B7K0131-BS1 LFB 0.25	27-Nov-17	11:14:47
4	171127G1_4	IPA	27-Nov-17	11:27:12
5	171127G1_5	B7K0131-BLK1 LRB 0.25	27-Nov-17	11:39:39
6	171127G1_6	B7K0131-MS1 LFSM 0.21131	27-Nov-17	11:52:05
7	171127G1_7	B7K0131-MSD1 LFSMD 0.23448	27-Nov-17	12:04:32
8	171127G1_8	1701716-01 CH-AT-1RW01-1117 0.22923	27-Nov-17	12:16:59
9	171127G1_9	1701716-02 CH-AT-1FB01-1117 0.25032	27-Nov-17	12:29:26
10	171127G1_10	1701716-03 CH-AT-1RW02-1117 0.2226	27-Nov-17	12:41:54
11	171127G1_11	1701716-04 CH-AT-1FB02-1117 0.24851	27-Nov-17	12:54:18
12	171127G1_12	1701716-05 CH-AT-1RW03-1117 0.23393	27-Nov-17	13:06:43
13	171127G1_13	1701716-06 CH-AT-1FB03-1117 0.2361	27-Nov-17	13:19:08
14	171127G1_14	1701716-07 CH-AT-1RW04-1117 0.23307	27-Nov-17	13:31:34
15	171127G1_15	1701716-08 CH-AT-1FB04-1117 0.25394	27-Nov-17	13:44:00
16	171127G1_16	1701716-09 CH-AT-1RW05-1117 0.22609	27-Nov-17	13:56:26
17	171127G1_17	1701716-10 CH-AT-1FB05-1117 0.25417	27-Nov-17	14:08:53
18	171127G1_18	1701716-11 CH-AT-1RW06-1117 0.22984	27-Nov-17	14:21:20
19	171127G1_19	1701716-12 CH-AT-1FB06-1117 0.25719	27-Nov-17	14:33:45
20	171127G1_20	1701716-13 CH-AT-1RW07-1117 0.22118	27-Nov-17	14:46:09
21	171127G1_21	1701716-14 CH-AT-1FB07-1117 0.24183	27-Nov-17	14:58:33
22	171127G1_22	1701716-15 CH-AT-1RW08-1117 0.23563	27-Nov-17	15:10:59
23	171127G1_23	1701716-16 CH-AT-1FB08-1117 0.23846	27-Nov-17	15:23:25
24	171127G1_24	1701716-17 CH-AT-1RW09-1117 0.21629	27-Nov-17	15:35:51
25	171127G1_25	1701716-18 CH-AT-1FB09-1117 0.23079	27-Nov-17	15:48:17
26	171127G1_26	IPA	27-Nov-17	16:00:45
27	171127G1_27	ST171127G1-2 PFC CS3 537 17K2009	27-Nov-17	16:13:12
28	171127G1_28	IPA	27-Nov-17	16:25:37
29	171127G1_29	B7K0145-BS1 LFB 0.25	27-Nov-17	16:47:45
30	171127G1_30	IPA	27-Nov-17	17:00:11
31	171127G1_31	B7K0145-BLK1 LRB 0.25	27-Nov-17	17:12:40

Dataset: Untitled

Last Altered: Tuesday, November 28, 2017 12:29:33 Pacific Standard Time

Printed: Tuesday, November 28, 2017 12:30:51 Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171127G1_32	B7K0145-MS1 LFSM 0.26848	27-Nov-17	17:25:07
33	171127G1_33	B7K0145-MSD1 LFSMD 0.2773	27-Nov-17	17:37:34
34	171127G1_34	1701749-01 CH-AT-1RW37-1117 0.26121	27-Nov-17	17:50:02
35	171127G1_35	1701749-02 CH-AT-1FB37-1117 0.26751	27-Nov-17	18:02:30
36	171127G1_36	1701749-03 CH-AT-1RW38-1117 0.25605	27-Nov-17	18:14:54
37	171127G1_37	1701749-04 CH-AT-1FB38-1117 0.26566	27-Nov-17	18:27:19
38	171127G1_38	1701749-05 CH-AT-1RW39-1117 0.262	27-Nov-17	18:39:44
39	171127G1_39	1701749-06 CH-AT-1FB39-1117 0.2631	27-Nov-17	18:52:10
40	171127G1_40	1701749-07 CH-AT-1RW40-1117 0.26376	27-Nov-17	19:04:36
41	171127G1_41	1701749-08 CH-AT-1FB40-1117 0.26538	27-Nov-17	19:17:03
42	171127G1_42	1701749-09 CH-AT-1RW41-1117 0.2718	27-Nov-17	19:29:31
43	171127G1_43	1701749-10 CH-AT-1FB41-1117 0.27043	27-Nov-17	19:42:00
44	171127G1_44	1701749-11 CH-AT-1RW42-1117 0.25895	27-Nov-17	19:54:23
45	171127G1_45	1701749-12 CH-AT-1FB42-1117 0.26643	27-Nov-17	20:06:48
46	171127G1_46	1701749-13 CH-AT-1RW43-1117 0.26844	27-Nov-17	20:19:12
47	171127G1_47	1701749-14 CH-AT-1FB43-1117 0.27027	27-Nov-17	20:31:38
48	171127G1_48	1701749-15 CH-AT-1RW44-1117 0.26492	27-Nov-17	20:44:04
49	171127G1_49	1701749-16 CH-AT-1FB44-1117 0.26813	27-Nov-17	20:56:32
50	171127G1_50	1701749-17 CH-AT-1RW45-1117 0.26412	27-Nov-17	21:08:59
51	171127G1_51	1701749-18 CH-AT-1FB45-1117 0.26491	27-Nov-17	21:21:27
52	171127G1_52	IPA	27-Nov-17	21:33:51
53	171127G1_53	ST171127G1-3 PFC CS5 537 17K2011	27-Nov-17	21:46:19
54	171127G1_54	IPA	27-Nov-17	21:58:43

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Last Altered: Tuesday, November 28, 2017 12:27:58 Pacific Standard Time

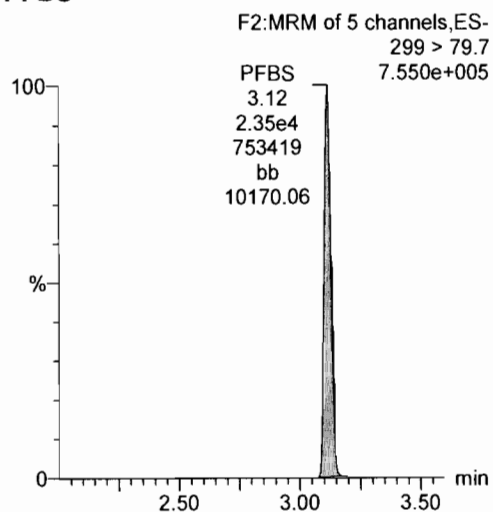
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Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 27 Nov 2017 14:32:15

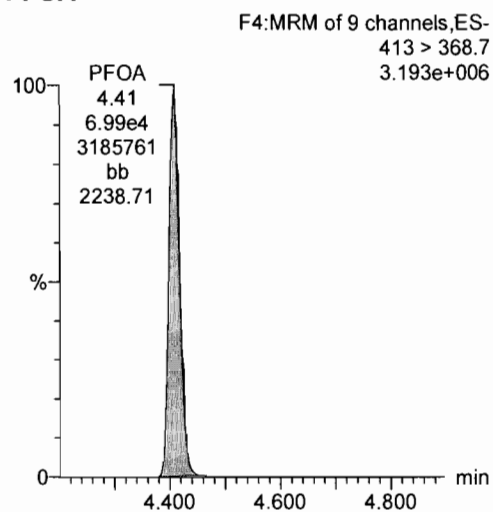
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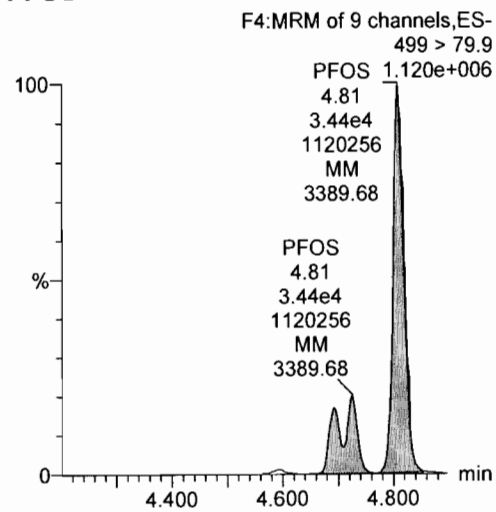
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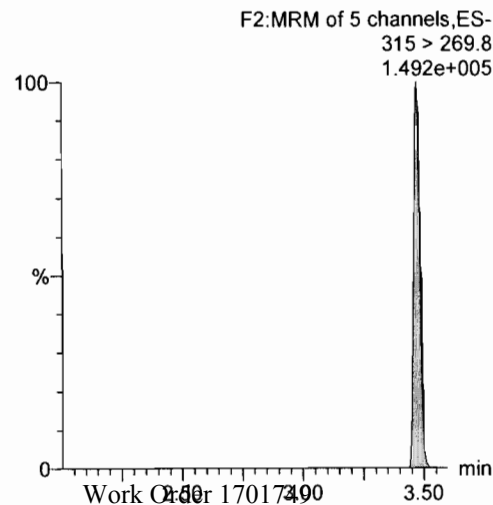
PFOA



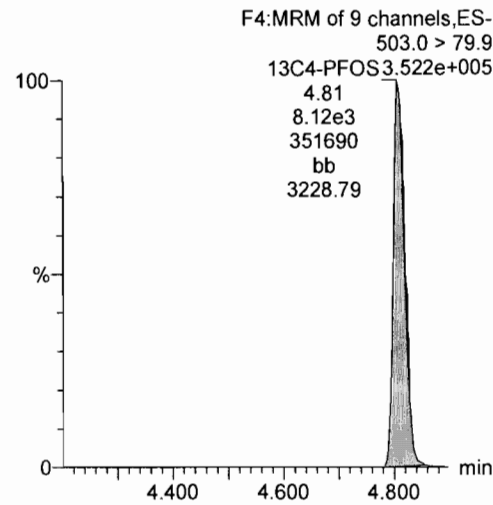
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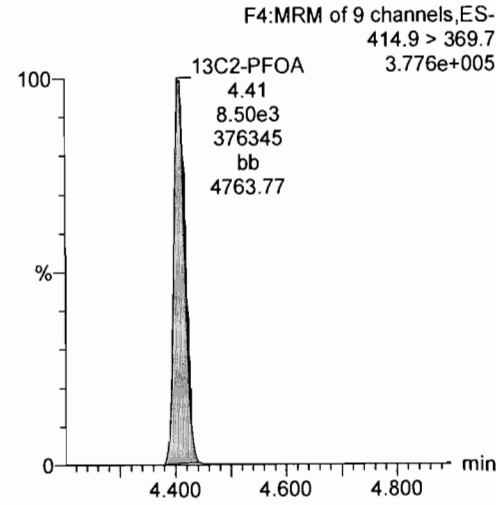
13C2-PFHxA



13C4-PFOS



13C2-PFOA



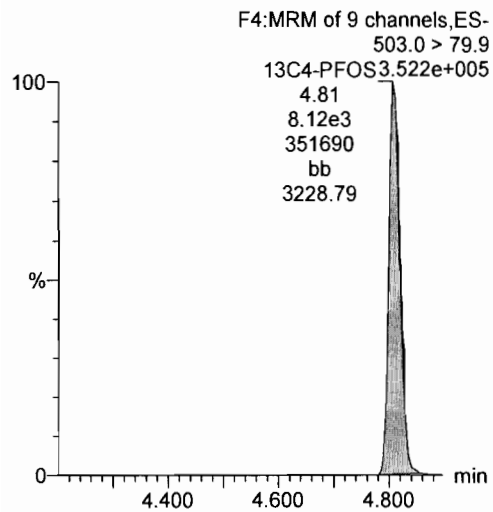
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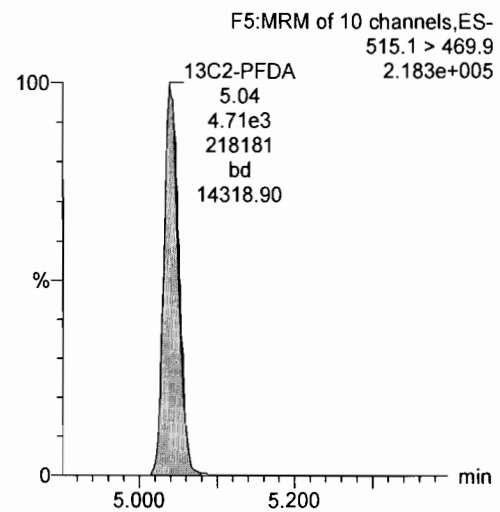
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13C4-PFOS



13C2-PFDA



INITIAL CALIBRATION (ICAL)
INCLUDING ASSOCIATED
INITIAL CALIBRATION VERIFICATION (ICV) AND INSTRUMENT BLANK (IB)

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time

Printed: Monday, November 27, 2017 09:18:54 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 19:34:27

Calibration: 26 Nov 2017 19:51:30 C18_537-Q1_11-25-17-L3

Compound name: PFBS

Coefficient of Determination: $R^2 = 0.998067$

Calibration curve: $0.886278 * x$

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

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

DM 11/27/17
✓ J.A. 11/27/2017

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171125G1_2	Standard	0.443	3.11	148.778	11353.713	0.376	0.4	-4.1	NO	0.998	NO	bb
2	2 171125G1_3	Standard	0.885	3.12	249.125	11312.515	0.632	0.7	-19.4	NO	0.998	NO	bb
3	3 171125G1_4	Standard	1.770	3.11	599.879	10414.688	1.653	1.9	5.4	NO	0.998	NO	bb
4	4 171125G1_5	Standard	4.420	3.12	1304.232	11717.421	3.195	3.6	-18.5	NO	0.998	NO	bb
5	5 171125G1_6	Standard	8.850	3.12	3046.969	10923.131	8.006	9.0	2.1	NO	0.998	NO	bb
6	6 171125G1_7	Standard	22.100	3.12	7668.119	10961.457	20.077	22.7	2.5	NO	0.998	NO	bd
7	7 171125G1_8	Standard	44.200	3.12	14447.599	10288.462	40.302	45.5	2.9	NO	0.998	NO	bb
8	8 171125G1_9	Standard	66.300	3.12	20346.059	10105.089	57.786	65.2	-1.7	NO	0.998	NO	bb
9	9 171125G1_10	Standard	88.400	3.12	26241.977	9430.776	79.860	90.1	1.9	NO	0.998	NO	bbX

Compound name: PFOA

Coefficient of Determination: $R^2 = 0.999038$

Calibration curve: $0.841053 * x$

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 171125G1_2	Standard	0.500	4.41	391.622	10353.699	0.378	0.4	-10.1	NO	0.999	NO	MM
2	2 171125G1_3	Standard	1.000	4.41	740.757	9329.975	0.794	0.9	-5.6	NO	0.999	NO	MM
3	3 171125G1_4	Standard	2.000	4.41	1754.398	10352.176	1.695	2.0	0.7	NO	0.999	NO	MM
4	4 171125G1_5	Standard	5.000	4.41	4610.348	10109.761	4.560	5.4	8.4	NO	0.999	NO	MM
5	5 171125G1_6	Standard	10.000	4.41	8710.974	10344.217	8.421	10.0	0.1	NO	0.999	NO	MM
6	6 171125G1_7	Standard	25.000	4.41	22122.717	9886.793	22.376	26.6	6.4	NO	0.999	NO	MM
7	7 171125G1_8	Standard	50.000	4.41	41221.871	9706.146	42.470	50.5	1.0	NO	0.999	NO	MM
8	8 171125G1_9	Standard	75.000	4.41	59173.539	9324.723	63.459	75.5	0.6	NO	0.999	NO	MM
9	9 171125G1_10	Standard	100.000	4.41	71499.648	8754.735	81.670	97.1	-2.9	NO	0.999	NO	MM

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time

Printed: Monday, November 27, 2017 09:18:54 Pacific Standard Time

Compound name: PFOS

Coefficient of Determination: $R^2 = 0.998864$

Calibration curve: $1.18285 * x$

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	171125G1_2	Standard	0.464	4.81	166.570	11353.713	0.421	0.4	-23.3	NO	0.999	NO	MM
2	2	171125G1_3	Standard	0.924	4.81	318.383	11312.515	0.808	0.7	-26.1	NO	0.999	NO	MM
3	3	171125G1_4	Standard	1.850	4.81	834.568	10414.688	2.300	1.9	5.1	NO	0.999	NO	MM
4	4	171125G1_5	Standard	4.620	4.81	2283.895	11717.421	5.594	4.7	2.4	NO	0.999	NO	MM
5	5	171125G1_6	Standard	9.240	4.81	4117.661	10923.131	10.819	9.1	-1.0	NO	0.999	NO	MM
6	6	171125G1_7	Standard	23.100	4.81	10156.604	10961.457	26.593	22.5	-2.7	NO	0.999	NO	MM
7	7	171125G1_8	Standard	46.200	4.81	19277.029	10288.462	53.774	45.5	-1.6	NO	0.999	NO	MM
8	8	171125G1_9	Standard	69.300	4.81	29526.109	10105.089	83.859	70.9	2.3	NO	0.999	NO	MM
9	9	171125G1_10	Standard	92.400	4.81	36144.129	9430.776	109.995	93.0	0.6	NO	0.999	NO	MMX

Compound name: 13C2-PFHxA

Response Factor: 0.450991

RRF SD: 0.0234656, Relative SD: 5.20312

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	171125G1_2	Standard	10.000	3.47	4870.931	10353.699	4.705	10.4	4.3	NO		NO	bb
2	2	171125G1_3	Standard	10.000	3.47	4441.022	9329.975	4.760	10.6	5.5	NO		NO	bb
3	3	171125G1_4	Standard	10.000	3.47	4281.225	10352.176	4.136	9.2	-8.3	NO		NO	bd
4	4	171125G1_5	Standard	10.000	3.47	4499.601	10109.761	4.451	9.9	-1.3	NO		NO	bb
5	5	171125G1_6	Standard	10.000	3.47	4701.819	10344.217	4.545	10.1	0.8	NO		NO	bb
6	6	171125G1_7	Standard	10.000	3.47	4133.068	9886.793	4.180	9.3	-7.3	NO		NO	bb
7	7	171125G1_8	Standard	10.000	3.47	4328.377	9706.146	4.459	9.9	-1.1	NO		NO	bb
8	8	171125G1_9	Standard	10.000	3.47	4249.482	9324.723	4.557	10.1	1.0	NO		NO	bb
9	9	171125G1_10	Standard	10.000	3.47	4198.792	8754.735	4.796	10.6	6.3	NO		NO	bb

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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Compound name: 13C2-PFDA

Response Factor: 0.590185

RRF SD: 0.0468027, Relative SD: 7.93017

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 171125G1_2	Standard	10.000	5.04	6324.458	10353.699	6.108	10.3	3.5	NO		NO	bb
2	2 171125G1_3	Standard	10.000	5.04	6302.661	9329.975	6.755	11.4	14.5	NO		NO	bd
3	3 171125G1_4	Standard	10.000	5.04	6422.071	10352.176	6.204	10.5	5.1	NO		NO	bb
4	4 171125G1_5	Standard	10.000	5.04	6106.069	10109.761	6.040	10.2	2.3	NO		NO	bb
5	5 171125G1_6	Standard	10.000	5.04	5345.813	10344.217	5.168	8.8	-12.4	NO		NO	bb
6	6 171125G1_7	Standard	10.000	5.04	5375.334	9886.793	5.437	9.2	-7.9	NO		NO	bb
7	7 171125G1_8	Standard	10.000	5.04	5589.127	9706.146	5.758	9.8	-2.4	NO		NO	bd
8	8 171125G1_9	Standard	10.000	5.04	5239.463	9324.723	5.619	9.5	-4.8	NO		NO	bd
9	9 171125G1_10	Standard	10.000	5.04	5277.000	8754.735	6.028	10.2	2.1	NO		NO	bd

Compound name: 13C2-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

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

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171125G1_2	Standard	10.000	4.41	10353.699	10353.699	10.000	10.0	0.0	NO		NO	bd
2	2 171125G1_3	Standard	10.000	4.41	9329.975	9329.975	10.000	10.0	0.0	NO		NO	bb
3	3 171125G1_4	Standard	10.000	4.41	10352.176	10352.176	10.000	10.0	0.0	NO		NO	bd
4	4 171125G1_5	Standard	10.000	4.41	10109.761	10109.761	10.000	10.0	0.0	NO		NO	bb
5	5 171125G1_6	Standard	10.000	4.41	10344.217	10344.217	10.000	10.0	0.0	NO		NO	bb
6	6 171125G1_7	Standard	10.000	4.41	9886.793	9886.793	10.000	10.0	0.0	NO		NO	bd
7	7 171125G1_8	Standard	10.000	4.41	9706.146	9706.146	10.000	10.0	0.0	NO		NO	bb
8	8 171125G1_9	Standard	10.000	4.41	9324.723	9324.723	10.000	10.0	0.0	NO		NO	bb
9	9 171125G1_10	Standard	10.000	4.41	8754.735	8754.735	10.000	10.0	0.0	NO		NO	bd

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

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

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 171125G1_2	Standard	28.700	4.81	11353.713	11353.713	28.700	28.7	0.0	NO		NO	bb
2	2 171125G1_3	Standard	28.700	4.81	11312.515	11312.515	28.700	28.7	0.0	NO		NO	bd
3	3 171125G1_4	Standard	28.700	4.81	10414.688	10414.688	28.700	28.7	0.0	NO		NO	bd
4	4 171125G1_5	Standard	28.700	4.81	11717.421	11717.421	28.700	28.7	0.0	NO		NO	MM
5	5 171125G1_6	Standard	28.700	4.81	10923.131	10923.131	28.700	28.7	0.0	NO		NO	bd
6	6 171125G1_7	Standard	28.700	4.81	10961.457	10961.457	28.700	28.7	0.0	NO		NO	bd
7	7 171125G1_8	Standard	28.700	4.81	10288.462	10288.462	28.700	28.7	0.0	NO		NO	bd
8	8 171125G1_9	Standard	28.700	4.81	10105.089	10105.089	28.700	28.7	0.0	NO		NO	bd
9	9 171125G1_10	Standard	28.700	4.81	9430.776	9430.776	28.700	28.7	0.0	NO		NO	MMX

Dataset: Untitled

Last Altered: Monday, November 27, 2017 09:22:48 Pacific Standard Time

Printed: Monday, November 27, 2017 09:24:50 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 20:36:49

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	171125G1_1	IPA	25-Nov-17	15:18:23
2	171125G1_2	ST171125G1-1 PFC CS-3 537 17K2003	25-Nov-17	15:30:51
3	171125G1_3	ST171125G1-2 PFC CS-2 537 17K2004	25-Nov-17	15:43:15
4	171125G1_4	ST171125G1-3 PFC CS-1 537 17K2005	25-Nov-17	15:55:39
5	171125G1_5	ST171125G1-4 PFC CS0 537 17K2006	25-Nov-17	16:08:05
6	171125G1_6	ST171125G1-5 PFC CS1 537 17K2007	25-Nov-17	16:20:31
7	171125G1_7	ST171125G1-6 PFC CS2 537 17K2008	25-Nov-17	16:32:58
8	171125G1_8	ST171125G1-7 PFC CS3 537 17K2009	25-Nov-17	16:45:24
9	171125G1_9	ST171125G1-8 PFC CS4 537 17K2010	25-Nov-17	16:57:53
10	171125G1_10	ST171125G1-9 PFC CS5 537 17K2011	25-Nov-17	17:10:21
11	171125G1_11	IPA	25-Nov-17	17:22:45
12	171125G1_12	ICV171125G1-1 PFC ICV 537 17K2012	25-Nov-17	17:35:12
13	171125G1_13	IPA	25-Nov-17	17:47:37
14	171125G1_14	B7K0117-BS1	25-Nov-17	18:00:08
15	171125G1_15	B7K0117-BSD1	25-Nov-17	18:12:34
16	171125G1_16	IPA	25-Nov-17	18:24:59
17	171125G1_17	B7K0117-BLK1	25-Nov-17	18:37:25
18	171125G1_18	1701712-01 CH-AT-1RW13-1117	25-Nov-17	18:49:51
19	171125G1_19	1701712-02 CH-AT-1FB13-1117	25-Nov-17	19:02:18
20	171125G1_20	1701712-03 CH-AT-1RW14-1117	25-Nov-17	19:14:46
21	171125G1_21	1701712-04 CH-AT-1FB14-1117	25-Nov-17	19:27:13
22	171125G1_22	1701712-05 CH-AT-1RW15-1117	25-Nov-17	19:39:37
23	171125G1_23	1701712-06 CH-AT-1FB15-1117	25-Nov-17	19:52:02
24	171125G1_24	1701712-07 CH-AT-1RW16-1117	25-Nov-17	20:04:26
25	171125G1_25	1701712-08 CH-AT-1FB16-1117	25-Nov-17	20:16:52
26	171125G1_26	1701712-09 CH-AT-1RW17-1117	25-Nov-17	20:29:18
27	171125G1_27	1701712-10 CH-AT-1FB17-1117	25-Nov-17	20:41:44
28	171125G1_28	1701712-11 CH-AT-1RW18-1117	25-Nov-17	20:54:11
29	171125G1_29	1701712-12 CH-AT-1FB18-1117	25-Nov-17	21:06:38
30	171125G1_30	1701712-13 CH-AT-1RW19-1117	25-Nov-17	21:19:02
31	171125G1_31	1701712-14 CH-AT-1FB19-1117	25-Nov-17	21:31:26

Dataset: Untitled

Last Altered: Monday, November 27, 2017 09:22:48 Pacific Standard Time

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Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	171125G1_32	1701712-15 CH-AT-1RW20-1117	25-Nov-17	21:43:51
33	171125G1_33	1701712-16 CH-AT-1FB20-1117	25-Nov-17	21:56:19
34	171125G1_34	1701712-17 CH-AT-1RW21-1117	25-Nov-17	22:08:47
35	171125G1_35	1701712-18 CH-AT-1FB21-1117	25-Nov-17	22:21:13
36	171125G1_36	1701712-19 CH-AT-1RW22-1117	25-Nov-17	22:33:40
37	171125G1_37	1701712-20 CH-AT-1FB22-1117	25-Nov-17	22:46:08
38	171125G1_38	IPA	25-Nov-17	22:58:31
39	171125G1_39	ST171125G1-10 PFC CS3 17K2009	25-Nov-17	23:10:59
40	171125G1_40	IPA	25-Nov-17	23:23:26

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time

Printed: Monday, November 27, 2017 09:19:38 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 19:34:27

Calibration: 26 Nov 2017 19:51:30 C18_537_Q1_11-25-17-L3

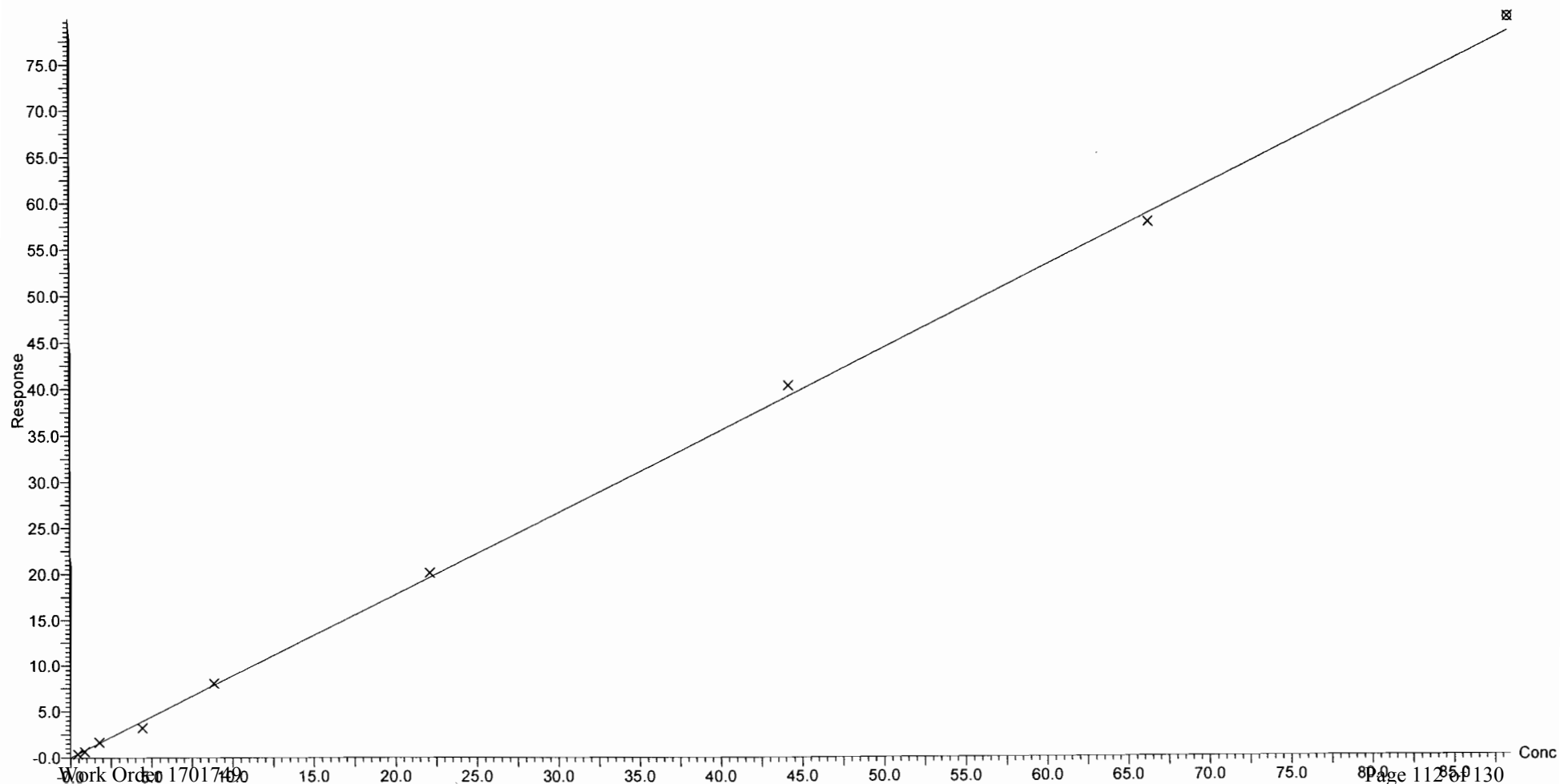
Compound name: PFBS

Coefficient of Determination: $R^2 = 0.998067$

Calibration curve: $0.886278 * x$

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\171125G1\171125G1-CRV.qld

Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time

Printed: Monday, November 27, 2017 09:19:38 Pacific Standard Time

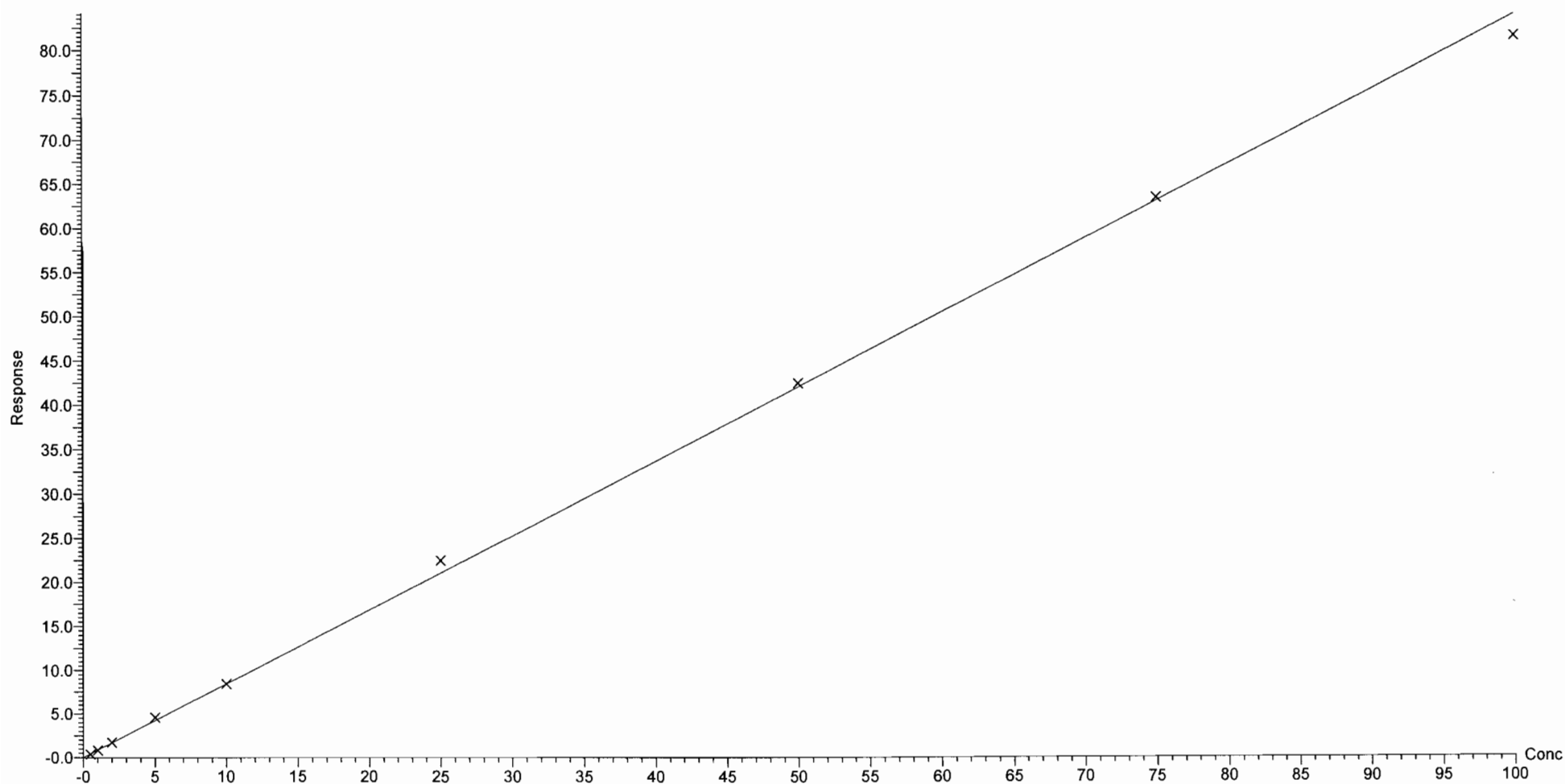
Compound name: PFOA

Coefficient of Determination: $R^2 = 0.999038$

Calibration curve: $0.841053 * x$

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

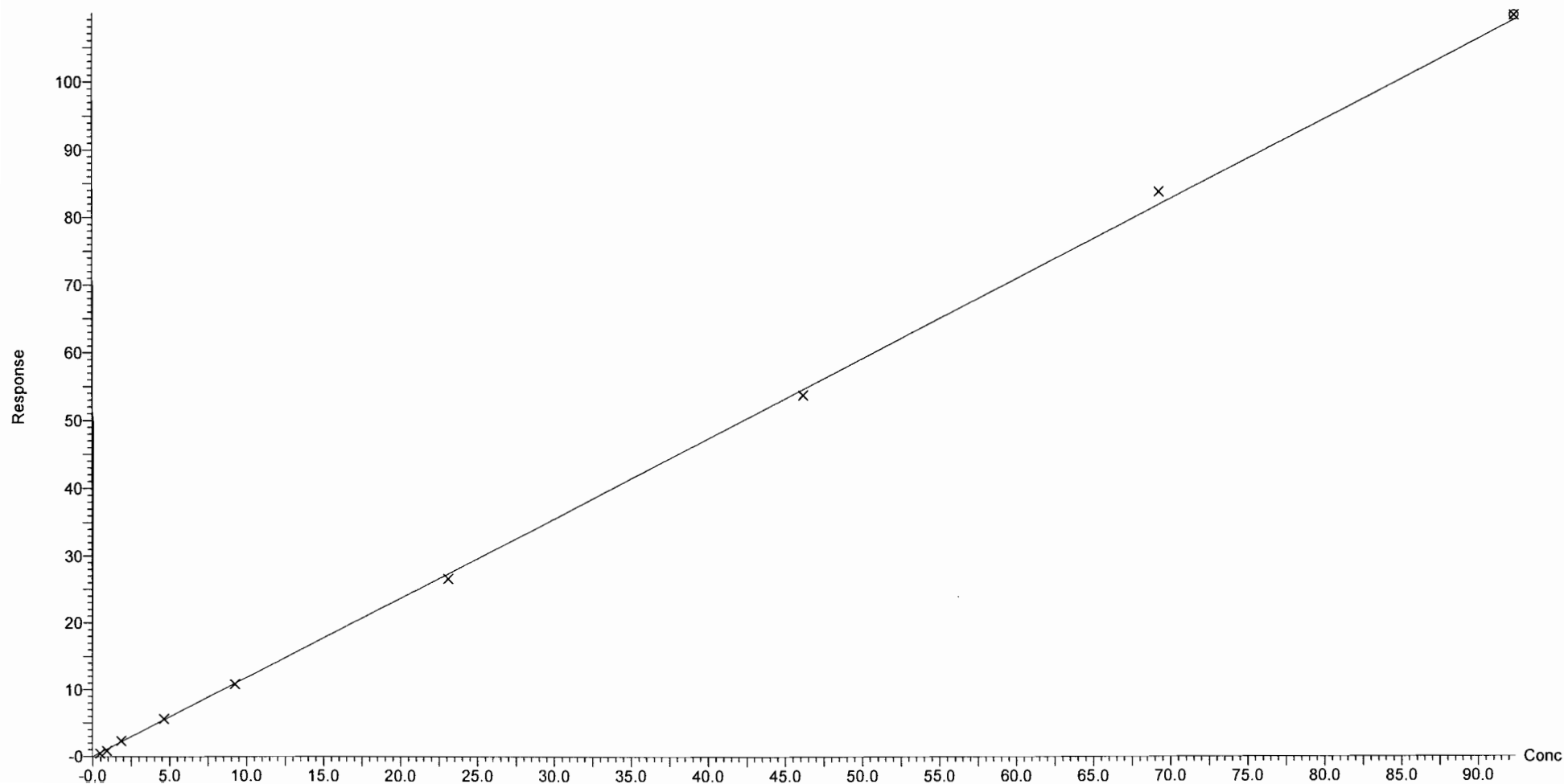
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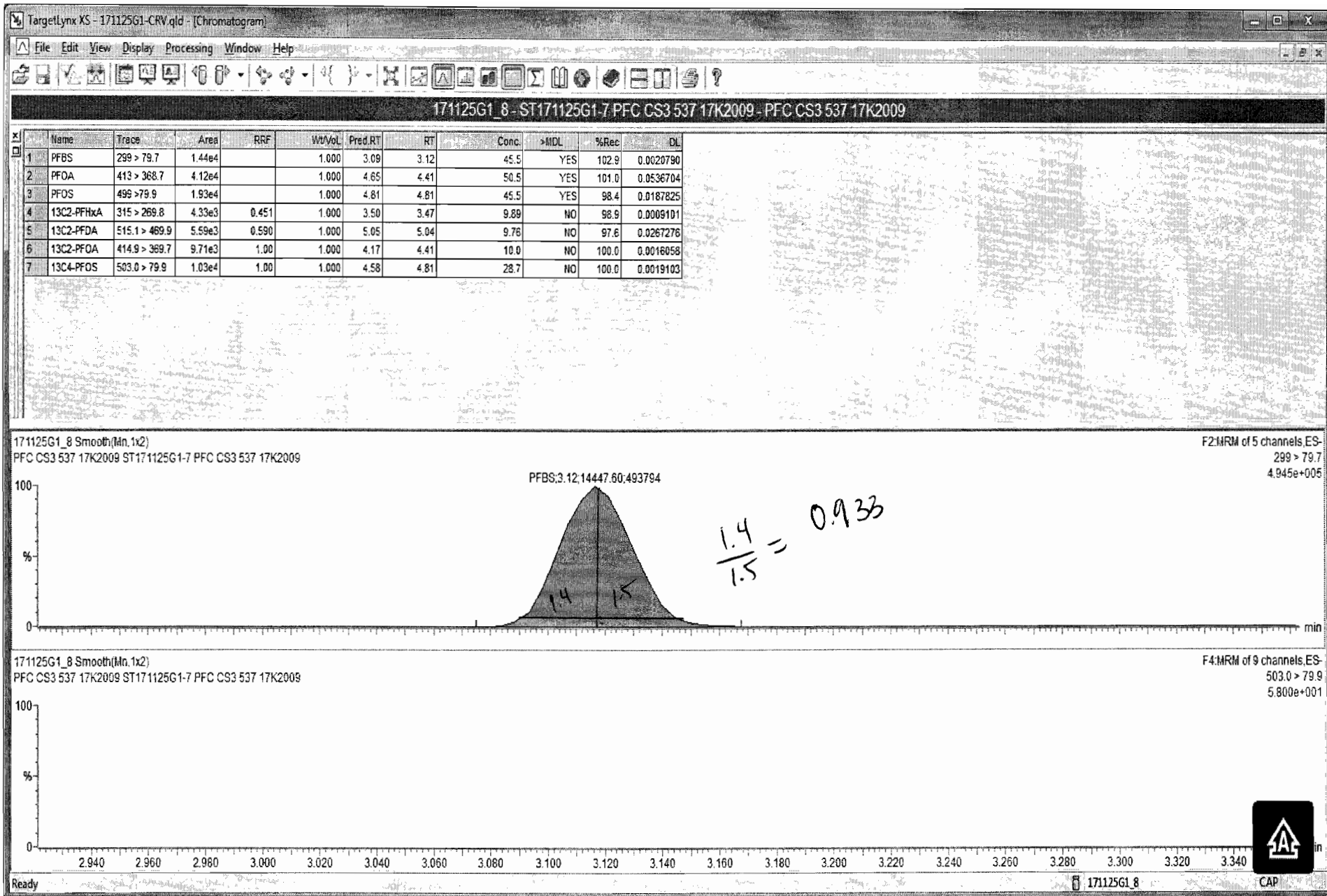


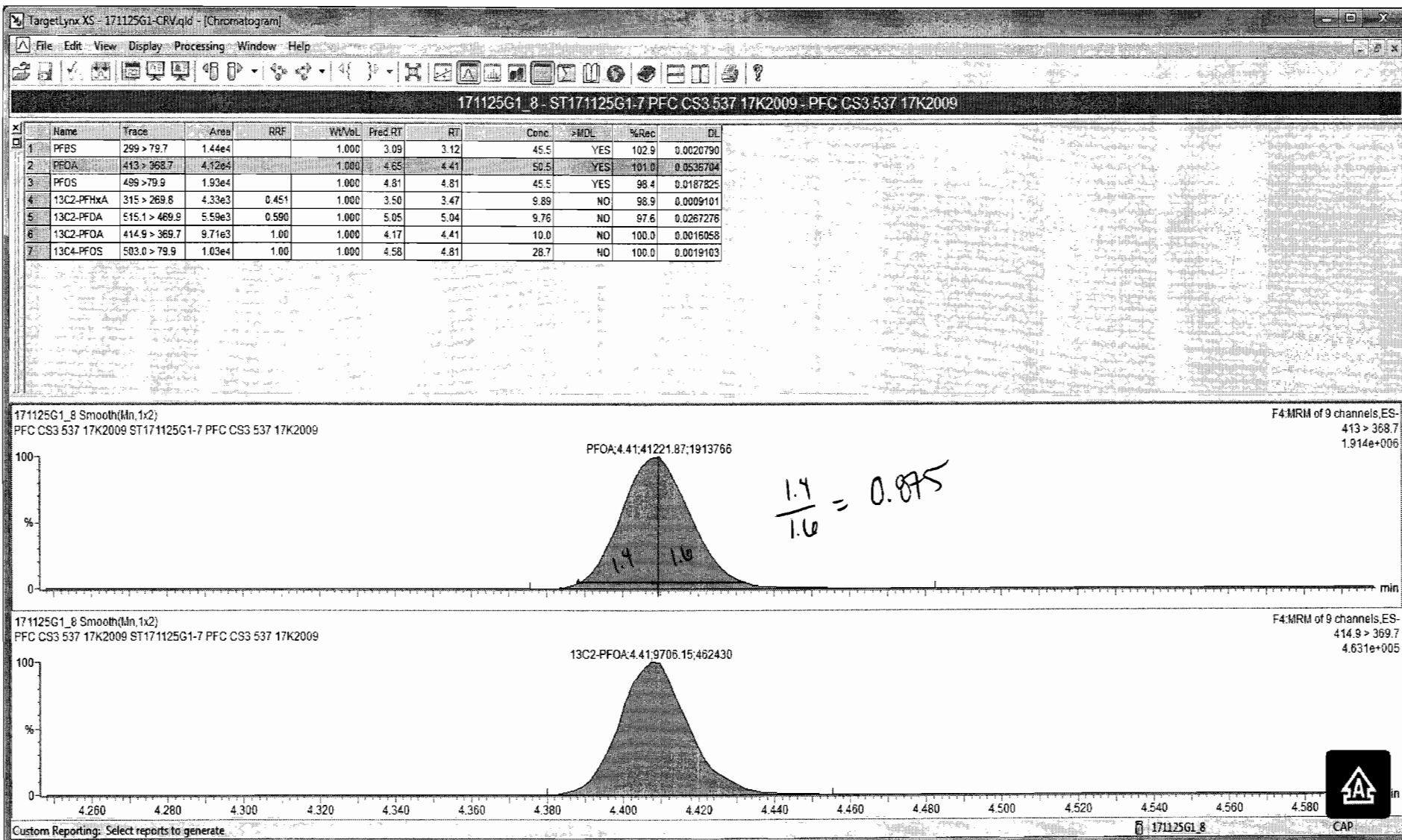
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Printed: Monday, November 27, 2017 09:19:38 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: $R^2 = 0.998864$
Calibration curve: $1.18285 * x$
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	X=excluded	
							Primary	Flags
1	ST171125G1-1 PFC CS-3 537 17K2003	171125G1_Standard	10	4.41	10353.7	10353.7	bd	
2	ST171125G1-2 PFC CS-2 537 17K2004	171125G1_Standard	10	4.41	9329.975	9329.975	bb	
3	ST171125G1-3 PFC CS-1 537 17K2005	171125G1_Standard	10	4.41	10352.18	10352.18	bd	
4	ST171125G1-4 PFC CS0 537 17K2006	171125G1_Standard	10	4.41	10109.76	10109.76	bb	
5	ST171125G1-5 PFC CS1 537 17K2007	171125G1_Standard	10	4.41	10344.22	10344.22	bb	
6	ST171125G1-6 PFC CS2 537 17K2008	171125G1_Standard	10	4.41	9886.793	9886.793	bd	
7	ST171125G1-7 PFC CS3 537 17K2009	171125G1_Standard	10	4.41	9706.146	9706.146	bb	
8	ST171125G1-8 PFC CS4 537 17K2010	171125G1_Standard	10	4.41	9324.723	9324.723	bb	
9	ST171125G1-9 PFC CS5 537 17K2011	171125G1_Standard	10	4.41	8754.735	8754.735	bd	
Average Area:							RPD:	
9795.803								16.72108

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	IS Area	X=excluded	
							Primary	Flags
1	ST171125G1-1 PFC CS-3 537 17K2003	171125G1_Standard	28.7	4.81	11353.71	11353.71	bb	
2	ST171125G1-2 PFC CS-2 537 17K2004	171125G1_Standard	28.7	4.81	11312.52	11312.52	bd	
3	ST171125G1-3 PFC CS-1 537 17K2005	171125G1_Standard	28.7	4.81	10414.69	10414.69	bd	
4	ST171125G1-4 PFC CS0 537 17K2006	171125G1_Standard	28.7	4.81	11717.42	11717.42	MM	
5	ST171125G1-5 PFC CS1 537 17K2007	171125G1_Standard	28.7	4.81	10923.13	10923.13	bd	
6	ST171125G1-6 PFC CS2 537 17K2008	171125G1_Standard	28.7	4.81	10961.46	10961.46	bd	
7	ST171125G1-7 PFC CS3 537 17K2009	171125G1_Standard	28.7	4.81	10288.46	10288.46	bd	
8	ST171125G1-8 PFC CS4 537 17K2010	171125G1_Standard	28.7	4.81	10105.09	10105.09	bd	
9	ST171125G1-9 PFC CS5 537 17K2011	171125G1_Standard	28.7	4.81	9430.776	9430.776	MMX	
Average Area:							RPD:	
10884.56								14.77678

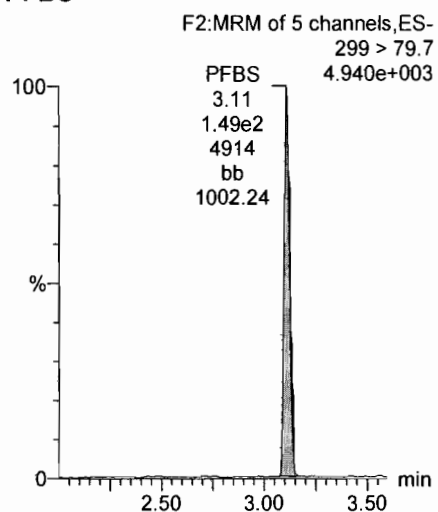
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Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

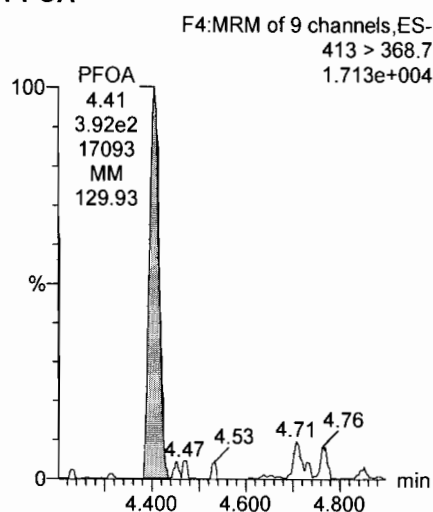
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Calibration: 26 Nov 2017 19:51:30

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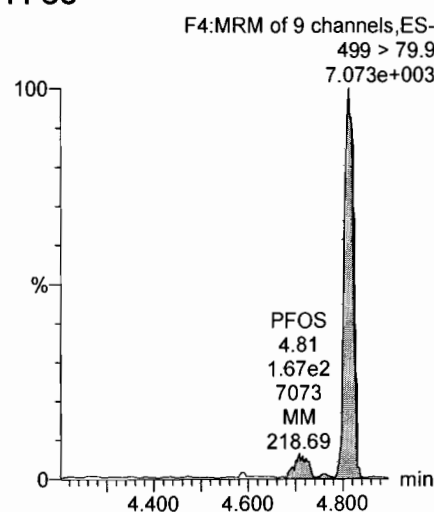
PFBS



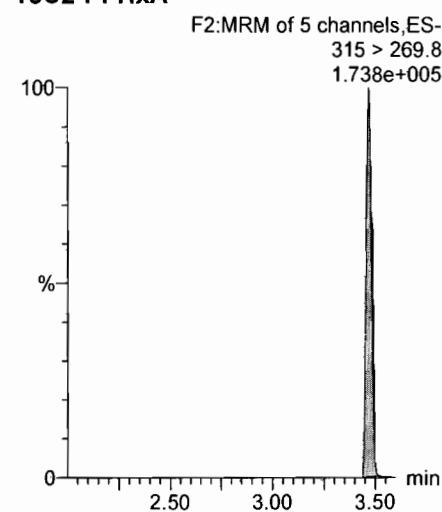
PFOA



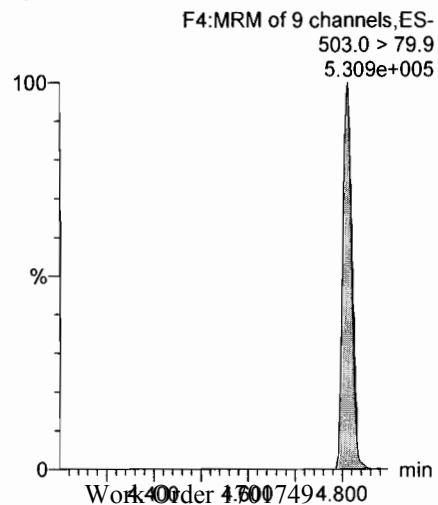
PFOS



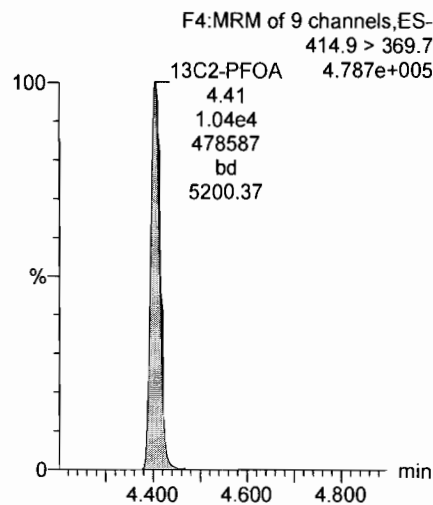
13C2-PFHxA



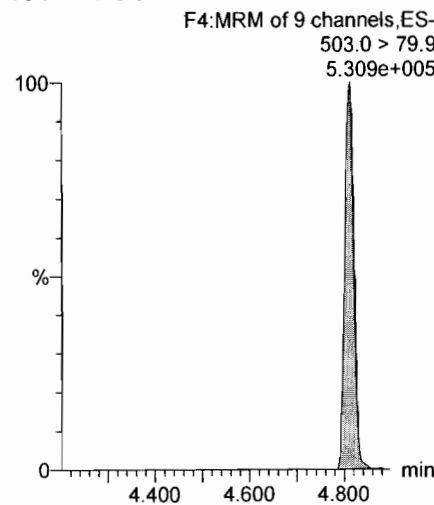
13C4-PFOS



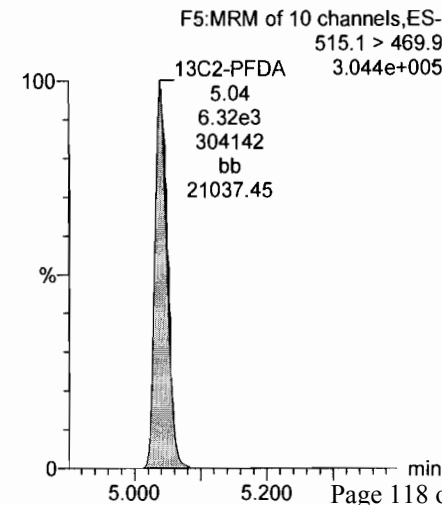
13C2-PFOA



13C4-PFOS



13C2-PFDA

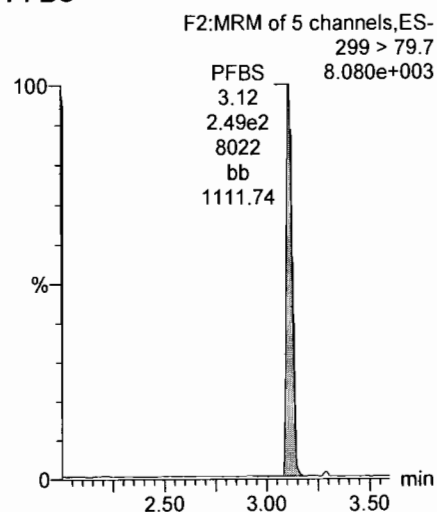


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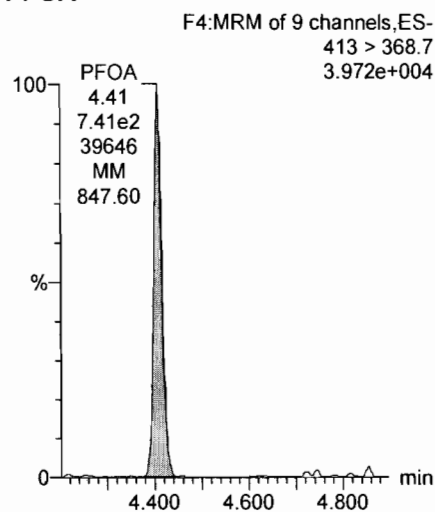
Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_3, Date: 25-Nov-2017, Time: 15:43:15, ID: ST171125G1-2 PFC CS-2 537 17K2004, Description: PFC CS-2 537 17K2004

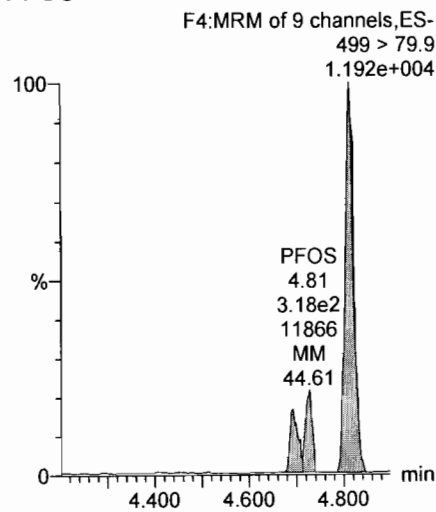
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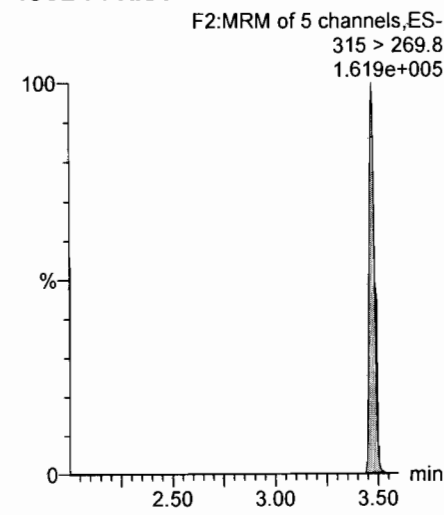
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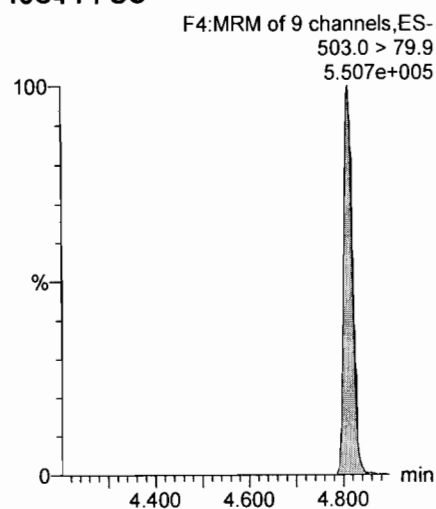
PFOS



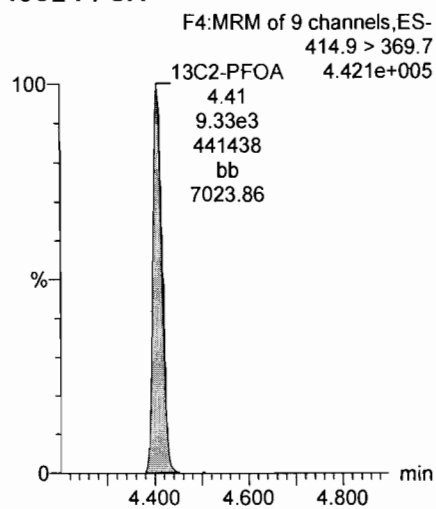
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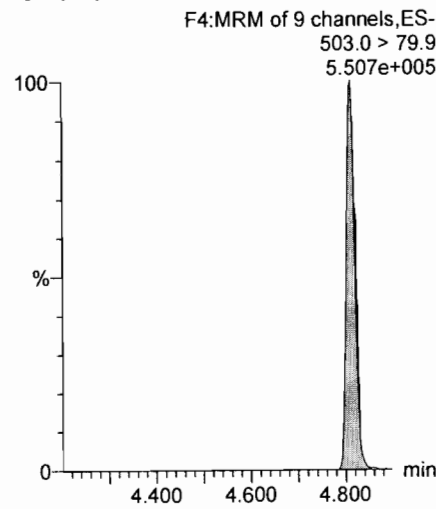
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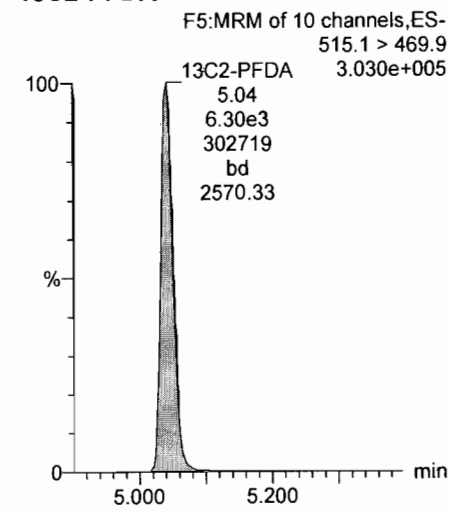
13C2-PFOA



13C4-PFOS



13C2-PFDA

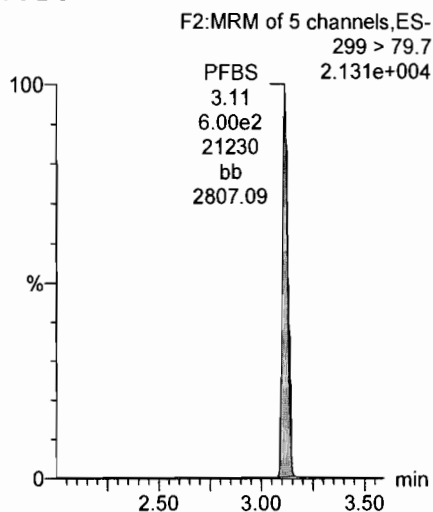


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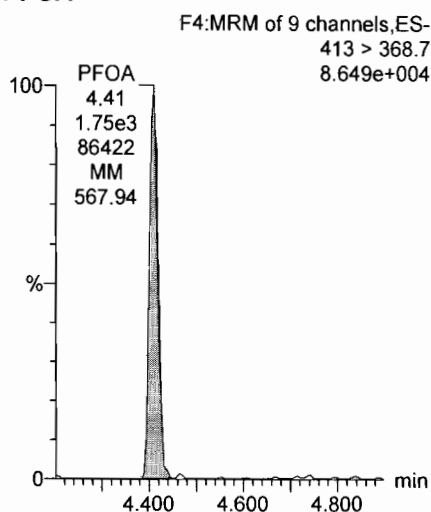
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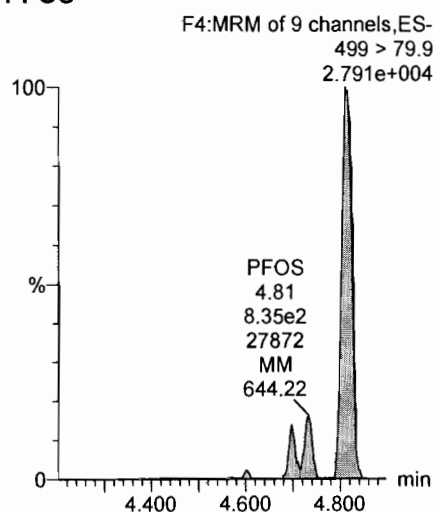
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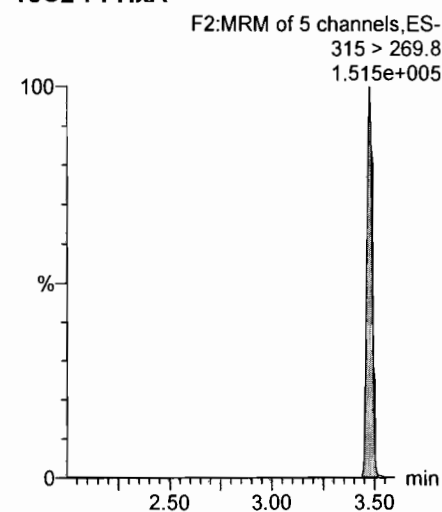
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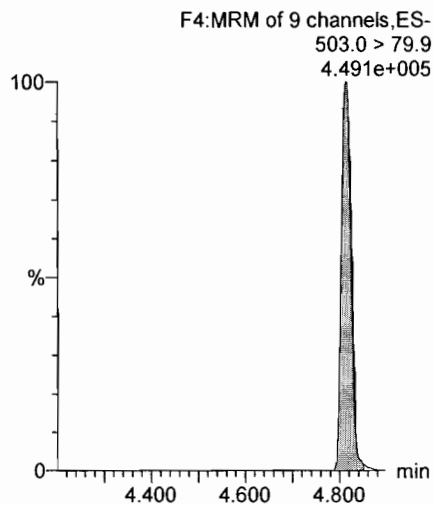
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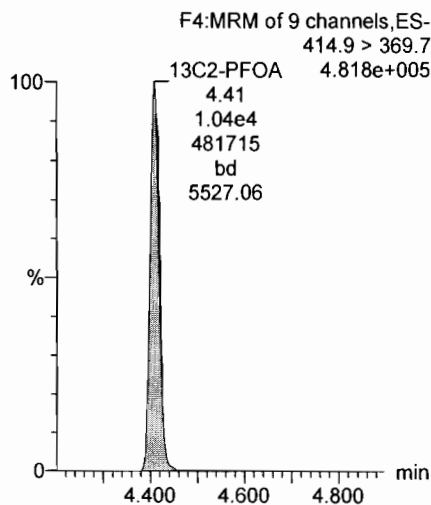
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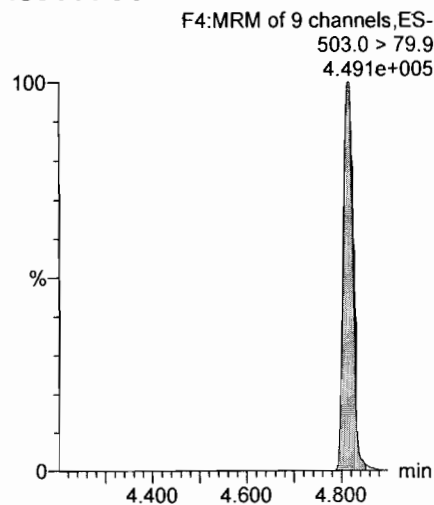
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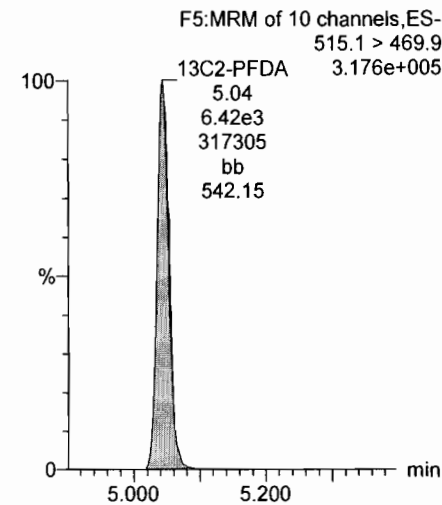
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13C4-PFOS



13C2-PFDA



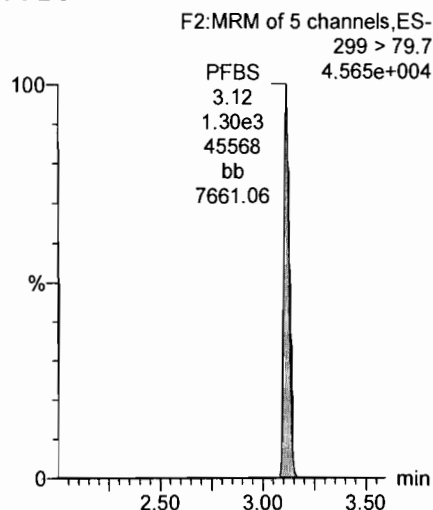
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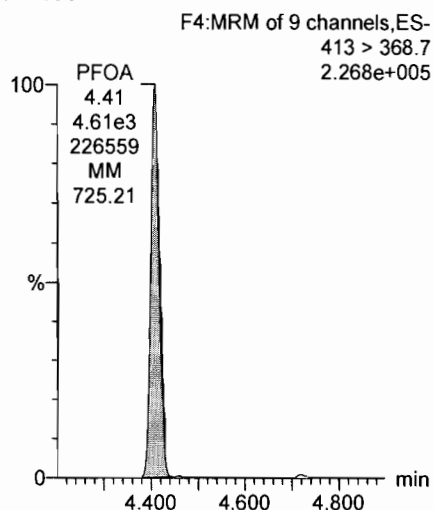
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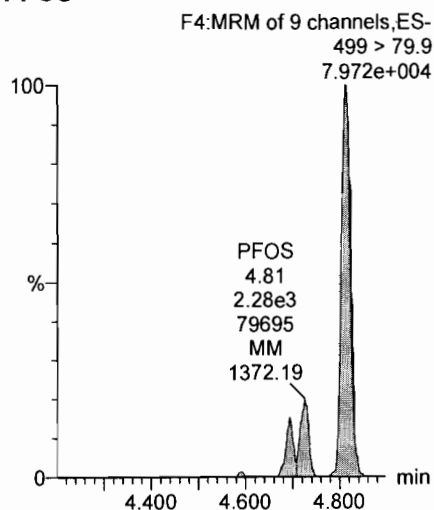
PFBS



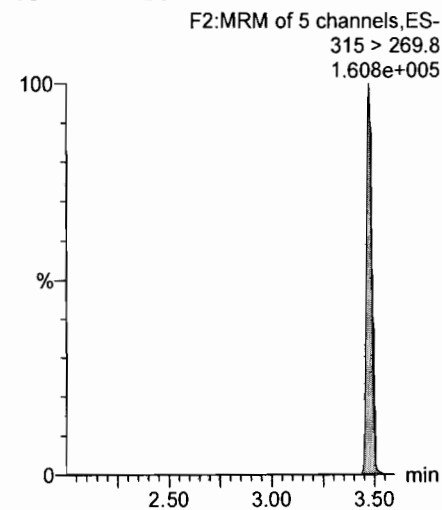
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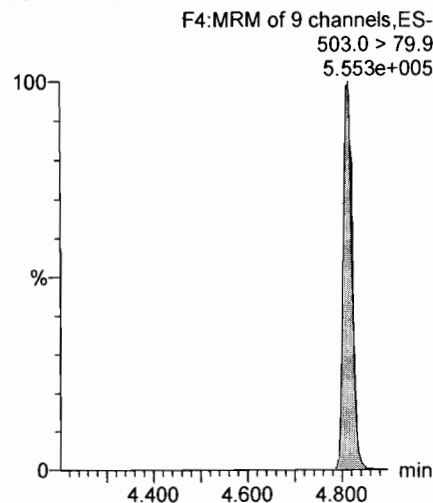
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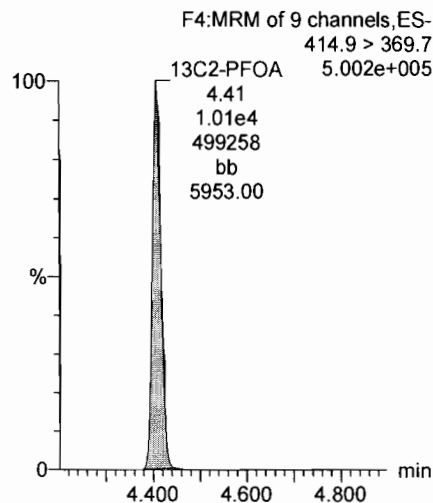
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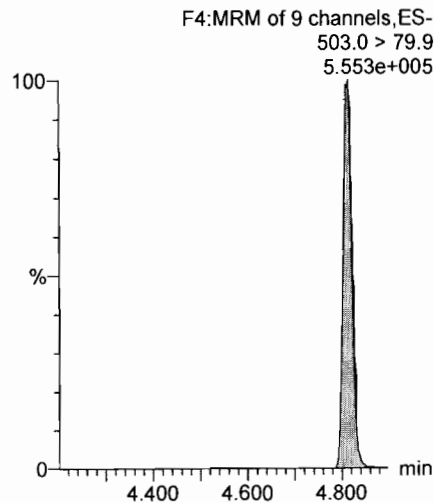
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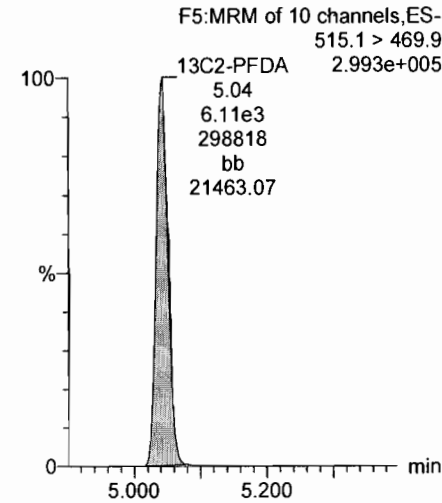
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13C2-PFDA

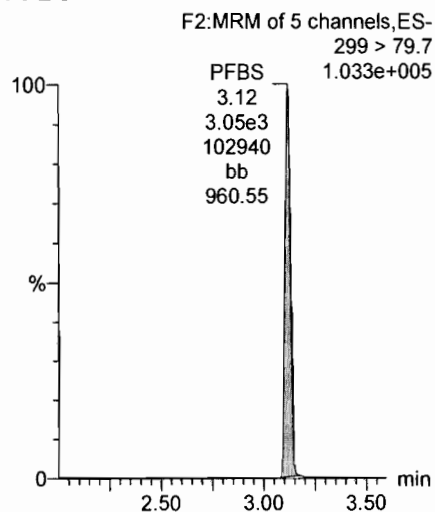


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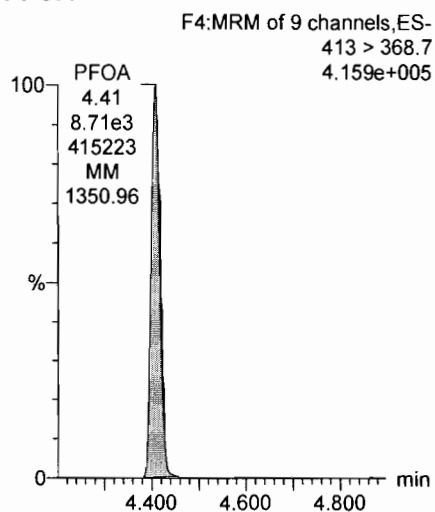
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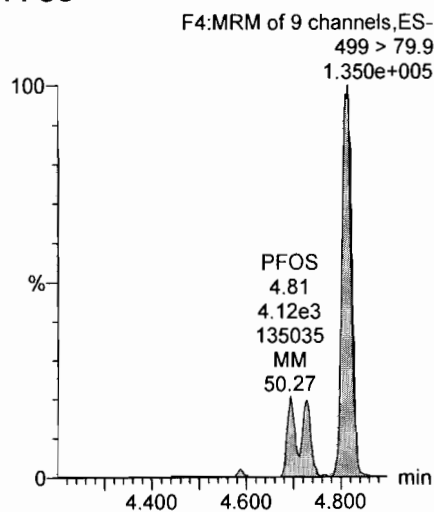
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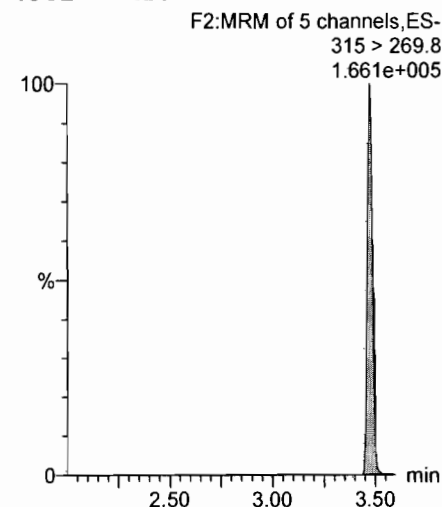
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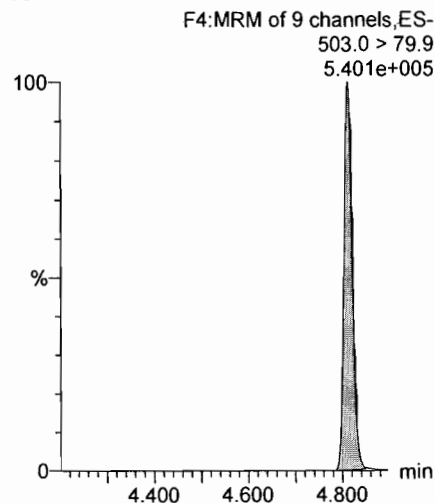
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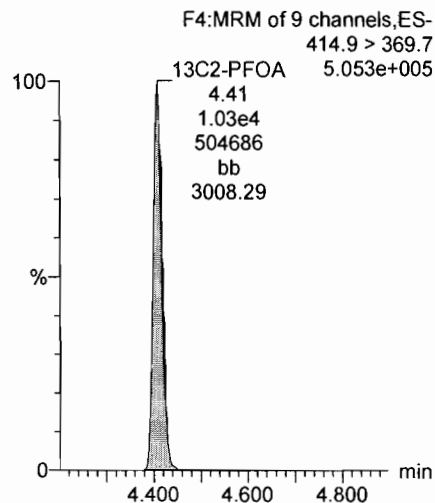
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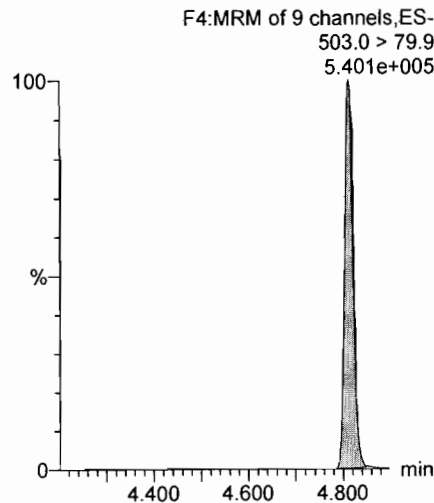
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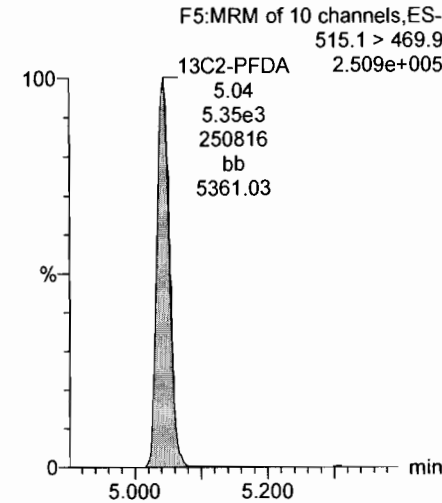
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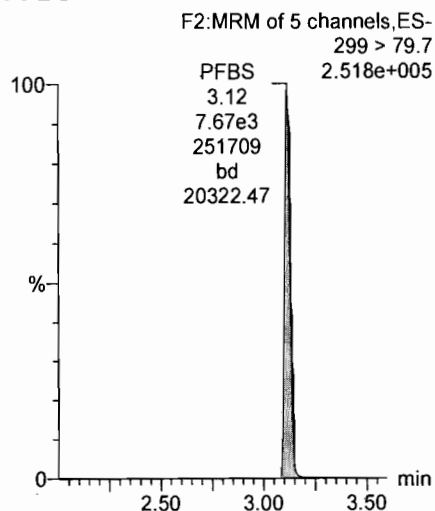


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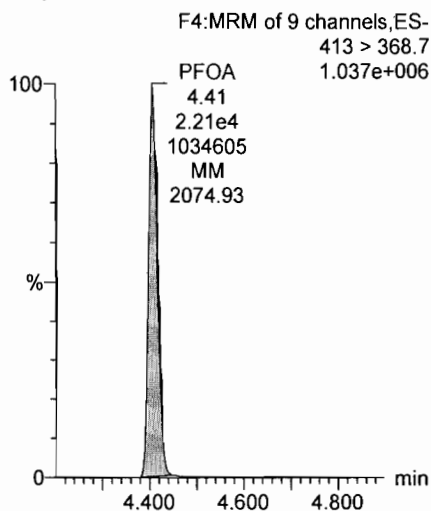
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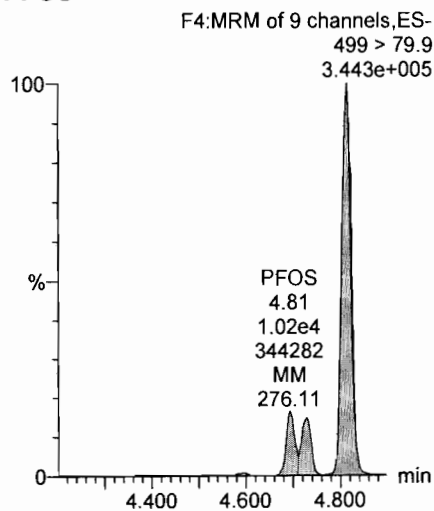
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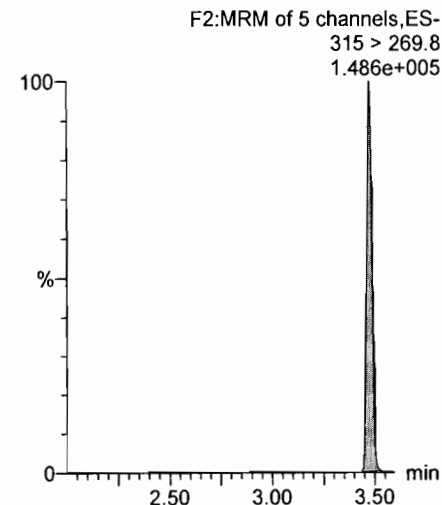
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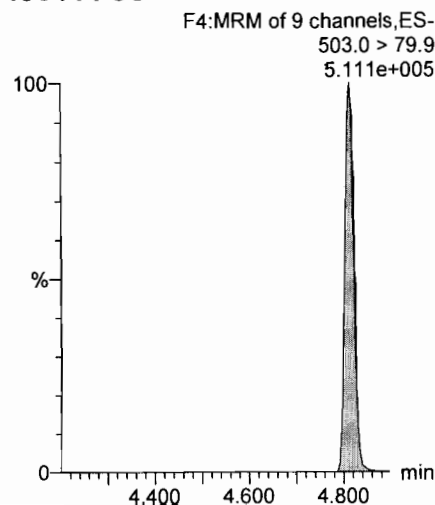
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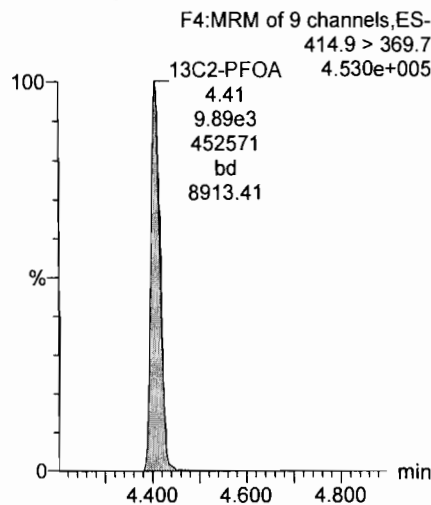
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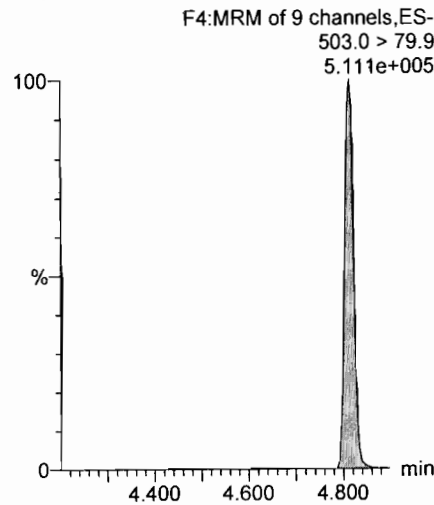
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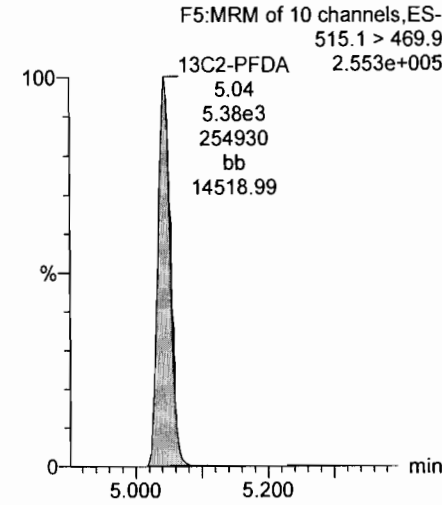
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13C4-PFOS



13C2-PFDA

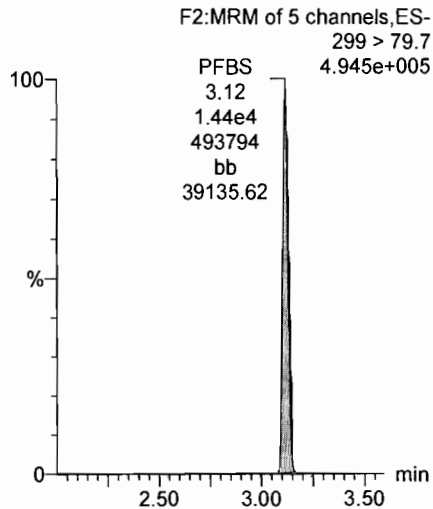


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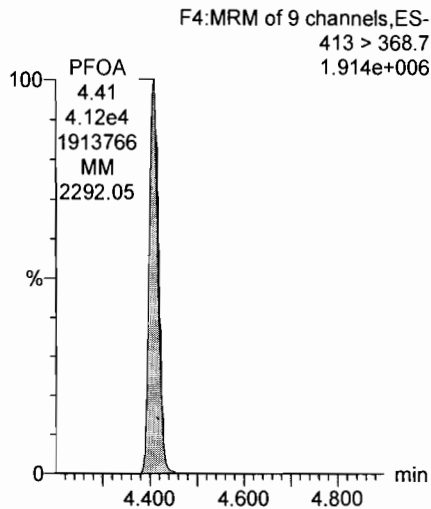
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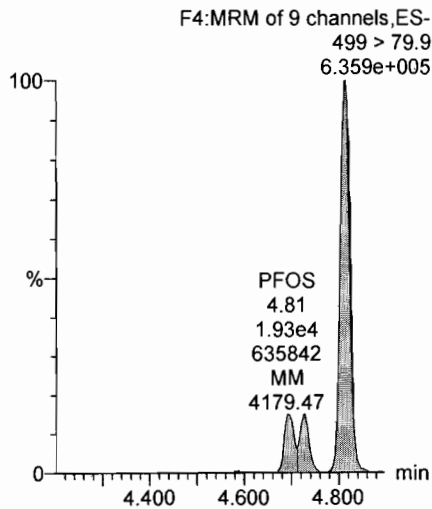
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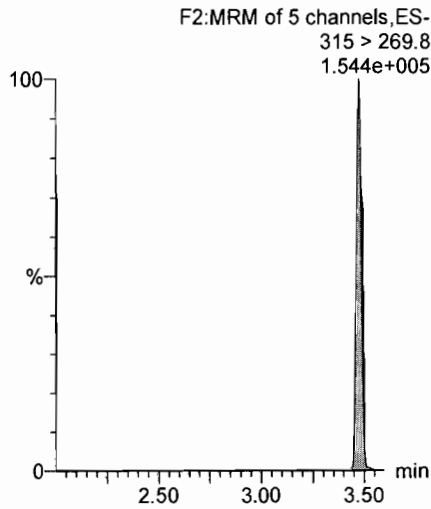
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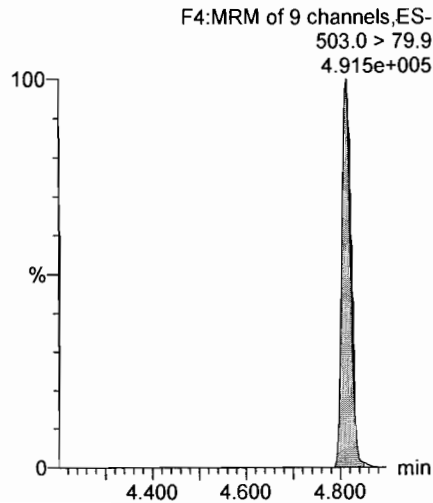
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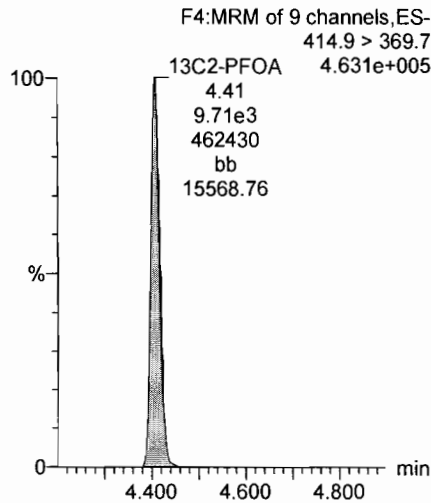
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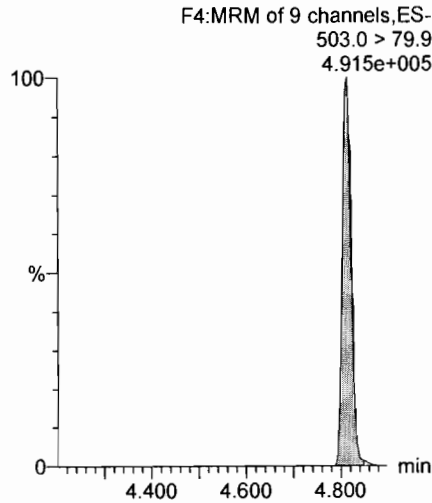
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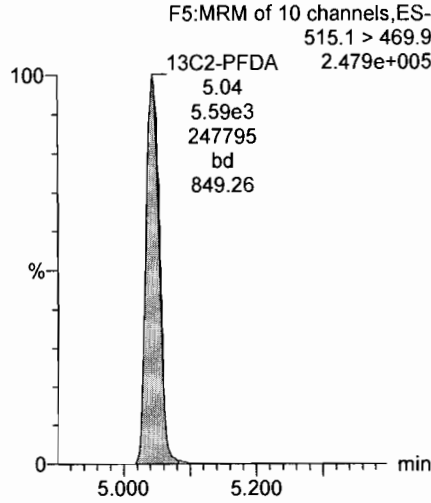
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13C4-PFOS



13C2-PFDA

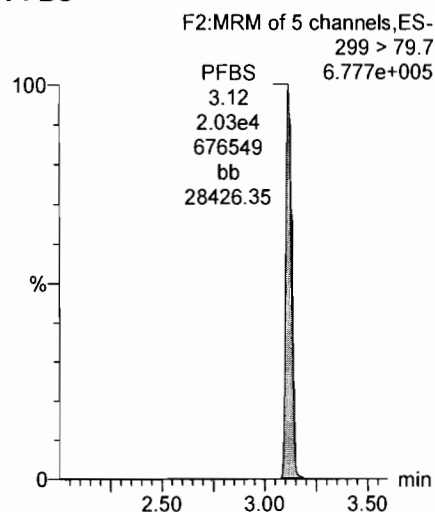


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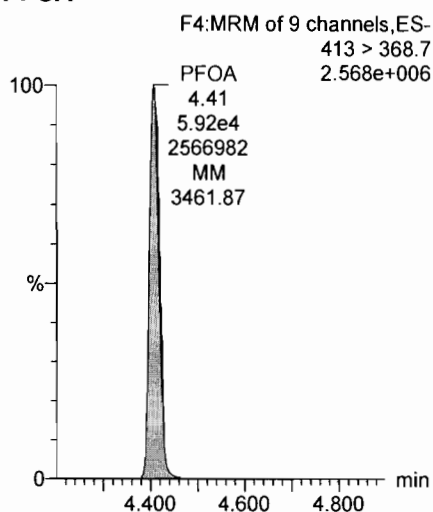
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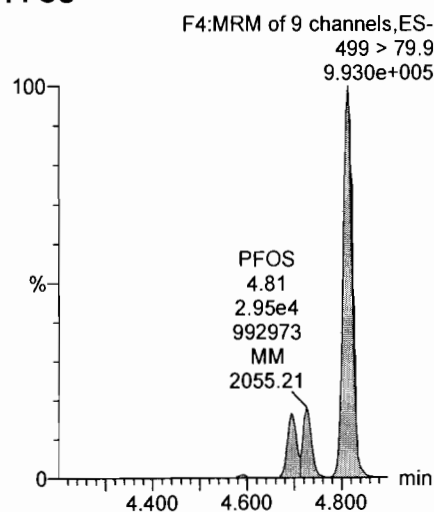
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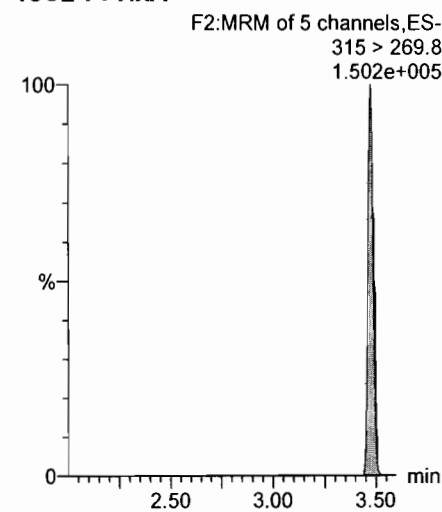
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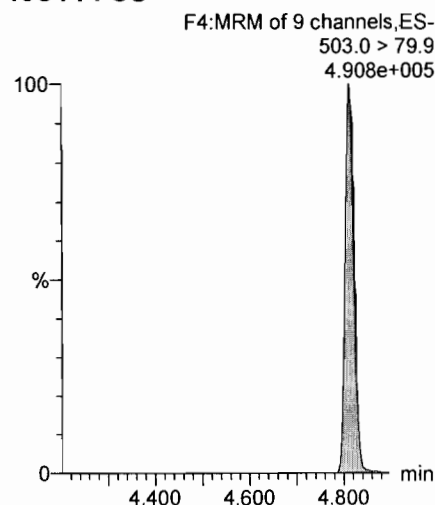
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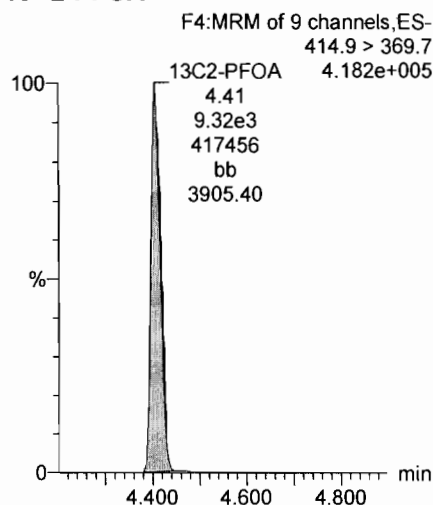
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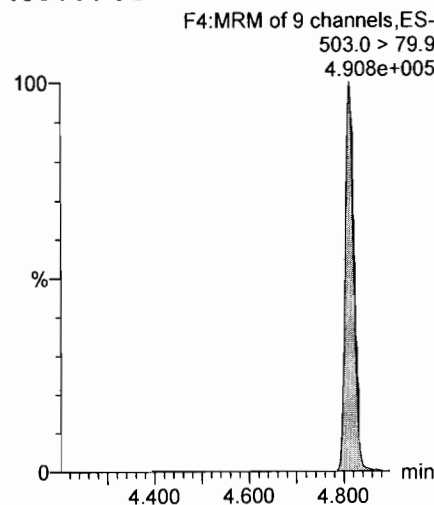
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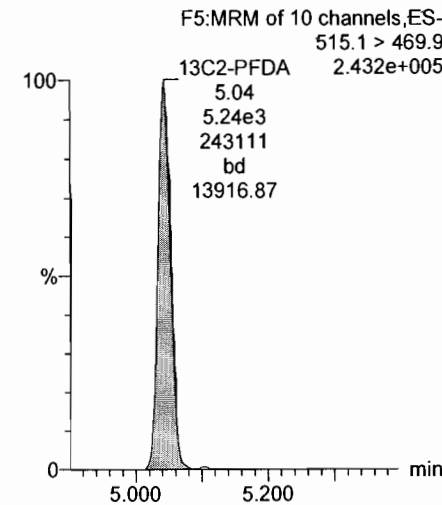
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13C4-PFOS



13C2-PFDA



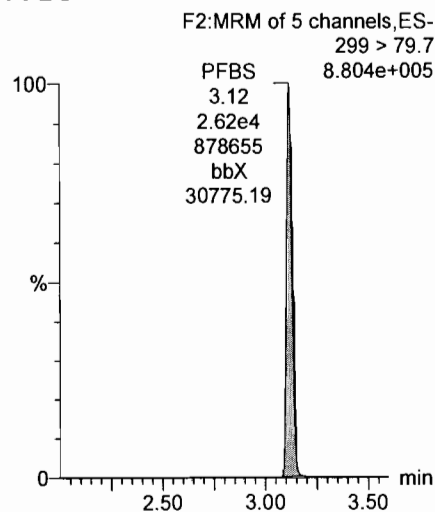
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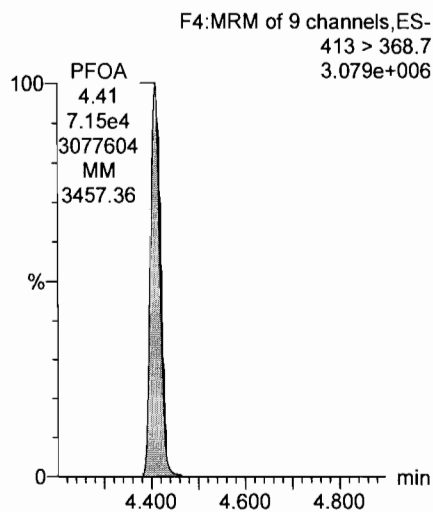
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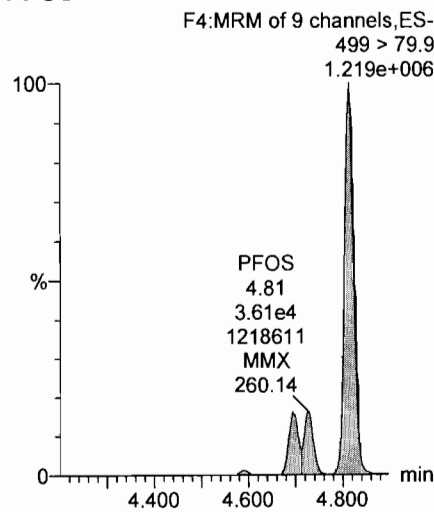
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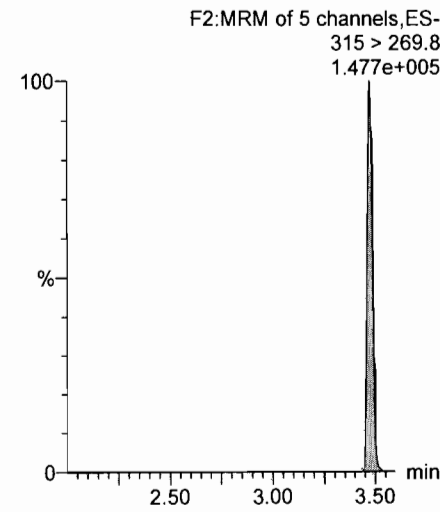
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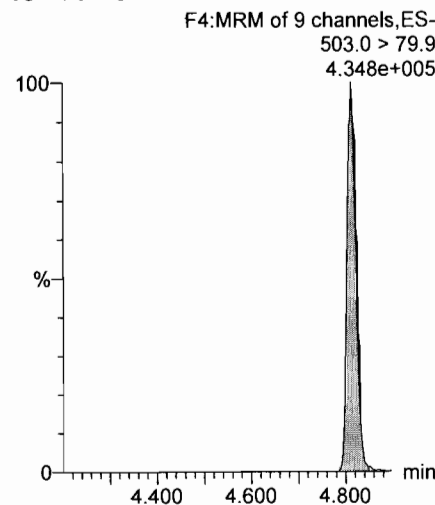
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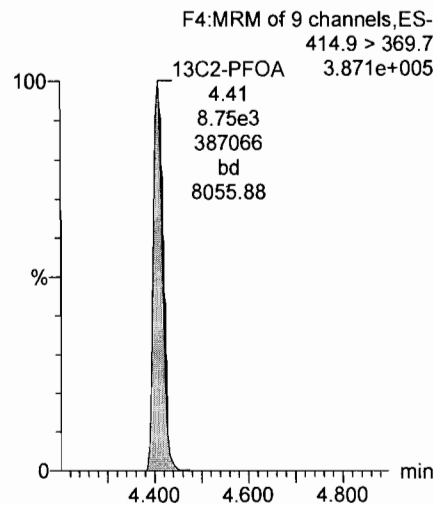
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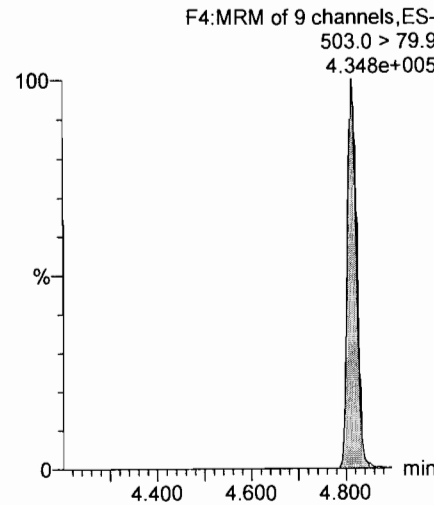
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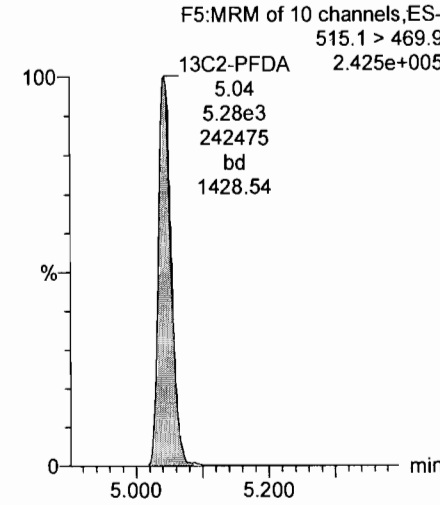
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-icv.qld

Last Altered: Sunday, November 26, 2017 20:30:59 Pacific Standard Time
Printed: Monday, November 27, 2017 09:36:34 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 20:29:15

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171125G1_12, Date: 25-Nov-2017, Time: 17:35:12, ID: ICV171125G1-1 PFC ICV 537 17K2012, Description: PFC ICV 537 17K2012

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.28e3	1.06e4		1.0000	3.09	3.12	8.89	10.0	100.3
2	2 PFOA	413 > 368.7	9.56e3	1.01e4		1.0000	4.65	4.41	9.49	11.3	112.8
3	3 PFOS	499 > 79.9	4.55e3	1.06e4		1.0000	4.81	4.81	12.3	10.4	104.3
4	4 13C2-PFHxA	315 > 269.8	4.60e3	1.01e4	0.451	1.0000	3.50	3.48	4.56	10.1	101.2
5	5 13C2-PFDA	515.1 > 469.9	5.30e3	1.01e4	0.590	1.0000	5.05	5.04	5.26	8.92	89.2
6	6 13C2-PFOA	414.9 > 369.7	1.01e4	1.01e4	1.000	1.0000	4.17	4.41	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.06e4	1.06e4	1.000	1.0000	4.58	4.81	28.7	28.7	100.0

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Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-icv.qld

Last Altered: Sunday, November 26, 2017 20:30:59 Pacific Standard Time

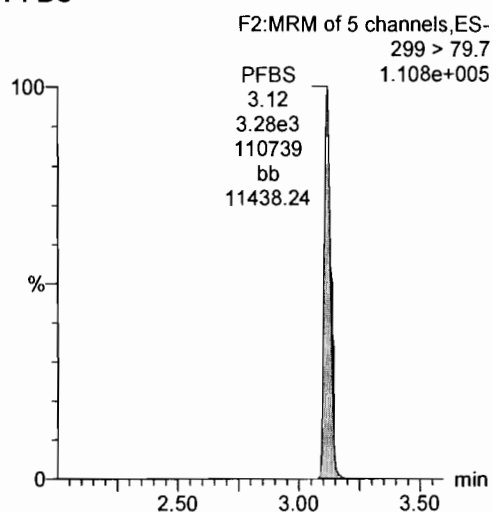
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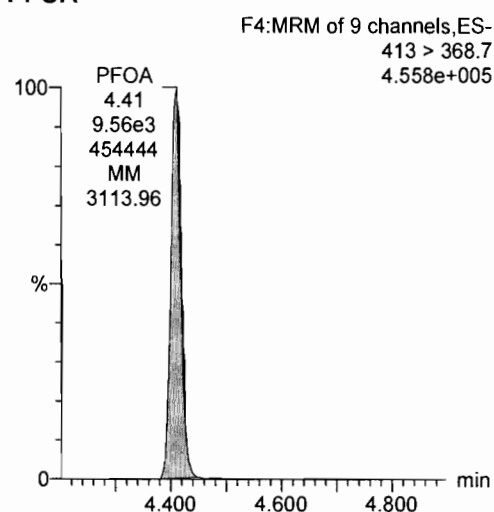
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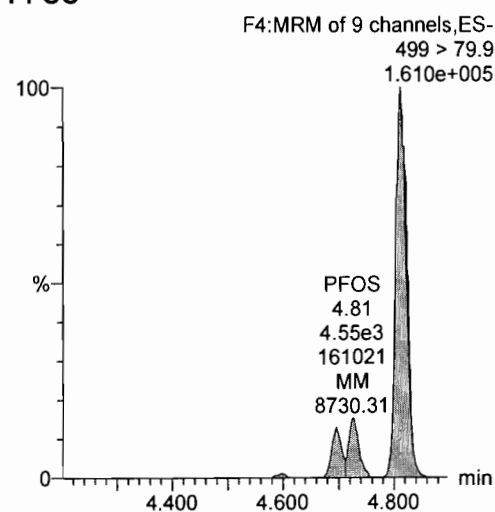
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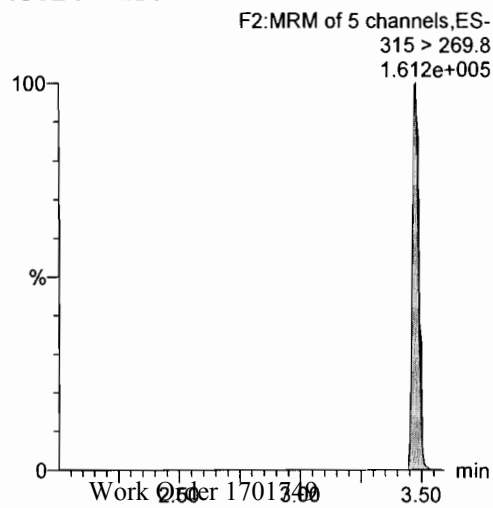
PFOA



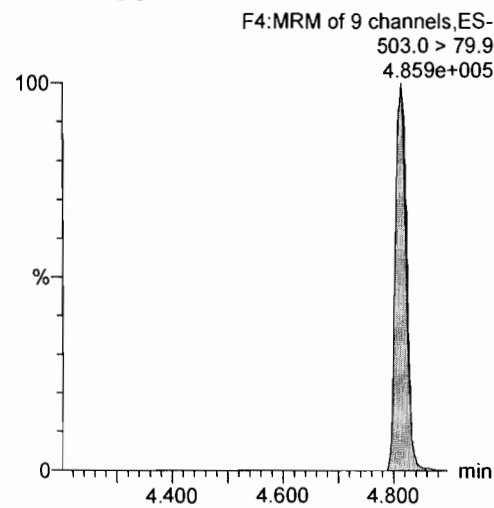
PFOS



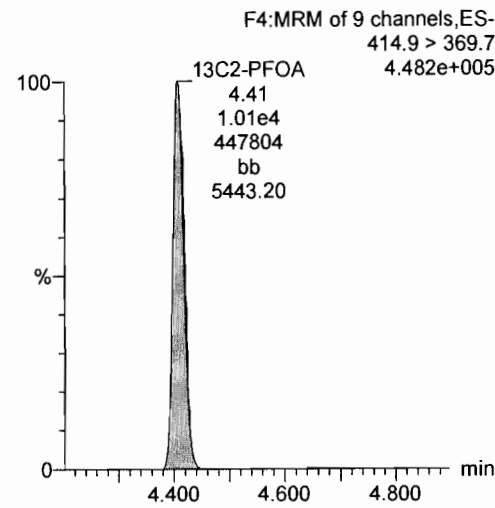
13C2-PFHxA



13C4-PFOS



13C2-PFOA



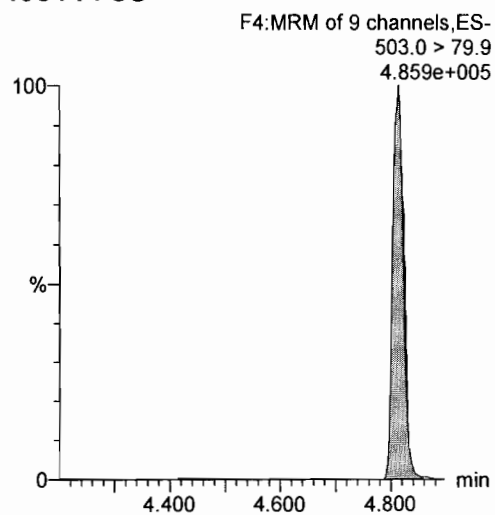
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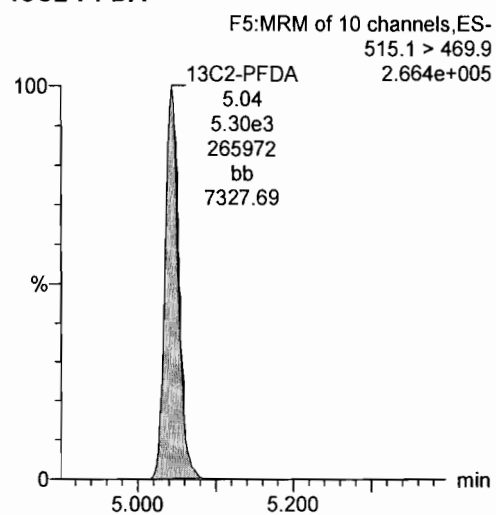
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Name: 171125G1_12, Date: 25-Nov-2017, Time: 17:35:12, ID: ICV171125G1-1 PFC ICV 537 17K2012, Description: PFC ICV 537 17K2012

13C4-PFOS



13C2-PFDA



Vista Analytical Laboratory

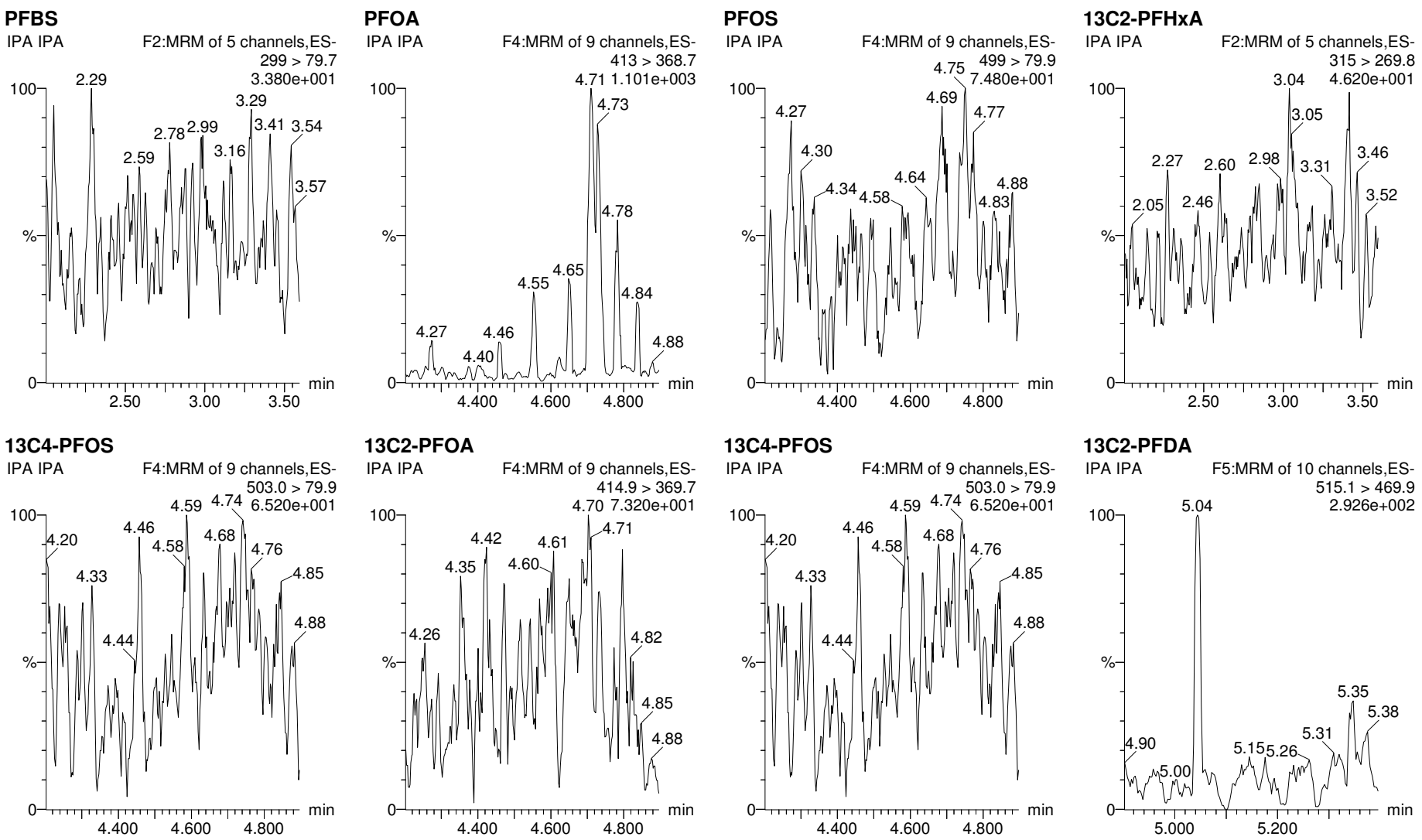
Dataset: Untitled

Last Altered: Monday, November 27, 2017 09:43:24 Pacific Standard Time

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Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 20:36:49
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171125G1_11, Date: 25-Nov-2017, Time: 17:22:45, ID: IPA, Description: IPA



Contract_ID	DO_CTO Number	Phase	Installation_ID	Chem_Name	Analyte_ID	Analyte_ Value	Original_ Analyte_ Value	Result_ Units	Lab_ Qualifier	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative	QC_ Control_ Limit_ Code	QC_ Accuracy_ Upper	QC_ Accuracy_ Lower	Control_L imit_ Date	QC_ Narrative	MDL	Detection_ Limit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_B atch
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.79	NG L	U		PR	TRG									5.1	0.424	4.79	9.57	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.79	NG L	U		PR	TRG									5.1	1.03	4.79	9.57	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.79	NG L	U		PR	TRG									5.1	0.995	4.79	9.57	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		114	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.67	NG L	U		PR	TRG									5.1	0.414	4.67	9.35	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.67	NG L	U		PR	TRG									5.1	1.01	4.67	9.35	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.67	NG L	U		PR	TRG									5.1	0.972	4.67	9.35	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		99.2	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.88	NG L	U		PR	TRG									5.1	0.433	4.88	9.76	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.88	NG L	U		PR	TRG									5.1	1.05	4.88	9.76	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.88	NG L	U		PR	TRG									5.1	1.02	4.88	9.76	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		113	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.71	NG L	U		PR	TRG									5.1	0.417	4.71	9.41	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.71	NG L	U		PR	TRG									5.1	1.02	4.71	9.41	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.71	NG L	U		PR	TRG									5.1	0.979	4.71	9.41	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		118	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.77	NG L	U		PR	TRG									5.1	0.423	4.77	9.54	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.77	NG L	U		PR	TRG									5.1	1.03	4.77	9.54	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.77	NG L	U		PR	TRG									5.1	0.992	4.77	9.54	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		107	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.75	NG L	U		PR	TRG									5.1	0.421	4.75	9.50	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.75	NG L	U		PR	TRG									5.1	1.03	4.75	9.50	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.75	NG L	U		PR	TRG									5.1	0.988	4.75	9.50	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		104	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.74	NG L	U		PR	TRG									5.1	0.420	4.74	9.48	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		12.5	NG L	U		PR	TRG									5.1	1.02	4.74	9.48	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		1.91	NG L	J		PR	TRG									5.1	0.986	4.74	9.48	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		120	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.71	NG L	U		PR	TRG									5.1	0.417	4.71	9.42	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.71	NG L	U		PR	TRG									5.1	1.02	4.71	9.42	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.71	NG L	U		PR	TRG									5.1	0.980	4.71	9.42	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		120	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.60	NG L	U		PR	TRG									5.1	0.407	4.60	9.20	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.60	NG L	U		PR	TRG									5.1	0.993	4.60	9.20	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.60	NG L	U		PR	TRG									5.1	0.957	4.60	9.20	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		121	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.62	NG L	U		PR	TRG									5.1	0.410	4.62	9.24	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.62	NG L	U		PR	TRG									5.1	0.998	4.62	9.24	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.62	NG L	U		PR	TRG									5.1	0.961	4.62	9.24	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		117	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.83	NG L	U		PR	TRG									5.1	0.428	4.83	9.65	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.83	NG L	U		PR	TRG									5.1	1.04	4.83	9.65	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.83	NG L	U		PR	TRG									5.1	1.00	4.83	9.65	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		112	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.69	NG L	U		PR	TRG									5.1	0.416	4.69	9.38	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.69	NG L	U		PR	TRG									5.1	1.01	4.69	9.38	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.69	NG L	U		PR	TRG									5.1	0.976	4.69	9.38	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		123	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.66	NG L	U		PR	TRG									5.1	0.413	4.66	9.31	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.66	NG L	U		PR	TRG									5.1	1.01	4.66	9.31	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.66	NG L	U		PR	TRG									5.1	0.969	4.66	9.31	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		109	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.63	NG L	U		PR	TRG									5.1	0.410	4.63	9.25	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.63	NG L	U		PR	TRG									5.1	0.999	4.63	9.25	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.63	NG L	U		PR	TRG									5.1	0.962	4.63	9.25	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	13C2-PFHxA	13C2-PFHxA		120	PCT REC			PR			SLSA	130	70					5.1				1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.72	NG L	U		PR	TRG									5.1	0.418	4.72	9.44	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctanoic acid (PFOA)	335-67-1		4.72	NG L	U		PR	TRG									5.1	1.02	4.72	9.44	1701749	S7K0078
N6247016D9000	0008		CHERRY POINT MCAS	Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.72	NG L	U		PR	TRG									5.1	0.981	4.72	9.44	1701749	S7K0078
N624																										

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

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701749
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-1RW37-1117	1701749-01	Water
2	CH-AT-1FB37-1117	1701749-02	Water
3	CH-AT-1RW38-1117	1701749-03	Water
4	CH-AT-1FB38-1117	1701749-04	Water
5	CH-AT-1RW39-1117	1701749-05	Water
6	CH-AT-1FB39-1117	1701749-06	Water
7	CH-AT-1RW40-1117	1701749-07	Water
8	CH-AT-1FB40-1117	1701749-08	Water
9	CH-AT-1RW41-1117	1701749-09	Water
9MS	CH-AT-1RW41-1117MS	1701749-09MS	Water
9MSD	CH-AT-1RW41-1117MSD	1701749-09MSD	Water
10	CH-AT-1FB41-1117	1701749-10	Water
11	CH-AT-1RW42-1117	1701749-11	Water
12	CH-AT-1FB42-1117	1701749-12	Water
13	CH-AT-1RW43-1117	1701749-13	Water
14	CH-AT-1FB43-1117	1701749-14	Water
15	CH-AT-1RW44-1117	1701749-15	Water
16	CH-AT-1FB44-1117	1701749-16	Water
17	CH-AT-1RW45-1117	1701749-17	Water
18	CH-AT-1FB45-1117	1701749-18	Water

A full data validation was performed on the analytical data for nine water samples and nine aqueous field blank samples collected on November 16-17, 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-1FB37-1117	None - ND	-	-	-
CH-AT-1FB38-1117	None - ND	-	-	-
CH-AT-1FB39-1117	None - ND	-	-	-
CH-AT-1FB40-1117	None - ND	-	-	-
CH-AT-1FB41-1117	None - ND	-	-	-
CH-AT-1FB42-1117	None - ND	-	-	-
CH-AT-1FB43-1117	None - ND	-	-	-
CH-AT-1FB44-1117	None - ND	-	-	-
CH-AT-1FB45-1117	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

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

Laboratory Control Samples

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

Internal Standard (IS) Area Performance

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

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed:

Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 1/5/18

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-1RW37-1117										EPA Method 537			
Client Data				Laboratory Data									
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701749-01	Batch	21-Nov-17	Extracted	10:13	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 13:31	Date Received:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBS	ND	0.424	4.79	9.57		B7K0145	25-Nov-17	0.261 L	27-Nov-17 17:50	1			
PFOA	ND	1.03	4.79	9.57		B7K0145	25-Nov-17	0.261 L	27-Nov-17 17:50	1			
PFOS	ND	0.995	4.79	9.57		B7K0145	25-Nov-17	0.261 L	27-Nov-17 17:50	1			
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C2-PFHxA	SURR	114	70 - 130		B7K0145	25-Nov-17	0.261 L	27-Nov-17 17:50	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

1131.8

2

Sample ID: CH-AT-1FB37-1117									
EPA Method 537									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-02	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 13:32		Date Received:	21-Nov-17 10:13			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.414	4.67	9.35		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02
PFOA	ND	1.01	4.67	9.35		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02
PFOS	ND	0.972	4.67	9.35		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	99.2	70 - 130		B7K0145	25-Nov-17	0.268 L	27-Nov-17 18:02	1

DL - Detection Limit

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

new 11/3/18

Sample ID: CH-AT-1RW38-1117									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-03	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 13:58		Date Received:	21-Nov-17 10:13			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.433	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14 1
PFOA	ND	1.05	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14 1
PFOS	ND	1.02	4.88	9.76		B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14 1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	113	70 - 130			B7K0145	25-Nov-17	0.256 L	27-Nov-17 18:14 1

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

new 1131.8

Sample ID: CH-AT-1FB38-1117									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-04	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 13:59		Date Received:	21-Nov-17 10:13			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.417	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27 1
PFOA	ND	1.02	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27 1
PFOS	ND	0.979	4.71	9.41		B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27 1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	118	70 - 130			B7K0145	25-Nov-17	0.266 L	27-Nov-17 18:27 1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

new 11/3/18

Sample ID: CH-AT-1RW39-1117									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-05	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 14:07		Date Received:	21-Nov-17 10:13			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.423	4.77	9.54		B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39
PFOA	ND	1.03	4.77	9.54		B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39
PFOS	ND	0.992	4.77	9.54		B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Dilution
13C2-PFHxA	SURR	107	70 - 130			B7K0145	25-Nov-17	0.262 L	27-Nov-17 18:39

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

11/21/18

Sample ID: CH-AT-1FB39-1117

EPA Method 537

Client Data				Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701749-06	Column:	BEH C18			
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 14:08	Date Received:	21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.75	9.50		B7K0145	25-Nov-17	0.263 L	27-Nov-17 18:52	1
PFOA	ND	1.03	4.75	9.50		B7K0145	25-Nov-17	0.263 L	27-Nov-17 18:52	1
PFOS	ND	0.988	4.75	9.50		B7K0145	25-Nov-17	0.263 L	27-Nov-17 18:52	1
Labeled Standards	Type	% Recovery	Limits							
13C2-PFHxA	SURR	104	70 - 130		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
						B7K0145	25-Nov-17	0.263 L	27-Nov-17 18:52	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 11/3/18

Sample ID: CH-AT-1RW40-1117										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1701749-07		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:		16-Nov-17 14:29		Date Received:		21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.420	4.74	9.48		B7K0145	25-Nov-17	0.264 L	27-Nov-17	19:04					
PFOA	12.5	1.02	4.74	9.48		B7K0145	25-Nov-17	0.264 L	27-Nov-17	19:04					
PFOS	1.91	0.986	4.74	9.48	J	B7K0145	25-Nov-17	0.264 L	27-Nov-17	19:04					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
I3C2-PFHxA	SURR	120	70 - 130		B7K0145	25-Nov-17	0.264 L	27-Nov-17	19:04						

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

new 11/3/18

Sample ID: CH-AT-1FB40-1117									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-08	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	16-Nov-17 14:30		Date Received:	21-Nov-17 10:13			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.417	4.71	9.42		B7K0145	25-Nov-17	0.265 L	27-Nov-17 19:17 1
PFOA	ND	1.02	4.71	9.42		B7K0145	25-Nov-17	0.265 L	27-Nov-17 19:17 1
PFOS	ND	0.980	4.71	9.42		B7K0145	25-Nov-17	0.265 L	27-Nov-17 19:17 1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	120	70 - 130		B7K0145	25-Nov-17	0.265 L	27-Nov-17 19:17 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

rw 11/31/17

Sample ID: CH-AT-1RW41-1117										EPA Method 537											
Client Data				Laboratory Data																	
Name: CH2M Hill		Matrix: Drinking Water		Lab Sample: 1701749-09		Batch: B7K0145		Extracted: 25-Nov-17		Samp Size: 0.272 L		Analyzed: 27-Nov-17		Dilution: 1							
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected: 17-Nov-17 09:05		Date Received: 21-Nov-17 10:13		Batch: B7K0145		Extracted: 25-Nov-17		Samp Size: 0.272 L		Analyzed: 27-Nov-17		Dilution: 1							
Analyte		Conc. (ng/L)		DL		LOD		LOQ		Qualifiers		Batch		Extracted		Samp Size		Analyzed		Dilution	
PFBS		ND		0.407		4.60		9.20				B7K0145		25-Nov-17		0.272 L		27-Nov-17		1	
PFOA		ND		0.993		4.60		9.20				B7K0145		25-Nov-17		0.272 L		27-Nov-17		1	
PFOS		ND		0.957		4.60		9.20				B7K0145		25-Nov-17		0.272 L		27-Nov-17		1	
Labeled Standards		Type		% Recovery		Limits		Qualifiers		Batch		Extracted		Samp Size		Analyzed		Dilution			
13C2-PFHxA		SURR		121		70 - 130				B7K0145		25-Nov-17		0.272 L		27-Nov-17		1			

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

11/3/18

Sample ID: CH-AT-1FB41-1117									
Client Data					Laboratory Data				
Name: CH2M Hill		Matrix: Drinking Water		Lab Sample: 1701749-10		Batch: 21-Nov-17		Column: BEH C18	
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected: 17-Nov-17 09:06		Date Received: 21-Nov-17 10:13		Extracted: 25-Nov-17		Samp Size: 0.270 L	
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.410	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42
PFOA	ND	0.998	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42
PFOS	ND	0.961	4.62	9.24		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
I3C2-PFHxA	SURR	117	70 - 130		B7K0145	25-Nov-17	0.270 L	27-Nov-17 19:42	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 11/3/18

Sample ID: CH-AT-1RW42-1117										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1701749-11		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:		17-Nov-17 09:28		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	9.65		B7K0145	25-Nov-17	0.259 L	27-Nov-17	19:54					
PFOA	ND	1.04	4.83	9.65		B7K0145	25-Nov-17	0.259 L	27-Nov-17	19:54					
PFOS	ND	1.00	4.83	9.65		B7K0145	25-Nov-17	0.259 L	27-Nov-17	19:54					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
I3C2-PFHxA	SURR	112	70 - 130		B7K0145	25-Nov-17	0.259 L	27-Nov-17	19:54						

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

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

LOD - Limit of Detection
LOQ - Limit of quantitation

DL - Detection Limit

new 11/3/18

Sample ID: CH-AT-1FB42-1117										EPA Method 537							
Client Data					Laboratory Data												
Name:		CH2M Hill			Matrix:		Drinking Water			Lab Sample:		1701749-12		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic / PFAS DW Investigation			Date Collected:		17-Nov-17 09:29			Date Received:		21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution							
PFBS	ND	0.416	4.69	9.38		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1							
PFOA	ND	1.01	4.69	9.38		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1							
PFOS	ND	0.976	4.69	9.38		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1							
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution								
13C2-PFHxA	SURR	123	70 - 130		B7K0145	25-Nov-17	0.266 L	27-Nov-17 20:06	1								

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

W1131.8

Sample ID: CH-AT-1RW43-1117										EPA Method 537	
Client Data				Laboratory Data							
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	1701749-13		Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-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	0.413	4.66	9.31		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1	
PFOA	ND	1.01	4.66	9.31		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1	
PFOS	ND	0.969	4.66	9.31		B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B7K0145	25-Nov-17	0.268 L	27-Nov-17 20:19	1	

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

new 13168

Sample ID: CH-AT-1FB43-1117										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1701749-14		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:		17-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	0.410	4.63	9.25		B7K0145	25-Nov-17	0.270 L	27-Nov-17 20:31	1					
PFOA	ND	0.999	4.63	9.25		B7K0145	25-Nov-17	0.270 L	27-Nov-17 20:31	1					
PFOS	ND	0.962	4.63	9.25		B7K0145	25-Nov-17	0.270 L	27-Nov-17 20:31	1					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution						
13C2-PFHxA	SURR	120	70 - 130		B7K0145	25-Nov-17	0.270 L	27-Nov-17 20:31	1						

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

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

LOD - Limit of Detection
 LOQ - Limit of quantitation

DL - Detection Limit

new 12/18

Sample ID: CH-AT-1RW44-1117									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-15	Column:	BEH C18	
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17 10:41		Date Received:	21-Nov-17 10:13			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.418	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44
PFOA	ND	1.02	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44
PFOS	ND	0.981	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
I3C2-PFHxA	SURR	125	70 - 130		B7K0145	25-Nov-17	0.265 L	27-Nov-17 20:44	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

11/21/18

Sample ID: CH-AT-1FB44-1117										EPA Method 537									
Client Data					Laboratory Data														
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701749-16	Column:	BEH C18		Date Received:	21-Nov-17	10:13							
Project:	CTO-08. MCOLF Atlantic / PFAS DW Investigation	Date Collected:	17-Nov-17	10:42															
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution									
PFBS	ND	0.413	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17	20:56	1								
PFOA	ND	1.01	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17	20:56	1								
PFOS	ND	0.970	4.66	9.32		B7K0145	25-Nov-17	0.268 L	27-Nov-17	20:56	1								
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution										
13C2-PFHxA	SURR	119	70 - 130		B7K0145	25-Nov-17	0.268 L	27-Nov-17	20:56	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

rw 11/3/18

Sample ID: CH-AT-1RW45-1117										EPA Method 537	
Client Data				Laboratory Data							
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	1701749-17	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	17-Nov-17 10:51		Date Received:	21-Nov-17 10:13				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.419	4.73	9.47		B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1	
PFOA	ND	1.02	4.73	9.47		B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1	
PFOS	ND	0.984	4.73	9.47		B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130			B7K0145	25-Nov-17	0.264 L	27-Nov-17 21:08	1	

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

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

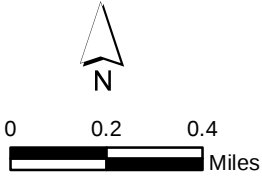
17013108

Sample ID: CH-AT-1FB45-1117										EPA Method 537					
Client Data					Laboratory Data										
Name:		CH2M Hill		Matrix:		Drinking Water		Lab Sample:		1701749-18		Column:		BEH C18	
Project:		CTO-08, MCOLF Atlantic / PEAS DW Investigation		Date Collected:		17-Nov-17 10:52		Date Received:		21-Nov-17 10:13					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
PFBS	ND	0.418	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	1					
PFOA	ND	1.02	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	1					
PFOS	ND	0.981	4.72	9.44		B7K0145	25-Nov-17	0.265 L	27-Nov-17 21:21	1					
Labeled Standards	Type	% Recovery	Limits												
13C2-PFHxA	SURR	115	70 - 130												
DL - Detection Limit				LCL-UCL - Lower control limit - upper control limit				When reported, PFHxS, PFOA and PFOS include both linear and branched isomers							
				Results reported to the DL				Only the linear isomer is reported for all other analytes							

new 163618



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



1 inch = 0.4 mile
Imagery: Esri, 2016

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