



**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 1701712**

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

February 2019



November 27, 2017

Vista Work Order No. 1701712

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 17, 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. Volpengeth
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. 1701712**Case Narrative****Sample Condition on Receipt:**

Twenty 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**

Samples "CH-AT-1RW15-1117" and "CH-AT-1RW17-1117" contained particulate and were centrifuged prior to extraction. The samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

Holding Times

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

Quality Control

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

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

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

TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	28
Certifications.....	29
Sample Receipt.....	32

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701712-01	CH-AT-1RW13-1117	14-Nov-17 11:11	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-02	CH-AT-1FB13-1117	14-Nov-17 11:12	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-03	CH-AT-1RW14-1117	14-Nov-17 12:02	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-04	CH-AT-1FB14-1117	14-Nov-17 12:03	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-05	CH-AT-1RW15-1117	14-Nov-17 14:42	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-06	CH-AT-1FB15-1117	14-Nov-17 14:43	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-07	CH-AT-1RW16-1117	14-Nov-17 14:12	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-08	CH-AT-1FB16-1117	14-Nov-17 14:13	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-09	CH-AT-1RW17-1117	14-Nov-17 16:02	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-10	CH-AT-1FB17-1117	14-Nov-17 16:03	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-11	CH-AT-1RW18-1117	14-Nov-17 16:37	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-12	CH-AT-1FB18-1117	14-Nov-17 16:38	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-13	CH-AT-1RW19-1117	15-Nov-17 09:07	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-14	CH-AT-1FB19-1117	15-Nov-17 09:08	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-15	CH-AT-1RW20-1117	15-Nov-17 09:39	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-16	CH-AT-1FB20-1117	15-Nov-17 09:40	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-17	CH-AT-1RW21-1117	15-Nov-17 10:15	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-18	CH-AT-1FB21-1117	15-Nov-17 10:16	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-19	CH-AT-1RW22-1117	15-Nov-17 10:41	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-20	CH-AT-1FB22-1117	15-Nov-17 10:42	17-Nov-17 08:54	HDPE Bottle, 250 mL

Vista Project: 1701712

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

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: B7K0117-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		B7K0117	18-Nov-17	0.250 L	25-Nov-17 18:37	1
PFOA	ND	1.08	5.00	10.0		B7K0117	18-Nov-17	0.250 L	25-Nov-17 18:37	1
PFOS	ND	1.04	5.00	10.0		B7K0117	18-Nov-17	0.250 L	25-Nov-17 18:37	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	93.9	70 - 130			B7K0117	18-Nov-17	0.250 L	25-Nov-17 18:37	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Sample ID: LCSD													EPA Method 537			
Name: CH2M Hill			Lab Sample: B7K0117-BS1/B7K0117-BSD1										Date Extracted: 18-Nov-17			
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigatio																
Matrix: Drinking Water																
			QC Batch: B7K0117										Column: BEH C18			
			Samp Size: 0.250/0.250 L													
Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
PFBS	31.6	35.4	89.2		31.9	35.4	90.2	1.04		70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1	
PFOA	40.2	40.0	100		43.2	40.0	108	7.29		70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1	
PFOS	36.1	37.0	97.5		32.1	37.0	86.8	11.6		70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1	
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
13C2-PFHxA	SURR		100				114			70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1	

Sample ID: CH-AT-1RW13-1117										EPA Method 537
Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701712-01	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	14-Nov-17 11:11		Date Received:	17-Nov-17 08:54				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.83		B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	1
PFOA	ND	1.06	4.92	9.83		B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	1
PFOS	ND	1.02	4.92	9.83		B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.8	70 - 130			B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	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-1FB13-1117										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-1RW14-1117					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-1FB14-1117					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-1RW15-1117					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-1FB15-1117										EPA Method 537	
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 14:43					Laboratory Data Lab Sample: 1701712-06 Date Received: 17-Nov-17 08:54 Column: BEH C18						
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.425	4.80	9.60		B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	1	
PFOA	ND	1.04	4.80	9.60		B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	1	
PFOS	ND	0.998	4.80	9.60		B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	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.

Sample ID: CH-AT-1RW16-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 14:12					Laboratory Data Lab Sample: 1701712-07 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.82		B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1
PFOA	ND	1.06	4.91	9.82		B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1
PFOS	ND	1.02	4.91	9.82		B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: CH-AT-1FB16-1117					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-1RW17-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 14-Nov-17 16:02					Laboratory Data Lab Sample: 1701712-09 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.84		B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1
PFOA	1.12	1.06	4.92	9.84	J	B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1
PFOS	ND	1.02	4.92	9.84		B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	116	70 - 130		B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1	

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

Sample ID: CH-AT-1FB17-1117										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-1RW18-1117					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-1FB18-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 14-Nov-17 16:38					Laboratory Data Lab Sample: 1701712-12 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.46		B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1
PFOA	ND	1.02	4.73	9.46		B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1
PFOS	ND	0.984	4.73	9.46		B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130			B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1

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

Sample ID: CH-AT-1FB19-1117					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-1RW20-1117										EPA Method 537	
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 09:39					Laboratory Data Lab Sample: 1701712-15 Date Received: 17-Nov-17 08:54 Column: BEH C18						
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	ND	0.439	4.95	9.90		B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	1	
PFOA	ND	1.07	4.95	9.90		B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	1	
PFOS	ND	1.03	4.95	9.90		B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	109	70 - 130			B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	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-1FB20-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 09:40					Laboratory Data Lab Sample: 1701712-16 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.65		B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1
PFOA	ND	1.04	4.83	9.65		B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1
PFOS	ND	1.00	4.83	9.65		B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.6	70 - 130			B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW21-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 15-Nov-17 10:15					Laboratory Data Lab Sample: 1701712-17 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1
PFOA	ND	1.07	4.93	9.87		B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1
PFOS	ND	1.03	4.93	9.87		B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1

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

Sample ID: CH-AT-1FB21-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 10:16					Laboratory Data Lab Sample: 1701712-18 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
PFOA	ND	1.05	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
PFOS	ND	1.01	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	102	70 - 130		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: CH-AT-1RW22-1117										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-1FB22-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 10:42					Laboratory Data Lab Sample: 1701712-20 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
PFOA	ND	1.05	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
PFOS	ND	1.01	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.8	70 - 130			B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

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



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701712 Temp: 0.6 °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): ☐ 21 days ☐ 14 days ☒ 7 days Specify _____
Standard: ☐ Rush (surcharge may apply)

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: 11/16/17 Time: 17:00 Received by (printed name and signature): B. Benedict Date: 11/17/17 Time: 1033
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										Comments	
ATTN: <u>Martha Maier</u>								Container(s)											
Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 8	537 List 14	Full List of 26	Other: Please List Below	PFOA/PFOS/PFS	UCMR3 PFAS List 8	PFAS List 14					
CH-AT-1RW13-1117	11/14/17	11:11		2	P	DW						X			TZ preservative				
CH-AT-1FB13-1117	11/14/17	11:12		2	P	DW						X			TZ preservative				
CH-AT-1RW14-1117	11/14/17	12:02		2	P	DW						X			TZ preservative				
CH-AT-1FB14-1117	11/14/17	12:03		1	P	DW						X			TZ preservative				
CH-AT-1RW15-1117	11/14/17	14:42		2	P	DW						X			TZ preservative				
CH-AT-1FB15-1117	11/14/17	14:43		2	P	DW						X			TZ preservative				
CH-AT-1RW16-1117	11/14/17	14:12		2	P	DW						X			TZ preservative				
CH-AT-1FB16-1117	11/14/17	14:13		2	P	DW						X			TZ preservative				
CH-AT-1RW17-1117	11/14/17	16:02		2	P	DW						X			TZ preservative				
CH-AT-1FB17-1117	11/14/17	16:03		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:

Coiler 2-2 of 3 pages

CTO-08 679580.15.FI.FS

ID: LR - 537COC



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701712 Temp: 0.6 °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): ☐ 21 days ☐ 14 days ☒ 7 days Specify: _____
Standard: _____
Rush (surcharge may apply)

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): Kathleen Smith Date: 11/16/17 Time: 17:00
Received by (printed name and signature): Beth Benedict Date: 11/17/17 Time: 1033
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 26	Other: Please List Below	PFOA/PFOS/PAHs	UCMR3 PFAS List 6	PAHs List 14	Comments
CH-AT-1RW18-1117	11/14/17	16:37		2	P	DW						X			TZ preservative
CH-AT-1FB18-1117	11/14/17	16:38		2	P	DW						X			TZ preservative
CH-AT-1RW19-1117	11/15/17	09:07		2	P	DW						X			TZ preservative
CH-AT-1FB19-1117	11/15/17	09:08		2	P	DW						X			TZ preservative
CH-AT-1RW20-1117	11/15/17	09:39		2	P	DW						X			TZ preservative
CH-AT-1FB20-1117	11/15/17	09:40		2	P	DW						X			TZ preservative
CH-AT-1RW21-1117	11/15/17	10:15		2	P	DW						X			TZ preservative
CH-AT-1FB21-1117	11/15/17	10:16		2	P	DW						X			TZ preservative
CH-AT-1RW22-1117	11/15/17	10:41		2	P	DW						X			TZ preservative
CH-AT-1FB22-1117	11/15/17	10:42		2	P	DW						X			TZ preservative

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

SEND DOCUMENTATION AND RESULTS TO:

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

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

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

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

Sample Log-in Checklist

 Vista Work Order #: 1701712 TAT 7

Samples Arrival:	Date/Time 11/17/17 0854	Initials: CB/B	Location: WR-2
			Shelf/Rack: NA
Logged In:	Date/Time 11/17/17 1055	Initials: SR MJS	Location: WR-2
			Shelf/Rack: B5
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac
	☐ GSO	☐ DHL	☐ Hand Delivered
	☐ Other		
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice
	☐ None		
Temp °C: 0.5 (uncorrected)	Time: 1032		Thermometer ID: IR-1
Temp °C: 0.6 (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 <u>244</u> Trk # <u>7707 6984 5976</u>	☒		
Sample Container Intact?	☒		
Sample Custody Seals Intact?			☒
Chain of Custody / Sample Documentation Present?	☒		
COC Anomaly/Sample Acceptance Form completed?		☒	☒
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	☒		
Preservation Documented:	☐ Na ₂ S ₂ O ₃	☒ Trizma	☐ None
	☒ Yes	☐ No	☐ NA
Shipping Container	☒ Vista	☐ Client	☐ Retain
	☐ Return	☐ Dispose	

Comments:



November 27, 2017

Vista Work Order No. 1701712

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 17, 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. 1701712**Case Narrative****Sample Condition on Receipt:**

Twenty 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**

Samples "CH-AT-1RW15-1117" and "CH-AT-1RW17-1117" contained particulate and were centrifuged prior to extraction. The samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

Holding Times

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

Quality Control

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

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

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

TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	28
Certifications.....	29
Sample Receipt.....	32
Extraction Information.....	35
Sample Data - EPA Method 537.....	40
IIS Areas, IBs and CCVs.....	87
ICAL with ICV and IB.....	97

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701712-01	CH-AT-1RW13-1117	14-Nov-17 11:11	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-02	CH-AT-1FB13-1117	14-Nov-17 11:12	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-03	CH-AT-1RW14-1117	14-Nov-17 12:02	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-04	CH-AT-1FB14-1117	14-Nov-17 12:03	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-05	CH-AT-1RW15-1117	14-Nov-17 14:42	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-06	CH-AT-1FB15-1117	14-Nov-17 14:43	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-07	CH-AT-1RW16-1117	14-Nov-17 14:12	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-08	CH-AT-1FB16-1117	14-Nov-17 14:13	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-09	CH-AT-1RW17-1117	14-Nov-17 16:02	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-10	CH-AT-1FB17-1117	14-Nov-17 16:03	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-11	CH-AT-1RW18-1117	14-Nov-17 16:37	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-12	CH-AT-1FB18-1117	14-Nov-17 16:38	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-13	CH-AT-1RW19-1117	15-Nov-17 09:07	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-14	CH-AT-1FB19-1117	15-Nov-17 09:08	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-15	CH-AT-1RW20-1117	15-Nov-17 09:39	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-16	CH-AT-1FB20-1117	15-Nov-17 09:40	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-17	CH-AT-1RW21-1117	15-Nov-17 10:15	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-18	CH-AT-1FB21-1117	15-Nov-17 10:16	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-19	CH-AT-1RW22-1117	15-Nov-17 10:41	17-Nov-17 08:54	HDPE Bottle, 250 mL
1701712-20	CH-AT-1FB22-1117	15-Nov-17 10:42	17-Nov-17 08:54	HDPE Bottle, 250 mL

Vista Project: 1701712

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

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: LCSD														EPA Method 537	
Name: CH2M Hill				Lab Sample: B7K0117-BS1/B7K0117-BSD1								Date Extracted: 18-Nov-17			
Project: CTO-08, MCOLF Atlantic / PFAS DW Investigatio				QC Batch: B7K0117								Column: BEH C18			
Matrix: Drinking Water				Samp Size: 0.250/0.250 L											
Analyte	LCS (ng/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	31.6	35.4	89.2		31.9	35.4	90.2	1.04		70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1
PFOA	40.2	40.0	100		43.2	40.0	108	7.29		70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1
PFOS	36.1	37.0	97.5		32.1	37.0	86.8	11.6		70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1
Labeled Standards	Type		LCS % Rec	LCS Quals			LCSD % Rec		LCSD Quals	Limits		LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFHxA	SURR		100				114			70-130		25-Nov-17 18:00	1	25-Nov-17 18:12	1

Sample ID: CH-AT-1RW13-1117					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-1FB13-1117										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-1RW14-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 12:02					Laboratory Data Lab Sample: 1701712-03 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.434	4.90	9.80		B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1
PFOA	ND	1.06	4.90	9.80		B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1
PFOS	ND	1.02	4.90	9.80		B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130			B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

Sample ID: CH-AT-1FB14-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 12:03					Laboratory Data Lab Sample: 1701712-04 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	1
PFOA	ND	1.05	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	1
PFOS	ND	1.01	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	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-1RW15-1117					EPA Method 537					
Client Data Name:CH2M Hill Matrix:Drinking Water Project:CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected:14-Nov-17 14:42					Laboratory Data Lab Sample:1701712-05 Column:BEH C18 Date Received:17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1
PFOA	ND	1.05	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1
PFOS	ND	1.01	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Sample ID: CH-AT-1FB15-1117					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-1RW16-1117					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-1RW17-1117					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-1FB17-1117					EPA Method 537					
Client Data Name:CH2M Hill Matrix:Drinking Water Project:CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected:14-Nov-17 16:03					Laboratory Data Lab Sample:1701712-10 Column:BEH C18 Date Received:17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.49		B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1
PFOA	ND	1.02	4.74	9.49		B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1
PFOS	ND	0.986	4.74	9.49		B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130			B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW18-1117					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-1FB18-1117					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-1RW19-1117										EPA Method 537
Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701712-13	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	15-Nov-17 09:07		Date Received:	17-Nov-17 08:54				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.451	5.09	10.2		B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1
PFOA	ND	1.10	5.09	10.2		B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1
PFOS	ND	1.06	5.09	10.2		B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.9	70 - 130			B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1FB19-1117					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-1FB20-1117					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-1RW21-1117					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-1FB21-1117					EPA Method 537					
Client Data Name: CH2M HillMatrix: Drinking WaterProject: CTO-08, MCOLF Atlantic / PFAS DW InvestigationDate Collected: 15-Nov-17 10:16					Laboratory Data Lab Sample: 1701712-18Column: BEH C18Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
PFOA	ND	1.05	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
PFOS	ND	1.01	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: CH-AT-1RW22-1117										EPA Method 537
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 15-Nov-17 10:41					Laboratory Data Lab Sample: 1701712-19 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.95	9.91		B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1
PFOA	ND	1.07	4.95	9.91		B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1
PFOS	ND	1.03	4.95	9.91		B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.9	70 - 130			B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Sample ID: CH-AT-1FB22-1117					EPA Method 537					
Client Data Name:CH2M Hill Matrix:Drinking Water Project:CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected:15-Nov-17 10:42					Laboratory Data Lab Sample:1701712-20 Column:BEH C18 Date Received:17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
PFOA	ND	1.05	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
PFOS	ND	1.01	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.8	70 - 130			B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

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



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701712 Temp: 0.6 °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 11/16/17 Time 17:00 Received by (printed name and signature) B. Benedict Date 11/17/17 Time 1033
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										Comments	
ATTN: <u>Martha Maier</u>								Container(s)											
Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 8	537 List 14	Full List of 26	Other: Please List Below	PFOA/PFOS/PFS	UCMR3 PFAS List 8	PFAS List 14					
CH-AT-1RW13-1117	11/14/17	11:11		2	P	DW						X			TZ preservative				
CH-AT-1FB13-1117	11/14/17	11:12		2	P	DW						X			TZ preservative				
CH-AT-1RW14-1117	11/14/17	12:02		2	P	DW						X			TZ preservative				
CH-AT-1FB14-1117	11/14/17	12:03		1	P	DW						X			TZ preservative				
CH-AT-1RW15-1117	11/14/17	14:42		2	P	DW						X			TZ preservative				
CH-AT-1FB15-1117	11/14/17	14:43		2	P	DW						X			TZ preservative				
CH-AT-1RW16-1117	11/14/17	14:12		2	P	DW						X			TZ preservative				
CH-AT-1FB16-1117	11/14/17	14:13		2	P	DW						X			TZ preservative				
CH-AT-1RW17-1117	11/14/17	16:02		2	P	DW						X			TZ preservative				
CH-AT-1FB17-1117	11/14/17	16:03		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: _____

Cooler 2-2 of 3 pages

CTO-08 679580.15.FI.FS

ID: LR-537COC



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701712 Temp: 0.6 °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): ☐ 21 days ☐ 14 days ☒ 7 days Specify: _____
Standard: _____
Rush (surcharge may apply)

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): Kathleen Smith Date: 11/16/17 Time: 17:00
Received by (printed name and signature): Beth Benedict Date: 11/17/17 Time: 1033
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 26	Other: Please List Below	PFOA/PFOS	UCMR3 PFAS List 6	537 List 14	Comments
CH-AT-1RW18-1117	11/14/17	16:37		2	P	DW						X			TZ preservative
CH-AT-1FB18-1117	11/14/17	16:38		2	P	DW						X			TZ preservative
CH-AT-1RW19-1117	11/15/17	09:07		2	P	DW						X			TZ preservative
CH-AT-1FB19-1117	11/15/17	09:08		2	P	DW						X			TZ preservative
CH-AT-1RW20-1117	11/15/17	09:39		2	P	DW						X			TZ preservative
CH-AT-1FB20-1117	11/15/17	09:40		2	P	DW						X			TZ preservative
CH-AT-1RW21-1117	11/15/17	10:15		2	P	DW						X			TZ preservative
CH-AT-1FB21-1117	11/15/17	10:16		2	P	DW						X			TZ preservative
CH-AT-1RW22-1117	11/15/17	10:41		2	P	DW						X			TZ preservative
CH-AT-1FB22-1117	11/15/17	10:42		2	P	DW						X			TZ preservative

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

SEND DOCUMENTATION AND RESULTS TO:

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

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

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

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

Sample Log-in Checklist

 Vista Work Order #: 1701712 TAT 7

Samples Arrival:	Date/Time 11/17/17 0854	Initials: CB/B	Location: WR-2
			Shelf/Rack: NA
Logged In:	Date/Time 11/17/17 1055	Initials: SR WJS	Location: WR-2
			Shelf/Rack: B5
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac
	☐ GSO	☐ DHL	☐ Hand Delivered
	☐ Other		
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice
	☐ None		
Temp °C: 0.5 (uncorrected)	Time: 1032		Thermometer ID: IR-1
Temp °C: 0.6 (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 <u>244</u> Trk # <u>7707 6984 5976</u>	☒		
Sample Container Intact?	☒		
Sample Custody Seals Intact?			☒
Chain of Custody / Sample Documentation Present?	☒		
COC Anomaly/Sample Acceptance Form completed?		☒	☒
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	☒		
Preservation Documented:	☐ Na ₂ S ₂ O ₃	☒ Trizma	☐ None
	☒ Yes	☐ No	☐ NA
Shipping Container	☒ Vista	☐ Client	☐ Retain
	☐ Return	☐ Dispose	

Comments:

EXTRACTION INFORMATION

Process Sheet



Workorder: 1701712

Prep Expiration: 2017-Nov-28
Client: CH2M Hill

Workorder Due: 27-Nov-17 00:00

TAT: 10

Method: 537 PFAS DW DoD Unmodified
Matrix: Drinking Water

Prep Batch: B7K0117

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

Prep Data Entered:

Date and Initials

Initial Sequence:

LabSampleID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701712-01	A ↓	☒	☒	CH-AT-1RW13-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-02		☒	☒	CH-AT-1FB13-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-03		☒	☒	CH-AT-1RW14-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-04		☒	☒	CH-AT-1FB14-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-05		☒	☒	CH-AT-1RW15-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-06		☒	☒	CH-AT-1FB15-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-07		☒	☒	CH-AT-1RW16-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-08		☒	☒	CH-AT-1FB16-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-09		☒	☒	CH-AT-1RW17-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-10		☒	☒	CH-AT-1FB17-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-11		☒	☒	CH-AT-1RW18-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-12		☒	☒	CH-AT-1FB18-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-13		☒	☒	CH-AT-1RW19-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-14		☒	☒	CH-AT-1FB19-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-15		☒	☒	CH-AT-1RW20-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-16		☒	☒	CH-AT-1FB20-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-17		☒	☒	CH-AT-1RW21-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-18		☒	☒	CH-AT-1FB21-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-19		☒	☒	CH-AT-1RW22-1117		WR-2 B-5	HDPE Bottle, 250 mL
1701712-20		☒	☒	CH-AT-1FB22-1117		WR-2 B-5	HDPE Bottle, 250 mL

LCS/LCSD

Pre-Prep Check Out: KBF 11/18/17

Pre-Prep Check In: NA

Prep Check Out: INS 11/18/17

Prep Check In: NA

Prep Reconciled Initials/Date: KBF 11/18/17

Spike Reconciled Initials/Date: INS 11/18/17

VialBoxID: Trout Pillow

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7K0117

Chemist: KBF

Prep Date/Time: 18-Nov-17 09:24

Prepared using: LCMS - SPE Extraction-LCMS

Balance ID: HRMS-8							
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	B7K0117-BLK1 ^(A)	NA	NA	(0.250) ✓	KBF IN 11/18/17	KBF 11/18/17	HC KC 11/20/17
☐	B7K0117-BS1	↓	↓	(0.250) ✓	↓	↓	↓
☐	B7K0117-BSD1	↓	↓	(0.250) ✓	↓	↓	↓
☐	1701712-01	281.34	27.07	0.25427 ✓	↓	↓	↓
☐	1701712-02	291.92	26.94	0.26498 ✓	↓	↓	↓
☐	1701712-03	283.30	28.14	0.25516 ✓	↓	↓	↓
☐	1701712-04	283.77	26.95	0.25682 ✓	↓	↓	↓
☒	1701712-05	284.47	27.56	0.25691 ✓	↓	↓	↓
☐	1701712-06	287.98	27.52	0.26046 ✓	↓	↓	↓
☐	1701712-07	281.52	26.84	0.25468 ✓	↓	↓	↓
☐	1701712-08	290.38	27.55	0.26283 ✓	↓	↓	↓
☒	1701712-09	282.37	28.28	0.25409 ✓	↓	↓	↓
☐	1701712-10	290.59	27.03	0.26356 ✓	↓	↓	↓
☐	1701712-11	279.59	26.93	0.25266 ✓	↓	↓	↓
☐	1701712-12	291.77	27.52	0.26425 ✓	↓	↓	↓
☐	1701712-13	273.49	27.93	0.24556 ✓	↓	↓	↓

SS/IS: <u>1733101, 50ml (V3)</u> NS: <u>1712601, 10ml (V2)</u> IS/RS: <u>1733102, 50ml (V3)</u>	SPE Chem: <u>Strata-X-33ml 500mg/pml</u> Lot#: <u>517-001946</u> Ele SOLV: <u>MeOH</u> Lot#: <u>DT006</u> Final Volume(s) <u>1ml</u>	Notes: <u>(A) 1.25g trizma added to QCs KBF 11/18/17</u>
---	--	--

Comments: Assume 1 g = 1 mL

Cen = Centrifuged
Work Order 1701712

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7K0117

Chemist: KBF

Prep Date/Time: 18-Nov-17 09:24

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: HRMS-8							
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	1701712-14	292.24	27.69	0.26456 ✓	KBF INS 11/18/17 ↓	KBF 11/18/17 ↓	KBF 11/20/17 ↓
☐	1701712-15	280.48	29.06	0.25242 ✓			
☐	1701712-16	285.99	26.99	0.25900 ✓			
☐	1701712-17	280.48	27.09	0.25339 ✓			
☐	1701712-18	285.39	27.62	0.25777 ✓			
☐	1701712-19	279.21	26.83	0.25238 ✓			
☐	1701712-20	285.14	27.02	0.25813 ✓			

SS/IS: <u>17J3101, 50ml (V3)</u> NS: <u>17I2601, 10ml (V2)</u> IS/RS: <u>17J3102, 50ml (V3)</u>	SPE Chem: <u>Strata-X 33um 500mg/6ml</u> Lot#: <u>517-001946</u> Ele SOLV: <u>MeOH</u> Lot#: <u>DT006</u> Final Volume(s) <u>1ml</u>	Notes:
---	--	--------

Comments: Assume 1 g = 1 mL

Cen = Centrifuged
Work Order 1701712

Batch: B7K0117

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701712-01	0.25427 ✓	NA	NA	1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-02	0.26498 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-03	0.25516 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-04	0.25682 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-05	0.25691 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-06	0.26046 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-07	0.25468 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-08	0.26283 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-09	0.25409 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-10	0.26356 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-11	0.25266 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-12	0.26425 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-13	0.24556 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-14	0.26456 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-15	0.25242 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-16	0.259 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-17	0.25339 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-18	0.25777 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-19	0.25238 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
1701712-20	0.25812 ✓			1000	18-Nov-17 09:24	KBF			Drinking Water	537 PFAS DW DoD Unmod
B7K0117-BLK1	0.25			1000	18-Nov-17 09:24	KBF				QC
B7K0117-BS1	0.25			1000	18-Nov-17 09:24	KBF	17I2601 ✓	10		QC
B7K0117-BSD1	0.25			1000	18-Nov-17 09:24	KBF	17I2601 ✓	10		QC

He
11/20/17

SAMPLE DATA –EPA METHOD 537

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-16.qld

Last Altered: Sunday, November 26, 2017 21:14:35 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:14:50 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

Name: 171125G1_17, Date: 25-Nov-2017, Time: 18:37:25, ID: B7K0117-BLK1, Description: LRB

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		7.96e3		0.2500	3.09				
2	2 PFOA	413 > 368.7	5.57e1	8.79e3		0.2500	4.41	4.30	0.0633	0.301	
3	3 PFOS	499 >79.9		7.96e3		0.2500	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.72e3	8.79e3	0.451	0.2500	3.50	3.48	4.24	37.6	93.9
5	5 13C2-PFDA	515.1 > 469.9	4.53e3	8.79e3	0.590	0.2500	5.05	5.04	5.15	34.9	87.3
6	6 13C2-PFOA	414.9 > 369.7	8.79e3	8.79e3	1.000	0.2500	4.17	4.41	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	7.96e3	7.96e3	1.000	0.2500	4.58	4.81	28.7	115	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-16.qld

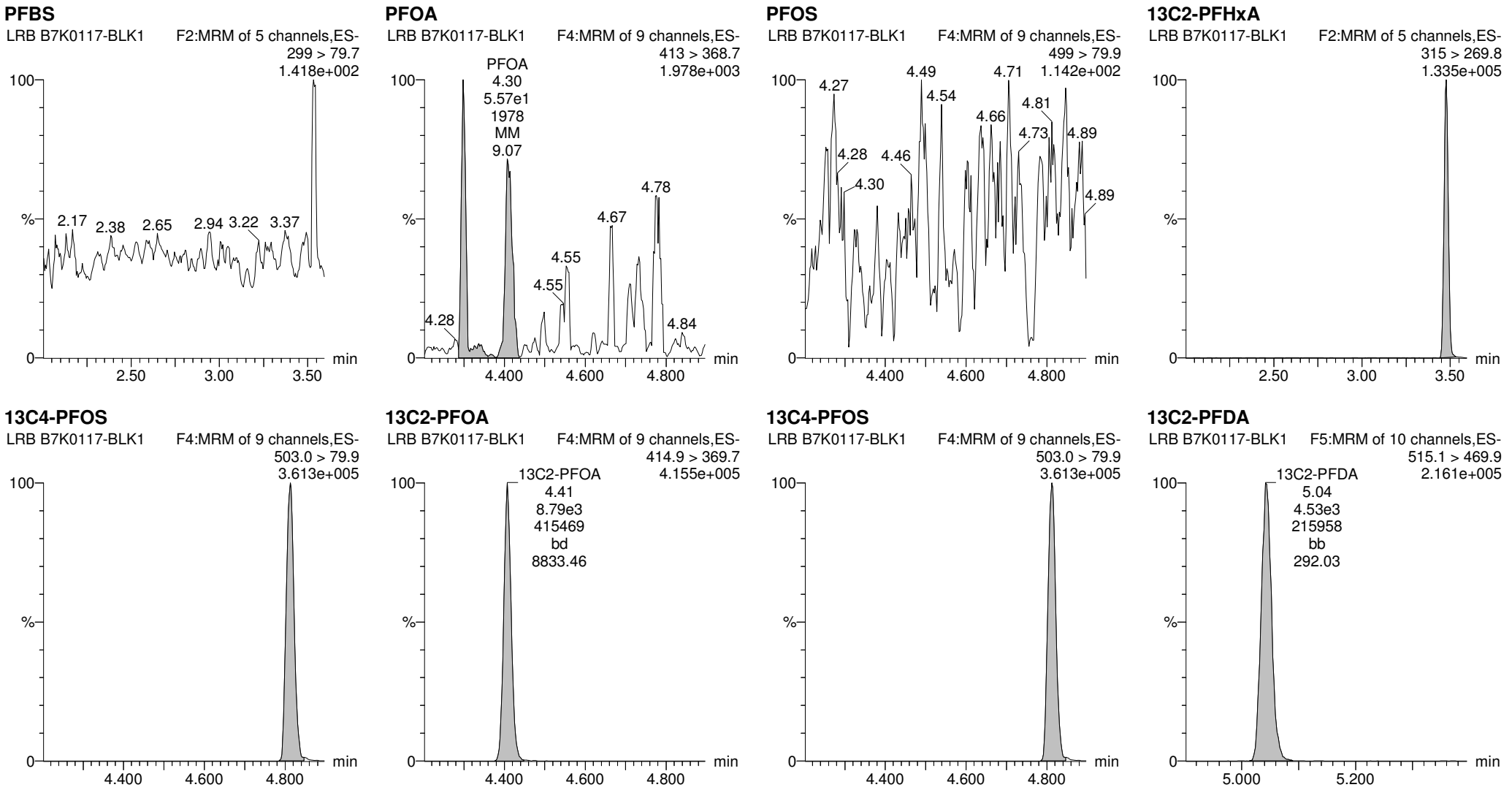
Last Altered: Sunday, November 26, 2017 21:14:35 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:14:50 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

Name: 171125G1_17, Date: 25-Nov-2017, Time: 18:37:25, ID: B7K0117-BLK1, Description: LRB



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-14.qld

Last Altered: Sunday, November 26, 2017 20:50:53 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:00:13 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

Name: 171125G1_14, Date: 25-Nov-2017, Time: 18:00:08, ID: B7K0117-BS1, Description: LFB

	#	Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBS	299 > 79.7	2.02e3	8.29e3		0.2500	3.09	3.12	7.00	31.6	89.2
2	2	PFOA	413 > 368.7	6.55e3	7.76e3		0.2500	4.41	4.41	8.45	40.2	100.4
3	3	PFOS	499 >79.9	3.08e3	8.29e3		0.2500	4.81	4.81	10.7	36.1	97.7
4	4	13C2-PFHxA	315 > 269.8	3.51e3	7.76e3	0.451	0.2500	3.50	3.48	4.53	40.2	100.4
5	5	13C2-PFDA	515.1 > 469.9	4.03e3	7.76e3	0.590	0.2500	5.05	5.04	5.19	35.2	87.9
6	6	13C2-PFOA	414.9 > 369.7	7.76e3	7.76e3	1.000	0.2500	4.17	4.41	10.0	40.0	100.0
7	7	13C4-PFOS	503.0 > 79.9	8.29e3	8.29e3	1.000	0.2500	4.58	4.81	28.7	115	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-14.qld

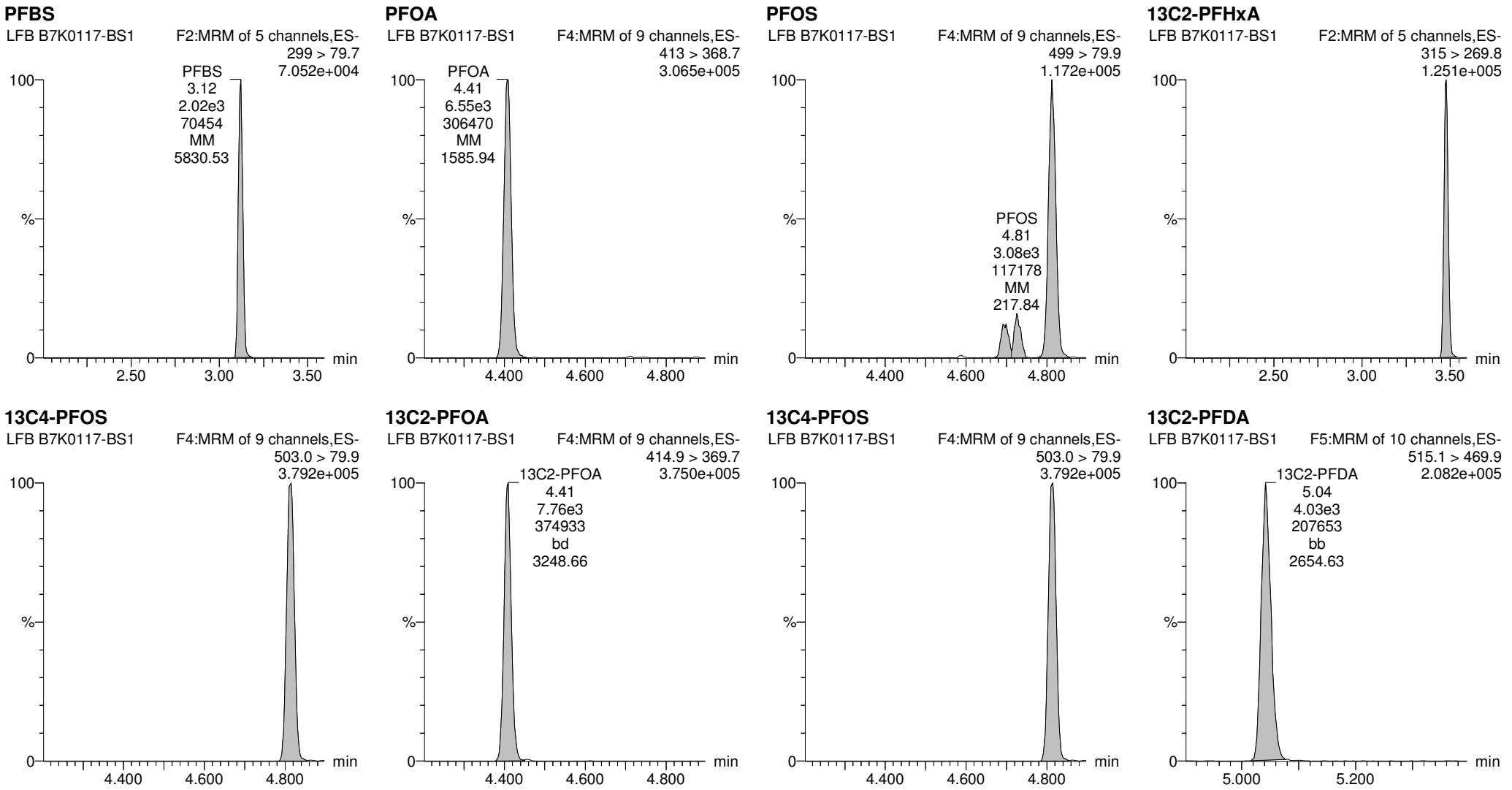
Rev'd: MM 11/27/17

Last Altered: Sunday, November 26, 2017 20:50:53 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:00:13 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

Name: 171125G1_14, Date: 25-Nov-2017, Time: 18:00:08, ID: B7K0117-BS1, Description: LFB



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-15.qld

Last Altered: Sunday, November 26, 2017 21:02:01 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:02:47 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

Name: 171125G1_15, Date: 25-Nov-2017, Time: 18:12:34, ID: B7K0117-BSD1, Description: LFBD

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	2.33e3	9.46e3		0.2500	3.09	3.12	7.07	31.9	90.2
2	2 PFOA	413 > 368.7	7.35e3	8.09e3		0.2500	4.41	4.41	9.09	43.2	108.0
3	3 PFOS	499 >79.9	3.13e3	9.46e3		0.2500	4.81	4.81	9.50	32.1	86.9
4	4 13C2-PFHxA	315 > 269.8	4.14e3	8.09e3	0.451	0.2500	3.50	3.48	5.12	45.4	113.5
5	5 13C2-PFDA	515.1 > 469.9	4.05e3	8.09e3	0.590	0.2500	5.05	5.04	5.00	33.9	84.7
6	6 13C2-PFOA	414.9 > 369.7	8.09e3	8.09e3	1.000	0.2500	4.17	4.41	10.0	40.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.46e3	9.46e3	1.000	0.2500	4.58	4.81	28.7	115	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-15.qld

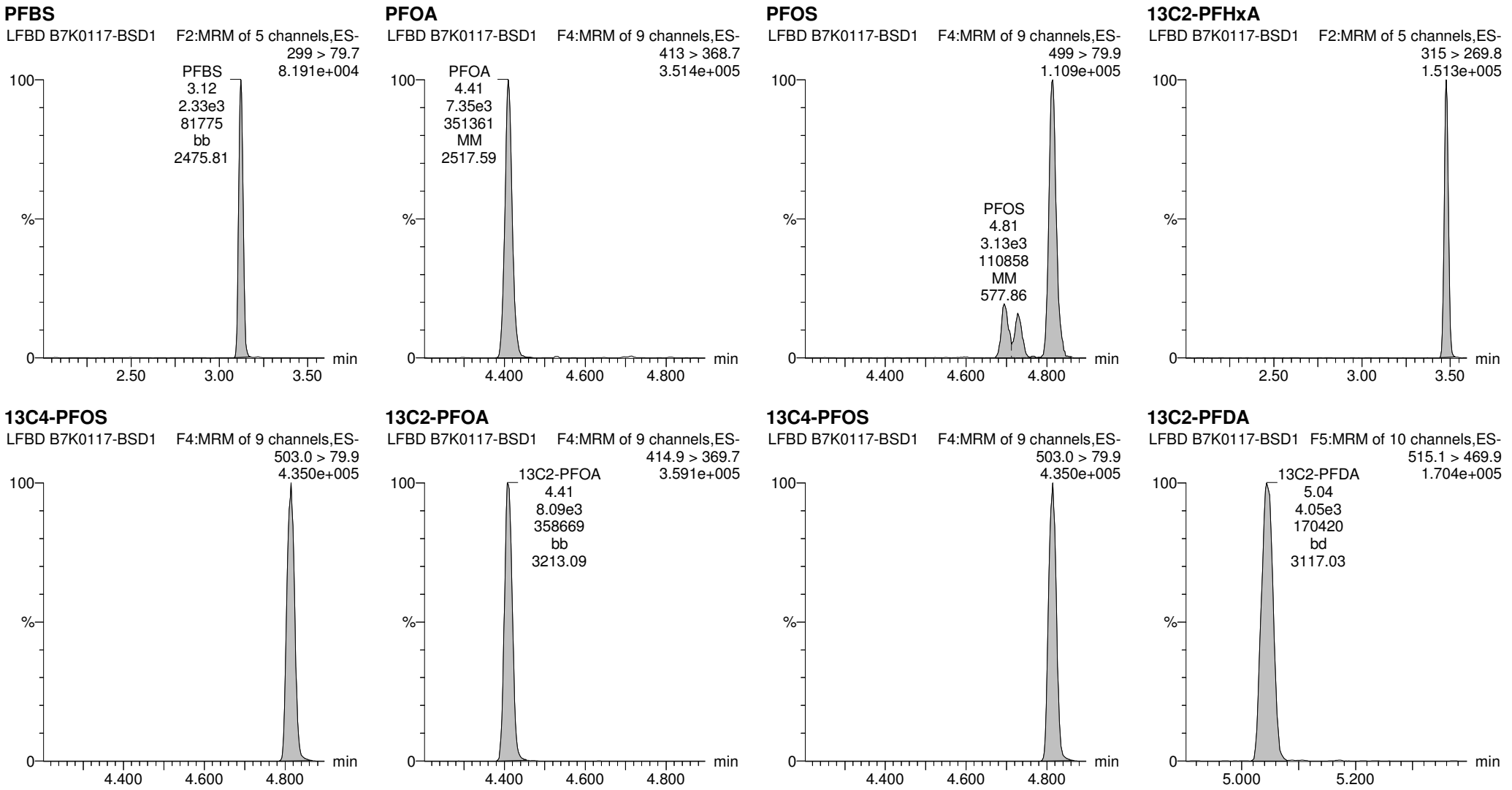
Last Altered: Sunday, November 26, 2017 21:02:01 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:02:47 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

Name: 171125G1_15, Date: 25-Nov-2017, Time: 18:12:34, ID: B7K0117-BSD1, Description: LFBD



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-17.qld

Last Altered: Sunday, November 26, 2017 21:08:08 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:08:49 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

Name: 171125G1_18, **Date:** 25-Nov-2017, **Time:** 18:49:51, **ID:** 1701712-01 CH-AT-1RW13-1117, **Description:** CH-AT-1RW13-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.43e3		0.2543	3.10				
2	2 PFOA	413 > 368.7	6.29e1	8.07e3		0.2543	4.41	4.42	0.0780	0.365	
3	3 PFOS	499 >79.9	5.98e0	8.43e3		0.2543	4.82	4.82	0.0204	0.0677	
4	4 13C2-PFHxA	315 > 269.8	3.63e3	8.07e3	0.451	0.2543	3.50	3.48	4.50	39.3	99.8
5	5 13C2-PFDA	515.1 > 469.9	4.57e3	8.07e3	0.590	0.2543	5.05	5.04	5.67	37.8	96.0
6	6 13C2-PFOA	414.9 > 369.7	8.07e3	8.07e3	1.000	0.2543	4.17	4.41	10.0	39.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.43e3	8.43e3	1.000	0.2543	4.58	4.82	28.7	113	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-17.qld

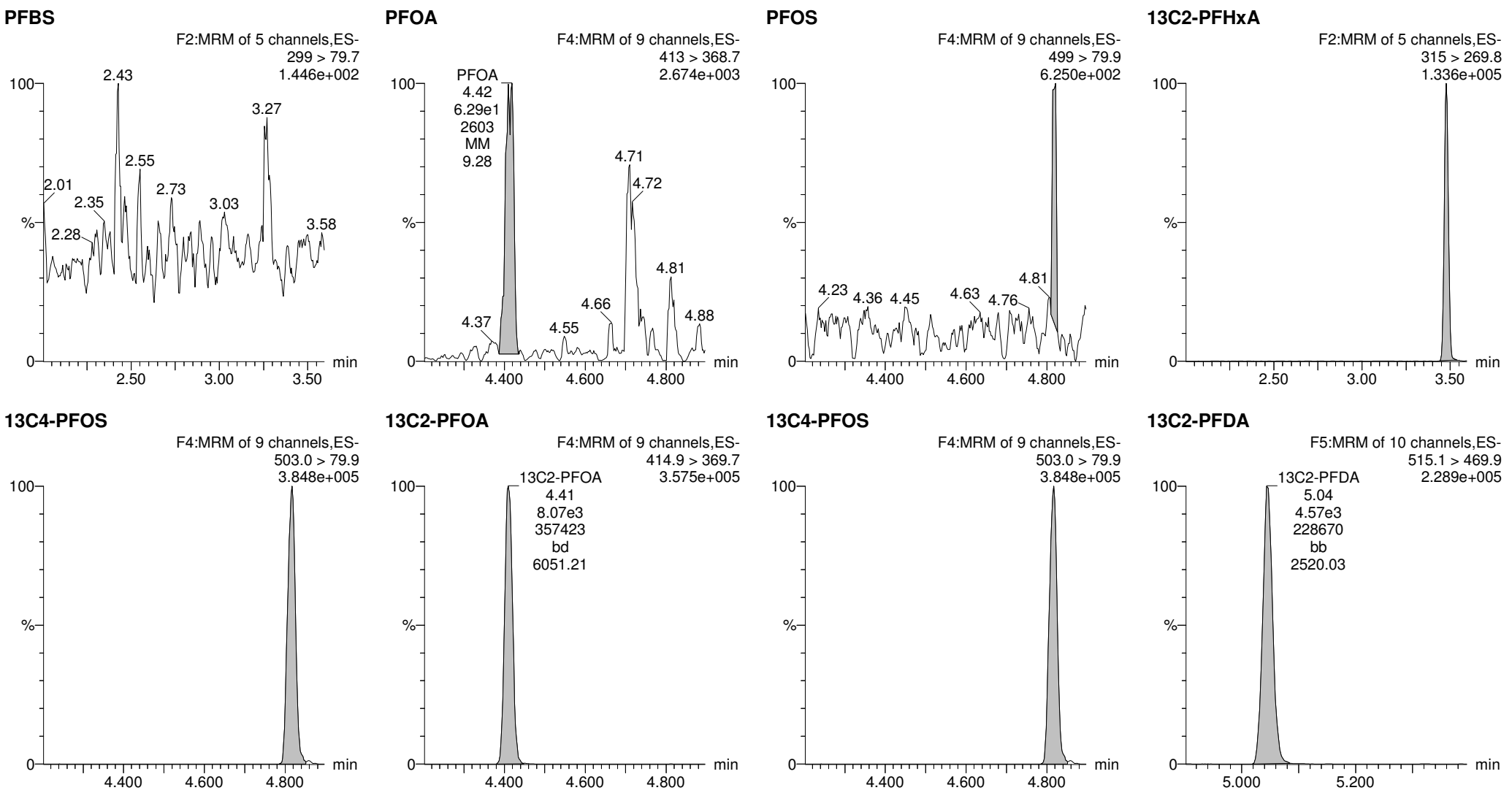
Rev'd: MM 11/27/17

Last Altered: Sunday, November 26, 2017 21:08:08 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:08:49 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

Name: 171125G1_18, Date: 25-Nov-2017, Time: 18:49:51, ID: 1701712-01 CH-AT-1RW13-1117, Description: CH-AT-1RW13-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-18.qld

Last Altered: Sunday, November 26, 2017 21:11:35 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:12:06 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

Name: 171125G1_19, Date: 25-Nov-2017, Time: 19:02:18, ID: 1701712-02 CH-AT-1FB13-1117, Description: CH-AT-1FB13-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.56e3		0.2650	3.09				
2	2 PFOA	413 > 368.7	3.38e1	8.42e3		0.2650	4.41	4.41	0.0402	0.180	
3	3 PFOS	499 >79.9		9.56e3		0.2650	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.88e3	8.42e3	0.451	0.2650	3.50	3.48	4.60	38.5	102.1
5	5 13C2-PFDA	515.1 > 469.9	5.38e3	8.42e3	0.590	0.2650	5.05	5.04	6.39	40.9	108.3
6	6 13C2-PFOA	414.9 > 369.7	8.42e3	8.42e3	1.000	0.2650	4.17	4.41	10.0	37.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.56e3	9.56e3	1.000	0.2650	4.58	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-18.qld

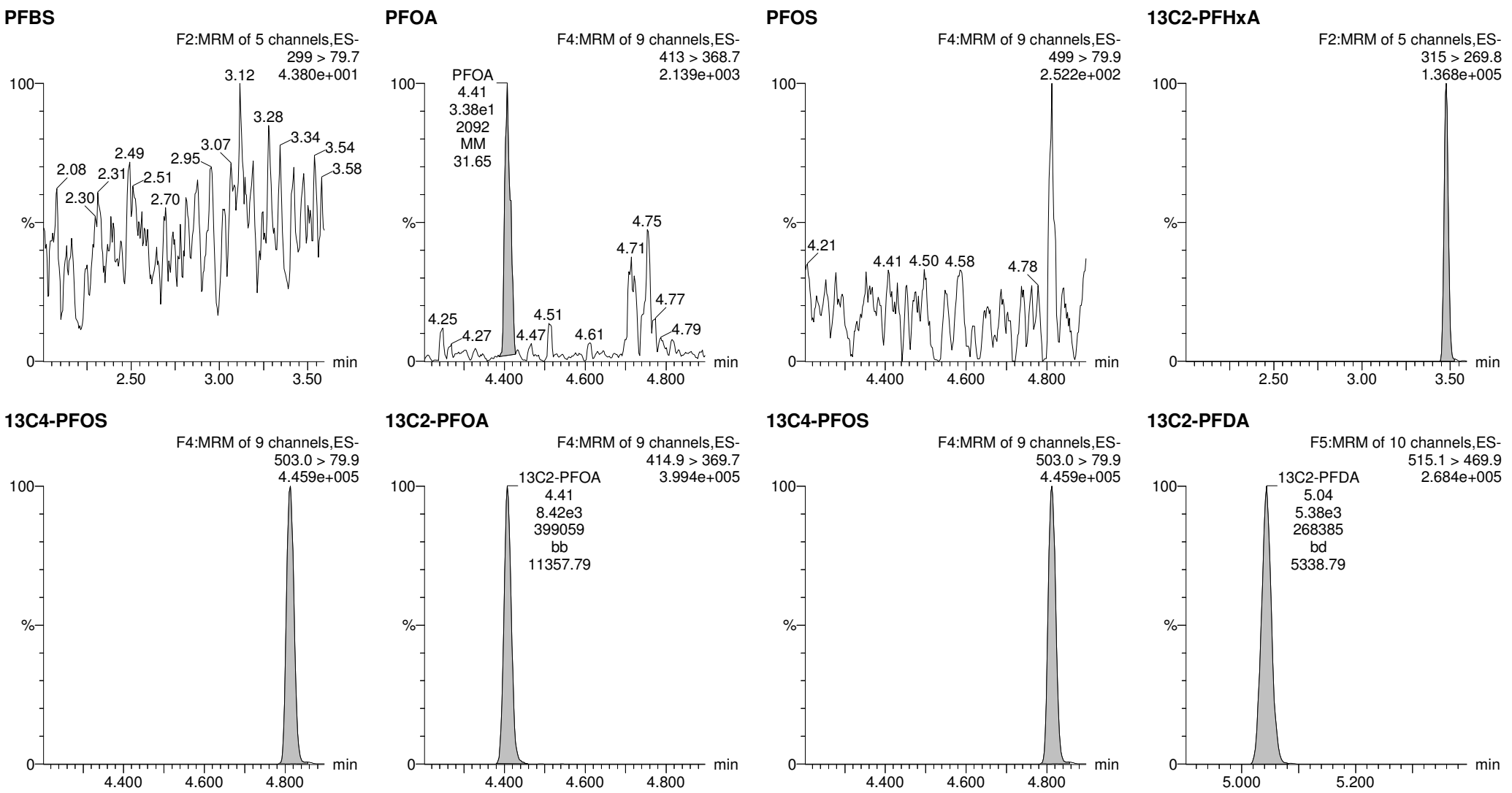
Last Altered: Sunday, November 26, 2017 21:11:35 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:12:06 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

Name: 171125G1_19, Date: 25-Nov-2017, Time: 19:02:18, ID: 1701712-02 CH-AT-1FB13-1117, Description: CH-AT-1FB13-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-20.qld

Last Altered: Sunday, November 26, 2017 21:17:01 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:18:38 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

Name: 171125G1_20, Date: 25-Nov-2017, Time: 19:14:46, ID: 1701712-03 CH-AT-1RW14-1117, Description: CH-AT-1RW14-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.74e3		0.2552	3.09				
2	2 PFOA	413 > 368.7	4.88e1	7.99e3		0.2552	4.41	4.41	0.0610	0.284	
3	3 PFOS	499 >79.9		8.74e3		0.2552	4.81				
4	4 13C2-PFHxA	315 > 269.8	4.03e3	7.99e3	0.451	0.2552	3.50	3.48	5.04	43.8	111.7
5	5 13C2-PFDA	515.1 > 469.9	4.48e3	7.99e3	0.590	0.2552	5.05	5.04	5.60	37.2	94.9
6	6 13C2-PFOA	414.9 > 369.7	7.99e3	7.99e3	1.000	0.2552	4.17	4.41	10.0	39.2	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.74e3	8.74e3	1.000	0.2552	4.58	4.81	28.7	112	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-20.qld

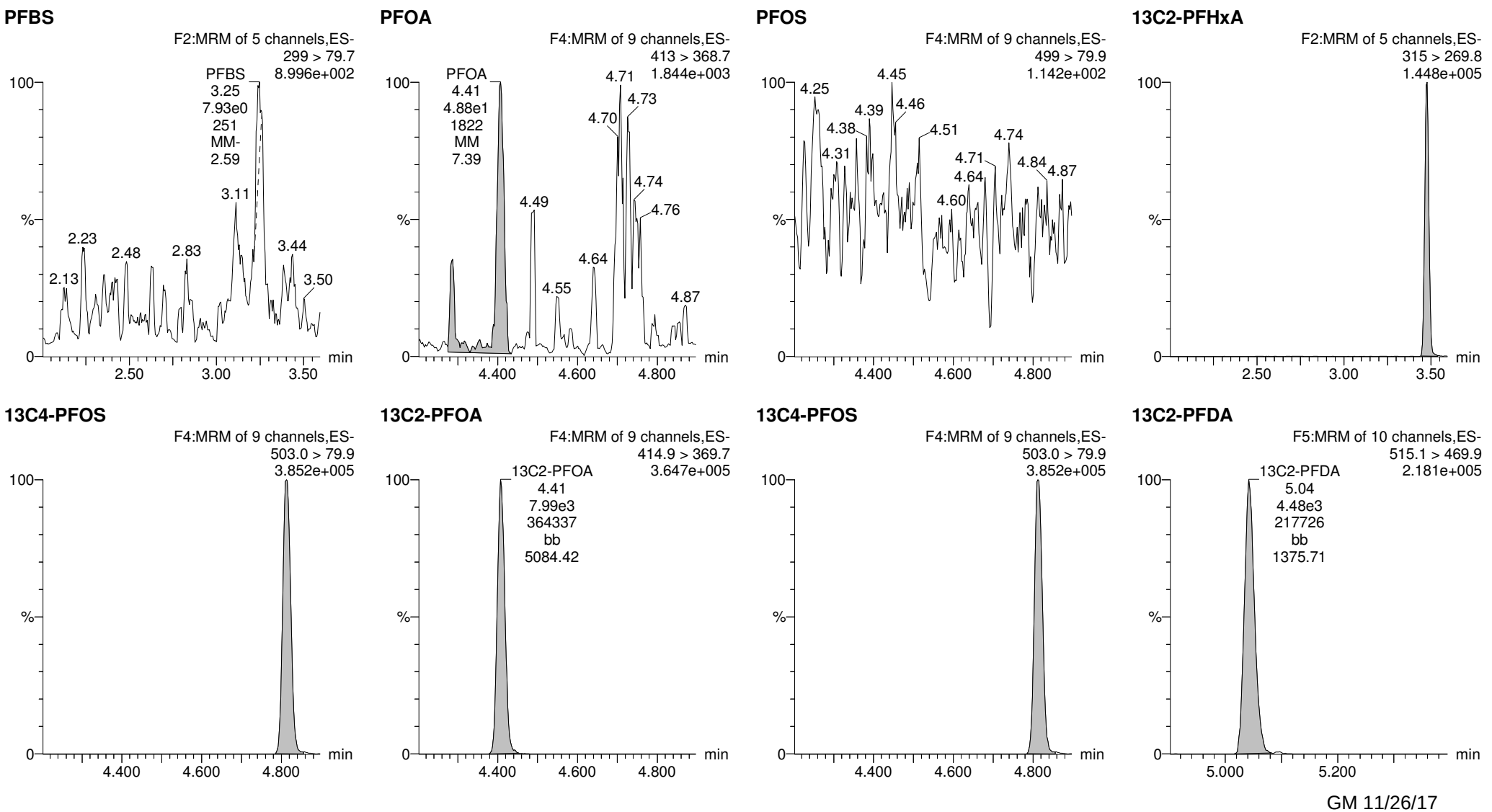
Last Altered: Sunday, November 26, 2017 21:17:01 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:18:38 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

Name: 171125G1_20, Date: 25-Nov-2017, Time: 19:14:46, ID: 1701712-03 CH-AT-1RW14-1117, Description: CH-AT-1RW14-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-21.qld

Last Altered: Sunday, November 26, 2017 21:21:02 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:21:48 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

Name: 171125G1_21, Date: 25-Nov-2017, Time: 19:27:13, ID: 1701712-04 CH-AT-1FB14-1117, Description: CH-AT-1FB14-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.88e3		0.2568	3.09				
2	2 PFOA	413 > 368.7	4.16e1	8.25e3		0.2568	4.41	4.41	0.0504	0.233	
3	3 PFOS	499 >79.9		8.88e3		0.2568	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.82e3	8.25e3	0.451	0.2568	3.50	3.48	4.63	40.0	102.7
5	5 13C2-PFDA	515.1 > 469.9	4.82e3	8.25e3	0.590	0.2568	5.05	5.04	5.84	38.5	98.9
6	6 13C2-PFOA	414.9 > 369.7	8.25e3	8.25e3	1.000	0.2568	4.17	4.41	10.0	38.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.88e3	8.88e3	1.000	0.2568	4.58	4.81	28.7	112	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-21.qld

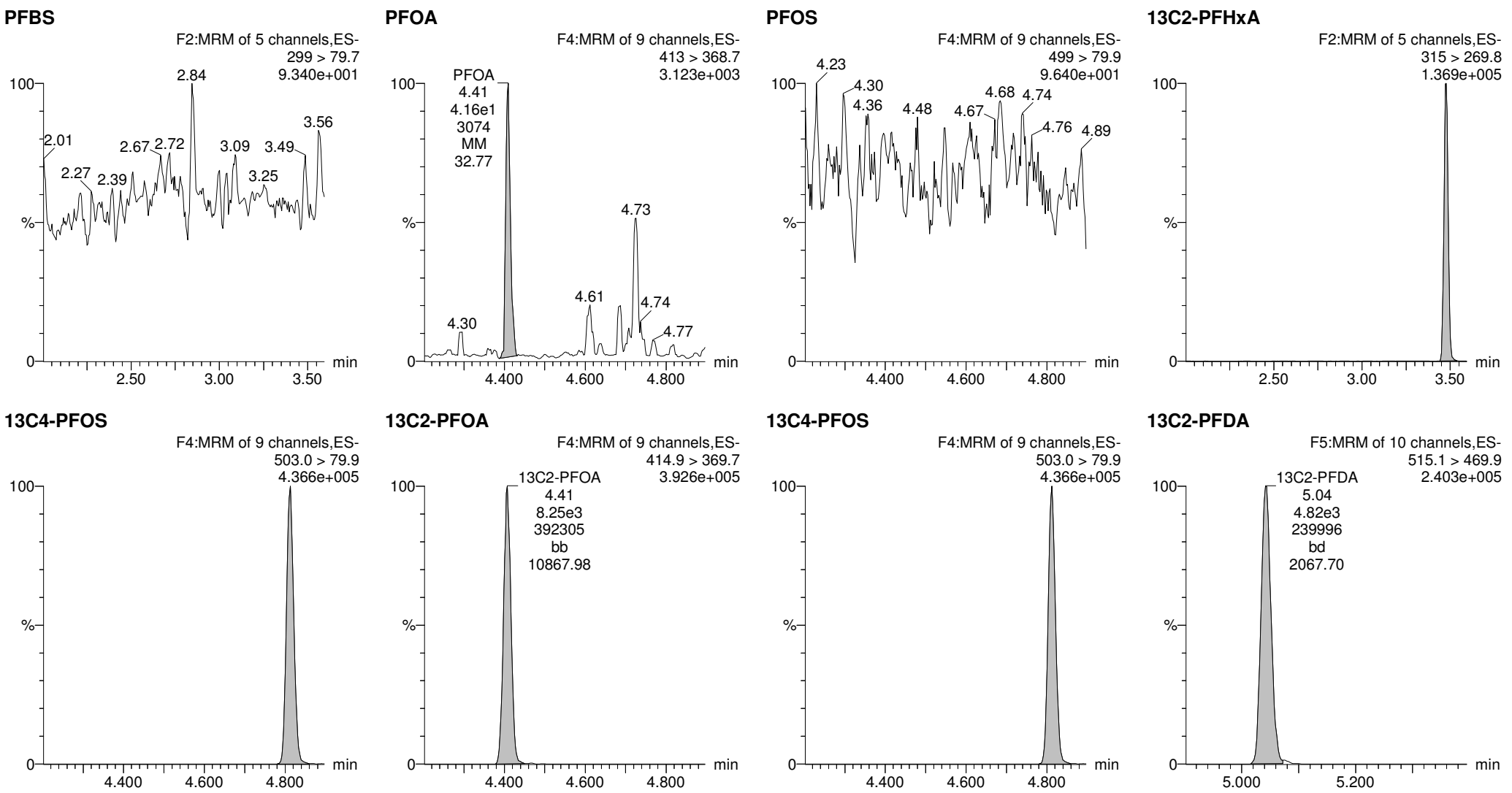
Rev'd: MM 11/27/17

Last Altered: Sunday, November 26, 2017 21:21:02 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:21:48 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

Name: 171125G1_21, Date: 25-Nov-2017, Time: 19:27:13, ID: 1701712-04 CH-AT-1FB14-1117, Description: CH-AT-1FB14-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-22.qld

Last Altered: Sunday, November 26, 2017 21:25:51 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:26:33 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

Name: 171125G1_22, Date: 25-Nov-2017, Time: 19:39:37, ID: 1701712-05 CH-AT-1RW15-1117, Description: CH-AT-1RW15-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.02e3		0.2569	3.09				
2	2 PFOA	413 > 368.7		8.34e3		0.2569	4.41				
3	3 PFOS	499 >79.9		9.02e3		0.2569	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.80e3	8.34e3	0.451	0.2569	3.50	3.48	4.55	39.3	100.9
5	5 13C2-PFDA	515.1 > 469.9	4.12e3	8.34e3	0.590	0.2569	5.05	5.04	4.94	32.6	83.7
6	6 13C2-PFOA	414.9 > 369.7	8.34e3	8.34e3	1.000	0.2569	4.17	4.41	10.0	38.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.02e3	9.02e3	1.000	0.2569	4.58	4.81	28.7	112	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-22.qld

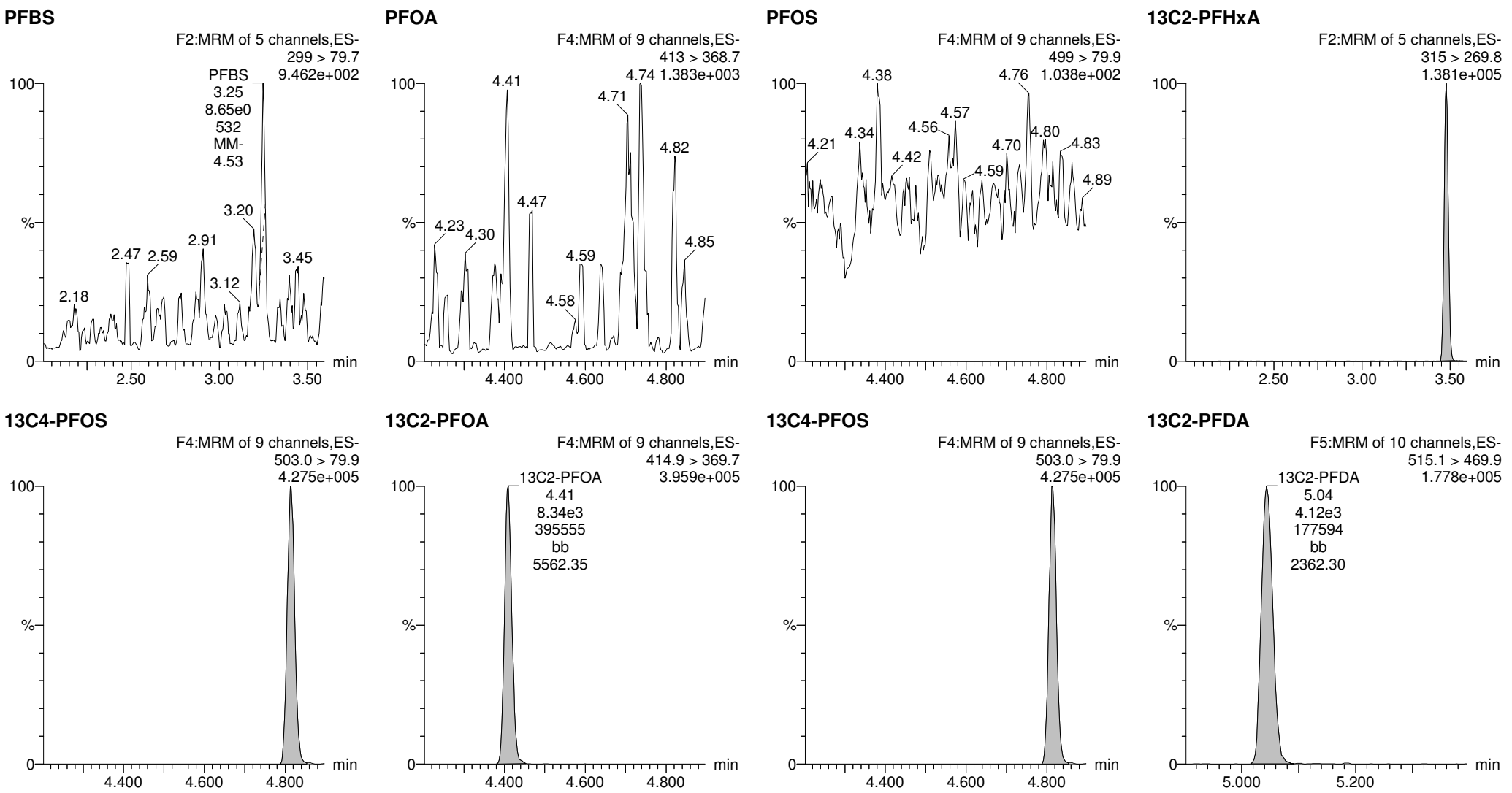
Last Altered: Sunday, November 26, 2017 21:25:51 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:26:33 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

Name: 171125G1_22, Date: 25-Nov-2017, Time: 19:39:37, ID: 1701712-05 CH-AT-1RW15-1117, Description: CH-AT-1RW15-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-23.qld

Last Altered: Sunday, November 26, 2017 21:28:41 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:29:11 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

Name: 171125G1_23, **Date:** 25-Nov-2017, **Time:** 19:52:02, **ID:** 1701712-06 CH-AT-1FB15-1117, **Description:** CH-AT-1FB15-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.84e3		0.2605	3.09				
2	2 PFOA	413 > 368.7	6.76e1	7.67e3		0.2605	4.41	4.41	0.0882	0.402	
3	3 PFOS	499 >79.9		8.84e3		0.2605	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.52e3	7.67e3	0.451	0.2605	3.50	3.48	4.60	39.1	101.9
5	5 13C2-PFDA	515.1 > 469.9	4.34e3	7.67e3	0.590	0.2605	5.05	5.04	5.66	36.8	95.9
6	6 13C2-PFOA	414.9 > 369.7	7.67e3	7.67e3	1.000	0.2605	4.17	4.41	10.0	38.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.84e3	8.84e3	1.000	0.2605	4.58	4.81	28.7	110	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-23.qld

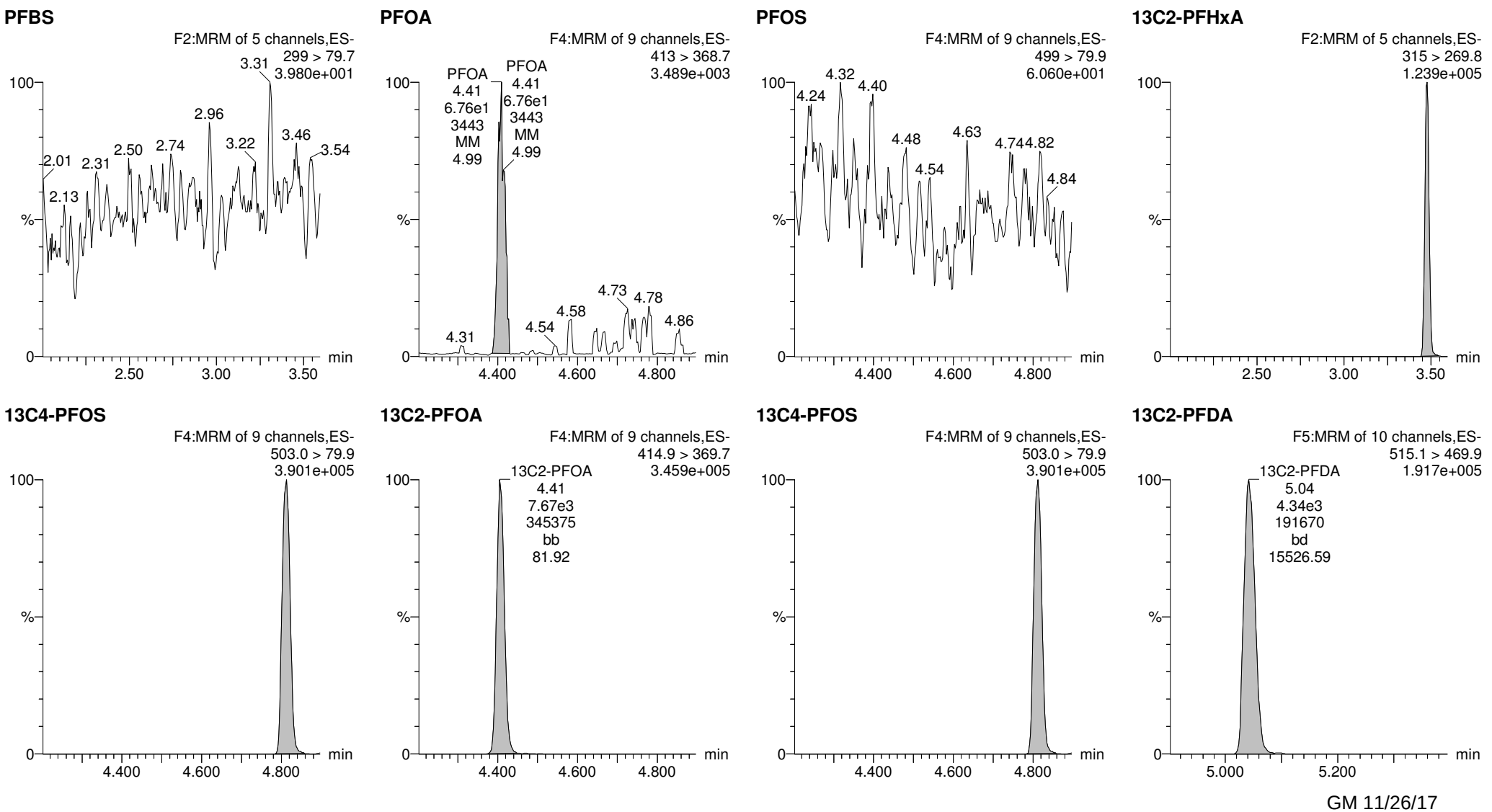
Last Altered: Sunday, November 26, 2017 21:28:41 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:29:11 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

Name: 171125G1_23, Date: 25-Nov-2017, Time: 19:52:02, ID: 1701712-06 CH-AT-1FB15-1117, Description: CH-AT-1FB15-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-24.qld

Last Altered: Sunday, November 26, 2017 21:30:54 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:31:39 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

Name: 171125G1_24, Date: 25-Nov-2017, Time: 20:04:26, ID: 1701712-07 CH-AT-1RW16-1117, Description: CH-AT-1RW16-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.50e3		0.2547	3.09				
2	2 PFOA	413 > 368.7	2.25e1	8.17e3		0.2547	4.41	4.41	0.0275	0.128	
3	3 PFOS	499 >79.9	5.31e0	9.50e3		0.2547	4.81	4.82	0.0160	0.0532	
4	4 13C2-PFHxA	315 > 269.8	3.81e3	8.17e3	0.451	0.2547	3.50	3.48	4.66	40.6	103.4
5	5 13C2-PFDA	515.1 > 469.9	4.81e3	8.17e3	0.590	0.2547	5.05	5.04	5.88	39.1	99.7
6	6 13C2-PFOA	414.9 > 369.7	8.17e3	8.17e3	1.000	0.2547	4.17	4.41	10.0	39.3	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.50e3	9.50e3	1.000	0.2547	4.58	4.81	28.7	113	100.0

ND

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-24.qld

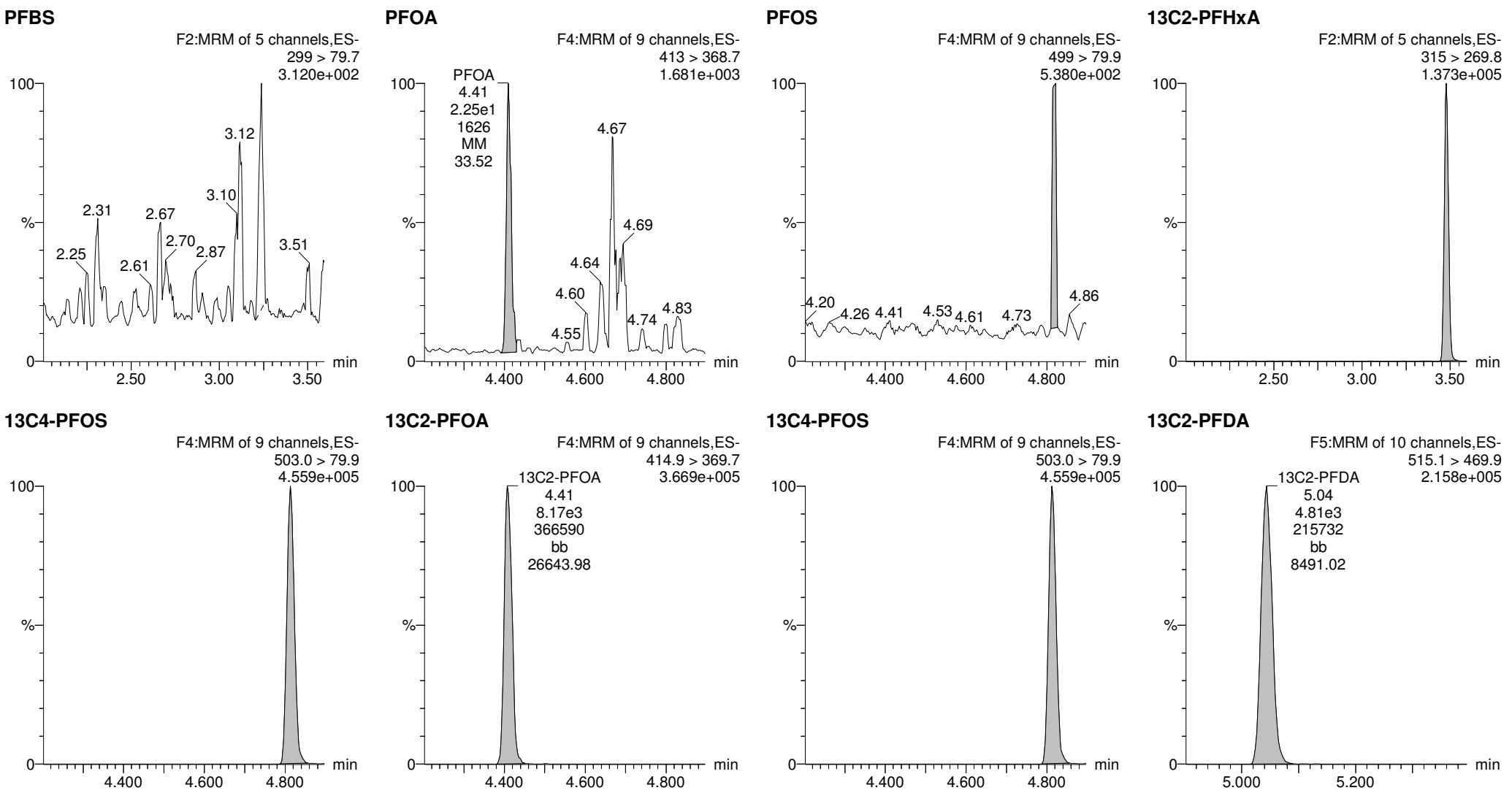
Last Altered: Sunday, November 26, 2017 21:30:54 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:31:39 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

Name: 171125G1_24, Date: 25-Nov-2017, Time: 20:04:26, ID: 1701712-07 CH-AT-1RW16-1117, Description: CH-AT-1RW16-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-25.qld

Last Altered: Sunday, November 26, 2017 21:33:44 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:35:57 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

Name: 171125G1_25, Date: 25-Nov-2017, Time: 20:16:52, ID: 1701712-08 CH-AT-1FB16-1117, Description: CH-AT-1FB16-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.63e3		0.2628	3.09				
2	2 PFOA	413 > 368.7	7.16e1	8.32e3		0.2628	4.41	4.41	0.0860	0.389	
3	3 PFOS	499 >79.9		9.63e3		0.2628	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.92e3	8.32e3	0.451	0.2628	3.50	3.48	4.71	39.7	104.5
5	5 13C2-PFDA	515.1 > 469.9	4.20e3	8.32e3	0.590	0.2628	5.05	5.05	5.05	32.6	85.6
6	6 13C2-PFOA	414.9 > 369.7	8.32e3	8.32e3	1.000	0.2628	4.17	4.41	10.0	38.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.63e3	9.63e3	1.000	0.2628	4.58	4.81	28.7	109	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-25.qld

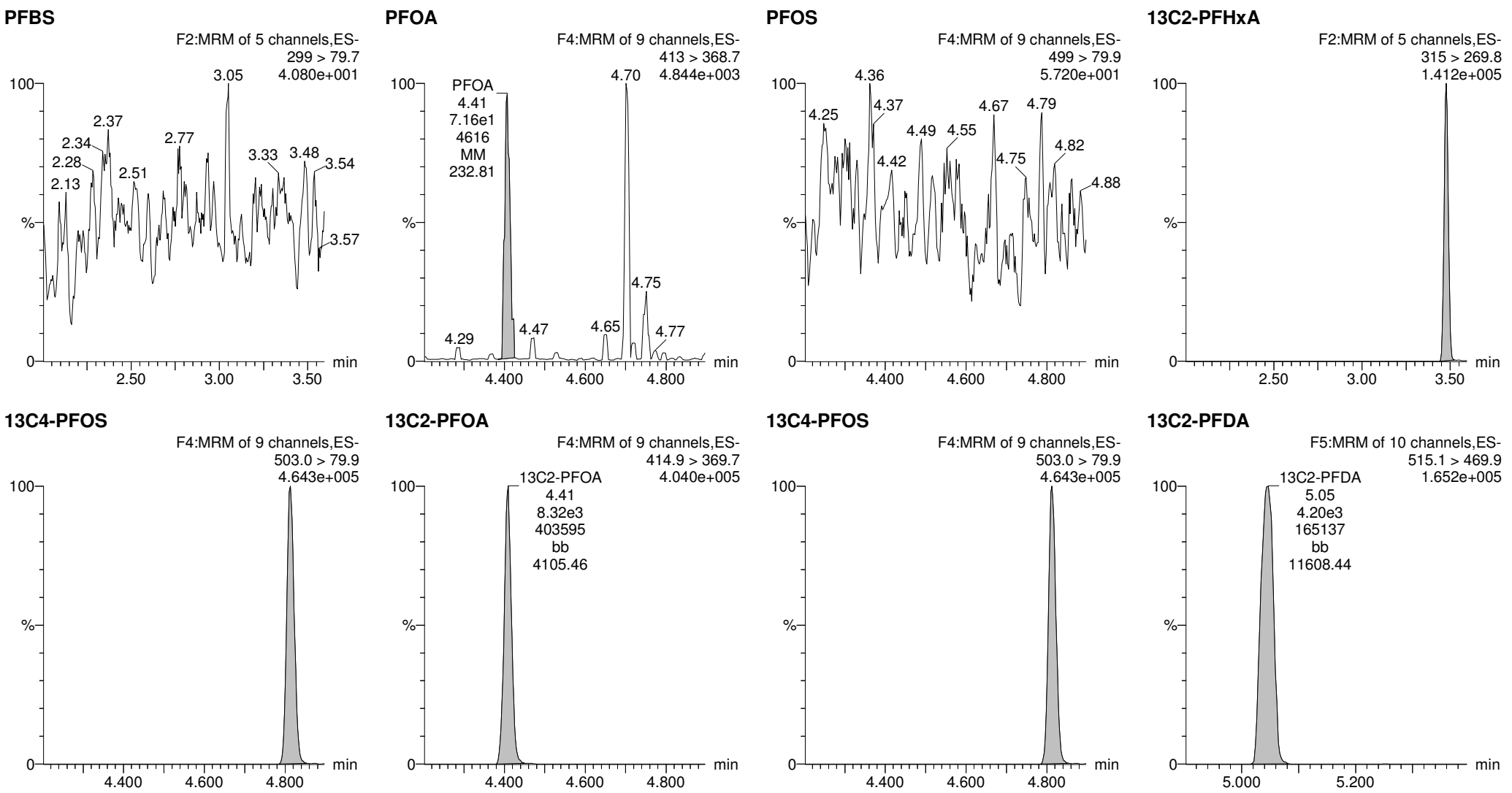
Last Altered: Sunday, November 26, 2017 21:33:44 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:35:57 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

Name: 171125G1_25, Date: 25-Nov-2017, Time: 20:16:52, ID: 1701712-08 CH-AT-1FB16-1117, Description: CH-AT-1FB16-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-26.qld

Last Altered: Sunday, November 26, 2017 21:37:58 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:38:38 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

Name: 171125G1_26, **Date:** 25-Nov-2017, **Time:** 20:29:18, **ID:** 1701712-09 CH-AT-1RW17-1117, **Description:** CH-AT-1RW17-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.89e3		0.2541	3.09				
2	2 PFOA	413 > 368.7	1.78e2	7.46e3		0.2541	4.41	4.41	0.239	1.12	
3	3 PFOS	499 >79.9		8.89e3		0.2541	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.91e3	7.46e3	0.451	0.2541	3.50	3.47	5.25	45.8	116.3
5	5 13C2-PFDA	515.1 > 469.9	4.95e3	7.46e3	0.590	0.2541	5.05	5.04	6.63	44.2	112.3
6	6 13C2-PFOA	414.9 > 369.7	7.46e3	7.46e3	1.000	0.2541	4.17	4.41	10.0	39.4	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.89e3	8.89e3	1.000	0.2541	4.58	4.81	28.7	113	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-26.qld

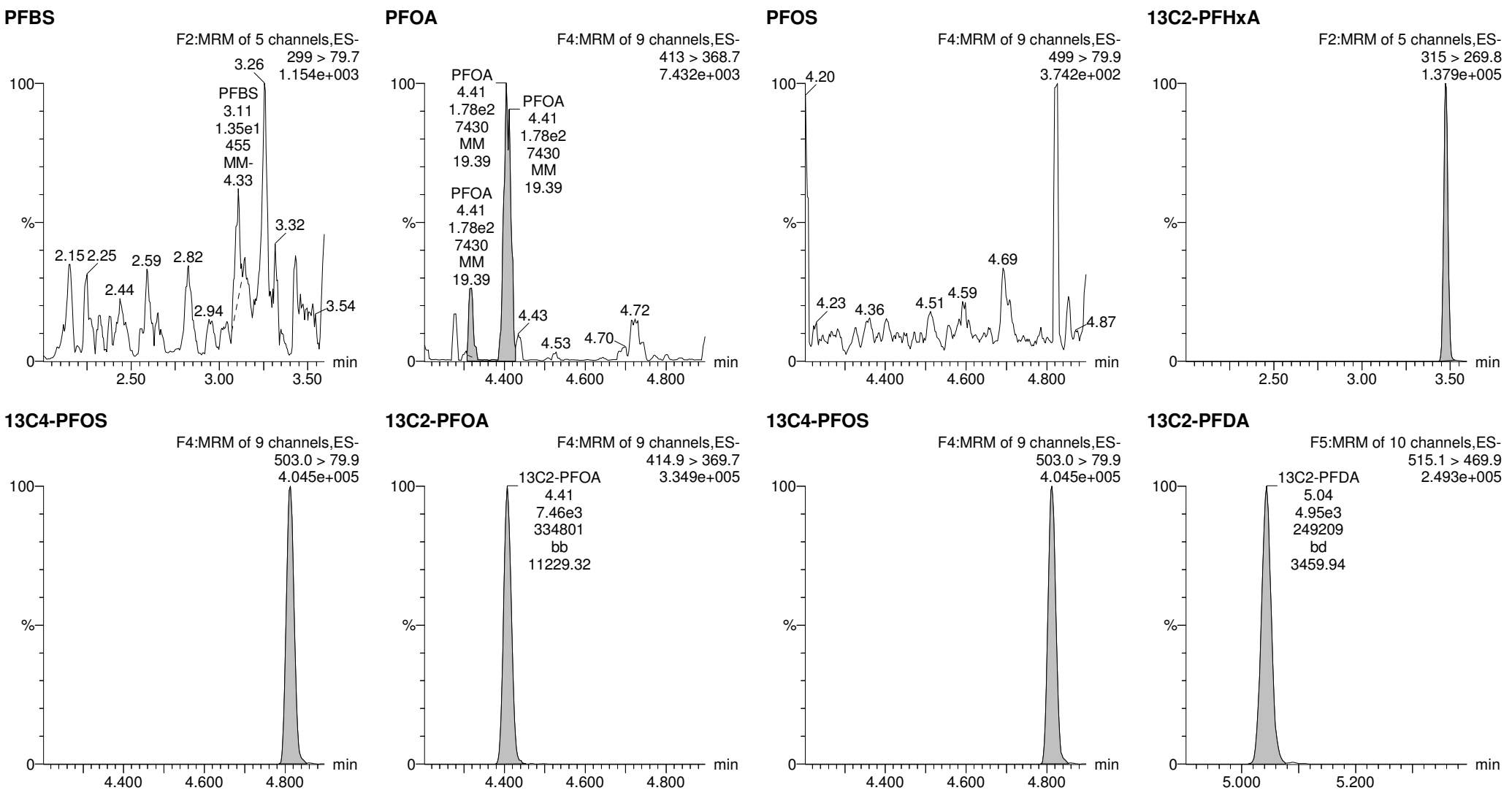
Last Altered: Sunday, November 26, 2017 21:37:58 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:38:38 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

Name: 171125G1_26, Date: 25-Nov-2017, Time: 20:29:18, ID: 1701712-09 CH-AT-1RW17-1117, Description: CH-AT-1RW17-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-27.qld

Last Altered: Sunday, November 26, 2017 21:42:40 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:43:15 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

Name: 171125G1_27, Date: 25-Nov-2017, Time: 20:41:44, ID: 1701712-10 CH-AT-1FB17-1117, Description: CH-AT-1FB17-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.08e3		0.2636	3.09				
2	2 PFOA	413 > 368.7	3.83e1	7.80e3		0.2636	4.41	4.42	0.0491	0.221	
3	3 PFOS	499 >79.9	1.03e1	9.08e3		0.2636	4.81	4.81	0.0325	0.104	
4	4 13C2-PFHxA	315 > 269.8	3.87e3	7.80e3	0.451	0.2636	3.50	3.48	4.96	41.8	110.1
5	5 13C2-PFDA	515.1 > 469.9	4.91e3	7.80e3	0.590	0.2636	5.05	5.04	6.30	40.5	106.7
6	6 13C2-PFOA	414.9 > 369.7	7.80e3	7.80e3	1.000	0.2636	4.17	4.41	10.0	37.9	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.08e3	9.08e3	1.000	0.2636	4.58	4.81	28.7	109	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-27.qld

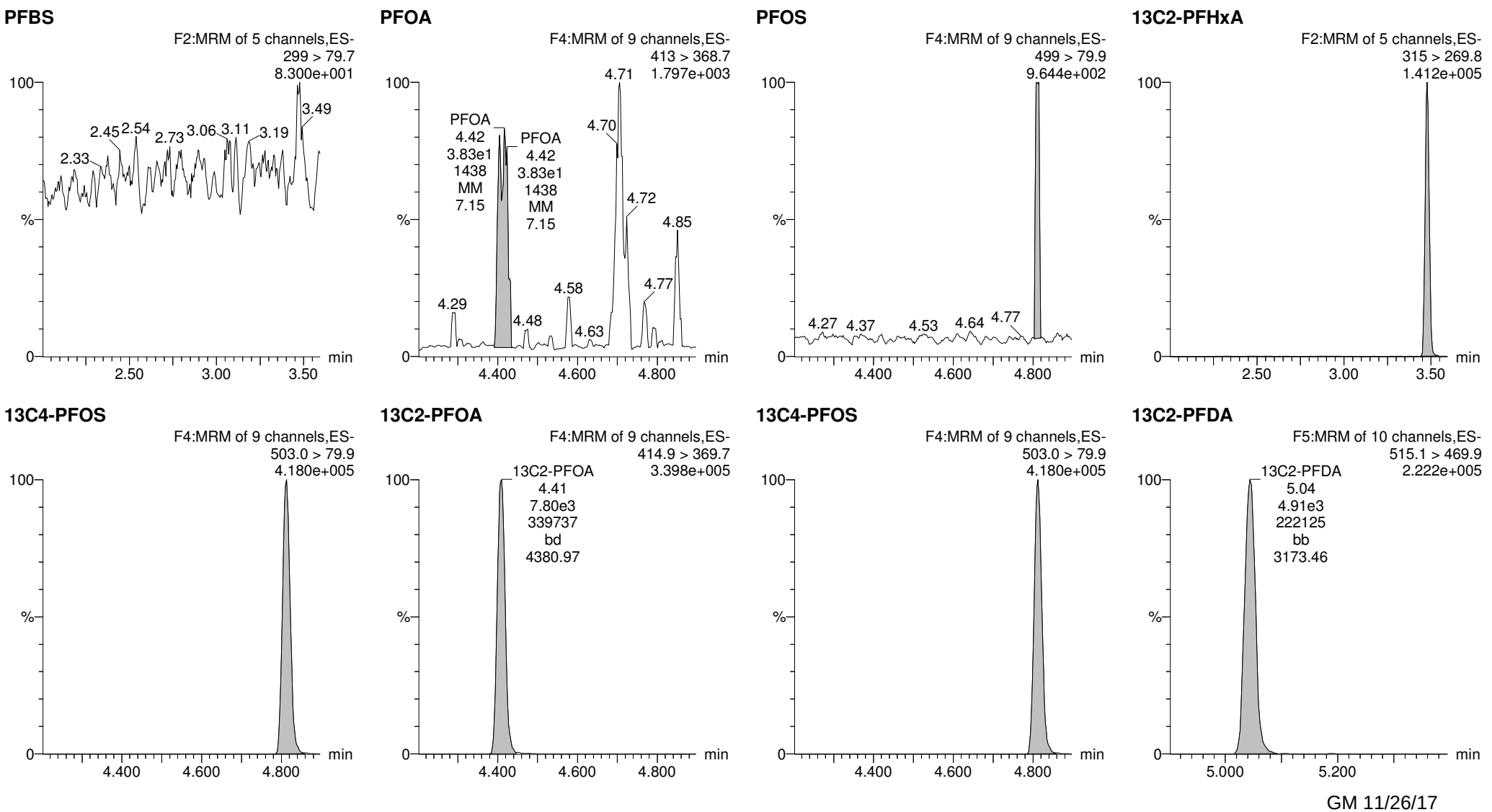
Rev'd: MM 11/27/17

Last Altered: Sunday, November 26, 2017 21:42:40 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:43:15 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

Name: 171125G1_27, Date: 25-Nov-2017, Time: 20:41:44, ID: 1701712-10 CH-AT-1FB17-1117, Description: CH-AT-1FB17-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-28.qld

Last Altered: Sunday, November 26, 2017 21:48:00 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:48:33 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

Name: 171125G1_28, Date: 25-Nov-2017, Time: 20:54:11, ID: 1701712-11 CH-AT-1RW18-1117, Description: CH-AT-1RW18-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.75e3		0.2527	3.09				
2	2 PFOA	413 > 368.7	4.12e1	8.46e3		0.2527	4.41	4.41	0.0487	0.229	
3	3 PFOS	499 >79.9		9.75e3		0.2527	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.88e3	8.46e3	0.451	0.2527	3.50	3.48	4.59	40.3	101.8
5	5 13C2-PFDA	515.1 > 469.9	4.83e3	8.46e3	0.590	0.2527	5.05	5.04	5.71	38.3	96.8
6	6 13C2-PFOA	414.9 > 369.7	8.46e3	8.46e3	1.000	0.2527	4.17	4.41	10.0	39.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.75e3	9.75e3	1.000	0.2527	4.58	4.81	28.7	114	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-28.qld

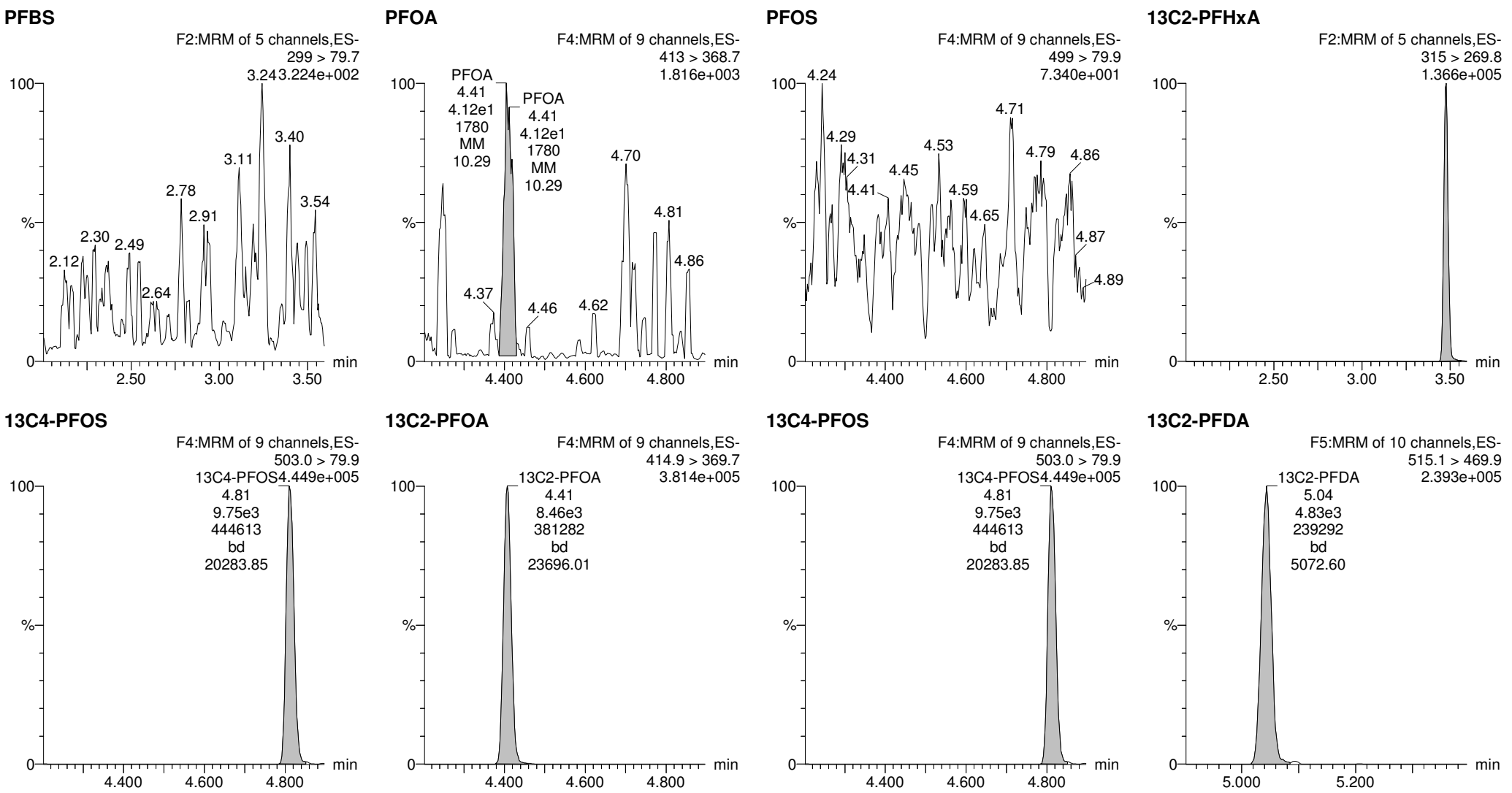
Last Altered: Sunday, November 26, 2017 21:48:00 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:48:33 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

Name: 171125G1_28, Date: 25-Nov-2017, Time: 20:54:11, ID: 1701712-11 CH-AT-1RW18-1117, Description: CH-AT-1RW18-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-29.qld

Last Altered: Sunday, November 26, 2017 21:49:45 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:50:31 Pacific Standard Time

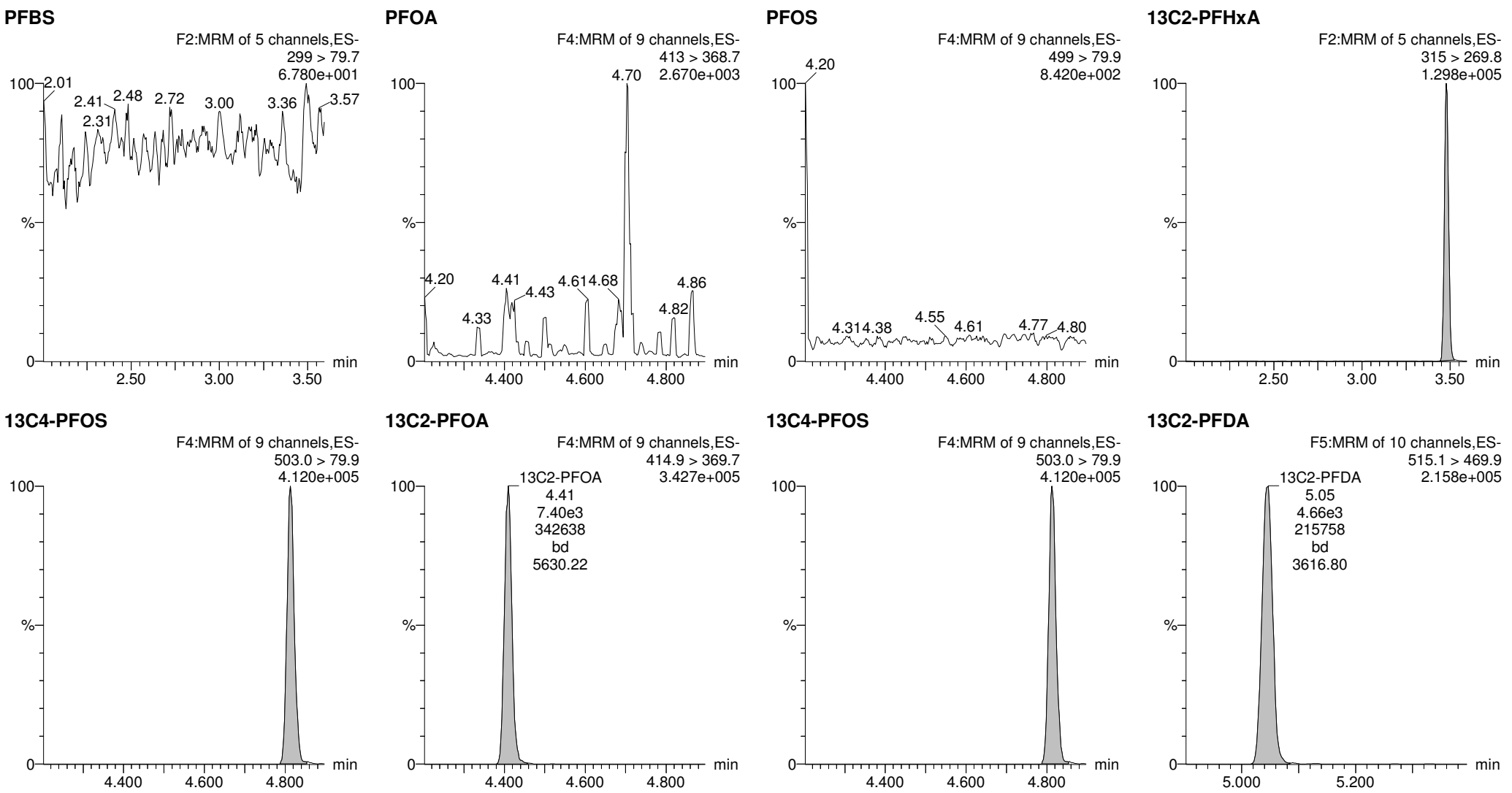
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 20:36:49

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

Name: 171125G1_29, **Date:** 25-Nov-2017, **Time:** 21:06:38, **ID:** 1701712-12 CH-AT-1FB18-1117, **Description:** CH-AT-1FB18-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.44e3		0.2642	3.09				
2	2 PFOA	413 > 368.7		7.40e3		0.2642	4.41				
3	3 PFOS	499 >79.9		8.44e3		0.2642	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.57e3	7.40e3	0.451	0.2642	3.50	3.48	4.83	40.5	107.2
5	5 13C2-PFDA	515.1 > 469.9	4.66e3	7.40e3	0.590	0.2642	5.05	5.05	6.30	40.4	106.7
6	6 13C2-PFOA	414.9 > 369.7	7.40e3	7.40e3	1.000	0.2642	4.17	4.41	10.0	37.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.44e3	8.44e3	1.000	0.2642	4.58	4.81	28.7	109	100.0

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_29, Date: 25-Nov-2017, Time: 21:06:38, ID: 1701712-12 CH-AT-1FB18-1117, Description: CH-AT-1FB18-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-30.qld

Last Altered: Sunday, November 26, 2017 21:53:09 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:53:37 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

Name: 171125G1_30, **Date:** 25-Nov-2017, **Time:** 21:19:02, **ID:** 1701712-13 CH-AT-1RW19-1117, **Description:** CH-AT-1RW19-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.16e3		0.2456	3.09				
2	2 PFOA	413 > 368.7	4.96e1	8.07e3		0.2456	4.41	4.40	0.0615	0.298	
3	3 PFOS	499 >79.9		8.16e3		0.2456	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.63e3	8.07e3	0.451	0.2456	3.50	3.48	4.50	40.7	99.9
5	5 13C2-PFDA	515.1 > 469.9	4.63e3	8.07e3	0.590	0.2456	5.05	5.04	5.74	39.6	97.2
6	6 13C2-PFOA	414.9 > 369.7	8.07e3	8.07e3	1.000	0.2456	4.17	4.41	10.0	40.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.16e3	8.16e3	1.000	0.2456	4.58	4.81	28.7	117	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-30.qld

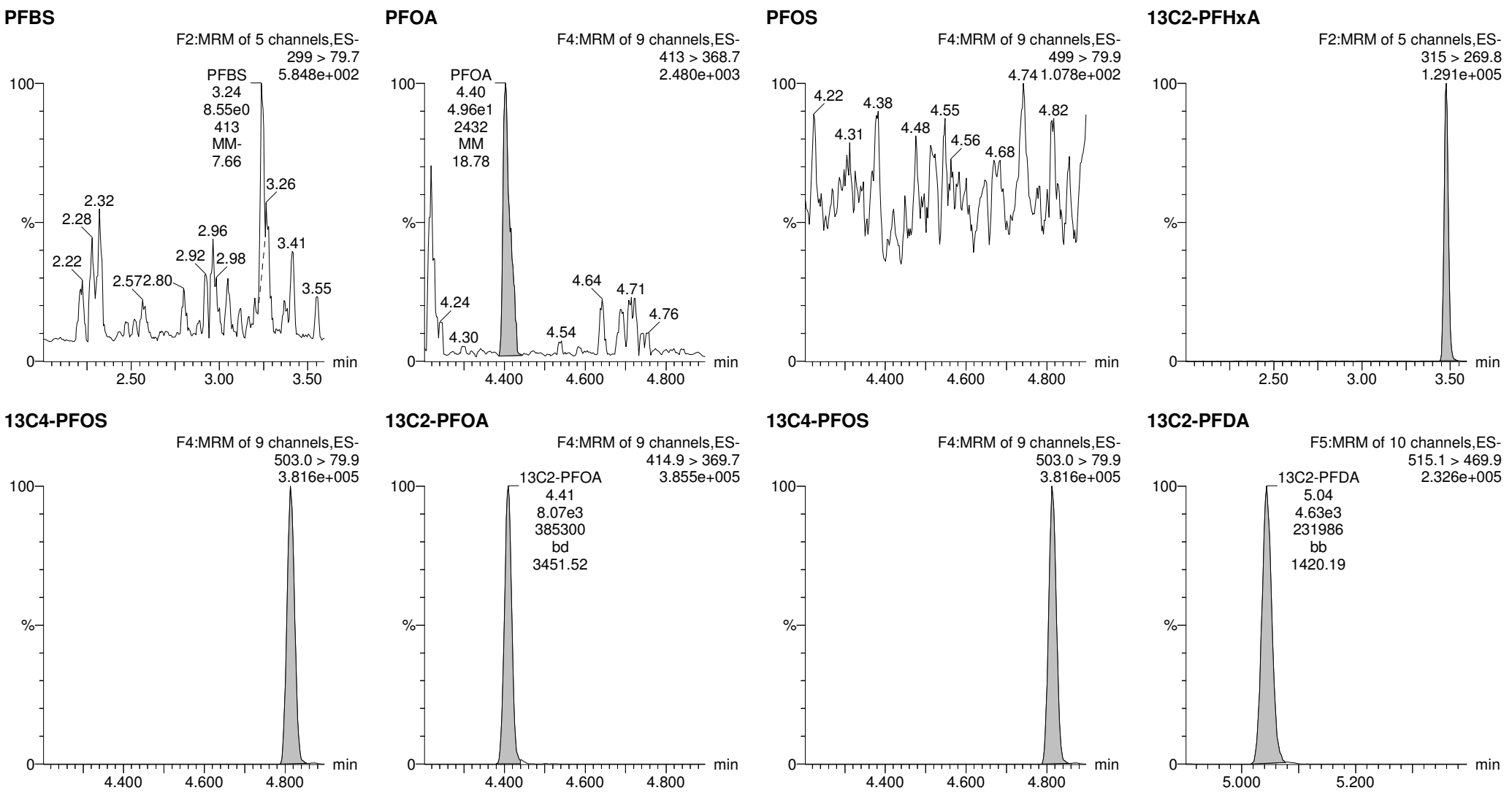
Last Altered: Sunday, November 26, 2017 21:53:09 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:53:37 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

Name: 171125G1_30, Date: 25-Nov-2017, Time: 21:19:02, ID: 1701712-13 CH-AT-1RW19-1117, Description: CH-AT-1RW19-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-31.qld

Last Altered: Sunday, November 26, 2017 21:55:09 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:55:46 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

Name: 171125G1_31, Date: 25-Nov-2017, Time: 21:31:26, ID: 1701712-14 CH-AT-1FB19-1117, Description: CH-AT-1FB19-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.24e3		0.2646	3.09				
2	2 PFOA	413 > 368.7	4.45e1	7.75e3		0.2646	4.41	4.41	0.0575	0.258	
3	3 PFOS	499 >79.9		8.24e3		0.2646	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.80e3	7.75e3	0.451	0.2646	3.50	3.48	4.91	41.1	108.8
5	5 13C2-PFDA	515.1 > 469.9	4.31e3	7.75e3	0.590	0.2646	5.05	5.04	5.57	35.7	94.3
6	6 13C2-PFOA	414.9 > 369.7	7.75e3	7.75e3	1.000	0.2646	4.17	4.41	10.0	37.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.24e3	8.24e3	1.000	0.2646	4.58	4.81	28.7	108	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-31.qld

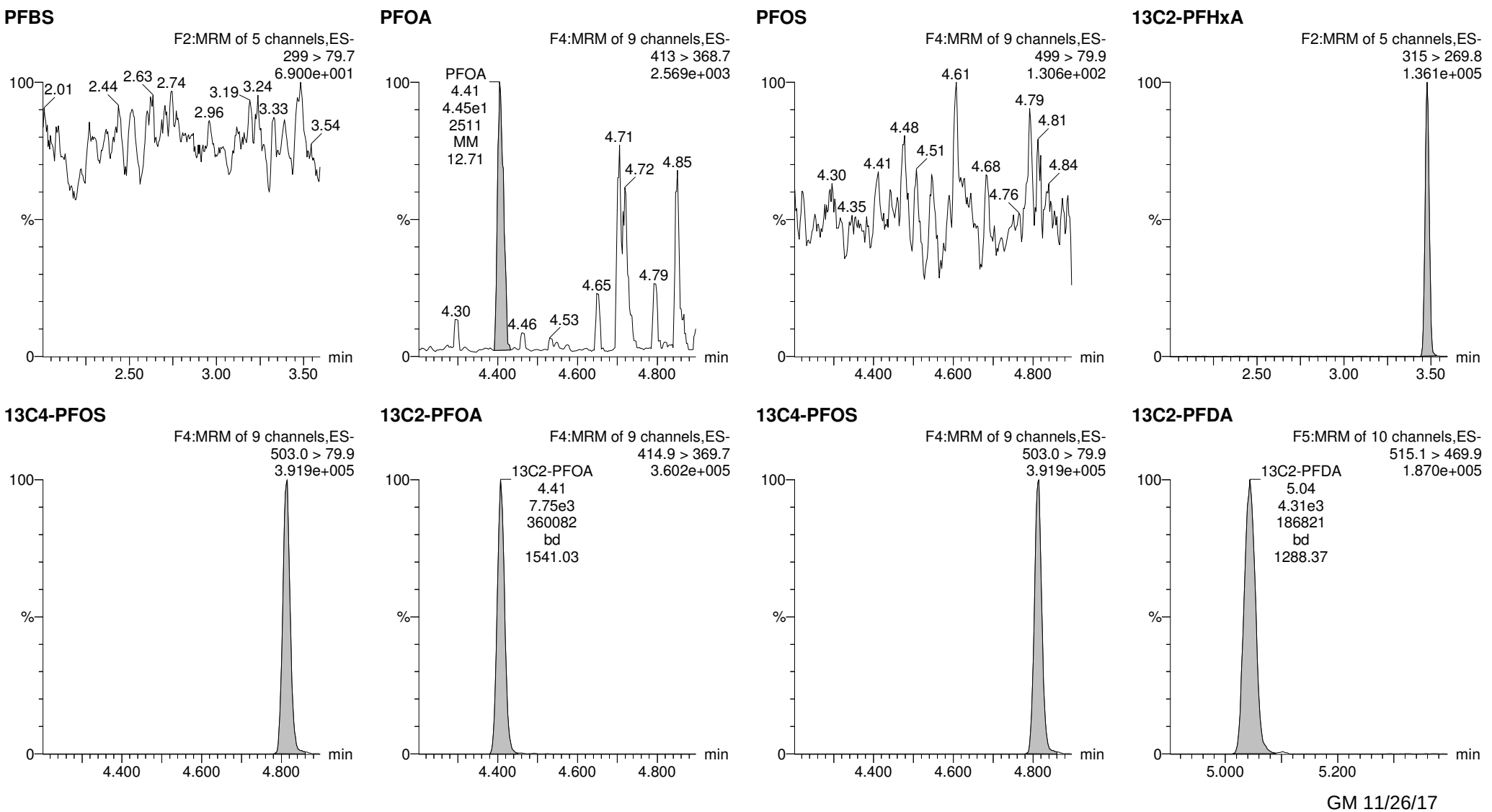
Last Altered: Sunday, November 26, 2017 21:55:09 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:55:46 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

Name: 171125G1_31, Date: 25-Nov-2017, Time: 21:31:26, ID: 1701712-14 CH-AT-1FB19-1117, Description: CH-AT-1FB19-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-32.qld

Last Altered: Sunday, November 26, 2017 21:58:56 Pacific Standard Time

Printed: Sunday, November 26, 2017 21:59:55 Pacific Standard Time

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

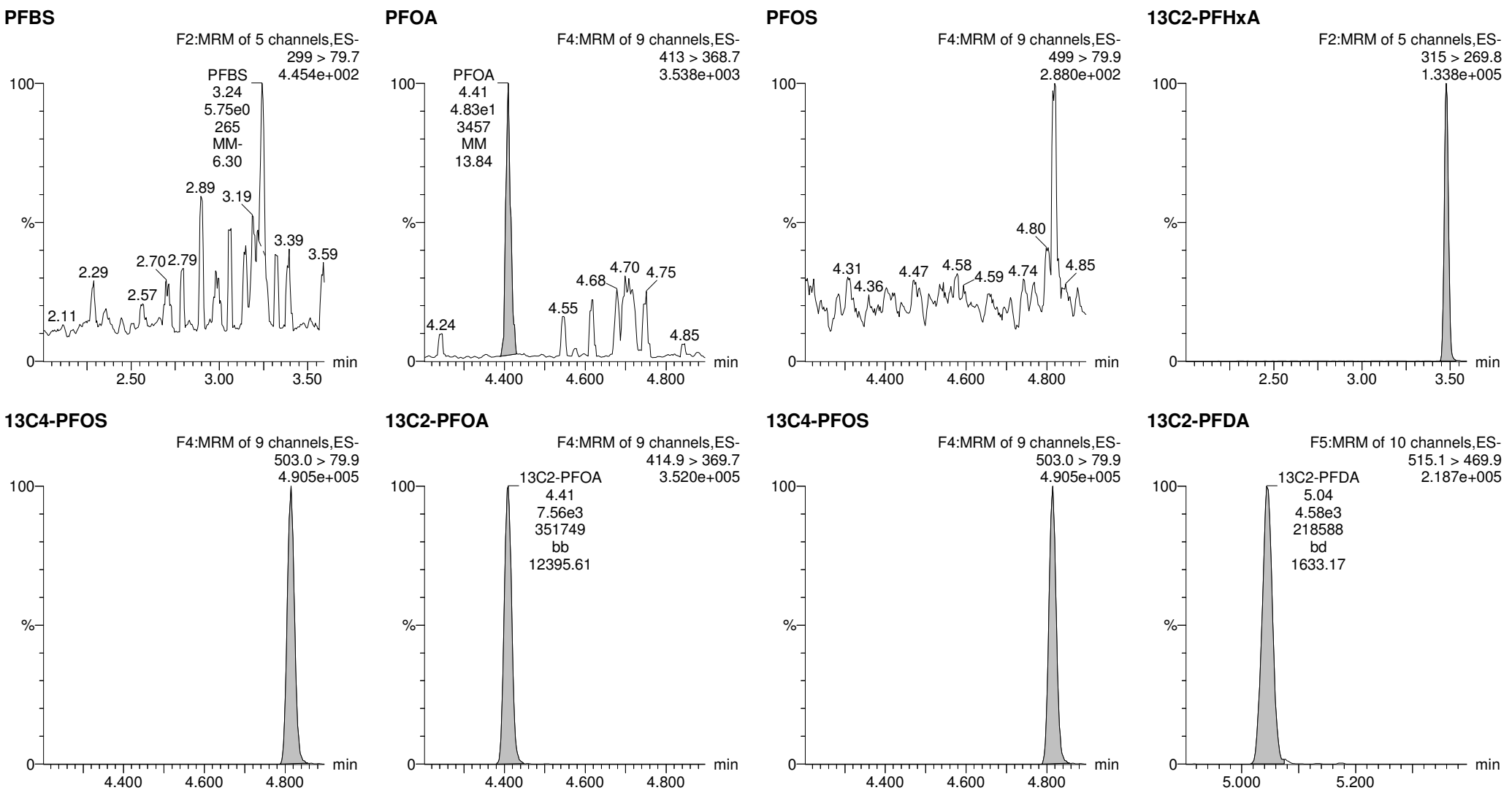
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171125G1_32, Date: 25-Nov-2017, Time: 21:43:51, ID: 1701712-15 CH-AT-1RW20-1117, Description: CH-AT-1RW20-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.97e3		0.2524	3.09				
2	2 PFOA	413 > 368.7	4.83e1	7.56e3		0.2524	4.41	4.41	0.0638	0.301	
3	3 PFOS	499 >79.9		9.97e3		0.2524	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.73e3	7.56e3	0.451	0.2524	3.50	3.48	4.93	43.3	109.4
5	5 13C2-PFDA	515.1 > 469.9	4.58e3	7.56e3	0.590	0.2524	5.05	5.04	6.06	40.7	102.7
6	6 13C2-PFOA	414.9 > 369.7	7.56e3	7.56e3	1.000	0.2524	4.17	4.41	10.0	39.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.97e3	9.97e3	1.000	0.2524	4.58	4.81	28.7	114	100.0

Last Altered: Sunday, November 26, 2017 21:58:56 Pacific Standard Time
Printed: Sunday, November 26, 2017 21:59:55 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
Name: 171125G1_32, **Date:** 25-Nov-2017, **Time:** 21:43:51, **ID:** 1701712-15 CH-AT-1RW20-1117, **Description:** CH-AT-1RW20-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-33.qld

Last Altered: Sunday, November 26, 2017 22:01:21 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:01:45 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

Name: 171125G1_33, **Date:** 25-Nov-2017, **Time:** 21:56:19, **ID:** 1701712-16 CH-AT-1FB20-1117, **Description:** CH-AT-1FB20-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.87e3		0.2590	3.09				
2	2 PFOA	413 > 368.7	3.25e1	8.42e3		0.2590	4.41	4.41	0.0386	0.177	
3	3 PFOS	499 >79.9		9.87e3		0.2590	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.78e3	8.42e3	0.451	0.2590	3.50	3.48	4.49	38.4	99.6
5	5 13C2-PFDA	515.1 > 469.9	5.13e3	8.42e3	0.590	0.2590	5.05	5.04	6.09	39.9	103.2
6	6 13C2-PFOA	414.9 > 369.7	8.42e3	8.42e3	1.000	0.2590	4.17	4.41	10.0	38.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.87e3	9.87e3	1.000	0.2590	4.58	4.81	28.7	111	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-33.qld

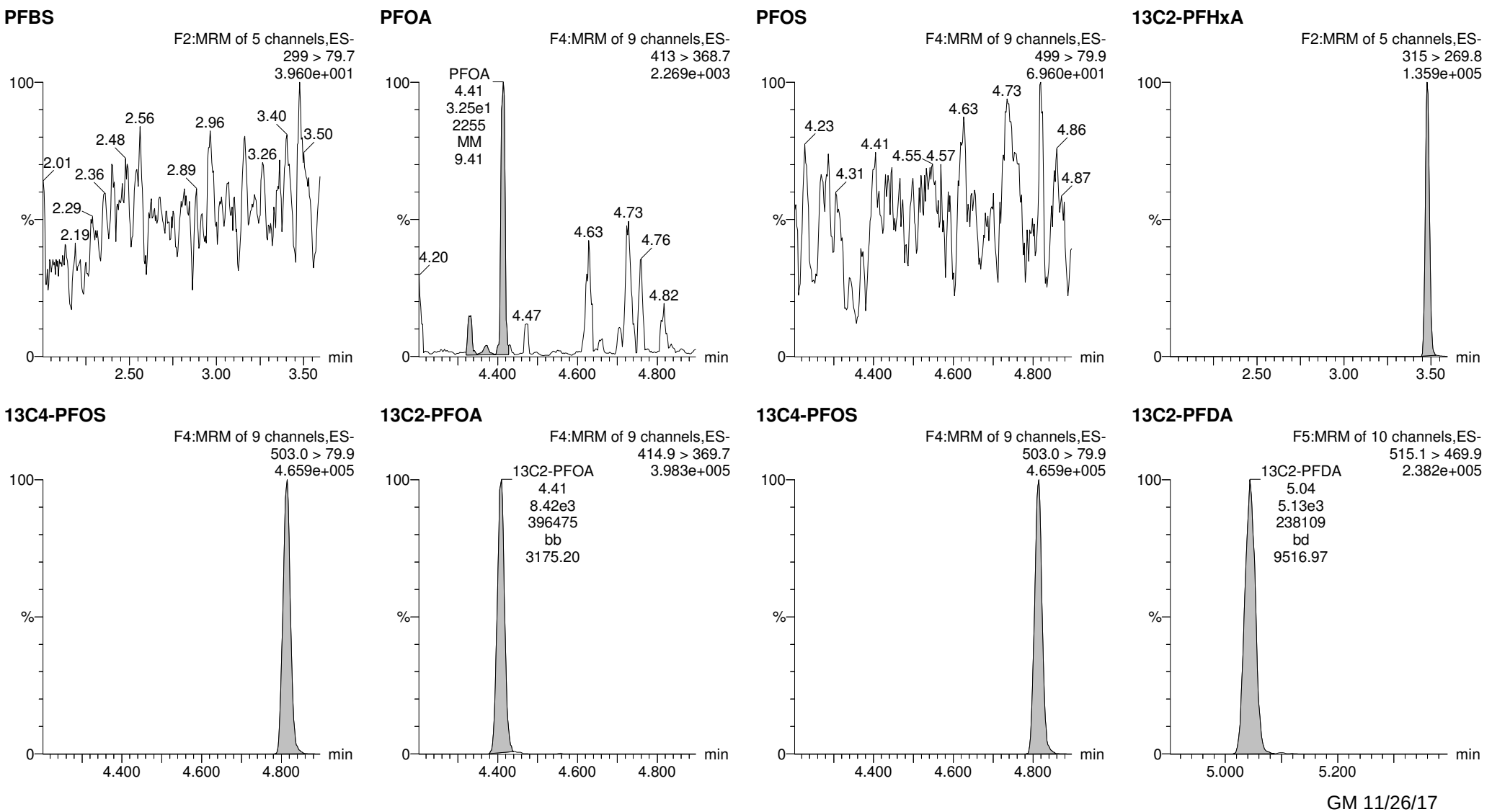
Last Altered: Sunday, November 26, 2017 22:01:21 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:01:45 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

Name: 171125G1_33, Date: 25-Nov-2017, Time: 21:56:19, ID: 1701712-16 CH-AT-1FB20-1117, Description: CH-AT-1FB20-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-34.qld

Last Altered: Sunday, November 26, 2017 22:03:19 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:03:51 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

Name: 171125G1_34, Date: 25-Nov-2017, Time: 22:08:47, ID: 1701712-17 CH-AT-1RW21-1117, Description: CH-AT-1RW21-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		8.89e3		0.2534	3.09				
2	2 PFOA	413 > 368.7	7.99e1	8.16e3		0.2534	4.41	4.40	0.0979	0.459	
3	3 PFOS	499 >79.9		8.89e3		0.2534	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.76e3	8.16e3	0.451	0.2534	3.50	3.48	4.60	40.3	102.0
5	5 13C2-PFDA	515.1 > 469.9	4.41e3	8.16e3	0.590	0.2534	5.05	5.04	5.41	36.2	91.6
6	6 13C2-PFOA	414.9 > 369.7	8.16e3	8.16e3	1.000	0.2534	4.17	4.41	10.0	39.5	100.0
7	7 13C4-PFOS	503.0 > 79.9	8.89e3	8.89e3	1.000	0.2534	4.58	4.81	28.7	113	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-34.qld

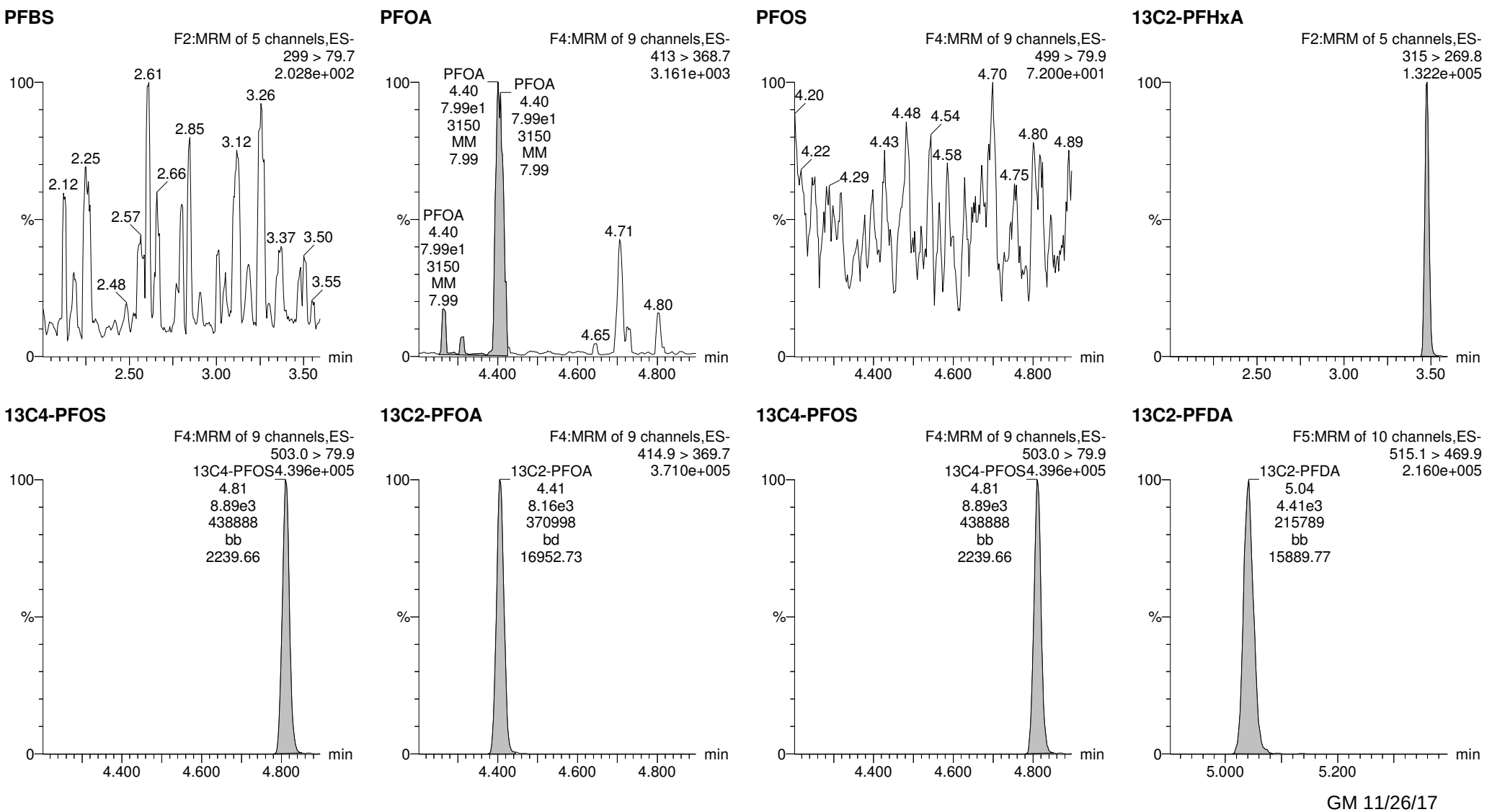
Last Altered: Sunday, November 26, 2017 22:03:19 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:03:51 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

Name: 171125G1_34, Date: 25-Nov-2017, Time: 22:08:47, ID: 1701712-17 CH-AT-1RW21-1117, Description: CH-AT-1RW21-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-35.qld

Last Altered: Sunday, November 26, 2017 22:05:21 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:05:47 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

Name: 171125G1_35, Date: 25-Nov-2017, Time: 22:21:13, ID: 1701712-18 CH-AT-1FB21-1117, Description: CH-AT-1FB21-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.16e3		0.2578	3.09				
2	2 PFOA	413 > 368.7	2.45e1	7.82e3		0.2578	4.41	4.40	0.0313	0.145	
3	3 PFOS	499 >79.9		9.16e3		0.2578	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.61e3	7.82e3	0.451	0.2578	3.50	3.47	4.61	39.7	102.3
5	5 13C2-PFDA	515.1 > 469.9	4.82e3	7.82e3	0.590	0.2578	5.05	5.04	6.16	40.5	104.4
6	6 13C2-PFOA	414.9 > 369.7	7.82e3	7.82e3	1.000	0.2578	4.17	4.41	10.0	38.8	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.16e3	9.16e3	1.000	0.2578	4.58	4.81	28.7	111	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-35.qld

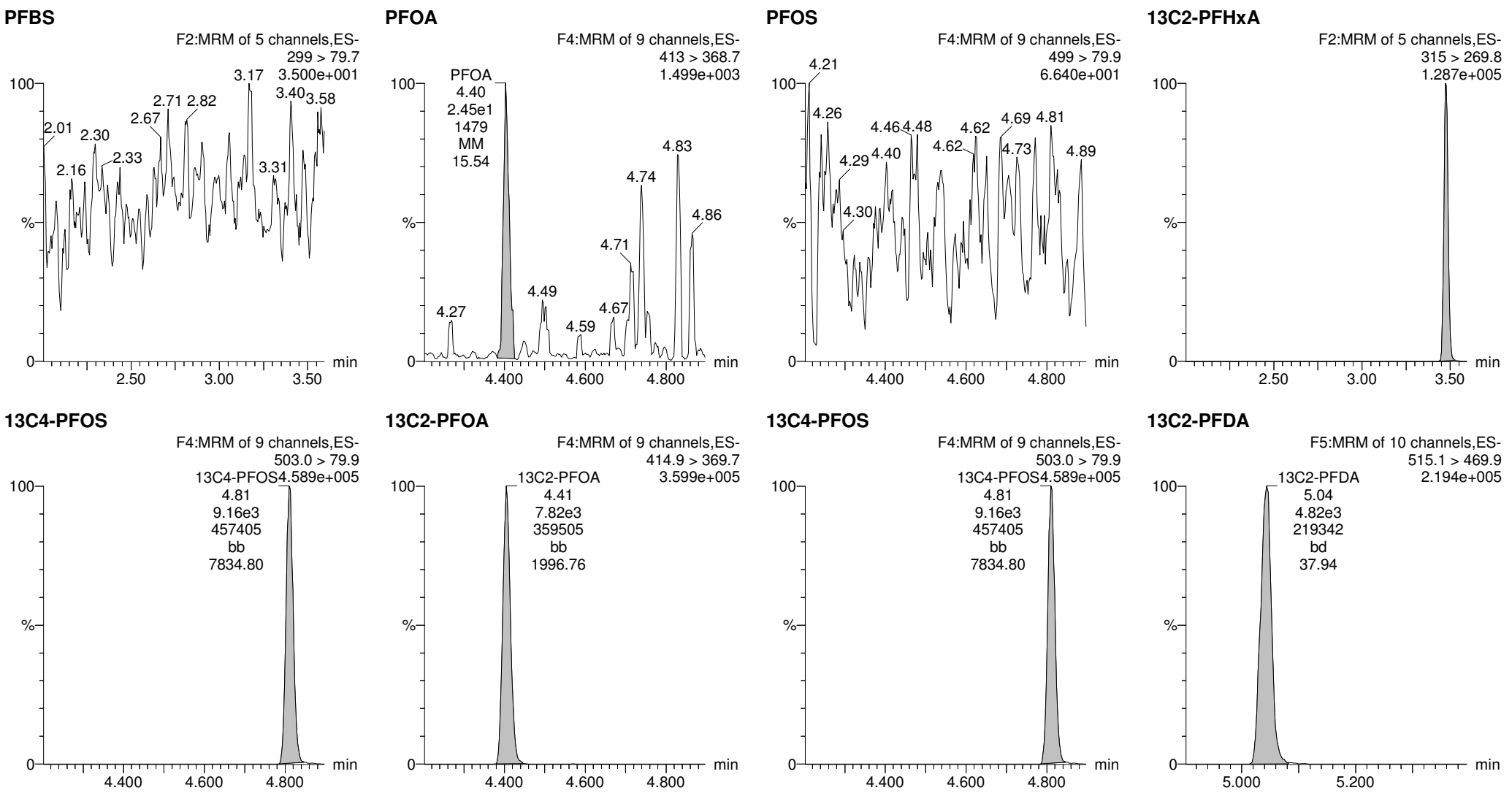
Last Altered: Sunday, November 26, 2017 22:05:21 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:05:47 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

Name: 171125G1_35, Date: 25-Nov-2017, Time: 22:21:13, ID: 1701712-18 CH-AT-1FB21-1117, Description: CH-AT-1FB21-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-36.qld

Last Altered: Sunday, November 26, 2017 22:07:16 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:07:48 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

Name: 171125G1_36, Date: 25-Nov-2017, Time: 22:33:40, ID: 1701712-19 CH-AT-1RW22-1117, Description: CH-AT-1RW22-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.42e3		0.2524	3.09				
2	2 PFOA	413 > 368.7	7.25e1	8.85e3		0.2524	4.41	4.41	0.0819	0.386	
3	3 PFOS	499 >79.9		9.42e3		0.2524	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.99e3	8.85e3	0.451	0.2524	3.50	3.47	4.51	39.6	99.9
5	5 13C2-PFDA	515.1 > 469.9	4.73e3	8.85e3	0.590	0.2524	5.05	5.04	5.35	35.9	90.6
6	6 13C2-PFOA	414.9 > 369.7	8.85e3	8.85e3	1.000	0.2524	4.17	4.41	10.0	39.6	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.42e3	9.42e3	1.000	0.2524	4.58	4.81	28.7	114	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-36.qld

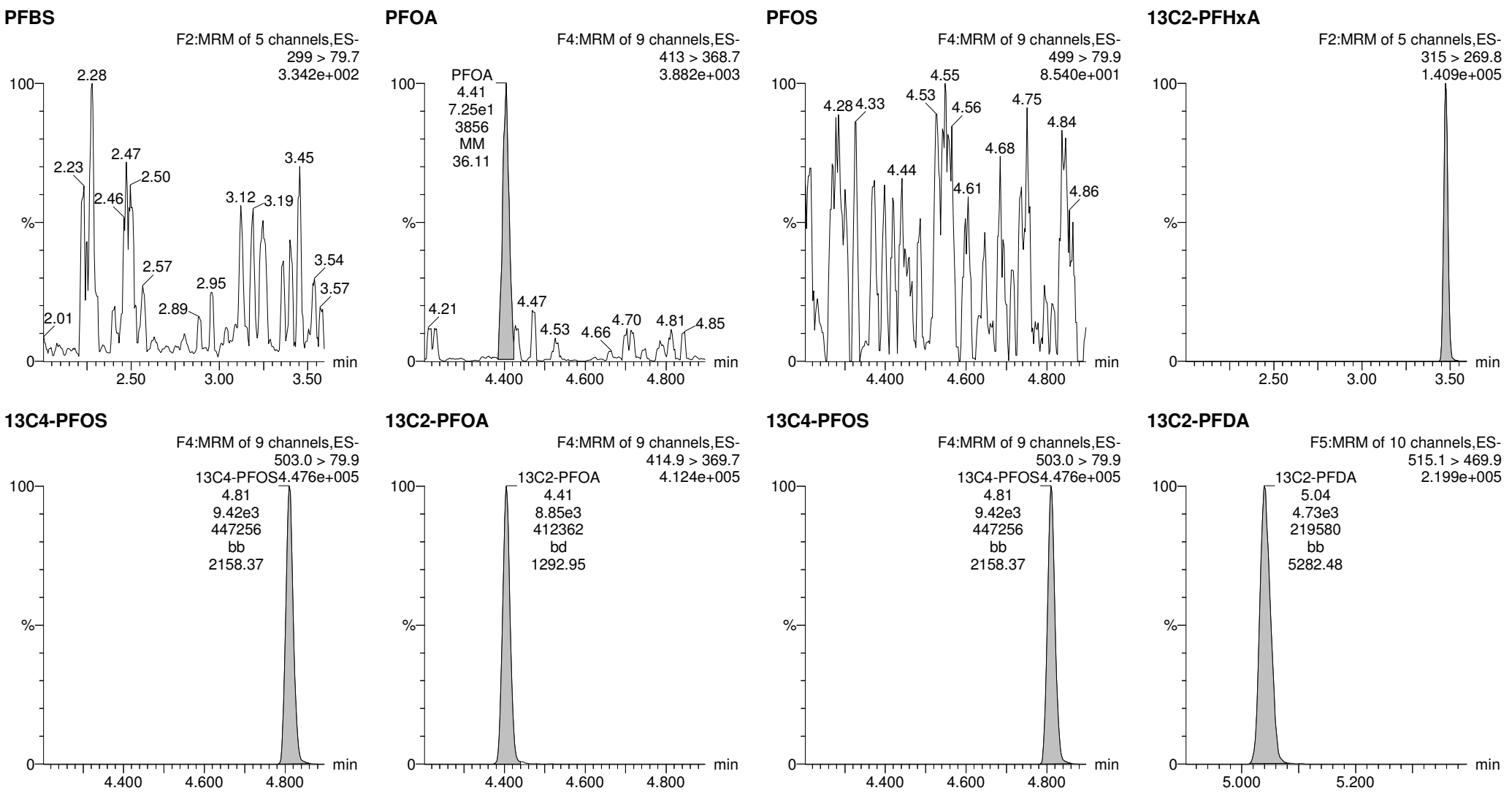
Last Altered: Sunday, November 26, 2017 22:07:16 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:07:48 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

Name: 171125G1_36, Date: 25-Nov-2017, Time: 22:33:40, ID: 1701712-19 CH-AT-1RW22-1117, Description: CH-AT-1RW22-1117



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-37.qld

Last Altered: Sunday, November 26, 2017 22:15:50 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:16:34 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

Name: 171125G1_37, **Date:** 25-Nov-2017, **Time:** 22:46:08, **ID:** 1701712-20 CH-AT-1FB22-1117, **Description:** CH-AT-1FB22-1117

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7		9.01e3		0.2581	3.09				
2	2 PFOA	413 > 368.7	2.94e1	7.93e3		0.2581	4.41	4.41	0.0371	0.171	
3	3 PFOS	499 >79.9		9.01e3		0.2581	4.81				
4	4 13C2-PFHxA	315 > 269.8	3.57e3	7.93e3	0.451	0.2581	3.50	3.47	4.50	38.7	99.8
5	5 13C2-PFDA	515.1 > 469.9	4.29e3	7.93e3	0.590	0.2581	5.05	5.04	5.40	35.5	91.6
6	6 13C2-PFOA	414.9 > 369.7	7.93e3	7.93e3	1.000	0.2581	4.17	4.41	10.0	38.7	100.0
7	7 13C4-PFOS	503.0 > 79.9	9.01e3	9.01e3	1.000	0.2581	4.58	4.81	28.7	111	100.0

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-37.qld

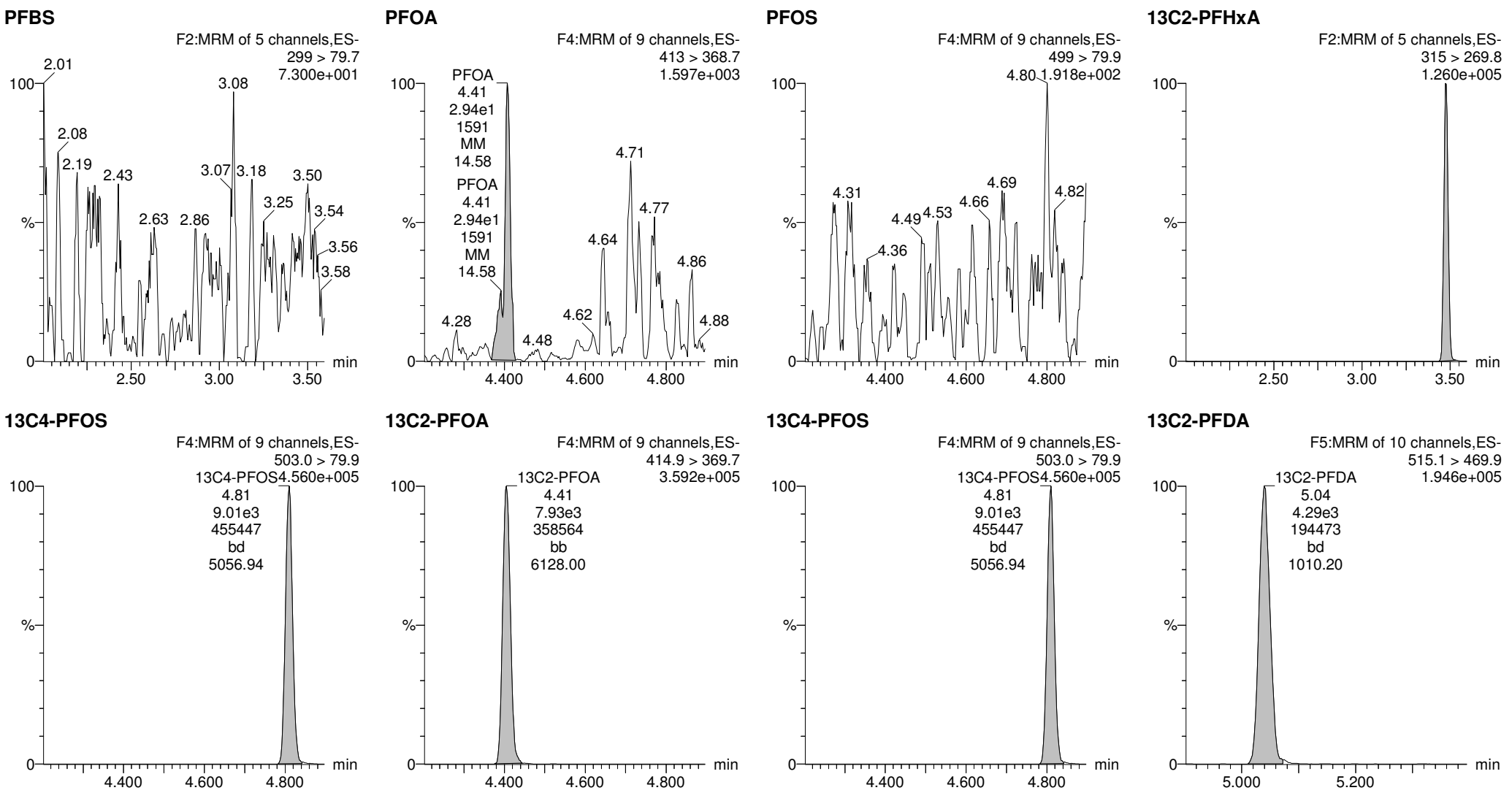
Last Altered: Sunday, November 26, 2017 22:15:50 Pacific Standard Time

Printed: Sunday, November 26, 2017 22:16:34 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

Name: 171125G1_37, Date: 25-Nov-2017, Time: 22:46:08, ID: 1701712-20 CH-AT-1FB22-1117, Description: CH-AT-1FB22-1117



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

Ical Area

Compound 6: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	IS Area	ICAL AREA	Area %
1 B7K0117-BS1	171125G1_Analyte		10	4.41	7757.903	9795.802778	79.19619
2 B7K0117-BSD1	171125G1_Analyte		10	4.41	8091.08	9795.802778	82.59742
3 IPA	171125G1_Analyte		10			9795.802778	0
4 B7K0117-BLK1	171125G1_Analyte		10	4.41	8793.914	9795.802778	89.77226
5 1701712-01 CH-AT-1RW13-1117	171125G1_Analyte		10	4.41	8065.944	9795.802778	82.34082
6 1701712-02 CH-AT-1FB13-1117	171125G1_Analyte		10	4.41	8420.651	9795.802778	85.96183
7 1701712-03 CH-AT-1RW14-1117	171125G1_Analyte		10	4.41	7992.815	9795.802778	81.59428
8 1701712-04 CH-AT-1FB14-1117	171125G1_Analyte		10	4.41	8252.624	9795.802778	84.24653
9 1701712-05 CH-AT-1RW15-1117	171125G1_Analyte		10	4.41	8343.035	9795.802778	85.16949
10 1701712-06 CH-AT-1FB15-1117	171125G1_Analyte		10	4.41	7665.179	9795.802778	78.24963
11 1701712-07 CH-AT-1RW16-1117	171125G1_Analyte		10	4.41	8171.278	9795.802778	83.41611
12 1701712-08 CH-AT-1FB16-1117	171125G1_Analyte		10	4.41	8320.938	9795.802778	84.94391
13 1701712-09 CH-AT-1RW17-1117	171125G1_Analyte		10	4.41	7460.708	9795.802778	76.16229
14 1701712-10 CH-AT-1FB17-1117	171125G1_Analyte		10	4.41	7799.148	9795.802778	79.61724
15 1701712-11 CH-AT-1RW18-1117	171125G1_Analyte		10	4.41	8456.644	9795.802778	86.32926
16 1701712-12 CH-AT-1FB18-1117	171125G1_Analyte		10	4.41	7397.36	9795.802778	75.51561
17 1701712-13 CH-AT-1RW19-1117	171125G1_Analyte		10	4.41	8069.585	9795.802778	82.37799
18 1701712-14 CH-AT-1FB19-1117	171125G1_Analyte		10	4.41	7746.248	9795.802778	79.07721
19 1701712-15 CH-AT-1RW20-1117	171125G1_Analyte		10	4.41	7563.032	9795.802778	77.20686
20 1701712-16 CH-AT-1FB20-1117	171125G1_Analyte		10	4.41	8415.409	9795.802778	85.90831
21 1701712-17 CH-AT-1RW21-1117	171125G1_Analyte		10	4.41	8163.078	9795.802778	83.3324
22 1701712-18 CH-AT-1FB21-1117	171125G1_Analyte		10	4.41	7822.134	9795.802778	79.85189
23 1701712-19 CH-AT-1RW22-1117	171125G1_Analyte		10	4.41	8847.787	9795.802778	90.32222
24 1701712-20 CH-AT-1FB22-1117	171125G1_Analyte		10	4.41	7929.979	9795.802778	80.95282
25 IPA	171125G1_Analyte		10			9795.802778	0
26 ST171125G1-10 PFC CS3 17K2009	171125G1_Analyte		10	4.41	12259.74	9795.802778	125.153

Compound 7: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	IS Area	ical area	Area %
1 B7K0117-BS1	171125G1_	Analyte	28.7	4.81	8293.197	10884.5595	76.19231
2 B7K0117-BSD1	171125G1_	Analyte	28.7	4.81	9455.9	10884.5595	86.87444
3 IPA	171125G1_	Analyte	28.7			10884.5595	0
4 B7K0117-BLK1	171125G1_	Analyte	28.7	4.81	7960.568	10884.5595	73.13634
5 1701712-01 CH-AT-1RW13-1117	171125G1_	Analyte	28.7	4.82	8429.648	10884.5595	77.44593
6 1701712-02 CH-AT-1FB13-1117	171125G1_	Analyte	28.7	4.81	9543.839	10884.5595	87.68236
7 1701712-03 CH-AT-1RW14-1117	171125G1_	Analyte	28.7	4.81	8739.741	10884.5595	80.29485
8 1701712-04 CH-AT-1FB14-1117	171125G1_	Analyte	28.7	4.81	8882.34	10884.5595	81.60496
9 1701712-05 CH-AT-1RW15-1117	171125G1_	Analyte	28.7	4.81	9015.525	10884.5595	82.82857
10 1701712-06 CH-AT-1FB15-1117	171125G1_	Analyte	28.7	4.81	8839.437	10884.5595	81.21079
11 1701712-07 CH-AT-1RW16-1117	171125G1_	Analyte	28.7	4.81	9500.691	10884.5595	87.28595
12 1701712-08 CH-AT-1FB16-1117	171125G1_	Analyte	28.7	4.81	9626.679	10884.5595	88.44344
13 1701712-09 CH-AT-1RW17-1117	171125G1_	Analyte	28.7	4.81	8885.597	10884.5595	81.63488
14 1701712-10 CH-AT-1FB17-1117	171125G1_	Analyte	28.7	4.81	9083.024	10884.5595	83.44871
15 1701712-11 CH-AT-1RW18-1117	171125G1_	Analyte	28.7	4.81	9752.263	10884.5595	89.59722
16 1701712-12 CH-AT-1FB18-1117	171125G1_	Analyte	28.7	4.81	8436.01	10884.5595	77.50438
17 1701712-13 CH-AT-1RW19-1117	171125G1_	Analyte	28.7	4.81	8160.294	10884.5595	74.97128
18 1701712-14 CH-AT-1FB19-1117	171125G1_	Analyte	28.7	4.81	8239.607	10884.5595	75.69996
19 1701712-15 CH-AT-1RW20-1117	171125G1_	Analyte	28.7	4.81	9974.01	10884.5595	91.63448
20 1701712-16 CH-AT-1FB20-1117	171125G1_	Analyte	28.7	4.81	9869.815	10884.5595	90.67721
21 1701712-17 CH-AT-1RW21-1117	171125G1_	Analyte	28.7	4.81	8894.21	10884.5595	81.71401
22 1701712-18 CH-AT-1FB21-1117	171125G1_	Analyte	28.7	4.81	9163.571	10884.5595	84.18872
23 1701712-19 CH-AT-1RW22-1117	171125G1_	Analyte	28.7	4.81	9415.041	10884.5595	86.49905
24 1701712-20 CH-AT-1FB22-1117	171125G1_	Analyte	28.7	4.81	9009.701	10884.5595	82.77506
25 IPA	171125G1_	Analyte	28.7			10884.5595	0
26 ST171125G1-10 PFC CS3 17K2009	171125G1_	Analyte	28.7	4.81	13557.29	10884.5595	124.5552
27 IPA	171125G1_	Analyte	28.7				

Vista Analytical Laboratory

Dataset: Untitled

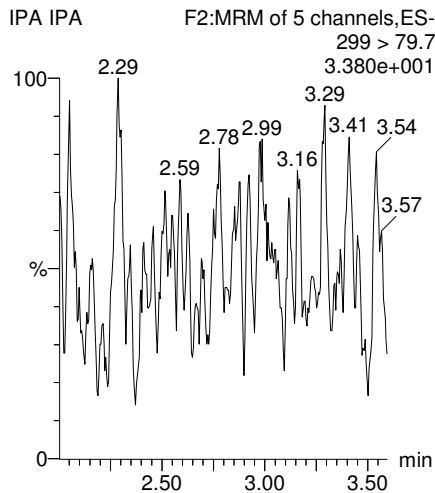
Last Altered: Monday, November 27, 2017 09:43:24 Pacific Standard Time

Printed: Monday, November 27, 2017 09:43:44 Pacific Standard Time

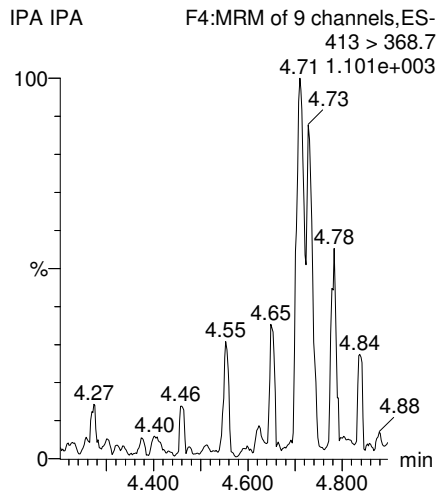
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 20:36:49
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

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

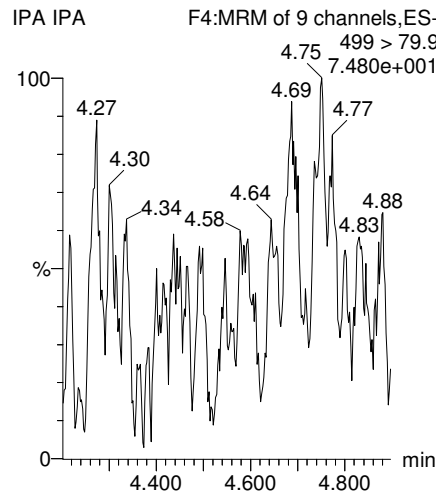
PFBS



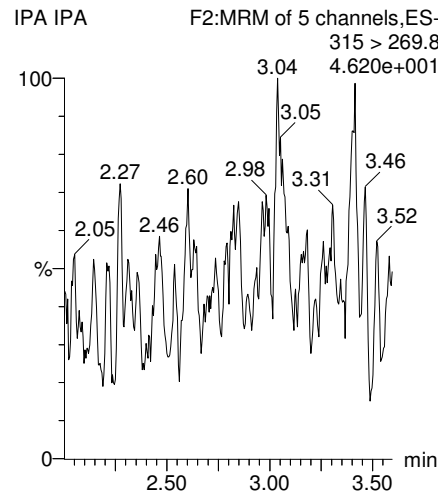
PFOA



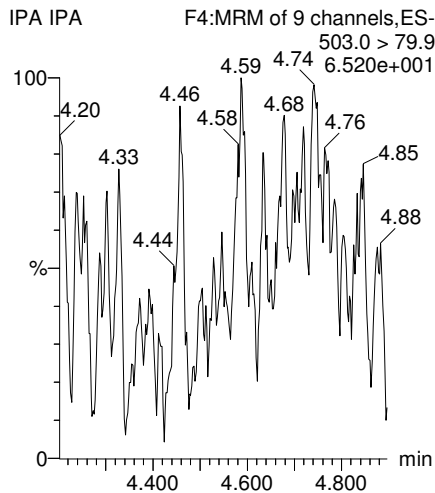
PFOS



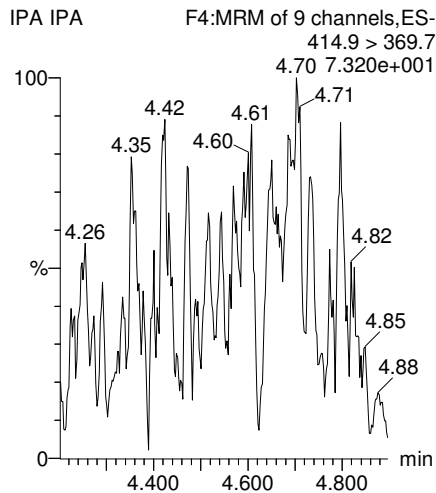
13C2-PFHxA



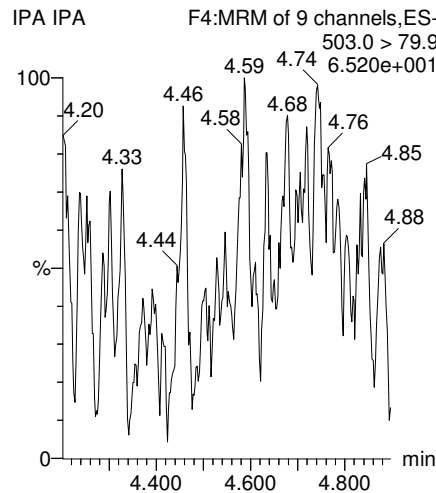
13C4-PFOS



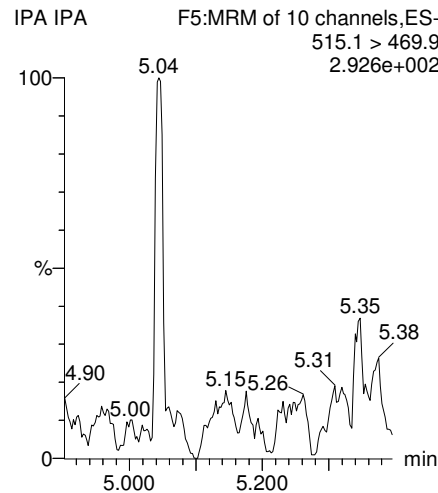
13C2-PFOA



13C4-PFOS



13C2-PFDA



Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-39.qld

Last Altered: Sunday, November 26, 2017 22:19:17 Pacific Standard Time

Printed: Monday, November 27, 2017 09:39:46 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

Name: 171125G1_39, Date: 25-Nov-2017, Time: 23:10:59, ID: ST171125G1-10 PFC CS3 17K2009, Description: PFC CS3 17K2009

	# Name	Trace	Area	IS Area	RRF	wt/vol	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.82e4	1.36e4		1.0000	3.09	3.13	38.4	43.4	98.1
2	2 PFOA	413 > 368.7	5.15e4	1.23e4		1.0000	4.41	4.41	42.0	50.0	100.0
3	3 PFOS	499 > 79.9	2.40e4	1.36e4		1.0000	4.81	4.81	50.9	43.0	93.1
4	4 13C2-PFHxA	315 > 269.8	5.47e3	1.23e4	0.451	1.0000	3.50	3.48	4.46	9.89	98.9
5	5 13C2-PFDA	515.1 > 469.9	5.74e3	1.23e4	0.590	1.0000	5.05	5.04	4.68	7.93	79.3
6	6 13C2-PFOA	414.9 > 369.7	1.23e4	1.23e4	1.000	1.0000	4.17	4.41	10.0	10.0	100.0
7	7 13C4-PFOS	503.0 > 79.9	1.36e4	1.36e4	1.000	1.0000	4.58	4.81	28.7	28.7	100.0

70-130
↓

DM
11/27/17
JHA.
11/27/2017

Dataset: Untitled

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

Printed: Monday, November 27, 2017 09:24:59 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

Printed: Monday, November 27, 2017 09:24:59 Pacific Standard Time

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

LC Calibration Standards Review Checklist 01

Calibration ID:	L M H	ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
<u>ST17112561-10</u>	<u>(M)</u>	☒	☒	☒	☒	☒	☒	<u>NK</u>
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 11/27/2017
Initials/Date

Comments:

DW-L3

Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-39.qld

Last Altered: Sunday, November 26, 2017 22:19:17 Pacific Standard Time

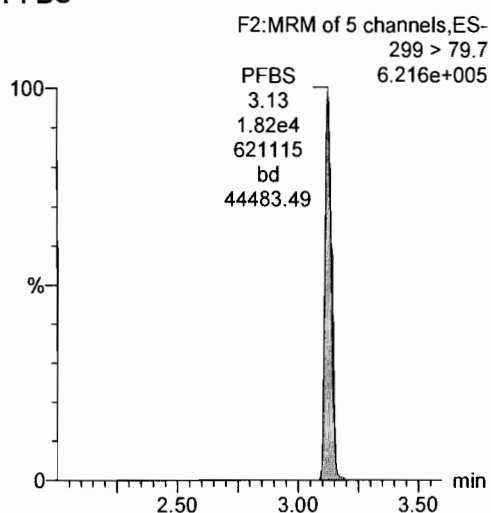
Printed: Monday, November 27, 2017 09:39:46 Pacific Standard Time

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

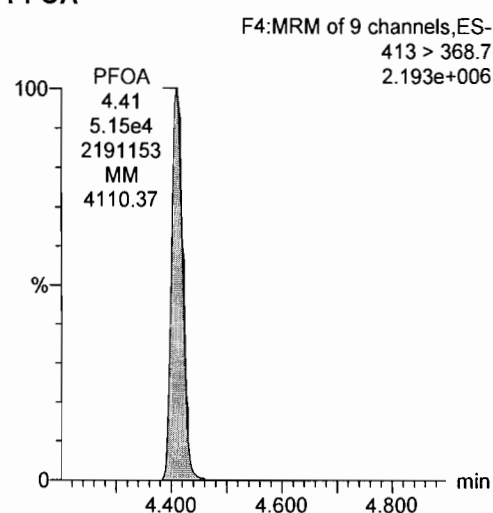
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

Name: 171125G1_39, Date: 25-Nov-2017, Time: 23:10:59, ID: ST171125G1-10 PFC CS3 17K2009, Description: PFC CS3 17K2009

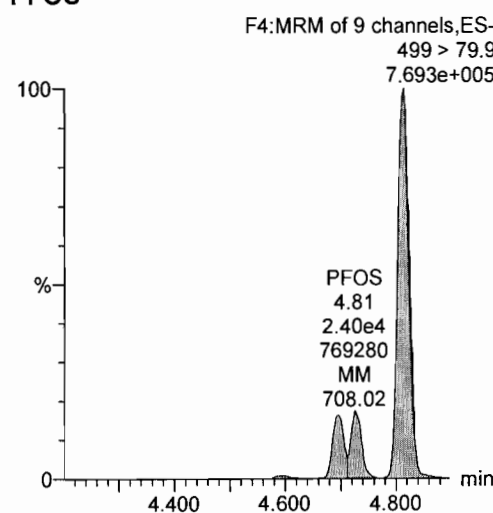
PFBS



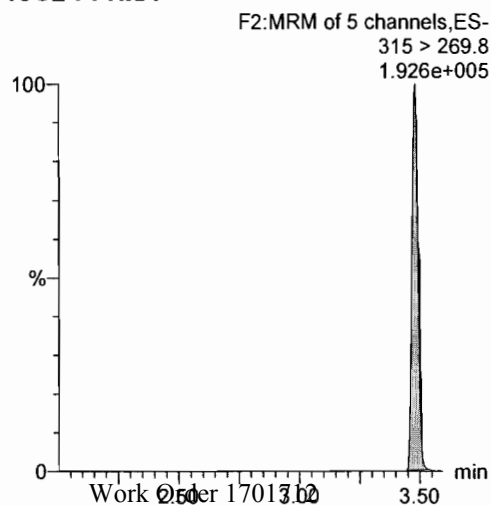
PFOA



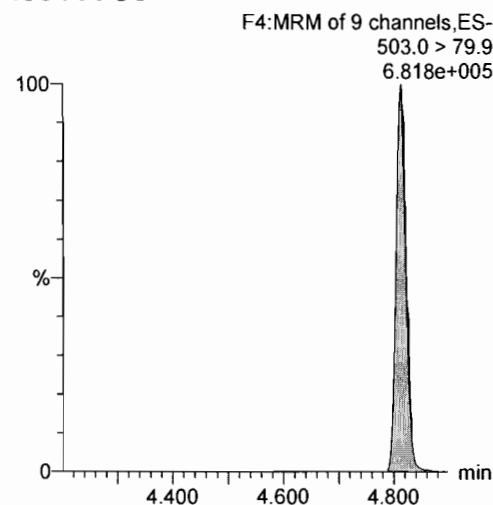
PFOS



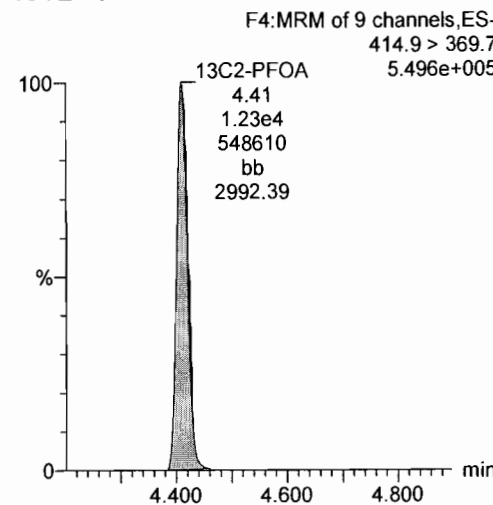
13C2-PFHxA



13C4-PFOS



13C2-PFOA



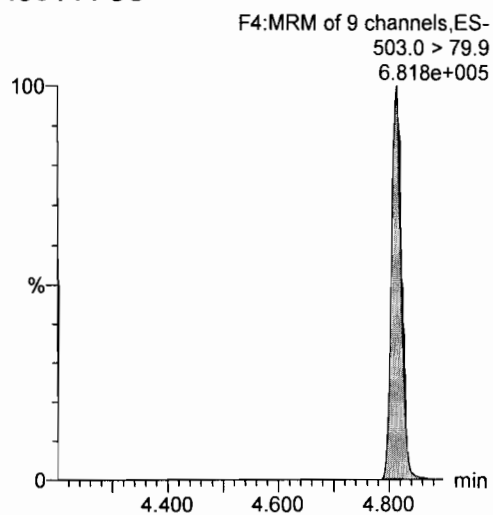
Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-39.qld

Last Altered: Sunday, November 26, 2017 22:19:17 Pacific Standard Time

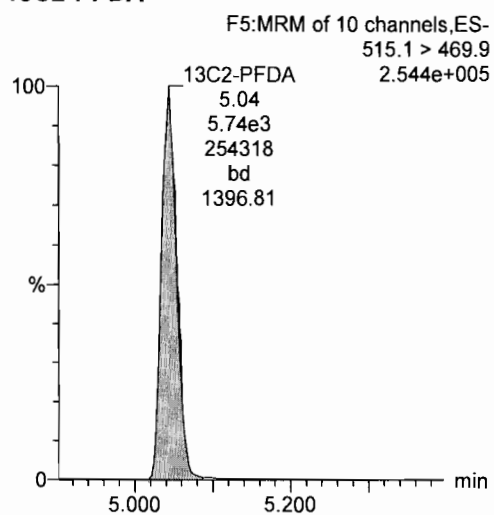
Printed: Monday, November 27, 2017 09:39:46 Pacific Standard Time

Name: 171125G1_39, Date: 25-Nov-2017, Time: 23:10:59, ID: ST171125G1-10 PFC CS3 17K2009, Description: PFC CS3 17K2009

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

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: 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

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: 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

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

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

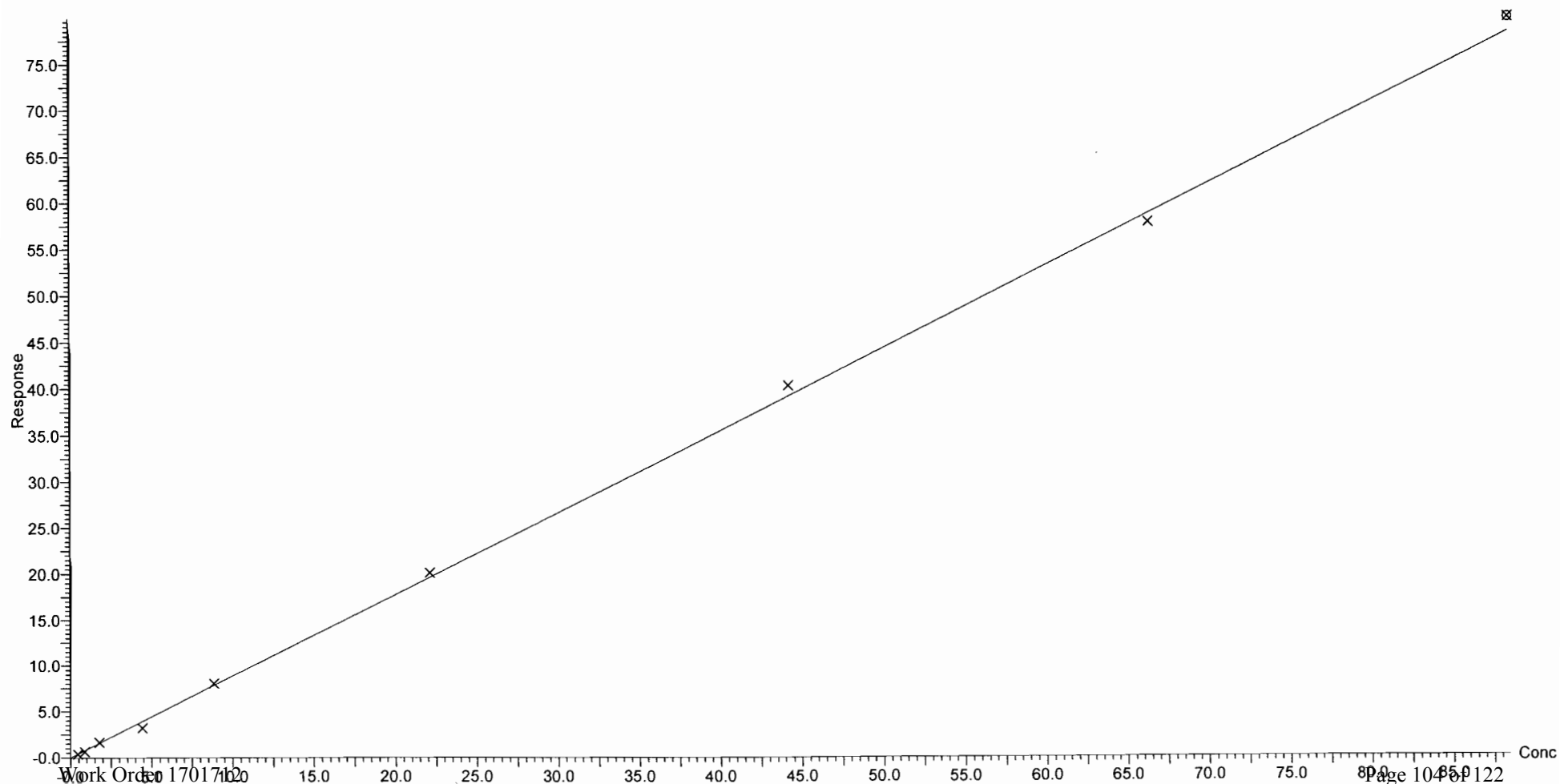
Compound name: PFBS

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

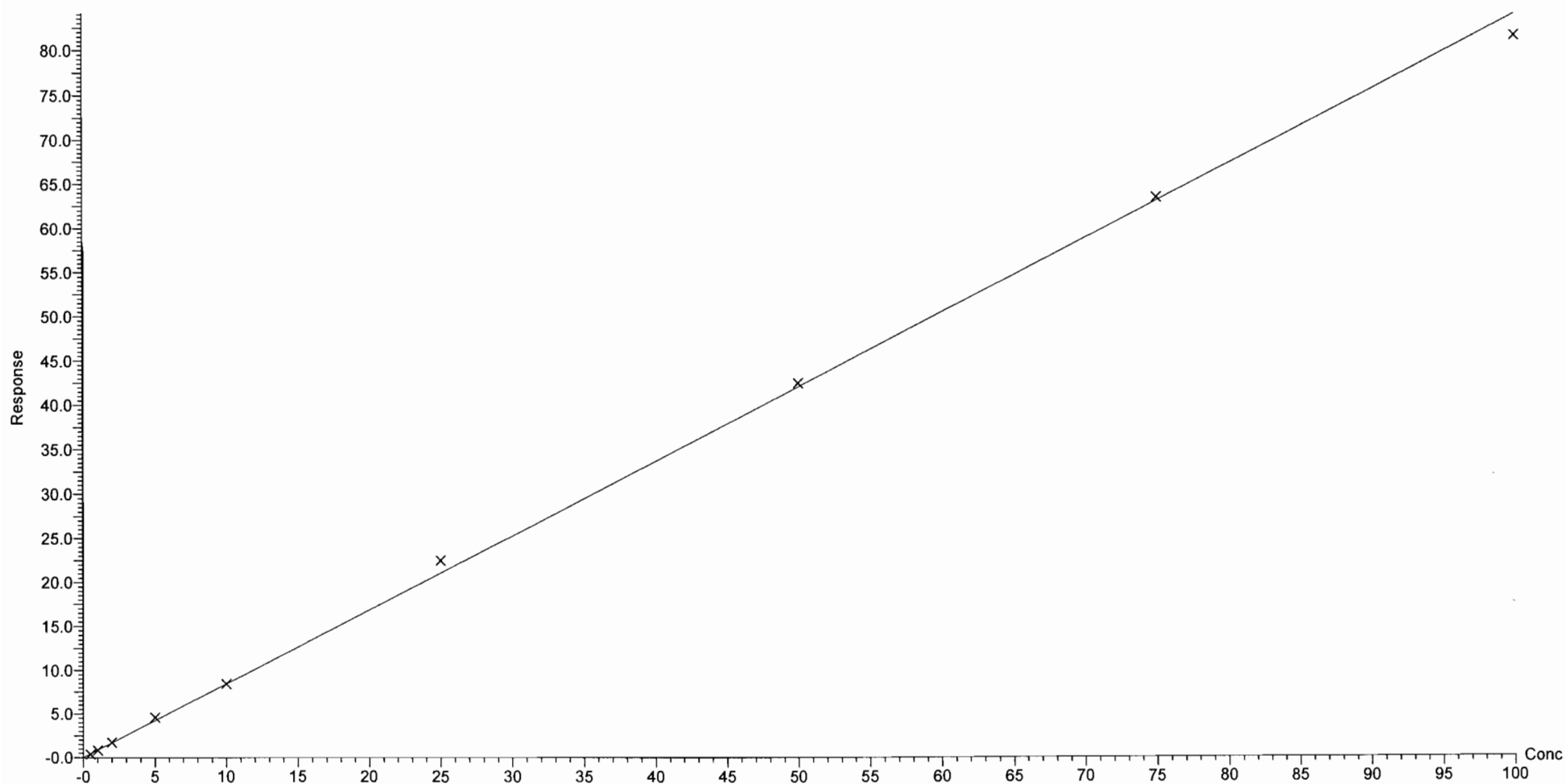
Compound name: PFOA

Coefficient of Determination: $R^2 = 0.999038$

Calibration curve: $0.841053 \times x$

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

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



Dataset: U:\G1.PRO\Results\2017\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

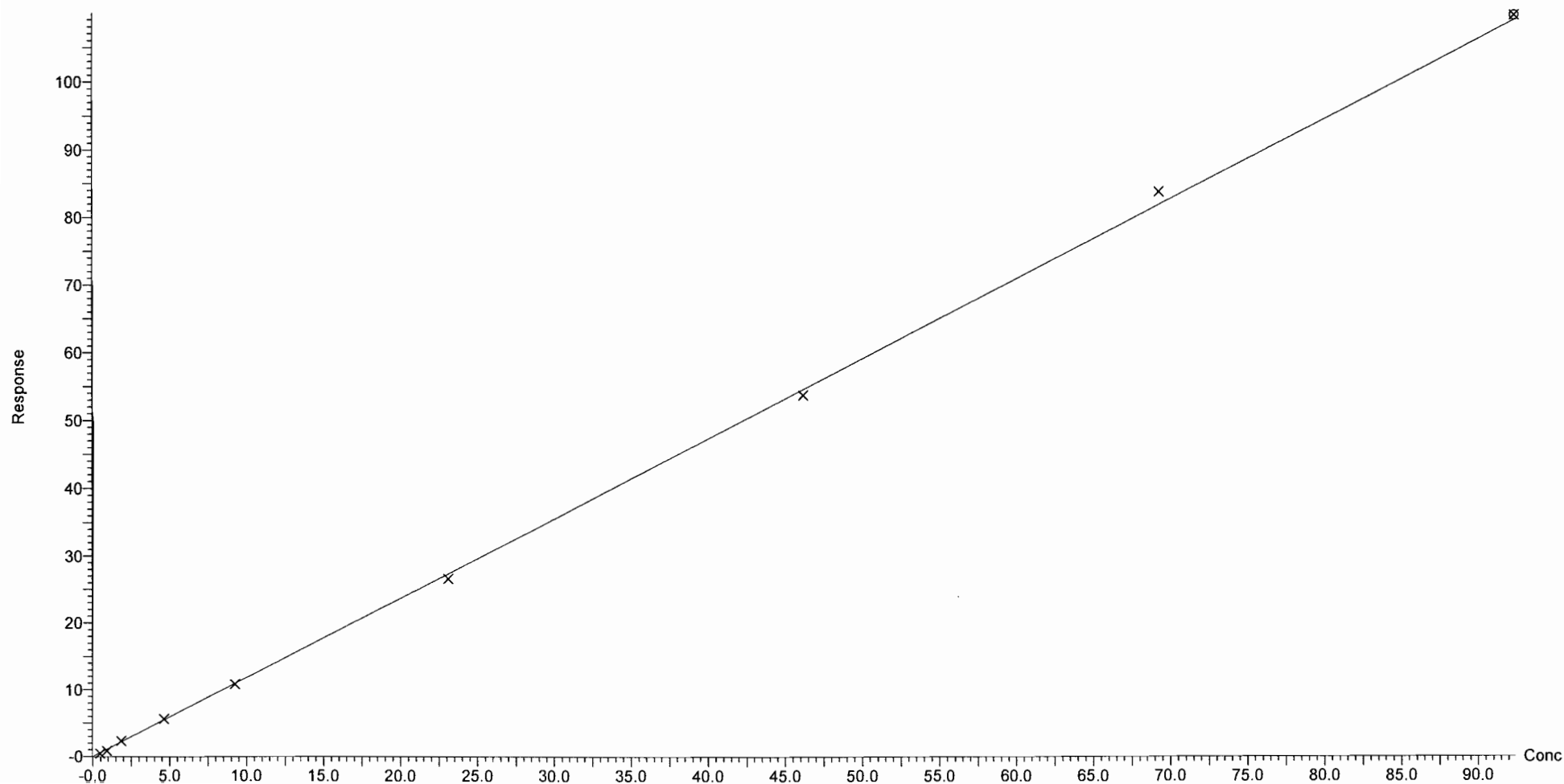
Compound name: PFOS

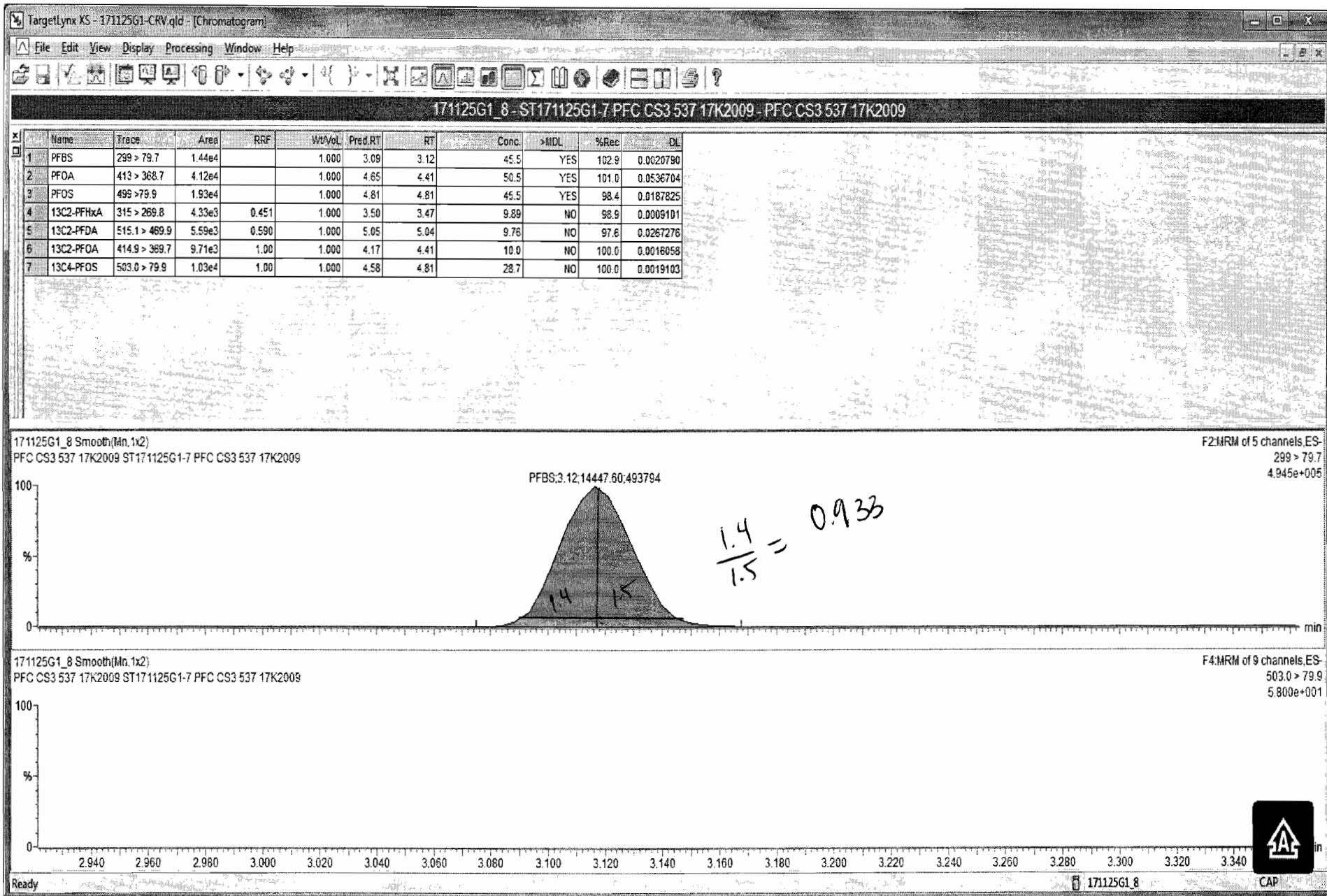
Coefficient of Determination: $R^2 = 0.998864$

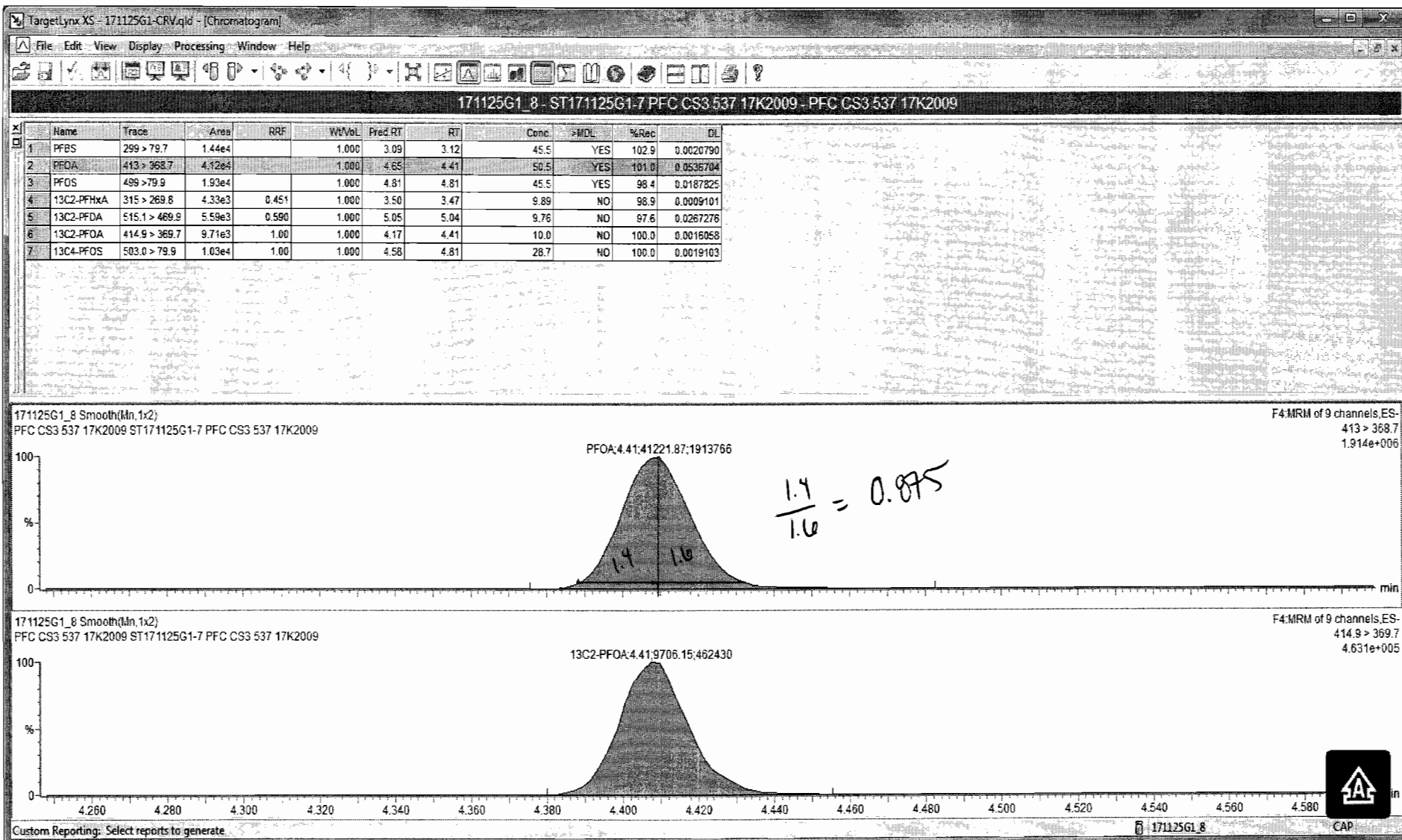
Calibration curve: $1.18285 * x$

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

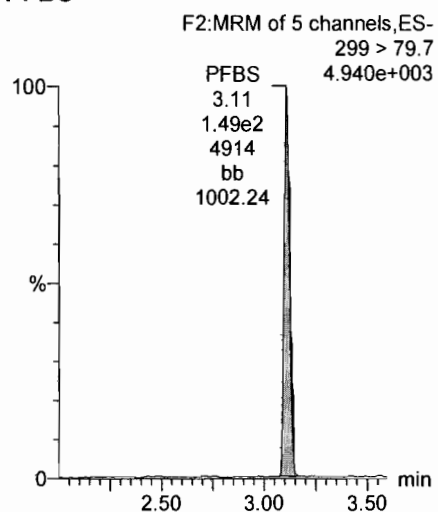
Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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

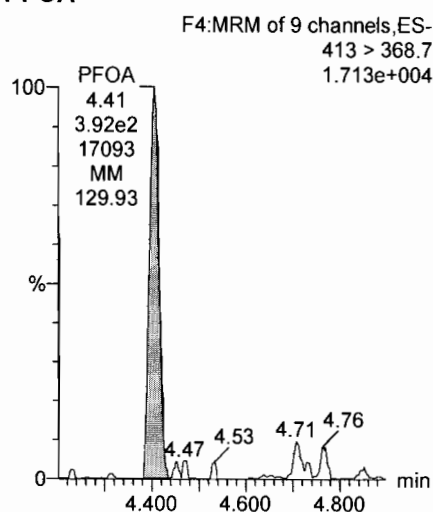
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 19:34:27
Calibration: 26 Nov 2017 19:51:30

Name: 171125G1_2, Date: 25-Nov-2017, Time: 15:30:51, ID: ST171125G1-1 PFC CS-3 537 17K2003, Description: PFC CS-3 537 17K2003

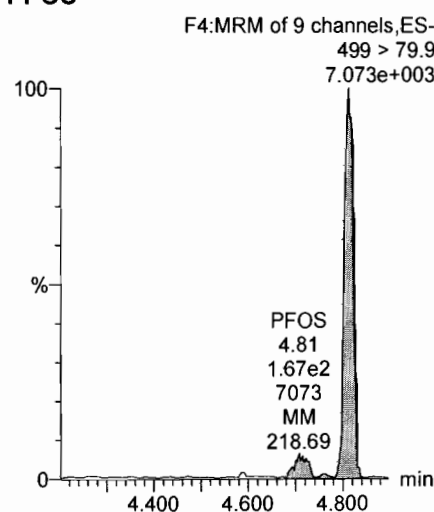
PFBS



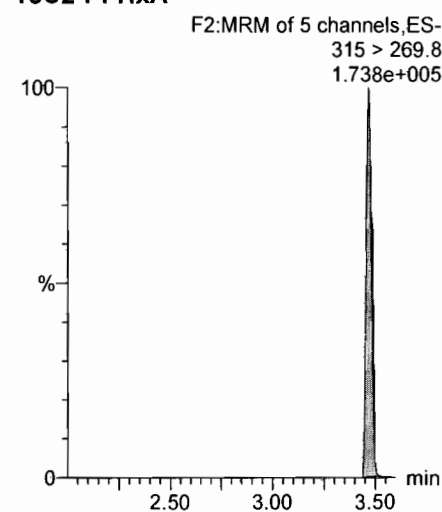
PFOA



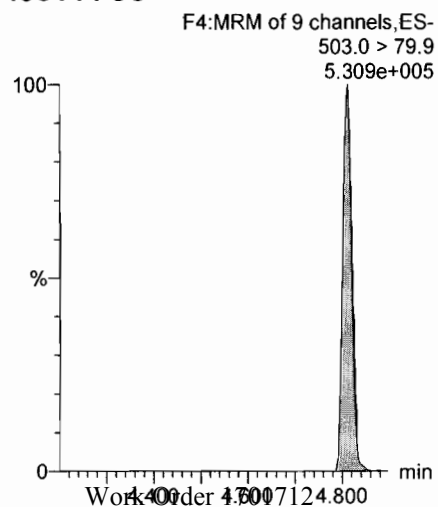
PFOS



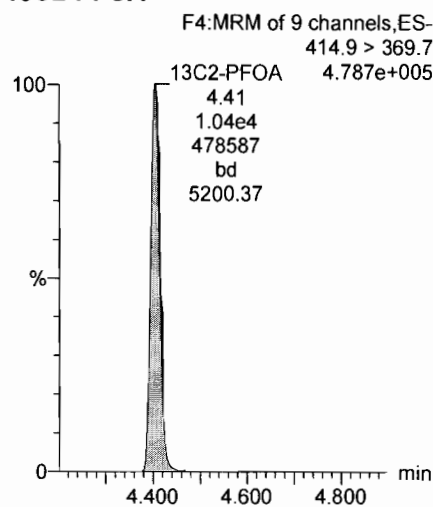
13C2-PFHxA



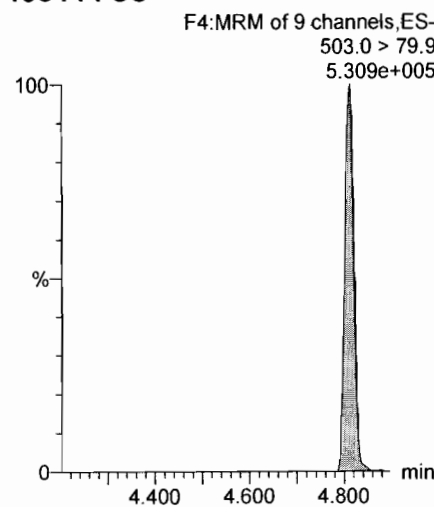
13C4-PFOS



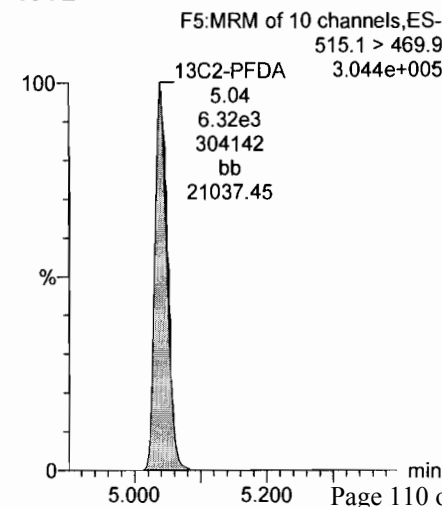
13C2-PFOA



13C4-PFOS



13C2-PFDA

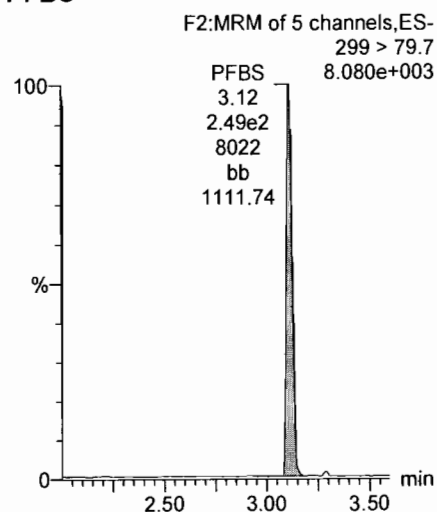


Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

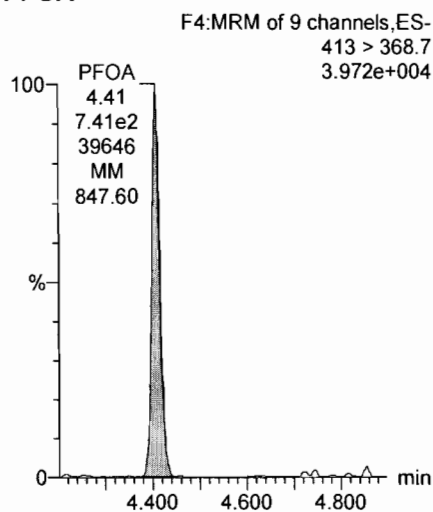
Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

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

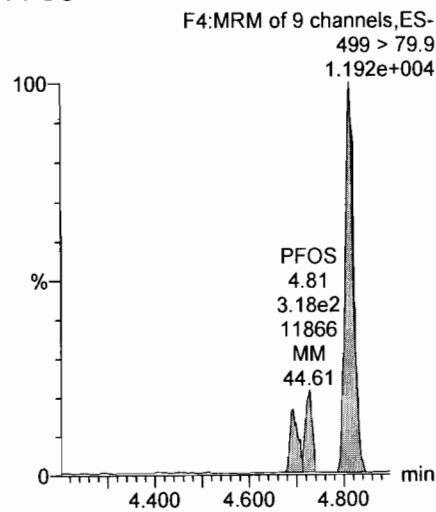
PFBS



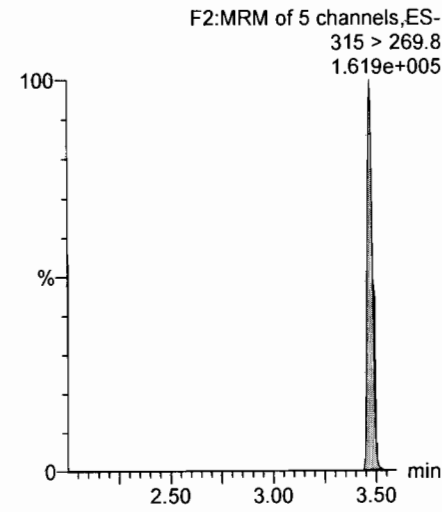
PFOA



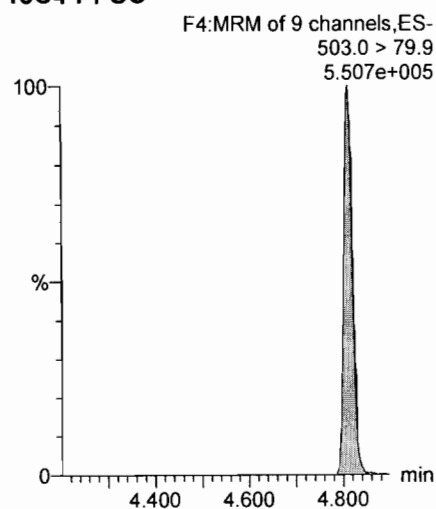
PFOS



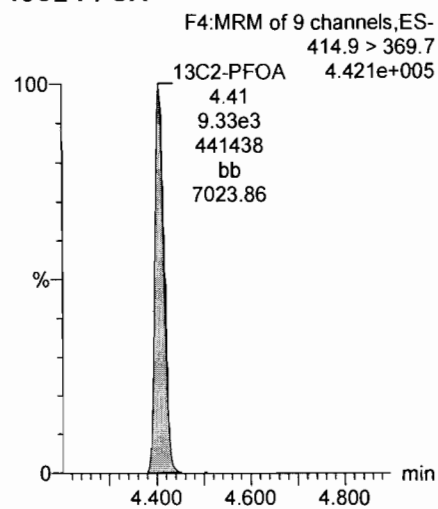
13C2-PFHxA



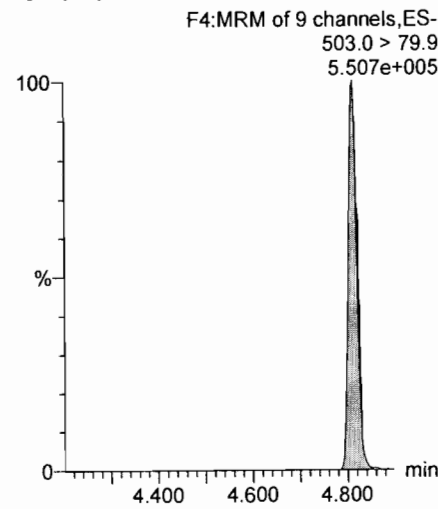
13C4-PFOS



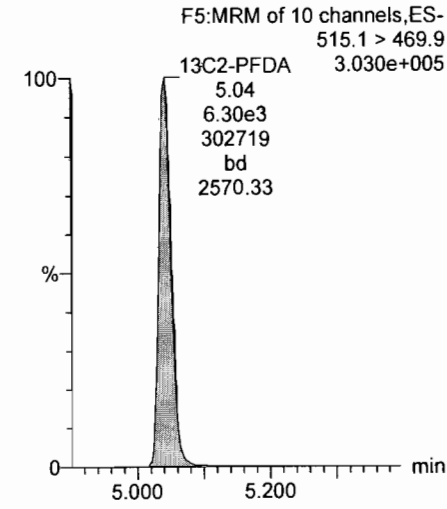
13C2-PFOA



13C4-PFOS



13C2-PFDA

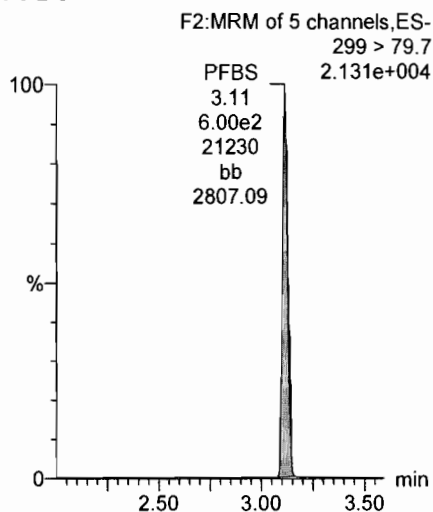


Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

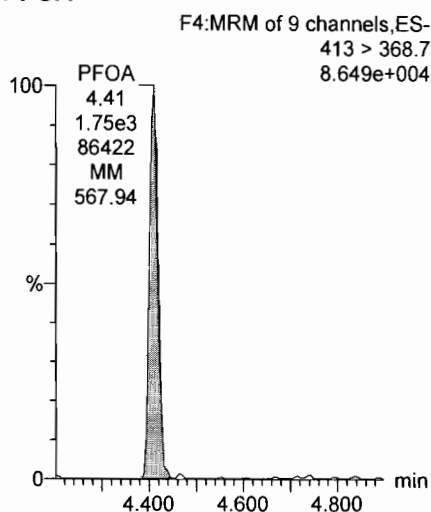
Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_4, Date: 25-Nov-2017, Time: 15:55:39, ID: ST171125G1-3 PFC CS-1 537 17K2005, Description: PFC CS-1 537 17K2005

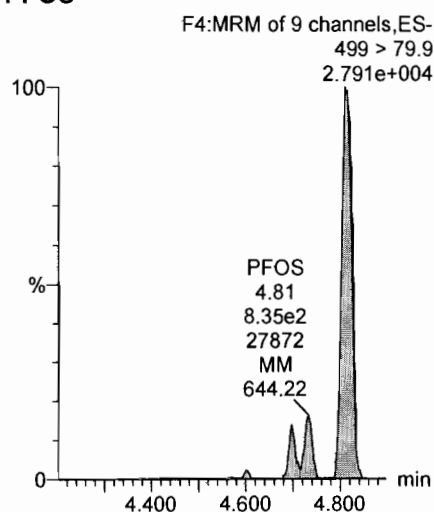
PFBS



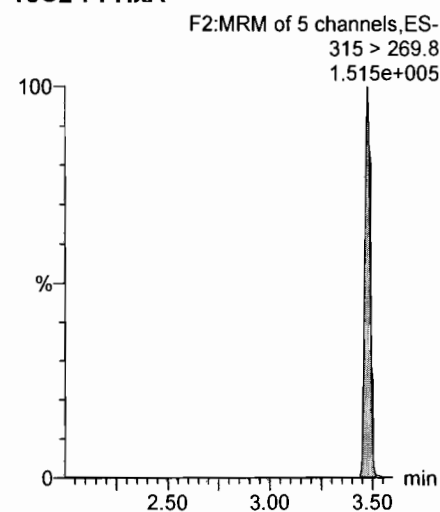
PFOA



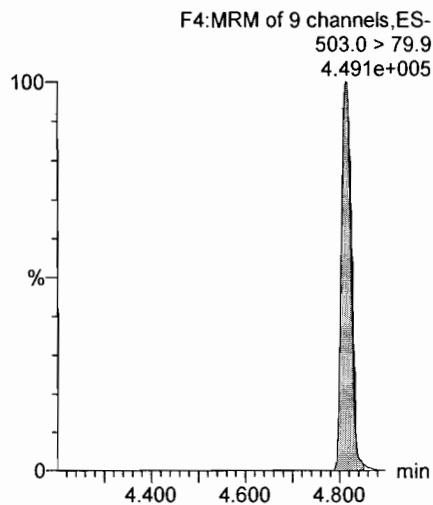
PFOS



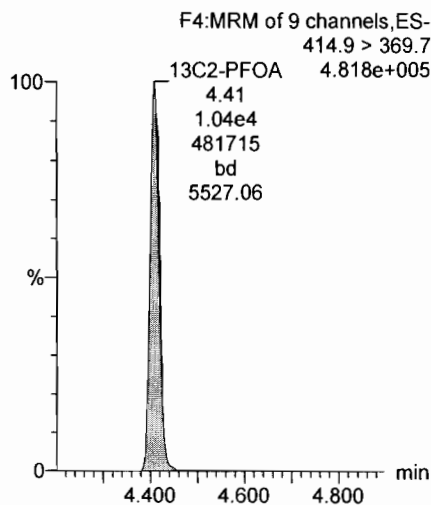
13C2-PFHxA



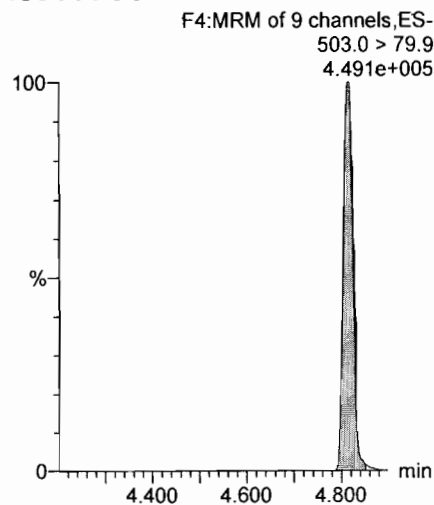
13C4-PFOS



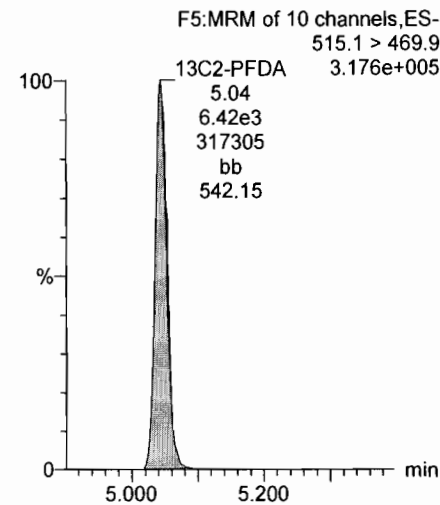
13C2-PFOA



13C4-PFOS



13C2-PFDA



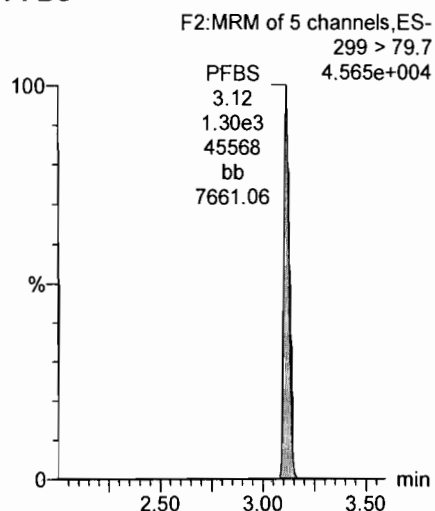
Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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

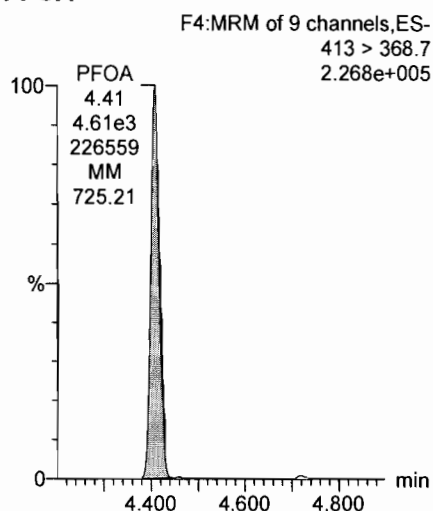
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_5, Date: 25-Nov-2017, Time: 16:08:05, ID: ST171125G1-4 PFC CS0 537 17K2006, Description: PFC CS0 537 17K2006

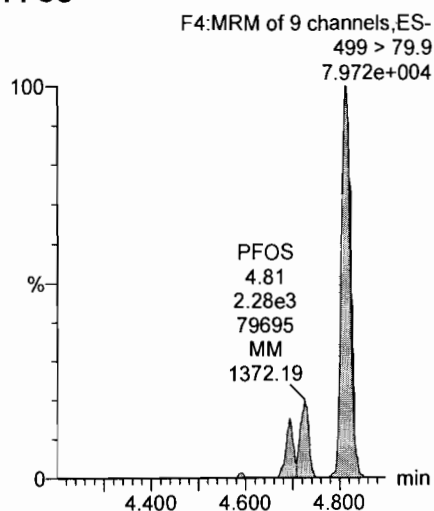
PFBS



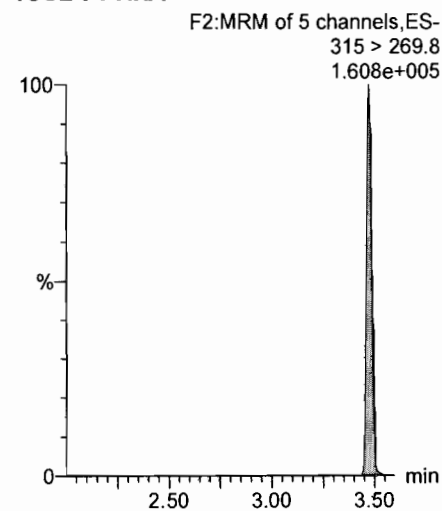
PFOA



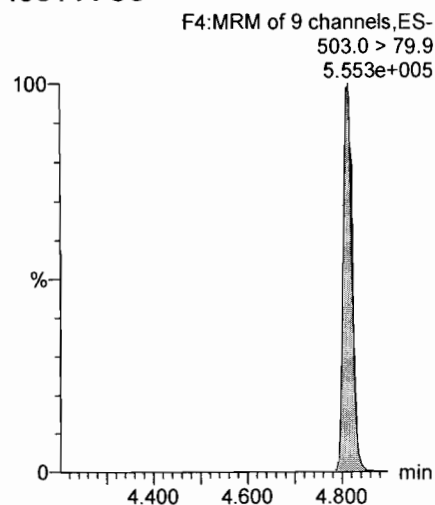
PFOS



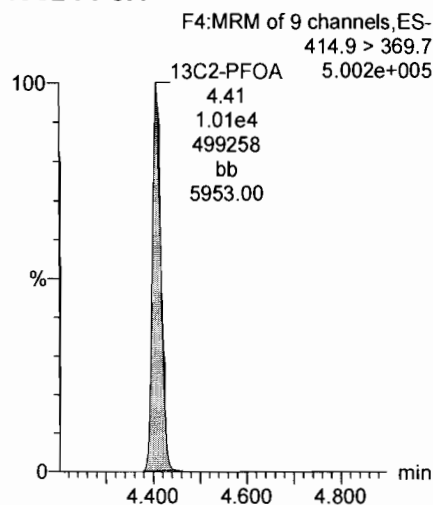
13C2-PFHxA



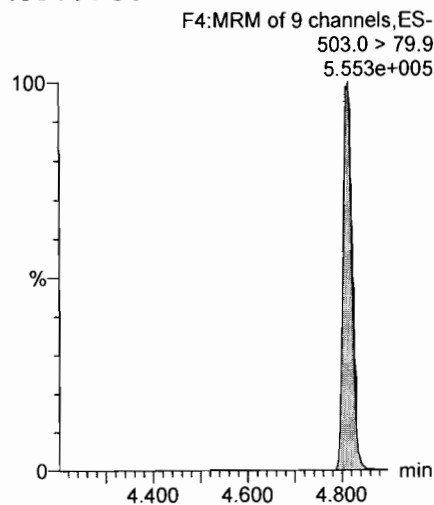
13C4-PFOS



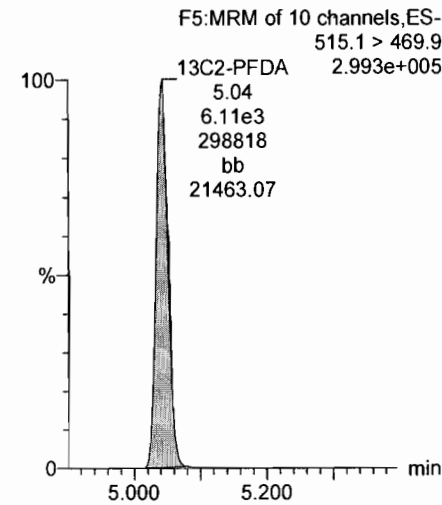
13C2-PFOA



13C4-PFOS



13C2-PFDA

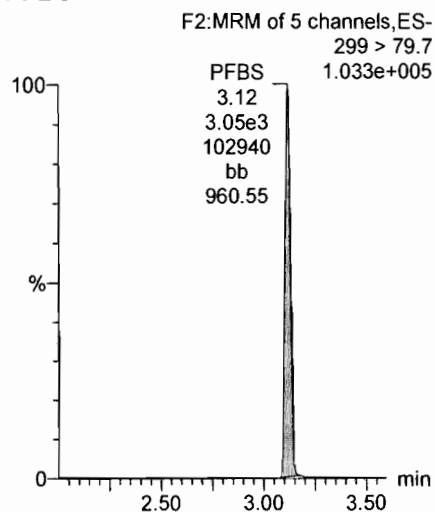


Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

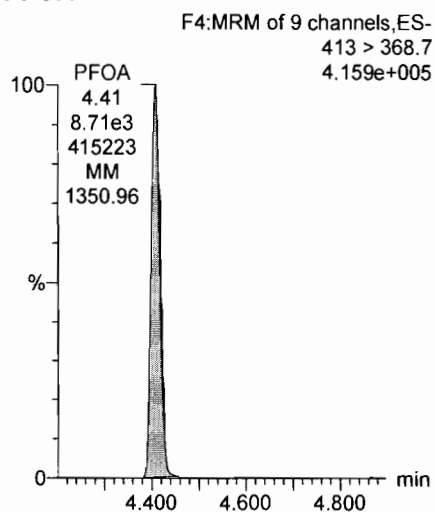
Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_6, Date: 25-Nov-2017, Time: 16:20:31, ID: ST171125G1-5 PFC CS1 537 17K2007, Description: PFC CS1 537 17K2007

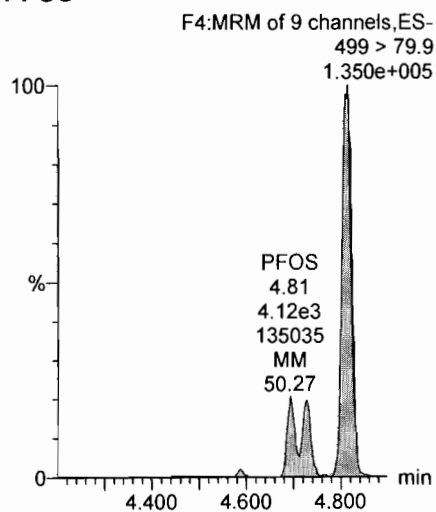
PFBS



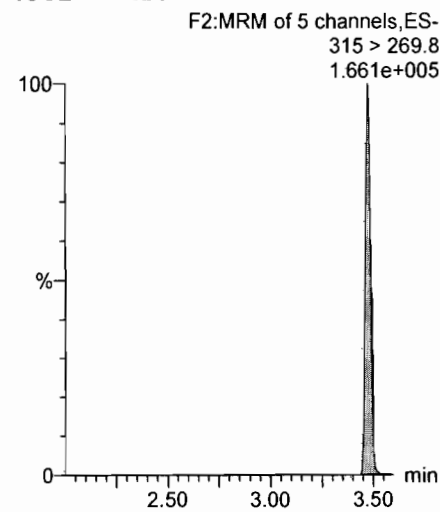
PFOA



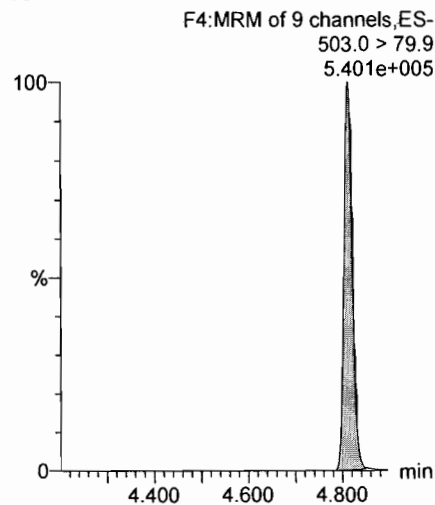
PFOS



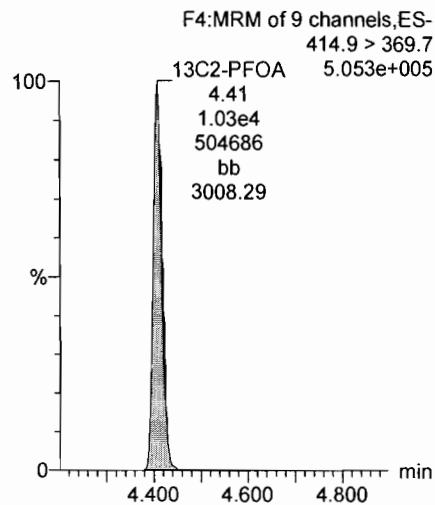
13C2-PFHxA



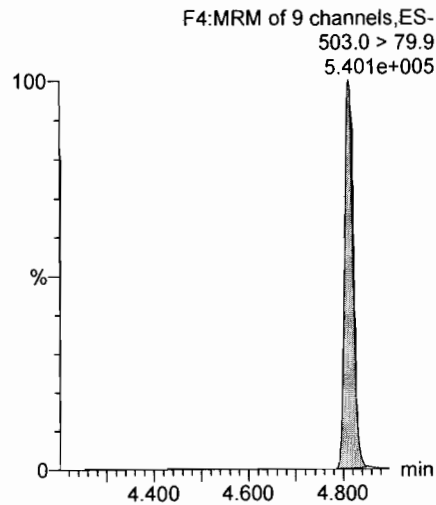
13C4-PFOS



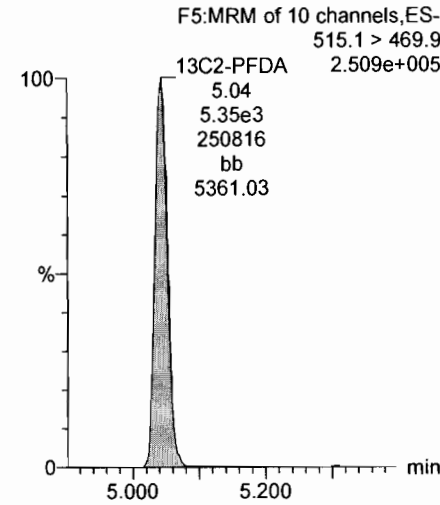
13C2-PFOA



13C4-PFOS



13C2-PFDA



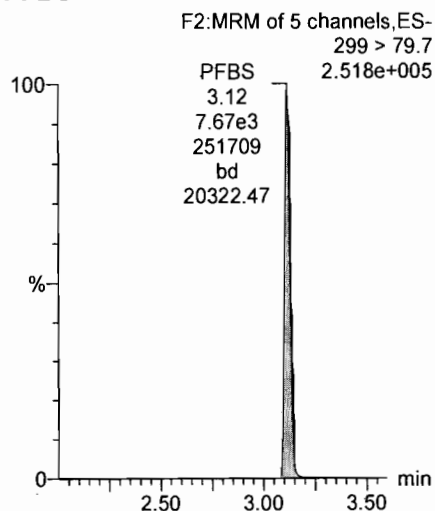
Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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

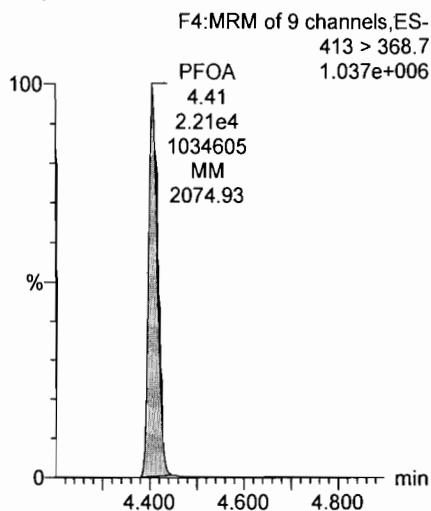
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_7, Date: 25-Nov-2017, Time: 16:32:58, ID: ST171125G1-6 PFC CS2 537 17K2008, Description: PFC CS2 537 17K2008

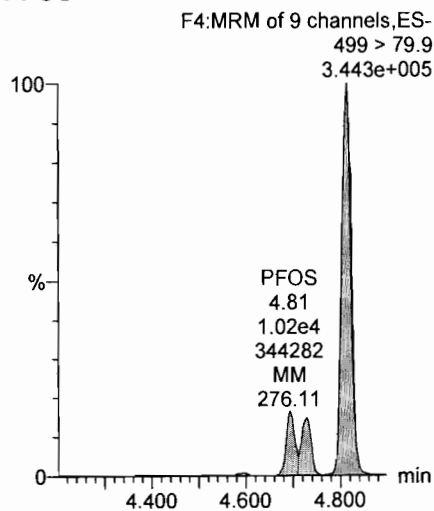
PFBS



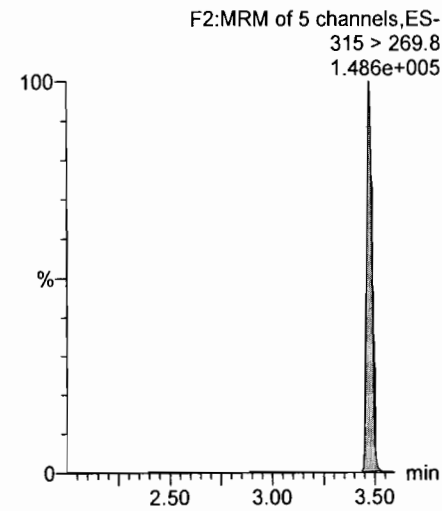
PFOA



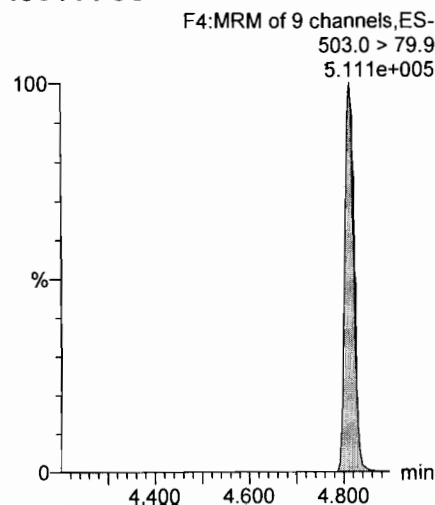
PFOS



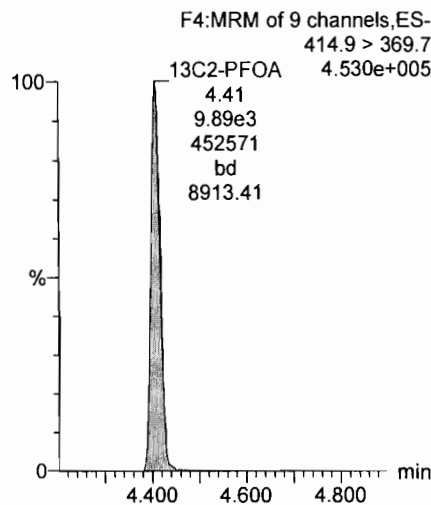
13C2-PFHxA



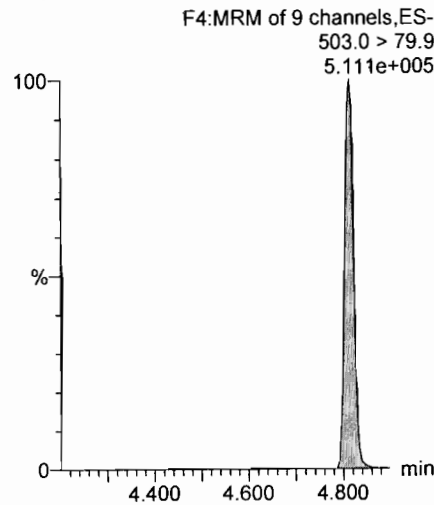
13C4-PFOS



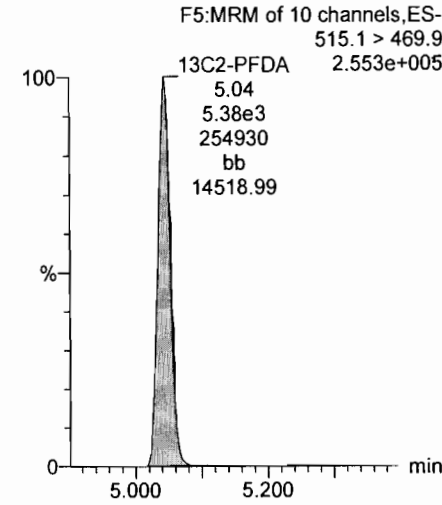
13C2-PFOA



13C4-PFOS



13C2-PFDA

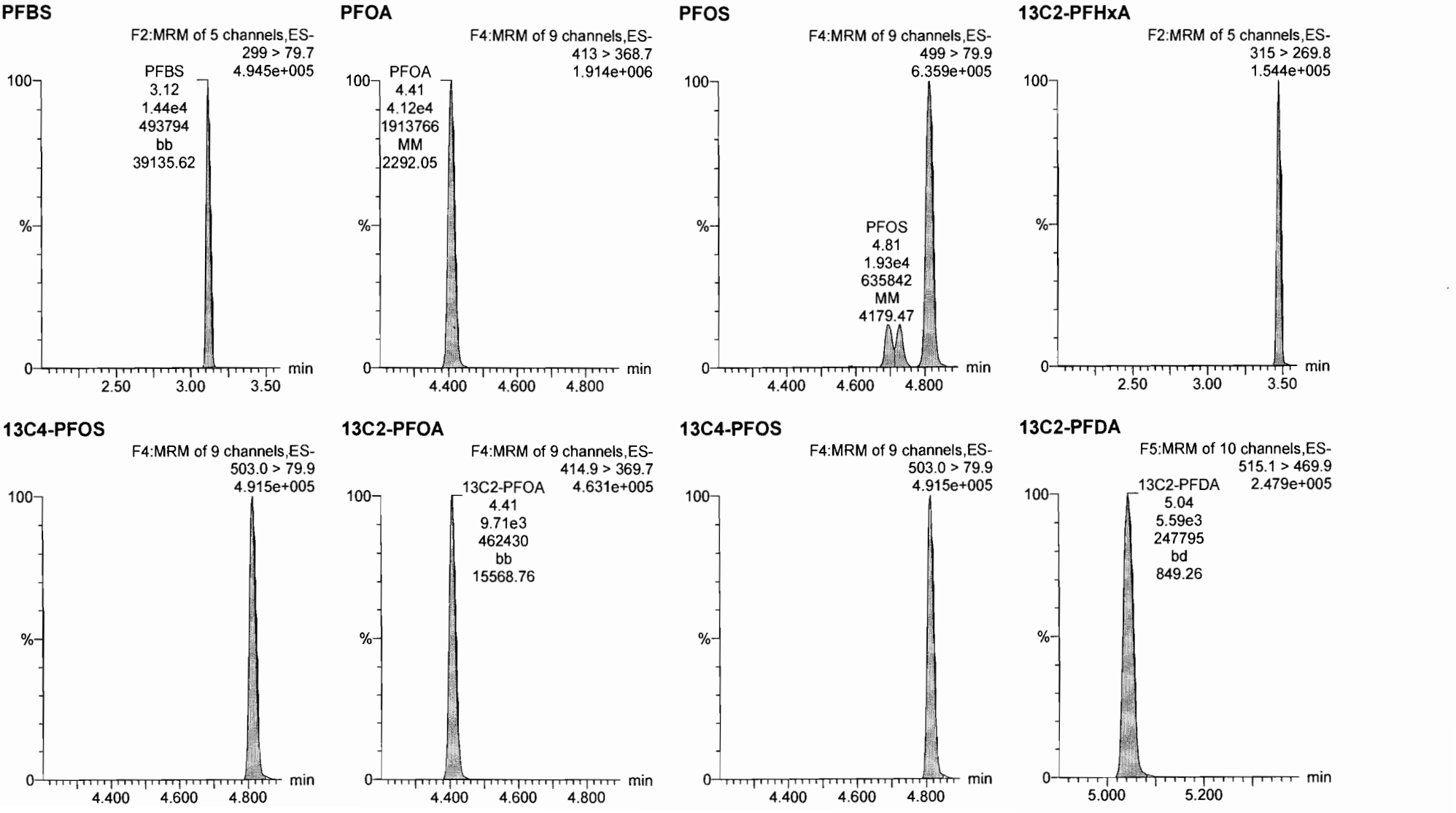


Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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

Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_8, Date: 25-Nov-2017, Time: 16:45:24, ID: ST171125G1-7 PFC CS3 537 17K2009, Description: PFC CS3 537 17K2009

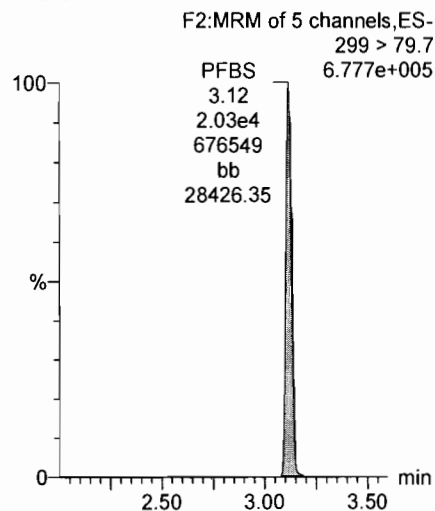


Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

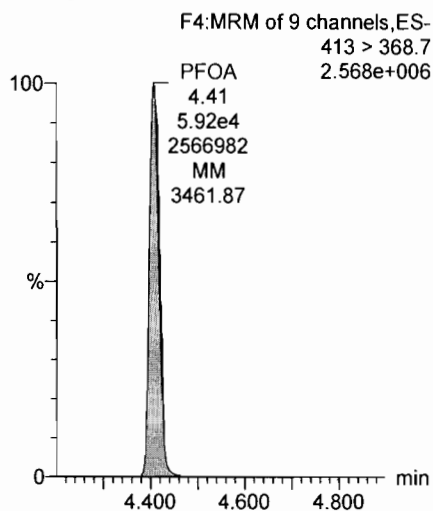
Last Altered: Sunday, November 26, 2017 19:51:30 Pacific Standard Time
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_9, Date: 25-Nov-2017, Time: 16:57:53, ID: ST171125G1-8 PFC CS4 537 17K2010, Description: PFC CS4 537 17K2010

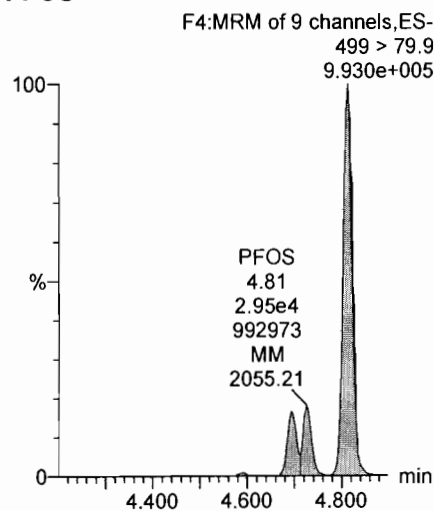
PFBS



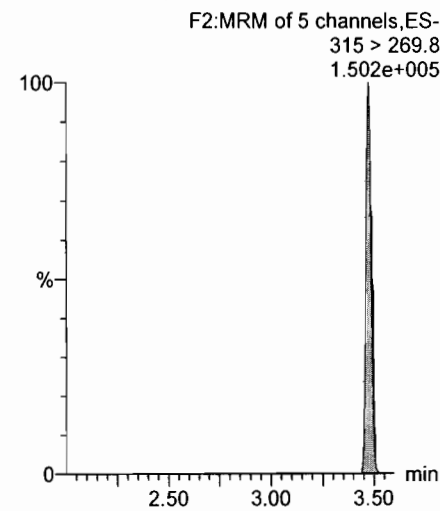
PFOA



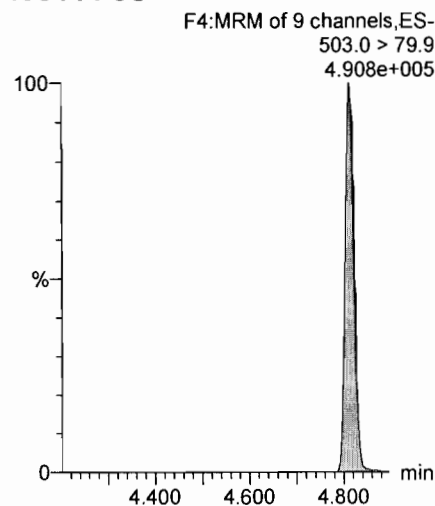
PFOS



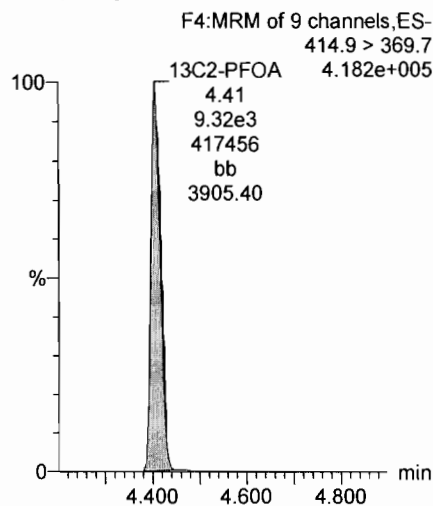
13C2-PFHxA



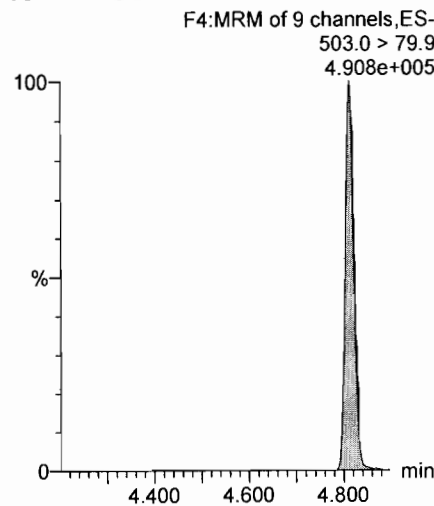
13C4-PFOS



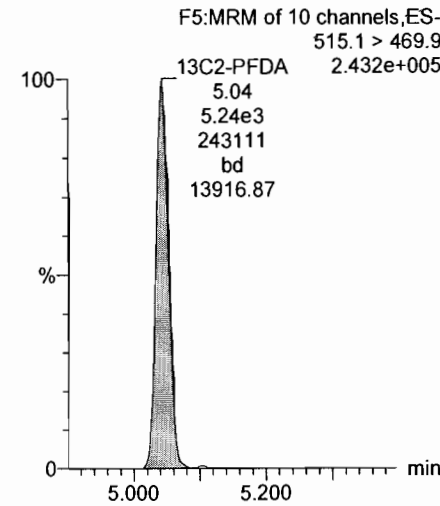
13C2-PFOA



13C4-PFOS



13C2-PFDA



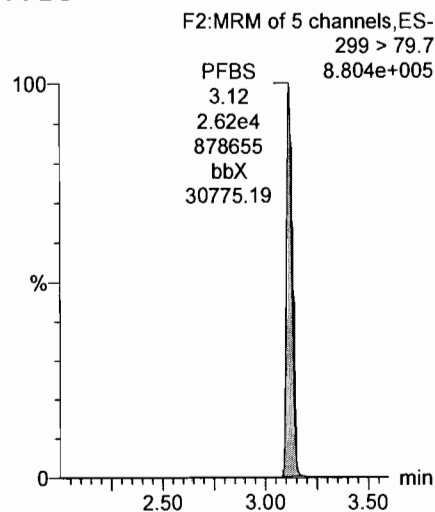
Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-CRV.qld

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

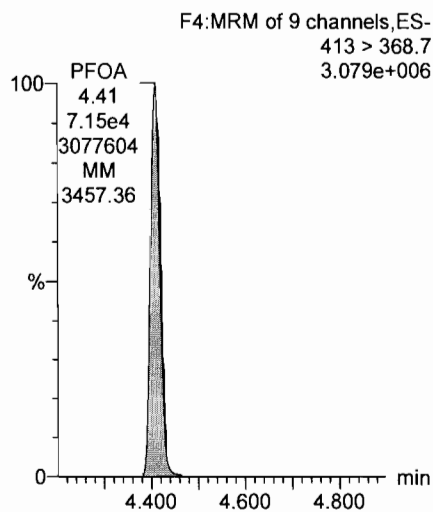
Printed: Monday, November 27, 2017 08:59:55 Pacific Standard Time

Name: 171125G1_10, Date: 25-Nov-2017, Time: 17:10:21, ID: ST171125G1-9 PFC CS5 537 17K2011, Description: PFC CS5 537 17K2011

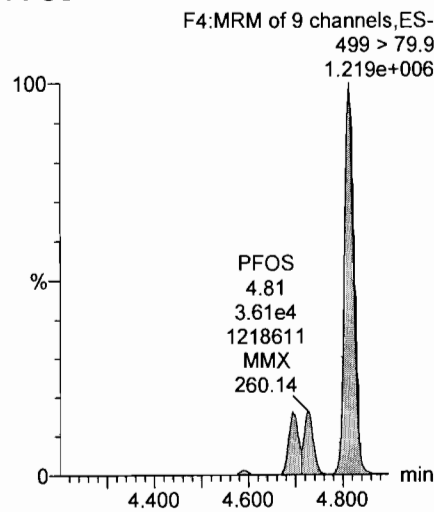
PFBS



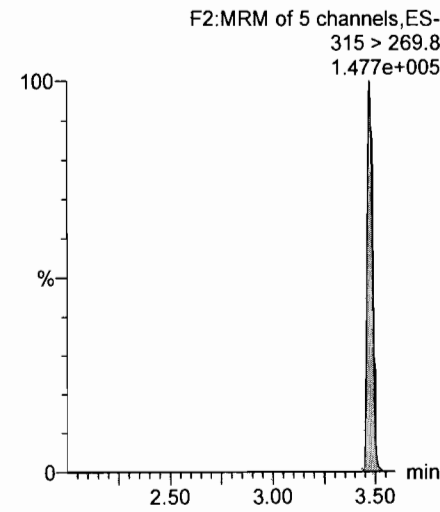
PFOA



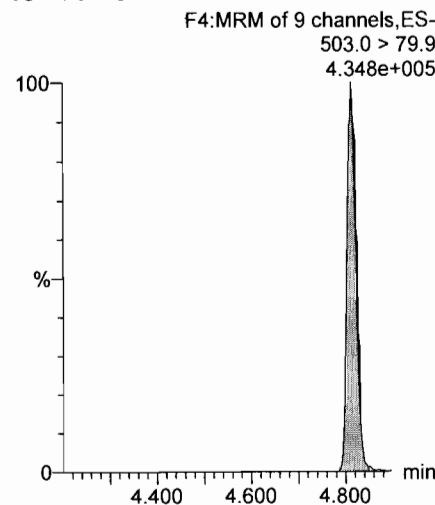
PFOS



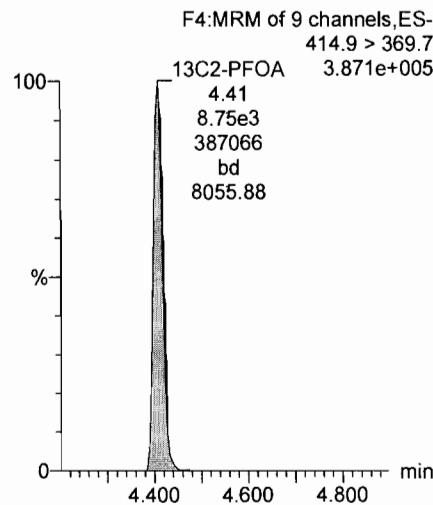
13C2-PFHxA



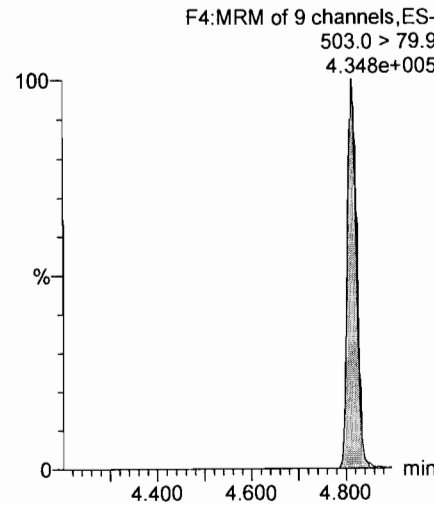
13C4-PFOS



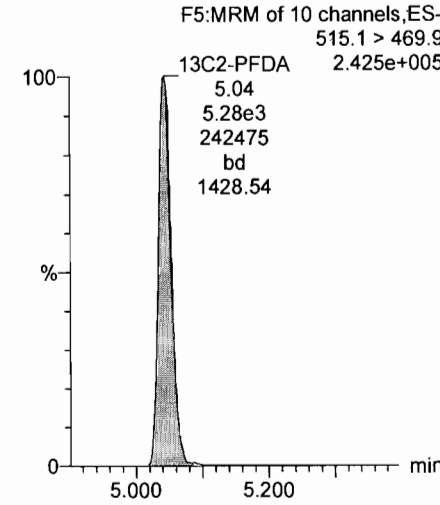
13C2-PFOA



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

70-136



AM
11/27/17
VJA.
11/27/2017

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

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

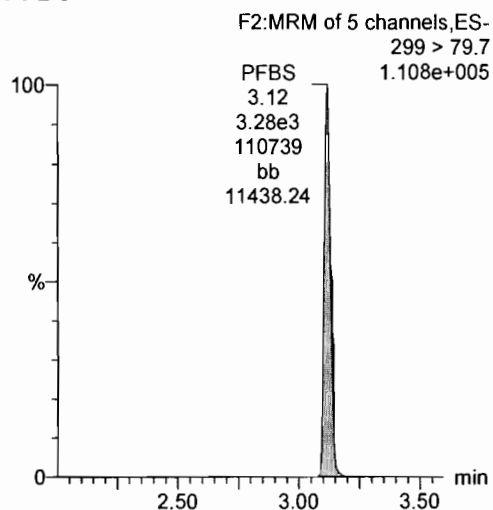
Printed: Monday, November 27, 2017 09:36:34 Pacific Standard Time

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

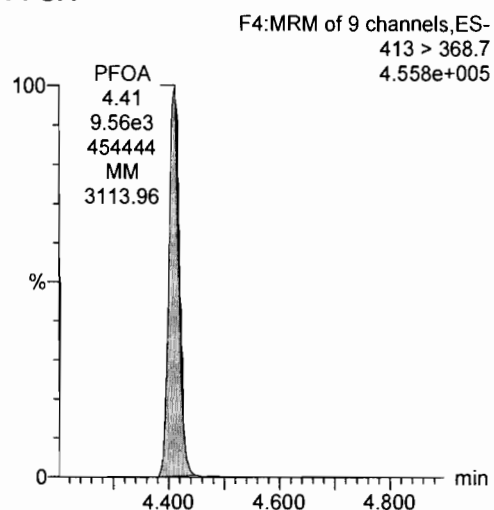
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

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

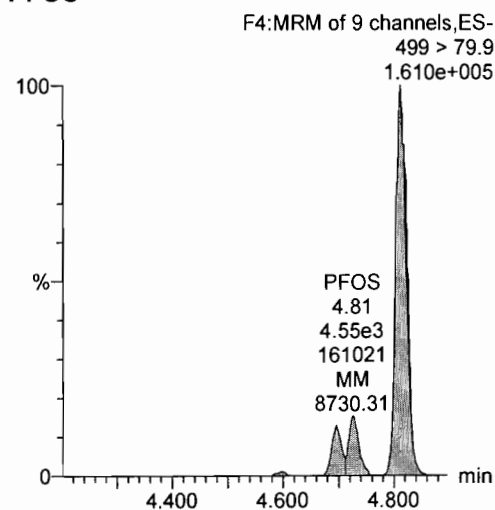
PFBS



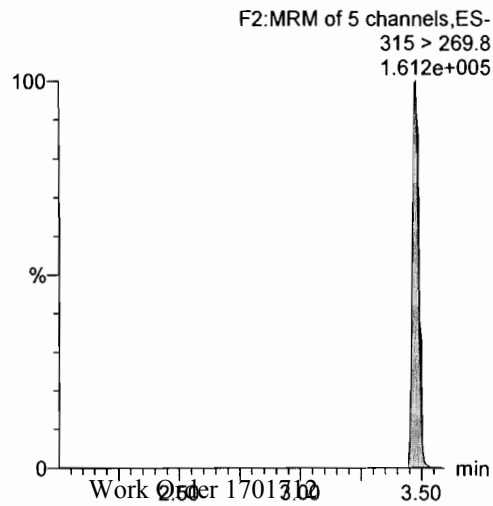
PFOA



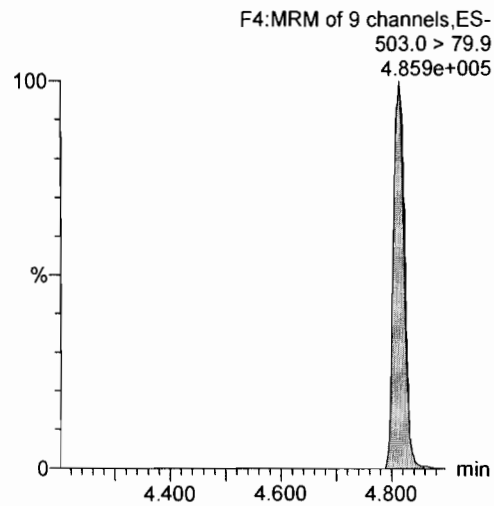
PFOS



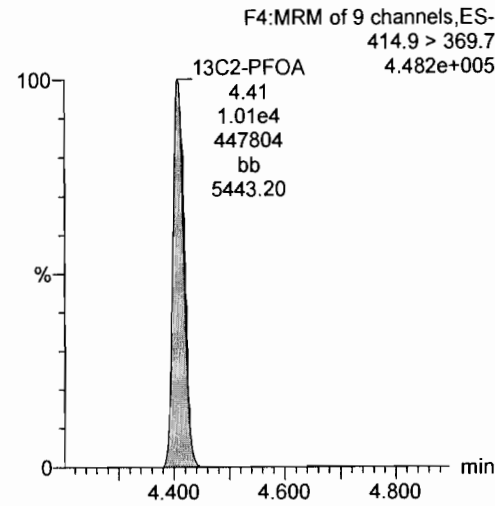
13C2-PFHxA



13C4-PFOS



13C2-PFOA



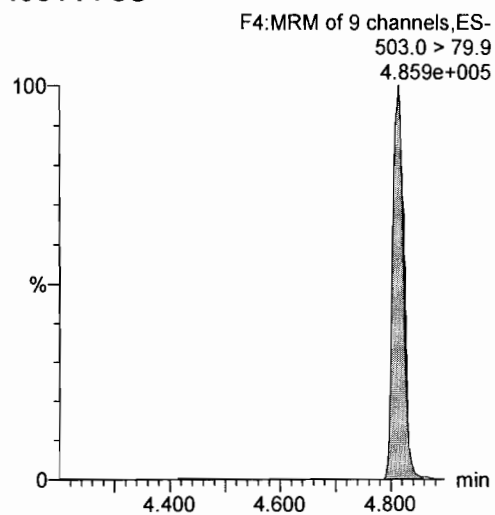
Dataset: U:\G1.PRO\Results\2017\171125G1\171125G1-icv.qld

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

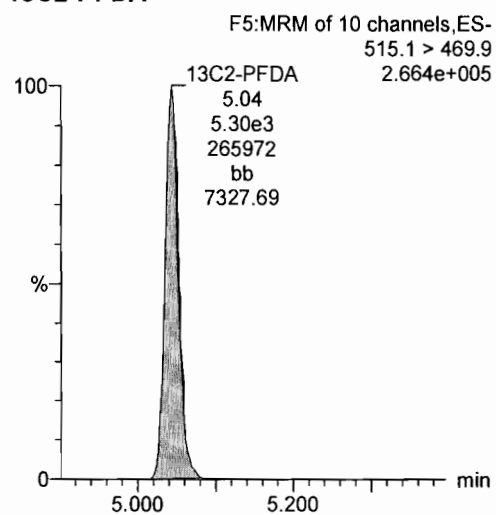
Printed: Monday, November 27, 2017 09:36:34 Pacific Standard Time

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

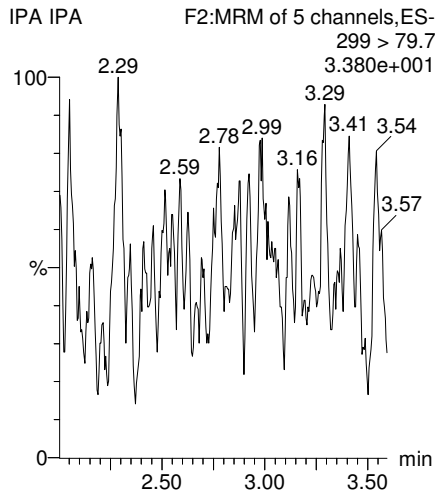
Last Altered: Monday, November 27, 2017 09:43:24 Pacific Standard Time

Printed: Monday, November 27, 2017 09:43:44 Pacific Standard Time

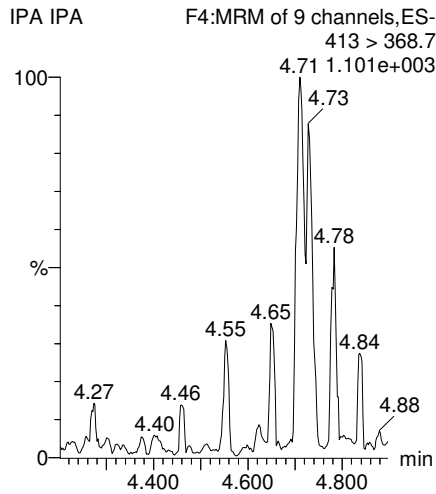
Method: U:\G1.PRO\MethDB\PFAS_DW_L3_1126.mdb 26 Nov 2017 20:36:49
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_11-25-17_L3.cdb 26 Nov 2017 19:51:30

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

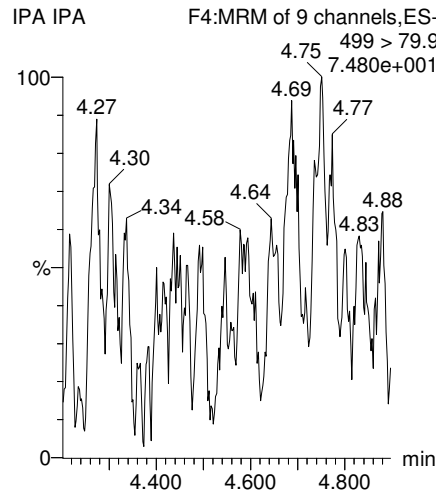
PFBS



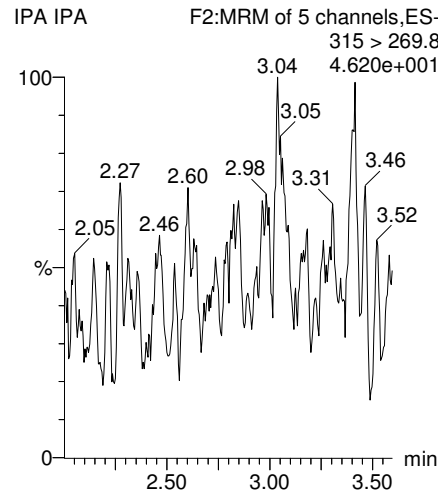
PFOA



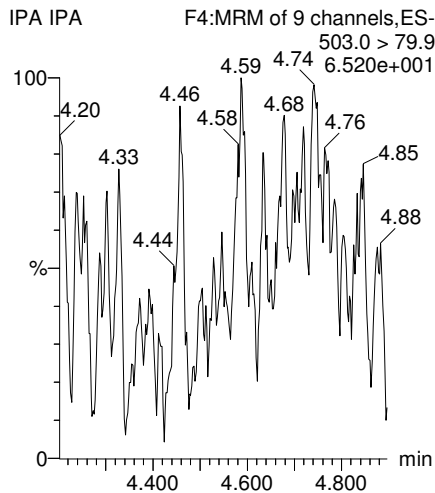
PFOS



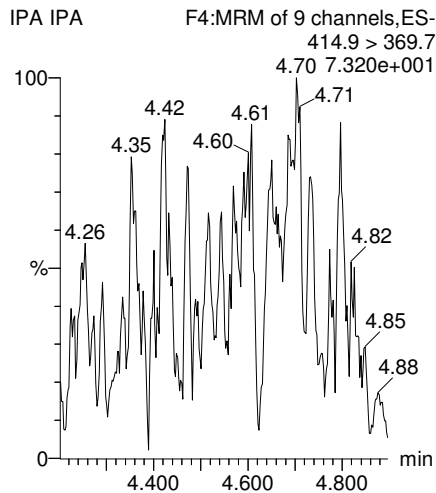
13C2-PFHxA



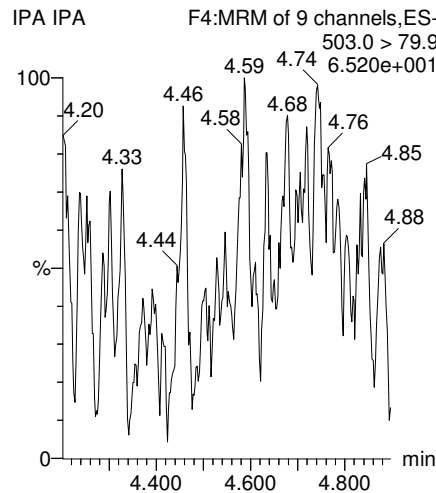
13C4-PFOS



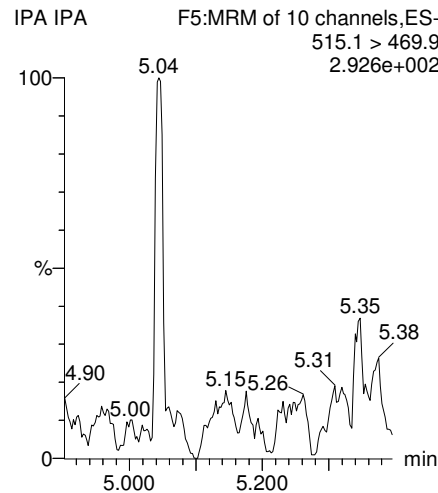
13C2-PFOA



13C4-PFOS



13C2-PFDA



Results

Contract_ID	DO_CTO Number	Phase	Installation_ID	Sample_Name	CH2M_ Code	Analysis_ Group	Analytical_ Method	PRC_ Code	Lab_ Code	Lab_Name	Leachate_M ethod	Sample_ Basis	Extraction_M ethod	Result_ Type	Lab_QC_T ype	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received	Leachate_D ate	Leachate_T ime
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:11	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:11	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:11	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:11	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:12	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:12	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB13-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 11:12	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:02	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:02	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:02	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:02	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:03	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:03	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:03	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB14-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 12:03	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW15-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 14:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW15-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 14:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW15-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 14:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW15-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/14/2017 14:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW15-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	0							

Contract_ID	DO_CTO _Number	Phase	Installation_ID	QC_Control_L imit_Code	QC_ Accuracy_ Upper	QC_ Accuracy_Lo wer	Control_ Limit_Date	QC_ Narrative	MDL	Detection_L imit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.436	4.92	9.83	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.06	4.92	9.83	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.92	9.83	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.418	4.72	9.43	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.72	9.43	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.981	4.72	9.43	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.434	4.90	9.80	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.06	4.90	9.80	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.90	9.80	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.431	4.87	9.73	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.05	4.87	9.73	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.01	4.87	9.73	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.431	4.87	9.73	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.05	4.87	9.73	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.01	4.87	9.73	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.425	4.80	9.60	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.04	4.80	9.60	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.998	4.80	9.60	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.435	4.91	9.82	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.06	4.91	9.82	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.91	9.82	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.421	4.76	9.51	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.03	4.76	9.51	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.989	4.76	9.51	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.436	4.92	9.84	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.06	4.92	9.84	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.92	9.84	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.420	4.74	9.49	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.74	9.49	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.986	4.74	9.49	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.438	4.95	9.89	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.07	4.95	9.89	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.03	4.95	9.89	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.419	4.73	9.46	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.73	9.46	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.984	4.73	9.46	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.451	5.09	10.2	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.10	5.09	10.2	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.06	5.09	10.2	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.419	4.72	9.45	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.02	4.72	9.45	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.983	4.72	9.45	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.439	4.95	9.90	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.07	4.95	9.90	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.03	4.95	9.90	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.428	4.83	9.65	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.04	4.83	9.65	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.00	4.83	9.65	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.437	4.93	9.87	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.07	4.93	9.87	1701712	S7K0057

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Sample_Name	CH2M_ Code	Analysis_ Group	Analytical_ Method	PRC_ Code	Lab_ Code	Lab_Name	Leachate_M ethod	Sample_ Basis	Extraction_M ethod	Result_ Type	Lab_QC_T ype	Sample_ Medium	QC_ Level	Date_Time_ Collected	Date_ Received	Leachate_D ate	Leachate_T ime
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW21-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:15	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW21-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:15	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB21-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:16	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB21-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:16	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB21-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:16	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW22-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:41	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1RW22-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:41	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB22-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB22-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	CH-AT-1FB22-1117	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	11/15/2017 10:42	11/17/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/18/2017 09:24	11/18/2017		
N6247016D9000	0008		CHERRY_POINT_MCAS	LCS Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	11/18/2017 09:24	11/18/2017		

Results

Contract_ID	DO_CTO _Number	Phase	Installation_ID	Extraction_D ate	Extraction_Ti me	Analysis_ Date	Analysis_ Time	Lab_ Sample_ID	Dilution	Run_ Number	Percent_ Moisture	Percent_L ipid	Chem_ Name	Analyte_ ID	Analyte_V alue	Original_ Analyte_V alue	Result_ Units	Lab_ Qualifier	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:08:00	1701712-17	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.93	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:08:00	1701712-17	1	-999			13C2-PFHxA	13C2-PFHxA		102	PCT_REC			PR		
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:21:00	1701712-18	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.85	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:21:00	1701712-18	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.85	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:21:00	1701712-18	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.85	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:21:00	1701712-18	1	-999			13C2-PFHxA	13C2-PFHxA		102	PCT_REC			PR		
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:33:00	1701712-19	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.95	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:33:00	1701712-19	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.95	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:33:00	1701712-19	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.95	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:33:00	1701712-19	1	-999			13C2-PFHxA	13C2-PFHxA		99.9	PCT_REC			PR		
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:46:00	1701712-20	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.84	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:46:00	1701712-20	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		4.84	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:46:00	1701712-20	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		4.84	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	22:46:00	1701712-20	1	-999			13C2-PFHxA	13C2-PFHxA		99.8	PCT_REC			PR		
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:37:00	B7K0117-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		5.00	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:37:00	B7K0117-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		5.00	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:37:00	B7K0117-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		5.00	NG_L	U		PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:37:00	B7K0117-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA		93.9	PCT_REC			PR	SUR	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:00:00	B7K0117-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		31.6	NG_L			PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:00:00	B7K0117-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		40.2	NG_L			PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:00:00	B7K0117-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		36.1	NG_L			PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:00:00	B7K0117-BS1	1	-999			13C2-PFHxA	13C2-PFHxA		100	PCT_REC			PR	SUR	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:12:00	B7K0117-BSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		31.9	NG_L			PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:12:00	B7K0117-BSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		43.2	NG_L			PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:12:00	B7K0117-BSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		32.1	NG_L			PR	TRG	
N6247016D9000	0008		CHERRY_POINT_MCAS	20171118	09:24:00	20171125	18:12:00	B7K0117-BSD1	1	-999			13C2-PFHxA	13C2-PFHxA		114	PCT_REC			PR	SUR	

Contract_ID	DO_CTO _Number	Phase	Installation_ID	QC_Control_L imit_Code	QC_ Accuracy_ Upper	QC_ Accuracy_ Lo wer	Control_ Limit_Date	QC_ Narrative	MDL	Detection_L imit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.03	4.93	9.87	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.430	4.85	9.70	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.05	4.85	9.70	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.01	4.85	9.70	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.439	4.95	9.91	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.07	4.95	9.91	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.03	4.95	9.91	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.429	4.84	9.69	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.05	4.84	9.69	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.01	4.84	9.69	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	0.443	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.08	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS								5.1	1.04	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	SLSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1	0.443	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1	1.08	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1	1.04	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1				1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1	0.443	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1	1.08	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1	1.04	5.00	10.0	1701712	S7K0057
N6247016D9000	0008		CHERRY_POINT_MCAS	LSA	130	70					5.1				1701712	S7K0057

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

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701712
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-1RW13-1117	1701712-01	Water
2	CH-AT-1FB13-1117	1701712-02	Water
3	CH-AT-1RW14-1117	1701712-03	Water
4	CH-AT-1FB14-1117	1701712-04	Water
5	CH-AT-1RW15-1117	1701712-05	Water
6	CH-AT-1FB15-1117	1701712-06	Water
7	CH-AT-1RW16-1117	1701712-07	Water
8	CH-AT-1FB16-1117	1701712-08	Water
9	CH-AT-1RW17-1117	1701712-09	Water
10	CH-AT-1FB17-1117	1701712-10	Water
11	CH-AT-1RW18-1117	1701712-11	Water
12	CH-AT-1FB18-1117	1701712-12	Water
13	CH-AT-1RW19-1117	1701712-13	Water
14	CH-AT-1FB19-1117	1701712-14	Water
15	CH-AT-1RW20-1117	1701712-15	Water
16	CH-AT-1FB20-1117	1701712-16	Water
17	CH-AT-1RW21-1117	1701712-17	Water
18	CH-AT-1FB21-1117	1701712-18	Water
19	CH-AT-1RW22-1117	1701712-19	Water
20	CH-AT-1FB22-1117	1701712-20	Water

A full data validation was performed on the analytical data for ten water samples and ten aqueous field blank samples collected on November 14-15, 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-1FB13-1117	None - ND	-	-	-
CH-AT-1FB14-1117	None - ND	-	-	-
CH-AT-1FB15-1117	None - ND	-	-	-
CH-AT-1FB16-1117	None - ND	-	-	-
CH-AT-1FB17-1117	None - ND	-	-	-
CH-AT-1FB18-1117	None - ND	-	-	-
CH-AT-1FB19-1117	None - ND	-	-	-
CH-AT-1FB20-1117	None - ND	-	-	-
CH-AT-1FB21-1117	None - ND	-	-	-
CH-AT-1FB22-1117	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- MS/MSD samples were not analyzed.

Laboratory Control Samples

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

Internal Standard (IS) Area Performance

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

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 11/5/18

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

Sample ID: CH-AT-1RW13-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation					Laboratory Data Lab Sample: 1701712-01 Date Received: 17-Nov-17 08:54 Matrix: Drinking Water Date Collected: 14-Nov-17 11:11 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.83		B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	1
PFOA	ND	1.06	4.92	9.83		B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	1
PFOS	ND	1.02	4.92	9.83		B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.8	70 - 130			B7K0117	18-Nov-17	0.254 L	25-Nov-17 18:49	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, PFHxA, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

mw 11/3/18

Sample ID: CH-AT-1FB13-1117

EPA Method 537

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701712-02	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	14-Nov-17 11:12		Date Received:	17-Nov-17 08:54				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.418	4.72	9.43		B7K0117	18-Nov-17	0.265 L	25-Nov-17 19:02	1
PFOA	ND	1.02	4.72	9.43		B7K0117	18-Nov-17	0.265 L	25-Nov-17 19:02	1
PFOS	ND	0.981	4.72	9.43		B7K0117	18-Nov-17	0.265 L	25-Nov-17 19:02	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.265 L	25-Nov-17 19:02	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.

mw 11/3/18

Sample ID: CH-AT-1RW14-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 12:02					Laboratory Data Lab Sample: 1701712-03 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.434	4.90	9.80		B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1
PFOA	ND	1.06	4.90	9.80		B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1
PFOS	ND	1.02	4.90	9.80		B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	112	70 - 130			B7K0117	18-Nov-17	0.255 L	25-Nov-17 19:14	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

nw1/3/18

Sample ID: CH-AT-1FB14-1117

EPA Method 537

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701712-04	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	14-Nov-17 12:03		Date Received:	17-Nov-17 08:54				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	1
PFOA	ND	1.05	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	1
PFOS	ND	1.01	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:27	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.

rev 1/3/18

Sample ID: CH-AT-1RW15-1117										EPA Method 537
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 14:42					Laboratory Data Lab Sample: 1701712-05 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.431	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1
PFOA	ND	1.05	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1
PFOS	ND	1.01	4.87	9.73		B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	101	70 - 130			B7K0117	18-Nov-17	0.257 L	25-Nov-17 19:39	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

11/3/18

Sample ID: CH-AT-1FB15-1117					EPA Method 537					
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 14-Nov-17 14:43					Laboratory Data Lab Sample: 1701712-06 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.425	4.80	9.60		B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	1
PFOA	ND	1.04	4.80	9.60		B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	1
PFOS	ND	0.998	4.80	9.60		B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.260 L	25-Nov-17 19:52	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, PFHxA, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

mw 1/3/18

Sample ID: CH-AT-1RW16-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 14:12					Laboratory Data Lab Sample: 1701712-07 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.435	4.91	9.82		B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1
PFOA	ND	1.06	4.91	9.82		B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1
PFOS	ND	1.02	4.91	9.82		B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	103	70 - 130			B7K0117	18-Nov-17	0.255 L	25-Nov-17 20:04	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

rev 1/3/18

Sample ID: CH-AT-1FB16-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 14:13					Laboratory Data Lab Sample: 1701712-08 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.421	4.76	9.51		B7K0117	18-Nov-17	0.263 L	25-Nov-17 20:16	1
PFOA	ND	1.03	4.76	9.51		B7K0117	18-Nov-17	0.263 L	25-Nov-17 20:16	1
PFOS	ND	0.989	4.76	9.51		B7K0117	18-Nov-17	0.263 L	25-Nov-17 20:16	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130			B7K0117	18-Nov-17	0.263 L	25-Nov-17 20:16	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

mw 1/3/18

Sample ID: CH-AT-1RW17-1117										EPA Method 537
Client Data					Laboratory Data					
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	1701712-09		Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	14-Nov-17 16:02		Date Received:	17-Nov-17 08:54			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.436	4.92	9.84		B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1
PFOA	1.12	1.06	4.92	9.84	J	B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1
PFOS	ND	1.02	4.92	9.84		B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	116	70 - 130			B7K0117	18-Nov-17	0.254 L	25-Nov-17 20:29	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

mw 131.8

Sample ID: CH-AT-1FB17-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 14-Nov-17 16:03					Laboratory Data Lab Sample: 1701712-10 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.420	4.74	9.49		B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1
PFOA	ND	1.02	4.74	9.49		B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1
PFOS	ND	0.986	4.74	9.49		B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	110	70 - 130			B7K0117	18-Nov-17	0.264 L	25-Nov-17 20:41	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

1131.8

Sample ID: CH-AT-1RW18-1117										EPA Method 537
Client Data					Laboratory Data					
Name:	CH2M Hill		Matrix:	Drinking Water		Lab Sample:	1701712-11		Column:	BEH C18
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation		Date Collected:	14-Nov-17 16:37		Date Received:	17-Nov-17 08:54			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.438	4.95	9.89		B7K0117	18-Nov-17	0.253 L	25-Nov-17 20:54	1
PFOA	ND	1.07	4.95	9.89		B7K0117	18-Nov-17	0.253 L	25-Nov-17 20:54	1
PFOS	ND	1.03	4.95	9.89		B7K0117	18-Nov-17	0.253 L	25-Nov-17 20:54	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.253 L	25-Nov-17 20:54	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, PFHxA, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

11/13/18

Sample ID: CH-AT-1FB18-1117					EPA Method 537					
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 14-Nov-17 16:38					Laboratory Data Lab Sample: 1701712-12 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.73	9.46		B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1
PFOA	ND	1.02	4.73	9.46		B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1
PFOS	ND	0.984	4.73	9.46		B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	107	70 - 130			B7K0117	18-Nov-17	0.264 L	25-Nov-17 21:06	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

new 1/31/18

Sample ID: CH-AT-1RW19-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 09:07					Laboratory Data Lab Sample: 1701712-13 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.451	5.09	10.2		B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1
PFOA	ND	1.10	5.09	10.2		B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1
PFOS	ND	1.06	5.09	10.2		B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.9	70 - 130			B7K0117	18-Nov-17	0.246 L	25-Nov-17 21:19	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

rw1131.8

Sample ID: CH-AT-1FB19-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 09:08					Laboratory Data Lab Sample: 1701712-14 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.419	4.72	9.45		B7K0117	18-Nov-17	0.265 L	25-Nov-17 21:31	1
PFOA	ND	1.02	4.72	9.45		B7K0117	18-Nov-17	0.265 L	25-Nov-17 21:31	1
PFOS	ND	0.983	4.72	9.45		B7K0117	18-Nov-17	0.265 L	25-Nov-17 21:31	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130			B7K0117	18-Nov-17	0.265 L	25-Nov-17 21:31	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

mw/13/18

Sample ID: CH-AT-1RW20-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 09:39					Laboratory Data Lab Sample: 1701712-15 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.95	9.90		B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	1
PFOA	ND	1.07	4.95	9.90		B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	1
PFOS	ND	1.03	4.95	9.90		B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	109	70 - 130			B7K0117	18-Nov-17	0.252 L	25-Nov-17 21:43	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, PFHxA, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

rw1318

Sample ID: CH-AT-1FB20-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 09:40					Laboratory Data Lab Sample: 1701712-16 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.428	4.83	9.65		B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1
PFOA	ND	1.04	4.83	9.65		B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1
PFOS	ND	1.00	4.83	9.65		B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.6	70 - 130			B7K0117	18-Nov-17	0.259 L	25-Nov-17 21:56	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

rw/13/18

Sample ID: CH-AT-1RW21-1117					EPA Method 537					
Client Data Name: CH2M Hill Matrix: Drinking Water Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Date Collected: 15-Nov-17 10:15					Laboratory Data Lab Sample: 1701712-17 Column: BEH C18 Date Received: 17-Nov-17 08:54					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.437	4.93	9.87		B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1
PFOA	ND	1.07	4.93	9.87		B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1
PFOS	ND	1.03	4.93	9.87		B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.253 L	25-Nov-17 22:08	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

rw1131.8

Sample ID: CH-AT-1FB21-1117

EPA Method 537

Client Data					Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701712-18	Column:	BEH C18		
Project:	CTO-08, MCOLF Atlantic / PFAS DW Investigation	Date Collected:	15-Nov-17 10:16		Date Received:	17-Nov-17 08:54				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.430	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
PFOA	ND	1.05	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
PFOS	ND	1.01	4.85	9.70		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102	70 - 130			B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:21	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

nw 1/3/18

Sample ID: CH-AT-1RW22-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 10:41					Laboratory Data Lab Sample: 1701712-19 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.439	4.95	9.91		B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1
PFOA	ND	1.07	4.95	9.91		B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1
PFOS	ND	1.03	4.95	9.91		B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.9	70 - 130			B7K0117	18-Nov-17	0.252 L	25-Nov-17 22:33	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

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

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

mw 11/3/18

Sample ID: CH-AT-1FB22-1117					EPA Method 537					
Client Data Name: CH2M Hill Project: CTO-08, MCOLF Atlantic / PFAS DW Investigation Matrix: Drinking Water Date Collected: 15-Nov-17 10:42					Laboratory Data Lab Sample: 1701712-20 Date Received: 17-Nov-17 08:54 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.429	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
PFOA	ND	1.05	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
PFOS	ND	1.01	4.84	9.69		B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	99.8	70 - 130			B7K0117	18-Nov-17	0.258 L	25-Nov-17 22:46	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

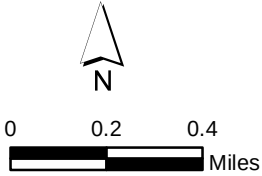
LCL-UCL - Lower control limit - upper control limit
Results reported to the DL

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

Nov 13/18



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



1 inch = 0.4 mile
Imagery: Esri, 2016

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