



**Groundwater Sample Results,
Level 4 Laboratory Report, Electronic Data Deliverable,
Data Validation Report, and the Sample Location Report,
SDG 1801071**

*Marine Corps Air Station Yuma
Yuma, Arizona*

November 2019

June 14, 2018

Vista Work Order No. 1801071

Ms. Sabina Sudoko
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

Dear Ms. Sudoko,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on May 31, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name '4663.3803'.

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,



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. 1801071

Case Narrative

Sample Condition on Receipt:

Five 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:

PFAS Isotope Dilution Method

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537).

Holding Times

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

Quality Control

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

A Method Blank and Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 of the LOQ concentrations. The LCS/LCSD recoveries were within the acceptance criteria.

The extracts of all samples except "FRB-2018053" were re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria. The area criteria passed for the second injection and the results from the re-injection have been reported.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1801071-01	A1-MW-27-SA1	PFAS Isotope Dilution Method	13C3-PFBS	H	174
1801071-02	A1-MW-55-SA1	PFAS Isotope Dilution Method	13C3-PFBS	H	165
1801071-04	A1-MW-07-SA1	PFAS Isotope Dilution Method	13C3-PFBS	H	209

H = Recovery was outside laboratory acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1801071-01	A1-MW-27-SA1	30-May-18 08:18	31-May-18 10:03	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1801071-02	A1-MW-55-SA1	30-May-18 10:16	31-May-18 10:03	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1801071-03	A1-MW-23-SA1	30-May-18 11:10	31-May-18 10:03	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1801071-04	A1-MW-07-SA1	30-May-18 12:06	31-May-18 10:03	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1801071-05	FRB-20180530	30-May-18 14:30	31-May-18 10:03	HDPE Bottle, 500 mL

ANALYTICAL RESULTS

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data				Laboratory Data							
Name:	Tetra Tech EC, Inc.	Matrix:	Aqueous	Lab Sample:	B8F0004-BLK1	Column:	BEH C18				
Project:	4663.3803										

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.000448	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFHxA	307-24-4	ND	0.000545	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFHpA	375-85-9	ND	0.000148	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFHxS	355-46-4	ND	0.000237	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFOA	335-67-1	ND	0.000163	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFNA	375-95-1	ND	0.000203	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFOS	1763-23-1	ND	0.000202	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFDA	335-76-2	ND	0.000373	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
MeFOSAA	2355-31-9	ND	0.000413	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
EtFOSAA	2991-50-6	ND	0.000343	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFOA	2058-94-8	ND	0.000263	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFDoA	307-55-1	ND	0.000198	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFTDA	72629-94-8	ND	0.000124	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
PFTeDA	376-06-7	ND	0.000189	0.00125	0.00200	U	B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	141	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C2-PFHxA	IS	92.9	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C4-PFHpA	IS	106	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
18O2-PFHxS	IS	98.3	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C2-PFOA	IS	89.3	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C5-PFNA	IS	97.0	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C8-PFOS	IS	94.6	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C2-PFDA	IS	89.2	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
d3-MeFOSAA	IS	71.3	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
d5-EtFOSAA	IS	75.0	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C2-PFUnA	IS	75.0	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C2-PFDoA	IS	74.6	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1
13C2-PFTeDA	IS	66.4	50 - 150		B8F0004	01-Jun-18	0.500 L	04-Jun-18 00:17	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: LCSD

PFAS Isotope Dilution Method

Name:	Tetra Tech EC, Inc.	Lab Sample:	B8F0004-BS1/B8F0004-BSD1	Date Extracted:	01-Jun-18
Project:	4663.3803	QC Batch:	B8F0004	Column:	BEH C18
Matrix:	Aqueous	Samp Size:	0.500/0.500 L		

Analyte	CAS Number	LCS (ug/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ug/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	375-73-5	0.0212	0.0200	106		0.0210	0.0200	105	1.25		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFHxA	307-24-4	0.0227	0.0200	114		0.0218	0.0200	109	4.00		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFHpA	375-85-9	0.0217	0.0200	108		0.0221	0.0200	111	2.03		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFHxS	355-46-4	0.0205	0.0200	102		0.0207	0.0200	103	0.969		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFOA	335-67-1	0.0202	0.0200	101		0.0199	0.0200	99.5	1.54		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFNA	375-95-1	0.0190	0.0200	94.8		0.0190	0.0200	95.0	0.272		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFOS	1763-23-1	0.0208	0.0200	104		0.0218	0.0200	109	4.90		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFDA	335-76-2	0.0214	0.0200	107		0.0218	0.0200	109	1.74		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
MeFOSAA	2355-31-9	0.0182	0.0200	90.8		0.0191	0.0200	95.6	5.15		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
EtFOSAA	2991-50-6	0.0182	0.0200	90.9		0.0195	0.0200	97.7	7.23		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFUnA	2058-94-8	0.0240	0.0200	120		0.0228	0.0200	114	4.84		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFDoA	307-55-1	0.0186	0.0200	93.1		0.0146	0.0200	72.8	24.4		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFTTrDA	72629-94-8	0.0171	0.0200	85.4		0.0169	0.0200	84.3	1.30		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1
PFTeDA	376-06-7	0.0237	0.0200	118		0.0253	0.0200	127	6.83		70-130	30	03-Jun-18 23:56	1	04-Jun-18 00:06	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C3-PFBS	IS	112		139		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C2-PFHxA	IS	94.2		91.9		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C4-PFHpA	IS	88.1		97.1		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
18O2-PFHxS	IS	110		98.5		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C2-PFOA	IS	97.7		92.7		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C5-PFNA	IS	90.1		86.4		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C8-PFOS	IS	95.7		91.4		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C2-PFDA	IS	97.9		91.2		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
d3-MeFOSAA	IS	88.0		71.9		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
d5-EtFOSAA	IS	92.2		71.4		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C2-PFUnA	IS	80.7		56.8		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C2-PFDoA	IS	82.2		87.3		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1
13C2-PFTeDA	IS	80.5		66.9		50-150	03-Jun-18 23:56	1	04-Jun-18 00:06	1

Sample ID: A1-MW-27-SA1
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	Tetra Tech EC, Inc.	Matrix:	Water	Lab Sample:	1801071-01	Column:	BEH C18
Project:	4663.3803	Date Collected:	30-May-18 08:18	Date Received:	31-May-18 10:03		
Location:	YUMA, AZ						

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0819	0.00191	0.00534	0.00854		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFHxA	307-24-4	0.236	0.00233	0.00534	0.00854		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFHpA	375-85-9	0.0252	0.000631	0.00534	0.00854		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFHxS	355-46-4	0.123	0.00101	0.00534	0.00854		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFOA	335-67-1	0.0274	0.000695	0.00534	0.00854		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFNA	375-95-1	ND	0.000865	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFOS	1763-23-1	0.0127	0.000862	0.00534	0.00854		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFDA	335-76-2	ND	0.00159	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
MeFOSAA	2355-31-9	ND	0.00176	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
EtFOSAA	2991-50-6	ND	0.00146	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFOA	2058-94-8	ND	0.00112	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFDoA	307-55-1	ND	0.000846	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFTDA	72629-94-8	ND	0.000528	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
PFTeDA	376-06-7	ND	0.000806	0.00534	0.00854	U	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	174	50 - 150	H	B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C2-PFHxA	IS	94.1	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C4-PFHpA	IS	94.7	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
18O2-PFHxS	IS	99.3	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C2-PFOA	IS	90.3	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C5-PFNA	IS	78.4	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C8-PFOS	IS	98.4	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C2-PFDA	IS	89.9	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
d3-MeFOSAA	IS	81.7	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
d5-EtFOSAA	IS	93.0	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C2-PFUnA	IS	58.7	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C2-PFDoA	IS	62.6	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	1
13C2-PFTeDA	IS	84.5	50 - 150		B8F0004	01-Jun-18	0.117 L	05-Jun-18 00:57	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: A1-MW-55-SA1
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	Tetra Tech EC, Inc.	Matrix:	Water	Lab Sample:	1801071-02	Column:	BEH C18
Project:	4663.3803	Date Collected:	30-May-18 10:16	Date Received:	31-May-18 10:03		
Location:	YUMA, AZ						

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00196	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFHxA	307-24-4	ND	0.00238	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFHpA	375-85-9	ND	0.000646	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFHxS	355-46-4	ND	0.00104	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFOA	335-67-1	ND	0.000712	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFNA	375-95-1	ND	0.000886	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFOS	1763-23-1	ND	0.000883	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFDA	335-76-2	ND	0.00163	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
MeFOSAA	2355-31-9	ND	0.00180	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
EtFOSAA	2991-50-6	ND	0.00150	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFOA	2058-94-8	ND	0.00115	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFDoA	307-55-1	ND	0.000866	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFTDA	72629-94-8	ND	0.000540	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
PFTeDA	376-06-7	ND	0.000826	0.00548	0.00875	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	165	50 - 150	H	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C2-PFHxA	IS	94.5	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C4-PFHpA	IS	98.7	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
18O2-PFHxS	IS	93.4	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C2-PFOA	IS	78.7	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C5-PFNA	IS	79.9	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C8-PFOS	IS	98.0	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C2-PFDA	IS	70.3	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
d3-MeFOSAA	IS	82.8	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
d5-EtFOSAA	IS	79.8	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C2-PFUnA	IS	68.2	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C2-PFDoA	IS	74.8	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	1
13C2-PFTeDA	IS	87.0	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:18	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: A1-MW-23-SA1
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	Tetra Tech EC, Inc.	Matrix:	Water	Lab Sample:	1801071-03	Column:	BEH C18
Project:	4663.3803	Date Collected:	30-May-18 11:10	Date Received:	31-May-18 10:03		
Location:	YUMA, AZ						

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00196	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFHxA	307-24-4	ND	0.00238	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFHpA	375-85-9	ND	0.000646	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFHxS	355-46-4	0.00581	0.00104	0.00548	0.00874	J	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFOA	335-67-1	ND	0.000712	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFNA	375-95-1	ND	0.000885	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFOS	1763-23-1	ND	0.000882	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFDA	335-76-2	ND	0.00163	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
MeFOSAA	2355-31-9	ND	0.00180	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
EtFOSAA	2991-50-6	ND	0.00150	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFOA	2058-94-8	ND	0.00115	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFDoA	307-55-1	ND	0.000866	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFTeDA	72629-94-8	ND	0.000540	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
PFTeDA	376-06-7	ND	0.000825	0.00548	0.00874	U	B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	148	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C2-PFHxA	IS	96.8	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C4-PFHpA	IS	103	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
18O2-PFHxS	IS	102	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C2-PFOA	IS	84.9	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C5-PFNA	IS	90.6	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C8-PFOS	IS	101	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C2-PFDA	IS	74.4	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
d3-MeFOSAA	IS	88.5	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
d5-EtFOSAA	IS	103	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C2-PFUnA	IS	69.3	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C2-PFDoA	IS	77.9	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	1
13C2-PFTeDA	IS	94.9	50 - 150		B8F0004	01-Jun-18	0.114 L	05-Jun-18 20:28	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: A1-MW-07-SA1
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	Tetra Tech EC, Inc.	Matrix:	Water	Lab Sample:	1801071-04	Column:	BEH C18
Project:	4663.3803	Date Collected:	30-May-18 12:06	Date Received:	31-May-18 10:03		
Location:	YUMA, AZ						

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.112	0.00188	0.00525	0.00840		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFHxA	307-24-4	0.356	0.00229	0.00525	0.00840		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFHpA	375-85-9	0.0494	0.000620	0.00525	0.00840		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFHxS	355-46-4	0.254	0.000994	0.00525	0.00840		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFOA	335-67-1	0.0511	0.000683	0.00525	0.00840		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFNA	375-95-1	ND	0.000850	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFOS	1763-23-1	0.0498	0.000847	0.00525	0.00840		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFDA	335-76-2	ND	0.00156	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
MeFOSAA	2355-31-9	ND	0.00173	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
EtFOSAA	2991-50-6	ND	0.00144	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFOA	2058-94-8	ND	0.00110	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFDoA	307-55-1	ND	0.000831	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFTDA	72629-94-8	ND	0.000519	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
PFTeDA	376-06-7	ND	0.000793	0.00525	0.00840	U	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	209	50 - 150	H	B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C2-PFHxA	IS	106	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C4-PFHpA	IS	104	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
18O2-PFHxS	IS	96.5	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C2-PFOA	IS	87.9	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C5-PFNA	IS	87.2	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C8-PFOS	IS	95.5	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C2-PFDA	IS	74.8	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
d3-MeFOSAA	IS	104	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
d5-EtFOSAA	IS	112	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C2-PFUnA	IS	85.1	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C2-PFDoA	IS	83.8	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	1
13C2-PFTeDA	IS	111	50 - 150		B8F0004	01-Jun-18	0.119 L	05-Jun-18 20:39	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: FRB-20180530 **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	Tetra Tech EC, Inc.	Matrix:	Water	Lab Sample:	1801071-05	Column:	BEH C18
Project:	4663.3803	Date Collected:	30-May-18 14:30	Date Received:	31-May-18 10:03		
Location:	YUMA AZ						

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.000449	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFHxA	307-24-4	ND	0.000546	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFHpA	375-85-9	ND	0.000148	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFHxS	355-46-4	ND	0.000237	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFOA	335-67-1	ND	0.000163	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFNA	375-95-1	ND	0.000203	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFOS	1763-23-1	ND	0.000202	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFDA	335-76-2	ND	0.000373	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
MeFOSAA	2355-31-9	ND	0.000414	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
EtFOSAA	2991-50-6	ND	0.000343	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFOA	2058-94-8	ND	0.000263	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFDoA	307-55-1	ND	0.000198	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFTDA	72629-94-8	ND	0.000124	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
PFTeDA	376-06-7	ND	0.000189	0.00125	0.00200	U	B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFBS	IS	116	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C2-PFHxA	IS	94.8	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C4-PFHpA	IS	98.1	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
18O2-PFHxS	IS	104	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C2-PFOA	IS	76.4	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C5-PFNA	IS	86.8	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C8-PFOS	IS	97.6	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C2-PFDA	IS	74.5	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
d3-MeFOSAA	IS	71.9	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
d5-EtFOSAA	IS	71.4	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C2-PFUnA	IS	72.3	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C2-PFDoA	IS	64.2	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	
13C2-PFTeDA	IS	64.6	50 - 150			B8F0004	01-Jun-18	0.499 L	05-Jun-18 01:38	1	

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

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
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
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
Q	Ion ratio outside of 70-130% of Standard Ratio. (DOD PFAS projects only)
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
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	1322288
New Hampshire Environmental Accreditation Program	207717
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	014
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	9077
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.

CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: 1801071 Temp: 0.2 °C
 Storage ID: WR-2 Storage Secured: Yes No

Project ID: 4663.3803 PO#: 1152405 Sampler: Spencer Doolittle
 (name)

TAT Standard: 21 days
 (check one): Rush (surcharge may apply)
 14 days 7 days Specify: 10 BD

Invoice to: Name: Accts Payable Company: Tetra Tech EC, Inc. Address: 1230 Columbia St. Suite 750 City: San Diego State: CA Ph#: 619-234-8696 Fax#:

Relinquished by (printed name and signature) SJoo Date: 5/30/18 Time: 1445 Received by (printed name and signature) MICHAEL O'HARE Date: 5/30/18 Time: 1445
 Relinquished by (printed name and signature) MICHAEL O'HARE Date: 5/30/18 Time: 1600 Received by (printed name and signature) FED-EX Date: 5/30/18 Time: 1600

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

Relinquished by: FedEx 5/31/18 1003

Received by: Sydney Roughton Sydney Roughton 5/31/18 1012

Method of Shipment:

FED-EX

Tracking No.:

Add Analysis(es) Requested

Container(s)

Mod. EPA Method 537

EPA Method 537 (DW only)

ATTN: SAMPLE RECEIVING

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	Add Analysis(es) Requested							Comments				
							PFOA/PFS	UCMR3 PFAS List6	537 List: 14	Full List of 26	Other: Please List Below	PFOA/PFS	UCMR3 PFAS List6		PFAS List: 14			
<u>A1-MW-27-SA1</u>	<u>5/30/18</u>	<u>0818</u>	<u>YUMA, AZ</u>	<u>2</u>	<u>P</u>	<u>W</u>						<u>X</u>						
<u>A1-MW-55-SA1</u>	<u>5/30/18</u>	<u>1016</u>	<u>Yuma, AZ</u>	<u>2</u>	<u>P</u>	<u>W</u>						<u>X</u>						
<u>A1-MW-23-SA1</u>	<u>5/30/18</u>	<u>1110</u>	<u>Yuma, AZ</u>	<u>2</u>	<u>P</u>	<u>W</u>						<u>X</u>						
<u>A1-MW-07-SA1</u>	<u>5/30/18</u>	<u>1206</u>	<u>Yuma, AZ</u>	<u>2</u>	<u>P</u>	<u>W</u>						<u>X</u>						
<u>FRB-20180930</u>	<u>5/30/18</u>	<u>1450</u>	<u>Yuma AZ</u>	<u>1</u>	<u>P</u>	<u>W</u>						<u>X</u>					<u>FRB IN 500 ML - POLY CAPS</u>	
																		<u>NEED</u>
																		<u>MSD</u>

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Sabina Sudoko
 Company: Tetra Tech EC, Inc.
 Address: 17885 Von Karman Avenue, Suite 500
 City: Irvine State: CA Zip: 92614
 Phone: 949-809-5022 Fax:
 Email: sabina.sudoko@tetratech.com

Container Types: P= HDPE, PJ= HDPE Jar

Bottle Preservation Type: T = Thiosulfate,

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,

O = Other:

TZ = Trizma:

SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: W - WATER

Sample Log-in Checklist

Vista Work Order #: 1801071 TAT 14

Samples Arrival:	Date/Time 05/31/18 1003	Initials: SR	Location: WR-2
Logged In:	Date/Time 5/31/18 1144	Initials: SR	Location: WR-2 Shelf/Rack: <u>E-7</u>
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> On Trac
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
Temp °C: 0.3 (uncorrected)	Time: 1008	Thermometer ID: IR-4	
Temp °C: 0.2 (corrected)	Probe used: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

		YES	NO	NA
Adequate Sample Volume Received?		SR		
Holding Time Acceptable?		SR		
Shipping Container(s) Intact?		SR		
Shipping Custody Seals Intact?		SR		
Shipping Documentation Present?		SR		
Airbill	Trk # 7811 9837 0547	SR	✓	
Sample Container Intact?		SR		
Sample Custody Seals Intact?				SR
Chain of Custody / Sample Documentation Present?		SR		
COC Anomaly/Sample Acceptance Form completed?				SR
If Chlorinated or Drinking Water Samples, Acceptable Preservation?				SR
Preservation Documented:	Na ₂ S ₂ O ₃ Trizma None	Yes	<input checked="" type="radio"/> No	NA
Shipping Container	<input checked="" type="radio"/> Vista	Client	Retain	Return Dispose

Comments:

EXTRACTION INFORMATION

Workorder: **1801071**

Prep Expiration: 2018-Jun-13
Client: Tetra Tech EC, Inc.

Workorder Due: 14-Jun-18 00:00

TAT: 14

Method: **537M PFAS DOD (LOQ as mRL)**
Matrix: **Aqueous**

Prep Batch: B8F0004

Version: 537 (14 Analyte)
DoD: DoD QSM 5.1

Prep Data Entered: 6/4/18 SR
Date and Initials

Initial Sequence: S8F0007

LabSampleID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1801071-01	A ↓	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A1-MW-27-SA1		WR-2 E-7	HDPE Bottle, 125 mL
1801071-02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A1-MW-55-SA1		WR-2 E-7	HDPE Bottle, 125 mL
1801071-03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A1-MW-23-SA1		WR-2 E-7	HDPE Bottle, 125 mL
1801071-04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A1-MW-07-SA1		WR-2 E-7	HDPE Bottle, 125 mL
1801071-05		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FRB-20180530		WR-2 E-7	HDPE Bottle, 500 mL

Pre-Prep Check Out: LT 06/01/18
Pre-Prep Check In: NA

Prep Check Out: NA
Prep Check In: NA

Prep Reconciled Initials/Date: LT 06/01/18
Spike Reconciled Initials/Date: SR 6/01/18
VialBoxID: Rush

Internal Chain of Custody

1801071



Client: Tetra Tech EC, Inc.

Project Number: 4663.3803

Received: 31-May-18 10:03

Vista Sample ID	Bottle	Sample				Extract	
		Initials Date/Time	Initials Date/Time	Initials Date/Time	Initials Date/Time	Initials Date/Time	Initials Date/Time
		New Location	New Location	New Location	New Location	New Location	New Location
1801071-01	A/B	SR 05/31/18 WR-2	LT 06/01/18 SOIL LAB	SR 6/1/18 Air Lab Consumed	SR 6/1/18 N/A	SR 6/2/18 R7	Am 6/4/18 OGD Instrument
1801071-02	A/B	SR 05/31/18 WR-2	↓	↓ ↓	↓	↓	↓
1801071-03	A/B	SR 05/31/18 WR-2	↓	↓ ↓	↓	↓	↓
1801071-04	A/B	SR 05/31/18 WR-2	↓	↓ ↓	↓	↓	↓
1801071-05	A	SR 05/31/18 WR-2	↓	↓ ↓	↓	↓	↓

Note in grid if sample or extract are depleted. See Login Checklist for initial location.

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537M PFAS DOD (LOQ as mRL)

B8F0004

Chemist: HIN

Prep Date: 6/1/18

Prep Time: 12:00

Prepared using: LCMS - SPE Extraction-LCMS

		Date/Initials: <u>LT 06/01/18</u>				Balance ID: <u>HKMS-8</u>					
Cen	VISTA Sample ID	pH Before	pH After	Chlorine (Cl)	Drops HCl Added	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE	RS CHEM/WIT DATE
<input type="checkbox"/>	B8F0004-BLK1 ^(A)	5	2	0	2	N/A	N/A	(0.500)	HIN JR 6/1/18	JR 7R 6/1/18	HIN JR 6-2-18
<input type="checkbox"/>	B8F0004-BS1	5	2	0	2	↓	↓	(0.500)	↓	↓	↓
<input type="checkbox"/>	B8F0004-BSD1	5	2	0	2	↓	↓	(0.600)	↓	↓	↓
<input type="checkbox"/>	1801039-01	5	2	0	3	136.62	26.95	0.10967	↓	↓	↓
<input type="checkbox"/>	1801039-02	5	2	0	3	143.24	27.00	0.11624	↓	↓	↓
<input type="checkbox"/>	1801039-03	5	2	0	3	138.86	26.92	0.11194	↓	↓	↓
<input type="checkbox"/>	1801039-04	6	2	0	3	139.43	26.95	0.11248	↓	↓	↓
<input type="checkbox"/>	1801039-07	5	2	0	3	139.37	26.85	0.11252	↓	↓	↓
<input type="checkbox"/>	1801039-08	5	2	0	1	143.73	26.78	0.11695	↓	↓	↓
<input type="checkbox"/>	1801071-01	5	2	0	3	144.03	26.98	0.11705 ✓	↓	↓	↓
<input type="checkbox"/>	1801071-02	5	2	0	2	141.27	26.99	0.11428 ✓	↓	↓	↓
<input type="checkbox"/>	1801071-03	5	2	0	2	141.32	26.96	0.11436 ✓	↓	↓	↓
<input type="checkbox"/>	1801071-04	6	2	0	3	146.03	26.95	0.11908 ✓	↓	↓	↓
<input type="checkbox"/>	1801071-05	5	2	0	1	543.13	44.35	0.49878 ✓	↓	↓	↓

IS: <u>18D2004, 10µL (V₃)</u> IS SUP: <u>NA</u> NS: <u>18E0923, 10µL (V₅)</u> RS: <u>18D2005, 10µL (V₃)</u>	SPE Chem: <u>Strata X-AW 33µm 200mg/6mL</u> Ele SOLV: <u>MeOH/0.5% NH₄OH in MeOH</u> Final Volume(s) <u>1mL</u>	Notes: ^(A) <u>Supelco ENVI-carb used. Lot # 10186601</u>
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Comments: Assume 1 g = 1 mL
Cen = Centrifuged

Batch: B8F0004

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1801039-01	0.10967 ✓	NA	NA	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801039-02	0.11624 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801039-03	0.11194 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801039-04	0.11248 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801039-07	0.11252 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801039-08	0.11695 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801071-01	0.11705 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801071-02	0.11428 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801071-03	0.11436 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801071-04	0.11908 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
1801071-05	0.49878 ✓	↓	↓	1000	01-Jun-18 12:00	HN			Water	537M PFAS DOD (LOQ as
B8F0004-BLK1	0.5 ✓	↓	↓	1000	01-Jun-18 12:00	HN				QC
B8F0004-BS1	0.5 ✓	↓	↓	1000	01-Jun-18 12:00	HN	18E0923 ✓	10 ✓		QC
B8F0004-BSD1	0.5 ✓	↓	↓	1000	01-Jun-18 12:00	HN	18E0923 ✓	10 ✓		QC

JR 6/4/18

Sample Data – PFAS Isotope Dilution Method

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-37.qld

Last Altered: Monday, June 11, 2018 11:10:23 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:12:28 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_37, Date: 04-Jun-2018, Time: 00:17:09, ID: B8F0004-BLK1 Method Blank 0.125, Description: Method Blank

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7		1.74e3	0.500		2.64						
2	5 PFHxA	313.2 > 268.9		3.35e3	0.500		3.13						
3	7 PFHpA	363.0 > 318.9		1.08e4	0.500		3.74						
4	8 L-PFHxS	398.9 > 79.6	3.91e0	1.40e3	0.500		3.89	3.89	0.0350			0.995	YES
5	11 L-PFOA	413 > 368.7		1.80e4	0.500		4.25						
6	14 PFNA	463.0 > 418.8		1.59e4	0.500		4.68						
7	16 L-PFOS	499.1 > 79.9		3.66e3	0.500		4.77						
8	18 PFDA	513 > 468.8		2.19e4	0.500		5.06						
9	21 L-MeFOSAA	570.1 > 419		3.68e3	0.500		5.22						
10	23 L-EtFOSAA	584.2 > 419		4.72e3	0.500		5.37						

MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-37.qld

Last Altered: Monday, June 11, 2018 11:10:23 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:12:51 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_37, Date: 04-Jun-2018, Time: 00:17:09, ID: B8F0004-BLK1 Method Blank 0.125, Description: Method Blank

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25 PFUdA	563.0 > 518.9		2.03e4	0.500		5.39						
2	27 PFDaA	612.9 > 569.0		1.86e4	0.500		5.67						
3	29 PFTTrDA	662.9 > 618.9		1.86e4	0.500		5.92						
4	30 PFTeDA	712.9 > 668.8		1.62e4	0.500		6.14						
5	38 13C3-PFBS	302. > 98.8	1.74e3	1.21e4	0.500	0.102	2.61	2.64	1.80	35.1617	140.6		
6	39 13C2-4:2 FTS	329.2>308.9	3.44e3	1.21e4	0.500	0.231	3.02	3.05	3.55	30.7181	122.9		
7	40 13C2-PFHxA	315 > 269.8	3.35e3	1.21e4	0.500	0.744	3.10	3.13	3.46	9.2946	92.9		
8	41 13C4-PFHpA	367.2 > 321.8	1.08e4	1.21e4	0.500	0.841	3.72	3.74	11.1	26.4306	105.7		
9	42 18O2-PFHxS	403.0 > 102.6	1.40e3	3.42e3	0.500	0.415	3.87	3.89	5.10	24.5754	98.3		
10	43 13C2-6:2 FTS	429.1 > 408.9	3.43e3	1.60e4	0.500	0.232	4.19	4.20	2.67	23.0795	92.3		
11	44 13C2-PFOA	414.9 > 369.7	1.80e4	1.60e4	0.500	1.256	4.25	4.26	14.0	22.3311	89.3		
12	45 13C5-PFNA	468.2 > 422.9	1.59e4	1.70e4	0.500	0.960	4.69	4.69	11.6	24.2595	97.0		
13	46 13C8-PFOSA	506.1 > 77.7	1.06e3	2.83e4	0.500	0.145	4.75	4.76	0.469	6.4592	25.8		
14	47 13C8-PFOS	507.0 > 79.9	3.66e3	3.69e3	0.500	1.047	4.77	4.77	12.4	23.6619	94.6		
15	48 13C2-PFDA	515.1 > 469.9	2.19e4	2.19e4	0.500	1.118	5.06	5.06	12.5	22.3110	89.2		
16	49 13C2-8:2 FTS	529.1 > 508.7	3.09e3	1.21e4	0.500	0.211	5.03	5.03	3.18	30.2049	120.8		
17	50 d3-N-MeFOSAA	573.3 > 419	3.68e3	2.83e4	0.500	0.182	5.21	5.20	1.63	17.8172	71.3		
18	51 d5-N-EtFOSAA	589.3 > 419	4.72e3	2.83e4	0.500	0.223	5.37	5.36	2.09	18.7457	75.0		
19	52 13C2-PFUdA	565 > 519.8	2.03e4	2.83e4	0.500	0.958	5.39	5.37	8.98	18.7478	75.0		
20	53 13C2-PFDoA	615.0 > 569.7	1.86e4	2.19e4	0.500	1.138	5.67	5.65	10.6	18.6609	74.6		
21	54 d3-N-MeFOSA	515.2 > 168.9		2.83e4	0.500	0.051	5.85						
22	55 13C2-PFTeDA	714.8 > 669.6	1.62e4	2.83e4	0.500	0.862	6.14	6.11	7.15	16.5940	66.4		
23	56 d5-N-ETFOSA	531.1 > 168.9		2.83e4	0.500	0.066	6.26						
24	57 13C2-PFHxDA	815 > 769.7	9.56e3	2.83e4	0.500	1.173	6.48	6.44	4.23	7.2097	72.1		
25	58 d7-N-MeFOSE	623.1 > 58.9		2.83e4	0.500	0.038	6.40						
26	59 d9-N-EtFOSE	639.2 > 58.8		2.83e4	0.500	0.035	6.54						
27	60 13C4-PFBA	217. > 171.8	6.67e3	6.67e3	0.500	1.000	1.33	1.39	12.5	25.0000	100.0		
28	61 13C5-PFHxA	318 > 272.9	1.21e4	1.21e4	0.500	1.000	3.10	3.13	12.5	25.0000	100.0		
29	62 13C3-PFHxS	401.9 > 79.9	3.42e3	3.42e3	0.500	1.000	3.87	3.89	12.5	25.0000	100.0		
30	63 13C8-PFOA	421.3 > 376	1.60e4	1.60e4	0.500	1.000	4.25	4.26	12.5	25.0000	100.0		
31	64 13C9-PFNA	472.2 > 426.9	1.70e4	1.70e4	0.500	1.000	4.69	4.69	12.5	25.0000	100.0		
32	65 13C4-PFOS	503 > 79.9	3.69e3	3.69e3	0.500	1.000	4.77	4.77	12.5	25.0000	100.0		MJT 6/11/2018

MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-37.qld

Last Altered: Monday, June 11, 2018 11:10:23 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:12:51 Pacific Daylight Time

Name: 180603M2_37, Date: 04-Jun-2018, Time: 00:17:09, ID: B8F0004-BLK1 Method Blank 0.125, Description: Method Blank

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	66 13C6-PFDA	519.1 > 473.7	2.19e4	2.19e4	0.500	1.000	5.06	5.06	12.5	25.0000	100.0		
34	67 13C7-PFUdA	570.1 > 524.8	2.83e4	2.83e4	0.500	1.000	5.39	5.37	12.5	25.0000	100.0		
35	68 Total PFHxS	398.9 > 79.6	3.91e0	1.40e3	0.500		4.05		0.000				
36	69 Total PFOA	413 > 368.7	0.00e0	1.80e4	0.500		4.30		0.000				
37	70 Total PFOS	499.1 > 79.9	0.00e0	3.66e3	0.500		4.90		0.000				
38	71 Total N-MeFOSAA	570.1 > 419	0.00e0	3.68e3	0.500		5.55		0.000				
39	72 Total N-EtFOSAA	584.2 > 419	0.00e0	4.72e3	0.500		5.70		0.000				

MM 6/11/2018

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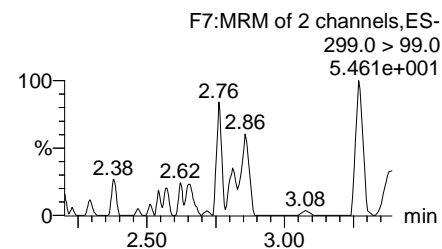
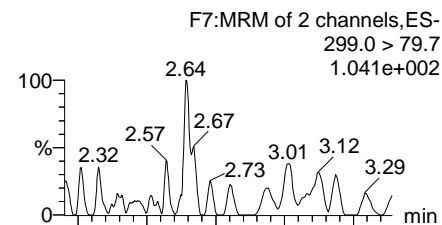
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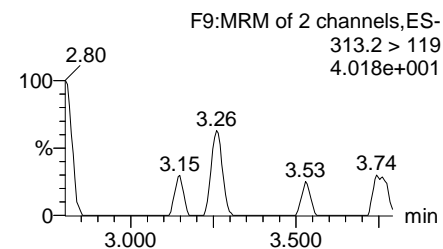
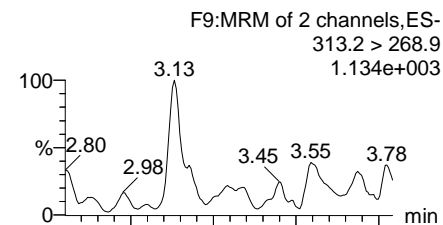
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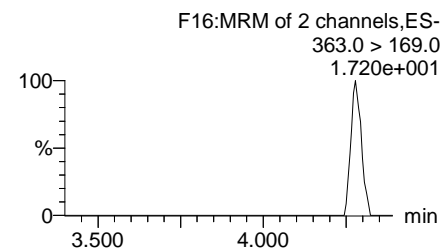
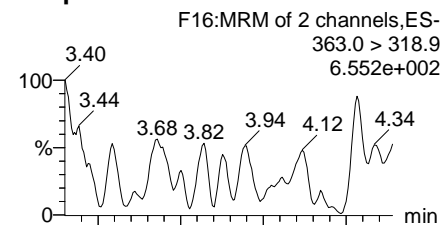
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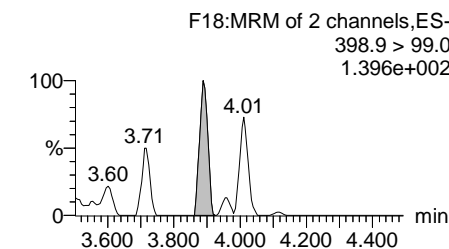
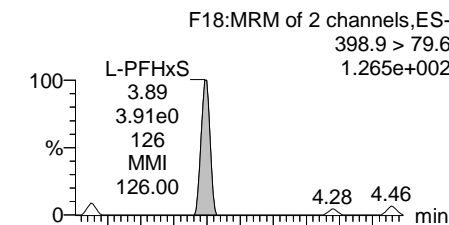
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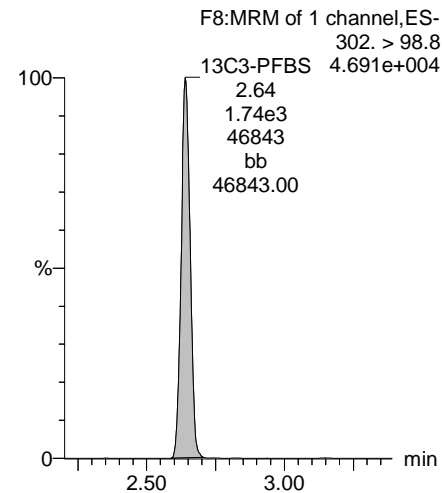
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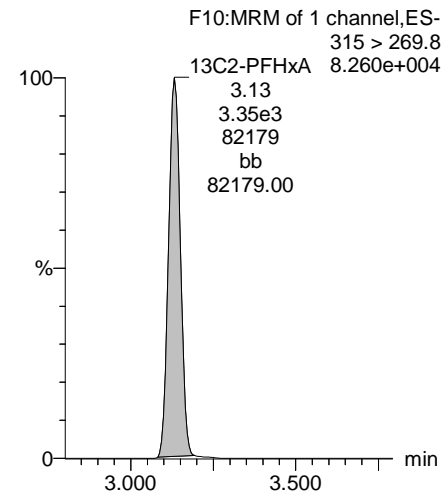
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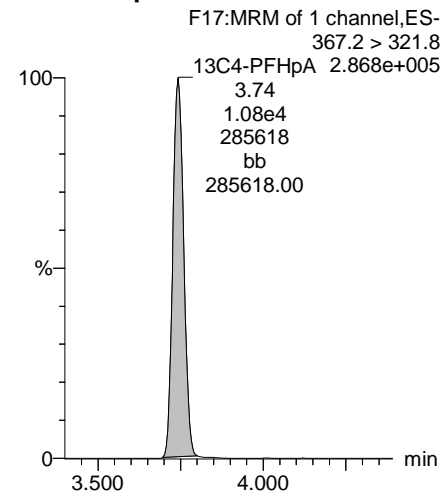
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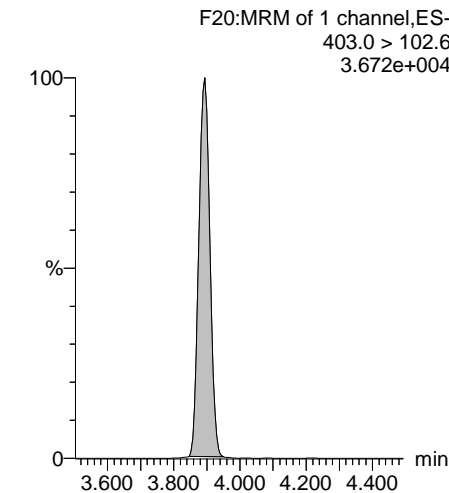
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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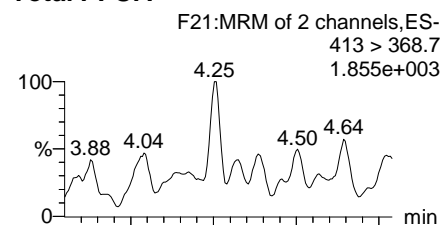
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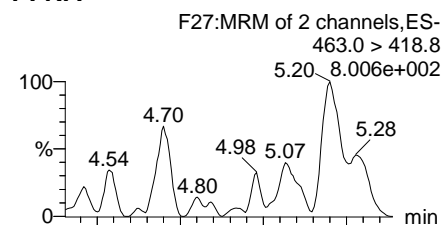
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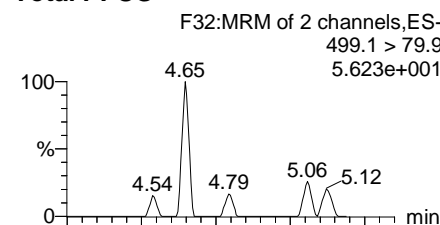
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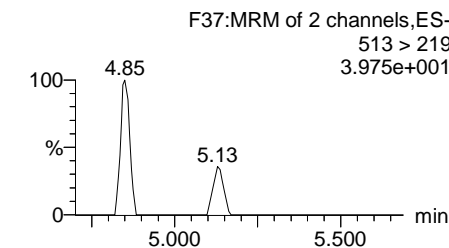
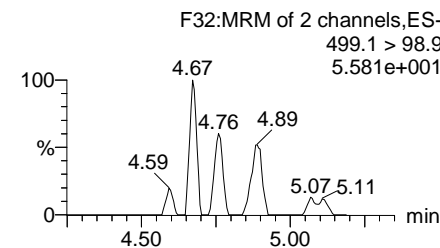
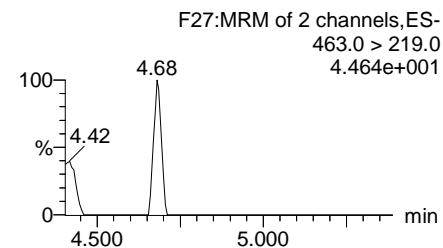
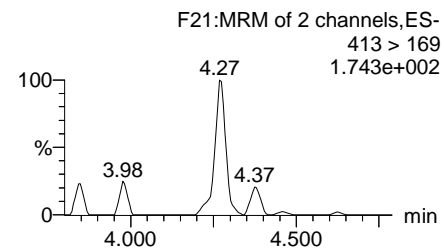
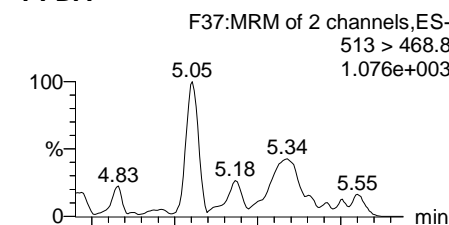
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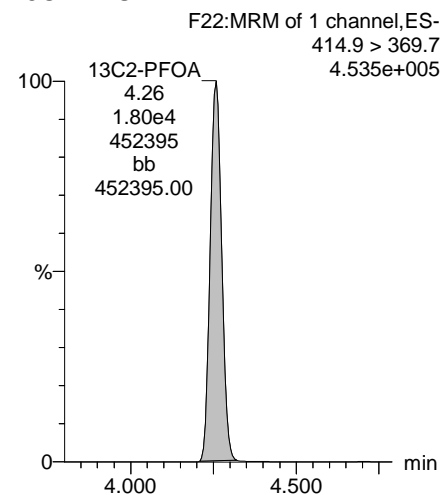
Total PFOS



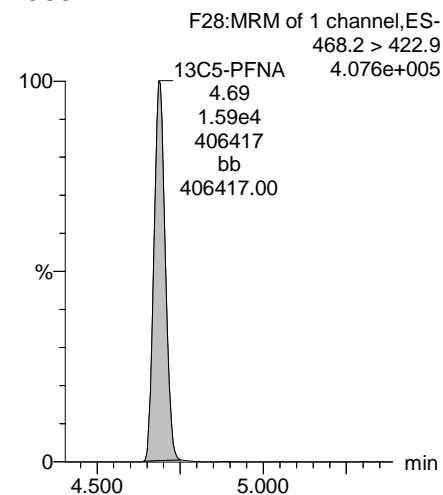
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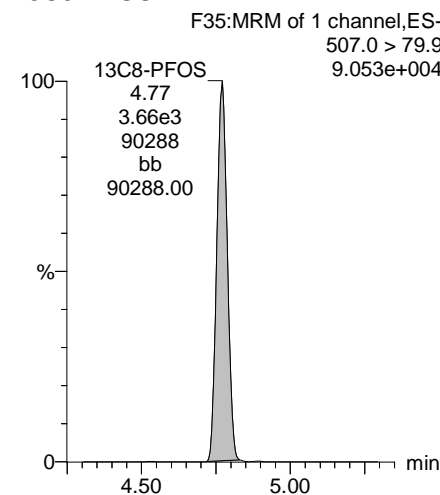
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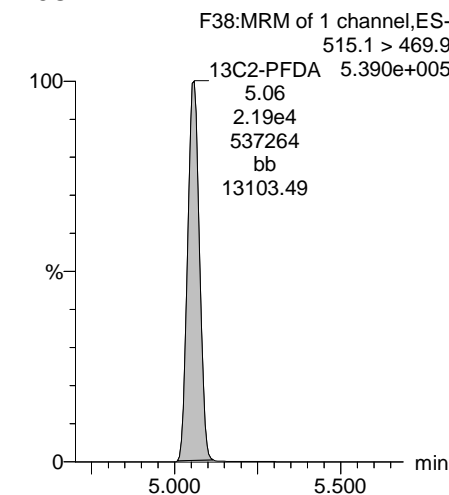
13C5-PFNA



13C8-PFOS



13C2-PFDA



MM 6/11/2018

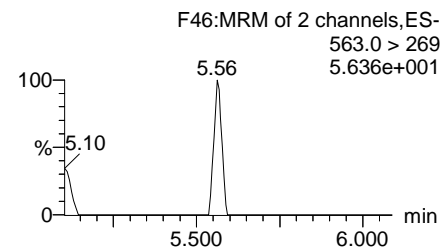
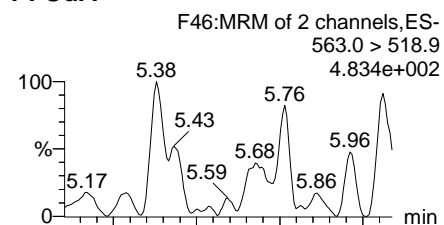
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Last Altered: Monday, June 11, 2018 11:10:23 Pacific Daylight Time

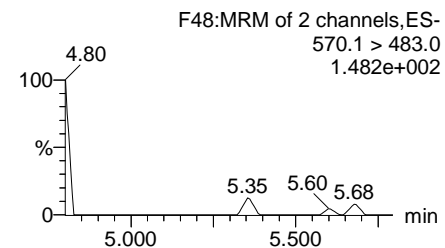
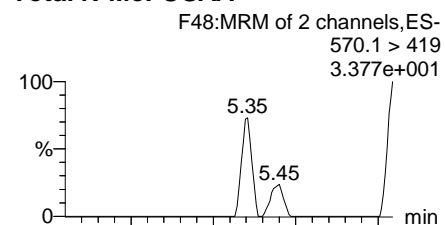
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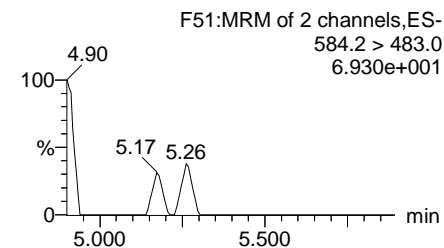
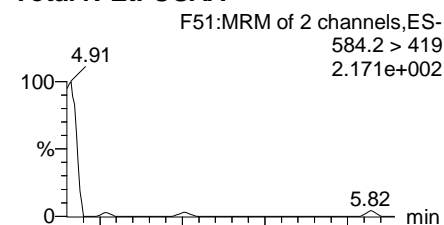
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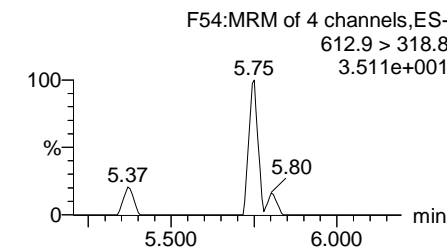
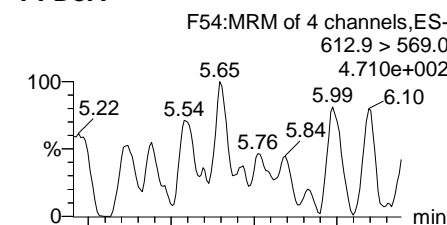
Total N-MeFOSAA



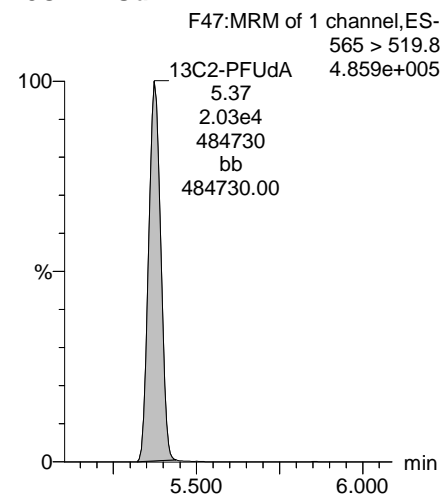
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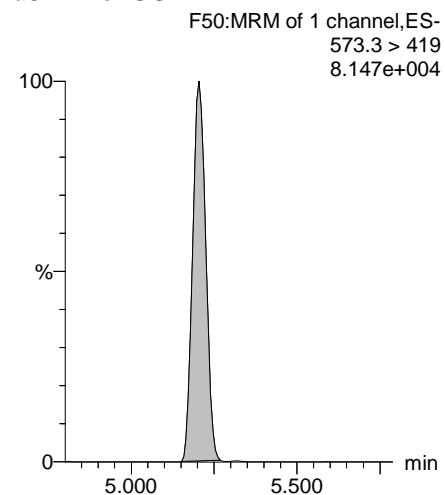
PFDaA



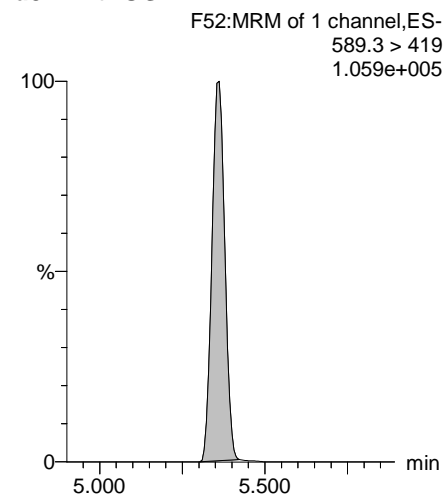
13C2-PFUdA



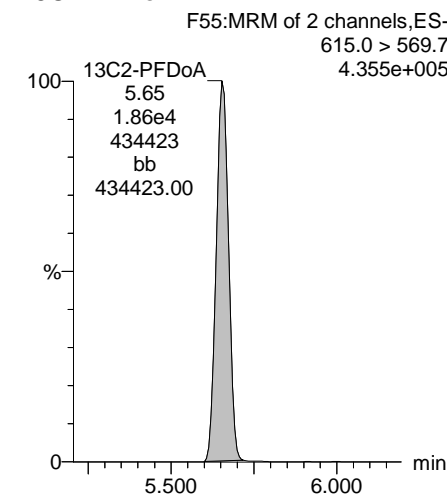
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDaA



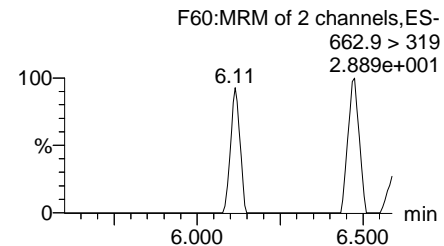
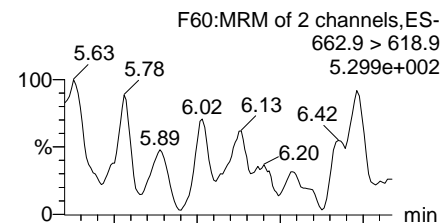
MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-37.qld

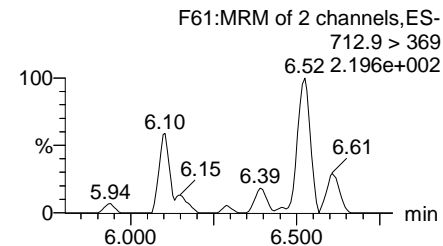
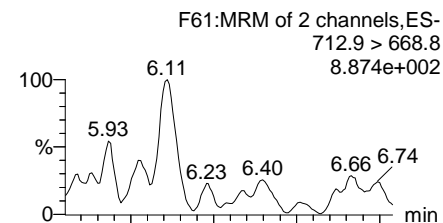
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Printed: Monday, June 11, 2018 11:12:51 Pacific Daylight Time

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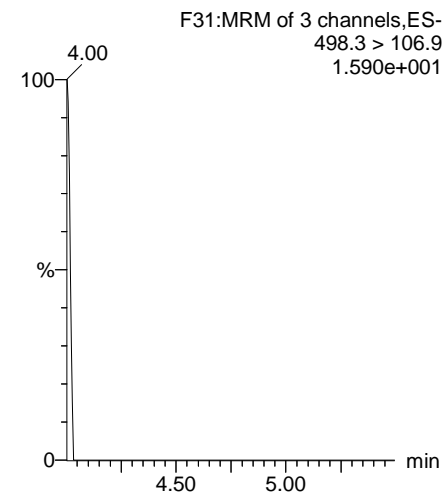
PFTrDA



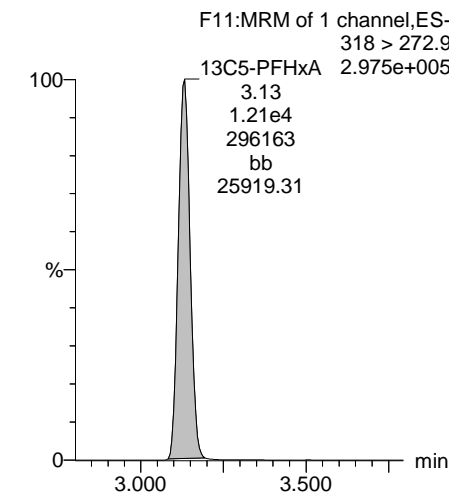
PFTeDA



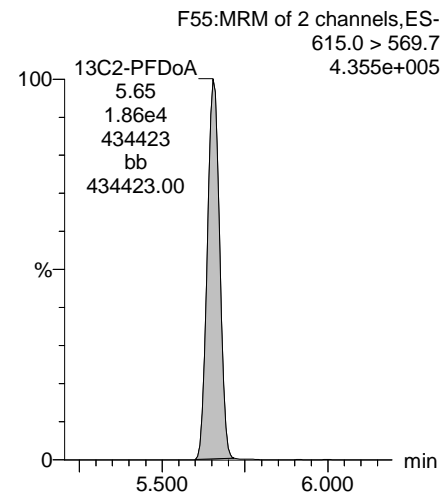
TCDA



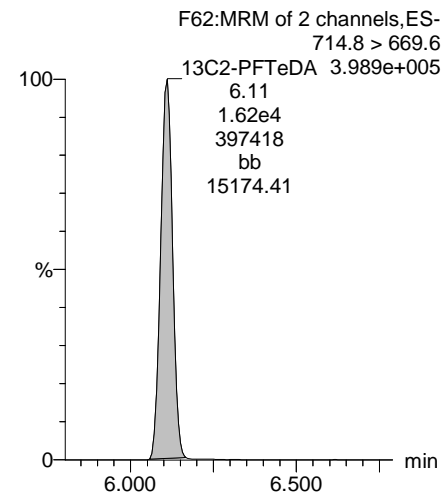
13C5-PFHxA



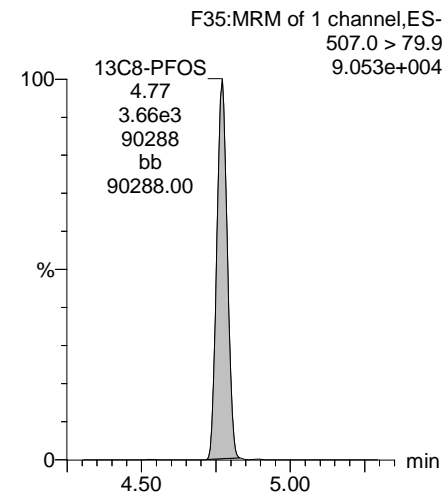
13C2-PFDoA



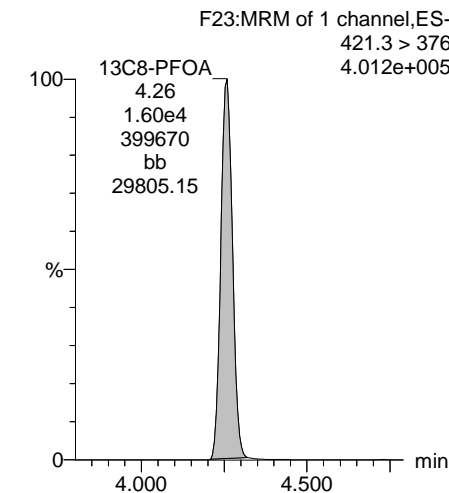
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-37.qld

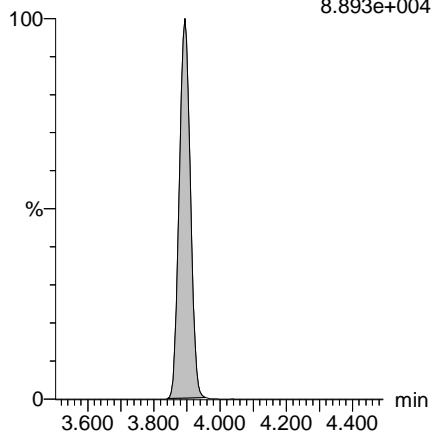
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Printed: Monday, June 11, 2018 11:12:51 Pacific Daylight Time

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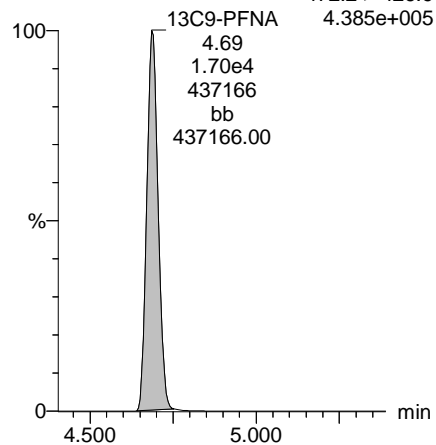
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.893e+004



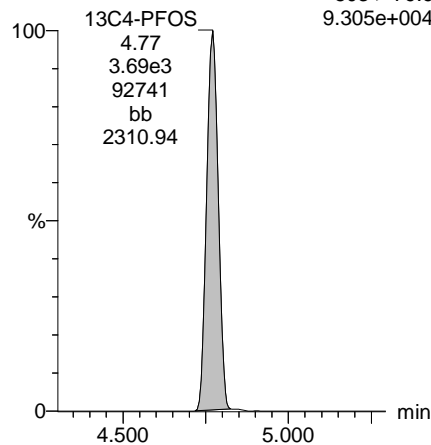
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
4.385e+005



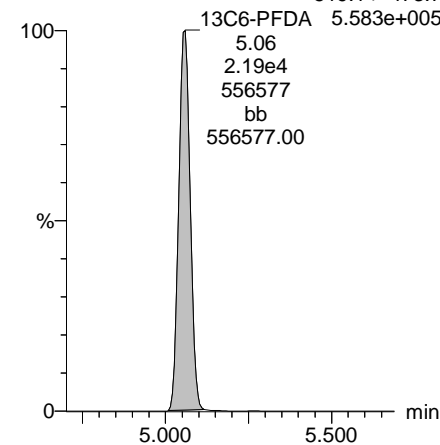
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
9.305e+004



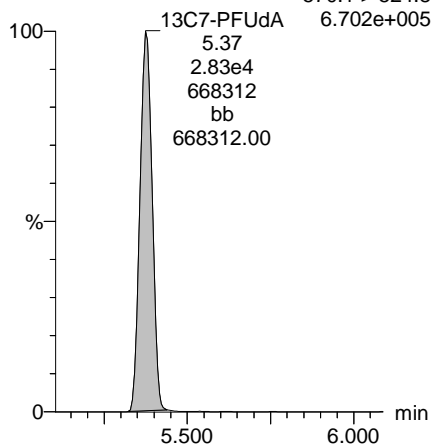
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.583e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.702e+005



Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

Last Altered: Monday, June 11, 2018 10:31:34 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:06:21 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7	2.62e3	1.58e3	0.500		2.64	2.64	20.7	21.2271	106.1	2.631	NO
2	5 PFHxA	313.2 > 268.9	1.35e4	3.87e3	0.500		3.13	3.13	17.4	22.7412	113.7	227.522	NO
3	7 PFHpA	363.0 > 318.9	1.03e4	1.02e4	0.500		3.74	3.74	12.5	21.6948	108.5	19.149	NO
4	8 L-PFHxS	398.9 > 79.6	2.15e3	1.37e3	0.500		3.89	3.89	19.6	20.4783	102.4	1.856	NO
5	11 L-PFOA	413 > 368.7	1.53e4	1.91e4	0.500		4.25	4.26	9.99	20.2168	101.1	4.746	NO
6	14 PFNA	463.0 > 418.8	1.70e4	1.66e4	0.500		4.68	4.68	12.8	18.9549	94.8	4.613	NO
7	16 L-PFOS	499.1 > 79.9	2.57e3	3.38e3	0.500		4.77	4.77	9.52	20.7570	103.8	1.897	NO
8	18 PFDA	513 > 468.8	1.75e4	2.01e4	0.500		5.06	5.06	10.9	21.4403	107.2	6.566	NO
9	21 L-MeFOSAA	570.1 > 419	5.35e3	3.66e3	0.500		5.22	5.21	18.3	18.1509	90.8	21.030	YES
10	23 L-EtFOSAA	584.2 > 419	4.05e3	4.68e3	0.500		5.37	5.36	10.8	18.1802	90.9	11.437	NO

MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

Last Altered: Monday, June 11, 2018 10:31:34 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:06:30 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25 PFUdA	563.0 > 518.9	1.55e4	1.76e4	0.500		5.39	5.38	11.0	23.9601	119.8	11.920	NO
2	27 PFD0A	612.9 > 569.0	1.80e4	1.72e4	0.500		5.67	5.65	13.1	18.6161	93.1	7.981	NO
3	29 PFTrDA	662.9 > 618.9	1.69e4	1.72e4	0.500		5.92	5.89	12.3	17.0754	85.4	38.373	YES
4	30 PFTeDA	712.9 > 668.8	1.64e4	1.58e4	0.500		6.14	6.11	12.9	23.6515	118.3	11.354	NO
5	38 13C3-PFBS	302. > 98.8	1.58e3	1.38e4	0.500	0.102	2.61	2.64	1.43	28.0337	112.1		
6	39 13C2-4:2 FTS	329.2>308.9	3.33e3	1.38e4	0.500	0.231	3.02	3.05	3.02	26.1003	104.4		
7	40 13C2-PFHxA	315 > 269.8	3.87e3	1.38e4	0.500	0.744	3.10	3.13	3.50	9.4151	94.2		
8	41 13C4-PFHpA	367.2 > 321.8	1.02e4	1.38e4	0.500	0.841	3.72	3.74	9.27	22.0322	88.1		
9	42 18O2-PFHxS	403.0 > 102.6	1.37e3	3.00e3	0.500	0.415	3.87	3.89	5.69	27.4540	109.8		
10	43 13C2-6:2 FTS	429.1 > 408.9	3.49e3	1.56e4	0.500	0.232	4.19	4.20	2.80	24.1888	96.8		
11	44 13C2-PFOA	414.9 > 369.7	1.91e4	1.56e4	0.500	1.256	4.25	4.26	15.3	24.4148	97.7		
12	45 13C5-PFNA	468.2 > 422.9	1.66e4	1.92e4	0.500	0.960	4.69	4.69	10.8	22.5353	90.1		
13	46 13C8-PFOSA	506.1 > 77.7	1.55e3	2.28e4	0.500	0.145	4.75	4.76	0.848	11.6903	46.8		
14	47 13C8-PFOS	507.0 > 79.9	3.38e3	3.37e3	0.500	1.047	4.77	4.77	12.5	23.9205	95.7		
15	48 13C2-PFDA	515.1 > 469.9	2.01e4	1.83e4	0.500	1.118	5.06	5.05	13.7	24.4698	97.9		
16	49 13C2-8:2 FTS	529.1 > 508.7	3.19e3	1.38e4	0.500	0.211	5.03	5.03	2.89	27.3976	109.6		
17	50 d3-N-MeFOSAA	573.3 > 419	3.66e3	2.28e4	0.500	0.182	5.21	5.20	2.01	21.9969	88.0		
18	51 d5-N-EtFOSAA	589.3 > 419	4.68e3	2.28e4	0.500	0.223	5.37	5.36	2.56	23.0432	92.2		
19	52 13C2-PFUdA	565 > 519.8	1.76e4	2.28e4	0.500	0.958	5.39	5.37	9.67	20.1811	80.7		
20	53 13C2-PFD0A	615.0 > 569.7	1.72e4	1.83e4	0.500	1.138	5.67	5.65	11.7	20.5468	82.2		
21	54 d3-N-MeFOSA	515.2 > 168.9	6.34e0	2.28e4	0.500	0.051	5.85	5.86	0.00348	0.1368	0.0		
22	55 13C2-PFTeDA	714.8 > 669.6	1.58e4	2.28e4	0.500	0.862	6.14	6.11	8.68	20.1347	80.5		
23	56 d5-N-ETFOSA	531.1 > 168.9		2.28e4	0.500	0.066	6.26						
24	57 13C2-PFHxDA	815 > 769.7	9.74e3	2.28e4	0.500	1.173	6.48	6.44	5.34	9.1077	91.1		
25	58 d7-N-MeFOSE	623.1 > 58.9		2.28e4	0.500	0.038	6.40						
26	59 d9-N-EtFOSE	639.2 > 58.8		2.28e4	0.500	0.035	6.54						
27	60 13C4-PFBA	217. > 171.8	9.03e3	9.03e3	0.500	1.000	1.33	1.40	12.5	25.0000	100.0		
28	61 13C5-PFHxA	318 > 272.9	1.38e4	1.38e4	0.500	1.000	3.10	3.13	12.5	25.0000	100.0		
29	62 13C3-PFHxS	401.9 > 79.9	3.00e3	3.00e3	0.500	1.000	3.87	3.89	12.5	25.0000	100.0		
30	63 13C8-PFOA	421.3 > 376	1.56e4	1.56e4	0.500	1.000	4.25	4.26	12.5	25.0000	100.0		
31	64 13C9-PFNA	472.2 > 426.9	1.92e4	1.92e4	0.500	1.000	4.69	4.69	12.5	25.0000	100.0		
32	65 13C4-PFOS	503 > 79.9	3.37e3	3.37e3	0.500	1.000	4.77	4.77	12.5	25.0000	100.0		MJT6/11/2018

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Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

Last Altered: Monday, June 11, 2018 10:31:34 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:06:30 Pacific Daylight Time

Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	66 13C6-PFDA	519.1 > 473.7	1.83e4	1.83e4	0.500	1.000	5.06	5.06	12.5	25.0000	100.0		
34	67 13C7-PFUdA	570.1 > 524.8	2.28e4	2.28e4	0.500	1.000	5.39	5.37	12.5	25.0000	100.0		
35	68 Total PFHxS	398.9 > 79.6	2.15e3	1.37e3	0.500		4.05		19.6	20.4783			
36	69 Total PFOA	413 > 368.7	1.53e4	1.91e4	0.500		4.30		9.99	20.2168			
37	70 Total PFOS	499.1 > 79.9	2.57e3	3.38e3	0.500		4.90		9.52	20.7570			
38	71 Total N-MeFOSAA	570.1 > 419	5.35e3	3.66e3	0.500		5.55		18.3	18.1509			
39	72 Total N-EtFOSAA	584.2 > 419	4.05e3	4.68e3	0.500		5.70		10.8	18.1802			

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Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

Last Altered: Monday, June 11, 2018 10:31:34 Pacific Daylight Time

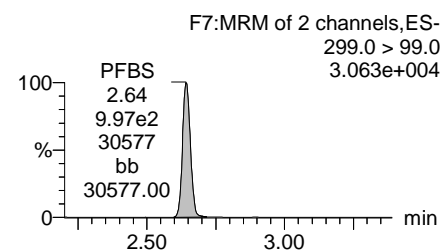
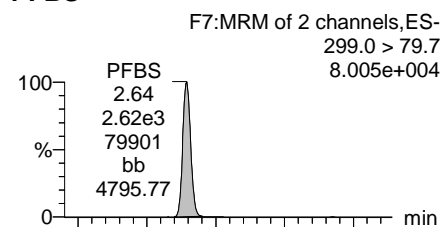
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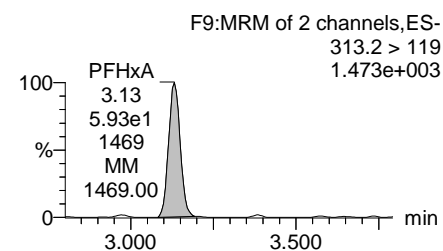
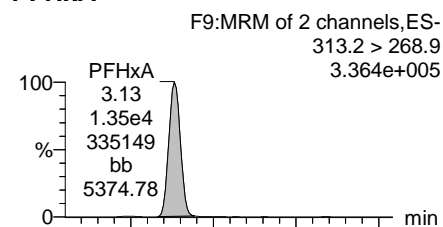
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Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

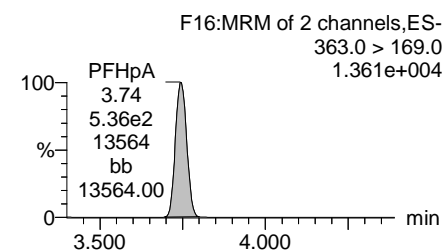
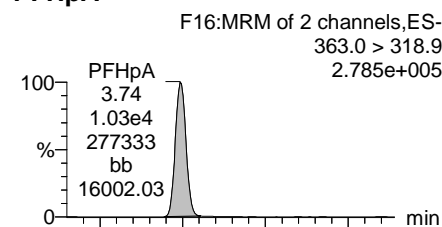
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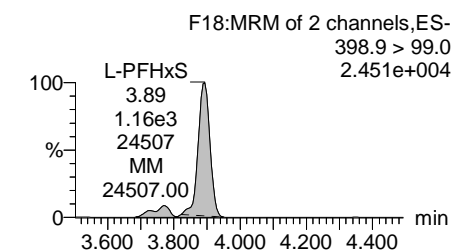
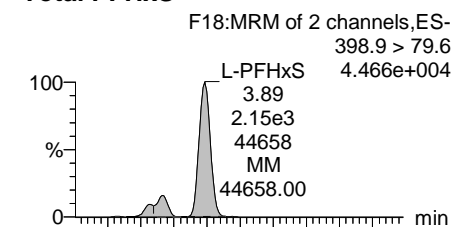
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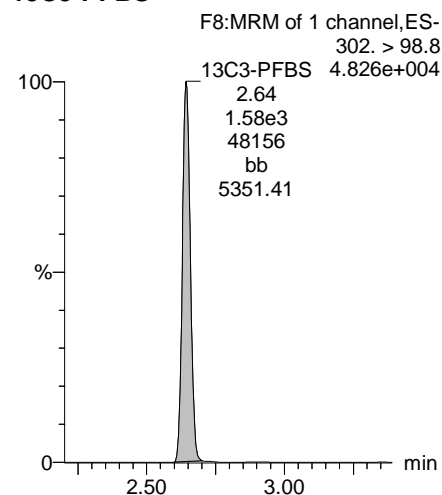
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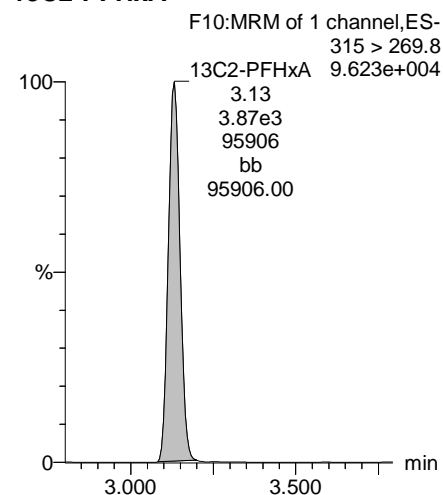
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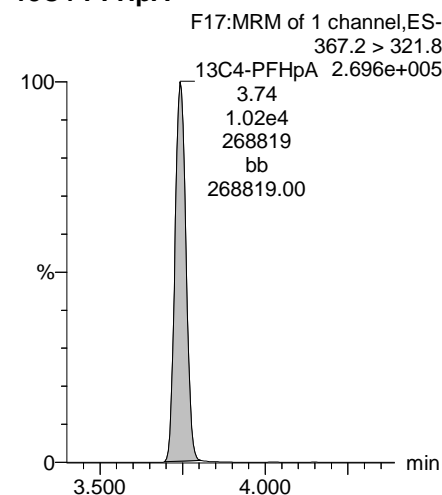
13C3-PFBS



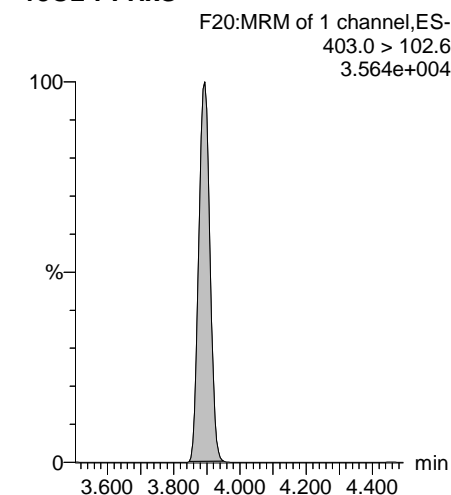
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



MJT6/11/2018

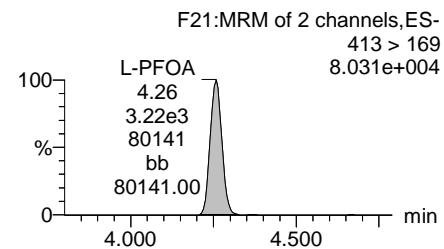
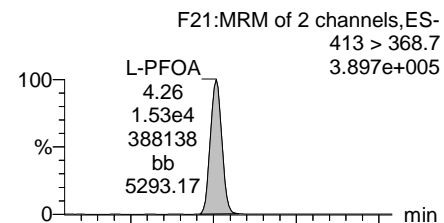
MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

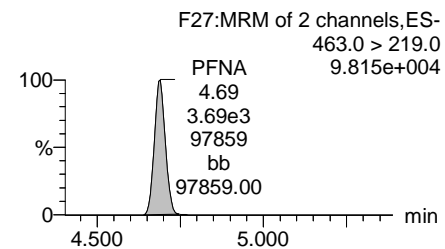
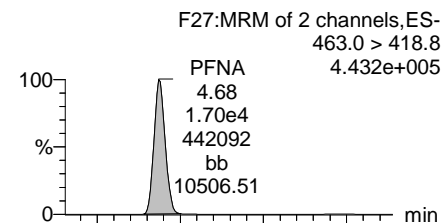
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Printed: Monday, June 11, 2018 11:06:30 Pacific Daylight Time

Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

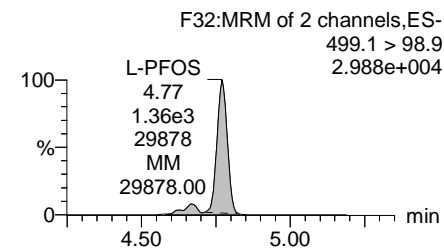
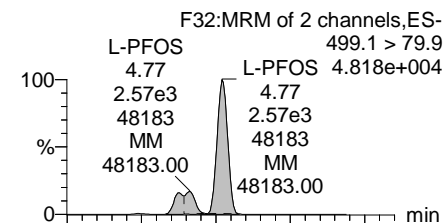
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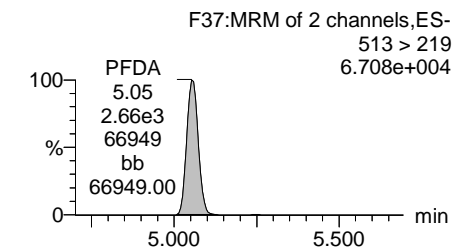
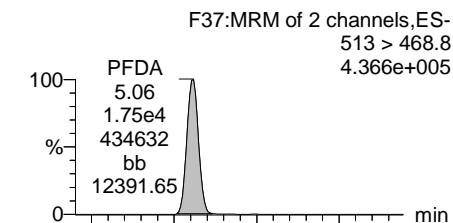
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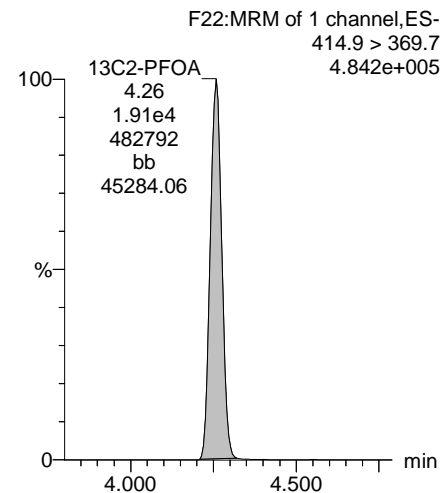
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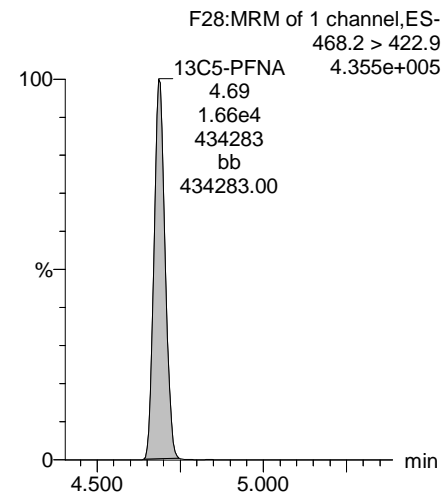
PFDA



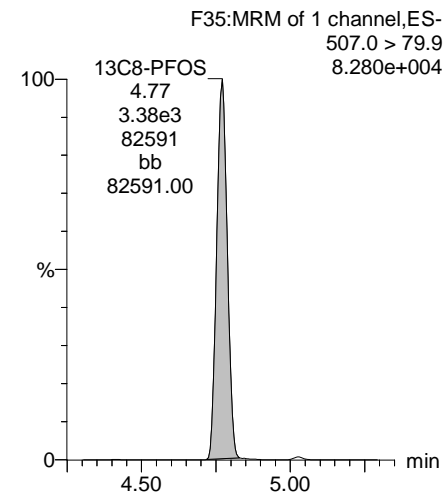
13C2-PFOA



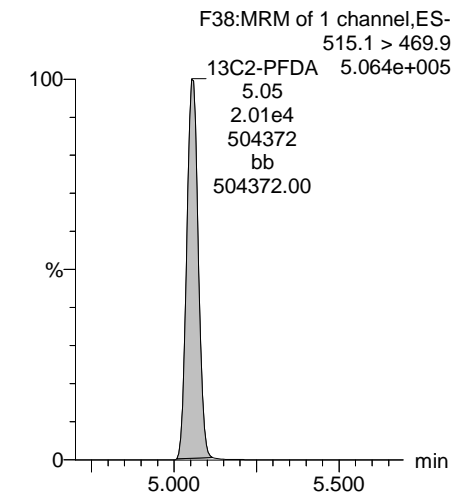
13C5-PFNA



13C8-PFOS



13C2-PFDA



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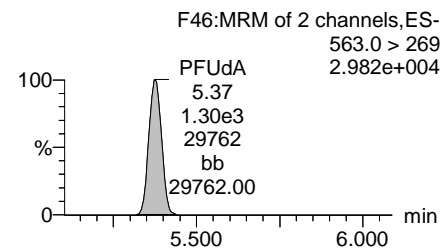
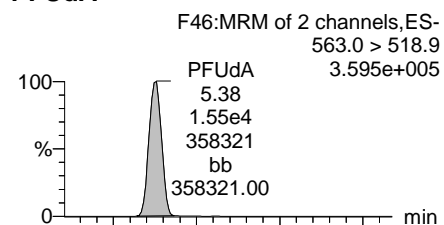
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Last Altered: Monday, June 11, 2018 10:31:34 Pacific Daylight Time

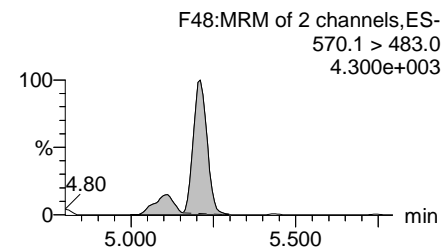
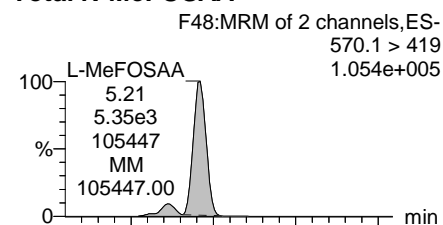
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Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

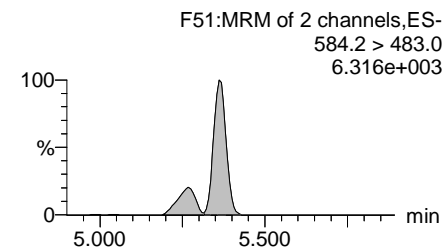
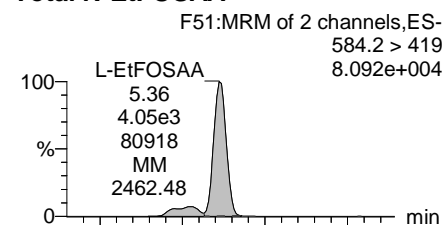
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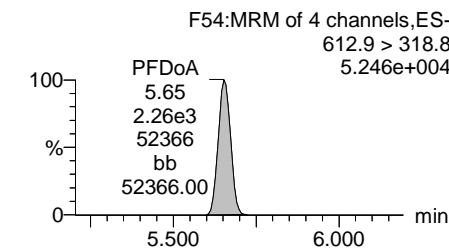
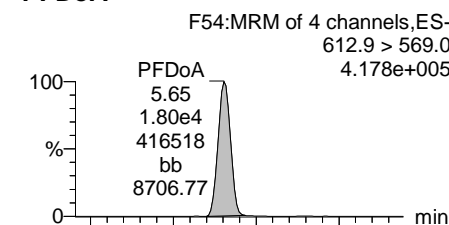
Total N-MeFOSAA



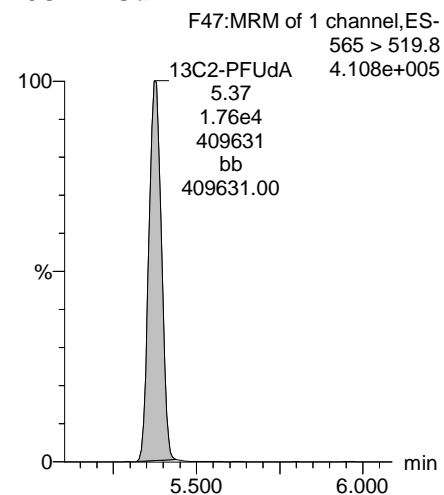
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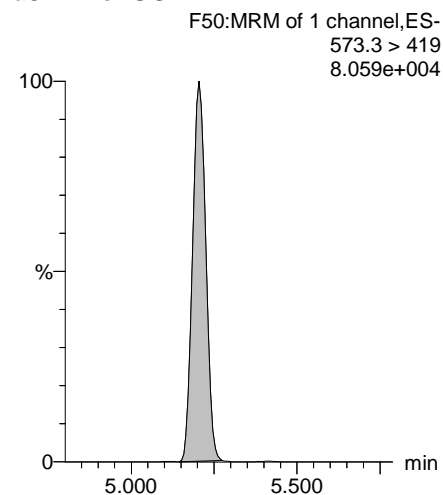
PFDoA



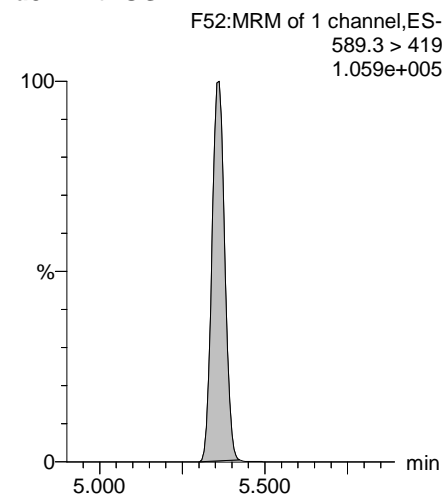
13C2-PFUdA



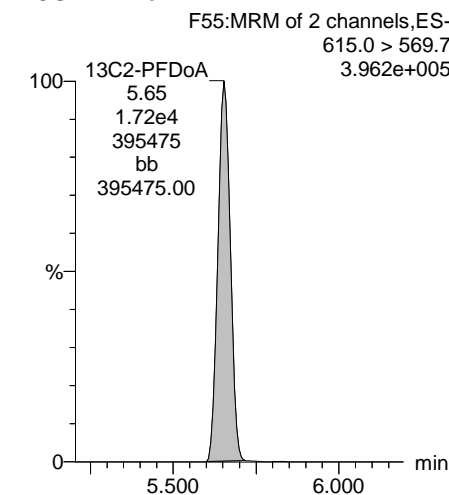
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



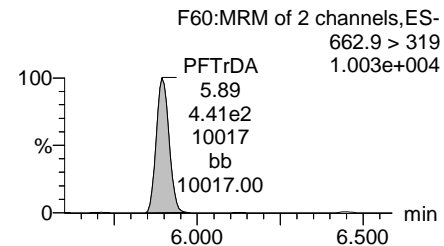
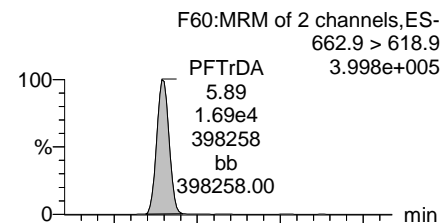
MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

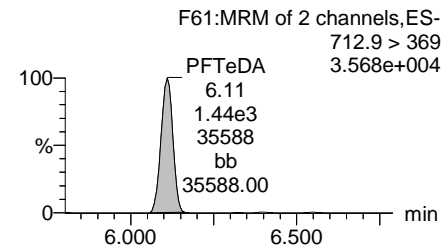
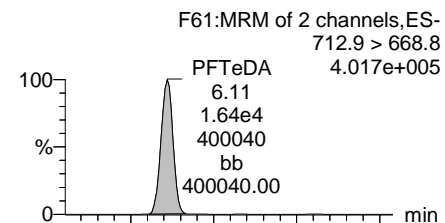
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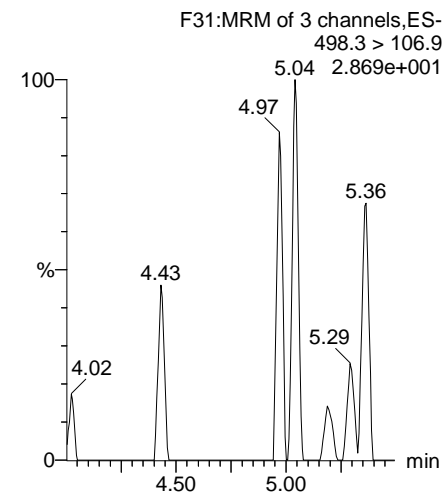
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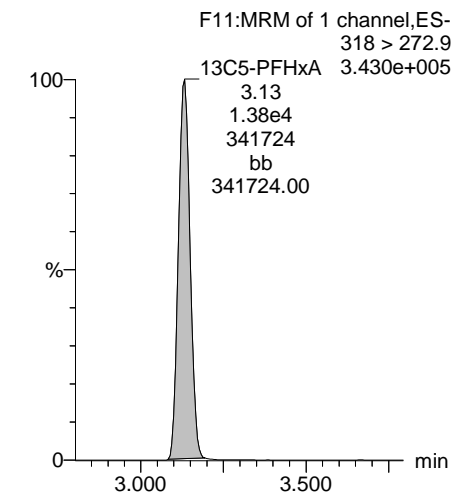
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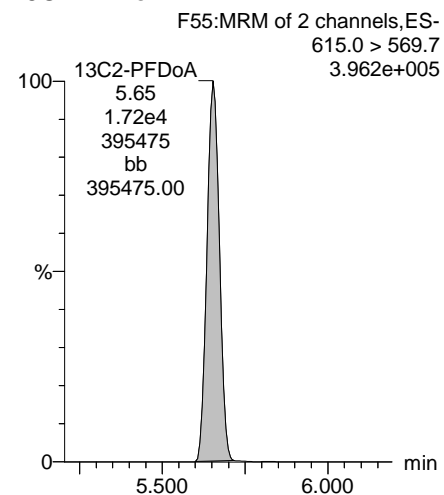
TCDA



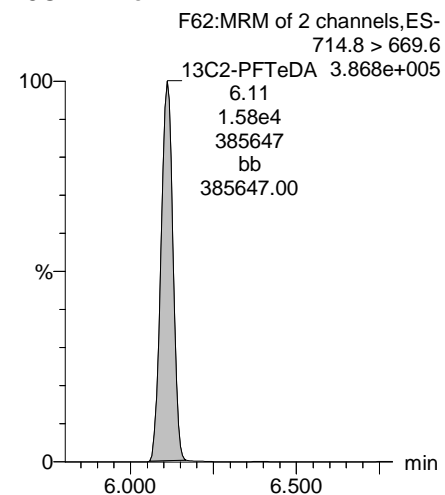
13C5-PFHxA



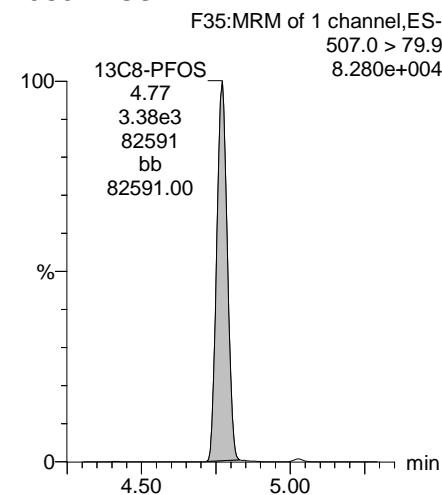
13C2-PFDoA



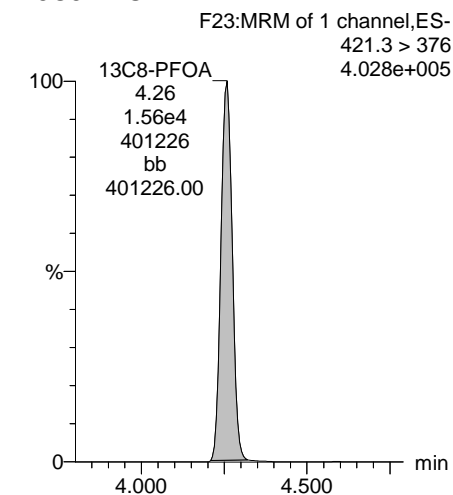
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-35 500ML.qld

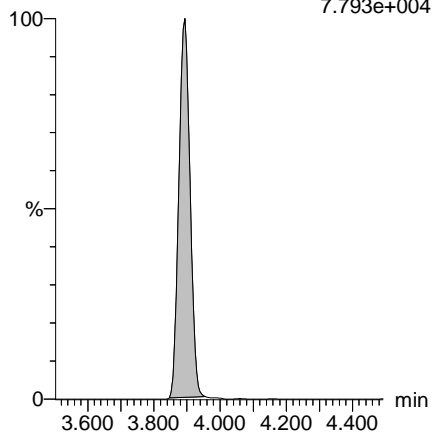
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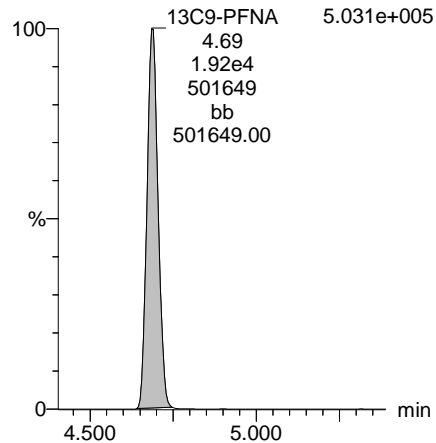
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
7.793e+004



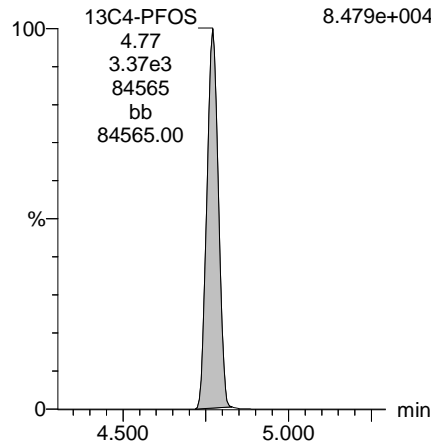
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.031e+005



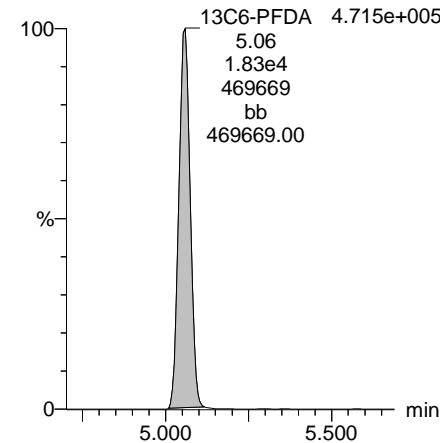
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.479e+004



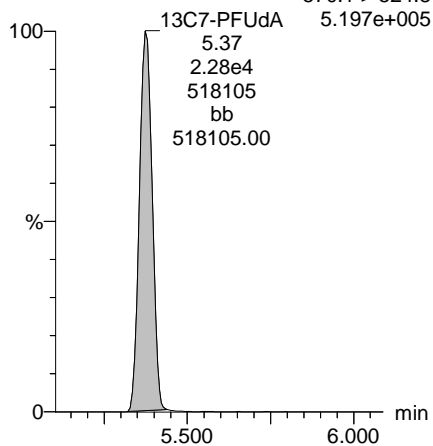
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
4.715e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
5.197e+005



Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

Printed: Monday, June 11, 2018 10:59:58 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7	2.76e3	1.69e3	0.500		2.64	2.64	20.5	20.9628	104.8	2.664	NO
2	5 PFHxA	313.2 > 268.9	1.09e4	3.24e3	0.500		3.13	3.13	16.7	21.8489	109.2	167.611	NO
3	7 PFHpA	363.0 > 318.9	9.90e3	9.69e3	0.500		3.74	3.74	12.8	22.1398	110.7	19.816	NO
4	8 L-PFHxS	398.9 > 79.6	2.19e3	1.38e3	0.500		3.89	3.89	19.8	20.6778	103.4	1.641	NO
5	11 L-PFOA	413 > 368.7	1.37e4	1.74e4	0.500		4.25	4.26	9.84	19.9074	99.5	4.297	NO
6	14 PFNA	463.0 > 418.8	1.69e4	1.65e4	0.500		4.68	4.69	12.8	19.0065	95.0	5.149	NO
7	16 L-PFOS	499.1 > 79.9	2.75e3	3.43e3	0.500		4.77	4.77	10.0	21.8000	109.0	1.940	NO
8	18 PFDA	513 > 468.8	1.71e4	1.93e4	0.500		5.06	5.06	11.1	21.8176	109.1	6.322	NO
9	21 L-MeFOSAA	570.1 > 419	5.63e3	3.66e3	0.500		5.22	5.21	19.2	19.1104	95.6	15.045	NO
10	23 L-EtFOSAA	584.2 > 419	4.13e3	4.44e3	0.500		5.37	5.36	11.6	19.5430	97.7	15.597	NO

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Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:00:10 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25 PFUdA	563.0 > 518.9	1.27e4	1.52e4	0.500		5.39	5.37	10.5	22.8269	114.1	9.790	NO
2	27 PFDaA	612.9 > 569.0	1.57e4	1.88e4	0.500		5.67	5.65	10.4	14.5679	72.8	9.693	NO
3	29 PFTTrDA	662.9 > 618.9	1.83e4	1.88e4	0.500		5.92	5.89	12.2	16.8553	84.3	24.242	NO
4	30 PFTeDA	712.9 > 668.8	1.78e4	1.61e4	0.500		6.14	6.11	13.8	25.3250	126.6	16.284	YES
5	38 13C3-PFBS	302. > 98.8	1.69e3	1.19e4	0.500	0.102	2.61	2.64	1.78	34.8484	139.4		
6	39 13C2-4:2 FTS	329.2>308.9	3.23e3	1.19e4	0.500	0.231	3.02	3.05	3.40	29.4449	117.8		
7	40 13C2-PFHxA	315 > 269.8	3.24e3	1.19e4	0.500	0.744	3.10	3.13	3.42	9.1899	91.9		
8	41 13C4-PFHpA	367.2 > 321.8	9.69e3	1.19e4	0.500	0.841	3.72	3.74	10.2	24.2870	97.1		
9	42 18O2-PFHxS	403.0 > 102.6	1.38e3	3.37e3	0.500	0.415	3.87	3.89	5.11	24.6313	98.5		
10	43 13C2-6:2 FTS	429.1 > 408.9	3.33e3	1.49e4	0.500	0.232	4.19	4.20	2.78	24.0173	96.1		
11	44 13C2-PFOA	414.9 > 369.7	1.74e4	1.49e4	0.500	1.256	4.25	4.26	14.6	23.1869	92.7		
12	45 13C5-PFNA	468.2 > 422.9	1.65e4	1.99e4	0.500	0.960	4.69	4.69	10.4	21.5915	86.4		
13	46 13C8-PFOSA	506.1 > 77.7	1.23e3	2.79e4	0.500	0.145	4.75	4.76	0.549	7.5666	30.3		
14	47 13C8-PFOS	507.0 > 79.9	3.43e3	3.59e3	0.500	1.047	4.77	4.77	12.0	22.8392	91.4		
15	48 13C2-PFDA	515.1 > 469.9	1.93e4	1.89e4	0.500	1.118	5.06	5.05	12.8	22.8055	91.2		
16	49 13C2-8:2 FTS	529.1 > 508.7	3.24e3	1.19e4	0.500	0.211	5.03	5.03	3.42	32.4138	129.7		
17	50 d3-N-MeFOSAA	573.3 > 419	3.66e3	2.79e4	0.500	0.182	5.21	5.20	1.64	17.9632	71.9		
18	51 d5-N-EtFOSAA	589.3 > 419	4.44e3	2.79e4	0.500	0.223	5.37	5.36	1.99	17.8485	71.4		
19	52 13C2-PFUdA	565 > 519.8	1.52e4	2.79e4	0.500	0.958	5.39	5.37	6.80	14.2017	56.8		
20	53 13C2-PFDoA	615.0 > 569.7	1.88e4	1.89e4	0.500	1.138	5.67	5.65	12.4	21.8355	87.3		
21	54 d3-N-MeFOSA	515.2 > 168.9		2.79e4	0.500	0.051	5.85						
22	55 13C2-PFTeDA	714.8 > 669.6	1.61e4	2.79e4	0.500	0.862	6.14	6.11	7.20	16.7156	66.9		
23	56 d5-N-ETFOSA	531.1 > 168.9		2.79e4	0.500	0.066	6.26						
24	57 13C2-PFHxDA	815 > 769.7	1.03e4	2.79e4	0.500	1.173	6.48	6.44	4.63	7.9047	79.0		
25	58 d7-N-MeFOSE	623.1 > 58.9		2.79e4	0.500	0.038	6.40						
26	59 d9-N-EtFOSE	639.2 > 58.8		2.79e4	0.500	0.035	6.54						
27	60 13C4-PFBA	217. > 171.8	6.12e3	6.12e3	0.500	1.000	1.33	1.40	12.5	25.0000	100.0		
28	61 13C5-PFHxA	318 > 272.9	1.19e4	1.19e4	0.500	1.000	3.10	3.13	12.5	25.0000	100.0		
29	62 13C3-PFHxS	401.9 > 79.9	3.37e3	3.37e3	0.500	1.000	3.87	3.89	12.5	25.0000	100.0		
30	63 13C8-PFOA	421.3 > 376	1.49e4	1.49e4	0.500	1.000	4.25	4.26	12.5	25.0000	100.0		
31	64 13C9-PFNA	472.2 > 426.9	1.99e4	1.99e4	0.500	1.000	4.69	4.69	12.5	25.0000	100.0		
32	65 13C4-PFOS	503 > 79.9	3.59e3	3.59e3	0.500	1.000	4.77	4.77	12.5	25.0000	100.0		MJT6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:00:10 Pacific Daylight Time

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	66 13C6-PFDA	519.1 > 473.7	1.89e4	1.89e4	0.500	1.000	5.06	5.05	12.5	25.0000	100.0		
34	67 13C7-PFUdA	570.1 > 524.8	2.79e4	2.79e4	0.500	1.000	5.39	5.37	12.5	25.0000	100.0		
35	68 Total PFHxS	398.9 > 79.6	2.19e3	1.38e3	0.500		4.05		19.8	20.6778			
36	69 Total PFOA	413 > 368.7	1.37e4	1.74e4	0.500		4.30		9.84	19.9074			
37	70 Total PFOS	499.1 > 79.9	2.75e3	3.43e3	0.500		4.90		10.0	21.8000			
38	71 Total N-MeFOSAA	570.1 > 419	5.63e3	3.66e3	0.500		5.55		19.2	19.1104			
39	72 Total N-EtFOSAA	584.2 > 419	4.13e3	4.44e3	0.500		5.70		11.6	19.5430			

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Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

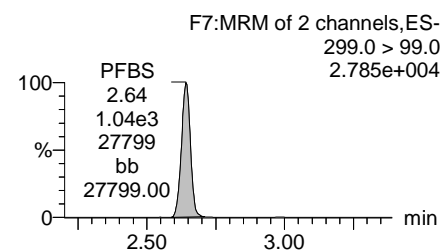
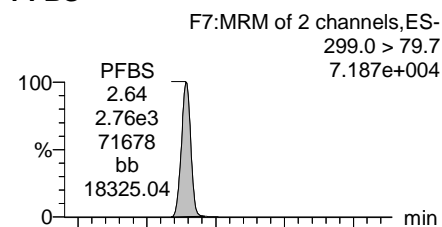
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Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

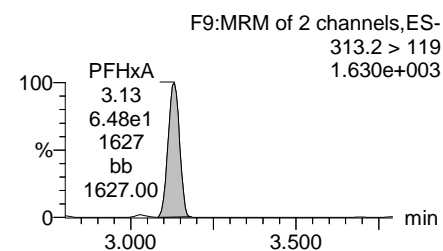
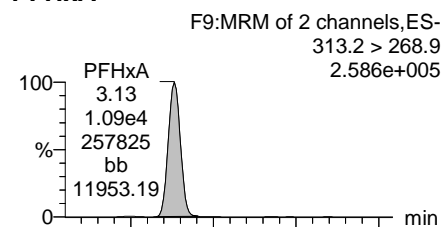
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

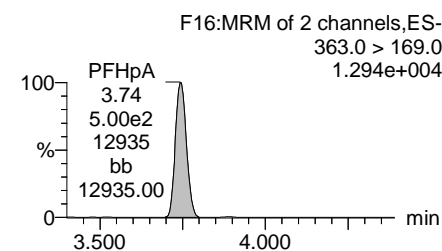
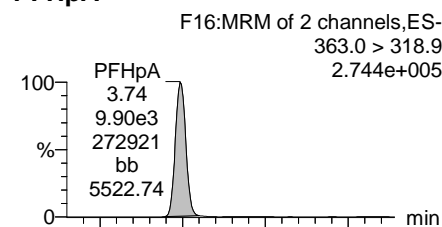
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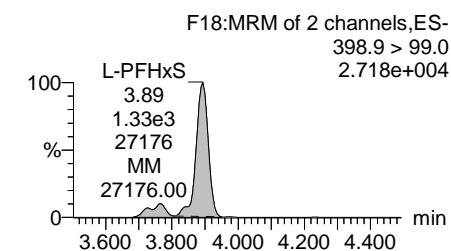
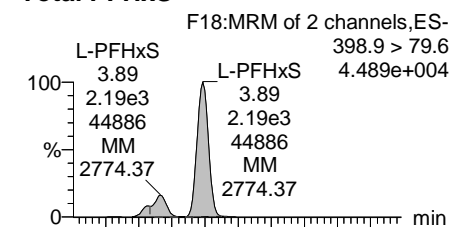
PFHxA



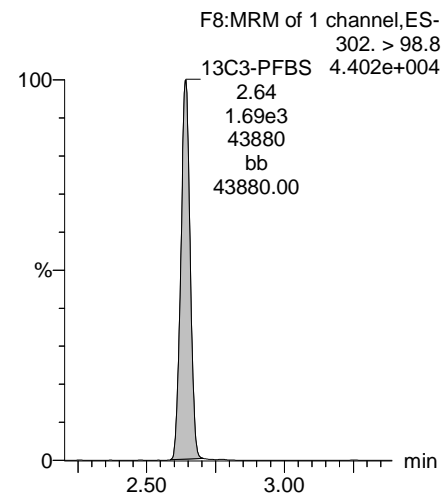
PFHpA



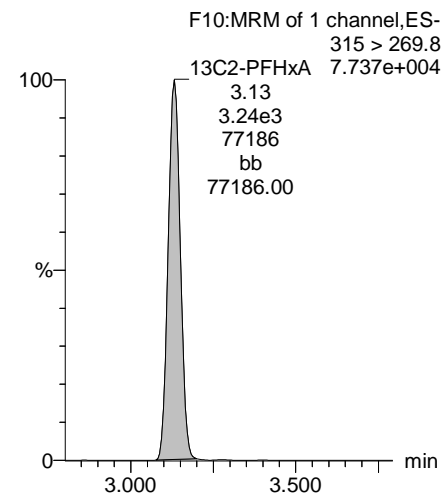
Total PFHxS



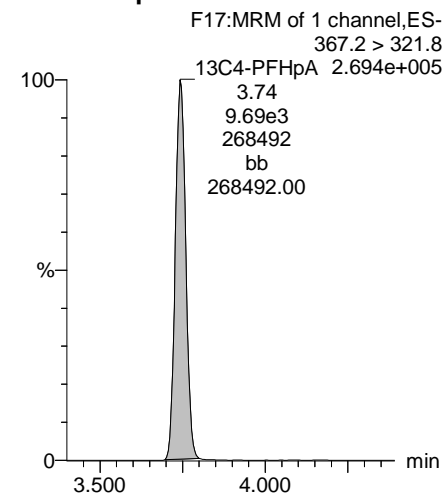
13C3-PFBS



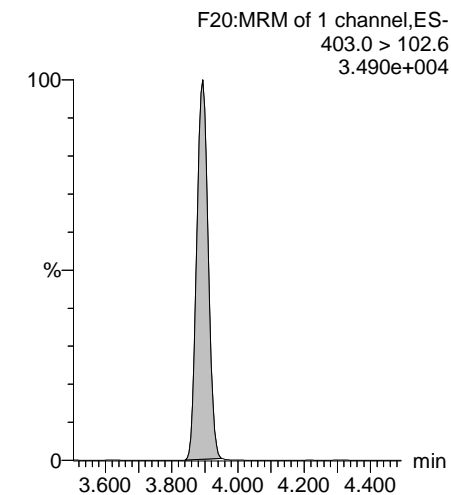
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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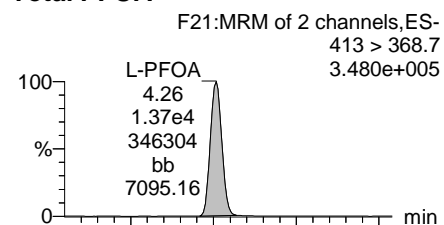
Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

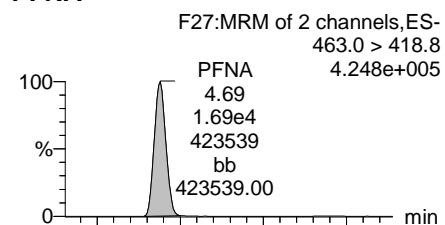
Printed: Monday, June 11, 2018 11:00:10 Pacific Daylight Time

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

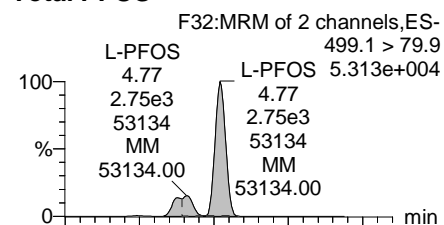
Total PFOA



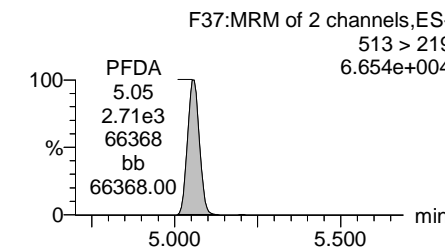
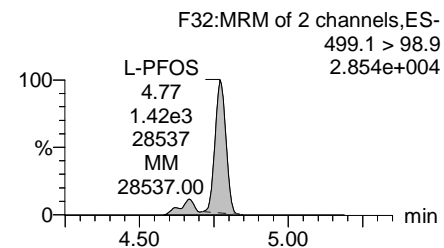
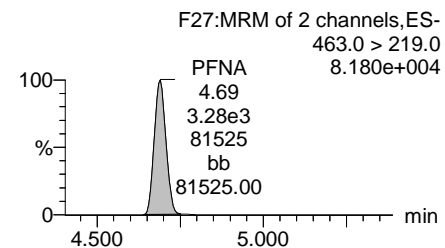
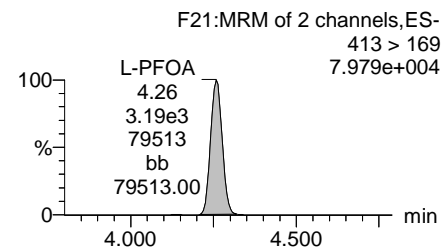
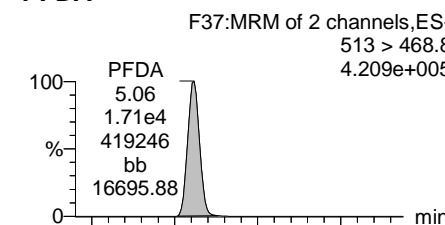
PFNA



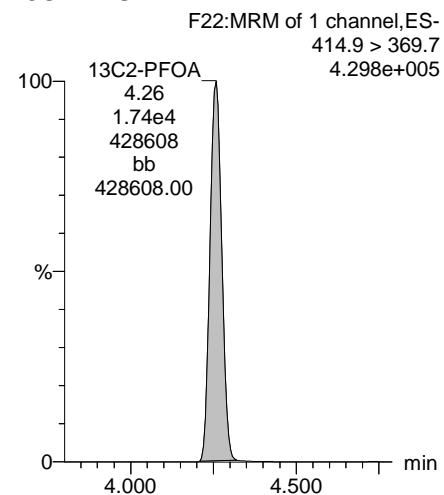
Total PFOS



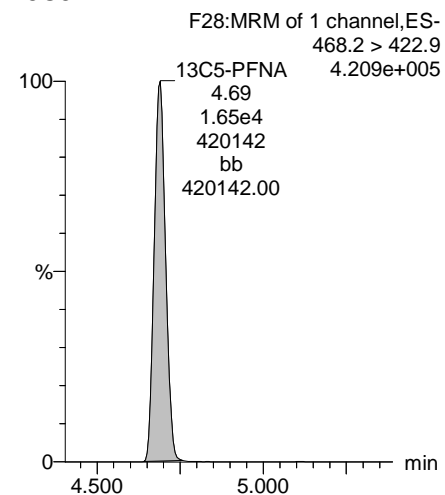
PFDA



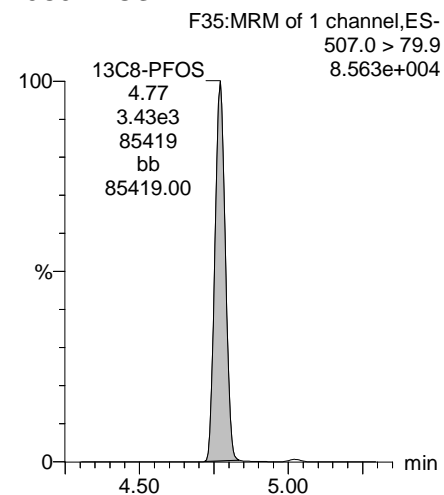
13C2-PFOA



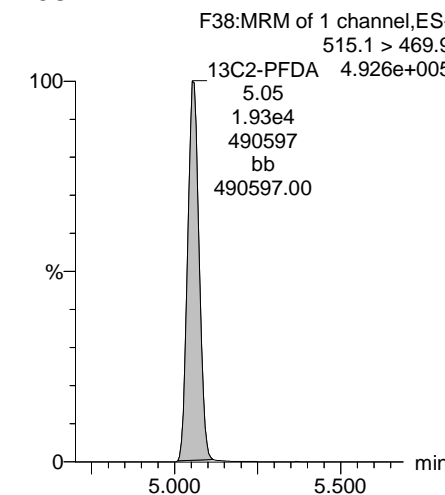
13C5-PFNA



13C8-PFOS



13C2-PFDA



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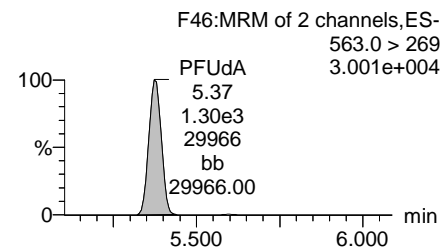
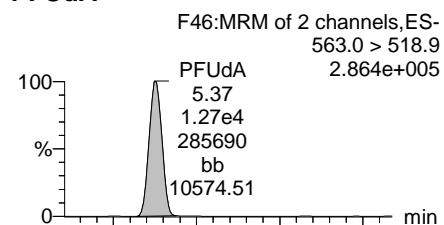
Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

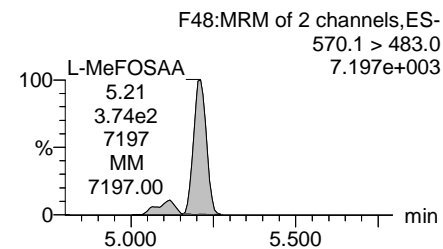
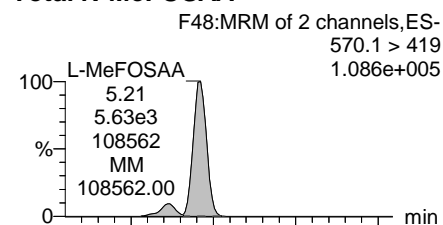
Printed: Monday, June 11, 2018 11:00:10 Pacific Daylight Time

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

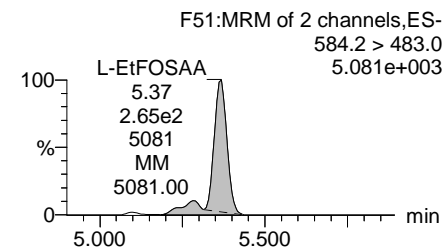
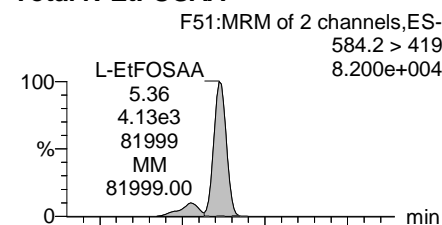
PFUdA



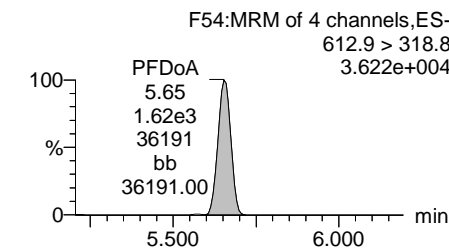
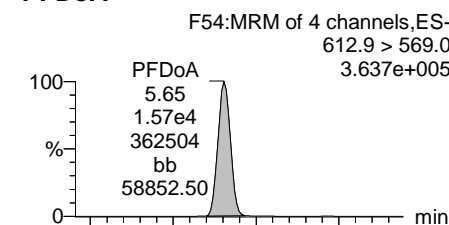
Total N-MeFOSAA



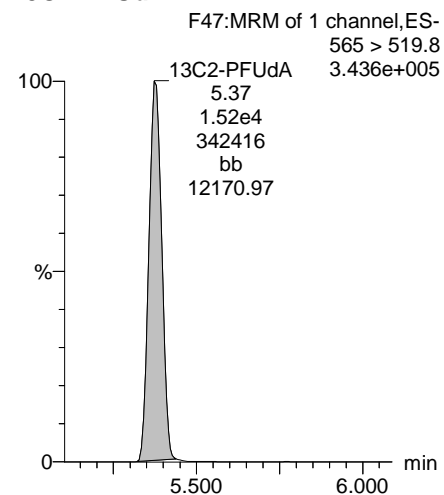
Total N-EtFOSAA



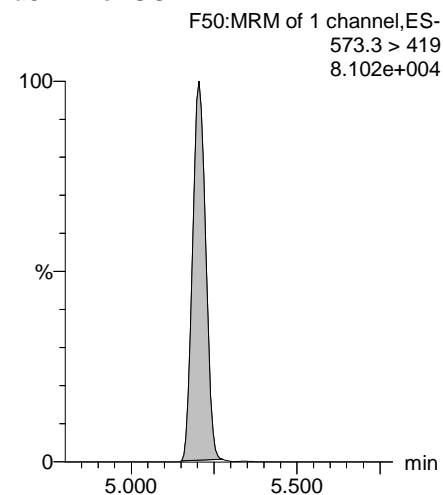
PFDaA



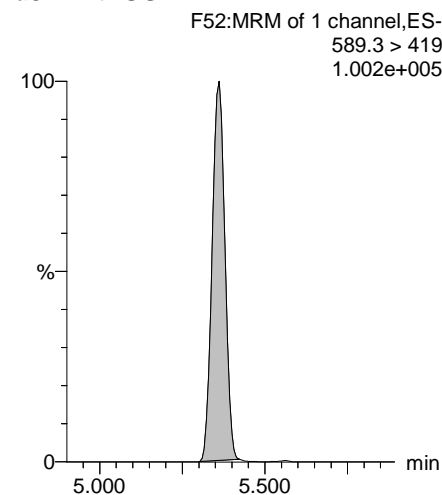
13C2-PFUdA



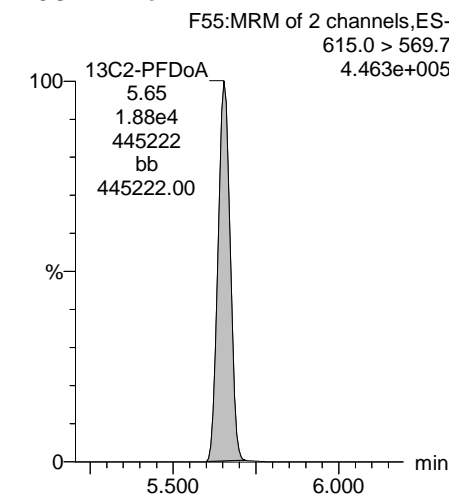
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDaA



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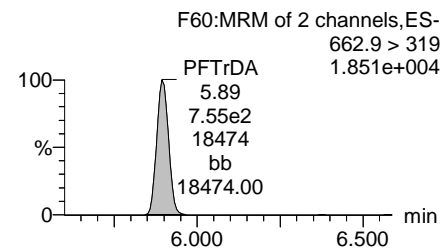
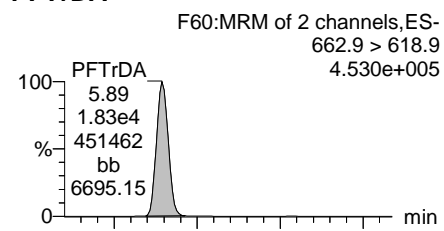
Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

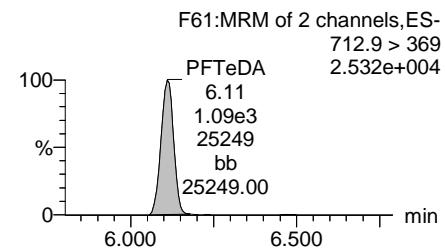
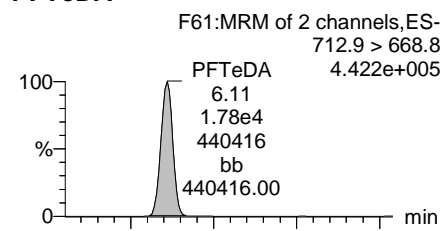
Printed: Monday, June 11, 2018 11:00:10 Pacific Daylight Time

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

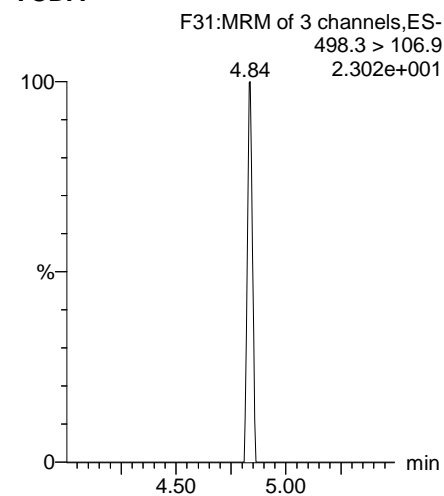
PFTTrDA



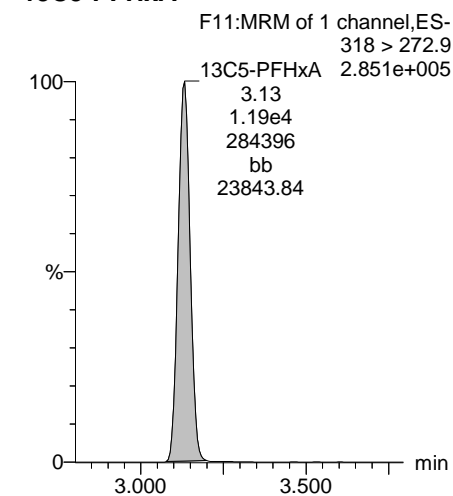
PFTeDA



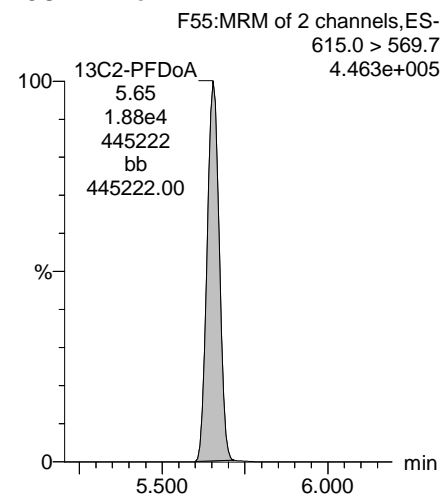
TCDA



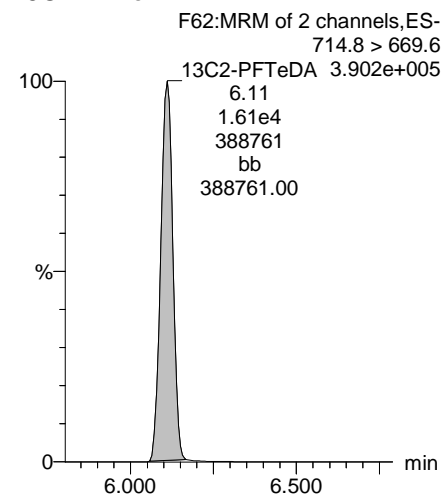
13C5-PFHxA



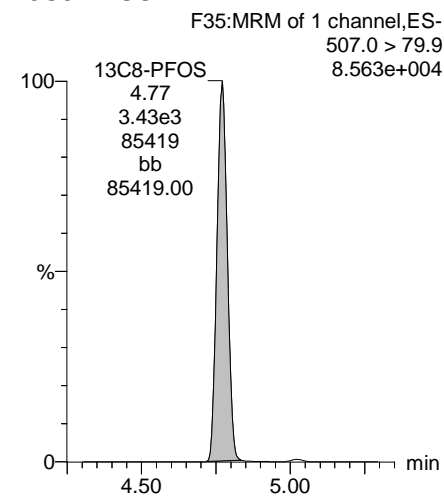
13C2-PFDoA



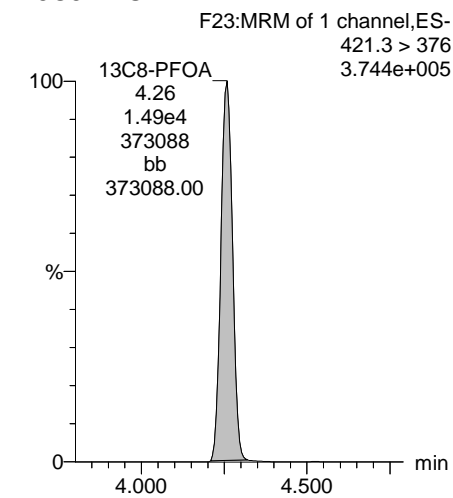
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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Dataset: Z:\Projects\PFAS.PRO\Results\180603M2\180603M2-36.qld

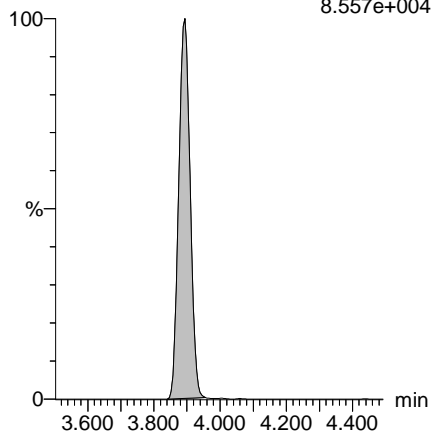
Last Altered: Monday, June 11, 2018 10:40:16 Pacific Daylight Time

Printed: Monday, June 11, 2018 11:00:10 Pacific Daylight Time

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

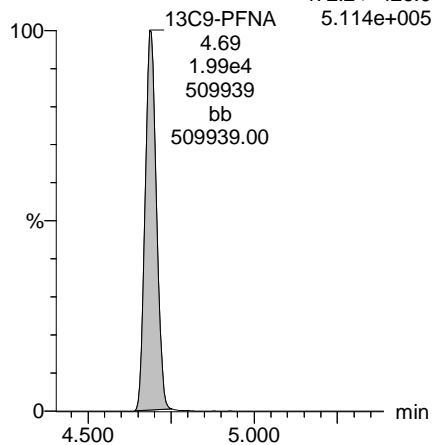
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.557e+004



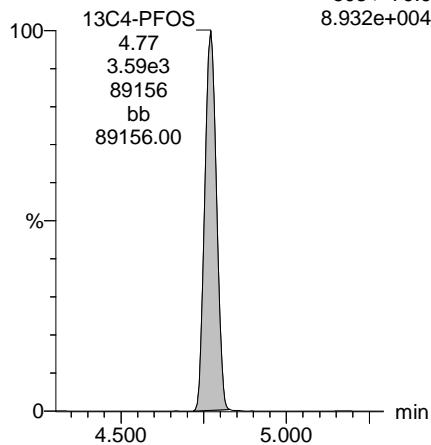
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.114e+005



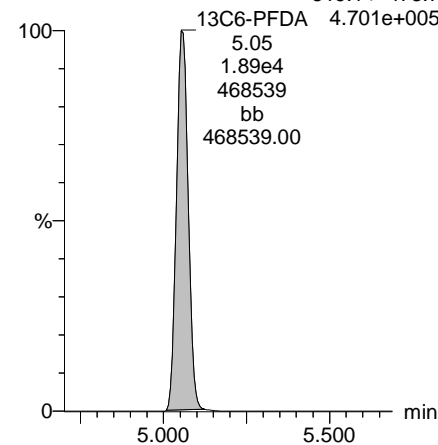
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.932e+004



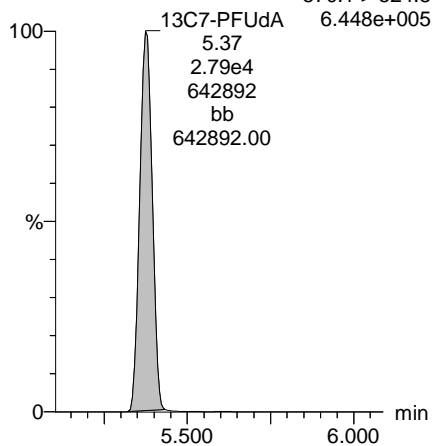
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
4.701e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.448e+005



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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

Printed: Monday, June 11, 2018 08:14:17 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7	2.58e3	1.69e3	0.117		2.60	2.60	19.1	81.9436		2.752	NO
2	5 PFHxA	313.2 > 268.9	2.25e4	2.57e3	0.117		3.09	3.09	43.8	235.5431		230.676	NO
3	7 PFHpA	363.0 > 318.9	2.07e3	7.42e3	0.117		3.70	3.70	3.49	25.1861		31.078	YES
4	8 L-PFHxS	398.9 > 79.6	3.43e3	1.55e3	0.117		3.86	3.86	27.6	122.6042		2.039	NO
5	11 L-PFOA	413 > 368.7	2.83e3	1.35e4	0.117		4.25	4.22	2.62	24.2182		4.097	NO
6	14 PFNA	463.0 > 418.8	2.63e1	1.04e4	0.117		4.66	4.66	0.0316			5.164	NO
7	16 L-PFOS	499.1 > 79.9	3.92e2	3.70e3	0.117		4.74	4.74	1.33	12.6920		2.668	YES
8	18 PFDA	513 > 468.8		1.48e4	0.117		5.03						
9	21 L-MeFOSAA	570.1 > 419		3.34e3	0.117		5.18						
10	23 L-EtFOSAA	584.2 > 419		4.62e3	0.117		5.37						

MM 6/11/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

Printed: Monday, June 11, 2018 08:16:00 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7	2.58e3	1.69e3	0.117		2.60	2.60	19.1	81.9436		2.752	NO
2	5 PFHxA	313.2 > 268.9	2.25e4	2.57e3	0.117		3.09	3.09	43.8	235.5431		230.676	NO
3	7 PFHpA	363.0 > 318.9	2.07e3	7.42e3	0.117		3.70	3.70	3.49	25.1861		31.078	YES
4	8 L-PFHxS	398.9 > 79.6	3.43e3	1.55e3	0.117		3.86	3.86	27.6	122.6042		2.039	NO
5	11 L-PFOA	413 > 368.7	2.83e3	1.35e4	0.117		4.25	4.22	2.62	24.2182		4.097	NO
6	14 PFNA	463.0 > 418.8	2.63e1	1.04e4	0.117		4.66	4.66	0.0316			5.164	NO
7	16 L-PFOS	499.1 > 79.9	3.92e2	3.70e3	0.117		4.74	4.74	1.33	12.6920		2.668	YES
8	18 PFDA	513 > 468.8		1.48e4	0.117		5.03						
9	21 L-MeFOSAA	570.1 > 419		3.34e3	0.117		5.18						
10	23 L-EtFOSAA	584.2 > 419		4.62e3	0.117		5.37						

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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

Printed: Monday, June 11, 2018 08:17:45 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25 PFUdA	563.0 > 518.9		1.22e4	0.117		5.35						
2	27 PFDaA	612.9 > 569.0	4.60e1	1.06e4	0.117		5.63	5.63	0.0540			11.283	YES
3	29 PFTTrDA	662.9 > 618.9		1.06e4	0.117		5.88						
4	30 PFTeDA	712.9 > 668.8		1.33e4	0.117		6.10						
5	38 13C3-PFBS	302. > 98.8	1.69e3	9.37e3	0.117	0.104	2.60	2.60	2.25	185.2915	173.5		
6	39 13C2-4:2 FTS	329.2>308.9	3.61e3	9.37e3	0.117	0.248	3.01	3.01	4.81	166.0393	155.5		
7	40 13C2-PFHxA	315 > 269.8	2.57e3	9.37e3	0.117	0.729	3.09	3.09	3.43	40.2121	94.1		
8	41 13C4-PFHpA	367.2 > 321.8	7.42e3	9.37e3	0.117	0.836	3.71	3.70	9.90	101.0922	94.7		
9	42 18O2-PFHxS	403.0 > 102.6	1.55e3	3.54e3	0.117	0.443	3.86	3.86	5.49	105.9930	99.3		
10	43 13C2-6:2 FTS	429.1 > 408.9	4.06e3	1.12e4	0.117	0.249	4.17	4.17	4.52	155.0597	145.2		
11	44 13C2-PFOA	414.9 > 369.7	1.35e4	1.12e4	0.117	1.332	4.23	4.22	15.0	96.4124	90.3		
12	45 13C5-PFNA	468.2 > 422.9	1.04e4	1.40e4	0.117	0.951	4.66	4.66	9.32	83.7644	78.4		
13	46 13C8-PFOA	506.1 > 77.7	2.00e3	2.23e4	0.117	0.140	4.73	4.72	1.12	68.7252	64.4		
14	47 13C8-PFOS	507.0 > 79.9	3.70e3	3.54e3	0.117	1.060	4.74	4.74	13.0	105.0766	98.4		
15	48 13C2-PFDA	515.1 > 469.9	1.48e4	1.46e4	0.117	1.130	5.03	5.03	12.7	95.9986	89.9		
16	49 13C2-8:2 FTS	529.1 > 508.7	2.71e3	9.37e3	0.117	0.217	5.00	5.00	3.61	141.7532	132.7		
17	50 d3-N-MeFOSAA	573.3 > 419	3.34e3	2.23e4	0.117	0.184	5.18	5.18	1.87	87.2168	81.7		
18	51 d5-N-EtFOSAA	589.3 > 419	4.62e3	2.23e4	0.117	0.223	5.34	5.34	2.59	99.2771	93.0		
19	52 13C2-PFUdA	565 > 519.8	1.22e4	2.23e4	0.117	0.936	5.35	5.35	6.87	62.6662	58.7		
20	53 13C2-PFDaA	615.0 > 569.7	1.06e4	1.46e4	0.117	1.168	5.63	5.63	9.14	66.8716	62.6		
21	54 d3-N-MeFOSA	515.2 > 168.9		2.23e4	0.117	0.051	5.85						
22	55 13C2-PFTeDA	714.8 > 669.6	1.33e4	2.23e4	0.117	0.706	6.09	6.09	7.46	90.2158	84.5		
23	56 d5-N-ETFOSA	531.1 > 168.9		2.23e4	0.117	0.071	6.24						
24	57 13C2-PFHxDA	815 > 769.7	9.47e3	2.23e4	0.117	1.079	6.43	6.43	5.32	42.1282	98.6		
25	58 d7-N-MeFOSE	623.1 > 58.9		2.23e4	0.117	0.041	6.37						
26	59 d9-N-EtFOSE	639.2 > 58.8		2.23e4	0.117	0.038	6.51						
27	60 13C4-PFBA	217. > 171.8	6.41e3	6.41e3	0.117	1.000	1.35	1.34	12.5	106.7920	100.0		
28	61 13C5-PFHxA	318 > 272.9	9.37e3	9.37e3	0.117	1.000	3.09	3.09	12.5	106.7920	100.0		
29	62 13C3-PFHxS	401.9 > 79.9	3.54e3	3.54e3	0.117	1.000	3.86	3.85	12.5	106.7920	100.0		
30	63 13C8-PFOA	421.3 > 376	1.12e4	1.12e4	0.117	1.000	4.23	4.22	12.5	106.7920	100.0		
31	64 13C9-PFNA	472.2 > 426.9	1.40e4	1.40e4	0.117	1.000	4.66	4.66	12.5	106.7920	100.0		
32	65 13C4-PFOS	503 > 79.9	3.54e3	3.54e3	0.117	1.000	4.74	4.74	12.5	106.7920		MJT for ANP 6/11/2018	

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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

Printed: Monday, June 11, 2018 08:17:45 Pacific Daylight Time

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	66 13C6-PFDA	519.1 > 473.7	1.46e4	1.46e4	0.117	1.000	5.03	5.03	12.5	106.7920	100.0		
34	67 13C7-PFUdA	570.1 > 524.8	2.23e4	2.23e4	0.117	1.000	5.35	5.35	12.5	106.7920	100.0		
35	68 Total PFHxS	398.9 > 79.6	3.43e3	1.55e3	0.117		4.05		27.6	122.6042			
36	69 Total PFOA	413 > 368.7	3.29e3	1.35e4	0.117		4.30		3.04	27.4297			
37	70 Total PFOS	499.1 > 79.9	3.92e2	3.70e3	0.117		4.90		1.33	12.6920			
38	71 Total N-MeFOSAA	570.1 > 419	0.00e0	3.34e3	0.117		5.55		0.000				
39	72 Total N-EtFOSAA	584.2 > 419	0.00e0	4.62e3	0.117		5.70		0.000				

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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

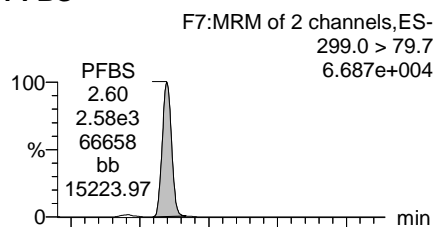
Printed: Monday, June 11, 2018 08:17:45 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

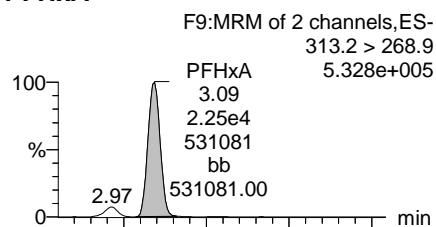
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

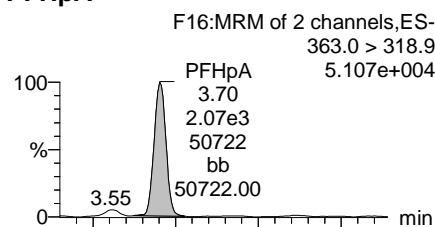
PFBS



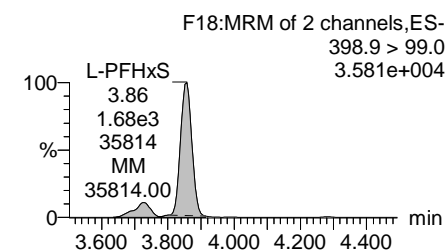
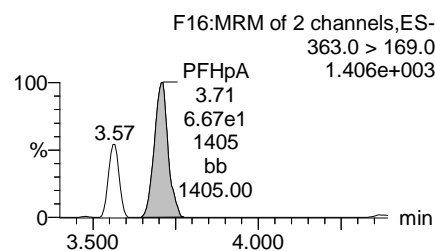
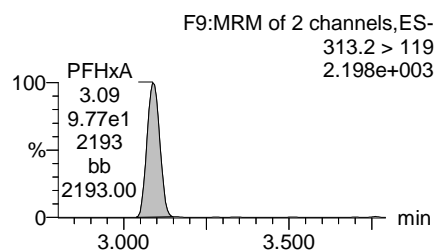
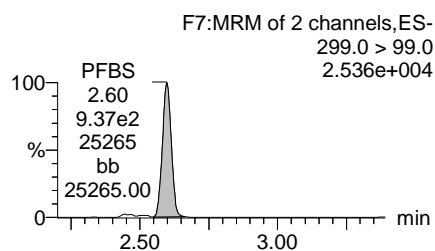
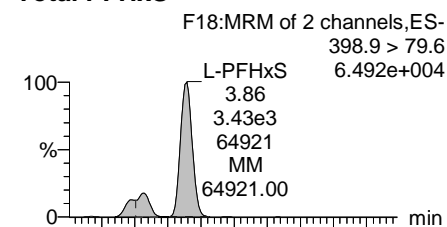
PFHxA



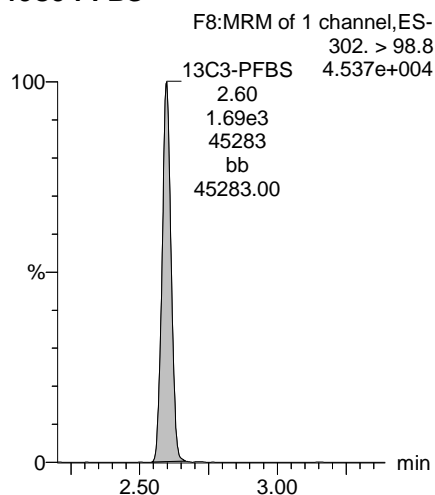
PFHpA



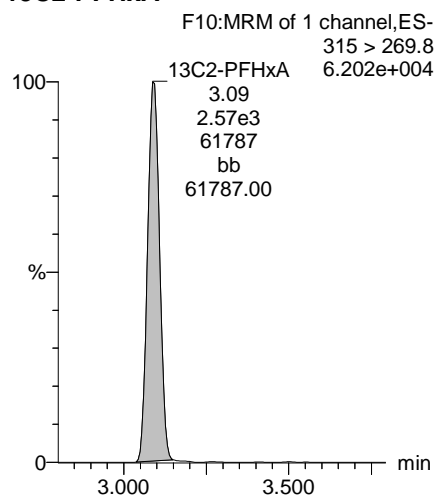
Total PFHxS



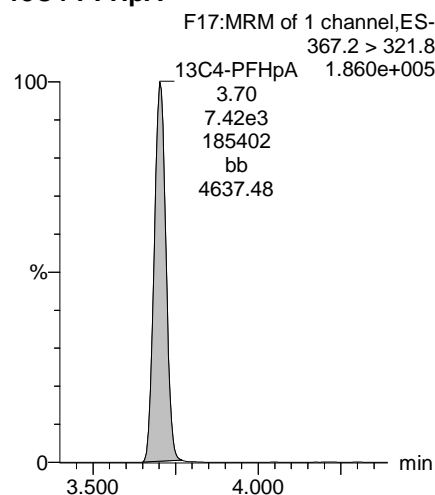
13C3-PFBS



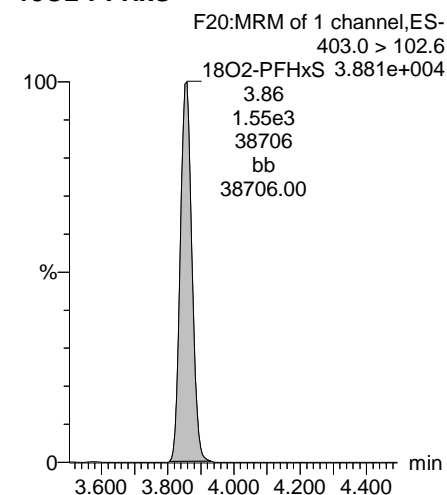
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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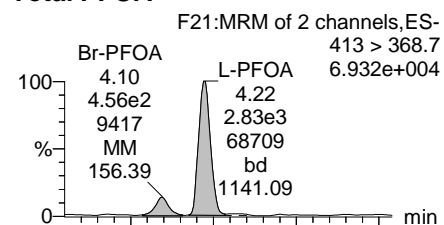
Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

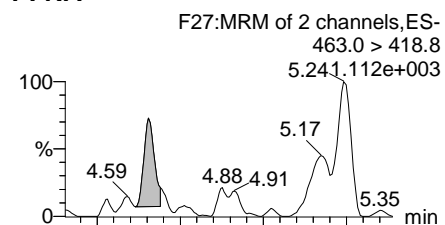
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Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

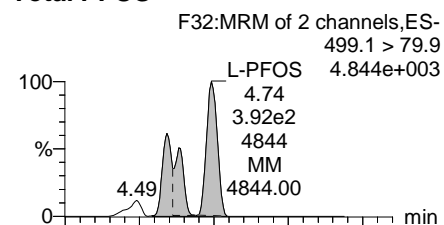
Total PFOA



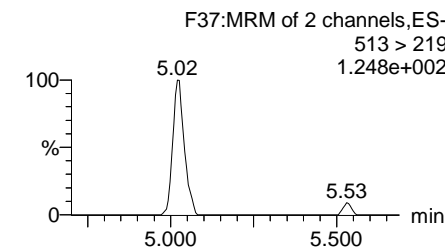
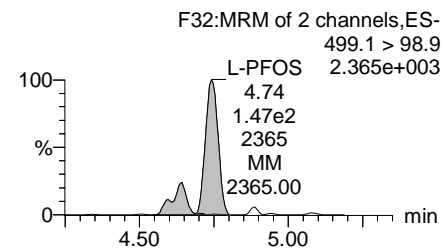
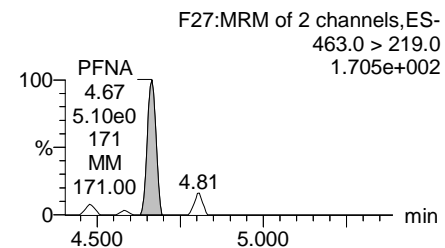
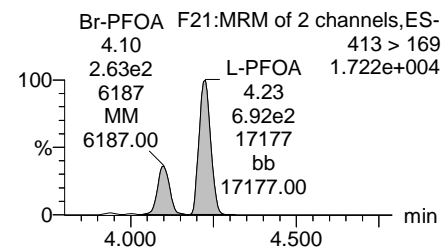
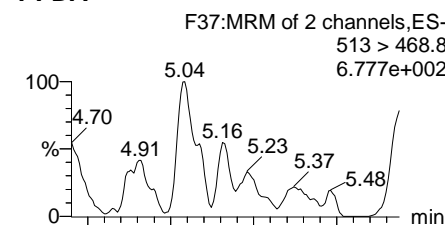
PFNA



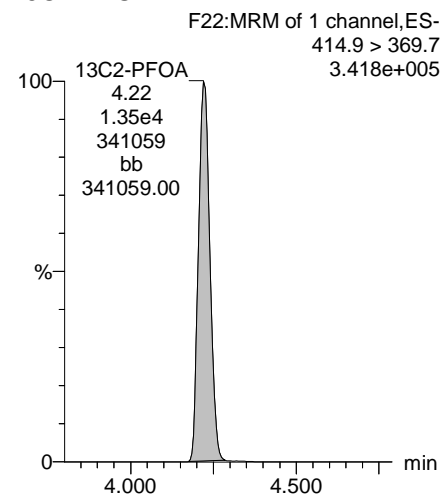
Total PFOS



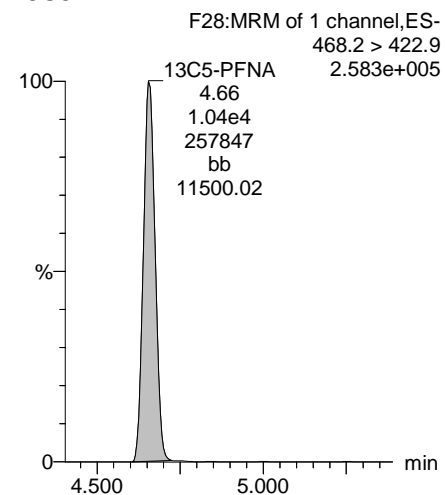
PFDA



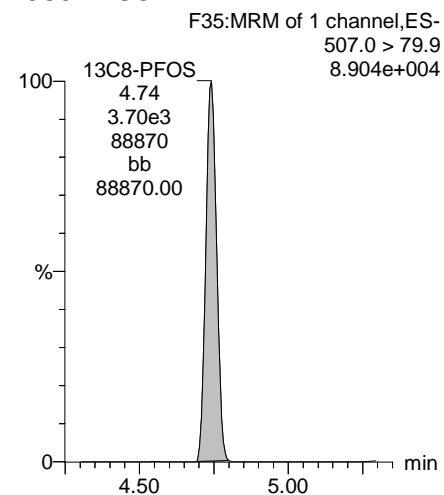
13C2-PFOA



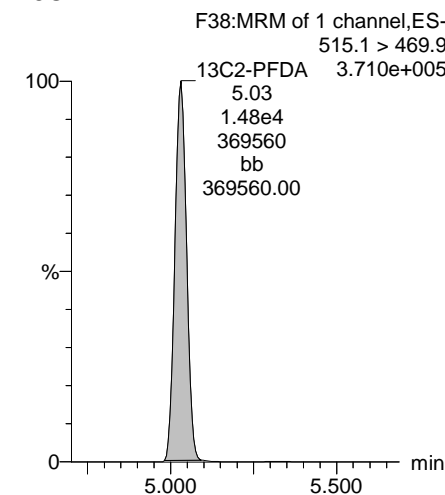
13C5-PFNA



13C8-PFOS



13C2-PFDA



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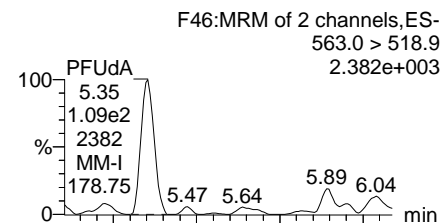
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Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

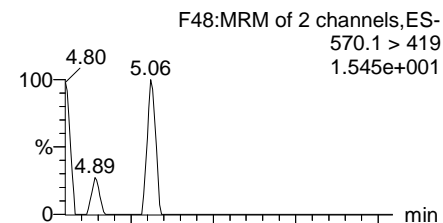
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Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

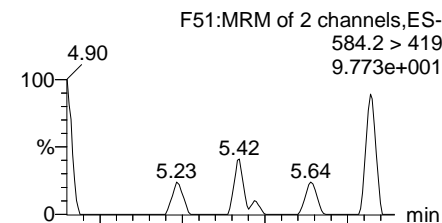
PFUdA



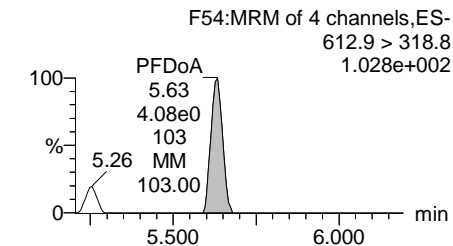
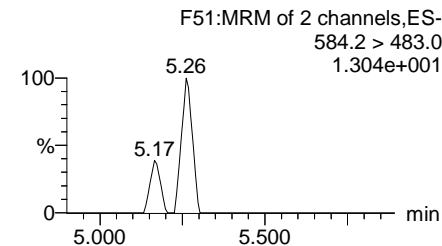
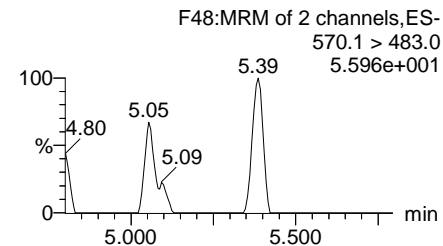
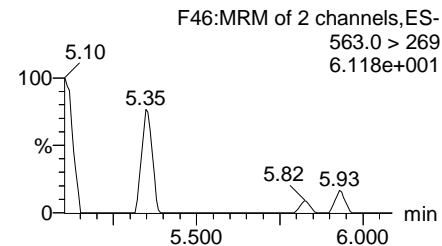
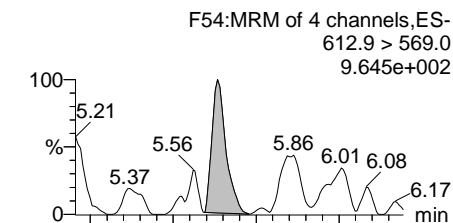
Total N-MeFOSAA



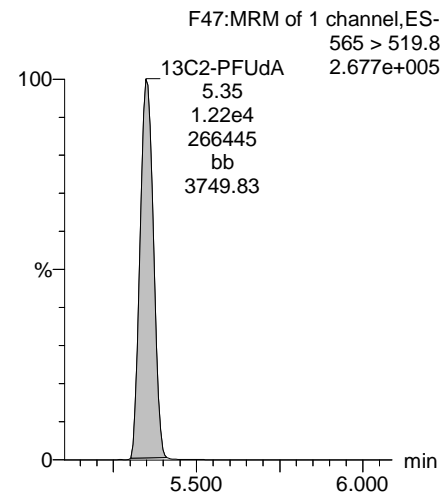
Total N-EtFOSAA



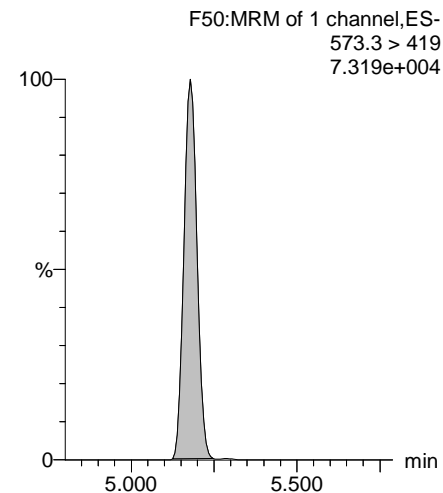
PFDaA



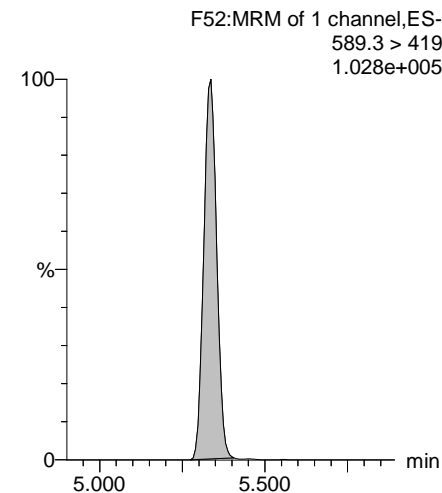
13C2-PFUdA



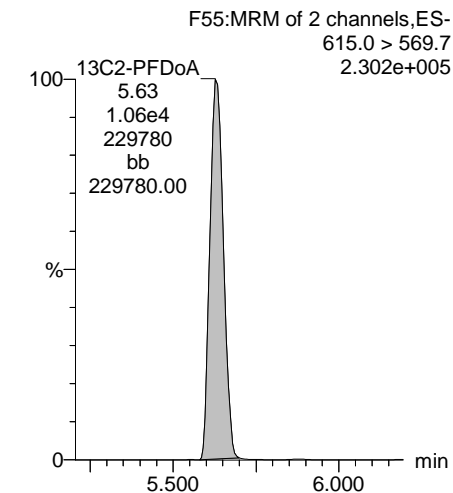
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDaA



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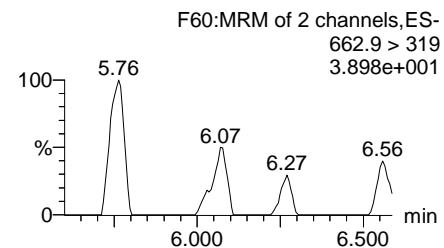
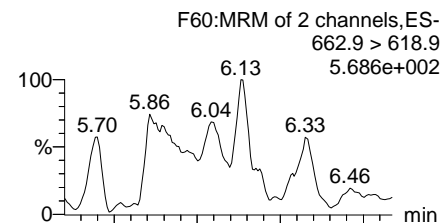
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Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

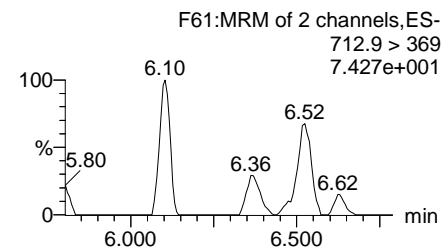
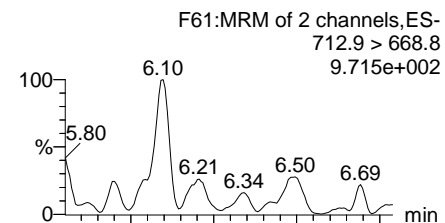
Printed: Monday, June 11, 2018 08:17:45 Pacific Daylight Time

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

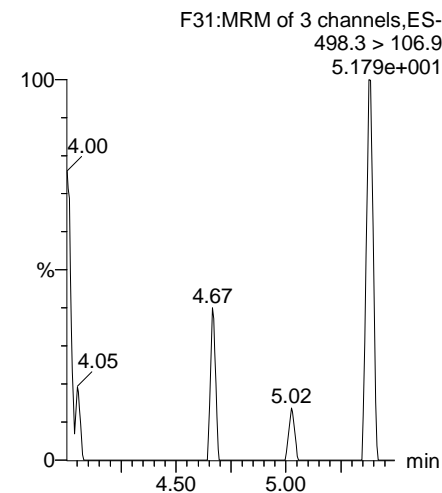
PFTrDA



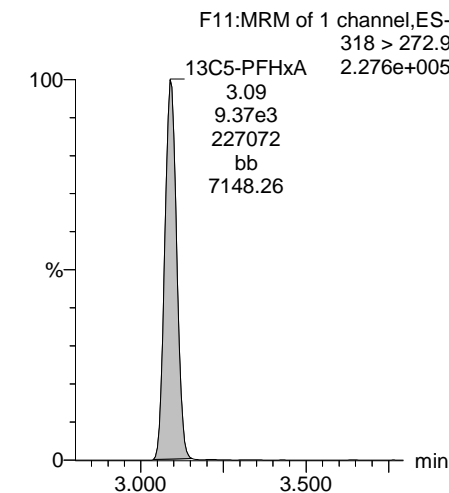
PFTeDA



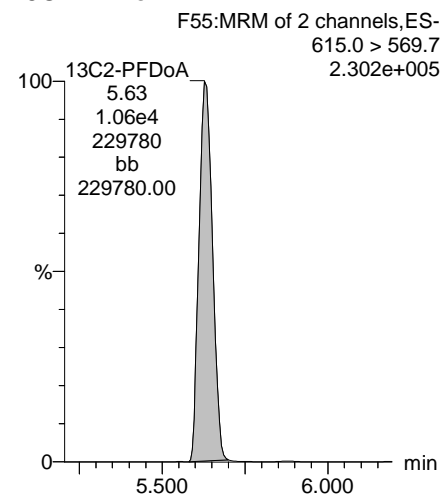
TCDA



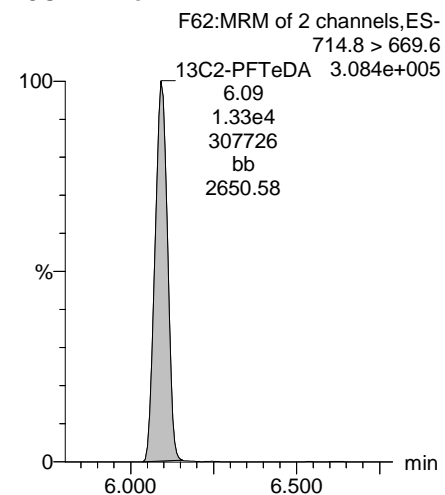
13C5-PFHxA



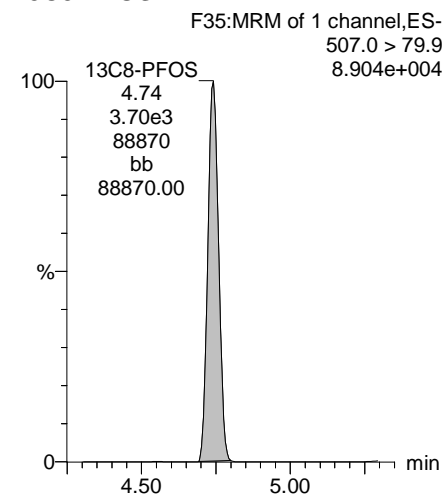
13C2-PFDoA



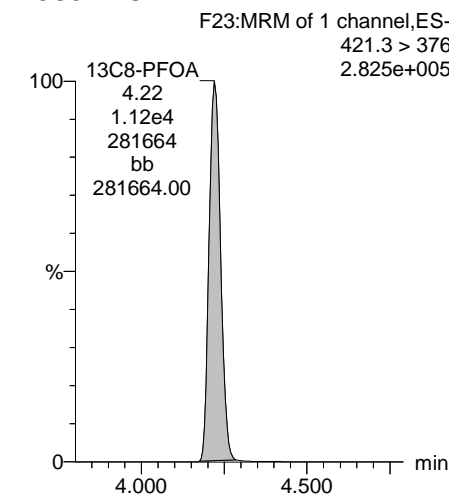
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-35.qld

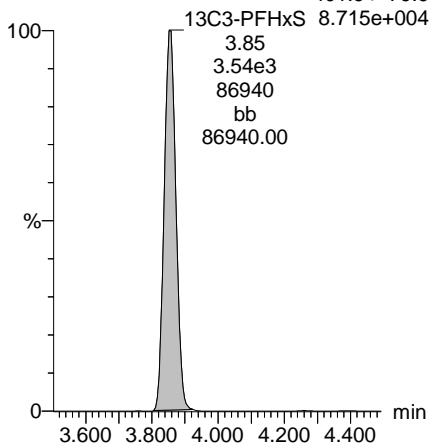
Last Altered: Friday, June 08, 2018 13:56:05 Pacific Daylight Time

Printed: Monday, June 11, 2018 08:17:45 Pacific Daylight Time

Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

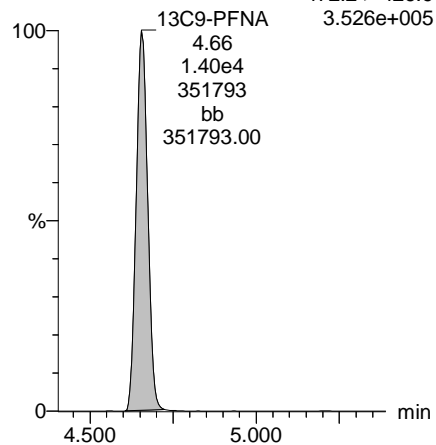
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9



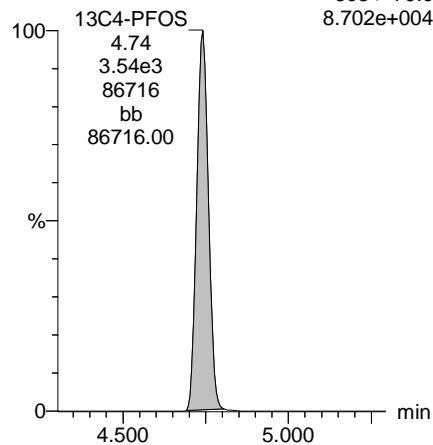
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9



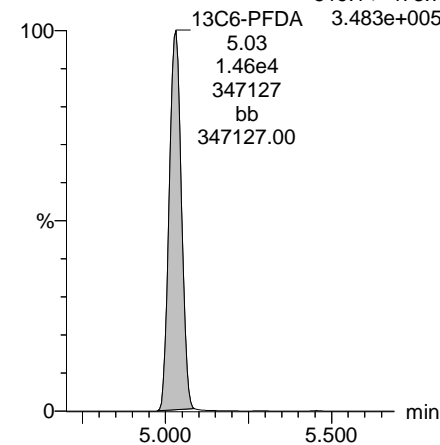
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9



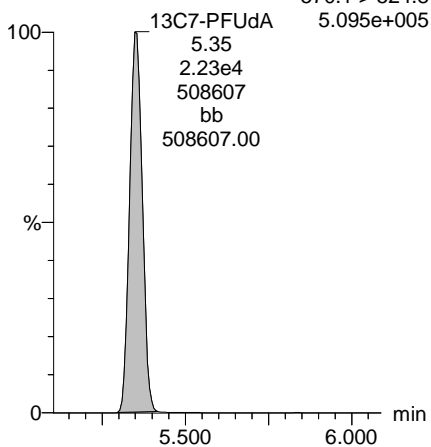
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7



13C7-PFUDa

F49:MRM of 1 channel,ES-
570.1 > 524.8



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:26:30 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7		1.40e3	0.114		2.56						
2	5 PFHxA	313.2 > 268.9		2.24e3	0.114		3.06						
3	7 PFHpA	363.0 > 318.9		6.71e3	0.114		3.67						
4	8 L-PFHxS	398.9 > 79.6	4.37e0	1.18e3	0.114		3.83	3.83	0.0464	0.2520		1.460	NO
5	11 L-PFOA	413 > 368.7		1.14e4	0.114		4.25						
6	14 PFNA	463.0 > 418.8		9.46e3	0.114		4.66						
7	16 L-PFOS	499.1 > 79.9		2.86e3	0.114		4.74						
8	18 PFDA	513 > 468.8		1.29e4	0.114		5.03						
9	21 L-MeFOSAA	570.1 > 419		3.24e3	0.114		5.18						
10	23 L-EtFOSAA	584.2 > 419		3.80e3	0.114		5.37						

MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25	PFUdA	563.0 > 518.9		1.36e4	0.114		5.35					
2	27	PFDoA	612.9 > 569.0		1.42e4	0.114		5.63					
3	29	PFTrDA	662.9 > 618.9		1.42e4	0.114		5.88					
4	30	PFTeDA	712.9 > 668.8		1.31e4	0.114		6.10					
5	38	13C3-PFBS	302. > 98.8	1.40e3	8.13e3	0.114	0.104	2.60	2.56	2.14	180.6954	165.2	
6	39	13C2-4:2 FTS	329.2>308.9	2.71e3	8.13e3	0.114	0.248	3.01	2.98	4.17	147.2322	134.6	
7	40	13C2-PFHxA	315 > 269.8	2.24e3	8.13e3	0.114	0.729	3.09	3.06	3.45	41.3613	94.5	
8	41	13C4-PFHpA	367.2 > 321.8	6.71e3	8.13e3	0.114	0.836	3.71	3.67	10.3	107.9106	98.7	
9	42	18O2-PFHxS	403.0 > 102.6	1.18e3	2.85e3	0.114	0.443	3.86	3.83	5.17	102.1718	93.4	
10	43	13C2-6:2 FTS	429.1 > 408.9	2.75e3	1.09e4	0.114	0.249	4.17	4.14	3.15	110.8648	101.4	
11	44	13C2-PFOA	414.9 > 369.7	1.14e4	1.09e4	0.114	1.332	4.23	4.20	13.1	86.0478	78.7	
12	45	13C5-PFNA	468.2 > 422.9	9.46e3	1.25e4	0.114	0.951	4.66	4.64	9.49	87.3655	79.9	
13	46	13C8-PFOSA	506.1 > 77.7	1.64e3	2.13e4	0.114	0.140	4.73	4.70	0.962	60.3185	55.1	
14	47	13C8-PFOS	507.0 > 79.9	2.86e3	2.75e3	0.114	1.060	4.74	4.72	13.0	107.2423	98.0	
15	48	13C2-PFDA	515.1 > 469.9	1.29e4	1.62e4	0.114	1.130	5.03	5.01	9.93	76.8557	70.3	
16	49	13C2-8:2 FTS	529.1 > 508.7	2.52e3	8.13e3	0.114	0.217	5.00	4.98	3.88	156.0718	142.7	
17	50	d3-N-MeFOSAA	573.3 > 419	3.24e3	2.13e4	0.114	0.184	5.18	5.17	1.90	90.5679	82.8	
18	51	d5-N-EtFOSAA	589.3 > 419	3.80e3	2.13e4	0.114	0.223	5.34	5.32	2.23	87.3057	79.8	
19	52	13C2-PFUdA	565 > 519.8	1.36e4	2.13e4	0.114	0.936	5.35	5.33	7.98	74.5851	68.2	
20	53	13C2-PFDoA	615.0 > 569.7	1.42e4	1.62e4	0.114	1.168	5.63	5.62	10.9	81.7669	74.8	
21	55	13C2-PFTeDA	714.8 > 669.6	1.31e4	2.13e4	0.114	0.706	6.09	6.08	7.68	95.1533	87.0	
22	56	d5-N-ETFOSA	531.1 > 168.9		2.13e4	0.114	0.071	6.24					
23	57	13C2-PFHxDA	815 > 769.7	8.47e3	2.13e4	0.114	1.079	6.43	6.43	4.96	40.2629	92.0	
24	58	d7-N-MeFOSE	623.1 > 58.9		2.13e4	0.114	0.041	6.37					
25	59	d9-N-EtFOSE	639.2 > 58.8		2.13e4	0.114	0.038	6.51					
26	60	13C4-PFBA	217. > 171.8	6.08e3	6.08e3	0.114	1.000	1.35	1.30	12.5	109.3805	100.0	
27	61	13C5-PFHxA	318 > 272.9	8.13e3	8.13e3	0.114	1.000	3.09	3.06	12.5	109.3805	100.0	
28	62	13C3-PFHxS	401.9 > 79.9	2.85e3	2.85e3	0.114	1.000	3.86	3.83	12.5	109.3805	100.0	
29	63	13C8-PFOA	421.3 > 376	1.09e4	1.09e4	0.114	1.000	4.23	4.20	12.5	109.3805	100.0	
30	64	13C9-PFNA	472.2 > 426.9	1.25e4	1.25e4	0.114	1.000	4.66	4.64	12.5	109.3805	100.0	
31	65	13C4-PFOS	503 > 79.9	2.75e3	2.75e3	0.114	1.000	4.74	4.72	12.5	109.3805	100.0	
32	66	13C6-PFDA	519.1 > 473.7	1.62e4	1.62e4	0.114	1.000	5.03	5.01	12.5	109.3805	100.0	ANP 6/8/2018

MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	67 13C7-PFUdA	570.1 > 524.8	2.13e4	2.13e4	0.114	1.000	5.35	5.34	12.5	109.3805	100.0		
34	68 Total PFHxS	398.9 > 79.6	4.37e0	1.18e3	0.114		4.05		0.0464	0.2520			
35	69 Total PFOA	413 > 368.7	0.00e0	1.14e4	0.114		4.30		0.000				
36	70 Total PFOS	499.1 > 79.9	0.00e0	2.86e3	0.114		4.90		0.000				
37	71 Total N-MeFOSAA	570.1 > 419	0.00e0	3.24e3	0.114		5.55		0.000				
38	72 Total N-EtFOSAA	584.2 > 419	0.00e0	3.80e3	0.114		5.70		0.000				

MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

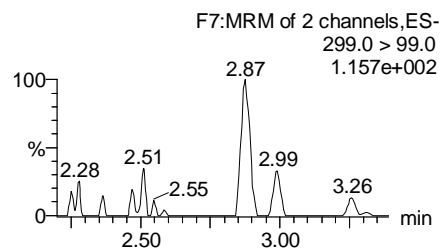
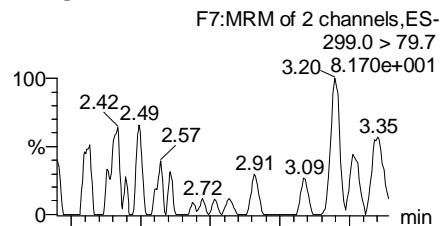
Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

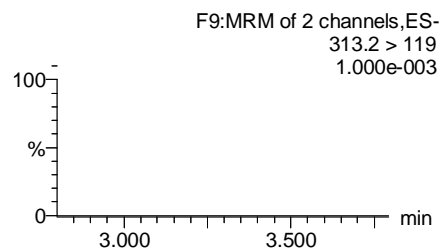
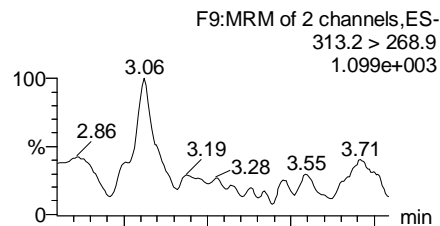
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

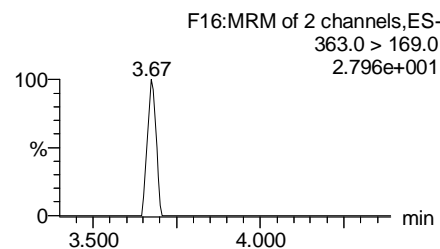
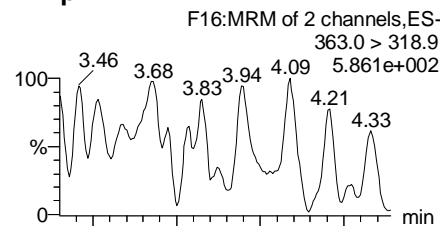
PFBS



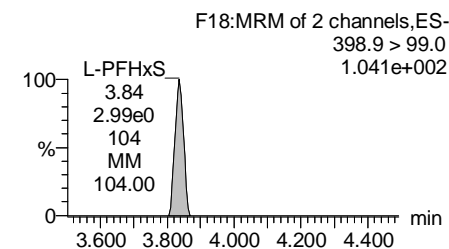
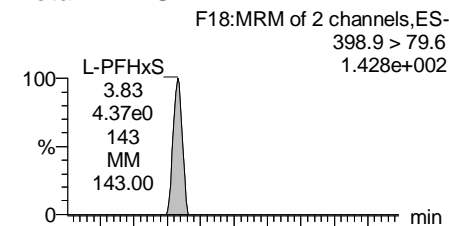
PFHxA



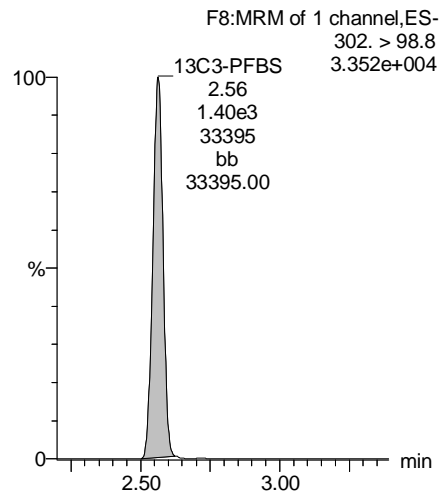
PFHpA



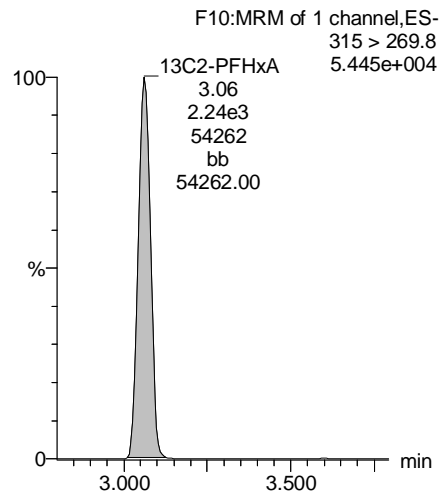
Total PFHxS



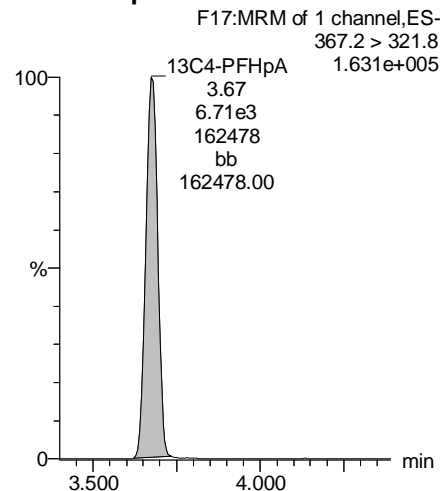
13C3-PFBS



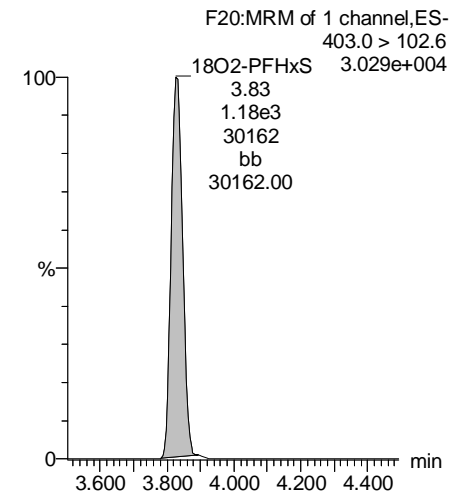
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



MM 6/8/2018

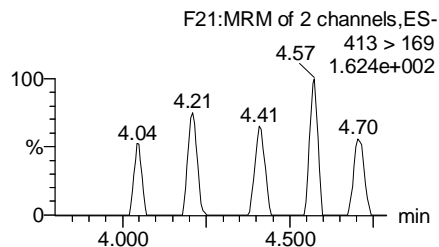
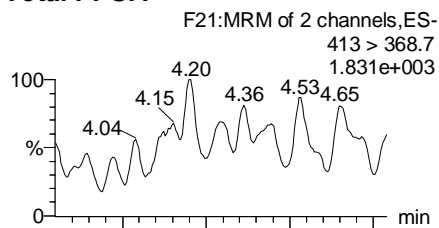
Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

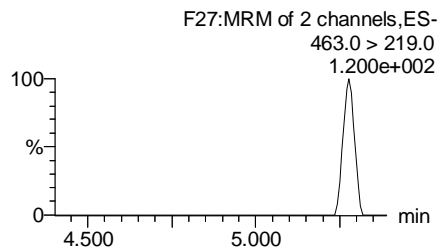
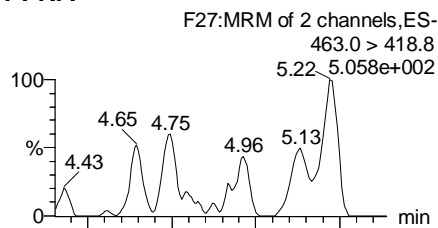
Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

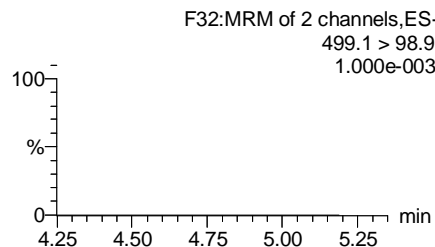
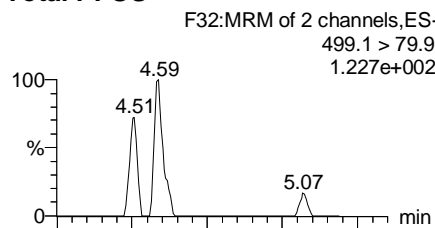
Total PFOA



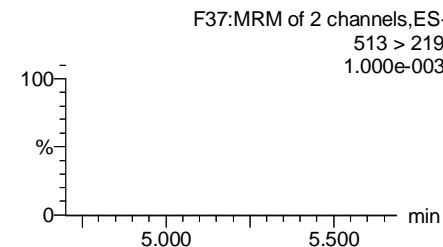
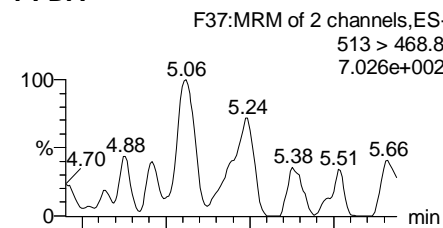
PFNA



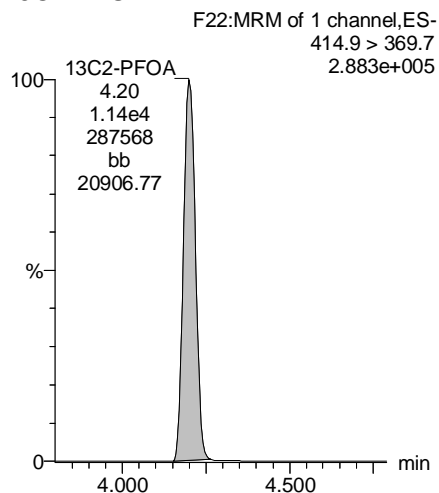
Total PFOS



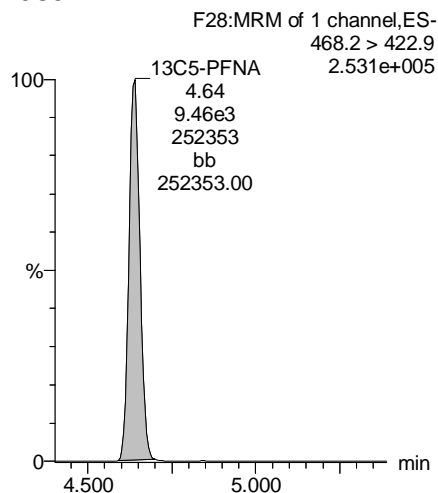
PFDA



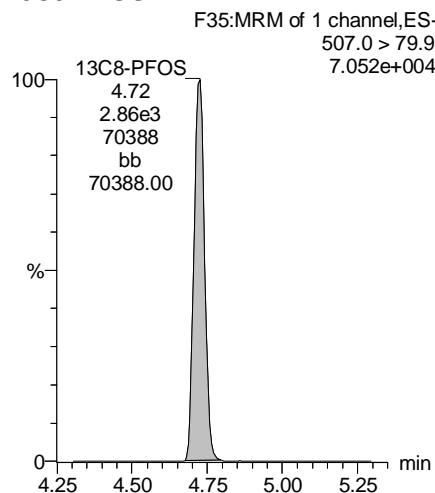
13C2-PFOA



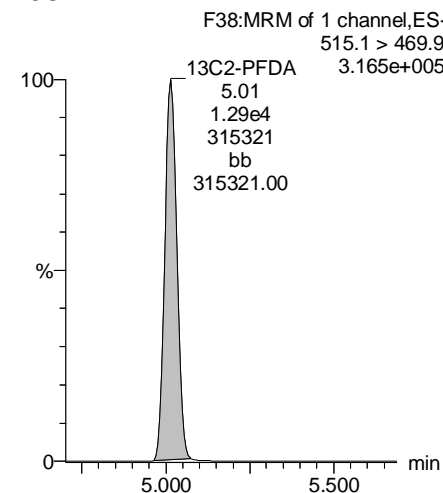
13C5-PFNA



13C8-PFOS



13C2-PFDA



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

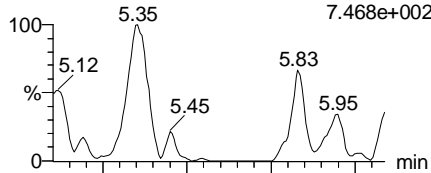
Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

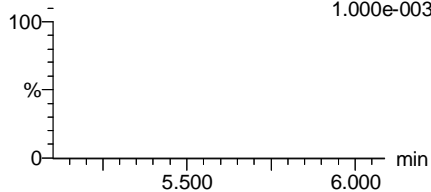
Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
7.468e+002

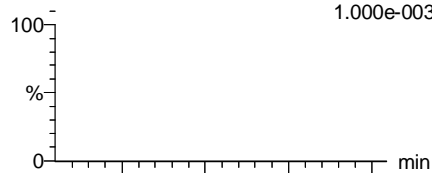


F46:MRM of 2 channels,ES-
563.0 > 269
1.000e-003

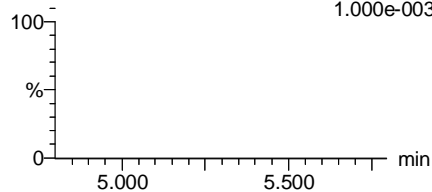


Total N-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
1.000e-003

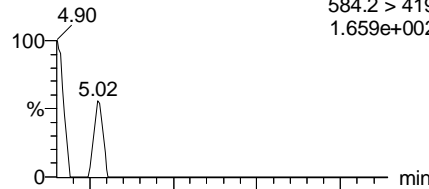


F48:MRM of 2 channels,ES-
570.1 > 483.0
1.000e-003

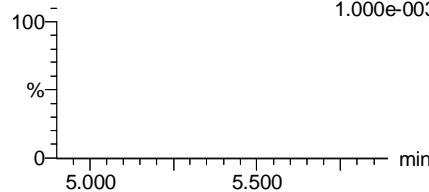


Total N-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
1.659e+002

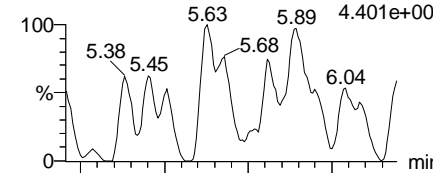


F51:MRM of 2 channels,ES-
584.2 > 483.0
1.000e-003

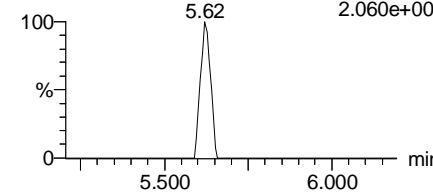


PFDaA

F54:MRM of 4 channels,ES-
612.9 > 569.0
4.401e+002

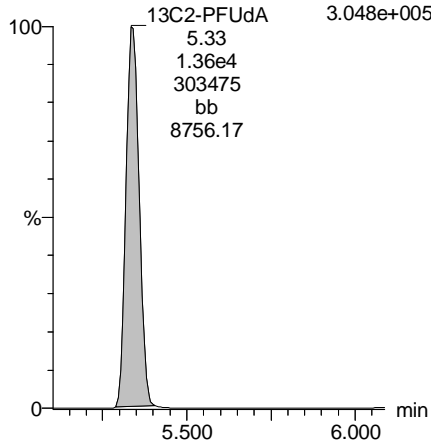


F54:MRM of 4 channels,ES-
612.9 > 318.8
2.060e+001



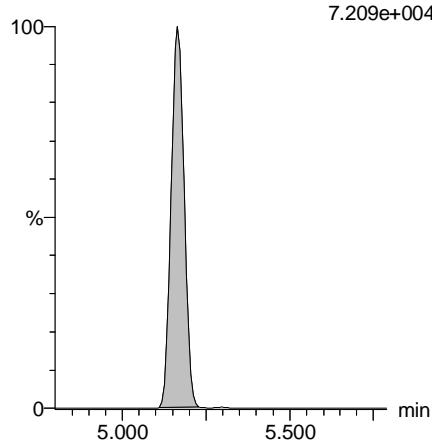
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
3.048e+005



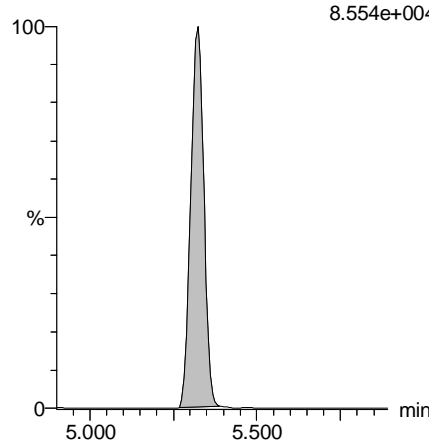
d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
7.209e+004



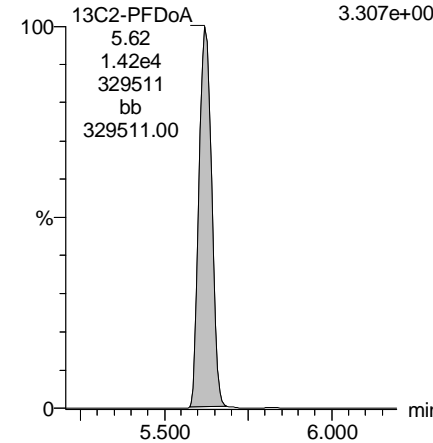
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
8.554e+004



13C2-PFDaA

F55:MRM of 2 channels,ES-
615.0 > 569.7
3.307e+005



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

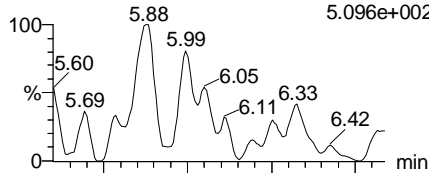
Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

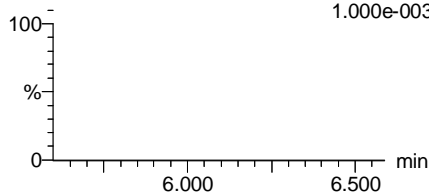
Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

PFTrDA

F60:MRM of 2 channels,ES-
662.9 > 618.9
5.096e+002

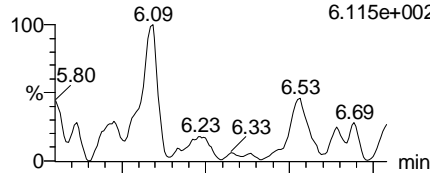


F60:MRM of 2 channels,ES-
662.9 > 319
1.000e-003

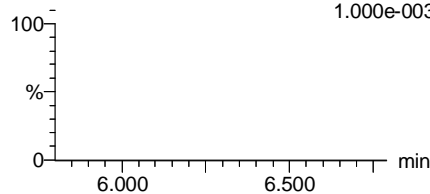


PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
6.115e+002

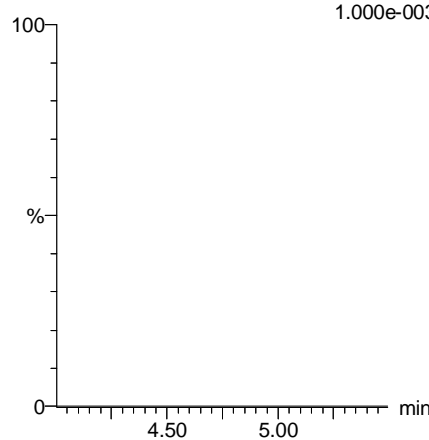


F61:MRM of 2 channels,ES-
712.9 > 369
1.000e-003



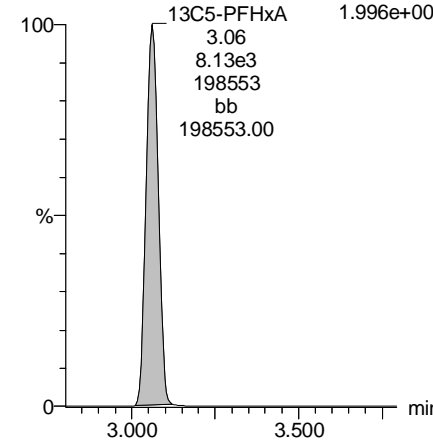
TCDA

F31:MRM of 3 channels,ES-
498.3 > 106.9
1.000e-003



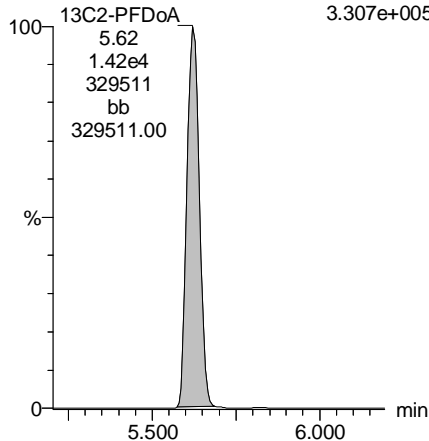
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
1.996e+005



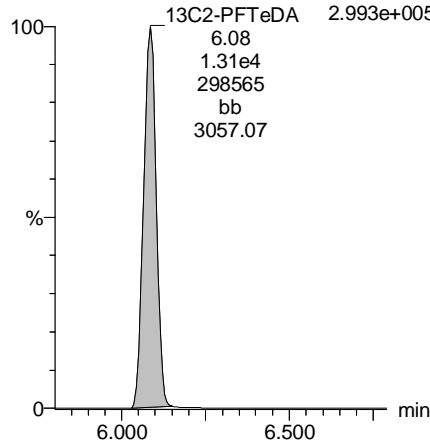
13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
3.307e+005



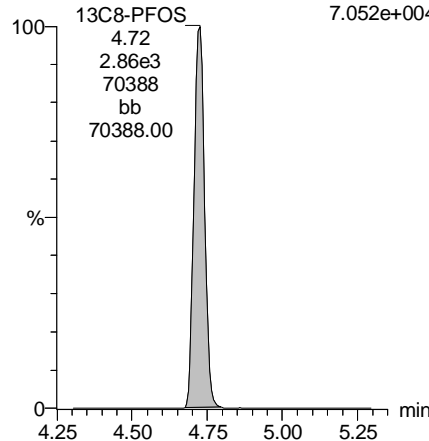
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
2.993e+005



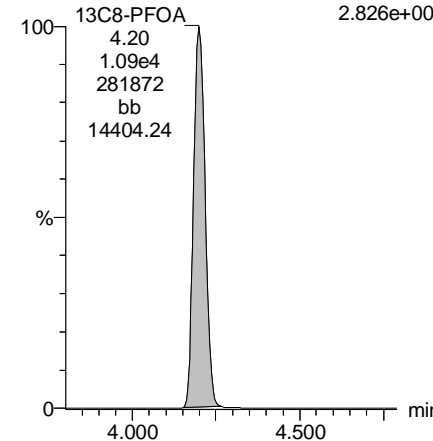
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
7.052e+004



13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
2.826e+005



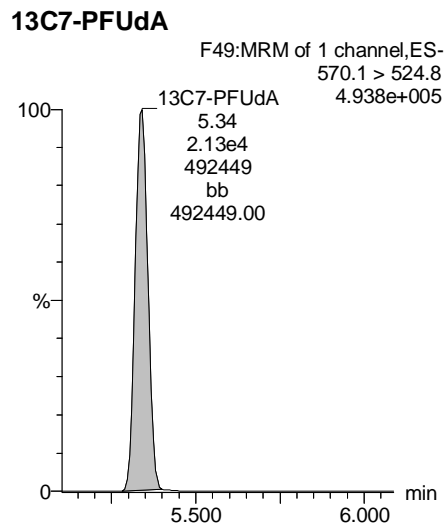
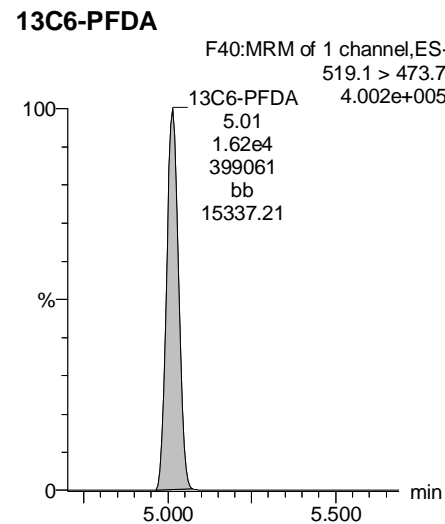
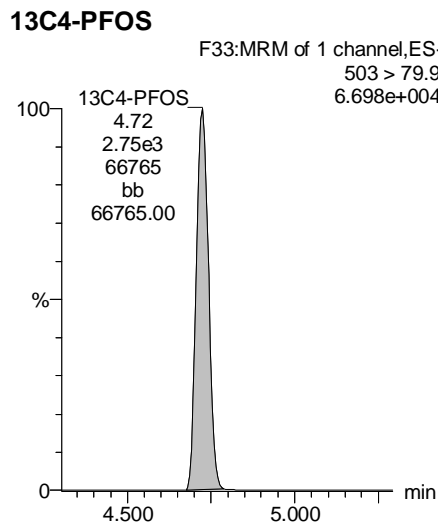
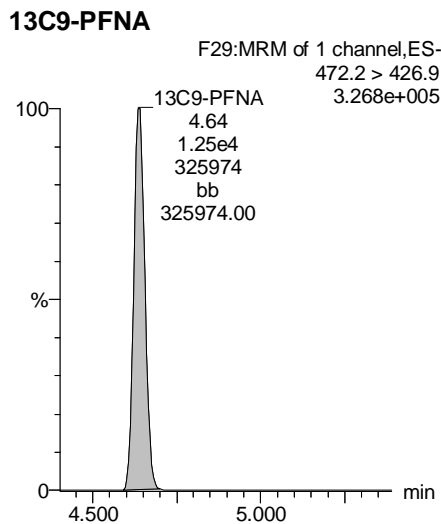
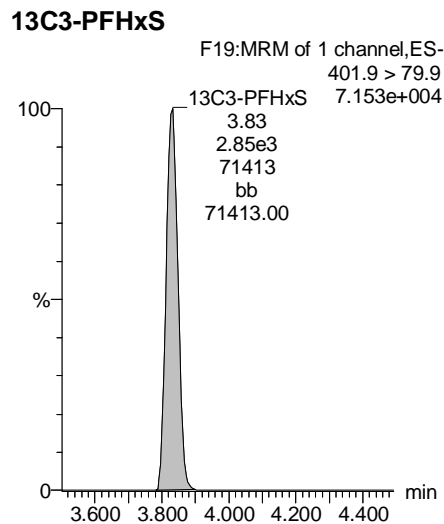
MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-23.qld

Last Altered: Friday, June 08, 2018 14:25:58 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:26:38 Pacific Daylight Time

Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-24.qld

Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:28:44 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7	2.36e1	1.57e3	0.114		2.57	2.57	0.188	0.8439		3.466	NO
2	5 PFHxA	313.2 > 268.9		2.88e3	0.114		3.06						
3	7 PFHpA	363.0 > 318.9		8.75e3	0.114		3.67						
4	8 L-PFHxS	398.9 > 79.6	1.38e2	1.36e3	0.114		3.83	3.83	1.27	5.8063		1.550	NO
5	11 L-PFOA	413 > 368.7		1.49e4	0.114		4.25						
6	14 PFNA	463.0 > 418.8		1.26e4	0.114		4.66						
7	16 L-PFOS	499.1 > 79.9		3.19e3	0.114		4.74						
8	18 PFDA	513 > 468.8		1.52e4	0.114		5.03						
9	21 L-MeFOSAA	570.1 > 419		3.70e3	0.114		5.18						
10	23 L-EtFOSAA	584.2 > 419		5.24e3	0.114		5.37						

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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-24.qld

Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:28:52 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25 PFUdA	563.0 > 518.9	3.39e1	1.48e4	0.114		5.35	5.34	0.0287			15.097	YES
2	27 PFDoA	612.9 > 569.0		1.65e4	0.114		5.63						
3	29 PFTrDA	662.9 > 618.9		1.65e4	0.114		5.88						
4	30 PFTeDA	712.9 > 668.8		1.53e4	0.114		6.10						
5	38 13C3-PFBS	302. > 98.8	1.57e3	1.02e4	0.114	0.104	2.60	2.57	1.92	161.9187	148.1		
6	39 13C2-4:2 FTS	329.2>308.9	3.26e3	1.02e4	0.114	0.248	3.01	2.98	4.00	141.0885	129.1		
7	40 13C2-PFHxA	315 > 269.8	2.88e3	1.02e4	0.114	0.729	3.09	3.06	3.53	42.3057	96.8		
8	41 13C4-PFHpA	367.2 > 321.8	8.75e3	1.02e4	0.114	0.836	3.71	3.67	10.7	111.9848	102.5		
9	42 18O2-PFHxS	403.0 > 102.6	1.36e3	3.02e3	0.114	0.443	3.86	3.83	5.64	111.4607	102.0		
10	43 13C2-6:2 FTS	429.1 > 408.9	3.08e3	1.32e4	0.114	0.249	4.17	4.14	2.92	102.6014	93.9		
11	44 13C2-PFOA	414.9 > 369.7	1.49e4	1.32e4	0.114	1.332	4.23	4.20	14.1	92.7462	84.9		
12	45 13C5-PFNA	468.2 > 422.9	1.26e4	1.46e4	0.114	0.951	4.66	4.64	10.8	99.0796	90.6		
13	46 13C8-PFOSA	506.1 > 77.7	1.91e3	2.28e4	0.114	0.140	4.73	4.70	1.05	65.5229	59.9		
14	47 13C8-PFOS	507.0 > 79.9	3.19e3	2.97e3	0.114	1.060	4.74	4.72	13.4	110.7555	101.3		
15	48 13C2-PFDA	515.1 > 469.9	1.52e4	1.81e4	0.114	1.130	5.03	5.01	10.5	81.3129	74.4		
16	49 13C2-8:2 FTS	529.1 > 508.7	2.87e3	1.02e4	0.114	0.217	5.00	4.98	3.51	141.1532	129.1		
17	50 d3-N-MeFOSAA	573.3 > 419	3.70e3	2.28e4	0.114	0.184	5.18	5.17	2.03	96.7106	88.5		
18	51 d5-N-EtFOSAA	589.3 > 419	5.24e3	2.28e4	0.114	0.223	5.34	5.32	2.87	112.5593	103.0		
19	52 13C2-PFUdA	565 > 519.8	1.48e4	2.28e4	0.114	0.936	5.35	5.34	8.11	75.6970	69.3		
20	53 13C2-PFDoA	615.0 > 569.7	1.65e4	1.81e4	0.114	1.168	5.63	5.62	11.4	85.1303	77.9		
21	55 13C2-PFTeDA	714.8 > 669.6	1.53e4	2.28e4	0.114	0.706	6.09	6.08	8.38	103.7394	94.9		
22	56 d5-N-ETFOSA	531.1 > 168.9		2.28e4	0.114	0.071	6.24						
23	57 13C2-PFHxDA	815 > 769.7	9.49e3	2.28e4	0.114	1.079	6.43	6.43	5.21	42.2060	96.5		
24	58 d7-N-MeFOSE	623.1 > 58.9		2.28e4	0.114	0.041	6.37						
25	59 d9-N-EtFOSE	639.2 > 58.8		2.28e4	0.114	0.038	6.51						
26	60 13C4-PFBA	217. > 171.8	6.22e3	6.22e3	0.114	1.000	1.35	1.30	12.5	109.3040	100.0		
27	61 13C5-PFHxA	318 > 272.9	1.02e4	1.02e4	0.114	1.000	3.09	3.06	12.5	109.3040	100.0		
28	62 13C3-PFHxS	401.9 > 79.9	3.02e3	3.02e3	0.114	1.000	3.86	3.83	12.5	109.3040	100.0		
29	63 13C8-PFOA	421.3 > 376	1.32e4	1.32e4	0.114	1.000	4.23	4.20	12.5	109.3040	100.0		
30	64 13C9-PFNA	472.2 > 426.9	1.46e4	1.46e4	0.114	1.000	4.66	4.64	12.5	109.3040	100.0		
31	65 13C4-PFOS	503 > 79.9	2.97e3	2.97e3	0.114	1.000	4.74	4.72	12.5	109.3040	100.0		
32	66 13C6-PFDA	519.1 > 473.7	1.81e4	1.81e4	0.114	1.000	5.03	5.01	12.5	109.3040	100.0	ANP 6/8/2018	

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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-24.qld

Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:28:52 Pacific Daylight Time

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	67 13C7-PFUdA	570.1 > 524.8	2.28e4	2.28e4	0.114	1.000	5.35	5.34	12.5	109.3040	100.0		
34	68 Total PFHxS	398.9 > 79.6	1.38e2	1.36e3	0.114		4.05		1.27	5.8063			
35	69 Total PFOA	413 > 368.7	0.00e0	1.49e4	0.114		4.30		0.000				
36	70 Total PFOS	499.1 > 79.9	0.00e0	3.19e3	0.114		4.90		0.000				
37	71 Total N-MeFOSAA	570.1 > 419	0.00e0	3.70e3	0.114		5.55		0.000				
38	72 Total N-EtFOSAA	584.2 > 419	0.00e0	5.24e3	0.114		5.70		0.000				

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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-24.qld

Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

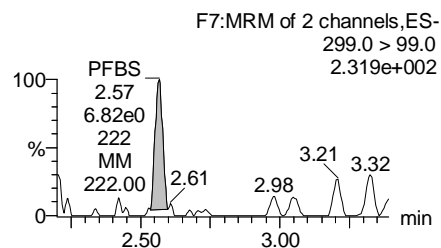
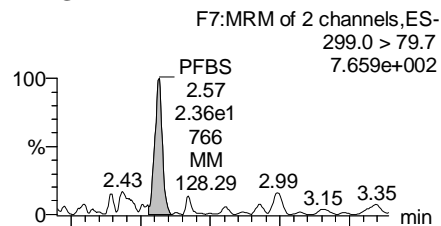
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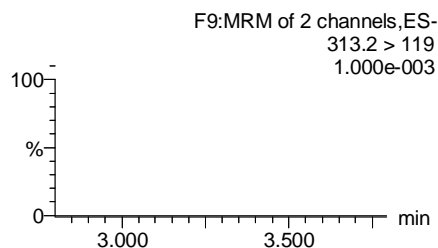
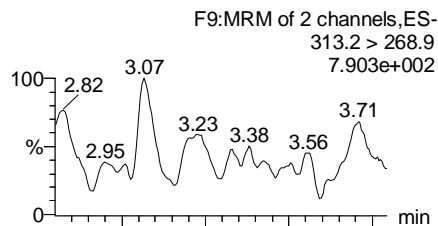
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Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

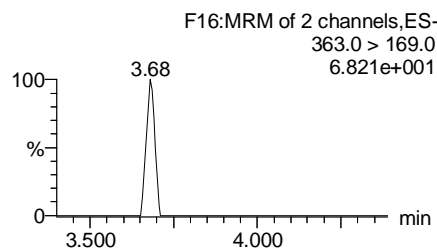
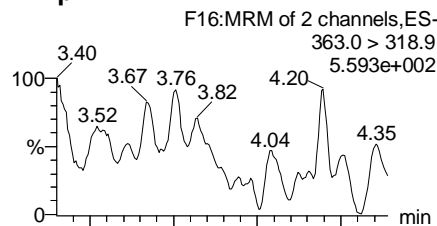
PFBS



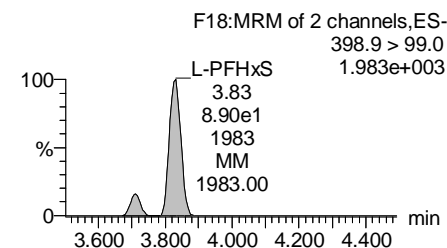
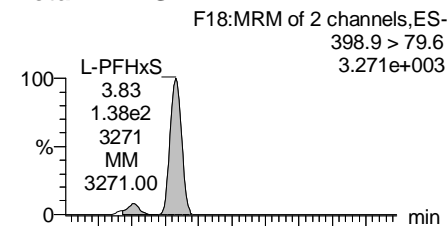
PFHxA



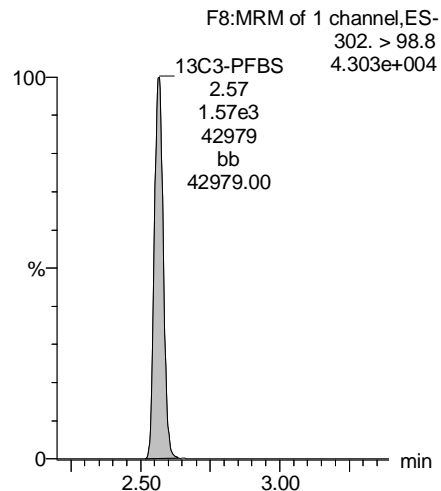
PFHpA



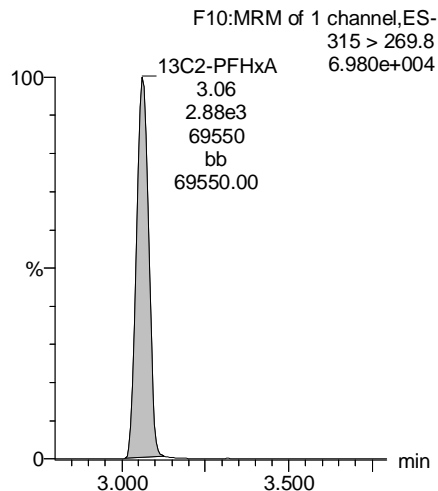
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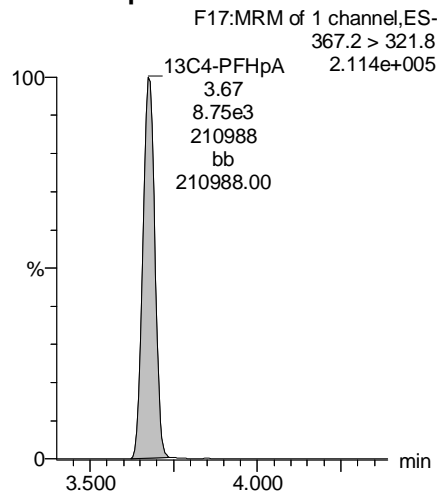
13C3-PFBS



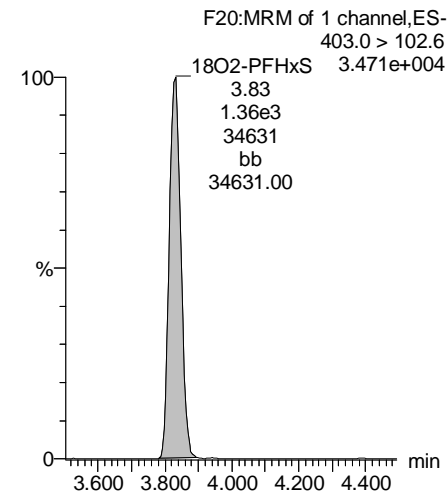
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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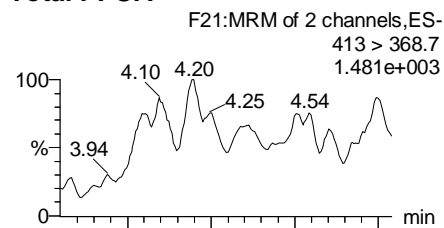
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Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

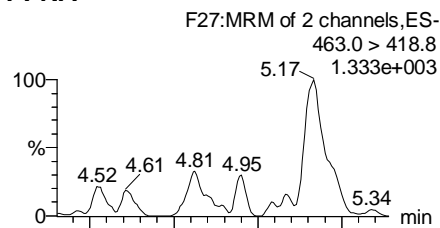
Printed: Friday, June 08, 2018 14:28:52 Pacific Daylight Time

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

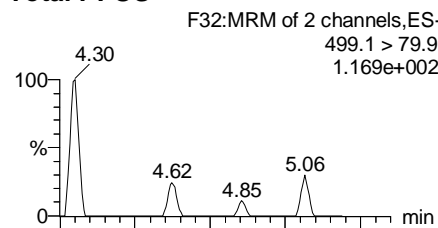
Total PFOA



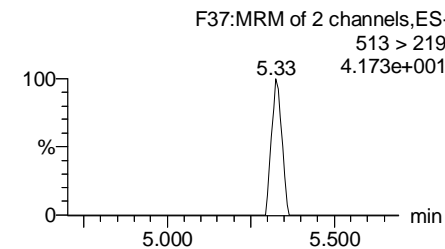
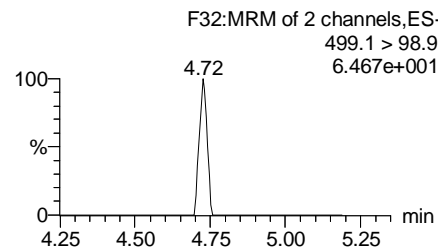
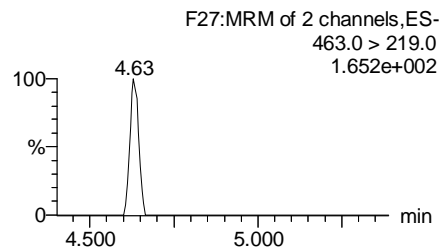
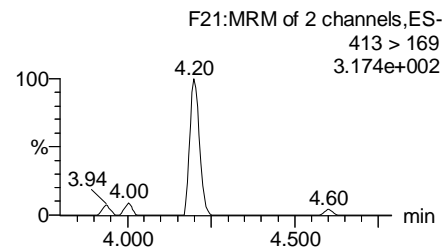
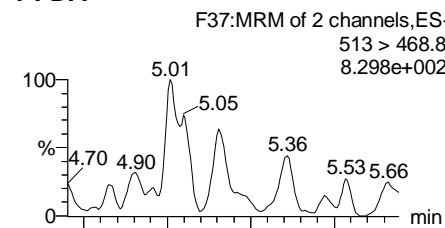
PFNA



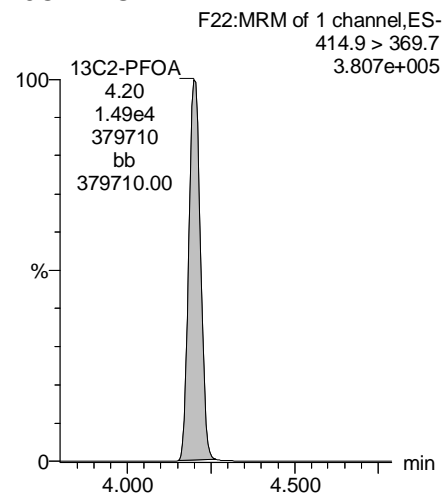
Total PFOS



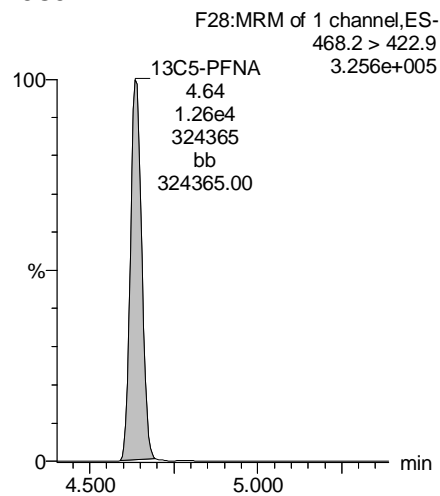
PFDA



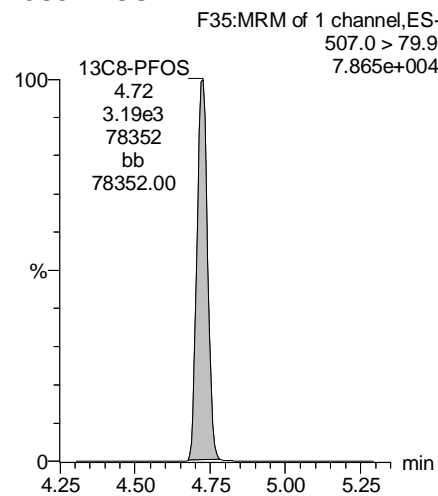
13C2-PFOA



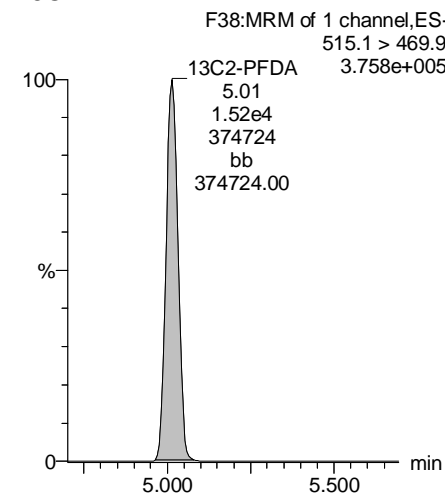
13C5-PFNA



13C8-PFOS



13C2-PFDA



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-24.qld

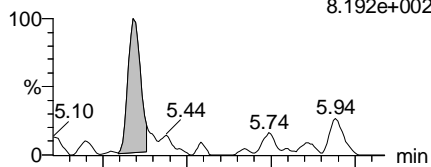
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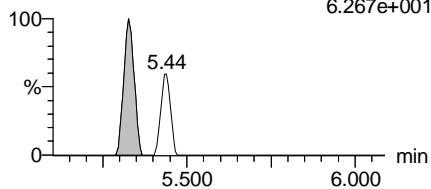
Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
8.192e+002

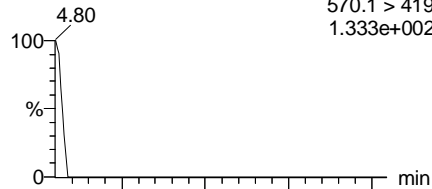


F46:MRM of 2 channels,ES-
563.0 > 269
6.267e+001

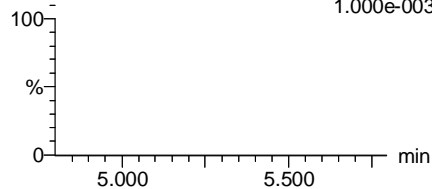


Total N-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
1.333e+002

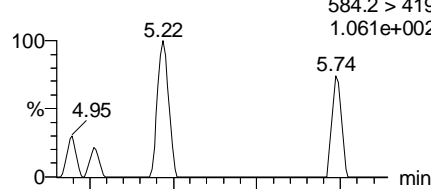


F48:MRM of 2 channels,ES-
570.1 > 483.0
1.000e-003

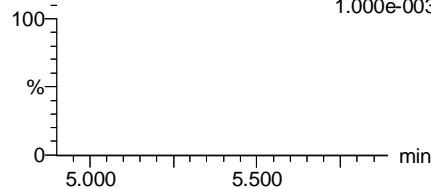


Total N-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
1.061e+002

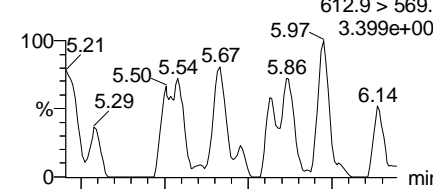


F51:MRM of 2 channels,ES-
584.2 > 483.0
1.000e-003

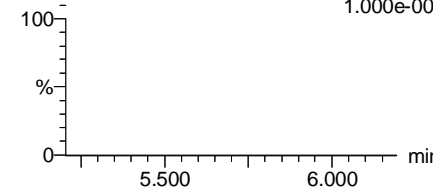


PFDaA

F54:MRM of 4 channels,ES-
612.9 > 569.0
3.399e+002

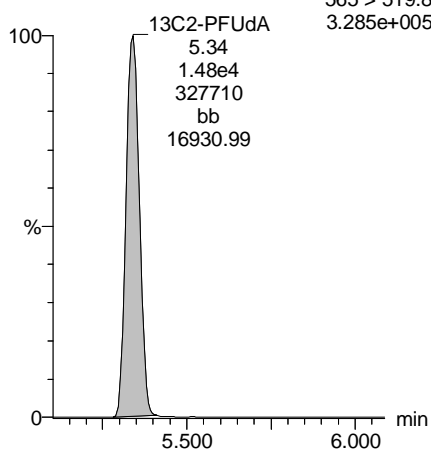


F54:MRM of 4 channels,ES-
612.9 > 318.8
1.000e-003



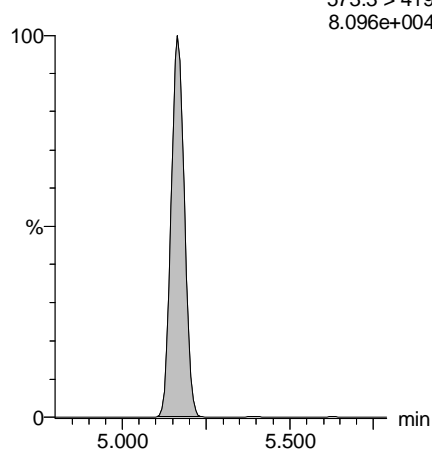
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
3.285e+005



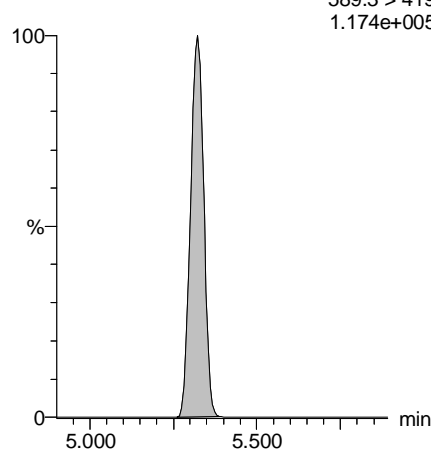
d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
8.096e+004



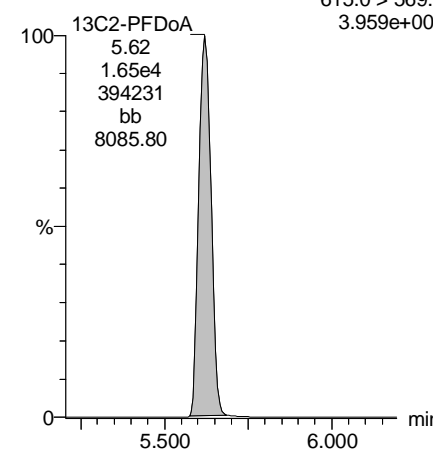
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
1.174e+005



13C2-PFDaA

F55:MRM of 2 channels,ES-
615.0 > 569.7
3.959e+005



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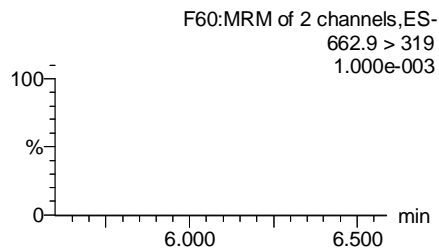
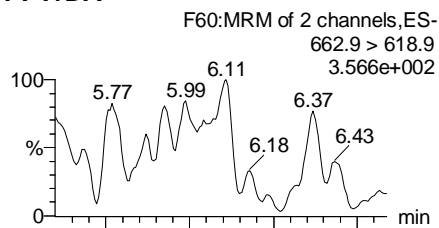
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Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

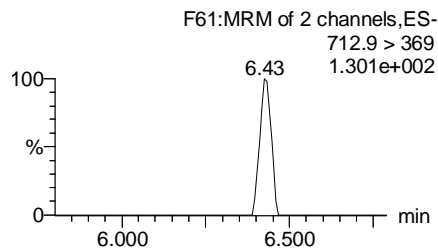
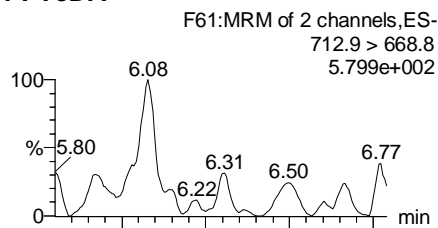
Printed: Friday, June 08, 2018 14:28:52 Pacific Daylight Time

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

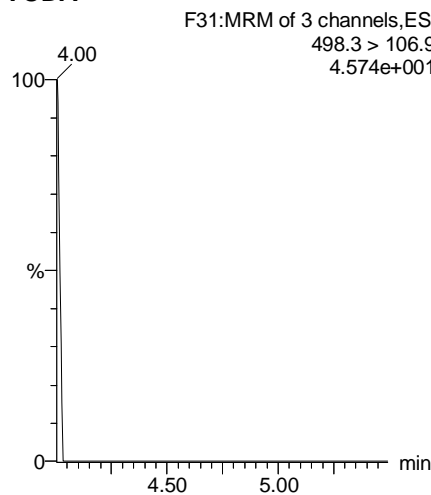
PFTrDA



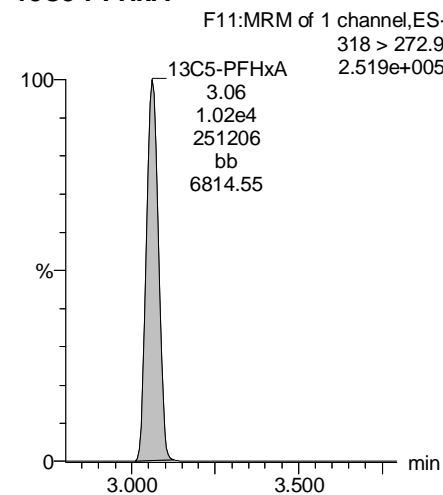
PFTeDA



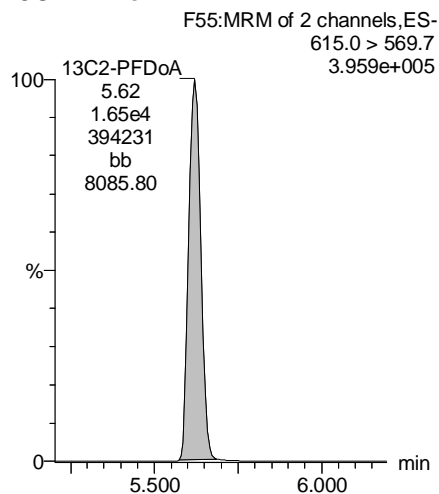
TCDA



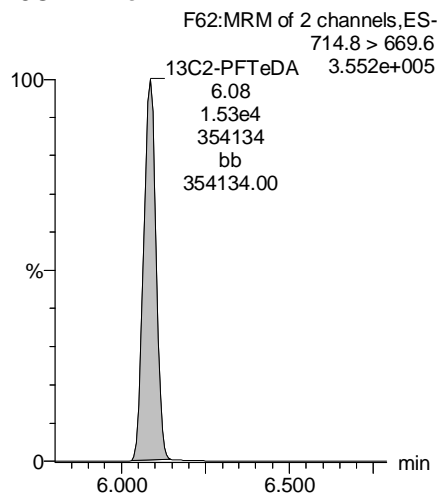
13C5-PFHxA



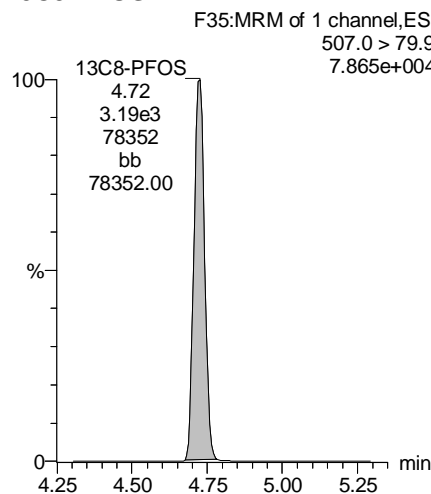
13C2-PFDoA



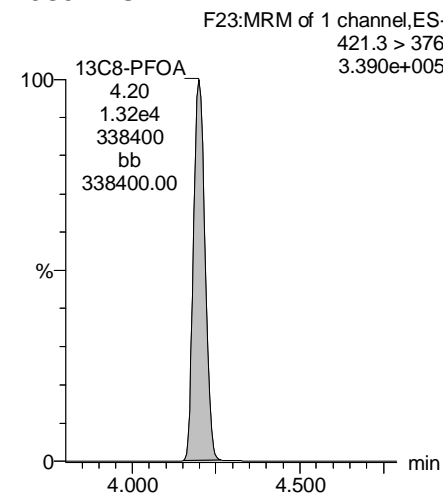
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



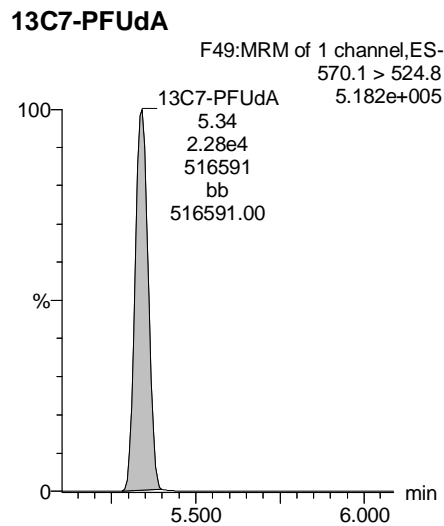
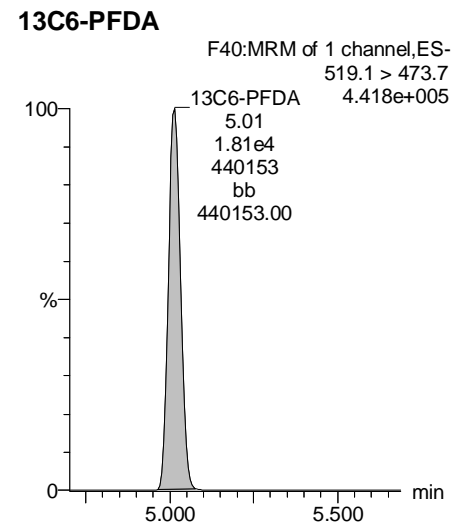
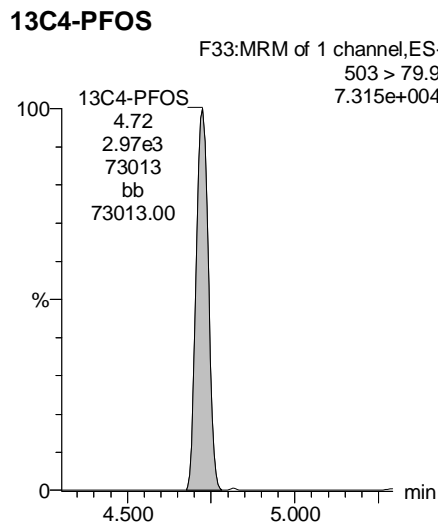
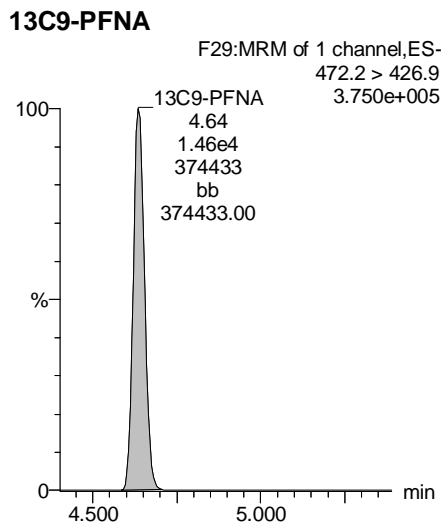
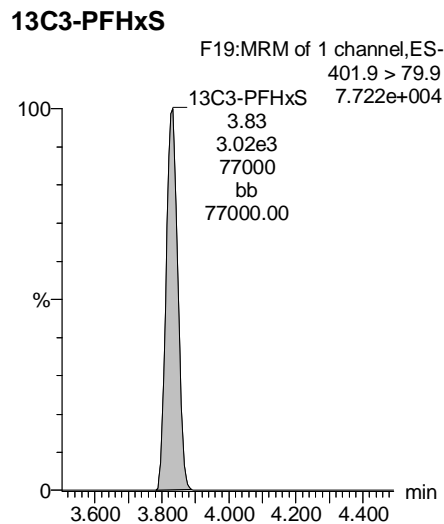
MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-24.qld

Last Altered: Friday, June 08, 2018 14:28:24 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:28:52 Pacific Daylight Time

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-25.qld

Last Altered: Friday, June 08, 2018 14:31:13 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:31:41 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_25, Date: 05-Jun-2018, Time: 20:39:12, ID: 1801071-04 A1-MW-07-SA1 0.11908, Description: A1-MW-07-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3 PFBS	299.0 > 79.7	3.35e3	1.57e3	0.119		2.56	2.56	26.6	112.2156		2.816	NO
2	5 PFHxA	313.2 > 268.9	3.02e4	2.25e3	0.119		3.06	3.06	67.2	356.3883		180.078	NO
3	7 PFHpA	363.0 > 318.9	3.48e3	6.31e3	0.119		3.67	3.67	6.90	49.3720		16.153	NO
4	8 L-PFHxS	398.9 > 79.6	6.27e3	1.35e3	0.119		3.83	3.83	58.1	253.7523		1.920	NO
5	11 L-PFOA	413 > 368.7	4.12e3	1.05e4	0.119		4.25	4.20	4.89	45.0612		4.564	NO
6	14 PFNA	463.0 > 418.8	8.28e1	9.65e3	0.119		4.66	4.64	0.107	0.0588		5.472	NO
7	16 L-PFOS	499.1 > 79.9	1.45e3	3.31e3	0.119		4.74	4.72	5.48	49.7558		2.060	NO
8	18 PFDA	513 > 468.8		1.24e4	0.119		5.03						
9	21 L-MeFOSAA	570.1 > 419		3.45e3	0.119		5.18						
10	23 L-EtFOSAA	584.2 > 419		4.55e3	0.119		5.37						

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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-25.qld

Last Altered: Friday, June 08, 2018 14:31:13 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:31:48 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_25, Date: 05-Jun-2018, Time: 20:39:12, ID: 1801071-04 A1-MW-07-SA1 0.11908, Description: A1-MW-07-SA1

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25	PFUdA	563.0 > 518.9	1.45e4	0.119		5.35						
2	27	PFDoA	612.9 > 569.0	1.44e4	0.119		5.63						
3	29	PFTrDA	662.9 > 618.9	1.44e4	0.119		5.88						
4	30	PFTeDA	712.9 > 668.8	1.42e4	0.119		6.10						
5	38	13C3-PFBS	302. > 98.8	1.57e3	7.27e3	0.119	0.104	2.60	2.56	2.71	218.9925	208.6	
6	39	13C2-4:2 FTS	329.2>308.9	3.31e3	7.27e3	0.119	0.248	3.01	2.98	5.69	192.9519	183.8	
7	40	13C2-PFHxA	315 > 269.8	2.25e3	7.27e3	0.119	0.729	3.09	3.06	3.87	44.5353	106.1	
8	41	13C4-PFHpA	367.2 > 321.8	6.31e3	7.27e3	0.119	0.836	3.71	3.67	10.9	108.9898	103.8	
9	42	18O2-PFHxS	403.0 > 102.6	1.35e3	3.16e3	0.119	0.443	3.86	3.83	5.34	101.3157	96.5	
10	43	13C2-6:2 FTS	429.1 > 408.9	3.43e3	9.00e3	0.119	0.249	4.17	4.14	4.76	160.4150	152.8	
11	44	13C2-PFOA	414.9 > 369.7	1.05e4	9.00e3	0.119	1.332	4.23	4.20	14.6	92.2967	87.9	
12	45	13C5-PFNA	468.2 > 422.9	9.65e3	1.16e4	0.119	0.951	4.66	4.64	10.4	91.4901	87.2	
13	46	13C8-PFOA	506.1 > 77.7	2.06e3	1.82e4	0.119	0.140	4.73	4.70	1.42	85.4653	81.4	
14	47	13C8-PFOS	507.0 > 79.9	3.31e3	3.27e3	0.119	1.060	4.74	4.72	12.7	100.2918	95.5	
15	48	13C2-PFDA	515.1 > 469.9	1.24e4	1.47e4	0.119	1.130	5.03	5.01	10.6	78.4956	74.8	
16	49	13C2-8:2 FTS	529.1 > 508.7	3.46e3	7.27e3	0.119	0.217	5.00	4.98	5.96	229.9911	219.1	
17	50	d3-N-MeFOSAA	573.3 > 419	3.45e3	1.82e4	0.119	0.184	5.18	5.17	2.38	108.7016	103.6	
18	51	d5-N-EtFOSAA	589.3 > 419	4.55e3	1.82e4	0.119	0.223	5.34	5.32	3.13	117.8431	112.3	
19	52	13C2-PFUdA	565 > 519.8	1.45e4	1.82e4	0.119	0.936	5.35	5.33	9.97	89.3615	85.1	
20	53	13C2-PFDoA	615.0 > 569.7	1.44e4	1.47e4	0.119	1.168	5.63	5.62	12.2	88.0076	83.8	
21	55	13C2-PFTeDA	714.8 > 669.6	1.42e4	1.82e4	0.119	0.706	6.09	6.08	9.78	116.3598	110.8	
22	56	d5-N-ETFOSA	531.1 > 168.9		1.82e4	0.119	0.071	6.24					
23	57	13C2-PFHxDA	815 > 769.7	9.16e3	1.82e4	0.119	1.079	6.43	6.43	6.30	49.0667	116.9	
24	58	d7-N-MeFOSE	623.1 > 58.9		1.82e4	0.119	0.041	6.37					
25	59	d9-N-EtFOSE	639.2 > 58.8		1.82e4	0.119	0.038	6.51					
26	60	13C4-PFBA	217. > 171.8	5.68e3	5.68e3	0.119	1.000	1.35	1.29	12.5	104.9714	100.0	
27	61	13C5-PFHxA	318 > 272.9	7.27e3	7.27e3	0.119	1.000	3.09	3.06	12.5	104.9714	100.0	
28	62	13C3-PFHxS	401.9 > 79.9	3.16e3	3.16e3	0.119	1.000	3.86	3.83	12.5	104.9714	100.0	
29	63	13C8-PFOA	421.3 > 376	9.00e3	9.00e3	0.119	1.000	4.23	4.20	12.5	104.9714	100.0	
30	64	13C9-PFNA	472.2 > 426.9	1.16e4	1.16e4	0.119	1.000	4.66	4.64	12.5	104.9714	100.0	
31	65	13C4-PFOS	503 > 79.9	3.27e3	3.27e3	0.119	1.000	4.74	4.72	12.5	104.9714	100.0	
32	66	13C6-PFDA	519.1 > 473.7	1.47e4	1.47e4	0.119	1.000	5.03	5.01	12.5	104.9714	100.0	ANP 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-25.qld

Last Altered: Friday, June 08, 2018 14:31:13 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:31:48 Pacific Daylight Time

Name: 180605M2_25, Date: 05-Jun-2018, Time: 20:39:12, ID: 1801071-04 A1-MW-07-SA1 0.11908, Description: A1-MW-07-SA1

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	67 13C7-PFUdA	570.1 > 524.8	1.82e4	1.82e4	0.119	1.000	5.35	5.34	12.5	104.9714	100.0		
34	68 Total PFHxS	398.9 > 79.6	6.27e3	1.35e3	0.119		4.05		58.1	253.7523			
35	69 Total PFOA	413 > 368.7	4.74e3	1.05e4	0.119		4.30		5.62	51.1413			
36	70 Total PFOS	499.1 > 79.9	1.45e3	3.31e3	0.119		4.90		5.48	49.7558			
37	71 Total N-MeFOSAA	570.1 > 419	0.00e0	3.45e3	0.119		5.55		0.000				
38	72 Total N-EtFOSAA	584.2 > 419	0.00e0	4.55e3	0.119		5.70		0.000				

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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-25.qld

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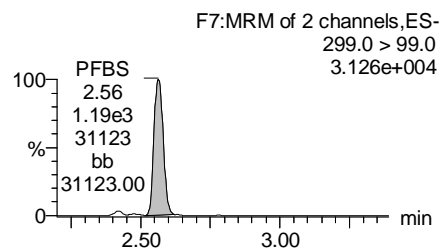
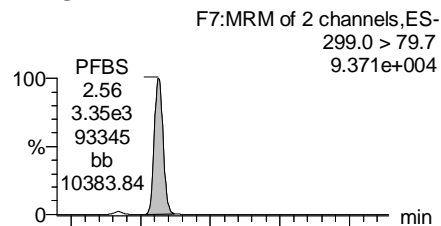
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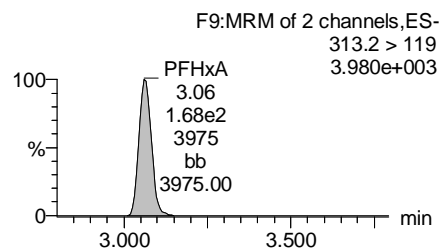
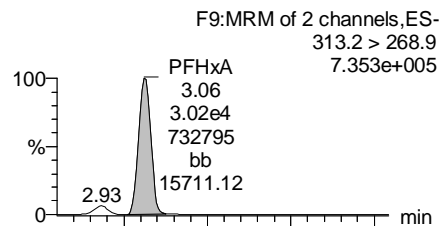
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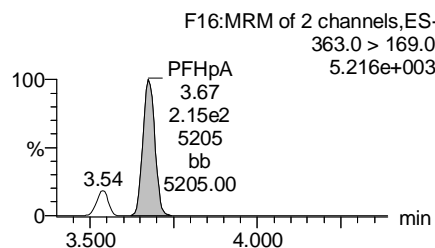
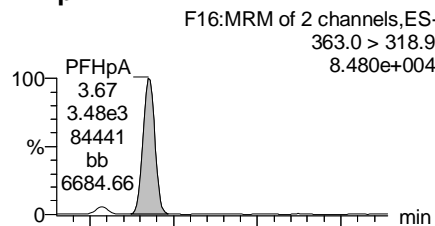
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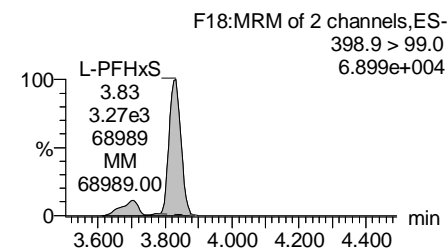
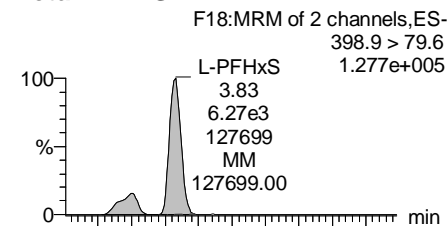
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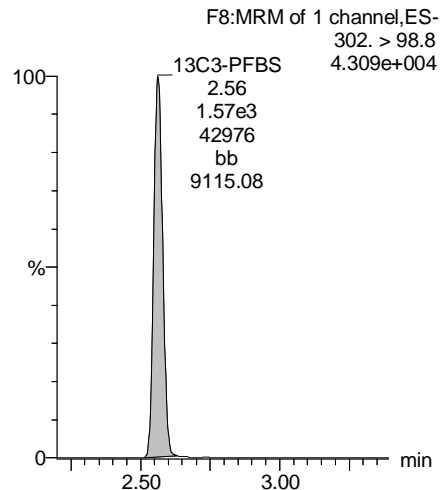
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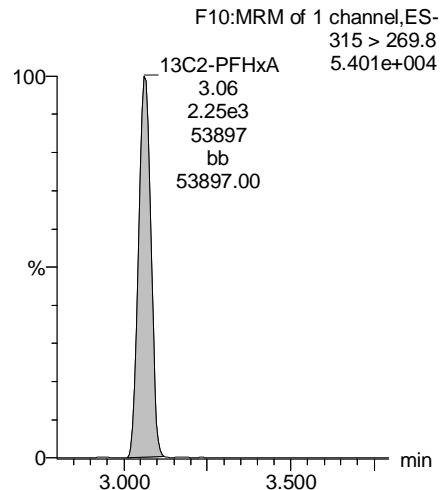
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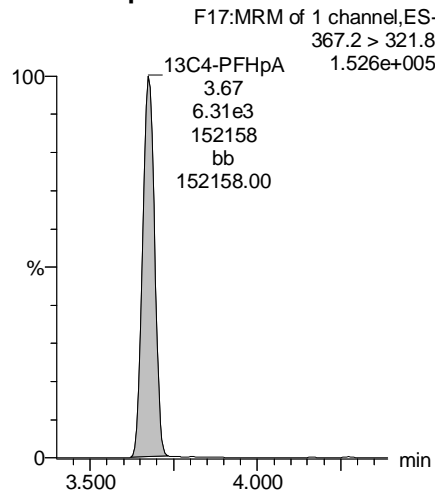
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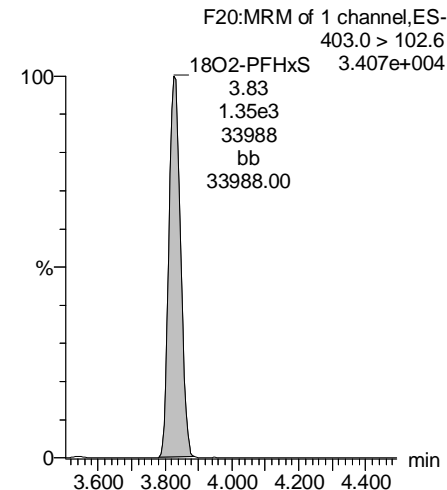
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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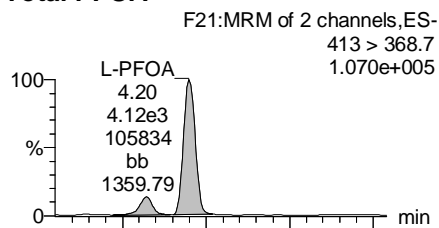
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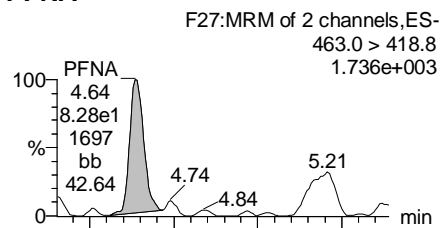
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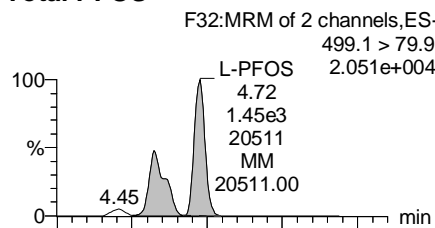
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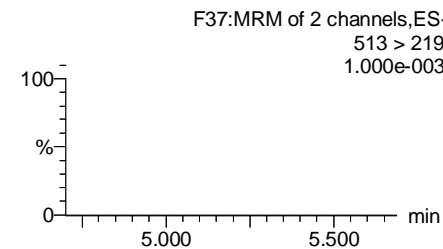
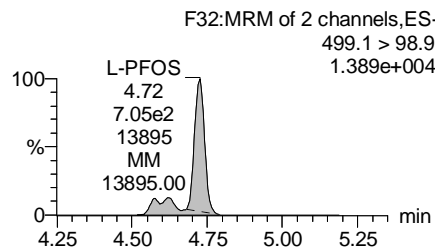
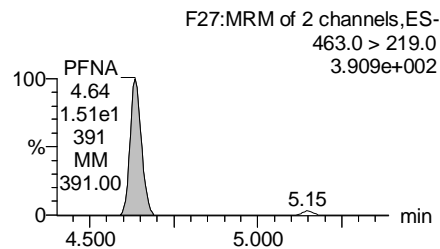
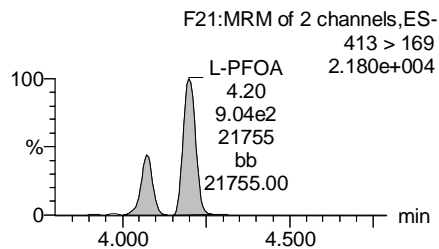
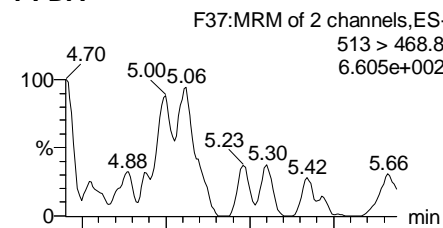
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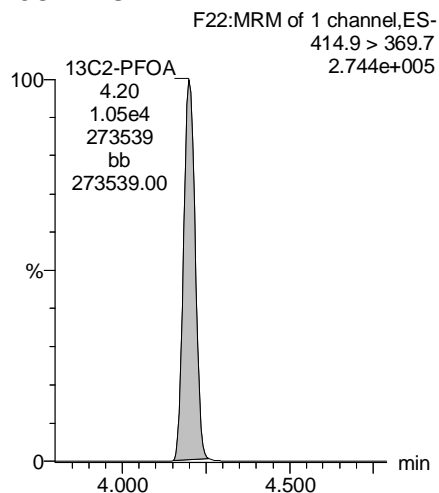
Total PFOS



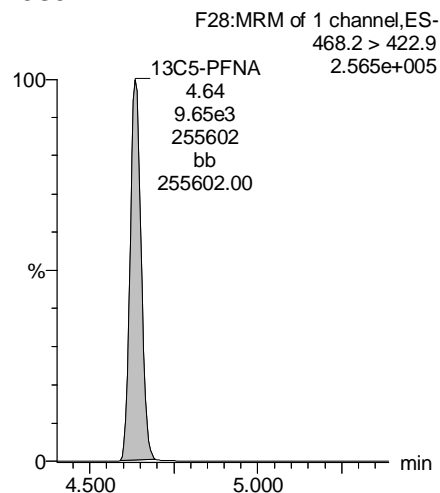
PFDA



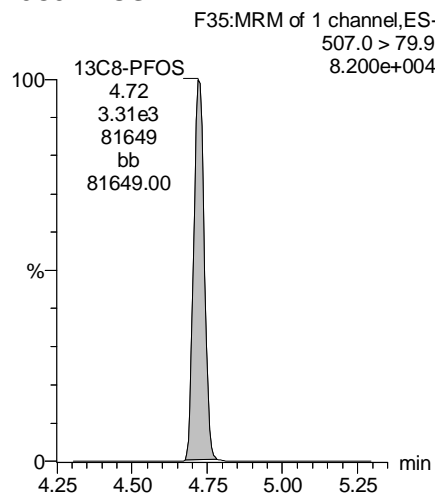
13C2-PFOA



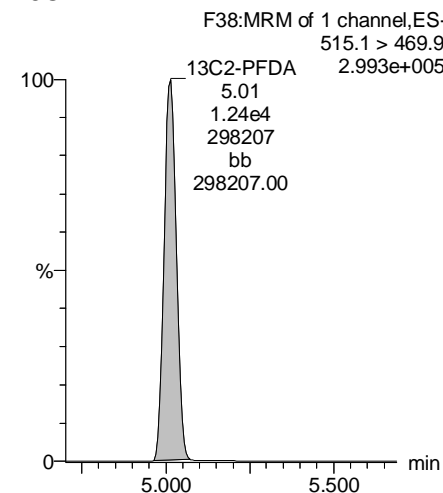
13C5-PFNA



13C8-PFOS



13C2-PFDA



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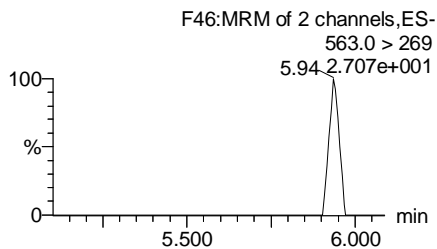
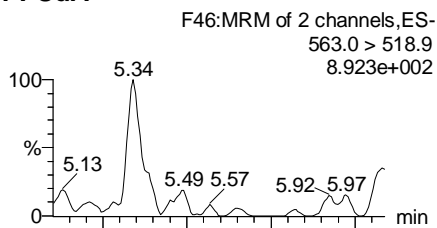
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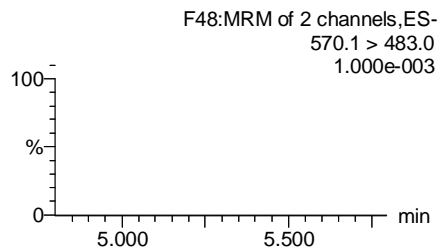
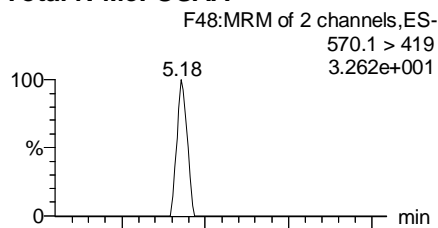
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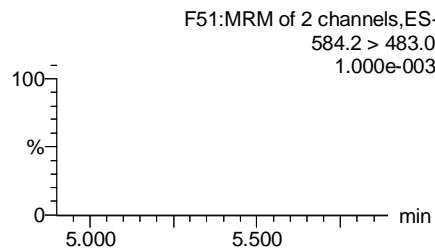
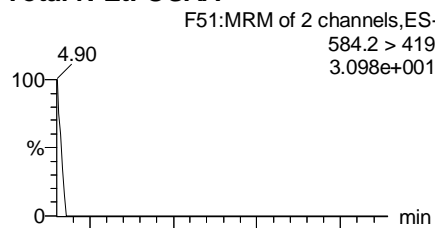
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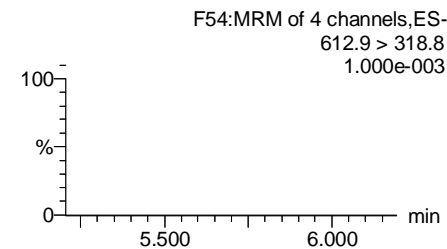
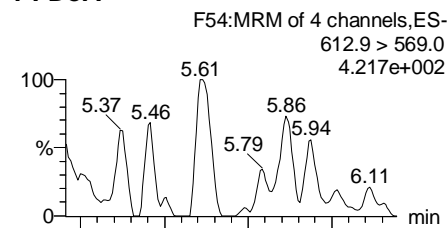
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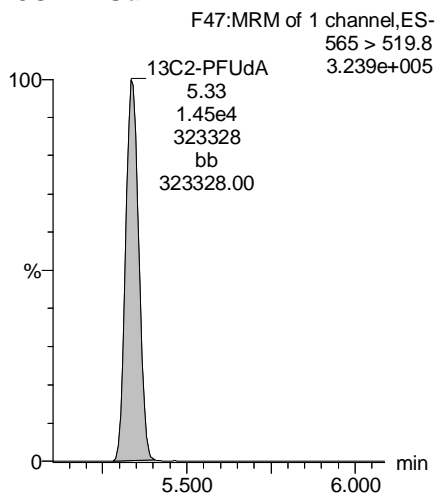
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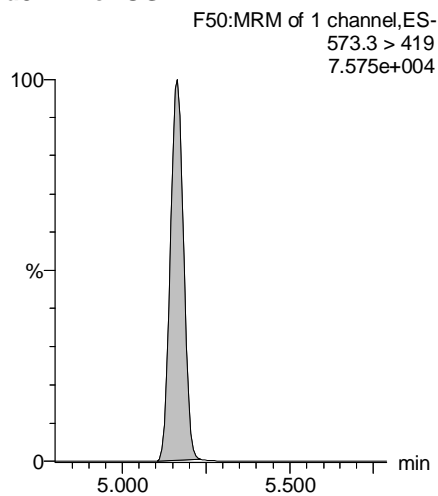
PFDaA



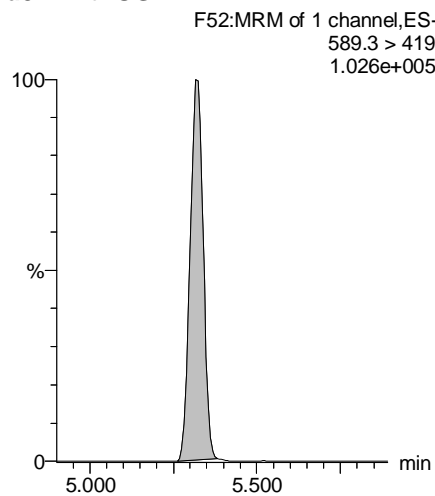
13C2-PFUdA



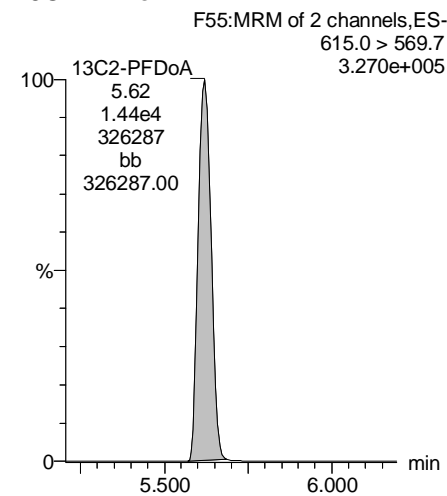
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDaA



MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-25.qld

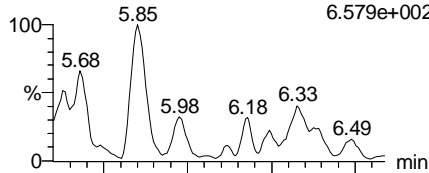
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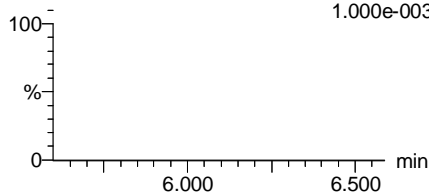
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PFTrDA

F60:MRM of 2 channels,ES-
662.9 > 618.9
6.579e+002

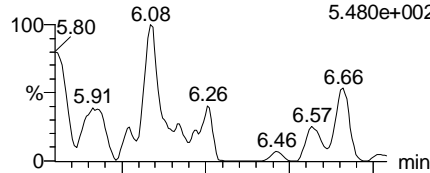


F60:MRM of 2 channels,ES-
662.9 > 319
1.000e-003

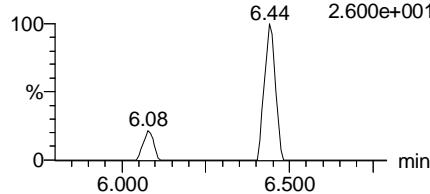


PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
5.480e+002

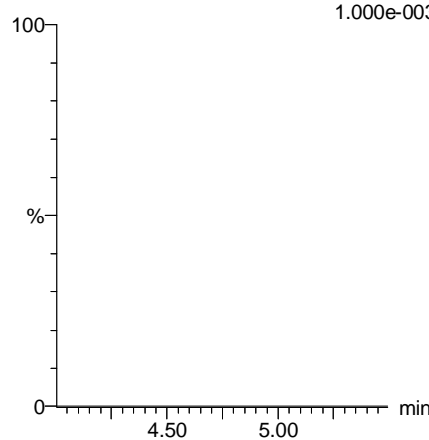


F61:MRM of 2 channels,ES-
712.9 > 369
2.600e+001



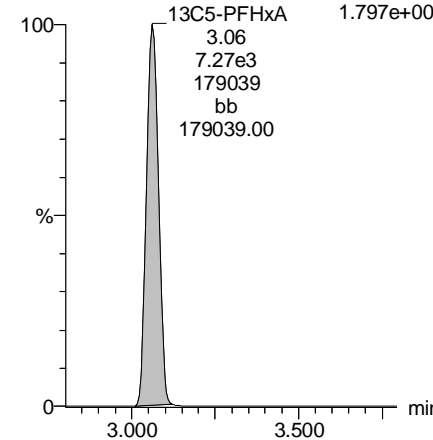
TCDA

F31:MRM of 3 channels,ES-
498.3 > 106.9
1.000e-003



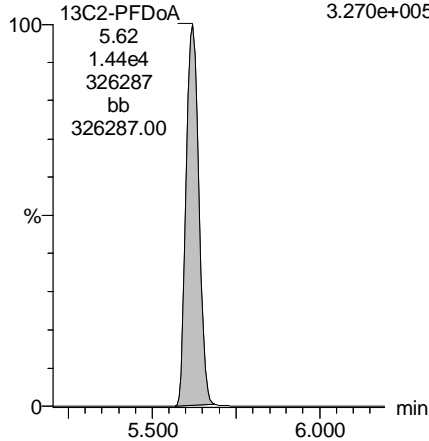
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
1.797e+005



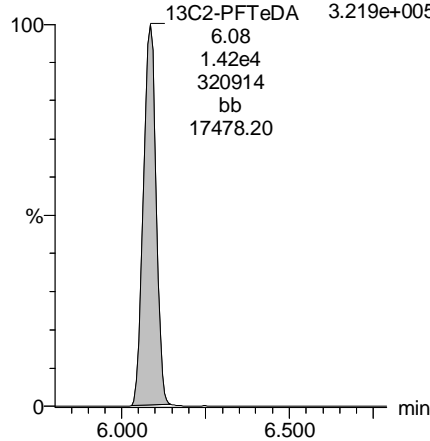
13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
3.270e+005



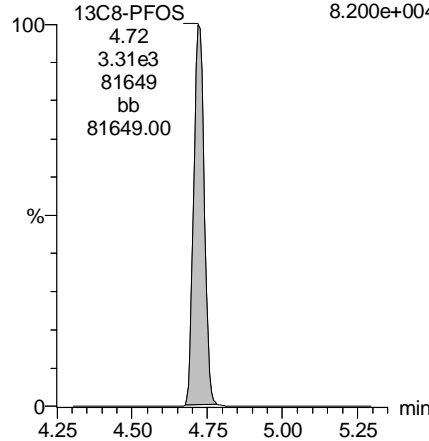
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
3.219e+005



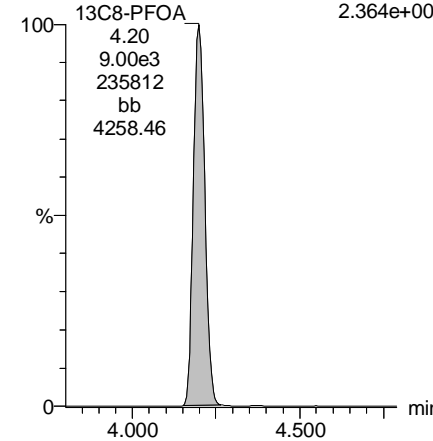
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
8.200e+004



13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
2.364e+005



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Dataset: Z:\Projects\PFAS.PRO\Results\180605M2\180605M2-25.qld

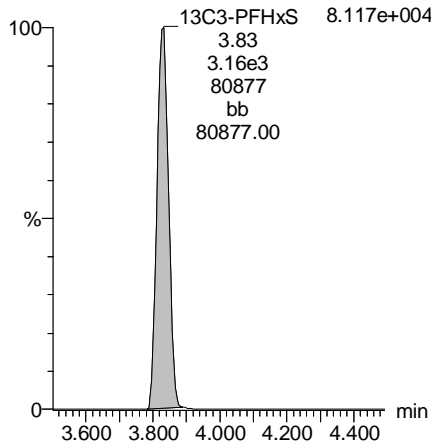
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Printed: Friday, June 08, 2018 14:31:48 Pacific Daylight Time

Name: 180605M2_25, Date: 05-Jun-2018, Time: 20:39:12, ID: 1801071-04 A1-MW-07-SA1 0.11908, Description: A1-MW-07-SA1

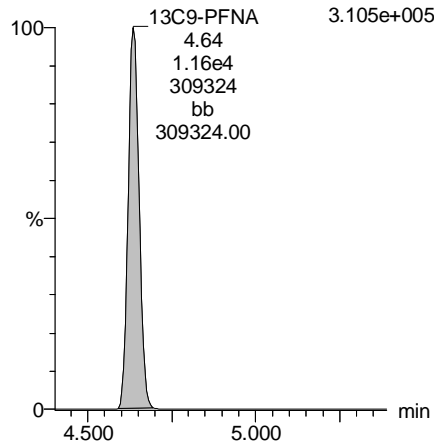
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9



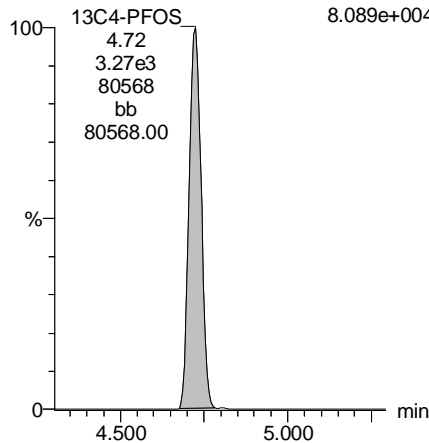
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9



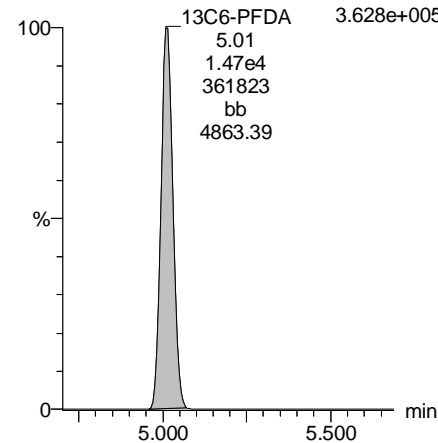
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9



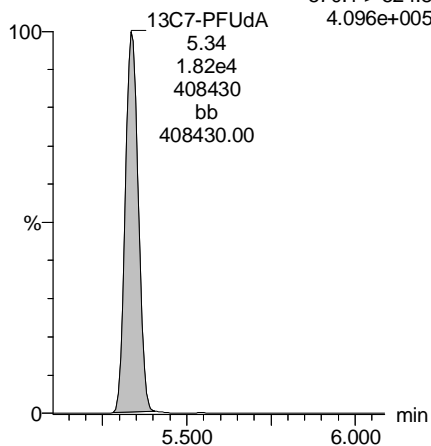
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7



13C7-PFUDa

F49:MRM of 1 channel,ES-
570.1 > 524.8



MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-39.qld

Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

Printed: Friday, June 08, 2018 13:59:16 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	3	PFBS	299.0 > 79.7		1.91e3	0.4988		2.59						
2	5	PFHxA	313.2 > 268.9		4.40e3	0.4988		3.09						
3	7	PFHpA	363.0 > 318.9		1.30e4	0.4988		3.70						
4	8	L-PFHxS	398.9 > 79.6	5.06e0	1.69e3	0.4988		3.85	3.84	0.0373	0.0483		1.388	NO
5	11	L-PFOA	413 > 368.7		1.71e4	0.4988		4.25						
6	14	PFNA	463.0 > 418.8		1.62e4	0.4988		4.66						
7	16	L-PFOS	499.1 > 79.9		3.90e3	0.4988		4.74						
8	18	PFDA	513 > 468.8		1.77e4	0.4988		5.03						
9	21	L-MeFOSAA	570.1 > 419		3.51e3	0.4988		5.18						
10	23	L-EtFOSAA	584.2 > 419		4.24e3	0.4988		5.37						

MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-39.qld

Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:14:09 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
1	25	PFUDa	563.0 > 518.9		1.80e4	0.499		5.35					
2	27	PFDa	612.9 > 569.0		1.58e4	0.499		5.63					
3	29	PFTrDA	662.9 > 618.9		1.58e4	0.499		5.88					
4	30	PFTeDA	712.9 > 668.8		1.21e4	0.499		6.10					
5	38	13C3-PFBS	302. > 98.8	1.91e3	1.59e4	0.499	0.104	2.60	2.60	1.50	28.9796	115.6	
6	39	13C2-4:2 FTS	329.2>308.9	3.95e3	1.59e4	0.499	0.248	3.01	3.01	3.10	25.1315	100.3	
7	40	13C2-PFHxA	315 > 269.8	4.40e3	1.59e4	0.499	0.729	3.09	3.09	3.45	9.4987	94.8	
8	41	13C4-PFHpA	367.2 > 321.8	1.30e4	1.59e4	0.499	0.836	3.71	3.70	10.2	24.5726	98.1	
9	42	18O2-PFHxS	403.0 > 102.6	1.69e3	3.67e3	0.499	0.443	3.86	3.85	5.76	26.1127	104.2	
10	43	13C2-6:2 FTS	429.1 > 408.9	3.85e3	1.68e4	0.499	0.249	4.17	4.17	2.86	23.0361	91.9	
11	44	13C2-PFOA	414.9 > 369.7	1.71e4	1.68e4	0.499	1.332	4.23	4.22	12.7	19.1467	76.4	
12	45	13C5-PFNA	468.2 > 422.9	1.62e4	1.96e4	0.499	0.951	4.66	4.66	10.3	21.7545	86.8	
13	46	13C8-PFOSA	506.1 > 77.7	1.56e3	2.66e4	0.499	0.140	4.73	4.72	0.733	10.5278	42.0	
14	47	13C8-PFOS	507.0 > 79.9	3.90e3	3.77e3	0.499	1.060	4.74	4.74	12.9	24.4489	97.6	
15	48	13C2-PFDA	515.1 > 469.9	1.77e4	2.11e4	0.499	1.130	5.03	5.03	10.5	18.6627	74.5	
16	49	13C2-8:2 FTS	529.1 > 508.7	2.97e3	1.59e4	0.499	0.217	5.00	5.00	2.34	21.5428	86.0	
17	50	d3-N-MeFOSAA	573.3 > 419	3.51e3	2.66e4	0.499	0.184	5.18	5.18	1.65	18.0221	71.9	
18	51	d5-N-EtFOSAA	589.3 > 419	4.24e3	2.66e4	0.499	0.223	5.34	5.34	1.99	17.9060	71.4	
19	52	13C2-PFUdA	565 > 519.8	1.80e4	2.66e4	0.499	0.936	5.35	5.35	8.46	18.1183	72.3	
20	53	13C2-PFDa	615.0 > 569.7	1.58e4	2.11e4	0.499	1.168	5.63	5.63	9.37	16.0815	64.2	
21	55	13C2-PFTeDA	714.8 > 669.6	1.21e4	2.66e4	0.499	0.706	6.09	6.09	5.70	16.1941	64.6	
22	56	d5-N-ETFOSA	531.1 > 168.9		2.66e4	0.499	0.071	6.24					
23	57	13C2-PFHxDA	815 > 769.7	9.64e3	2.66e4	0.499	1.079	6.43	6.43	4.53	8.4285	84.1	
24	58	d7-N-MeFOSE	623.1 > 58.9		2.66e4	0.499	0.041	6.37					
25	59	d9-N-EtFOSE	639.2 > 58.8		2.66e4	0.499	0.038	6.51					
26	60	13C4-PFBA	217. > 171.8	9.36e3	9.36e3	0.499	1.000	1.35	1.33	12.5	25.0611	100.0	
27	61	13C5-PFHxA	318 > 272.9	1.59e4	1.59e4	0.499	1.000	3.09	3.09	12.5	25.0611	100.0	
28	62	13C3-PFHxS	401.9 > 79.9	3.67e3	3.67e3	0.499	1.000	3.86	3.85	12.5	25.0611	100.0	
29	63	13C8-PFOA	421.3 > 376	1.68e4	1.68e4	0.499	1.000	4.23	4.22	12.5	25.0611	100.0	
30	64	13C9-PFNA	472.2 > 426.9	1.96e4	1.96e4	0.499	1.000	4.66	4.66	12.5	25.0611	100.0	
31	65	13C4-PFOS	503 > 79.9	3.77e3	3.77e3	0.499	1.000	4.74	4.74	12.5	25.0611	100.0	
32	66	13C6-PFDA	519.1 > 473.7	2.11e4	2.11e4	0.499	1.000	5.03	5.03	12.5	25.0611	100.0	ANP 6/8/2018

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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-39.qld

Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:14:09 Pacific Daylight Time

Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Ion Ratio	Ratio Out?
33	67 13C7-PFUdA	570.1 > 524.8	2.66e4	2.66e4	0.499	1.000	5.35	5.35	12.5	25.0611	100.0		
34	68 Total PFHxS	398.9 > 79.6	5.06e0	1.69e3	0.499		4.05		0.0373	0.0483			
35	69 Total PFOA	413 > 368.7	0.00e0	1.71e4	0.499		4.30		0.000				
36	70 Total PFOS	499.1 > 79.9	0.00e0	3.90e3	0.499		4.90		0.000				
37	71 Total N-MeFOSAA	570.1 > 419	0.00e0	3.51e3	0.499		5.55		0.000				
38	72 Total N-EtFOSAA	584.2 > 419	0.00e0	4.24e3	0.499		5.70		0.000				

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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-39.qld

Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

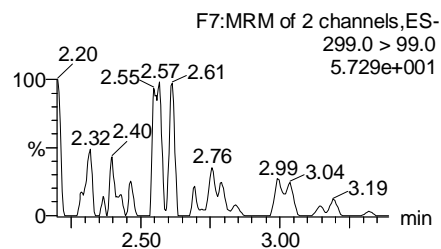
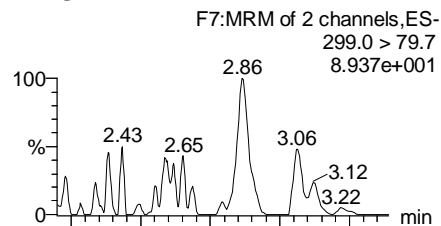
Printed: Friday, June 08, 2018 14:14:09 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

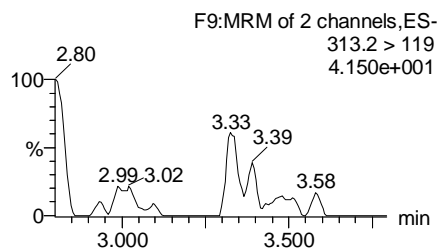
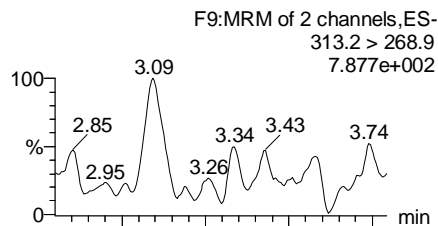
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Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

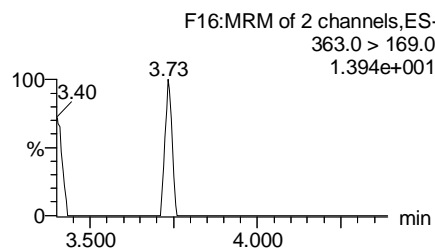
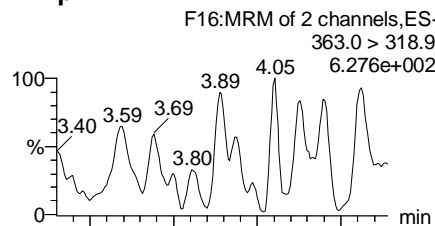
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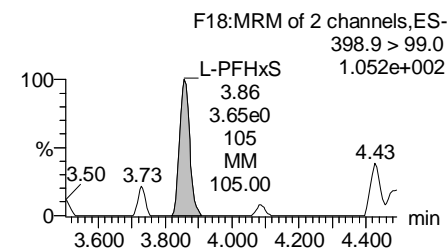
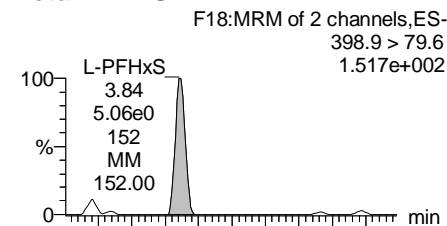
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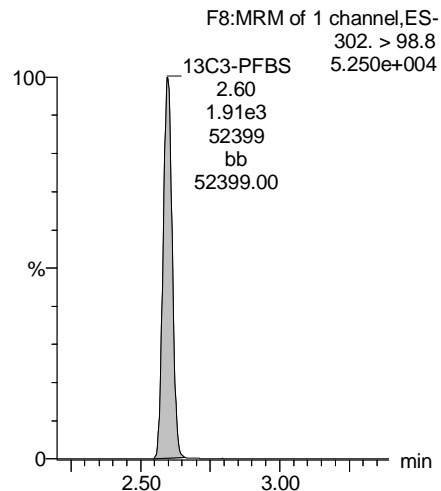
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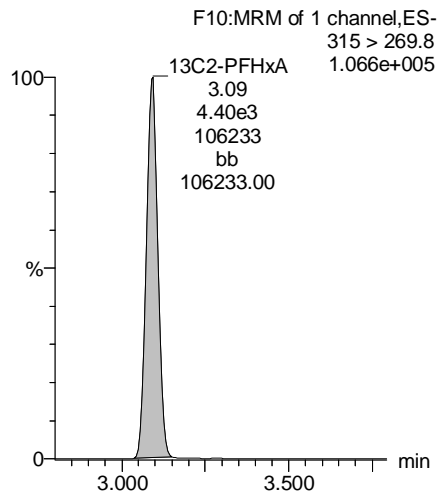
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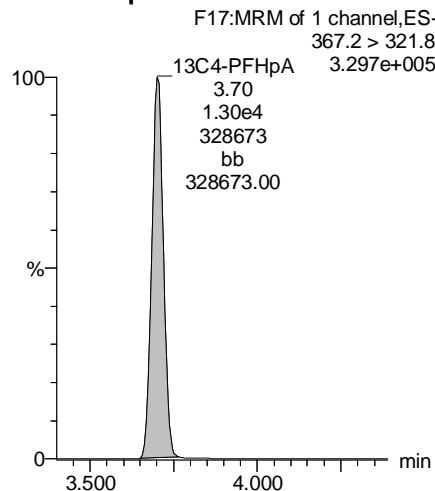
13C3-PFBS



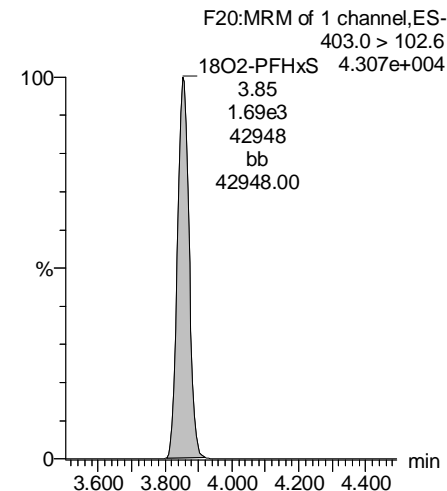
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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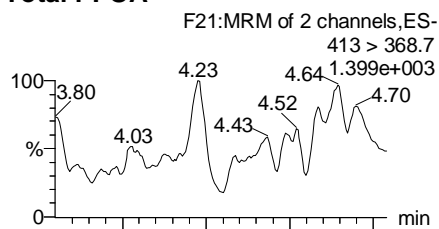
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Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

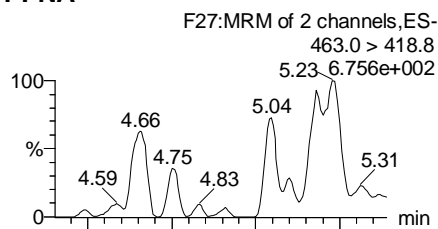
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Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

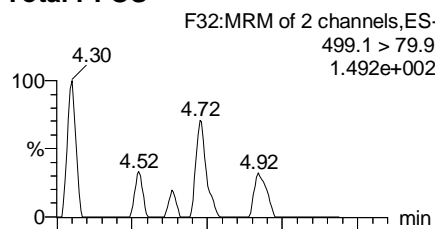
Total PFOA



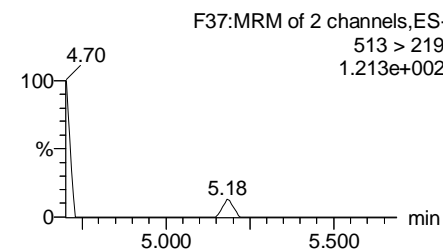
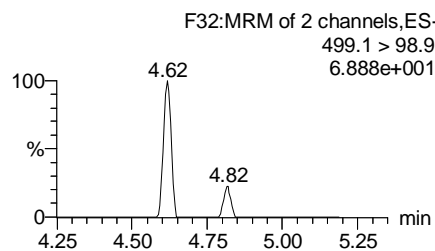
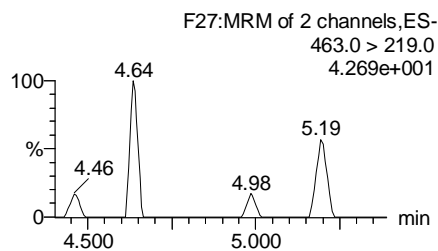
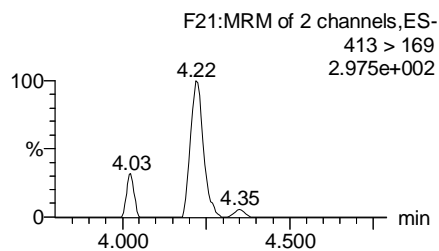
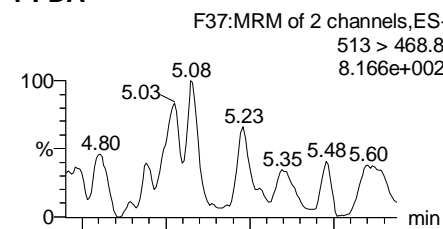
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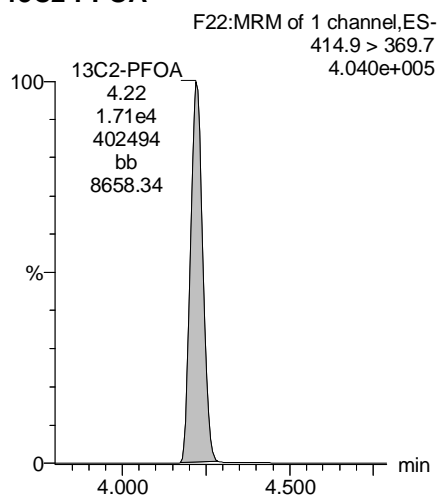
Total PFOS



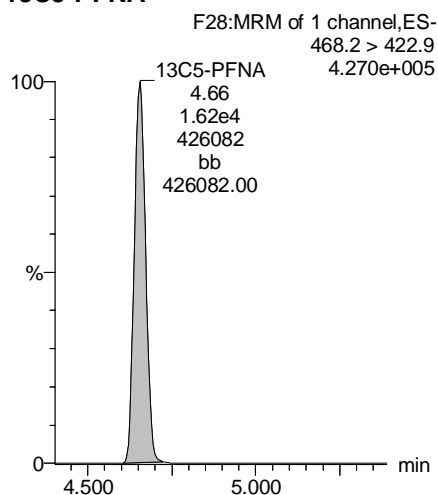
PFDA



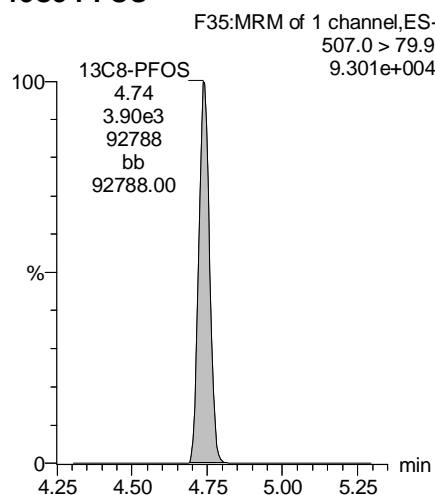
13C2-PFOA



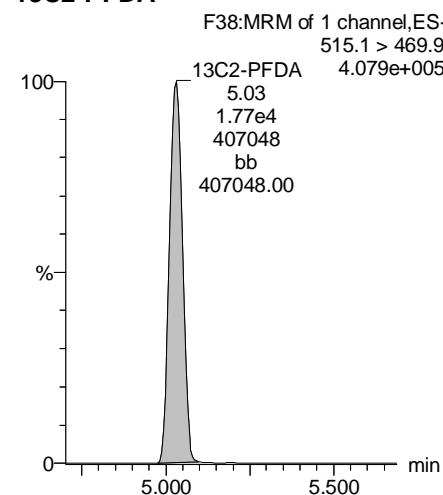
13C5-PFNA



13C8-PFOS



13C2-PFDA



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Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-39.qld

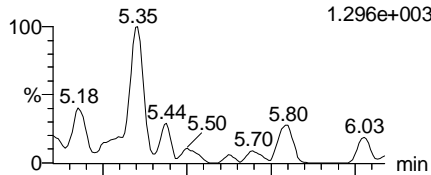
Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

Printed: Friday, June 08, 2018 14:14:09 Pacific Daylight Time

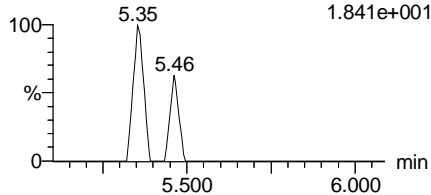
Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
1.296e+003

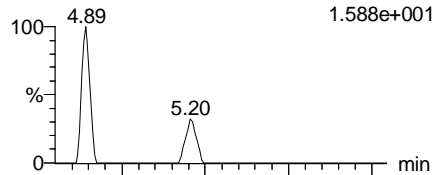


F46:MRM of 2 channels,ES-
563.0 > 269
1.841e+001

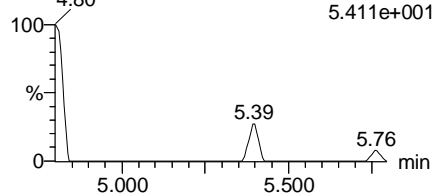


Total N-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
1.588e+001

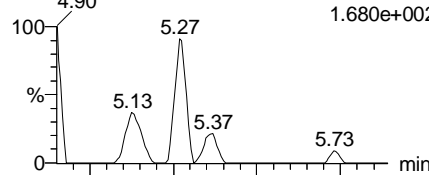


F48:MRM of 2 channels,ES-
570.1 > 483.0
5.411e+001

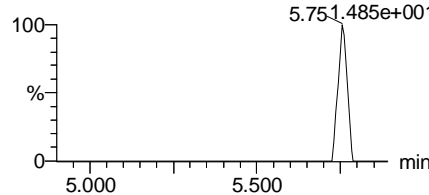


Total N-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
1.680e+002

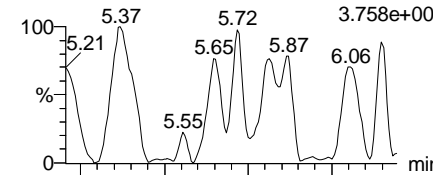


F51:MRM of 2 channels,ES-
584.2 > 483.0
5.751485e+001

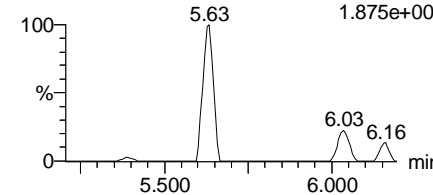


PFDoA

F54:MRM of 4 channels,ES-
612.9 > 569.0
3.758e+002

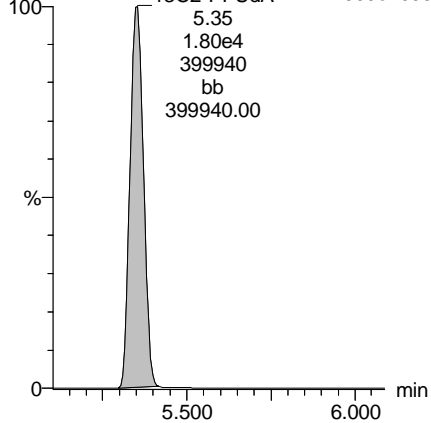


F54:MRM of 4 channels,ES-
612.9 > 318.8
1.875e+002



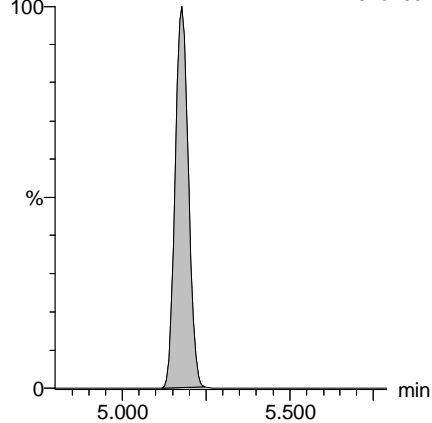
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
4.009e+005



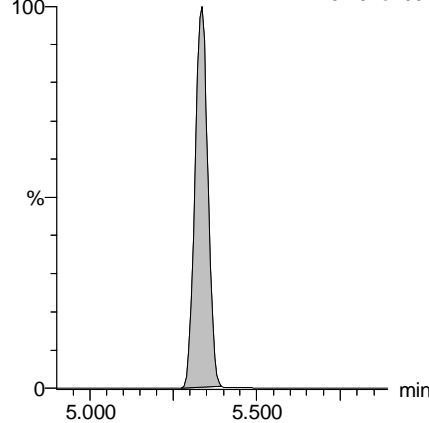
d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
7.704e+004



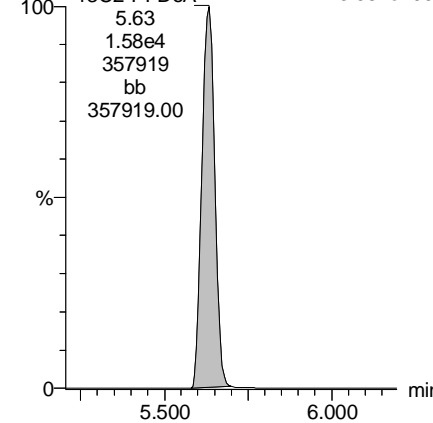
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
9.487e+004



13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
3.587e+005



MM 6/8/2018

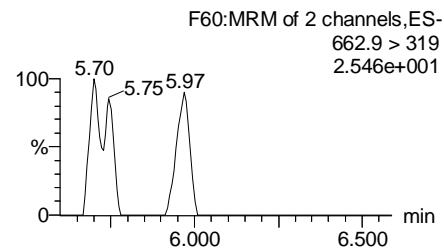
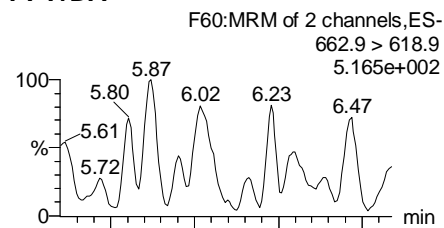
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Last Altered: Friday, June 08, 2018 13:58:23 Pacific Daylight Time

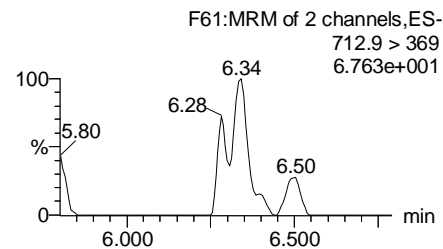
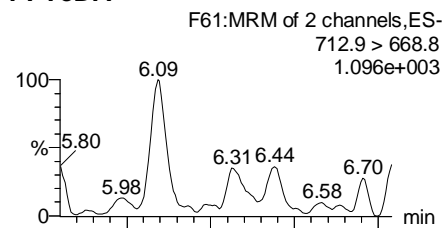
Printed: Friday, June 08, 2018 14:14:09 Pacific Daylight Time

Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

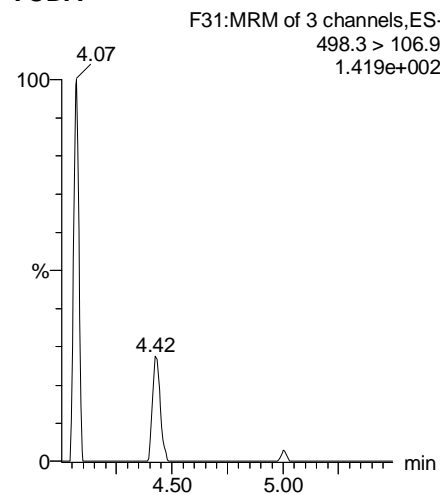
PFTrDA



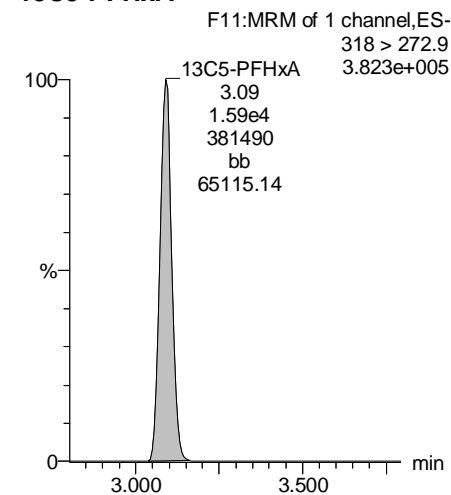
PFTeDA



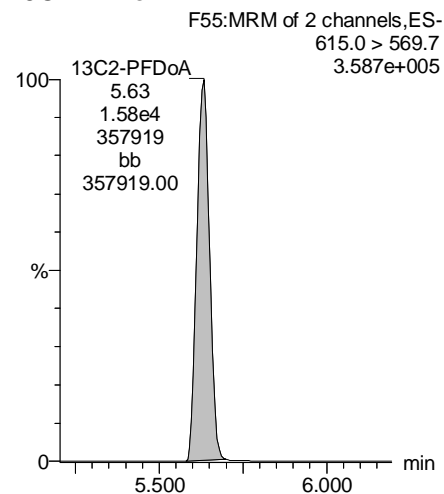
TCDA



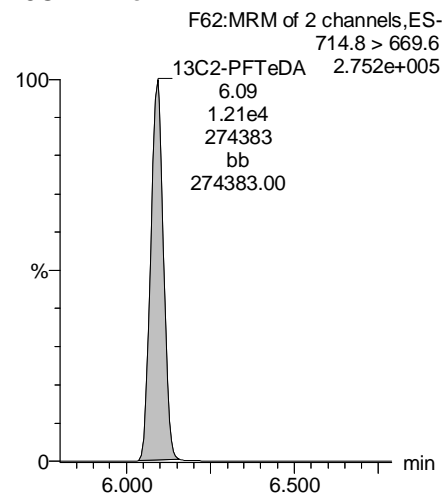
13C5-PFHxA



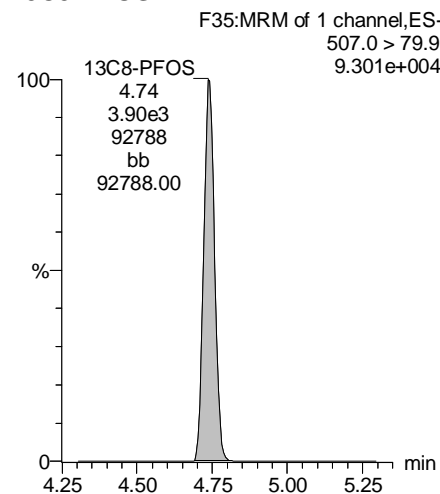
13C2-PFDoA



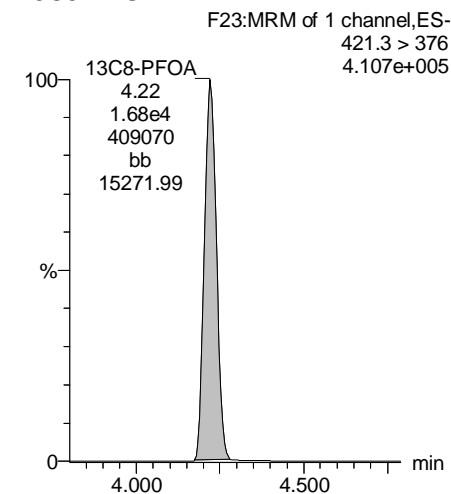
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



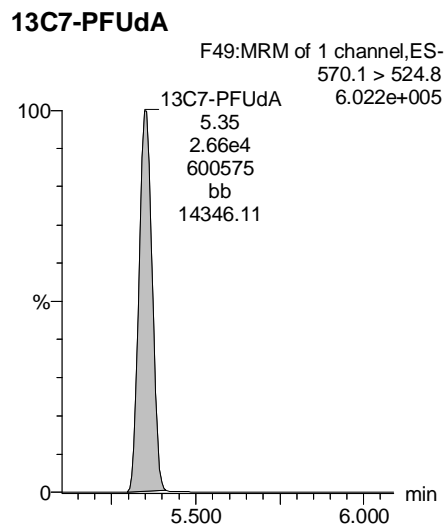
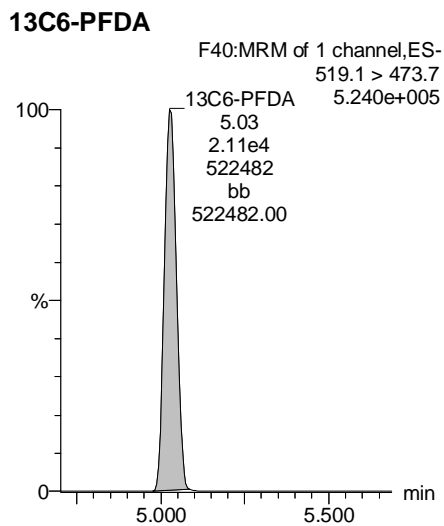
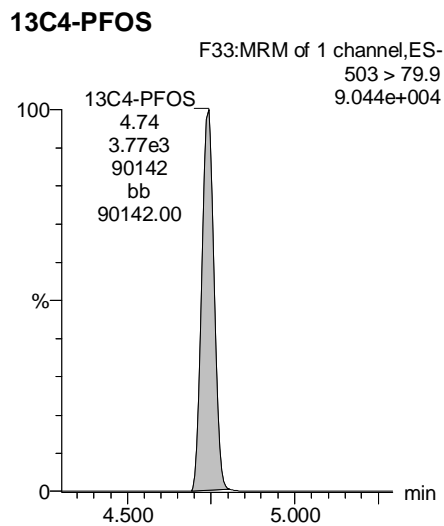
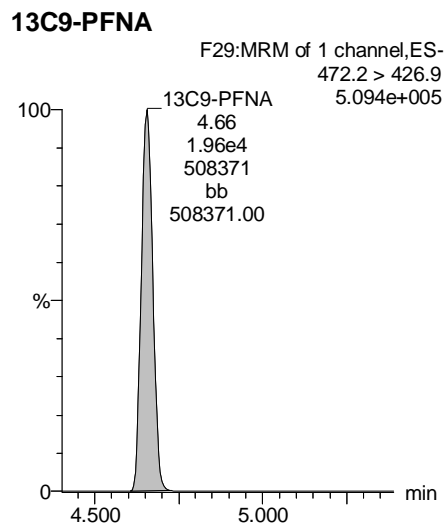
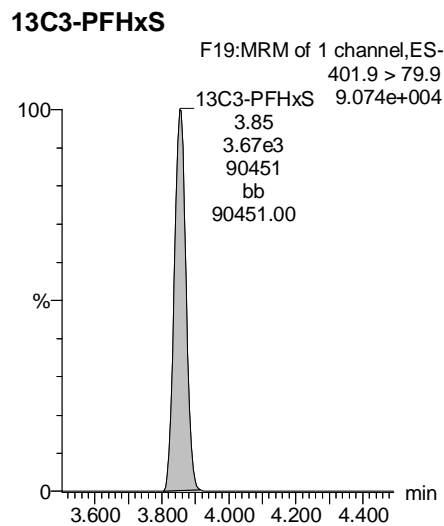
MM 6/8/2018

Dataset: Z:\Projects\PFAS.PRO\Results\180604M2\180604M2-39.qld

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Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530



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

Dataset: Untitled

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Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_RS-5-19-18.mdb 20 May 2018 12:59:37

Calibration: 05 Jun 2018 09:18:29

Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-6 PFC CS3 18E2907	1.19e4	100.0	NO
2	2 13C5-PFHxA	ST180603M2-6 PFC CS3 18E2907	1.77e4	100.0	NO
3	3 13C3-PFHxS	ST180603M2-6 PFC CS3 18E2907	3.36e3	100.0	NO
4	4 13C8-PFOA	ST180603M2-6 PFC CS3 18E2907	1.73e4	100.0	NO
5	5 13C9-PFNA	ST180603M2-6 PFC CS3 18E2907	2.02e4	100.0	NO
6	6 13C4-PFOS	ST180603M2-6 PFC CS3 18E2907	3.59e3	100.0	NO
7	7 13C6-PFDA	ST180603M2-6 PFC CS3 18E2907	2.31e4	100.0	NO
8	8 13C7-PFUDa	ST180603M2-6 PFC CS3 18E2907	2.94e4	100.0	NO

Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-7 PFC CS4 18E2908	1.28e4	107.7	NO
2	2 13C5-PFHxA	ST180603M2-7 PFC CS4 18E2908	1.77e4	100.1	NO
3	3 13C3-PFHxS	ST180603M2-7 PFC CS4 18E2908	3.64e3	108.3	NO
4	4 13C8-PFOA	ST180603M2-7 PFC CS4 18E2908	2.08e4	120.8	NO
5	5 13C9-PFNA	ST180603M2-7 PFC CS4 18E2908	2.08e4	103.2	NO
6	6 13C4-PFOS	ST180603M2-7 PFC CS4 18E2908	3.65e3	101.7	NO
7	7 13C6-PFDA	ST180603M2-7 PFC CS4 18E2908	2.64e4	114.0	NO
8	8 13C7-PFUDa	ST180603M2-7 PFC CS4 18E2908	2.29e4	78.0	NO

Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-8 PFC CS5 18E2909	1.16e4	97.3	NO
2	2 13C5-PFHxA	ST180603M2-8 PFC CS5 18E2909	1.66e4	94.1	NO
3	3 13C3-PFHxS	ST180603M2-8 PFC CS5 18E2909	3.44e3	102.4	NO
4	4 13C8-PFOA	ST180603M2-8 PFC CS5 18E2909	1.66e4	96.3	NO
5	5 13C9-PFNA	ST180603M2-8 PFC CS5 18E2909	2.15e4	106.4	NO
6	6 13C4-PFOS	ST180603M2-8 PFC CS5 18E2909	3.20e3	89.3	NO
7	7 13C6-PFDA	ST180603M2-8 PFC CS5 18E2909	2.11e4	91.2	NO
8	8 13C7-PFUDa	ST180603M2-8 PFC CS5 18E2909	2.82e4	96.0	NO

Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-9 PFC CS6 18E2910	1.19e4	99.6	NO
2	2 13C5-PFHxA	ST180603M2-9 PFC CS6 18E2910	1.63e4	92.0	NO
3	3 13C3-PFHxS	ST180603M2-9 PFC CS6 18E2910	3.18e3	94.7	NO
4	4 13C8-PFOA	ST180603M2-9 PFC CS6 18E2910	1.68e4	97.5	NO
5	5 13C9-PFNA	ST180603M2-9 PFC CS6 18E2910	1.74e4	86.0	NO
6	6 13C4-PFOS	ST180603M2-9 PFC CS6 18E2910	3.22e3	89.6	NO
7	7 13C6-PFDA	ST180603M2-9 PFC CS6 18E2910	2.13e4	92.2	NO
8	8 13C7-PFUDa	ST180603M2-9 PFC CS6 18E2910	2.15e4	73.2	NO

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Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180603M2-10 PFC CS7 18E2911	1.10e4	92.1	NO
2	2	13C5-PFHxA	ST180603M2-10 PFC CS7 18E2911	1.45e4	81.8	NO
3	3	13C3-PFHxS	ST180603M2-10 PFC CS7 18E2911	2.79e3	83.1	NO
4	4	13C8-PFOA	ST180603M2-10 PFC CS7 18E2911	1.34e4	77.4	NO
5	5	13C9-PFNA	ST180603M2-10 PFC CS7 18E2911	1.87e4	92.6	NO
6	6	13C4-PFOS	ST180603M2-10 PFC CS7 18E2911	2.93e3	81.6	NO
7	7	13C6-PFDA	ST180603M2-10 PFC CS7 18E2911	1.81e4	78.3	NO
8	8	13C7-PFUdA	ST180603M2-10 PFC CS7 18E2911	2.14e4	72.7	NO

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ICV180603M2-1 PFC 537 ICV 18E2901	1.14e4	96.2	NO
2	2	13C5-PFHxA	ICV180603M2-1 PFC 537 ICV 18E2901	1.66e4	94.2	NO
3	3	13C3-PFHxS	ICV180603M2-1 PFC 537 ICV 18E2901	3.55e3	105.6	NO
4	4	13C8-PFOA	ICV180603M2-1 PFC 537 ICV 18E2901	1.87e4	108.3	NO
5	5	13C9-PFNA	ICV180603M2-1 PFC 537 ICV 18E2901	2.10e4	104.2	NO
6	6	13C4-PFOS	ICV180603M2-1 PFC 537 ICV 18E2901	3.48e3	96.8	NO
7	7	13C6-PFDA	ICV180603M2-1 PFC 537 ICV 18E2901	2.33e4	100.8	NO
8	8	13C7-PFUdA	ICV180603M2-1 PFC 537 ICV 18E2901	2.83e4	96.4	NO

Name: 180603M2_14, Date: 03-Jun-2018, Time: 20:13:28, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

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Name: 180603M2_15, Date: 03-Jun-2018, Time: 20:27:03, ID: B8F0002-BS1 OPR 0.125, Description: OPR

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8F0002-BS1 OPR 0.125	7.76e3	65.2	NO
2	2 13C5-PFHxA	B8F0002-BS1 OPR 0.125	1.18e4	66.5	NO
3	3 13C3-PFHxS	B8F0002-BS1 OPR 0.125	2.90e3	86.5	NO
4	4 13C8-PFOA	B8F0002-BS1 OPR 0.125	1.29e4	74.9	NO
5	5 13C9-PFNA	B8F0002-BS1 OPR 0.125	1.67e4	82.6	NO
6	6 13C4-PFOS	B8F0002-BS1 OPR 0.125	3.06e3	85.2	NO
7	7 13C6-PFDA	B8F0002-BS1 OPR 0.125	1.65e4	71.5	NO
8	8 13C7-PFUdA	B8F0002-BS1 OPR 0.125	2.51e4	85.4	NO

Name: 180603M2_16, Date: 03-Jun-2018, Time: 20:37:28, ID: B8F0002-BLK1 Method Blank 0.125, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8F0002-BLK1 Method Blank 0.125	8.85e3	74.4	NO
2	2 13C5-PFHxA	B8F0002-BLK1 Method Blank 0.125	1.42e4	80.2	NO
3	3 13C3-PFHxS	B8F0002-BLK1 Method Blank 0.125	3.36e3	100.2	NO
4	4 13C8-PFOA	B8F0002-BLK1 Method Blank 0.125	1.61e4	93.5	NO
5	5 13C9-PFNA	B8F0002-BLK1 Method Blank 0.125	1.88e4	93.3	NO
6	6 13C4-PFOS	B8F0002-BLK1 Method Blank 0.125	3.63e3	101.0	NO
7	7 13C6-PFDA	B8F0002-BLK1 Method Blank 0.125	2.34e4	101.0	NO
8	8 13C7-PFUdA	B8F0002-BLK1 Method Blank 0.125	2.57e4	87.5	NO

Name: 180603M2_17, Date: 03-Jun-2018, Time: 20:47:59, ID: 1801010-01RE1 GSUMW0050510180516GSC 0.24314, Description: GSUMW0050510180516GSC

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801010-01RE1 GSUMW00505101805...	1.03e4	86.3	NO
2	2 13C5-PFHxA	1801010-01RE1 GSUMW00505101805...	1.48e4	83.9	NO
3	3 13C3-PFHxS	1801010-01RE1 GSUMW00505101805...	3.47e3	103.3	NO
4	4 13C8-PFOA	1801010-01RE1 GSUMW00505101805...	1.63e4	94.7	NO
5	5 13C9-PFNA	1801010-01RE1 GSUMW00505101805...	1.94e4	96.0	NO
6	6 13C4-PFOS	1801010-01RE1 GSUMW00505101805...	3.48e3	96.8	NO
7	7 13C6-PFDA	1801010-01RE1 GSUMW00505101805...	2.00e4	86.5	NO
8	8 13C7-PFUdA	1801010-01RE1 GSUMW00505101805...	3.01e4	102.4	NO

Name: 180603M2_18, Date: 03-Jun-2018, Time: 20:58:23, ID: 1801010-02RE1 MW0081819180517GSC 0.23679, Description: MW0081819180517GSC

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801010-02RE1 MW0081819180517G...	8.15e3	68.5	NO
2	2 13C5-PFHxA	1801010-02RE1 MW0081819180517G...	1.28e4	72.5	NO
3	3 13C3-PFHxS	1801010-02RE1 MW0081819180517G...	3.09e3	92.1	NO
4	4 13C8-PFOA	1801010-02RE1 MW0081819180517G...	1.46e4	84.4	NO
5	5 13C9-PFNA	1801010-02RE1 MW0081819180517G...	1.56e4	77.3	NO
6	6 13C4-PFOS	1801010-02RE1 MW0081819180517G...	3.11e3	86.5	NO
7	7 13C6-PFDA	1801010-02RE1 MW0081819180517G...	1.75e4	75.8	NO
8	8 13C7-PFUdA	1801010-02RE1 MW0081819180517G...	1.83e4	62.4	NO

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Name: 180603M2_19, Date: 03-Jun-2018, Time: 21:08:54, ID: 1801010-03RE1 MW0083738180517RAP 0.25096,
Description: MW0083738180517RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-03RE1 MW0083738180517R...	9.20e3	77.3	NO
2	2	13C5-PFHxA	1801010-03RE1 MW0083738180517R...	1.39e4	78.7	NO
3	3	13C3-PFHxS	1801010-03RE1 MW0083738180517R...	3.60e3	107.3	NO
4	4	13C8-PFOA	1801010-03RE1 MW0083738180517R...	1.53e4	88.7	NO
5	5	13C9-PFNA	1801010-03RE1 MW0083738180517R...	2.04e4	101.2	NO
6	6	13C4-PFOS	1801010-03RE1 MW0083738180517R...	3.72e3	103.6	NO
7	7	13C6-PFDA	1801010-03RE1 MW0083738180517R...	2.13e4	92.0	NO
8	8	13C7-PFUDa	1801010-03RE1 MW0083738180517R...	2.66e4	90.7	NO

Name: 180603M2_20, Date: 03-Jun-2018, Time: 21:19:18, ID: 1801010-04RE1 MW0052021180517MK 0.24417,
Description: MW0052021180517MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-04RE1 MW0052021180517M...	8.62e3	72.5	NO
2	2	13C5-PFHxA	1801010-04RE1 MW0052021180517M...	1.35e4	76.5	NO
3	3	13C3-PFHxS	1801010-04RE1 MW0052021180517M...	3.68e3	109.7	NO
4	4	13C8-PFOA	1801010-04RE1 MW0052021180517M...	1.42e4	82.3	NO
5	5	13C9-PFNA	1801010-04RE1 MW0052021180517M...	1.61e4	80.0	NO
6	6	13C4-PFOS	1801010-04RE1 MW0052021180517M...	3.59e3	99.9	NO
7	7	13C6-PFDA	1801010-04RE1 MW0052021180517M...	1.87e4	80.7	NO
8	8	13C7-PFUDa	1801010-04RE1 MW0052021180517M...	2.57e4	87.6	NO

Name: 180603M2_21, Date: 03-Jun-2018, Time: 21:29:49, ID: 1801010-05RE1 MW0056061180517RAP 0.23251,
Description: MW0056061180517RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-05RE1 MW0056061180517R...	1.01e4	84.7	NO
2	2	13C5-PFHxA	1801010-05RE1 MW0056061180517R...	1.55e4	87.7	NO
3	3	13C3-PFHxS	1801010-05RE1 MW0056061180517R...	3.36e3	100.2	NO
4	4	13C8-PFOA	1801010-05RE1 MW0056061180517R...	1.67e4	96.7	NO
5	5	13C9-PFNA	1801010-05RE1 MW0056061180517R...	1.91e4	94.8	NO
6	6	13C4-PFOS	1801010-05RE1 MW0056061180517R...	3.58e3	99.7	NO
7	7	13C6-PFDA	1801010-05RE1 MW0056061180517R...	1.98e4	85.7	NO
8	8	13C7-PFUDa	1801010-05RE1 MW0056061180517R...	2.57e4	87.5	NO

Name: 180603M2_22, Date: 03-Jun-2018, Time: 21:40:13, ID: 1801010-06RE1 MW0071920180517RAP 0.23669,
Description: MW0071920180517RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-06RE1 MW0071920180517R...	9.40e3	79.0	NO
2	2	13C5-PFHxA	1801010-06RE1 MW0071920180517R...	1.42e4	80.6	NO
3	3	13C3-PFHxS	1801010-06RE1 MW0071920180517R...	2.99e3	89.1	NO
4	4	13C8-PFOA	1801010-06RE1 MW0071920180517R...	1.45e4	83.9	NO
5	5	13C9-PFNA	1801010-06RE1 MW0071920180517R...	1.78e4	88.1	NO
6	6	13C4-PFOS	1801010-06RE1 MW0071920180517R...	3.13e3	87.2	NO
7	7	13C6-PFDA	1801010-06RE1 MW0071920180517R...	1.89e4	81.9	NO
8	8	13C7-PFUDa	1801010-06RE1 MW0071920180517R...	2.41e4	82.0	NO

Dataset: Untitled

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Name: 180603M2_23, Date: 03-Jun-2018, Time: 21:50:44, ID: 1801010-07RE1 MW0074849180517GSC 0.24972, Description: MW0074849180517GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-07RE1 MW0074849180517G...	9.61e3	80.7	NO
2	2	13C5-PFHxA	1801010-07RE1 MW0074849180517G...	1.50e4	84.7	NO
3	3	13C3-PFHxS	1801010-07RE1 MW0074849180517G...	3.36e3	100.2	NO
4	4	13C8-PFOA	1801010-07RE1 MW0074849180517G...	1.49e4	86.5	NO
5	5	13C9-PFNA	1801010-07RE1 MW0074849180517G...	1.93e4	95.6	NO
6	6	13C4-PFOS	1801010-07RE1 MW0074849180517G...	3.21e3	89.5	NO
7	7	13C6-PFDA	1801010-07RE1 MW0074849180517G...	1.84e4	79.7	NO
8	8	13C7-PFUDa	1801010-07RE1 MW0074849180517G...	2.48e4	84.3	NO

Name: 180603M2_24, Date: 03-Jun-2018, Time: 22:01:08, ID: 1801010-08RE1 MW0065051180517RAP 0.24826, Description: MW0065051180517RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-08RE1 MW0065051180517R...	8.91e3	74.9	NO
2	2	13C5-PFHxA	1801010-08RE1 MW0065051180517R...	1.44e4	81.3	NO
3	3	13C3-PFHxS	1801010-08RE1 MW0065051180517R...	2.98e3	88.7	NO
4	4	13C8-PFOA	1801010-08RE1 MW0065051180517R...	1.55e4	90.1	NO
5	5	13C9-PFNA	1801010-08RE1 MW0065051180517R...	1.95e4	96.4	NO
6	6	13C4-PFOS	1801010-08RE1 MW0065051180517R...	3.14e3	87.4	NO
7	7	13C6-PFDA	1801010-08RE1 MW0065051180517R...	1.85e4	80.2	NO
8	8	13C7-PFUDa	1801010-08RE1 MW0065051180517R...	2.56e4	87.0	NO

Name: 180603M2_25, Date: 03-Jun-2018, Time: 22:11:39, ID: 1801010-09RE1 MW0060510180517GSC 0.24083, Description: MW0060510180517GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-09RE1 MW0060510180517G...	8.78e3	73.8	NO
2	2	13C5-PFHxA	1801010-09RE1 MW0060510180517G...	1.33e4	75.4	NO
3	3	13C3-PFHxS	1801010-09RE1 MW0060510180517G...	3.22e3	95.9	NO
4	4	13C8-PFOA	1801010-09RE1 MW0060510180517G...	1.41e4	81.8	NO
5	5	13C9-PFNA	1801010-09RE1 MW0060510180517G...	1.87e4	92.5	NO
6	6	13C4-PFOS	1801010-09RE1 MW0060510180517G...	3.44e3	95.7	NO
7	7	13C6-PFDA	1801010-09RE1 MW0060510180517G...	1.80e4	77.6	NO
8	8	13C7-PFUDa	1801010-09RE1 MW0060510180517G...	1.95e4	66.4	NO

Name: 180603M2_26, Date: 03-Jun-2018, Time: 22:22:04, ID: 1801010-10RE1 MW0010308180518GSC 0.24601, Description: MW0010308180518GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-10RE1 MW0010308180518G...	9.01e3	75.7	NO
2	2	13C5-PFHxA	1801010-10RE1 MW0010308180518G...	1.41e4	79.6	NO
3	3	13C3-PFHxS	1801010-10RE1 MW0010308180518G...	3.14e3	93.4	NO
4	4	13C8-PFOA	1801010-10RE1 MW0010308180518G...	1.52e4	88.0	NO
5	5	13C9-PFNA	1801010-10RE1 MW0010308180518G...	1.70e4	84.4	NO
6	6	13C4-PFOS	1801010-10RE1 MW0010308180518G...	3.24e3	90.1	NO
7	7	13C6-PFDA	1801010-10RE1 MW0010308180518G...	1.81e4	78.3	NO
8	8	13C7-PFUDa	1801010-10RE1 MW0010308180518G...	2.13e4	72.4	NO

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Name: 180603M2_27, Date: 03-Jun-2018, Time: 22:32:34, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180603M2-11 PFC CS3 18E2907	1.27e4	106.4	NO
2	2	13C5-PFHxA	ST180603M2-11 PFC CS3 18E2907	1.83e4	103.7	NO
3	3	13C3-PFHxS	ST180603M2-11 PFC CS3 18E2907	4.12e3	122.9	NO
4	4	13C8-PFOA	ST180603M2-11 PFC CS3 18E2907	1.82e4	105.4	NO
5	5	13C9-PFNA	ST180603M2-11 PFC CS3 18E2907	2.27e4	112.6	NO
6	6	13C4-PFOS	ST180603M2-11 PFC CS3 18E2907	3.97e3	110.6	NO
7	7	13C6-PFDA	ST180603M2-11 PFC CS3 18E2907	2.09e4	90.3	NO
8	8	13C7-PFUdA	ST180603M2-11 PFC CS3 18E2907	2.60e4	88.4	NO

Name: 180603M2_29, Date: 03-Jun-2018, Time: 22:53:29, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_30, Date: 03-Jun-2018, Time: 23:03:59, ID: 1801010-11RE1 MW0030207180518GSC 0.24202, Description: MW0030207180518GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-11RE1 MW0030207180518G...	9.57e3	80.4	NO
2	2	13C5-PFHxA	1801010-11RE1 MW0030207180518G...	1.48e4	83.6	NO
3	3	13C3-PFHxS	1801010-11RE1 MW0030207180518G...	3.31e3	98.6	NO
4	4	13C8-PFOA	1801010-11RE1 MW0030207180518G...	1.46e4	84.6	NO
5	5	13C9-PFNA	1801010-11RE1 MW0030207180518G...	1.83e4	90.5	NO
6	6	13C4-PFOS	1801010-11RE1 MW0030207180518G...	3.52e3	97.9	NO
7	7	13C6-PFDA	1801010-11RE1 MW0030207180518G...	1.85e4	80.0	NO
8	8	13C7-PFUdA	1801010-11RE1 MW0030207180518G...	2.49e4	84.9	NO

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Name: 180603M2_31, Date: 03-Jun-2018, Time: 23:14:25, ID: 1801010-12RE1 MW0034647180518RAP 0.25022,
Description: MW0034647180518RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-12RE1 MW0034647180518R...	9.81e3	82.4	NO
2	2	13C5-PFHxA	1801010-12RE1 MW0034647180518R...	1.45e4	81.8	NO
3	3	13C3-PFHxS	1801010-12RE1 MW0034647180518R...	3.46e3	103.0	NO
4	4	13C8-PFOA	1801010-12RE1 MW0034647180518R...	1.61e4	93.4	NO
5	5	13C9-PFNA	1801010-12RE1 MW0034647180518R...	1.68e4	83.1	NO
6	6	13C4-PFOS	1801010-12RE1 MW0034647180518R...	3.45e3	96.1	NO
7	7	13C6-PFDA	1801010-12RE1 MW0034647180518R...	1.99e4	86.2	NO
8	8	13C7-PFUDa	1801010-12RE1 MW0034647180518R...	2.56e4	87.2	NO

Name: 180603M2_32, Date: 03-Jun-2018, Time: 23:24:55, ID: 1801010-13RE1 GSUMW0031116180518GSC 0.24665,
Description: GSUMW0031116180518GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-13RE1 GSUMW00311161805...	8.25e3	69.3	NO
2	2	13C5-PFHxA	1801010-13RE1 GSUMW00311161805...	1.30e4	73.6	NO
3	3	13C3-PFHxS	1801010-13RE1 GSUMW00311161805...	2.97e3	88.4	NO
4	4	13C8-PFOA	1801010-13RE1 GSUMW00311161805...	1.41e4	82.0	NO
5	5	13C9-PFNA	1801010-13RE1 GSUMW00311161805...	1.61e4	79.5	NO
6	6	13C4-PFOS	1801010-13RE1 GSUMW00311161805...	3.15e3	87.7	NO
7	7	13C6-PFDA	1801010-13RE1 GSUMW00311161805...	1.45e4	62.7	NO
8	8	13C7-PFUDa	1801010-13RE1 GSUMW00311161805...	1.93e4	65.7	NO

Name: 180603M2_33, Date: 03-Jun-2018, Time: 23:35:20, ID: 1801010-14RE1 MW0093233180518RAP 0.23472,
Description: MW0093233180518RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-14RE1 MW0093233180518R...	8.81e3	74.0	NO
2	2	13C5-PFHxA	1801010-14RE1 MW0093233180518R...	1.37e4	77.7	NO
3	3	13C3-PFHxS	1801010-14RE1 MW0093233180518R...	3.31e3	98.7	NO
4	4	13C8-PFOA	1801010-14RE1 MW0093233180518R...	1.51e4	87.8	NO
5	5	13C9-PFNA	1801010-14RE1 MW0093233180518R...	1.84e4	91.3	NO
6	6	13C4-PFOS	1801010-14RE1 MW0093233180518R...	3.70e3	103.0	NO
7	7	13C6-PFDA	1801010-14RE1 MW0093233180518R...	1.97e4	85.1	NO
8	8	13C7-PFUDa	1801010-14RE1 MW0093233180518R...	2.04e4	69.5	NO

Name: 180603M2_34, Date: 03-Jun-2018, Time: 23:45:50, ID: 1801010-15RE1 MW0091516180518MK 0.24729,
Description: MW0091516180518MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801010-15RE1 MW0091516180518M...	8.55e3	71.8	NO
2	2	13C5-PFHxA	1801010-15RE1 MW0091516180518M...	1.36e4	76.7	NO
3	3	13C3-PFHxS	1801010-15RE1 MW0091516180518M...	3.43e3	102.2	NO
4	4	13C8-PFOA	1801010-15RE1 MW0091516180518M...	1.48e4	85.7	NO
5	5	13C9-PFNA	1801010-15RE1 MW0091516180518M...	1.83e4	90.5	NO
6	6	13C4-PFOS	1801010-15RE1 MW0091516180518M...	3.57e3	99.5	NO
7	7	13C6-PFDA	1801010-15RE1 MW0091516180518M...	1.95e4	84.3	NO
8	8	13C7-PFUDa	1801010-15RE1 MW0091516180518M...	2.58e4	87.7	NO

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Name: 180603M2_35, Date: 03-Jun-2018, Time: 23:56:15, ID: B8F0004-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8F0004-BS1 OPR 0.125	9.03e3	75.9	NO
2	2	13C5-PFHxA	B8F0004-BS1 OPR 0.125	1.38e4	78.1	NO
3	3	13C3-PFHxS	B8F0004-BS1 OPR 0.125	3.00e3	89.4	NO
4	4	13C8-PFOA	B8F0004-BS1 OPR 0.125	1.56e4	90.3	NO
5	5	13C9-PFNA	B8F0004-BS1 OPR 0.125	1.92e4	95.3	NO
6	6	13C4-PFOS	B8F0004-BS1 OPR 0.125	3.37e3	93.9	NO
7	7	13C6-PFDA	B8F0004-BS1 OPR 0.125	1.83e4	79.3	NO
8	8	13C7-PFUdA	B8F0004-BS1 OPR 0.125	2.28e4	77.6	NO

Name: 180603M2_36, Date: 04-Jun-2018, Time: 00:06:45, ID: B8F0004-BSD1 LCSD 0.125, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8F0004-BSD1 LCSD 0.125	6.12e3	51.4	NO
2	2	13C5-PFHxA	B8F0004-BSD1 LCSD 0.125	1.19e4	67.1	NO
3	3	13C3-PFHxS	B8F0004-BSD1 LCSD 0.125	3.37e3	100.5	NO
4	4	13C8-PFOA	B8F0004-BSD1 LCSD 0.125	1.49e4	86.6	NO
5	5	13C9-PFNA	B8F0004-BSD1 LCSD 0.125	1.99e4	98.5	NO
6	6	13C4-PFOS	B8F0004-BSD1 LCSD 0.125	3.59e3	100.0	NO
7	7	13C6-PFDA	B8F0004-BSD1 LCSD 0.125	1.89e4	81.9	NO
8	8	13C7-PFUdA	B8F0004-BSD1 LCSD 0.125	2.79e4	95.0	NO

Name: 180603M2_37, Date: 04-Jun-2018, Time: 00:17:09, ID: B8F0004-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8F0004-BLK1 Method Blank 0.125	6.67e3	56.0	NO
2	2	13C5-PFHxA	B8F0004-BLK1 Method Blank 0.125	1.21e4	68.6	NO
3	3	13C3-PFHxS	B8F0004-BLK1 Method Blank 0.125	3.42e3	102.0	NO
4	4	13C8-PFOA	B8F0004-BLK1 Method Blank 0.125	1.60e4	92.9	NO
5	5	13C9-PFNA	B8F0004-BLK1 Method Blank 0.125	1.70e4	84.4	NO
6	6	13C4-PFOS	B8F0004-BLK1 Method Blank 0.125	3.69e3	102.8	NO
7	7	13C6-PFDA	B8F0004-BLK1 Method Blank 0.125	2.19e4	94.8	NO
8	8	13C7-PFUdA	B8F0004-BLK1 Method Blank 0.125	2.83e4	96.3	NO

Name: 180603M2_38, Date: 04-Jun-2018, Time: 00:27:40, ID: 1801039-01 A1-MW-13-SA1 0.10967, Description: A1-MW-13-SA1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801039-01 A1-MW-13-SA1 0.10967	2.33e3	19.6	YES
2	2	13C5-PFHxA	1801039-01 A1-MW-13-SA1 0.10967	4.13e3	23.3	YES
3	3	13C3-PFHxS	1801039-01 A1-MW-13-SA1 0.10967	3.56e3	106.0	NO
4	4	13C8-PFOA	1801039-01 A1-MW-13-SA1 0.10967	5.54e3	32.1	YES
5	5	13C9-PFNA	1801039-01 A1-MW-13-SA1 0.10967	9.65e3	47.8	YES
6	6	13C4-PFOS	1801039-01 A1-MW-13-SA1 0.10967	4.06e3	113.1	NO
7	7	13C6-PFDA	1801039-01 A1-MW-13-SA1 0.10967	1.38e4	59.8	NO
8	8	13C7-PFUdA	1801039-01 A1-MW-13-SA1 0.10967	1.77e4	60.4	NO

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Name: 180603M2_39, Date: 04-Jun-2018, Time: 00:38:04, ID: 1801039-02 A1-MW-11-SA1 0.11624, Description: A1-MW-11-SA1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801039-02 A1-MW-11-SA1 0.11624	3.69e3	31.0	YES
2	2	13C5-PFHxA	1801039-02 A1-MW-11-SA1 0.11624	5.73e3	32.4	YES
3	3	13C3-PFHxS	1801039-02 A1-MW-11-SA1 0.11624	3.21e3	95.7	NO
4	4	13C8-PFOA	1801039-02 A1-MW-11-SA1 0.11624	6.86e3	39.8	YES
5	5	13C9-PFNA	1801039-02 A1-MW-11-SA1 0.11624	1.04e4	51.6	NO
6	6	13C4-PFOS	1801039-02 A1-MW-11-SA1 0.11624	3.37e3	93.9	NO
7	7	13C6-PFDA	1801039-02 A1-MW-11-SA1 0.11624	1.39e4	60.0	NO
8	8	13C7-PFUdA	1801039-02 A1-MW-11-SA1 0.11624	1.96e4	66.7	NO

Name: 180603M2_40, Date: 04-Jun-2018, Time: 00:48:35, ID: 1801039-03 A1-MW-14-SA1 0.11194, Description: A1-MW-14-SA1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801039-03 A1-MW-14-SA1 0.11194	1.93e3	16.2	YES
2	2	13C5-PFHxA	1801039-03 A1-MW-14-SA1 0.11194	3.38e3	19.1	YES
3	3	13C3-PFHxS	1801039-03 A1-MW-14-SA1 0.11194	3.73e3	111.2	NO
4	4	13C8-PFOA	1801039-03 A1-MW-14-SA1 0.11194	5.41e3	31.3	YES
5	5	13C9-PFNA	1801039-03 A1-MW-14-SA1 0.11194	7.75e3	38.4	YES
6	6	13C4-PFOS	1801039-03 A1-MW-14-SA1 0.11194	3.71e3	103.4	NO
7	7	13C6-PFDA	1801039-03 A1-MW-14-SA1 0.11194	1.04e4	45.1	YES
8	8	13C7-PFUdA	1801039-03 A1-MW-14-SA1 0.11194	1.62e4	55.2	NO

Name: 180603M2_41, Date: 04-Jun-2018, Time: 00:59:00, ID: 1801039-04 A1-MW-15-SA1 0.11248, Description: A1-MW-15-SA1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801039-04 A1-MW-15-SA1 0.11248	3.93e3	33.0	YES
2	2	13C5-PFHxA	1801039-04 A1-MW-15-SA1 0.11248	7.20e3	40.7	YES
3	3	13C3-PFHxS	1801039-04 A1-MW-15-SA1 0.11248	3.64e3	108.4	NO
4	4	13C8-PFOA	1801039-04 A1-MW-15-SA1 0.11248	1.10e4	63.8	NO
5	5	13C9-PFNA	1801039-04 A1-MW-15-SA1 0.11248	1.41e4	69.9	NO
6	6	13C4-PFOS	1801039-04 A1-MW-15-SA1 0.11248	3.77e3	104.9	NO
7	7	13C6-PFDA	1801039-04 A1-MW-15-SA1 0.11248	1.79e4	77.5	NO
8	8	13C7-PFUdA	1801039-04 A1-MW-15-SA1 0.11248	2.32e4	79.1	NO

Name: 180603M2_42, Date: 04-Jun-2018, Time: 01:09:30, ID: 1801039-07 A1-MW-25-SA1 0.11252, Description: A1-MW-25-SA1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801039-07 A1-MW-25-SA1 0.11252	2.10e3	17.7	YES
2	2	13C5-PFHxA	1801039-07 A1-MW-25-SA1 0.11252	3.52e3	19.9	YES
3	3	13C3-PFHxS	1801039-07 A1-MW-25-SA1 0.11252	3.06e3	91.3	NO
4	4	13C8-PFOA	1801039-07 A1-MW-25-SA1 0.11252	5.07e3	29.4	YES
5	5	13C9-PFNA	1801039-07 A1-MW-25-SA1 0.11252	8.19e3	40.6	YES
6	6	13C4-PFOS	1801039-07 A1-MW-25-SA1 0.11252	3.12e3	87.0	NO
7	7	13C6-PFDA	1801039-07 A1-MW-25-SA1 0.11252	1.02e4	44.0	YES
8	8	13C7-PFUdA	1801039-07 A1-MW-25-SA1 0.11252	1.40e4	47.6	YES

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Name: 180603M2_43, Date: 04-Jun-2018, Time: 01:19:55, ID: 1801039-08 FRB-20180524 0.11695, Description: FRB-20180524

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801039-08 FRB-20180524 0.11695	8.07e3	67.8	NO
2	2	13C5-PFHxA	1801039-08 FRB-20180524 0.11695	1.35e4	76.6	NO
3	3	13C3-PFHxS	1801039-08 FRB-20180524 0.11695	3.41e3	101.5	NO
4	4	13C8-PFOA	1801039-08 FRB-20180524 0.11695	1.32e4	76.5	NO
5	5	13C9-PFNA	1801039-08 FRB-20180524 0.11695	2.09e4	103.6	NO
6	6	13C4-PFOS	1801039-08 FRB-20180524 0.11695	3.61e3	100.6	NO
7	7	13C6-PFDA	1801039-08 FRB-20180524 0.11695	1.98e4	85.5	NO
8	8	13C7-PFUdA	1801039-08 FRB-20180524 0.11695	2.59e4	88.3	NO

Name: 180603M2_44, Date: 04-Jun-2018, Time: 01:30:25, ID: B8F0003-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8F0003-BS1 OPR 0.125	1.14e4	96.1	NO
2	2	13C5-PFHxA	B8F0003-BS1 OPR 0.125	1.66e4	94.0	NO
3	3	13C3-PFHxS	B8F0003-BS1 OPR 0.125	3.52e3	105.0	NO
4	4	13C8-PFOA	B8F0003-BS1 OPR 0.125	1.81e4	105.1	NO
5	5	13C9-PFNA	B8F0003-BS1 OPR 0.125	2.11e4	104.7	NO
6	6	13C4-PFOS	B8F0003-BS1 OPR 0.125	3.58e3	99.7	NO
7	7	13C6-PFDA	B8F0003-BS1 OPR 0.125	2.36e4	102.0	NO
8	8	13C7-PFUdA	B8F0003-BS1 OPR 0.125	2.38e4	81.1	NO

Name: 180603M2_45, Date: 04-Jun-2018, Time: 01:40:51, ID: B8F0003-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8F0003-BLK1 Method Blank 0.125	1.18e4	99.2	NO
2	2	13C5-PFHxA	B8F0003-BLK1 Method Blank 0.125	1.71e4	97.0	NO
3	3	13C3-PFHxS	B8F0003-BLK1 Method Blank 0.125	3.72e3	110.8	NO
4	4	13C8-PFOA	B8F0003-BLK1 Method Blank 0.125	1.87e4	108.3	NO
5	5	13C9-PFNA	B8F0003-BLK1 Method Blank 0.125	2.26e4	111.9	NO
6	6	13C4-PFOS	B8F0003-BLK1 Method Blank 0.125	3.99e3	111.0	NO
7	7	13C6-PFDA	B8F0003-BLK1 Method Blank 0.125	2.01e4	86.8	NO
8	8	13C7-PFUdA	B8F0003-BLK1 Method Blank 0.125	2.73e4	93.0	NO

Name: 180603M2_46, Date: 04-Jun-2018, Time: 01:51:22, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA	5.88e0	0.0	YES
8	8	13C7-PFUdA	IPA			NO

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Name: 180603M2_47, Date: 04-Jun-2018, Time: 02:01:52, ID: ST180603M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180603M2-12 PFC CS3 18E2907	1.32e4	110.5	NO
2	2	13C5-PFHxA	ST180603M2-12 PFC CS3 18E2907	1.88e4	106.4	NO
3	3	13C3-PFHxS	ST180603M2-12 PFC CS3 18E2907	3.97e3	118.3	NO
4	4	13C8-PFOA	ST180603M2-12 PFC CS3 18E2907	2.23e4	129.4	NO
5	5	13C9-PFNA	ST180603M2-12 PFC CS3 18E2907	2.32e4	115.0	NO
6	6	13C4-PFOS	ST180603M2-12 PFC CS3 18E2907	4.24e3	118.2	NO
7	7	13C6-PFDA	ST180603M2-12 PFC CS3 18E2907	2.49e4	107.7	NO
8	8	13C7-PFUdA	ST180603M2-12 PFC CS3 18E2907	2.63e4	89.4	NO

Name: 180603M2_48, Date: 04-Jun-2018, Time: 02:12:16, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_49, Date: 04-Jun-2018, Time: 02:22:47, ID: 1800937-01RE1 CL1TMW0118180503N 0.26212, Description: CL1TMW0118180503N

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800937-01RE1 CL1TMW0118180503...	1.01e4	85.1	NO
2	2	13C5-PFHxA	1800937-01RE1 CL1TMW0118180503...	1.57e4	88.5	NO
3	3	13C3-PFHxS	1800937-01RE1 CL1TMW0118180503...	3.50e3	104.2	NO
4	4	13C8-PFOA	1800937-01RE1 CL1TMW0118180503...	1.52e4	87.8	NO
5	5	13C9-PFNA	1800937-01RE1 CL1TMW0118180503...	1.61e4	79.9	NO
6	6	13C4-PFOS	1800937-01RE1 CL1TMW0118180503...	3.45e3	96.2	NO
7	7	13C6-PFDA	1800937-01RE1 CL1TMW0118180503...	1.48e4	64.0	NO
8	8	13C7-PFUdA	1800937-01RE1 CL1TMW0118180503...	2.04e4	69.5	NO

Name: 180603M2_50, Date: 04-Jun-2018, Time: 02:33:17, ID: 1800937-02RE1 CL1TMW0405180504N 0.25472, Description: CL1TMW0405180504N

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800937-02RE1 CL1TMW0405180504...	9.87e3	82.9	NO
2	2	13C5-PFHxA	1800937-02RE1 CL1TMW0405180504...	1.42e4	80.2	NO
3	3	13C3-PFHxS	1800937-02RE1 CL1TMW0405180504...	3.57e3	106.3	NO
4	4	13C8-PFOA	1800937-02RE1 CL1TMW0405180504...	1.35e4	78.4	NO
5	5	13C9-PFNA	1800937-02RE1 CL1TMW0405180504...	1.70e4	84.4	NO
6	6	13C4-PFOS	1800937-02RE1 CL1TMW0405180504...	9.22e2	25.7	YES
7	7	13C6-PFDA	1800937-02RE1 CL1TMW0405180504...	1.81e4	78.2	NO
8	8	13C7-PFUdA	1800937-02RE1 CL1TMW0405180504...	2.35e4	79.9	NO

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Name: 180603M2_51, Date: 04-Jun-2018, Time: 02:43:42, ID: 1800937-03RE1 CL1SW0300180508N 0.25704,
Description: CL1SW0300180508N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-03RE1 CL1SW0300180508N ...	9.56e3	80.3	NO
2	2 13C5-PFHxA	1800937-03RE1 CL1SW0300180508N ...	1.41e4	79.9	NO
3	3 13C3-PFHxS	1800937-03RE1 CL1SW0300180508N ...	3.21e3	95.6	NO
4	4 13C8-PFOA	1800937-03RE1 CL1SW0300180508N ...	1.54e4	89.2	NO
5	5 13C9-PFNA	1800937-03RE1 CL1SW0300180508N ...	1.78e4	88.4	NO
6	6 13C4-PFOS	1800937-03RE1 CL1SW0300180508N ...	2.76e3	77.0	NO
7	7 13C6-PFDA	1800937-03RE1 CL1SW0300180508N ...	1.98e4	85.8	NO
8	8 13C7-PFUDa	1800937-03RE1 CL1SW0300180508N ...	2.40e4	81.6	NO

Name: 180603M2_52, Date: 04-Jun-2018, Time: 02:54:12, ID: 1800937-04RE1 CL1SW0400180508N 0.25921,
Description: CL1SW0400180508N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-04RE1 CL1SW0400180508N ...	1.01e4	84.7	NO
2	2 13C5-PFHxA	1800937-04RE1 CL1SW0400180508N ...	1.45e4	82.2	NO
3	3 13C3-PFHxS	1800937-04RE1 CL1SW0400180508N ...	3.33e3	99.3	NO
4	4 13C8-PFOA	1800937-04RE1 CL1SW0400180508N ...	1.67e4	96.9	NO
5	5 13C9-PFNA	1800937-04RE1 CL1SW0400180508N ...	1.84e4	91.4	NO
6	6 13C4-PFOS	1800937-04RE1 CL1SW0400180508N ...	3.41e3	94.9	NO
7	7 13C6-PFDA	1800937-04RE1 CL1SW0400180508N ...	1.99e4	85.8	NO
8	8 13C7-PFUDa	1800937-04RE1 CL1SW0400180508N ...	2.61e4	88.9	NO

Name: 180603M2_53, Date: 04-Jun-2018, Time: 03:04:35, ID: 1800937-05RE1 CL1SW0500180508N 0.25542,
Description: CL1SW0500180508N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-05RE1 CL1SW0500180508N ...	9.78e3	82.2	NO
2	2 13C5-PFHxA	1800937-05RE1 CL1SW0500180508N ...	1.38e4	78.3	NO
3	3 13C3-PFHxS	1800937-05RE1 CL1SW0500180508N ...	3.22e3	95.9	NO
4	4 13C8-PFOA	1800937-05RE1 CL1SW0500180508N ...	1.60e4	92.6	NO
5	5 13C9-PFNA	1800937-05RE1 CL1SW0500180508N ...	1.88e4	93.3	NO
6	6 13C4-PFOS	1800937-05RE1 CL1SW0500180508N ...	3.45e3	96.2	NO
7	7 13C6-PFDA	1800937-05RE1 CL1SW0500180508N ...	2.00e4	86.5	NO
8	8 13C7-PFUDa	1800937-05RE1 CL1SW0500180508N ...	1.97e4	66.9	NO

Name: 180603M2_54, Date: 04-Jun-2018, Time: 03:15:06, ID: 1800937-06RE1 CL1DR0100180508N 0.25416,
Description: CL1DR0100180508N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-06RE1 CL1DR0100180508N ...	1.01e4	84.5	NO
2	2 13C5-PFHxA	1800937-06RE1 CL1DR0100180508N ...	1.46e4	82.4	NO
3	3 13C3-PFHxS	1800937-06RE1 CL1DR0100180508N ...	3.24e3	96.4	NO
4	4 13C8-PFOA	1800937-06RE1 CL1DR0100180508N ...	1.76e4	102.1	NO
5	5 13C9-PFNA	1800937-06RE1 CL1DR0100180508N ...	1.75e4	86.5	NO
6	6 13C4-PFOS	1800937-06RE1 CL1DR0100180508N ...	3.30e3	92.0	NO
7	7 13C6-PFDA	1800937-06RE1 CL1DR0100180508N ...	1.94e4	84.1	NO
8	8 13C7-PFUDa	1800937-06RE1 CL1DR0100180508N ...	2.40e4	81.7	NO

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Name: 180603M2_55, Date: 04-Jun-2018, Time: 03:25:30, ID: 1800937-07RE1 CL1DR0300180508N 0.26057,
Description: CL1DR0300180508N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-07RE1 CL1DR0300180508N ...	1.01e4	85.2	NO
2	2 13C5-PFHxA	1800937-07RE1 CL1DR0300180508N ...	1.47e4	83.0	NO
3	3 13C3-PFHxS	1800937-07RE1 CL1DR0300180508N ...	3.49e3	103.9	NO
4	4 13C8-PFOA	1800937-07RE1 CL1DR0300180508N ...	1.45e4	83.8	NO
5	5 13C9-PFNA	1800937-07RE1 CL1DR0300180508N ...	1.88e4	93.3	NO
6	6 13C4-PFOS	1800937-07RE1 CL1DR0300180508N ...	3.55e3	99.0	NO
7	7 13C6-PFDA	1800937-07RE1 CL1DR0300180508N ...	1.77e4	76.6	NO
8	8 13C7-PFUDa	1800937-07RE1 CL1DR0300180508N ...	2.48e4	84.3	NO

Name: 180603M2_56, Date: 04-Jun-2018, Time: 03:36:00, ID: 1800937-08RE1 CL1DR0200180509N 0.25133,
Description: CL1DR0200180509N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-08RE1 CL1DR0200180509N ...	8.58e3	72.1	NO
2	2 13C5-PFHxA	1800937-08RE1 CL1DR0200180509N ...	1.31e4	74.1	NO
3	3 13C3-PFHxS	1800937-08RE1 CL1DR0200180509N ...	3.05e3	90.9	NO
4	4 13C8-PFOA	1800937-08RE1 CL1DR0200180509N ...	1.30e4	75.1	NO
5	5 13C9-PFNA	1800937-08RE1 CL1DR0200180509N ...	1.58e4	78.1	NO
6	6 13C4-PFOS	1800937-08RE1 CL1DR0200180509N ...	2.46e3	68.6	NO
7	7 13C6-PFDA	1800937-08RE1 CL1DR0200180509N ...	1.83e4	79.2	NO
8	8 13C7-PFUDa	1800937-08RE1 CL1DR0200180509N ...	2.07e4	70.4	NO

Name: 180603M2_57, Date: 04-Jun-2018, Time: 03:46:30, ID: 1800937-09RE1 CL1SW0100180509N 0.25634,
Description: CL1SW0100180509N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-09RE1 CL1SW0100180509N ...	1.03e4	86.7	NO
2	2 13C5-PFHxA	1800937-09RE1 CL1SW0100180509N ...	1.51e4	85.2	NO
3	3 13C3-PFHxS	1800937-09RE1 CL1SW0100180509N ...	3.47e3	103.4	NO
4	4 13C8-PFOA	1800937-09RE1 CL1SW0100180509N ...	1.58e4	91.7	NO
5	5 13C9-PFNA	1800937-09RE1 CL1SW0100180509N ...	1.67e4	82.7	NO
6	6 13C4-PFOS	1800937-09RE1 CL1SW0100180509N ...	3.44e3	95.9	NO
7	7 13C6-PFDA	1800937-09RE1 CL1SW0100180509N ...	1.95e4	84.4	NO
8	8 13C7-PFUDa	1800937-09RE1 CL1SW0100180509N ...	2.26e4	76.8	NO

Name: 180603M2_58, Date: 04-Jun-2018, Time: 03:56:55, ID: 1800937-10RE1 CL1SW0200180509N 0.25044,
Description: CL1SW0200180509N

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800937-10RE1 CL1SW0200180509N ...	1.14e4	95.9	NO
2	2 13C5-PFHxA	1800937-10RE1 CL1SW0200180509N ...	1.63e4	92.1	NO
3	3 13C3-PFHxS	1800937-10RE1 CL1SW0200180509N ...	3.85e3	114.7	NO
4	4 13C8-PFOA	1800937-10RE1 CL1SW0200180509N ...	1.71e4	99.3	NO
5	5 13C9-PFNA	1800937-10RE1 CL1SW0200180509N ...	2.16e4	107.1	NO
6	6 13C4-PFOS	1800937-10RE1 CL1SW0200180509N ...	4.02e3	112.1	NO
7	7 13C6-PFDA	1800937-10RE1 CL1SW0200180509N ...	1.87e4	81.0	NO
8	8 13C7-PFUDa	1800937-10RE1 CL1SW0200180509N ...	2.57e4	87.3	NO

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Name: 180603M2_59, Date: 04-Jun-2018, Time: 04:07:25, ID: IPA, Description: IPA

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

Name: 180603M2_60, Date: 04-Jun-2018, Time: 04:17:50, ID: ST180603M2-13 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-13 PFC CS3 18E2907	1.36e4	114.6	NO
2	2 13C5-PFHxA	ST180603M2-13 PFC CS3 18E2907	1.96e4	110.9	NO
3	3 13C3-PFHxS	ST180603M2-13 PFC CS3 18E2907	4.08e3	121.6	NO
4	4 13C8-PFOA	ST180603M2-13 PFC CS3 18E2907	2.07e4	120.1	NO
5	5 13C9-PFNA	ST180603M2-13 PFC CS3 18E2907	2.18e4	107.8	NO
6	6 13C4-PFOS	ST180603M2-13 PFC CS3 18E2907	3.97e3	110.5	NO
7	7 13C6-PFDA	ST180603M2-13 PFC CS3 18E2907	2.68e4	115.8	NO
8	8 13C7-PFUdA	ST180603M2-13 PFC CS3 18E2907	2.97e4	101.2	NO

Name: 180603M2_61, Date: 04-Jun-2018, Time: 04:28:21, ID: IPA, Description: IPA

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

Name: 180603M2_62, Date: 04-Jun-2018, Time: 04:38:46, ID: ST180603M2-14 PFC CS0 18E2904, Description: PFC CS0 18E2904

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-14 PFC CS0 18E2904	1.41e4	118.3	NO
2	2 13C5-PFHxA	ST180603M2-14 PFC CS0 18E2904	2.13e4	120.7	NO
3	3 13C3-PFHxS	ST180603M2-14 PFC CS0 18E2904	4.20e3	125.1	NO
4	4 13C8-PFOA	ST180603M2-14 PFC CS0 18E2904	1.91e4	110.5	NO
5	5 13C9-PFNA	ST180603M2-14 PFC CS0 18E2904	2.50e4	123.9	NO
6	6 13C4-PFOS	ST180603M2-14 PFC CS0 18E2904	4.40e3	122.4	NO
7	7 13C6-PFDA	ST180603M2-14 PFC CS0 18E2904	2.57e4	111.0	NO
8	8 13C7-PFUdA	ST180603M2-14 PFC CS0 18E2904	3.13e4	106.6	NO

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Name: 180603M2_63, Date: 04-Jun-2018, Time: 04:49:16, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_64, Date: 04-Jun-2018, Time: 04:59:39, ID: 1800882-02RE1 731 0.12084, Description: 731

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800882-02RE1 731 0.12084	7.41e3	62.3	NO
2	2	13C5-PFHxA	1800882-02RE1 731 0.12084	1.11e4	62.9	NO
3	3	13C3-PFHxS	1800882-02RE1 731 0.12084	3.12e3	92.9	NO
4	4	13C8-PFOA	1800882-02RE1 731 0.12084	1.39e4	80.3	NO
5	5	13C9-PFNA	1800882-02RE1 731 0.12084	1.55e4	76.8	NO
6	6	13C4-PFOS	1800882-02RE1 731 0.12084	2.98e3	83.1	NO
7	7	13C6-PFDA	1800882-02RE1 731 0.12084	1.56e4	67.6	NO
8	8	13C7-PFUdA	1800882-02RE1 731 0.12084	2.14e4	72.9	NO

Name: 180603M2_65, Date: 04-Jun-2018, Time: 05:10:10, ID: 1800882-03RE1 781 0.11874, Description: 781

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800882-03RE1 781 0.11874	7.16e3	60.2	NO
2	2	13C5-PFHxA	1800882-03RE1 781 0.11874	1.06e4	60.2	NO
3	3	13C3-PFHxS	1800882-03RE1 781 0.11874	3.01e3	89.6	NO
4	4	13C8-PFOA	1800882-03RE1 781 0.11874	1.33e4	77.0	NO
5	5	13C9-PFNA	1800882-03RE1 781 0.11874	1.71e4	84.8	NO
6	6	13C4-PFOS	1800882-03RE1 781 0.11874	3.13e3	87.1	NO
7	7	13C6-PFDA	1800882-03RE1 781 0.11874	1.55e4	67.0	NO
8	8	13C7-PFUdA	1800882-03RE1 781 0.11874	1.90e4	64.7	NO

Name: 180603M2_66, Date: 04-Jun-2018, Time: 05:20:35, ID: 1800882-04RE1 702 0.11993, Description: 702

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800882-04RE1 702 0.11993	8.64e3	72.6	NO
2	2	13C5-PFHxA	1800882-04RE1 702 0.11993	1.33e4	75.1	NO
3	3	13C3-PFHxS	1800882-04RE1 702 0.11993	3.62e3	107.7	NO
4	4	13C8-PFOA	1800882-04RE1 702 0.11993	1.56e4	90.3	NO
5	5	13C9-PFNA	1800882-04RE1 702 0.11993	1.81e4	89.5	NO
6	6	13C4-PFOS	1800882-04RE1 702 0.11993	3.55e3	98.8	NO
7	7	13C6-PFDA	1800882-04RE1 702 0.11993	1.61e4	69.7	NO
8	8	13C7-PFUdA	1800882-04RE1 702 0.11993	2.29e4	78.0	NO

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Name: 180603M2_67, Date: 04-Jun-2018, Time: 05:31:05, ID: 1800882-05RE1 Trip Blank 0.12132, Description: Trip Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800882-05RE1 Trip Blank 0.12132	8.99e3	75.5	NO
2	2	13C5-PFHxA	1800882-05RE1 Trip Blank 0.12132	1.25e4	70.5	NO
3	3	13C3-PFHxS	1800882-05RE1 Trip Blank 0.12132	2.82e3	84.1	NO
4	4	13C8-PFOA	1800882-05RE1 Trip Blank 0.12132	1.45e4	84.0	NO
5	5	13C9-PFNA	1800882-05RE1 Trip Blank 0.12132	1.61e4	79.7	NO
6	6	13C4-PFOS	1800882-05RE1 Trip Blank 0.12132	2.90e3	80.9	NO
7	7	13C6-PFDA	1800882-05RE1 Trip Blank 0.12132	1.43e4	62.0	NO
8	8	13C7-PFUdA	1800882-05RE1 Trip Blank 0.12132	2.14e4	72.9	NO

Name: 180603M2_68, Date: 04-Jun-2018, Time: 05:41:30, ID: 1800882-06RE1 Trip Blank 0.12059, Description: Trip Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800882-06RE1 Trip Blank 0.12059	9.20e3	77.3	NO
2	2	13C5-PFHxA	1800882-06RE1 Trip Blank 0.12059	1.39e4	78.4	NO
3	3	13C3-PFHxS	1800882-06RE1 Trip Blank 0.12059	3.30e3	98.4	NO
4	4	13C8-PFOA	1800882-06RE1 Trip Blank 0.12059	1.50e4	87.2	NO
5	5	13C9-PFNA	1800882-06RE1 Trip Blank 0.12059	1.77e4	87.8	NO
6	6	13C4-PFOS	1800882-06RE1 Trip Blank 0.12059	3.19e3	88.8	NO
7	7	13C6-PFDA	1800882-06RE1 Trip Blank 0.12059	1.88e4	81.2	NO
8	8	13C7-PFUdA	1800882-06RE1 Trip Blank 0.12059	1.94e4	65.9	NO

Name: 180603M2_69, Date: 04-Jun-2018, Time: 05:52:00, ID: B8E0215-BS1 OPR 1, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0215-BS1 OPR 1	7.16e3	60.1	NO
2	2	13C5-PFHxA	B8E0215-BS1 OPR 1	1.13e4	64.1	NO
3	3	13C3-PFHxS	B8E0215-BS1 OPR 1	2.89e3	86.2	NO
4	4	13C8-PFOA	B8E0215-BS1 OPR 1	1.21e4	70.4	NO
5	5	13C9-PFNA	B8E0215-BS1 OPR 1	1.42e4	70.6	NO
6	6	13C4-PFOS	B8E0215-BS1 OPR 1	2.74e3	76.2	NO
7	7	13C6-PFDA	B8E0215-BS1 OPR 1	1.59e4	68.6	NO
8	8	13C7-PFUdA	B8E0215-BS1 OPR 1	2.00e4	68.1	NO

Name: 180603M2_70, Date: 04-Jun-2018, Time: 06:02:25, ID: B8E0215-BLK1 Method Blank 1, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0215-BLK1 Method Blank 1	6.27e3	52.7	NO
2	2	13C5-PFHxA	B8E0215-BLK1 Method Blank 1	9.59e3	54.2	NO
3	3	13C3-PFHxS	B8E0215-BLK1 Method Blank 1	2.33e3	69.5	NO
4	4	13C8-PFOA	B8E0215-BLK1 Method Blank 1	1.21e4	70.3	NO
5	5	13C9-PFNA	B8E0215-BLK1 Method Blank 1	1.37e4	68.1	NO
6	6	13C4-PFOS	B8E0215-BLK1 Method Blank 1	2.51e3	69.9	NO
7	7	13C6-PFDA	B8E0215-BLK1 Method Blank 1	1.10e4	47.5	YES
8	8	13C7-PFUdA	B8E0215-BLK1 Method Blank 1	1.64e4	55.8	NO

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Name: 180603M2_71, Date: 04-Jun-2018, Time: 06:12:55, ID: 1800935-05 CL1MC0100180509N 1.11, Description: CL1MC0100180509N

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800935-05 CL1MC0100180509N 1.11	7.99e3	67.1	NO
2	2	13C5-PFHxA	1800935-05 CL1MC0100180509N 1.11	1.15e4	65.1	NO
3	3	13C3-PFHxS	1800935-05 CL1MC0100180509N 1.11	2.56e3	76.4	NO
4	4	13C8-PFOA	1800935-05 CL1MC0100180509N 1.11	1.32e4	76.7	NO
5	5	13C9-PFNA	1800935-05 CL1MC0100180509N 1.11	1.56e4	77.2	NO
6	6	13C4-PFOS	1800935-05 CL1MC0100180509N 1.11	2.51e3	69.9	NO
7	7	13C6-PFDA	1800935-05 CL1MC0100180509N 1.11	1.32e4	57.2	NO
8	8	13C7-PFUdA	1800935-05 CL1MC0100180509N 1.11	1.89e4	64.3	NO

Name: 180603M2_72, Date: 04-Jun-2018, Time: 06:23:20, ID: B8E0212-BS1 OPR 5, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0212-BS1 OPR 5	1.09e4	91.7	NO
2	2	13C5-PFHxA	B8E0212-BS1 OPR 5	1.64e4	93.0	NO
3	3	13C3-PFHxS	B8E0212-BS1 OPR 5	3.64e3	108.5	NO
4	4	13C8-PFOA	B8E0212-BS1 OPR 5	1.70e4	98.6	NO
5	5	13C9-PFNA	B8E0212-BS1 OPR 5	1.82e4	90.4	NO
6	6	13C4-PFOS	B8E0212-BS1 OPR 5	3.85e3	107.3	NO
7	7	13C6-PFDA	B8E0212-BS1 OPR 5	1.85e4	79.8	NO
8	8	13C7-PFUdA	B8E0212-BS1 OPR 5	2.63e4	89.7	NO

Name: 180603M2_73, Date: 04-Jun-2018, Time: 06:33:50, ID: B8E0212-BLK1 Method Blank 5, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0212-BLK1 Method Blank 5	9.18e3	77.2	NO
2	2	13C5-PFHxA	B8E0212-BLK1 Method Blank 5	1.35e4	76.1	NO
3	3	13C3-PFHxS	B8E0212-BLK1 Method Blank 5	3.02e3	90.1	NO
4	4	13C8-PFOA	B8E0212-BLK1 Method Blank 5	1.55e4	89.6	NO
5	5	13C9-PFNA	B8E0212-BLK1 Method Blank 5	1.65e4	81.7	NO
6	6	13C4-PFOS	B8E0212-BLK1 Method Blank 5	2.85e3	79.5	NO
7	7	13C6-PFDA	B8E0212-BLK1 Method Blank 5	1.78e4	77.0	NO
8	8	13C7-PFUdA	B8E0212-BLK1 Method Blank 5	2.21e4	75.3	NO

Name: 180603M2_74, Date: 04-Jun-2018, Time: 06:44:15, ID: 1801036-01 Milk 5, Description: Milk

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1801036-01 Milk 5	8.82e3	74.1	NO
2	2	13C5-PFHxA	1801036-01 Milk 5	1.31e4	74.0	NO
3	3	13C3-PFHxS	1801036-01 Milk 5	2.83e3	84.5	NO
4	4	13C8-PFOA	1801036-01 Milk 5	1.52e4	87.8	NO
5	5	13C9-PFNA	1801036-01 Milk 5	1.89e4	93.7	NO
6	6	13C4-PFOS	1801036-01 Milk 5	3.02e3	84.1	NO
7	7	13C6-PFDA	1801036-01 Milk 5	1.92e4	83.1	NO
8	8	13C7-PFUdA	1801036-01 Milk 5	1.80e4	61.4	NO

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Name: 180603M2_75, Date: 04-Jun-2018, Time: 06:54:46, ID: B8E0173-BS1 OPR 0.25, Description: OPR

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0173-BS1 OPR 0.25	9.47e3	79.5	NO
2	2 13C5-PFHxA	B8E0173-BS1 OPR 0.25	1.46e4	82.7	NO
3	3 13C3-PFHxS	B8E0173-BS1 OPR 0.25	3.16e3	94.1	NO
4	4 13C8-PFOA	B8E0173-BS1 OPR 0.25	1.49e4	86.2	NO
5	5 13C9-PFNA	B8E0173-BS1 OPR 0.25	1.79e4	88.7	NO
6	6 13C4-PFOS	B8E0173-BS1 OPR 0.25	3.14e3	87.5	NO
7	7 13C6-PFDA	B8E0173-BS1 OPR 0.25	1.98e4	85.7	NO
8	8 13C7-PFUdA	B8E0173-BS1 OPR 0.25	2.34e4	79.7	NO

Name: 180603M2_76, Date: 04-Jun-2018, Time: 07:05:11, ID: B8E0173-BLK1 Method Blank 0.25, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0173-BLK1 Method Blank 0.25	9.45e3	79.4	NO
2	2 13C5-PFHxA	B8E0173-BLK1 Method Blank 0.25	1.40e4	79.4	NO
3	3 13C3-PFHxS	B8E0173-BLK1 Method Blank 0.25	3.03e3	90.3	NO
4	4 13C8-PFOA	B8E0173-BLK1 Method Blank 0.25	1.44e4	83.3	NO
5	5 13C9-PFNA	B8E0173-BLK1 Method Blank 0.25	1.79e4	88.7	NO
6	6 13C4-PFOS	B8E0173-BLK1 Method Blank 0.25	3.19e3	89.0	NO
7	7 13C6-PFDA	B8E0173-BLK1 Method Blank 0.25	1.36e4	58.9	NO
8	8 13C7-PFUdA	B8E0173-BLK1 Method Blank 0.25	2.26e4	77.0	NO

Name: 180603M2_77, Date: 04-Jun-2018, Time: 07:15:41, ID: 1800999-01 DPH-MW10 0.11774, Description: DPH-MW10

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800999-01 DPH-MW10 0.11774	8.94e3	75.1	NO
2	2 13C5-PFHxA	1800999-01 DPH-MW10 0.11774	1.38e4	78.0	NO
3	3 13C3-PFHxS	1800999-01 DPH-MW10 0.11774	3.45e3	102.9	NO
4	4 13C8-PFOA	1800999-01 DPH-MW10 0.11774	1.33e4	77.2	NO
5	5 13C9-PFNA	1800999-01 DPH-MW10 0.11774	1.75e4	87.0	NO
6	6 13C4-PFOS	1800999-01 DPH-MW10 0.11774	3.67e3	102.3	NO
7	7 13C6-PFDA	1800999-01 DPH-MW10 0.11774	1.62e4	69.9	NO
8	8 13C7-PFUdA	1800999-01 DPH-MW10 0.11774	2.01e4	68.4	NO

Name: 180603M2_78, Date: 04-Jun-2018, Time: 07:26:05, ID: 1800999-02 DPH-MW19 0.12462, Description: DPH-MW19

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800999-02 DPH-MW19 0.12462	9.72e3	81.7	NO
2	2 13C5-PFHxA	1800999-02 DPH-MW19 0.12462	1.54e4	87.3	NO
3	3 13C3-PFHxS	1800999-02 DPH-MW19 0.12462	3.67e3	109.4	NO
4	4 13C8-PFOA	1800999-02 DPH-MW19 0.12462	1.69e4	98.2	NO
5	5 13C9-PFNA	1800999-02 DPH-MW19 0.12462	1.90e4	94.4	NO
6	6 13C4-PFOS	1800999-02 DPH-MW19 0.12462	3.49e3	97.1	NO
7	7 13C6-PFDA	1800999-02 DPH-MW19 0.12462	2.07e4	89.4	NO
8	8 13C7-PFUdA	1800999-02 DPH-MW19 0.12462	2.35e4	80.1	NO

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Name: 180603M2_79, Date: 04-Jun-2018, Time: 07:36:36, ID: 1800999-03 DPH-MW23 0.1216, Description: DPH-MW23

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800999-03 DPH-MW23 0.1216	7.99e3	67.2	NO
2	2	13C5-PFHxA	1800999-03 DPH-MW23 0.1216	1.23e4	69.8	NO
3	3	13C3-PFHxS	1800999-03 DPH-MW23 0.1216	3.34e3	99.4	NO
4	4	13C8-PFOA	1800999-03 DPH-MW23 0.1216	1.38e4	79.8	NO
5	5	13C9-PFNA	1800999-03 DPH-MW23 0.1216	1.59e4	78.7	NO
6	6	13C4-PFOS	1800999-03 DPH-MW23 0.1216	3.38e3	94.0	NO
7	7	13C6-PFDA	1800999-03 DPH-MW23 0.1216	1.69e4	73.0	NO
8	8	13C7-PFUdA	1800999-03 DPH-MW23 0.1216	1.86e4	63.2	NO

Name: 180603M2_80, Date: 04-Jun-2018, Time: 07:47:01, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_81, Date: 04-Jun-2018, Time: 07:57:31, ID: ST180603M2-15 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180603M2-15 PFC CS3 18E2907	1.45e4	121.9	NO
2	2	13C5-PFHxA	ST180603M2-15 PFC CS3 18E2907	2.20e4	124.2	NO
3	3	13C3-PFHxS	ST180603M2-15 PFC CS3 18E2907	4.46e3	132.9	NO
4	4	13C8-PFOA	ST180603M2-15 PFC CS3 18E2907	2.25e4	130.6	NO
5	5	13C9-PFNA	ST180603M2-15 PFC CS3 18E2907	2.60e4	128.9	NO
6	6	13C4-PFOS	ST180603M2-15 PFC CS3 18E2907	4.28e3	119.1	NO
7	7	13C6-PFDA	ST180603M2-15 PFC CS3 18E2907	2.56e4	110.8	NO
8	8	13C7-PFUdA	ST180603M2-15 PFC CS3 18E2907	3.38e4	115.1	NO

Name: 180603M2_82, Date: 04-Jun-2018, Time: 08:07:56, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

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Name: 180603M2_83, Date: 04-Jun-2018, Time: 08:18:27, ID: 1800837-12 REEPDW409FRB 0.12029, Description: REEPDW409FRB

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800837-12 REEPDW409FRB 0.12029	9.82e3	82.5	NO
2	2 13C5-PFHxA	1800837-12 REEPDW409FRB 0.12029	1.47e4	82.9	NO
3	3 13C3-PFHxS	1800837-12 REEPDW409FRB 0.12029	3.06e3	91.1	NO
4	4 13C8-PFOA	1800837-12 REEPDW409FRB 0.12029	1.66e4	96.4	NO
5	5 13C9-PFNA	1800837-12 REEPDW409FRB 0.12029	1.83e4	90.9	NO
6	6 13C4-PFOS	1800837-12 REEPDW409FRB 0.12029	3.29e3	91.6	NO
7	7 13C6-PFDA	1800837-12 REEPDW409FRB 0.12029	1.93e4	83.2	NO
8	8 13C7-PFUdA	1800837-12 REEPDW409FRB 0.12029	2.60e4	88.6	NO

Name: 180603M2_84, Date: 04-Jun-2018, Time: 08:28:51, ID: B8E0169-BS1 OPR 0.125, Description: OPR

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0169-BS1 OPR 0.125	1.03e4	86.6	NO
2	2 13C5-PFHxA	B8E0169-BS1 OPR 0.125	1.65e4	93.2	NO
3	3 13C3-PFHxS	B8E0169-BS1 OPR 0.125	3.82e3	114.0	NO
4	4 13C8-PFOA	B8E0169-BS1 OPR 0.125	1.78e4	102.9	NO
5	5 13C9-PFNA	B8E0169-BS1 OPR 0.125	2.03e4	100.5	NO
6	6 13C4-PFOS	B8E0169-BS1 OPR 0.125	3.60e3	100.2	NO
7	7 13C6-PFDA	B8E0169-BS1 OPR 0.125	1.84e4	79.5	NO
8	8 13C7-PFUdA	B8E0169-BS1 OPR 0.125	2.65e4	90.3	NO

Name: 180603M2_85, Date: 04-Jun-2018, Time: 08:39:22, ID: B8E0169-BSD1 LCSD 0.125, Description: LCSD

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0169-BSD1 LCSD 0.125	1.34e4	112.9	NO
2	2 13C5-PFHxA	B8E0169-BSD1 LCSD 0.125	2.03e4	114.8	NO
3	3 13C3-PFHxS	B8E0169-BSD1 LCSD 0.125	4.72e3	140.6	NO
4	4 13C8-PFOA	B8E0169-BSD1 LCSD 0.125	2.33e4	135.0	NO
5	5 13C9-PFNA	B8E0169-BSD1 LCSD 0.125	2.47e4	122.6	NO
6	6 13C4-PFOS	B8E0169-BSD1 LCSD 0.125	5.06e3	140.8	NO
7	7 13C6-PFDA	B8E0169-BSD1 LCSD 0.125	2.64e4	114.0	NO
8	8 13C7-PFUdA	B8E0169-BSD1 LCSD 0.125	3.42e4	116.5	NO

Name: 180603M2_86, Date: 04-Jun-2018, Time: 08:49:47, ID: B8E0169-BLK1 Method Blank 0.125, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0169-BLK1 Method Blank 0.125	1.43e4	120.2	NO
2	2 13C5-PFHxA	B8E0169-BLK1 Method Blank 0.125	2.04e4	115.5	NO
3	3 13C3-PFHxS	B8E0169-BLK1 Method Blank 0.125	4.59e3	136.9	NO
4	4 13C8-PFOA	B8E0169-BLK1 Method Blank 0.125	2.36e4	136.5	NO
5	5 13C9-PFNA	B8E0169-BLK1 Method Blank 0.125	2.81e4	139.3	NO
6	6 13C4-PFOS	B8E0169-BLK1 Method Blank 0.125	4.96e3	138.2	NO
7	7 13C6-PFDA	B8E0169-BLK1 Method Blank 0.125	2.99e4	129.2	NO
8	8 13C7-PFUdA	B8E0169-BLK1 Method Blank 0.125	3.51e4	119.3	NO

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Name: 180603M2_87, Date: 04-Jun-2018, Time: 09:00:17, ID: 1800954-01 REEPDW499 0.12056, Description: REEPDW499

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-01 REEPDW499 0.12056	8.71e3	73.2	NO
2	2	13C5-PFHxA	1800954-01 REEPDW499 0.12056	1.33e4	75.0	NO
3	3	13C3-PFHxS	1800954-01 REEPDW499 0.12056	3.69e3	110.0	NO
4	4	13C8-PFOA	1800954-01 REEPDW499 0.12056	1.45e4	84.2	NO
5	5	13C9-PFNA	1800954-01 REEPDW499 0.12056	1.40e4	69.4	NO
6	6	13C4-PFOS	1800954-01 REEPDW499 0.12056	4.12e3	114.7	NO
7	7	13C6-PFDA	1800954-01 REEPDW499 0.12056	1.78e4	77.1	NO
8	8	13C7-PFUdA	1800954-01 REEPDW499 0.12056	2.56e4	87.2	NO

Name: 180603M2_88, Date: 04-Jun-2018, Time: 09:10:47, ID: 1800954-02 REEPDW1007 0.11869, Description: REEPDW1007

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-02 REEPDW1007 0.11869	1.11e4	93.6	NO
2	2	13C5-PFHxA	1800954-02 REEPDW1007 0.11869	1.58e4	89.3	NO
3	3	13C3-PFHxS	1800954-02 REEPDW1007 0.11869	3.77e3	112.3	NO
4	4	13C8-PFOA	1800954-02 REEPDW1007 0.11869	1.67e4	96.9	NO
5	5	13C9-PFNA	1800954-02 REEPDW1007 0.11869	1.99e4	98.6	NO
6	6	13C4-PFOS	1800954-02 REEPDW1007 0.11869	4.37e3	121.7	NO
7	7	13C6-PFDA	1800954-02 REEPDW1007 0.11869	1.94e4	83.8	NO
8	8	13C7-PFUdA	1800954-02 REEPDW1007 0.11869	2.89e4	98.5	NO

Name: 180603M2_89, Date: 04-Jun-2018, Time: 09:21:11, ID: 1800954-03 REEPDW1008 0.11591, Description: REEPDW1008

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-03 REEPDW1008 0.11591	1.16e4	97.7	NO
2	2	13C5-PFHxA	1800954-03 REEPDW1008 0.11591	1.70e4	96.0	NO
3	3	13C3-PFHxS	1800954-03 REEPDW1008 0.11591	4.44e3	132.3	NO
4	4	13C8-PFOA	1800954-03 REEPDW1008 0.11591	1.78e4	103.0	NO
5	5	13C9-PFNA	1800954-03 REEPDW1008 0.11591	1.69e4	83.9	NO
6	6	13C4-PFOS	1800954-03 REEPDW1008 0.11591	4.00e3	111.4	NO
7	7	13C6-PFDA	1800954-03 REEPDW1008 0.11591	1.97e4	85.2	NO
8	8	13C7-PFUdA	1800954-03 REEPDW1008 0.11591	2.77e4	94.4	NO

Name: 180603M2_90, Date: 04-Jun-2018, Time: 09:31:42, ID: 1800954-04 REEPDW1009 0.11871, Description: REEPDW1009

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-04 REEPDW1009 0.11871	8.54e3	71.8	NO
2	2	13C5-PFHxA	1800954-04 REEPDW1009 0.11871	1.28e4	72.3	NO
3	3	13C3-PFHxS	1800954-04 REEPDW1009 0.11871	3.08e3	91.7	NO
4	4	13C8-PFOA	1800954-04 REEPDW1009 0.11871	1.19e4	69.0	NO
5	5	13C9-PFNA	1800954-04 REEPDW1009 0.11871	1.52e4	75.5	NO
6	6	13C4-PFOS	1800954-04 REEPDW1009 0.11871	3.19e3	88.9	NO
7	7	13C6-PFDA	1800954-04 REEPDW1009 0.11871	1.48e4	64.0	NO
8	8	13C7-PFUdA	1800954-04 REEPDW1009 0.11871	1.99e4	67.8	NO

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Name: 180603M2_91, Date: 04-Jun-2018, Time: 09:42:06, ID: 1800954-05 REEPDW1010 0.1202, Description: REEPDW1010

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-05 REEPDW1010 0.1202	7.56e3	63.5	NO
2	2	13C5-PFHxA	1800954-05 REEPDW1010 0.1202	1.11e4	62.7	NO
3	3	13C3-PFHxS	1800954-05 REEPDW1010 0.1202	3.31e3	98.7	NO
4	4	13C8-PFOA	1800954-05 REEPDW1010 0.1202	1.11e4	64.1	NO
5	5	13C9-PFNA	1800954-05 REEPDW1010 0.1202	1.36e4	67.6	NO
6	6	13C4-PFOS	1800954-05 REEPDW1010 0.1202	3.50e3	97.6	NO
7	7	13C6-PFDA	1800954-05 REEPDW1010 0.1202	1.54e4	66.5	NO
8	8	13C7-PFUdA	1800954-05 REEPDW1010 0.1202	2.01e4	68.3	NO

Name: 180603M2_92, Date: 04-Jun-2018, Time: 09:52:36, ID: 1800954-06 REEPDW550 0.11863, Description: REEPDW550

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-06 REEPDW550 0.11863	1.13e4	94.6	NO
2	2	13C5-PFHxA	1800954-06 REEPDW550 0.11863	1.70e4	96.4	NO
3	3	13C3-PFHxS	1800954-06 REEPDW550 0.11863	4.49e3	133.8	NO
4	4	13C8-PFOA	1800954-06 REEPDW550 0.11863	1.81e4	104.7	NO
5	5	13C9-PFNA	1800954-06 REEPDW550 0.11863	2.17e4	107.5	NO
6	6	13C4-PFOS	1800954-06 REEPDW550 0.11863	4.65e3	129.4	NO
7	7	13C6-PFDA	1800954-06 REEPDW550 0.11863	2.03e4	87.7	NO
8	8	13C7-PFUdA	1800954-06 REEPDW550 0.11863	3.43e4	116.7	NO

Name: 180603M2_93, Date: 04-Jun-2018, Time: 10:03:01, ID: 1800954-07 REEPDW1011 0.11919, Description: REEPDW1011

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-07 REEPDW1011 0.11919	1.06e4	89.2	NO
2	2	13C5-PFHxA	1800954-07 REEPDW1011 0.11919	1.50e4	85.1	NO
3	3	13C3-PFHxS	1800954-07 REEPDW1011 0.11919	3.88e3	115.7	NO
4	4	13C8-PFOA	1800954-07 REEPDW1011 0.11919	1.62e4	93.6	NO
5	5	13C9-PFNA	1800954-07 REEPDW1011 0.11919	1.85e4	91.7	NO
6	6	13C4-PFOS	1800954-07 REEPDW1011 0.11919	4.00e3	111.3	NO
7	7	13C6-PFDA	1800954-07 REEPDW1011 0.11919	2.11e4	91.2	NO
8	8	13C7-PFUdA	1800954-07 REEPDW1011 0.11919	2.59e4	88.3	NO

Name: 180603M2_94, Date: 04-Jun-2018, Time: 10:13:31, ID: 1800954-08 REEPDW1012 0.11288, Description: REEPDW1012

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-08 REEPDW1012 0.11288	7.48e3	62.8	NO
2	2	13C5-PFHxA	1800954-08 REEPDW1012 0.11288	1.04e4	58.8	NO
3	3	13C3-PFHxS	1800954-08 REEPDW1012 0.11288	3.10e3	92.3	NO
4	4	13C8-PFOA	1800954-08 REEPDW1012 0.11288	1.12e4	65.1	NO
5	5	13C9-PFNA	1800954-08 REEPDW1012 0.11288	1.28e4	63.4	NO
6	6	13C4-PFOS	1800954-08 REEPDW1012 0.11288	3.18e3	88.4	NO
7	7	13C6-PFDA	1800954-08 REEPDW1012 0.11288	1.43e4	61.7	NO
8	8	13C7-PFUdA	1800954-08 REEPDW1012 0.11288	1.67e4	56.7	NO

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Name: 180603M2_95, Date: 04-Jun-2018, Time: 10:23:57, ID: 1800954-09 REEPDW1001 0.12106, Description: REEPDW1001

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-09 REEPDW1001 0.12106	7.78e3	65.3	NO
2	2	13C5-PFHxA	1800954-09 REEPDW1001 0.12106	1.12e4	63.3	NO
3	3	13C3-PFHxS	1800954-09 REEPDW1001 0.12106	3.11e3	92.6	NO
4	4	13C8-PFOA	1800954-09 REEPDW1001 0.12106	1.11e4	64.5	NO
5	5	13C9-PFNA	1800954-09 REEPDW1001 0.12106	1.42e4	70.5	NO
6	6	13C4-PFOS	1800954-09 REEPDW1001 0.12106	3.26e3	90.9	NO
7	7	13C6-PFDA	1800954-09 REEPDW1001 0.12106	1.59e4	68.8	NO
8	8	13C7-PFUdA	1800954-09 REEPDW1001 0.12106	1.89e4	64.4	NO

Name: 180603M2_96, Date: 04-Jun-2018, Time: 10:34:27, ID: 1800954-10 REEPDW1003 0.11189, Description: REEPDW1003

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-10 REEPDW1003 0.11189	6.38e3	53.6	NO
2	2	13C5-PFHxA	1800954-10 REEPDW1003 0.11189	9.04e3	51.1	NO
3	3	13C3-PFHxS	1800954-10 REEPDW1003 0.11189	2.81e3	83.8	NO
4	4	13C8-PFOA	1800954-10 REEPDW1003 0.11189	8.27e3	47.9	YES
5	5	13C9-PFNA	1800954-10 REEPDW1003 0.11189	1.09e4	53.8	NO
6	6	13C4-PFOS	1800954-10 REEPDW1003 0.11189	2.95e3	82.1	NO
7	7	13C6-PFDA	1800954-10 REEPDW1003 0.11189	1.14e4	49.1	YES
8	8	13C7-PFUdA	1800954-10 REEPDW1003 0.11189	1.45e4	49.5	YES

Name: 180603M2_97, Date: 04-Jun-2018, Time: 10:44:52, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_98, Date: 04-Jun-2018, Time: 10:55:22, ID: ST180603M2-16 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180603M2-16 PFC CS3 18E2907	1.60e4	134.8	NO
2	2	13C5-PFHxA	ST180603M2-16 PFC CS3 18E2907	2.12e4	119.9	NO
3	3	13C3-PFHxS	ST180603M2-16 PFC CS3 18E2907	4.61e3	137.5	NO
4	4	13C8-PFOA	ST180603M2-16 PFC CS3 18E2907	2.18e4	126.3	NO
5	5	13C9-PFNA	ST180603M2-16 PFC CS3 18E2907	2.81e4	139.4	NO
6	6	13C4-PFOS	ST180603M2-16 PFC CS3 18E2907	4.51e3	125.7	NO
7	7	13C6-PFDA	ST180603M2-16 PFC CS3 18E2907	2.75e4	119.1	NO
8	8	13C7-PFUdA	ST180603M2-16 PFC CS3 18E2907	3.41e4	116.2	NO

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Name: 180603M2_99, Date: 04-Jun-2018, Time: 11:05:53, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_100, Date: 04-Jun-2018, Time: 11:16:18, ID: 1800954-11 REEPDW1004 0.11763, Description: REEPDW1004

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-11 REEPDW1004 0.11763	1.03e4	86.8	NO
2	2	13C5-PFHxA	1800954-11 REEPDW1004 0.11763	1.51e4	85.1	NO
3	3	13C3-PFHxS	1800954-11 REEPDW1004 0.11763	3.96e3	118.1	NO
4	4	13C8-PFOA	1800954-11 REEPDW1004 0.11763	1.72e4	99.6	NO
5	5	13C9-PFNA	1800954-11 REEPDW1004 0.11763	1.99e4	98.5	NO
6	6	13C4-PFOS	1800954-11 REEPDW1004 0.11763	4.36e3	121.3	NO
7	7	13C6-PFDA	1800954-11 REEPDW1004 0.11763	1.98e4	85.5	NO
8	8	13C7-PFUdA	1800954-11 REEPDW1004 0.11763	2.67e4	90.8	NO

Name: 180603M2_101, Date: 04-Jun-2018, Time: 11:26:48, ID: 1800954-12 REEPDW1006 0.11887, Description: REEPDW1006

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-12 REEPDW1006 0.11887	1.04e4	87.8	NO
2	2	13C5-PFHxA	1800954-12 REEPDW1006 0.11887	1.50e4	84.7	NO
3	3	13C3-PFHxS	1800954-12 REEPDW1006 0.11887	3.60e3	107.4	NO
4	4	13C8-PFOA	1800954-12 REEPDW1006 0.11887	1.51e4	87.6	NO
5	5	13C9-PFNA	1800954-12 REEPDW1006 0.11887	1.79e4	88.9	NO
6	6	13C4-PFOS	1800954-12 REEPDW1006 0.11887	3.61e3	100.7	NO
7	7	13C6-PFDA	1800954-12 REEPDW1006 0.11887	1.87e4	80.8	NO
8	8	13C7-PFUdA	1800954-12 REEPDW1006 0.11887	2.24e4	76.2	NO

Name: 180603M2_102, Date: 04-Jun-2018, Time: 11:37:13, ID: 1800954-13 REEPDW1013 0.11579, Description: REEPDW1013

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-13 REEPDW1013 0.11579	1.06e4	89.4	NO
2	2	13C5-PFHxA	1800954-13 REEPDW1013 0.11579	1.48e4	83.7	NO
3	3	13C3-PFHxS	1800954-13 REEPDW1013 0.11579	3.57e3	106.2	NO
4	4	13C8-PFOA	1800954-13 REEPDW1013 0.11579	1.55e4	89.8	NO
5	5	13C9-PFNA	1800954-13 REEPDW1013 0.11579	1.90e4	94.3	NO
6	6	13C4-PFOS	1800954-13 REEPDW1013 0.11579	3.66e3	101.9	NO
7	7	13C6-PFDA	1800954-13 REEPDW1013 0.11579	1.81e4	78.1	NO
8	8	13C7-PFUdA	1800954-13 REEPDW1013 0.11579	2.26e4	76.8	NO

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Name: 180603M2_103, Date: 04-Jun-2018, Time: 11:47:43, ID: 1800954-14 REEPDW1014 0.11881, Description: REEPDW1014

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-14 REEPDW1014 0.11881	9.22e3	77.5	NO
2	2	13C5-PFHxA	1800954-14 REEPDW1014 0.11881	1.25e4	70.9	NO
3	3	13C3-PFHxS	1800954-14 REEPDW1014 0.11881	3.45e3	102.7	NO
4	4	13C8-PFOA	1800954-14 REEPDW1014 0.11881	1.28e4	74.4	NO
5	5	13C9-PFNA	1800954-14 REEPDW1014 0.11881	1.43e4	71.0	NO
6	6	13C4-PFOS	1800954-14 REEPDW1014 0.11881	3.71e3	103.4	NO
7	7	13C6-PFDA	1800954-14 REEPDW1014 0.11881	1.58e4	68.3	NO
8	8	13C7-PFUdA	1800954-14 REEPDW1014 0.11881	2.10e4	71.4	NO

Name: 180603M2_104, Date: 04-Jun-2018, Time: 11:58:08, ID: 1800954-15 REEPDW1002 0.12307, Description: REEPDW1002

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-15 REEPDW1002 0.12307	1.04e4	87.1	NO
2	2	13C5-PFHxA	1800954-15 REEPDW1002 0.12307	1.45e4	82.1	NO
3	3	13C3-PFHxS	1800954-15 REEPDW1002 0.12307	3.24e3	96.5	NO
4	4	13C8-PFOA	1800954-15 REEPDW1002 0.12307	1.47e4	85.4	NO
5	5	13C9-PFNA	1800954-15 REEPDW1002 0.12307	1.79e4	88.6	NO
6	6	13C4-PFOS	1800954-15 REEPDW1002 0.12307	3.27e3	91.0	NO
7	7	13C6-PFDA	1800954-15 REEPDW1002 0.12307	1.90e4	81.9	NO
8	8	13C7-PFUdA	1800954-15 REEPDW1002 0.12307	2.14e4	72.8	NO

Name: 180603M2_105, Date: 04-Jun-2018, Time: 12:08:38, ID: 1800954-16 REEPDW1005 0.12281, Description: REEPDW1005

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800954-16 REEPDW1005 0.12281	7.83e3	65.8	NO
2	2	13C5-PFHxA	1800954-16 REEPDW1005 0.12281	1.21e4	68.6	NO
3	3	13C3-PFHxS	1800954-16 REEPDW1005 0.12281	2.98e3	88.8	NO
4	4	13C8-PFOA	1800954-16 REEPDW1005 0.12281	1.02e4	58.9	NO
5	5	13C9-PFNA	1800954-16 REEPDW1005 0.12281	1.37e4	68.0	NO
6	6	13C4-PFOS	1800954-16 REEPDW1005 0.12281	3.15e3	87.8	NO
7	7	13C6-PFDA	1800954-16 REEPDW1005 0.12281	1.56e4	67.4	NO
8	8	13C7-PFUdA	1800954-16 REEPDW1005 0.12281	1.96e4	66.8	NO

Name: 180603M2_106, Date: 04-Jun-2018, Time: 12:19:02, ID: B8E0167-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0167-BS1 OPR 0.125	1.02e4	85.9	NO
2	2	13C5-PFHxA	B8E0167-BS1 OPR 0.125	1.50e4	84.9	NO
3	3	13C3-PFHxS	B8E0167-BS1 OPR 0.125	3.57e3	106.3	NO
4	4	13C8-PFOA	B8E0167-BS1 OPR 0.125	1.66e4	96.0	NO
5	5	13C9-PFNA	B8E0167-BS1 OPR 0.125	2.10e4	104.3	NO
6	6	13C4-PFOS	B8E0167-BS1 OPR 0.125	3.60e3	100.3	NO
7	7	13C6-PFDA	B8E0167-BS1 OPR 0.125	1.96e4	84.9	NO
8	8	13C7-PFUdA	B8E0167-BS1 OPR 0.125	2.53e4	86.0	NO

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Name: 180603M2_107, Date: 04-Jun-2018, Time: 12:29:32, ID: B8E0167-BSD1 LCSD 0.125, Description: LCSD

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0167-BSD1 LCSD 0.125	8.17e3	68.7	NO
2	2 13C5-PFHxA	B8E0167-BSD1 LCSD 0.125	1.29e4	73.0	NO
3	3 13C3-PFHxS	B8E0167-BSD1 LCSD 0.125	3.02e3	90.1	NO
4	4 13C8-PFOA	B8E0167-BSD1 LCSD 0.125	1.27e4	73.3	NO
5	5 13C9-PFNA	B8E0167-BSD1 LCSD 0.125	1.47e4	72.8	NO
6	6 13C4-PFOS	B8E0167-BSD1 LCSD 0.125	3.01e3	83.8	NO
7	7 13C6-PFDA	B8E0167-BSD1 LCSD 0.125	1.70e4	73.5	NO
8	8 13C7-PFUdA	B8E0167-BSD1 LCSD 0.125	2.17e4	73.8	NO

Name: 180603M2_108, Date: 04-Jun-2018, Time: 12:39:56, ID: B8E0167-BLK1 Method Blank 0.125, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0167-BLK1 Method Blank 0.125	9.62e3	80.9	NO
2	2 13C5-PFHxA	B8E0167-BLK1 Method Blank 0.125	1.38e4	77.9	NO
3	3 13C3-PFHxS	B8E0167-BLK1 Method Blank 0.125	3.10e3	92.3	NO
4	4 13C8-PFOA	B8E0167-BLK1 Method Blank 0.125	1.50e4	86.7	NO
5	5 13C9-PFNA	B8E0167-BLK1 Method Blank 0.125	1.87e4	92.6	NO
6	6 13C4-PFOS	B8E0167-BLK1 Method Blank 0.125	3.34e3	93.1	NO
7	7 13C6-PFDA	B8E0167-BLK1 Method Blank 0.125	1.89e4	81.7	NO
8	8 13C7-PFUdA	B8E0167-BLK1 Method Blank 0.125	2.27e4	77.4	NO

Name: 180603M2_109, Date: 04-Jun-2018, Time: 12:50:27, ID: 1800982-01 REEPDW1037 0.11872, Description: REEPDW1037

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800982-01 REEPDW1037 0.11872	8.54e3	71.7	NO
2	2 13C5-PFHxA	1800982-01 REEPDW1037 0.11872	1.27e4	71.6	NO
3	3 13C3-PFHxS	1800982-01 REEPDW1037 0.11872	2.92e3	87.1	NO
4	4 13C8-PFOA	1800982-01 REEPDW1037 0.11872	1.27e4	73.4	NO
5	5 13C9-PFNA	1800982-01 REEPDW1037 0.11872	1.56e4	77.4	NO
6	6 13C4-PFOS	1800982-01 REEPDW1037 0.11872	2.97e3	82.6	NO
7	7 13C6-PFDA	1800982-01 REEPDW1037 0.11872	1.69e4	72.9	NO
8	8 13C7-PFUdA	1800982-01 REEPDW1037 0.11872	1.89e4	64.3	NO

Name: 180603M2_110, Date: 04-Jun-2018, Time: 13:00:57, ID: 1800982-02 REEPDW1048 0.12739, Description: REEPDW1048

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800982-02 REEPDW1048 0.12739	1.02e4	85.7	NO
2	2 13C5-PFHxA	1800982-02 REEPDW1048 0.12739	1.46e4	82.5	NO
3	3 13C3-PFHxS	1800982-02 REEPDW1048 0.12739	3.71e3	110.6	NO
4	4 13C8-PFOA	1800982-02 REEPDW1048 0.12739	1.63e4	94.3	NO
5	5 13C9-PFNA	1800982-02 REEPDW1048 0.12739	2.13e4	105.6	NO
6	6 13C4-PFOS	1800982-02 REEPDW1048 0.12739	3.93e3	109.5	NO
7	7 13C6-PFDA	1800982-02 REEPDW1048 0.12739	1.76e4	76.1	NO
8	8 13C7-PFUdA	1800982-02 REEPDW1048 0.12739	2.85e4	97.0	NO

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Name: 180603M2_111, Date: 04-Jun-2018, Time: 13:11:23, ID: 1800982-03 REEPDW1049 0.12389, Description: REEPDW1049

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800982-03 REEPDW1049 0.12389	9.88e3	83.0	NO
2	2 13C5-PFHxA	1800982-03 REEPDW1049 0.12389	1.46e4	82.4	NO
3	3 13C3-PFHxS	1800982-03 REEPDW1049 0.12389	3.81e3	113.6	NO
4	4 13C8-PFOA	1800982-03 REEPDW1049 0.12389	1.50e4	86.7	NO
5	5 13C9-PFNA	1800982-03 REEPDW1049 0.12389	1.81e4	89.8	NO
6	6 13C4-PFOS	1800982-03 REEPDW1049 0.12389	3.91e3	109.0	NO
7	7 13C6-PFDA	1800982-03 REEPDW1049 0.12389	2.00e4	86.6	NO
8	8 13C7-PFUdA	1800982-03 REEPDW1049 0.12389	2.48e4	84.4	NO

Name: 180603M2_112, Date: 04-Jun-2018, Time: 13:21:53, ID: 1800982-04 REEPDW1050 0.12048, Description: REEPDW1050

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800982-04 REEPDW1050 0.12048	9.03e3	75.9	NO
2	2 13C5-PFHxA	1800982-04 REEPDW1050 0.12048	1.47e4	83.2	NO
3	3 13C3-PFHxS	1800982-04 REEPDW1050 0.12048	3.29e3	98.2	NO
4	4 13C8-PFOA	1800982-04 REEPDW1050 0.12048	1.51e4	87.2	NO
5	5 13C9-PFNA	1800982-04 REEPDW1050 0.12048	1.72e4	85.2	NO
6	6 13C4-PFOS	1800982-04 REEPDW1050 0.12048	3.17e3	88.2	NO
7	7 13C6-PFDA	1800982-04 REEPDW1050 0.12048	1.93e4	83.3	NO
8	8 13C7-PFUdA	1800982-04 REEPDW1050 0.12048	2.46e4	83.7	NO

Name: 180603M2_113, Date: 04-Jun-2018, Time: 13:32:17, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

Name: 180603M2_114, Date: 04-Jun-2018, Time: 13:42:48, ID: ST180603M2-17 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180603M2-17 PFC CS3 18E2907	1.66e4	139.7	NO
2	2 13C5-PFHxA	ST180603M2-17 PFC CS3 18E2907	2.36e4	133.6	NO
3	3 13C3-PFHxS	ST180603M2-17 PFC CS3 18E2907	4.58e3	136.4	NO
4	4 13C8-PFOA	ST180603M2-17 PFC CS3 18E2907	2.41e4	139.8	NO
5	5 13C9-PFNA	ST180603M2-17 PFC CS3 18E2907	2.99e4	147.9	NO
6	6 13C4-PFOS	ST180603M2-17 PFC CS3 18E2907	4.82e3	134.1	NO
7	7 13C6-PFDA	ST180603M2-17 PFC CS3 18E2907	2.96e4	128.0	NO
8	8 13C7-PFUdA	ST180603M2-17 PFC CS3 18E2907	3.92e4	133.5	NO

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Name: 180603M2_115, Date: 04-Jun-2018, Time: 13:53:18, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_116, Date: 04-Jun-2018, Time: 14:03:43, ID: 1800982-05 REEPDW554 0.11977, Description: REEPDW554

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800982-05 REEPDW554 0.11977	9.94e3	83.5	NO
2	2	13C5-PFHxA	1800982-05 REEPDW554 0.11977	1.43e4	80.8	NO
3	3	13C3-PFHxS	1800982-05 REEPDW554 0.11977	3.58e3	106.6	NO
4	4	13C8-PFOA	1800982-05 REEPDW554 0.11977	1.61e4	93.1	NO
5	5	13C9-PFNA	1800982-05 REEPDW554 0.11977	1.85e4	91.5	NO
6	6	13C4-PFOS	1800982-05 REEPDW554 0.11977	3.77e3	105.1	NO
7	7	13C6-PFDA	1800982-05 REEPDW554 0.11977	2.06e4	89.2	NO
8	8	13C7-PFUdA	1800982-05 REEPDW554 0.11977	2.46e4	83.7	NO

Name: 180603M2_117, Date: 04-Jun-2018, Time: 14:14:13, ID: 1800982-06 REEPDW1043 0.12141, Description: REEPDW1043

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800982-06 REEPDW1043 0.12141	7.77e3	65.3	NO
2	2	13C5-PFHxA	1800982-06 REEPDW1043 0.12141	1.28e4	72.7	NO
3	3	13C3-PFHxS	1800982-06 REEPDW1043 0.12141	3.22e3	95.9	NO
4	4	13C8-PFOA	1800982-06 REEPDW1043 0.12141	1.10e4	63.9	NO
5	5	13C9-PFNA	1800982-06 REEPDW1043 0.12141	1.52e4	75.5	NO
6	6	13C4-PFOS	1800982-06 REEPDW1043 0.12141	3.36e3	93.6	NO
7	7	13C6-PFDA	1800982-06 REEPDW1043 0.12141	1.59e4	68.6	NO
8	8	13C7-PFUdA	1800982-06 REEPDW1043 0.12141	1.99e4	67.7	NO

Name: 180603M2_118, Date: 04-Jun-2018, Time: 14:24:38, ID: B8E0141-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0141-BS1 OPR 0.125	1.28e4	107.8	NO
2	2	13C5-PFHxA	B8E0141-BS1 OPR 0.125	1.83e4	103.4	NO
3	3	13C3-PFHxS	B8E0141-BS1 OPR 0.125	3.80e3	113.1	NO
4	4	13C8-PFOA	B8E0141-BS1 OPR 0.125	1.94e4	112.6	NO
5	5	13C9-PFNA	B8E0141-BS1 OPR 0.125	2.24e4	110.8	NO
6	6	13C4-PFOS	B8E0141-BS1 OPR 0.125	3.98e3	110.9	NO
7	7	13C6-PFDA	B8E0141-BS1 OPR 0.125	2.48e4	107.1	NO
8	8	13C7-PFUdA	B8E0141-BS1 OPR 0.125	2.87e4	97.6	NO

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Name: 180603M2_119, Date: 04-Jun-2018, Time: 14:35:08, ID: B8E0224-BSD1 LCSD 0.125, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0224-BSD1 LCSD 0.125	8.09e3	67.9	NO
2	2	13C5-PFHxA	B8E0224-BSD1 LCSD 0.125	1.28e4	72.3	NO
3	3	13C3-PFHxS	B8E0224-BSD1 LCSD 0.125	2.80e3	83.5	NO
4	4	13C8-PFOA	B8E0224-BSD1 LCSD 0.125	1.36e4	78.8	NO
5	5	13C9-PFNA	B8E0224-BSD1 LCSD 0.125	1.57e4	77.9	NO
6	6	13C4-PFOS	B8E0224-BSD1 LCSD 0.125	2.84e3	79.0	NO
7	7	13C6-PFDA	B8E0224-BSD1 LCSD 0.125	1.70e4	73.7	NO
8	8	13C7-PFUdA	B8E0224-BSD1 LCSD 0.125	2.20e4	74.7	NO

Name: 180603M2_120, Date: 04-Jun-2018, Time: 14:45:32, ID: B8E0224-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0224-BS1 OPR 0.125	8.49e3	71.4	NO
2	2	13C5-PFHxA	B8E0224-BS1 OPR 0.125	1.15e4	65.3	NO
3	3	13C3-PFHxS	B8E0224-BS1 OPR 0.125	2.48e3	73.9	NO
4	4	13C8-PFOA	B8E0224-BS1 OPR 0.125	1.19e4	68.7	NO
5	5	13C9-PFNA	B8E0224-BS1 OPR 0.125	1.27e4	62.8	NO
6	6	13C4-PFOS	B8E0224-BS1 OPR 0.125	2.65e3	73.9	NO
7	7	13C6-PFDA	B8E0224-BS1 OPR 0.125	1.49e4	64.2	NO
8	8	13C7-PFUdA	B8E0224-BS1 OPR 0.125	1.98e4	67.5	NO

Name: 180603M2_121, Date: 04-Jun-2018, Time: 14:56:03, ID: B8E0224-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B8E0224-BLK1 Method Blank 0.125	9.12e3	76.6	NO
2	2	13C5-PFHxA	B8E0224-BLK1 Method Blank 0.125	1.49e4	84.4	NO
3	3	13C3-PFHxS	B8E0224-BLK1 Method Blank 0.125	3.12e3	93.0	NO
4	4	13C8-PFOA	B8E0224-BLK1 Method Blank 0.125	1.54e4	89.2	NO
5	5	13C9-PFNA	B8E0224-BLK1 Method Blank 0.125	1.81e4	89.5	NO
6	6	13C4-PFOS	B8E0224-BLK1 Method Blank 0.125	3.12e3	86.8	NO
7	7	13C6-PFDA	B8E0224-BLK1 Method Blank 0.125	2.16e4	93.5	NO
8	8	13C7-PFUdA	B8E0224-BLK1 Method Blank 0.125	2.45e4	83.5	NO

Name: 180603M2_122, Date: 04-Jun-2018, Time: 15:06:25, ID: 1800952-13RE1 REEPDW488 0.11053, Description: REEPDW488

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1800952-13RE1 REEPDW488 0.11053	5.95e3	50.0	NO
2	2	13C5-PFHxA	1800952-13RE1 REEPDW488 0.11053	9.65e3	54.6	NO
3	3	13C3-PFHxS	1800952-13RE1 REEPDW488 0.11053	3.02e3	90.1	NO
4	4	13C8-PFOA	1800952-13RE1 REEPDW488 0.11053	1.03e4	59.9	NO
5	5	13C9-PFNA	1800952-13RE1 REEPDW488 0.11053	1.24e4	61.7	NO
6	6	13C4-PFOS	1800952-13RE1 REEPDW488 0.11053	3.25e3	90.5	NO
7	7	13C6-PFDA	1800952-13RE1 REEPDW488 0.11053	1.58e4	68.4	NO
8	8	13C7-PFUdA	1800952-13RE1 REEPDW488 0.11053	1.95e4	66.3	NO

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Name: 180603M2_123, Date: 04-Jun-2018, Time: 15:16:56, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA	5.28e0	0.0	YES
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180603M2_124, Date: 04-Jun-2018, Time: 15:27:21, ID: ST180603M2-18 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180603M2-18 PFC CS3 18E2907	1.52e4	127.9	NO
2	2	13C5-PFHxA	ST180603M2-18 PFC CS3 18E2907	2.16e4	122.3	NO
3	3	13C3-PFHxS	ST180603M2-18 PFC CS3 18E2907	4.30e3	128.1	NO
4	4	13C8-PFOA	ST180603M2-18 PFC CS3 18E2907	2.07e4	120.2	NO
5	5	13C9-PFNA	ST180603M2-18 PFC CS3 18E2907	2.53e4	125.6	NO
6	6	13C4-PFOS	ST180603M2-18 PFC CS3 18E2907	4.53e3	126.1	NO
7	7	13C6-PFDA	ST180603M2-18 PFC CS3 18E2907	2.74e4	118.6	NO
8	8	13C7-PFUdA	ST180603M2-18 PFC CS3 18E2907	3.64e4	123.9	NO

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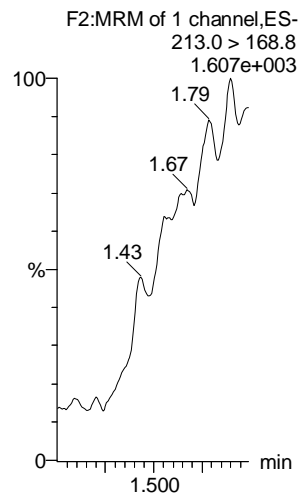
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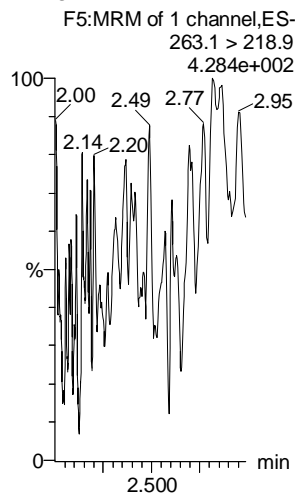
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Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

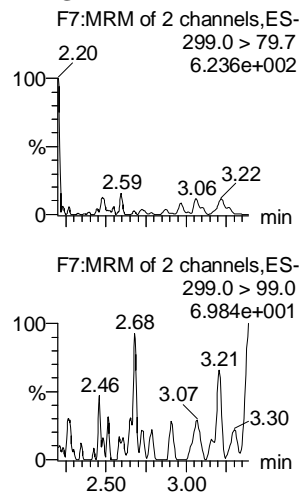
PFBA



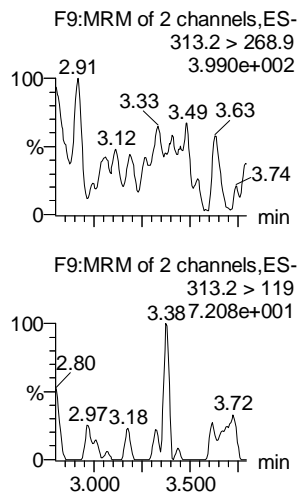
PFPeA



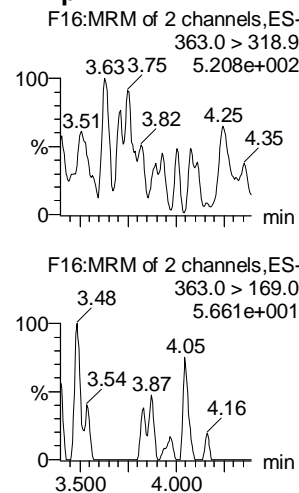
PFBS



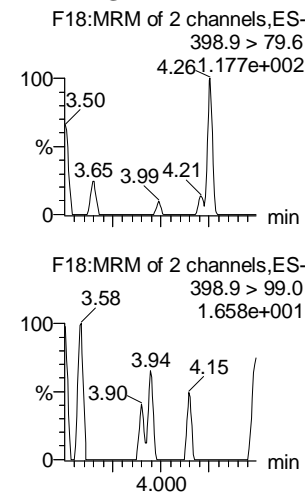
PFHxA



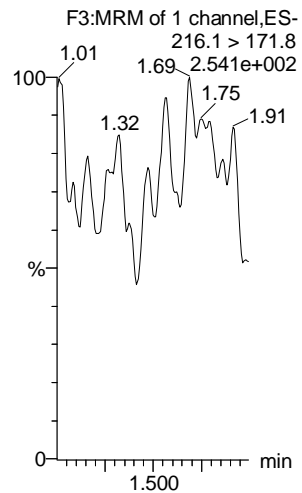
PFHpA



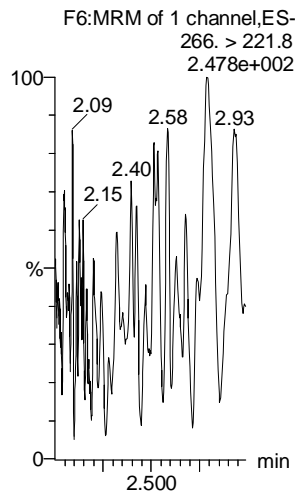
L-PFHxS



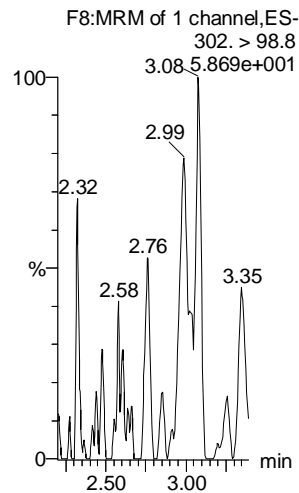
13C3-PFBA



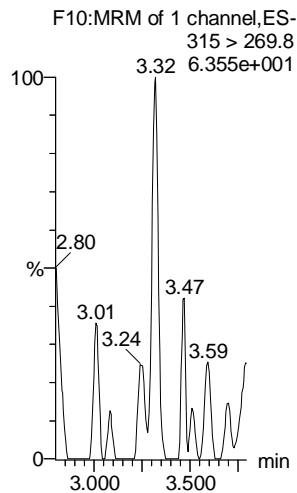
13C3-PFPeA



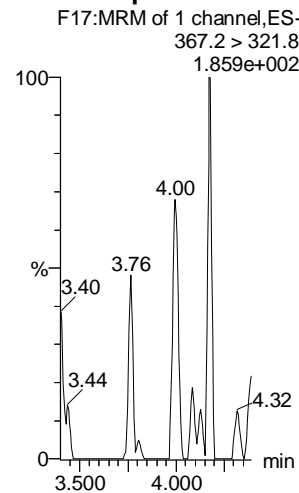
13C3-PFBS



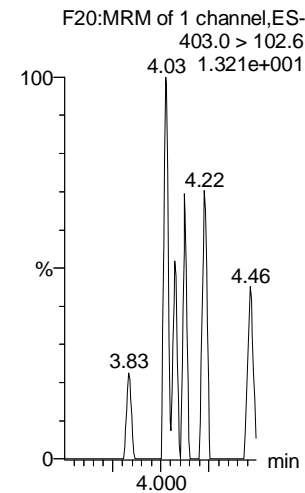
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



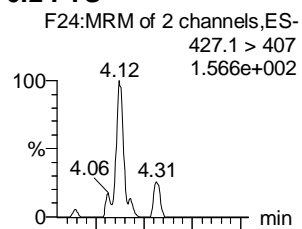
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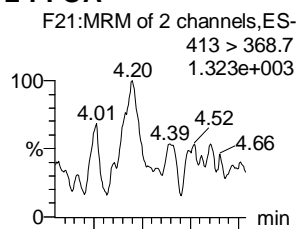
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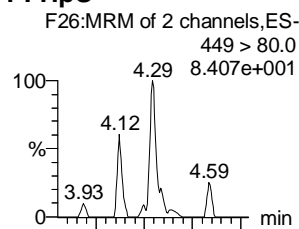
6:2 FTS



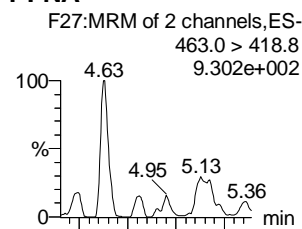
L-PFOA



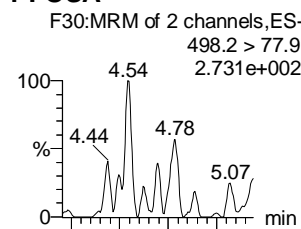
PFHpS



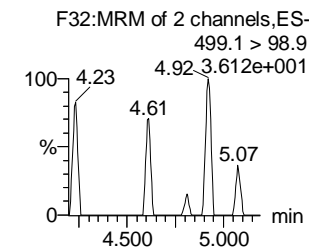
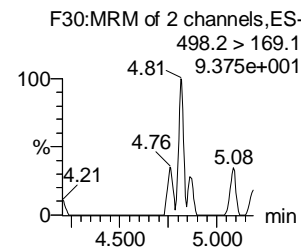
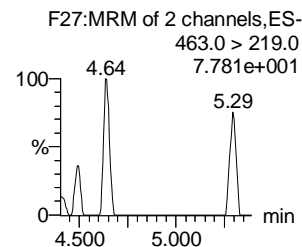
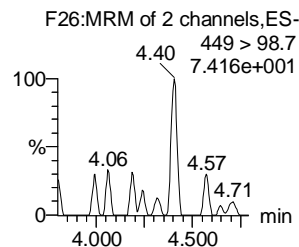
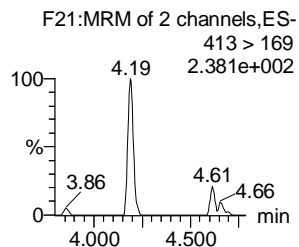
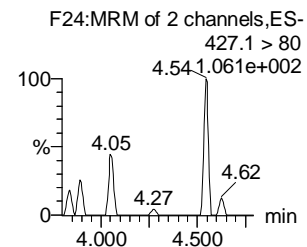
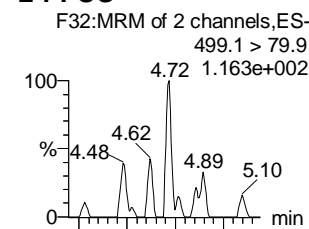
PFNA



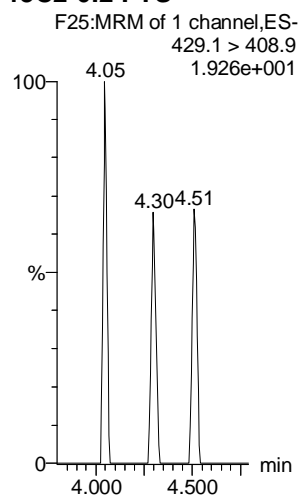
PFOSA



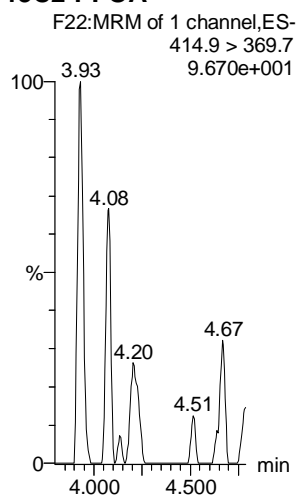
L-PFOS



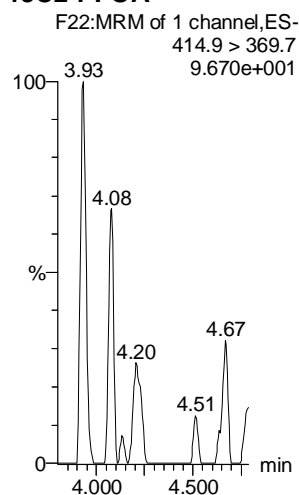
13C2-6:2 FTS



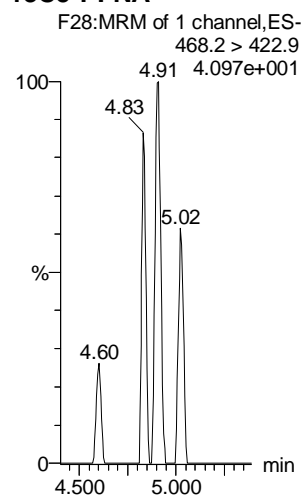
13C2-PFOA



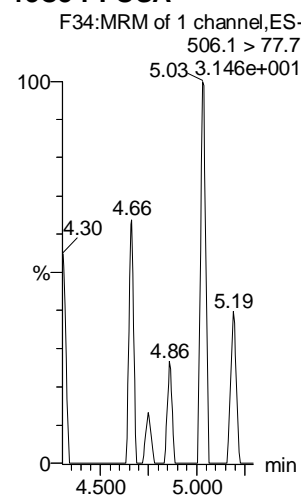
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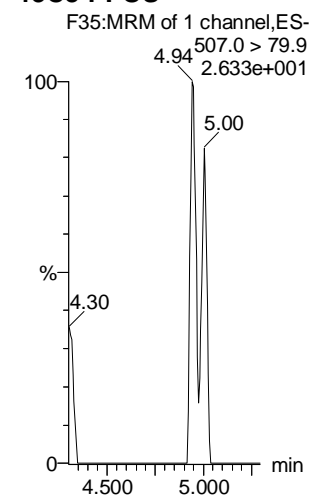
13C5-PFNA



13C8-PFOSA



13C8-PFOS



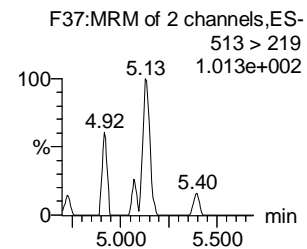
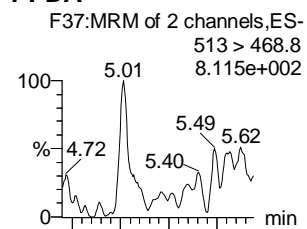
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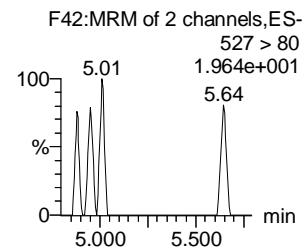
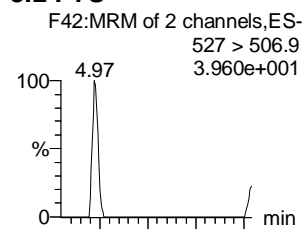
Printed: Tuesday, June 05, 2018 09:55:12 Pacific Daylight Time

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

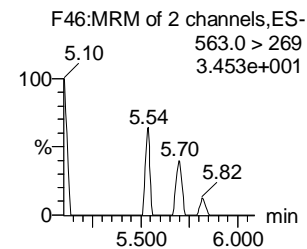
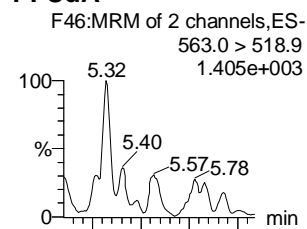
PFDA



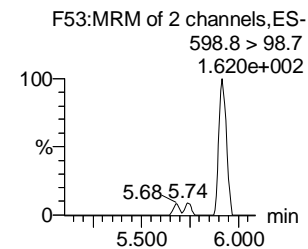
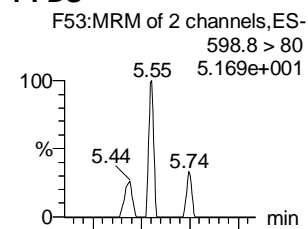
8:2 FTS



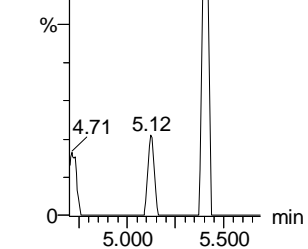
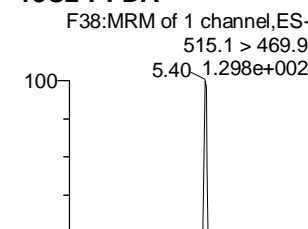
PFUdA



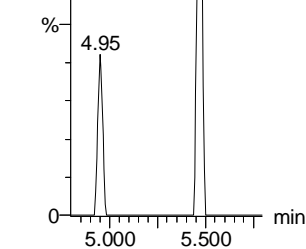
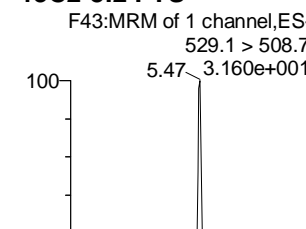
PFDS



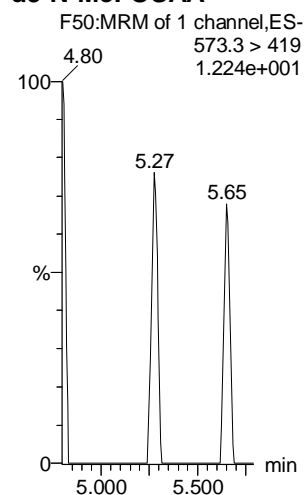
13C2-PFDA



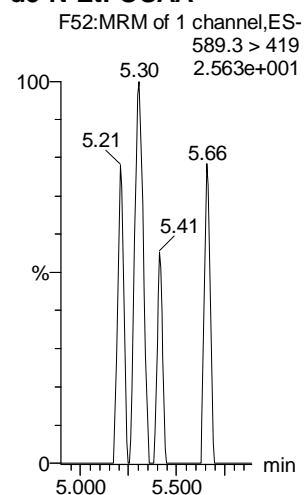
13C2-8:2 FTS



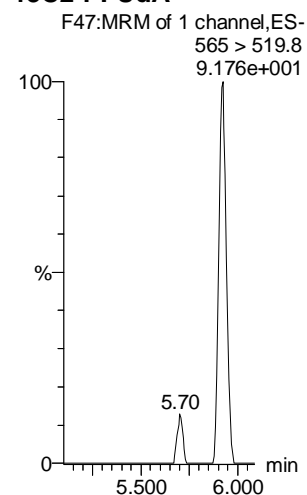
d3-N-MeFOSAA



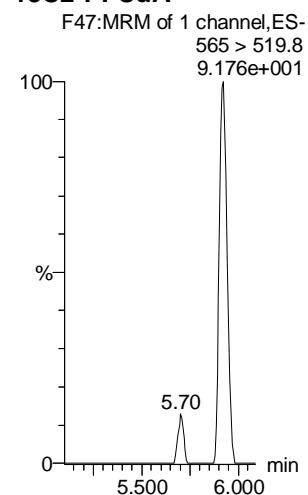
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA



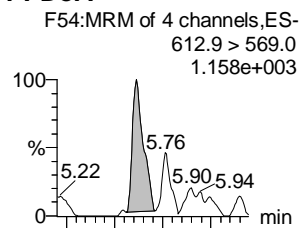
Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 09:54:38 Pacific Daylight Time

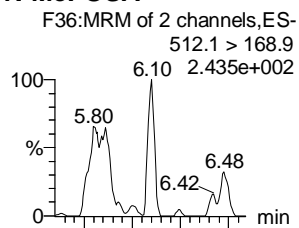
Printed: Tuesday, June 05, 2018 09:55:12 Pacific Daylight Time

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

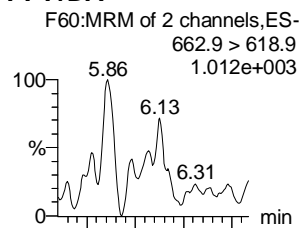
PFDaA



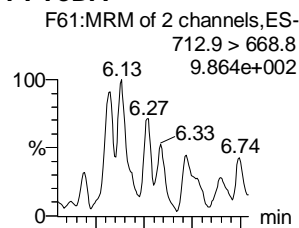
N-MeFOSA



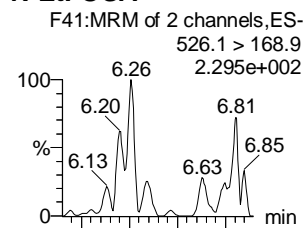
PFTrDA



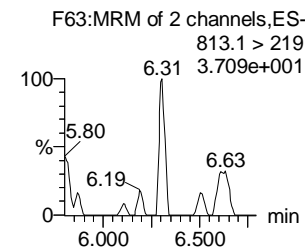
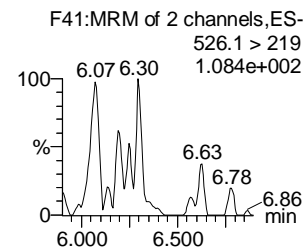
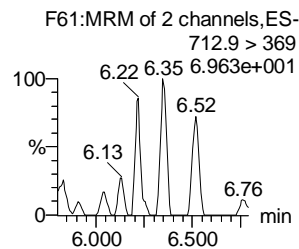
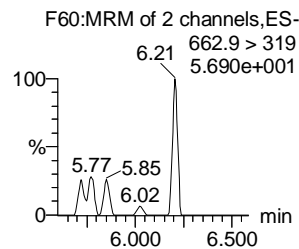
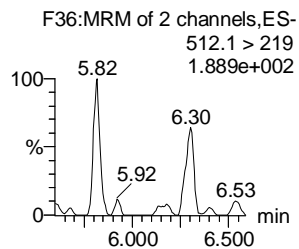
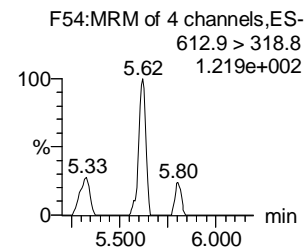
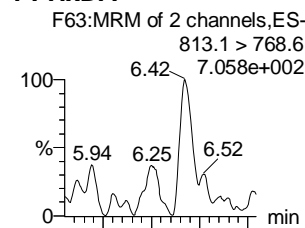
PFTeDA



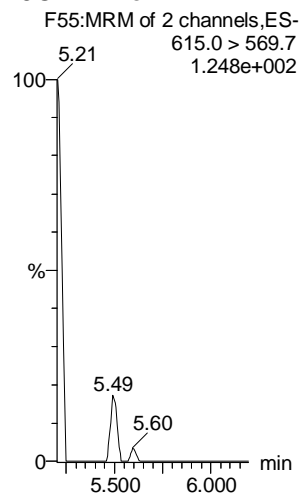
N-EtFOSA



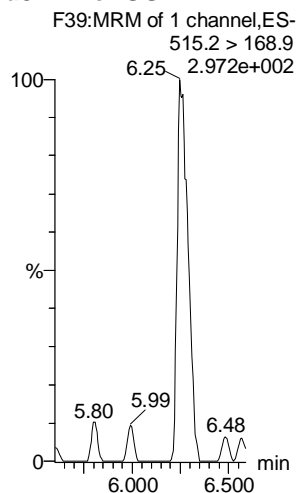
PFHxDA



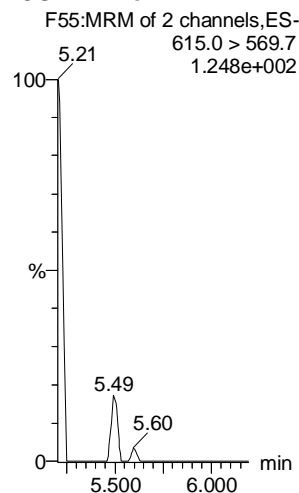
13C2-PFDaA



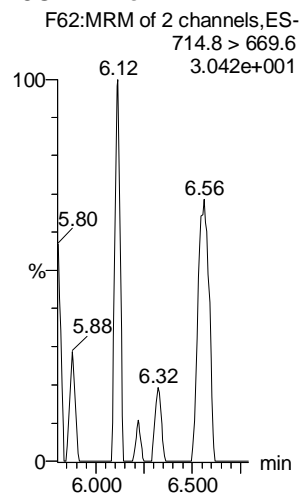
d3-N-MeFOSA



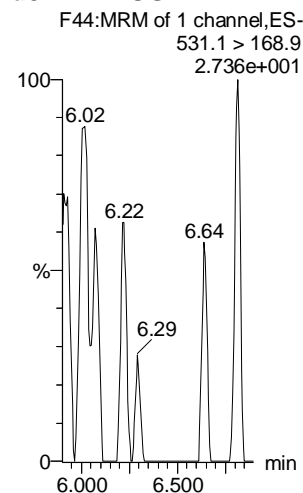
13C2-PFDaA



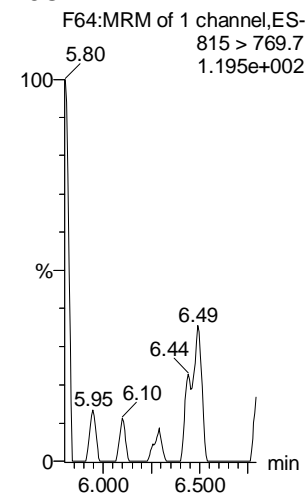
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA



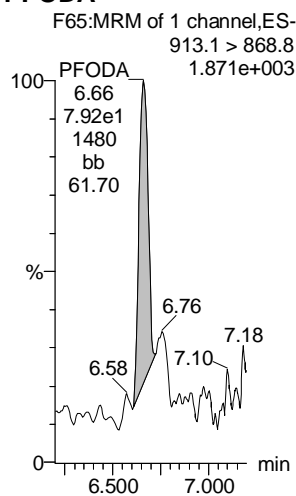
Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 09:54:38 Pacific Daylight Time

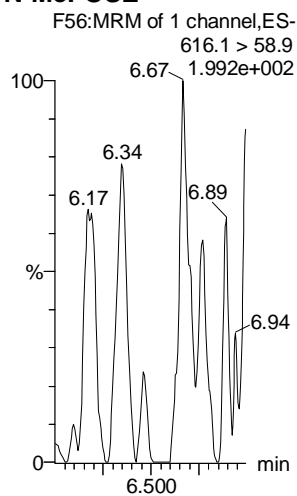
Printed: Tuesday, June 05, 2018 09:55:12 Pacific Daylight Time

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

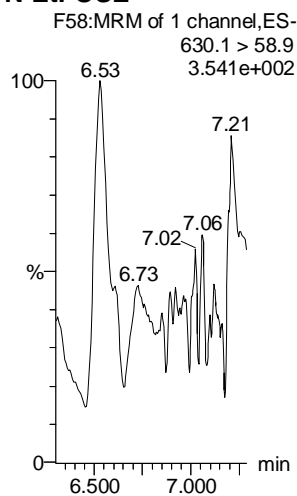
PFODA



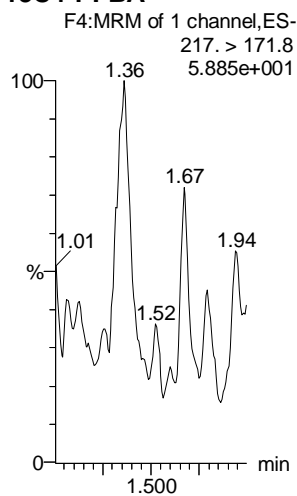
N-MeFOSE



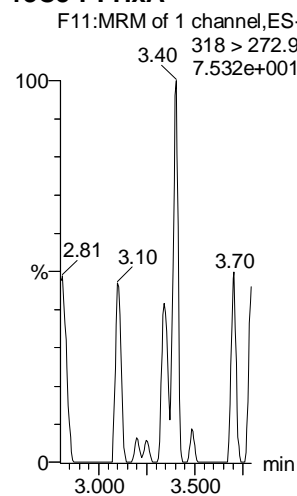
N-EtFOSE



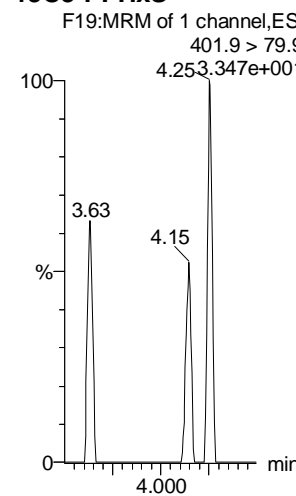
13C4-PFBA



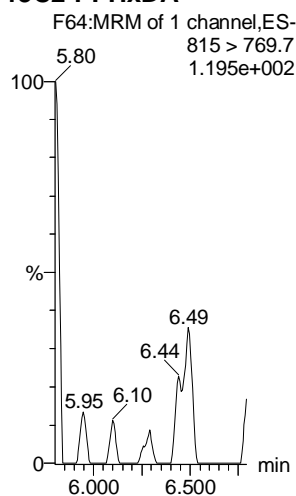
13C5-PFHxA



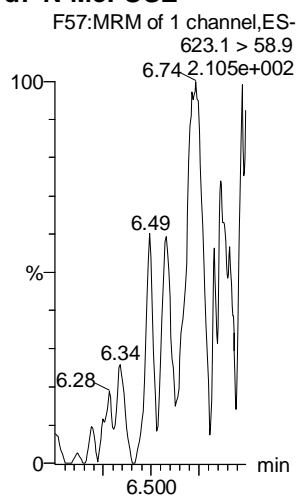
13C3-PFHxS



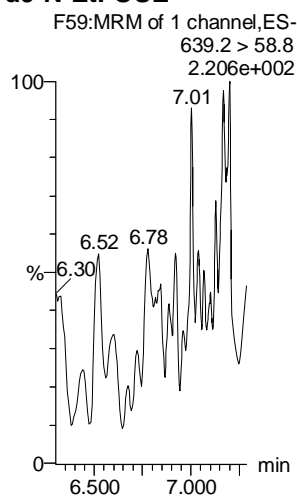
13C2-PFHxDA



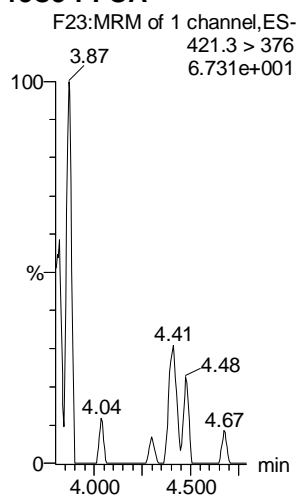
d7-N-MeFOSE



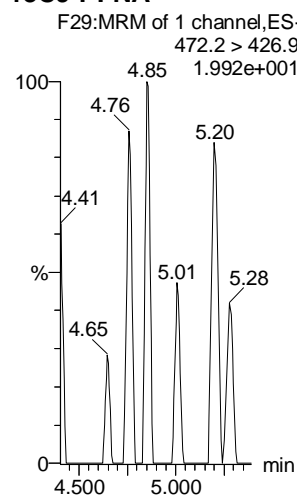
d9-N-EtFOSE



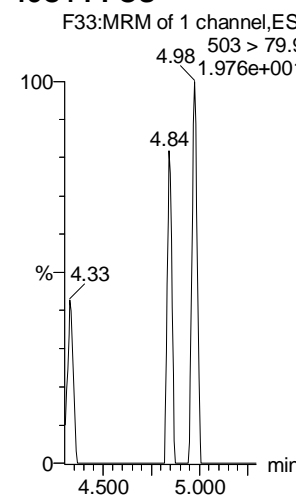
13C8-PFOA



13C9-PFNA



13C4-PFOS



Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 09:54:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 09:55:12 Pacific Daylight Time

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

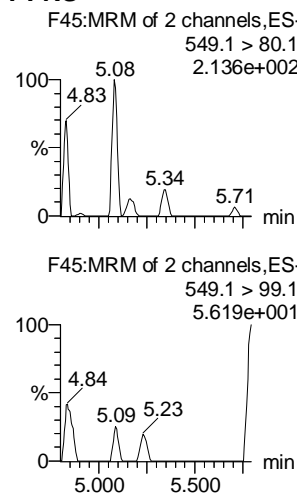
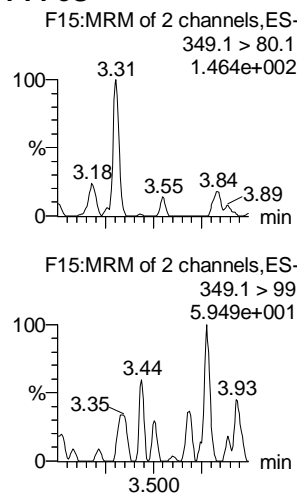
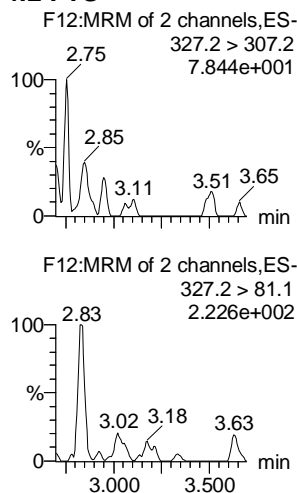
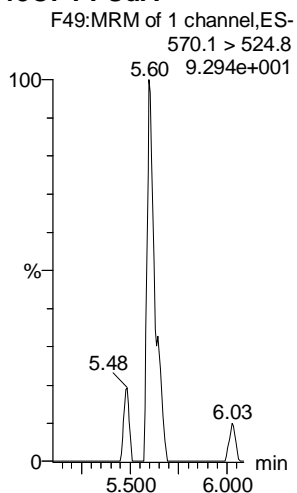
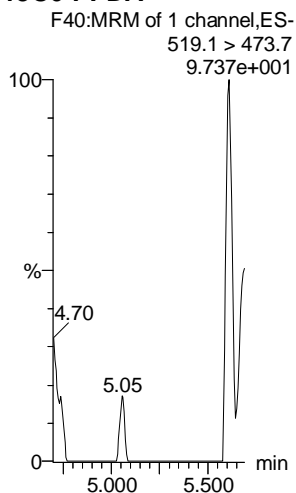
13C6-PFDA

13C7-PFUdA

4:2 FTS

PFPeS

PFNS



LC Calibration Standards Review Checklist Q4

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
Calibration ID:	<u>ST180603M2-11</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-12</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-13</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-14</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-15</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-16</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-17</u>	<u>L</u> M H	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:	<u>-18</u>	<u>L</u> M H	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:		L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibration ID:		L M H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

N/A

Full Mass Cal. Date: 5/30/18

- Run Log Present:
- # of Samples per Sequence Checked:
- Instrument Blank Saved:
- IIS Area Saved:
- Reviewed By: AD 6/5/18
Initials/Date

Comments:

(A) PFD0A < 10%.

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

VAD 6/5/18

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:24 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	1.02e4	1.13e4		1.40	1.39	11.3	10.1	100.5	NO		
2	2 PFPeA	263.1 > 21...	1.27e4	1.53e4		2.35	2.35	10.4	10.3	102.9	NO		
3	3 PFBS	299.0 > 79.7	3.16e3	1.94e3		2.64	2.64	20.4	10.4	104.4	NO	2.640	NO
4	4 4:2 FTS	327.2>307.2	3.89e3	4.20e3		3.04	3.04	11.6	10.2	102.3	NO	1.932	NO
5	5 PFHxA	313.2 > 26...	1.70e4	5.22e3		3.13	3.13	16.3	10.6	106.2	NO	275.627	YES
6	6 PFPeS	349.1>80.1	2.69e3	1.94e3		3.34	3.33	17.4	9.46	94.6	NO	1.596	NO
7	7 PFHpA	363.0 > 31...	1.52e4	1.61e4		3.74	3.74	11.8	10.2	102.5	NO	19.074	NO
8	8 L-PFHxS	398.9 > 79.6	2.33e3	1.55e3		3.89	3.89	18.8	9.78	97.8	NO	1.571	NO
9	10 6:2 FTS	427.1 > 407	4.30e3	4.33e3		4.19	4.20	12.4	10.6	106.2	NO	3.062	NO
10	11 L-PFOA	413 > 368.7	1.84e4	2.28e4		4.25	4.25	10.1	10.2	101.8	NO	4.115	NO
11	13 PFHpS	449 > 80.0	3.21e3	2.28e4		4.36	4.36	1.76	10.9	109.0	NO	1.984	NO
12	14 PFNA	463.0 > 41...	2.21e4	1.87e4		4.68	4.68	14.8	11.0	109.6	NO	4.793	NO
13	15 PFOSA	498.2 > 77.9	2.93e3	4.01e3		4.75	4.76	9.13	10.8	107.7	NO	23.146	NO
14	16 L-PFOS	499.1 > 79.9	2.77e3	4.15e3		4.77	4.77	8.33	9.09	90.9	NO	1.795	NO
15	18 PFDA	513 > 468.8	2.57e4	3.03e4		5.06	5.05	10.6	10.4	104.4	NO	6.718	NO
16	19 8:2 FTS	527 > 506.9	4.54e3	3.90e3		5.03	5.03	14.6	10.3	102.8	NO	3.215	NO
17	20 PFNS	549.1>80.1	2.49e3	4.15e3		5.13	5.12	7.50	9.33	93.3	NO	1.675	NO
18	21 L-MeFOSAA	570.1 > 419	8.48e3	5.90e3		5.22	5.20	18.0	8.94	89.4	NO	13.849	NO
19	23 L-EtFOSAA	584.2 > 419	6.24e3	7.25e3		5.37	5.36	10.8	9.04	90.4	NO	12.069	NO

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	25 PFUDa	563.0 > 51...	2.15e4	2.61e4		5.39	5.37	10.3	11.2	112.3	NO	11.934	NO
2	26 PFDS	598.8 > 80	3.46e3	2.61e4		5.44	5.42	1.66	10.9	109.4	NO	2.225	NO
3	27 PFDoA	612.9 > 56...	2.95e4	2.56e4		5.67	5.65	14.4	10.3	102.6	NO	8.775	NO
4	28 N-MeFOSA	512.1 > 16...	6.25e3	1.74e4		5.83	5.87	53.8	52.1	104.1	NO	1.387	NO
5	29 PFTeDA	662.9 > 61...	2.79e4	2.56e4		5.92	5.89	13.6	9.47	94.7	NO	31.479	NO
6	30 PFTeDA	712.9 > 66...	2.17e4	1.94e4		6.14	6.11	14.0	12.8	127.9	NO	12.762	NO
7	31 N-EtFOSA	526.1 > 16...	7.44e3	2.30e4		6.24	6.25	48.5	53.0	106.0	NO	1.574	NO
8	32 PFHxDA	813.1 > 76...	1.47e4	1.23e4		6.48	6.44	5.94	9.94	99.4	NO	39.764	NO
9	33 PFODA	913.1 > 86...	2.24e4	1.23e4		6.71	6.67	9.10	11.7	117.1	NO		
10	34 N-MeFOSE	616.1 > 58.9	4.00e3	1.18e4		6.41	6.38	50.8	51.8	103.5	NO		
11	35 N-EtFOSE	630.1 > 58.9	4.66e3	1.12e4		6.56	6.53	62.3	50.5	101.0	NO		
12	36 13C3-PFBA	216.1 > 17...	1.13e4	1.27e4	0.892	1.33	1.39	11.2	12.5	100.2	NO		
13	37 13C3-PFPeA	266. > 221.8	1.53e4	1.83e4	0.848	2.32	2.35	10.4	12.3	98.5	NO		
14	38 13C3-PFBS	302. > 98.8	1.94e3	1.83e4	0.102	2.61	2.64	1.32	12.9	103.5	NO		
15	39 13C2-4:2 FTS	329.2>308.9	4.20e3	1.83e4	0.231	3.02	3.04	2.86	12.4	99.1	NO		
16	40 13C2-PFHxA	315 > 269.8	5.22e3	1.83e4	0.744	3.10	3.13	3.56	4.78	95.7	NO		
17	41 13C4-PFHpA	367.2 > 32...	1.61e4	1.83e4	0.841	3.72	3.74	11.0	13.1	104.4	NO		
18	42 18O2-PFHxS	403.0 > 10...	1.55e3	4.12e3	0.415	3.87	3.89	4.71	11.4	90.9	NO		
19	43 13C2-6:2 FTS	429.1 > 40...	4.33e3	1.82e4	0.232	4.19	4.20	2.97	12.8	102.8	NO		
20	44 13C2-PFOA	414.9 > 36...	2.28e4	1.82e4	1.256	4.25	4.25	15.7	12.5	100.0	NO		
21	45 13C5-PFNA	468.2 > 42...	1.87e4	2.27e4	0.960	4.69	4.69	10.3	10.7	85.8	NO		
22	46 13C8-PFOA	506.1 > 77.7	4.01e3	2.60e4	0.145	4.75	4.76	1.93	13.3	106.4	NO		
23	47 13C8-PFOS	507.0 > 79.9	4.15e3	3.97e3	1.047	4.77	4.77	13.1	12.5	99.8	NO		
24	48 13C2-PFDA	515.1 > 46...	3.03e4	2.09e4	1.118	5.06	5.05	18.1	16.2	129.8	NO		
25	49 13C2-8:2 FTS	529.1 > 50...	3.90e3	1.83e4	0.211	5.03	5.03	2.66	12.6	100.8	NO		
26	50 d3-N-MeFOSAA	573.3 > 419	5.90e3	2.60e4	0.182	5.21	5.20	2.84	15.5	124.4	NO		
27	51 d5-N-EtFOSAA	589.3 > 419	7.25e3	2.60e4	0.223	5.37	5.36	3.49	15.7	125.4	NO		
28	52 13C2-PFUDa	565 > 519.8	2.61e4	2.60e4	0.958	5.39	5.37	12.5	13.1	104.7	NO		
29	53 13C2-PFDoA	615.0 > 56...	2.56e4	2.09e4	1.138	5.67	5.65	15.3	13.5	107.9	NO		
30	54 d3-N-MeFOA	515.2 > 16...	1.74e4	2.60e4	0.051	5.85	5.90	8.38	165	109.9	NO		
31	55 13C2-PFTeDA	714.8 > 66...	1.94e4	2.60e4	0.862	6.14	6.11	9.35	10.9	86.8	NO		
32	56 d5-N-ETFOSA	531.1 > 16...	2.30e4	2.60e4	0.066	6.26	6.27	11.1	167	111.4	NO		

GM 6/4/2018

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	57 13C2-PFHxDA	815 > 769.7	1.23e4	2.60e4	1.173	6.48	6.44	5.93	5.06	101.1	NO		
34	58 d7-N-MeFOSE	623.1 > 58.9	1.18e4	2.60e4	0.038	6.40	6.37	5.68	151	100.7	NO		
35	59 d9-N-EtFOSE	639.2 > 58.8	1.12e4	2.60e4	0.035	6.54	6.52	5.40	153	101.9	NO		
36	60 13C4-PFBA	217. > 171.8	1.27e4	1.27e4	1.000	1.33	1.39	12.5	12.5	100.0	NO		
37	61 13C5-PFHxA	318 > 272.9	1.83e4	1.83e4	1.000	3.10	3.13	12.5	12.5	100.0	NO		
38	62 13C3-PFHxS	401.9 > 79.9	4.12e3	4.12e3	1.000	3.87	3.89	12.5	12.5	100.0	NO		
39	63 13C8-PFOA	421.3 > 376	1.82e4	1.82e4	1.000	4.25	4.25	12.5	12.5	100.0	NO		
40	64 13C9-PFNA	472.2 > 42...	2.27e4	2.27e4	1.000	4.69	4.69	12.5	12.5	100.0	NO		
41	65 13C4-PFOS	503 > 79.9	3.97e3	3.97e3	1.000	4.77	4.77	12.5	12.5	100.0	NO		
42	66 13C6-PFDA	519.1 > 47...	2.09e4	2.09e4	1.000	5.06	5.05	12.5	12.5	100.0	NO		
43	67 13C7-PFUdA	570.1 > 52...	2.60e4	2.60e4	1.000	5.39	5.37	12.5	12.5	100.0	NO		

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 09:19:21 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 09:20:15 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180603M2_1	IPA	03-Jun-18	17:55:38
2	2 180603M2_2	ST180603M2-2 PFC CS-2 18E2902	03-Jun-18	18:07:52
3	3 180603M2_3	ST180603M2-2 PFC CS-1 18E2903	03-Jun-18	18:18:22
4	4 180603M2_4	ST180603M2-3 PFC CS0 18E2904	03-Jun-18	18:28:47
5	5 180603M2_5	ST180603M2-4 PFC CS1 18E2905	03-Jun-18	18:39:17
6	6 180603M2_6	ST180603M2-5 PFC CS2 18E2906	03-Jun-18	18:49:42
7	7 180603M2_7	ST180603M2-6 PFC CS3 18E2907	03-Jun-18	19:00:12
8	8 180603M2_8	ST180603M2-7 PFC CS4 18E2908	03-Jun-18	19:10:37
9	9 180603M2_9	ST180603M2-8 PFC CS5 18E2909	03-Jun-18	19:21:07
10	10 180603M2_10	ST180603M2-9 PFC CS6 18E2910	03-Jun-18	19:31:33
11	11 180603M2_11	ST180603M2-10 PFC CS7 18E2911	03-Jun-18	19:42:03
12	12 180603M2_12	IPA	03-Jun-18	19:52:27
13	13 180603M2_13	ICV180603M2-1 PFC 537 ICV 18E2901	03-Jun-18	20:02:58
14	14 180603M2_14	IPA	03-Jun-18	20:13:28
15	15 180603M2_15	B8F0002-BS1 OPR 0.125	03-Jun-18	20:27:03
16	16 180603M2_16	B8F0002-BLK1 Method Blank 0.125	03-Jun-18	20:37:28
17	17 180603M2_17	1801010-01RE1 GSUMW00505101805...	03-Jun-18	20:47:59
18	18 180603M2_18	1801010-02RE1 MW0081819180517G...	03-Jun-18	20:58:23
19	19 180603M2_19	1801010-03RE1 MW0083738180517R...	03-Jun-18	21:08:54
20	20 180603M2_20	1801010-04RE1 MW0052021180517M...	03-Jun-18	21:19:18
21	21 180603M2_21	1801010-05RE1 MW0056061180517R...	03-Jun-18	21:29:49
22	22 180603M2_22	1801010-06RE1 MW0071920180517R...	03-Jun-18	21:40:13
23	23 180603M2_23	1801010-07RE1 MW0074849180517G...	03-Jun-18	21:50:44
24	24 180603M2_24	1801010-08RE1 MW0065051180517R...	03-Jun-18	22:01:08
25	25 180603M2_25	1801010-09RE1 MW0060510180517G...	03-Jun-18	22:11:39
26	26 180603M2_26	1801010-10RE1 MW0010308180518G...	03-Jun-18	22:22:04
27	27 180603M2_27	IPA	03-Jun-18	22:32:34
28	28 180603M2_28	ST180603M2-11 PFC CS3 18E2907	03-Jun-18	22:42:58
29	29 180603M2_29	IPA	03-Jun-18	22:53:29
30	30 180603M2_30	1801010-11RE1 MW0030207180518G...	03-Jun-18	23:03:59
31	31 180603M2_31	1801010-12RE1 MW0034647180518R...	03-Jun-18	23:14:25
32	32 180603M2_32	1801010-13RE1 GSUMW00311161805...	03-Jun-18	23:24:55

Dataset: Untitled

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Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
33	33 180603M2_33	1801010-14RE1 MW0093233180518R...	03-Jun-18	23:35:20
34	34 180603M2_34	1801010-15RE1 MW0091516180518M...	03-Jun-18	23:45:50
35	35 180603M2_35	B8F0004-BS1 OPR 0.125	03-Jun-18	23:56:15
36	36 180603M2_36	B8F0004-BS1 LCSD 0.125	04-Jun-18	00:06:45
37	37 180603M2_37	B8F0004-BLK1 Method Blank 0.125	04-Jun-18	00:17:09
38	38 180603M2_38	1801039-01 A1-MW-13-SA1 0.10967	04-Jun-18	00:27:40
39	39 180603M2_39	1801039-02 A1-MW-11-SA1 0.11624	04-Jun-18	00:38:04
40	40 180603M2_40	1801039-03 A1-MW-14-SA1 0.11194	04-Jun-18	00:48:35
41	41 180603M2_41	1801039-04 A1-MW-15-SA1 0.11248	04-Jun-18	00:59:00
42	42 180603M2_42	1801039-07 A1-MW-25-SA1 0.11252	04-Jun-18	01:09:30
43	43 180603M2_43	1801039-08 FRB-20180524 0.11695	04-Jun-18	01:19:55
44	44 180603M2_44	B8F0003-BS1 OPR 0.125	04-Jun-18	01:30:25
45	45 180603M2_45	B8F0003-BLK1 Method Blank 0.125	04-Jun-18	01:40:51
46	46 180603M2_46	IPA	04-Jun-18	01:51:22
47	47 180603M2_47	ST180603M2-12 PFC CS3 18E2907	04-Jun-18	02:01:52
48	48 180603M2_48	IPA	04-Jun-18	02:12:16
49	49 180603M2_49	1800937-01RE1 CL1TMW0118180503...	04-Jun-18	02:22:47
50	50 180603M2_50	1800937-02RE1 CL1TMW0405180504...	04-Jun-18	02:33:17
51	51 180603M2_51	1800937-03RE1 CL1SW0300180508N ...	04-Jun-18	02:43:42
52	52 180603M2_52	1800937-04RE1 CL1SW0400180508N ...	04-Jun-18	02:54:12
53	53 180603M2_53	1800937-05RE1 CL1SW0500180508N ...	04-Jun-18	03:04:35
54	54 180603M2_54	1800937-06RE1 CL1DR0100180508N ...	04-Jun-18	03:15:06
55	55 180603M2_55	1800937-07RE1 CL1DR0300180508N ...	04-Jun-18	03:25:30
56	56 180603M2_56	1800937-08RE1 CL1DR0200180509N ...	04-Jun-18	03:36:00
57	57 180603M2_57	1800937-09RE1 CL1SW0100180509N ...	04-Jun-18	03:46:30
58	58 180603M2_58	1800937-10RE1 CL1SW0200180509N ...	04-Jun-18	03:56:55
59	59 180603M2_59	IPA	04-Jun-18	04:07:25
60	60 180603M2_60	ST180603M2-13 PFC CS3 18E2907	04-Jun-18	04:17:50
61	61 180603M2_61	IPA	04-Jun-18	04:28:21
62	62 180603M2_62	ST180603M2-14 PFC CS0 18E2904	04-Jun-18	04:38:46
63	63 180603M2_63	IPA	04-Jun-18	04:49:16
64	64 180603M2_64	1800882-02RE1 731 0.12084	04-Jun-18	04:59:39
65	65 180603M2_65	1800882-03RE1 781 0.11874	04-Jun-18	05:10:10
66	66 180603M2_66	1800882-04RE1 702 0.11993	04-Jun-18	05:20:35
67	67 180603M2_67	1800882-05RE1 Trip Blank 0.12132	04-Jun-18	05:31:05
68	68 180603M2_68	1800882-06RE1 Trip Blank 0.12059	04-Jun-18	05:41:30

Dataset: Untitled

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Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
69	69 180603M2_69	B8E0215-BS1 OPR 1	04-Jun-18	05:52:00
70	70 180603M2_70	B8E0215-BLK1 Method Blank 1	04-Jun-18	06:02:25
71	71 180603M2_71	1800935-05 CL1MC0100180509N 1.11	04-Jun-18	06:12:55
72	72 180603M2_72	B8E0212-BS1 OPR 5	04-Jun-18	06:23:20
73	73 180603M2_73	B8E0212-BLK1 Method Blank 5	04-Jun-18	06:33:50
74	74 180603M2_74	1801036-01 Milk 5	04-Jun-18	06:44:15
75	75 180603M2_75	B8E0173-BS1 OPR 0.25	04-Jun-18	06:54:46
76	76 180603M2_76	B8E0173-BLK1 Method Blank 0.25	04-Jun-18	07:05:11
77	77 180603M2_77	1800999-01 DPH-MW10 0.11774	04-Jun-18	07:15:41
78	78 180603M2_78	1800999-02 DPH-MW19 0.12462	04-Jun-18	07:26:05
79	79 180603M2_79	1800999-03 DPH-MW23 0.1216	04-Jun-18	07:36:36
80	80 180603M2_80	IPA	04-Jun-18	07:47:01
81	81 180603M2_81	ST180603M2-15 PFC CS3 18E2907	04-Jun-18	07:57:31
82	82 180603M2_82	IPA	04-Jun-18	08:07:56
83	83 180603M2_83	1800837-12 REEPDW409FRB 0.12029	04-Jun-18	08:18:27
84	84 180603M2_84	B8E0169-BS1 OPR 0.125	04-Jun-18	08:28:51
85	85 180603M2_85	B8E0169-BSD1 LCSD 0.125	04-Jun-18	08:39:22
86	86 180603M2_86	B8E0169-BLK1 Method Blank 0.125	04-Jun-18	08:49:47
87	87 180603M2_87	1800954-01 REEPDW499 0.12056	04-Jun-18	09:00:17
88	88 180603M2_88	1800954-02 REEPDW1007 0.11869	04-Jun-18	09:10:47
89	89 180603M2_89	1800954-03 REEPDW1008 0.11591	04-Jun-18	09:21:11
90	90 180603M2_90	1800954-04 REEPDW1009 0.11871	04-Jun-18	09:31:42
91	91 180603M2_91	1800954-05 REEPDW1010 0.1202	04-Jun-18	09:42:06
92	92 180603M2_92	1800954-06 REEPDW550 0.11863	04-Jun-18	09:52:36
93	93 180603M2_93	1800954-07 REEPDW1011 0.11919	04-Jun-18	10:03:01
94	94 180603M2_94	1800954-08 REEPDW1012 0.11288	04-Jun-18	10:13:31
95	95 180603M2_95	1800954-09 REEPDW1001 0.12106	04-Jun-18	10:23:57
96	96 180603M2_96	1800954-10 REEPDW1003 0.11189	04-Jun-18	10:34:27
97	97 180603M2_97	IPA	04-Jun-18	10:44:52
98	98 180603M2_98	ST180603M2-16 PFC CS3 18E2907	04-Jun-18	10:55:22
99	99 180603M2_99	IPA	04-Jun-18	11:05:53
100	1... 180603M2_100	1800954-11 REEPDW1004 0.11763	04-Jun-18	11:16:18
101	1... 180603M2_101	1800954-12 REEPDW1006 0.11887	04-Jun-18	11:26:48
102	1... 180603M2_102	1800954-13 REEPDW1013 0.11579	04-Jun-18	11:37:13
103	1... 180603M2_103	1800954-14 REEPDW1014 0.11881	04-Jun-18	11:47:43
104	1... 180603M2_104	1800954-15 REEPDW1002 0.12307	04-Jun-18	11:58:08

Dataset: Untitled

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Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
105	1... 180603M2_105	1800954-16 REEPDW1005 0.12281	04-Jun-18	12:08:38
106	1... 180603M2_106	B8E0167-BS1 OPR 0.125	04-Jun-18	12:19:02
107	1... 180603M2_107	B8E0167-BSD1 LCSD 0.125	04-Jun-18	12:29:32
108	1... 180603M2_108	B8E0167-BLK1 Method Blank 0.125	04-Jun-18	12:39:56
109	1... 180603M2_109	1800982-01 REEPDW1037 0.11872	04-Jun-18	12:50:27
110	1... 180603M2_110	1800982-02 REEPDW1048 0.12739	04-Jun-18	13:00:57
111	1... 180603M2_111	1800982-03 REEPDW1049 0.12389	04-Jun-18	13:11:23
112	1... 180603M2_112	1800982-04 REEPDW1050 0.12048	04-Jun-18	13:21:53
113	1... 180603M2_113	IPA	04-Jun-18	13:32:17
114	1... 180603M2_114	ST180603M2-17 PFC CS3 18E2907	04-Jun-18	13:42:48
115	1... 180603M2_115	IPA	04-Jun-18	13:53:18
116	1... 180603M2_116	1800982-05 REEPDW554 0.11977	04-Jun-18	14:03:43
117	1... 180603M2_117	1800982-06 REEPDW1043 0.12141	04-Jun-18	14:14:13
118	1... 180603M2_118	B8E0141-BS1 OPR 0.125	04-Jun-18	14:24:38
119	1... 180603M2_119	B8E0224-BSD1 LCSD 0.125	04-Jun-18	14:35:08
120	1... 180603M2_120	B8E0224-BS1 OPR 0.125	04-Jun-18	14:45:32
121	1... 180603M2_121	B8E0224-BLK1 Method Blank 0.125	04-Jun-18	14:56:03
122	1... 180603M2_122	1800952-13RE1 REEPDW488 0.11053	04-Jun-18	15:06:25
123	1... 180603M2_123	IPA	04-Jun-18	15:16:56
124	1... 180603M2_124	ST180603M2-18 PFC CS3 18E2907	04-Jun-18	15:27:21
125	1... 180603M2_125	IPA	04-Jun-18	15:37:51

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

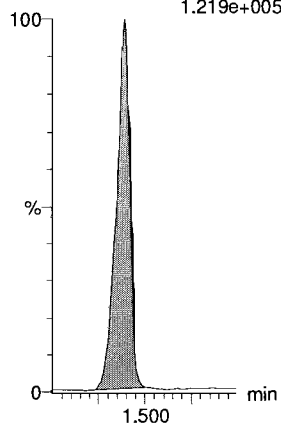
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

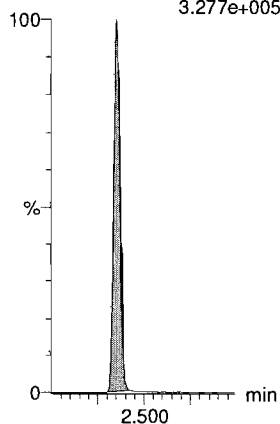
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
1.219e+005



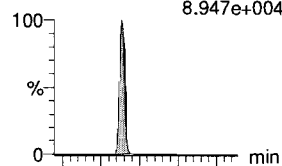
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
3.277e+005

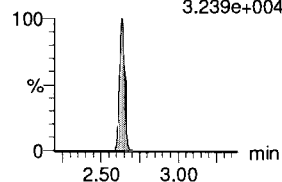


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
8.947e+004

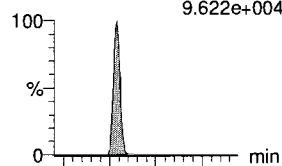


F7:MRM of 2 channels,ES-
299.0 > 99.0
3.239e+004

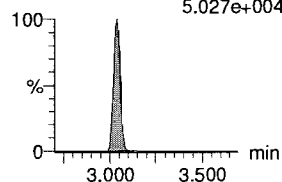


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
9.622e+004

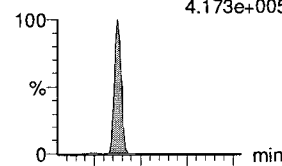


F12:MRM of 2 channels,ES-
327.2 > 81.1
5.027e+004

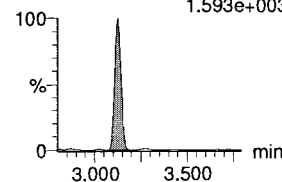


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
4.173e+005

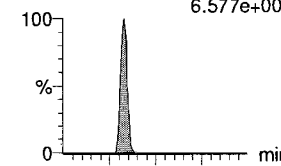


F9:MRM of 2 channels,ES-
313.2 > 119
1.593e+003

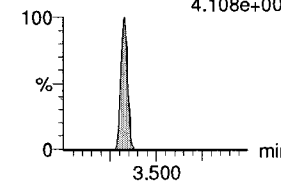


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
6.577e+004

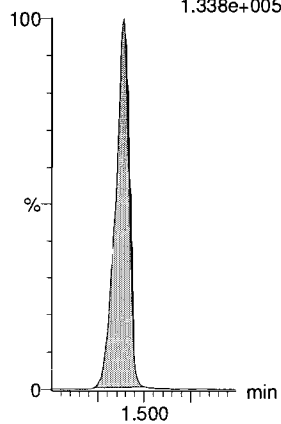


F15:MRM of 2 channels,ES-
349.1 > 99
4.108e+004



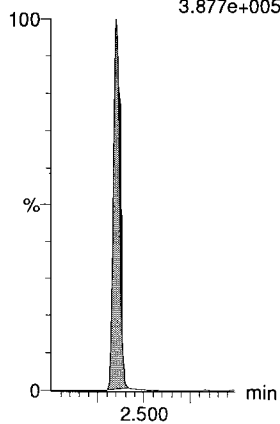
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.338e+005



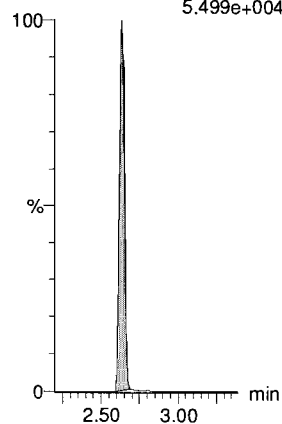
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.877e+005



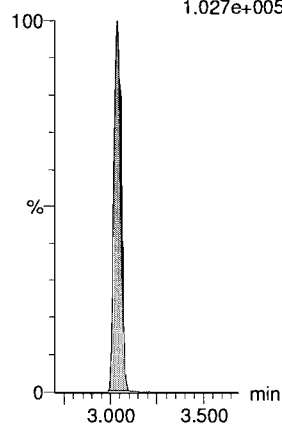
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.499e+004



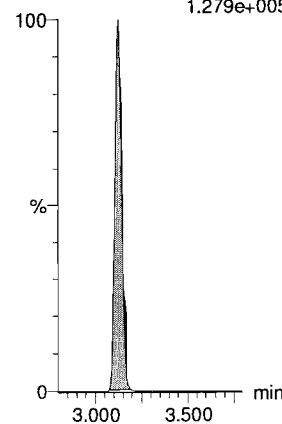
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
1.027e+005



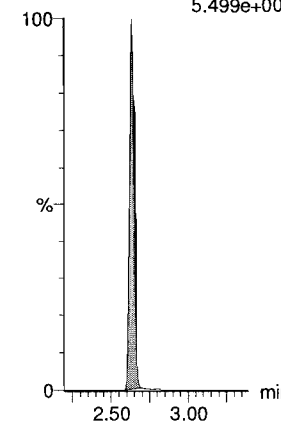
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.279e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.499e+004



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

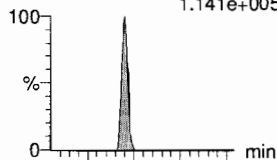
Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

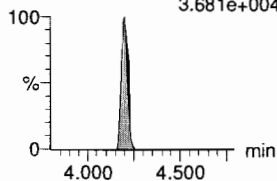
Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
1.141e+005

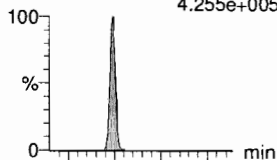


F24:MRM of 2 channels,ES-
427.1 > 80
3.681e+004

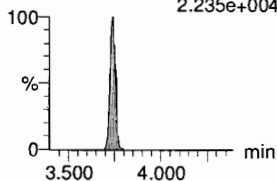


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
4.255e+005

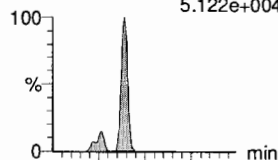


F16:MRM of 2 channels,ES-
363.0 > 169.0
2.235e+004

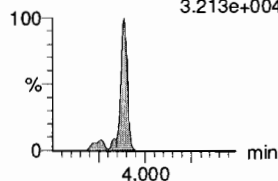


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
5.122e+004

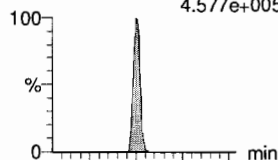


F18:MRM of 2 channels,ES-
398.9 > 99.0
3.213e+004

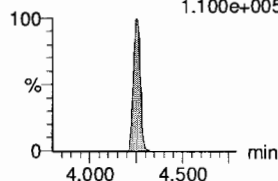


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
4.577e+005

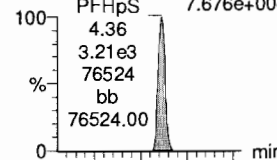


F21:MRM of 2 channels,ES-
413 > 169
1.100e+005

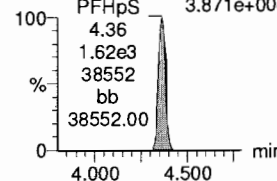


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
7.676e+004

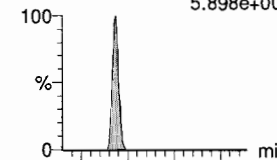


F26:MRM of 2 channels,ES-
449 > 98.7
3.871e+004

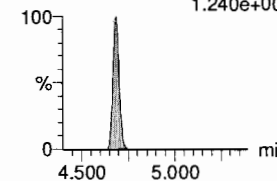


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
5.898e+005

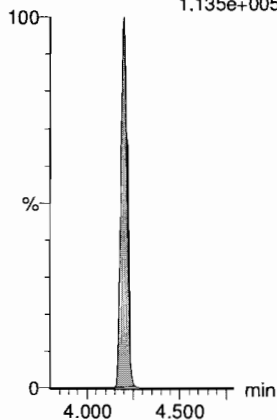


F27:MRM of 2 channels,ES-
463.0 > 219.0
1.240e+005



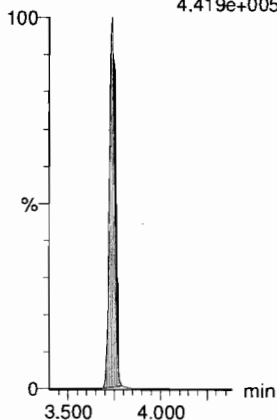
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
1.135e+005



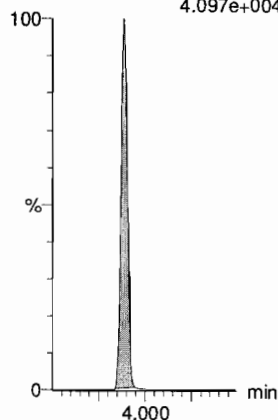
13C4-PFHpa

F17:MRM of 1 channel,ES-
367.2 > 321.8
4.419e+005



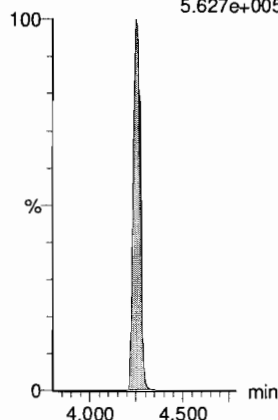
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
4.097e+004



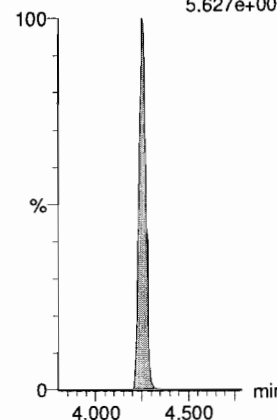
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
5.627e+005



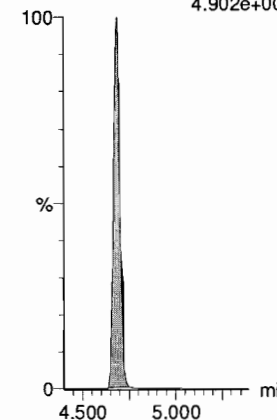
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
5.627e+005



13C5-PFNA

F28:MRM of 1 channel,ES-
468.2 > 422.9
4.902e+005

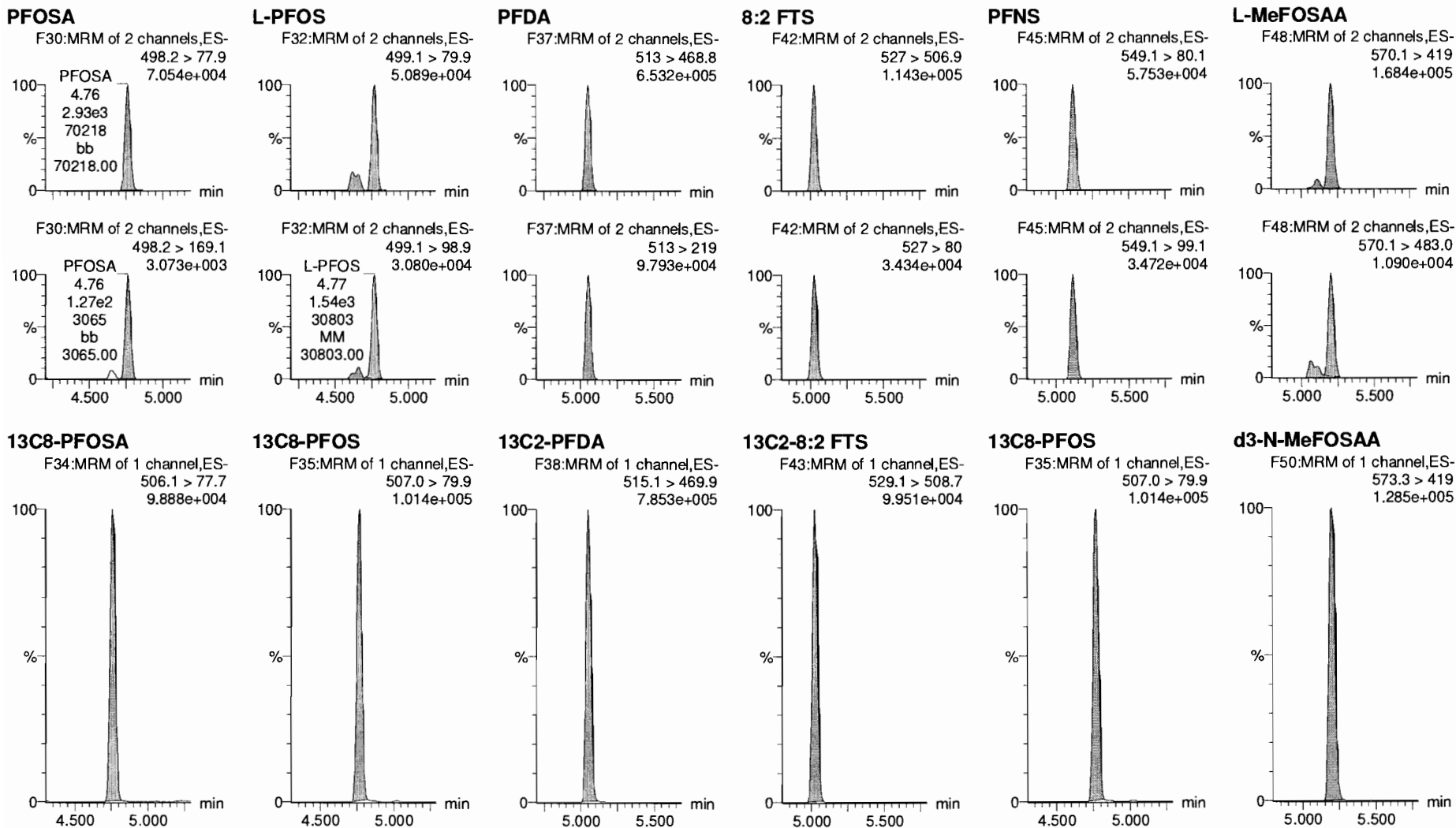


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

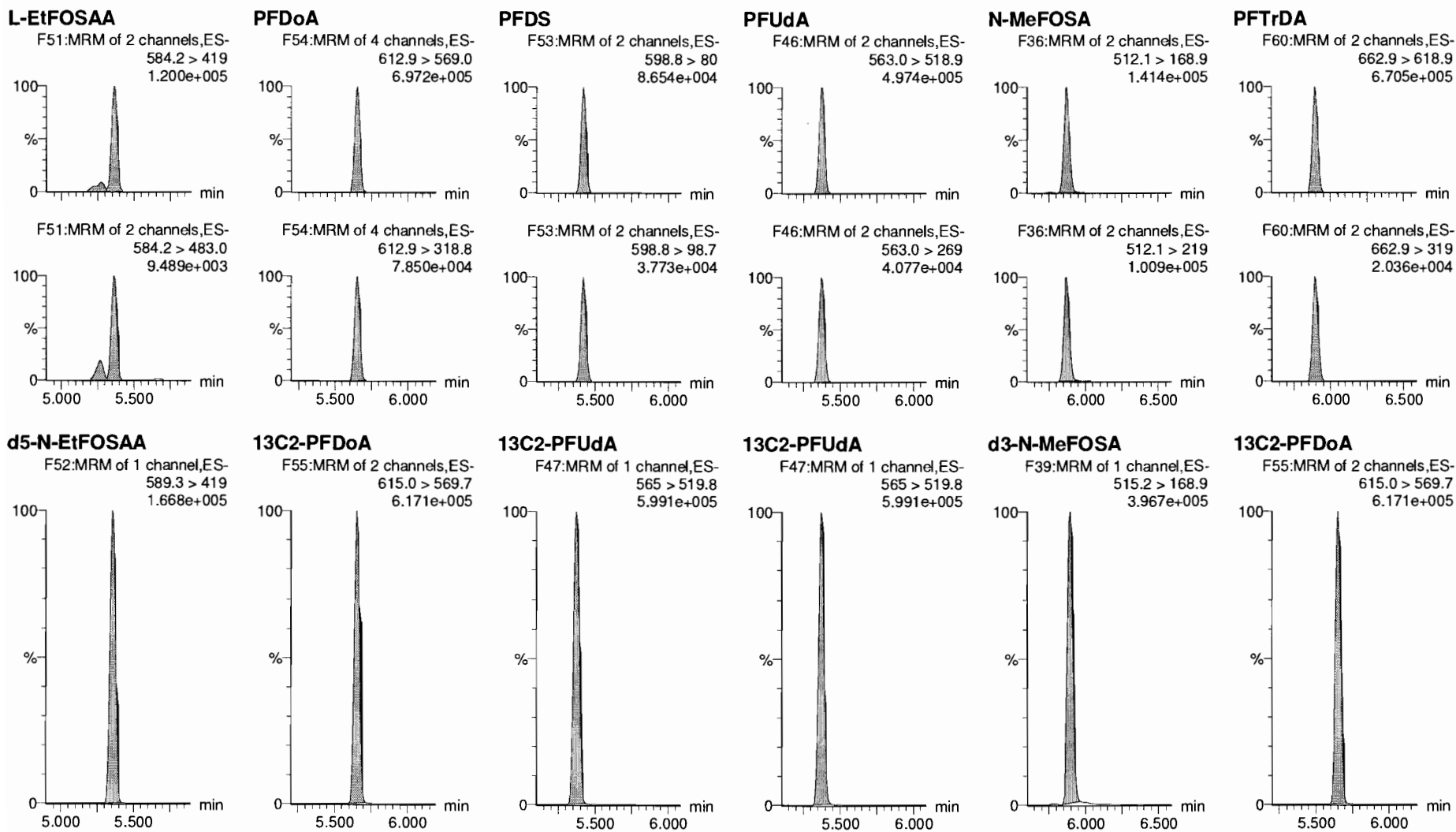


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

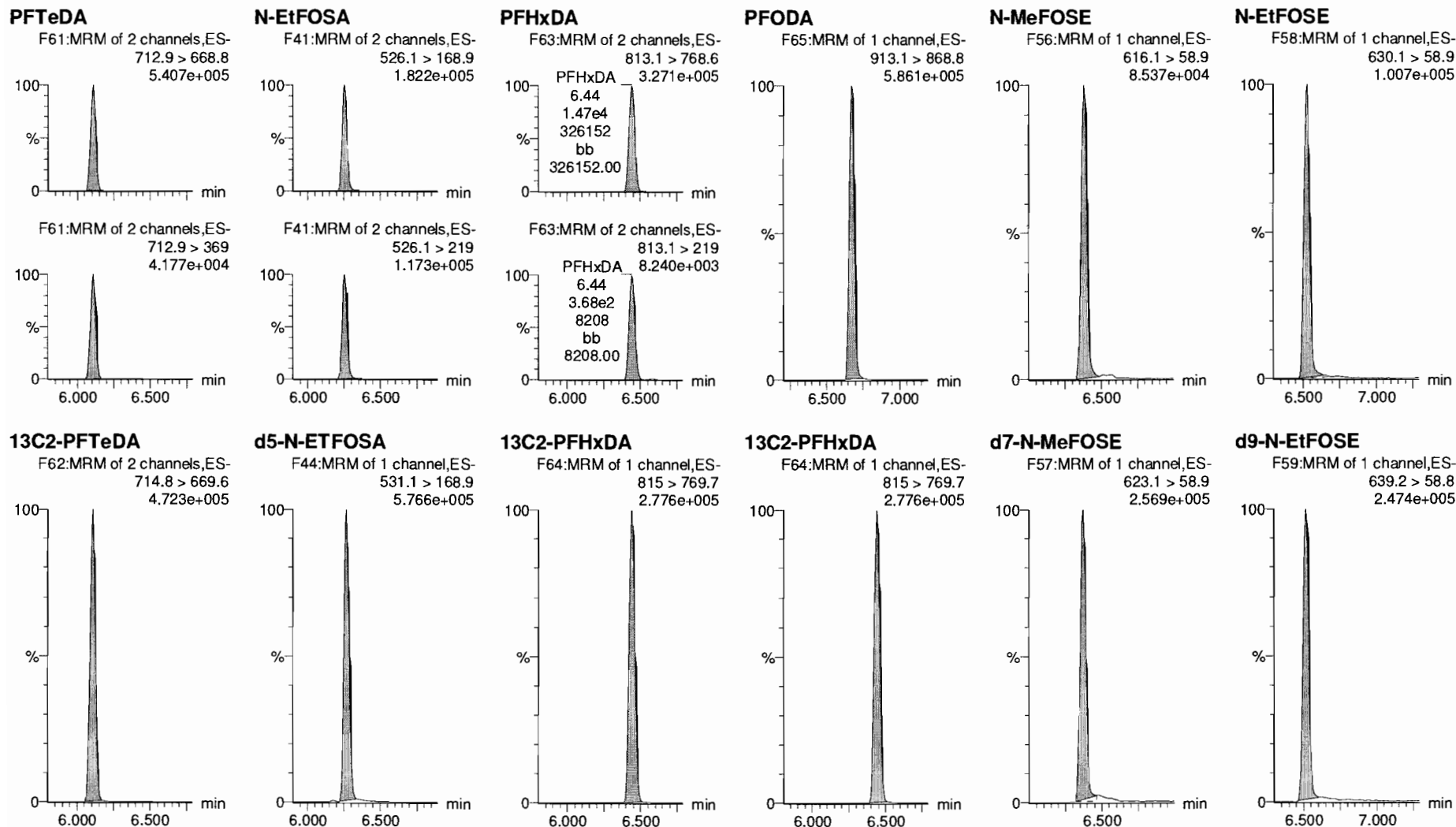
Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time
Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

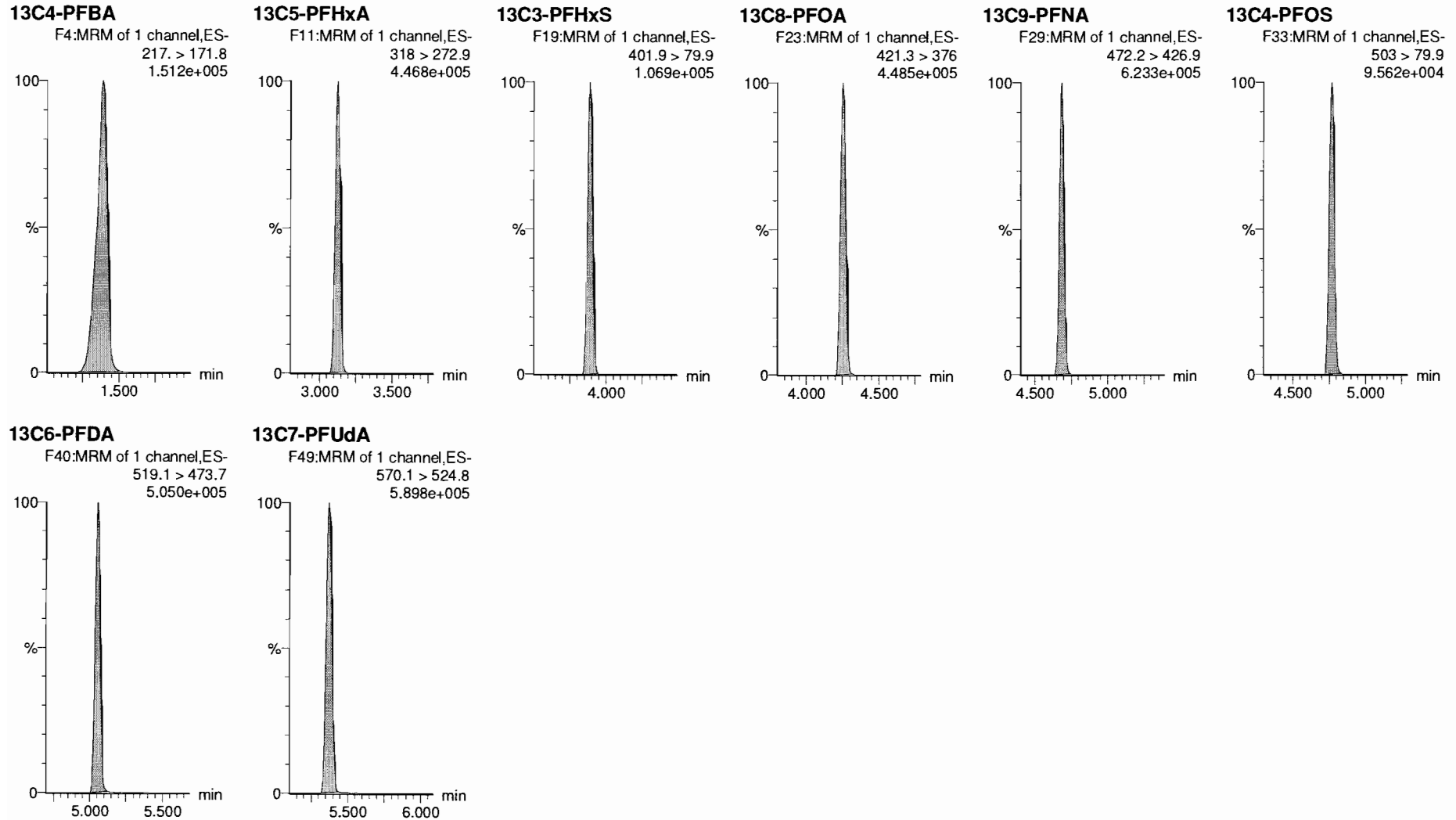


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-28.qld

Last Altered: Monday, June 04, 2018 14:18:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:18:34 Pacific Daylight Time

Name: 180603M2_28, Date: 03-Jun-2018, Time: 22:42:58, ID: ST180603M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-47.qld

Last Altered: Monday, June 04, 2018 14:07:15 Pacific Daylight Time
Printed: Monday, June 04, 2018 14:07:42 Pacific Daylight Time

VAD 6/5/18

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_47, Date: 04-Jun-2018, Time: 02:01:52, ID: ST180603M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	1.06e4	1.18e4		1.41	1.40	11.2	10.0	100.2	NO		
2	2 PFPeA	263.1 > 21...	1.32e4	1.60e4		2.36	2.37	10.3	10.2	101.9	NO		
3	3 PFBS	299.0 > 79.7	3.19e3	2.03e3		2.65	2.65	19.6	10.0	100.5	NO	2.618	NO
4	4 4:2 FTS	327.2>307.2	3.81e3	4.13e3		3.05	3.05	11.5	10.2	101.9	NO	1.927	NO
5	5 PFHxA	313.2 > 26...	1.78e4	5.54e3		3.14	3.14	16.0	10.5	104.7	NO	245.010	YES
6	6 PFPeS	349.1>80.1	2.88e3	2.03e3		3.35	3.34	17.7	9.67	96.7	NO	1.704	NO
7	7 PFHpA	363.0 > 31...	1.49e4	1.54e4		3.75	3.75	12.1	10.5	104.9	NO	20.295	NO
8	8 L-PFHxS	398.9 > 79.6	2.50e3	1.76e3		3.90	3.90	17.7	9.23	92.3	NO	1.646	NO
9	10 6:2 FTS	427.1 > 407	4.23e3	4.22e3		4.19	4.21	12.5	10.7	107.1	NO	3.206	NO
10	11 L-PFOA	413 > 368.7	1.82e4	2.49e4		4.25	4.26	9.15	9.25	92.5	NO	4.211	NO
11	13 PFHpS	449 > 80.0	3.15e3	2.49e4		4.36	4.37	1.58	9.83	98.3	NO	1.840	NO
12	14 PFNA	463.0 > 41...	2.44e4	2.31e4		4.68	4.69	13.2	9.81	98.1	NO	5.142	NO
13	15 PFOSA	498.2 > 77.9	3.02e3	3.96e3		4.75	4.77	9.52	11.2	112.3	NO	26.781	NO
14	16 L-PFOS	499.1 > 79.9	3.20e3	4.15e3		4.77	4.78	9.65	10.5	105.2	NO	2.062	NO
15	18 PFDA	513 > 468.8	2.46e4	3.09e4		5.06	5.06	9.94	9.78	97.8	NO	6.964	NO
16	19 8:2 FTS	527 > 506.9	4.69e3	3.80e3		5.03	5.03	15.4	10.9	108.9	NO	2.908	NO
17	20 PFNS	549.1>80.1	2.82e3	4.15e3		5.13	5.12	8.50	10.6	105.6	NO	1.709	NO
18	21 L-MeFOSAA	570.1 > 419	7.99e3	5.82e3		5.22	5.21	17.2	8.53	85.3	NO	12.086	NO
19	23 L-EtFOSAA	584.2 > 419	6.52e3	7.58e3		5.37	5.37	10.7	9.03	90.3	NO	16.875	NO

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-47.qld

Last Altered: Monday, June 04, 2018 14:07:15 Pacific Daylight Time
Printed: Monday, June 04, 2018 14:07:53 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_47, Date: 04-Jun-2018, Time: 02:01:52, ID: ST180603M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	25 PFUdA	563.0 > 51...	2.33e4	2.93e4		5.39	5.38	9.91	10.8	108.1	NO	12.108	NO
2	26 PFDS	598.8 > 80	3.38e3	2.93e4		5.44	5.42	1.44	9.50	95.0	NO	2.083	NO
3	27 PFDoA	612.9 > 56...	2.43e4	2.76e4		5.67	5.66	11.0	7.71	77.1	NO	8.409	NO
4	28 N-MeFOSA	512.1 > 16...	6.20e3	1.74e4		5.83	5.88	53.6	51.8	103.6	NO	1.365	NO
5	29 PFTTrDA	662.9 > 61...	2.90e4	2.76e4		5.92	5.90	13.1	9.13	91.3	NO	29.538	NO
6	30 PFTeDA	712.9 > 66...	2.13e4	2.28e4		6.14	6.11	11.7	10.7	106.7	NO	12.630	NO
7	31 N-EtFOSA	526.1 > 16...	7.40e3	2.39e4		6.24	6.26	46.4	50.7	101.4	NO	1.519	NO
8	32 PFHxDA	813.1 > 76...	1.45e4	1.28e4		6.48	6.44	5.65	9.44	94.4	NO	35.022	NO
9	33 PFODA	913.1 > 86...	2.18e4	1.28e4		6.71	6.68	8.49	10.9	109.2	NO		
10	34 N-MeFOSE	616.1 > 58.9	4.04e3	1.25e4		6.41	6.38	48.4	49.4	98.7	NO		
11	35 N-EtFOSE	630.1 > 58.9	4.90e3	1.15e4		6.56	6.53	64.0	52.0	103.9	NO		
12	36 13C3-PFBA	216.1 > 17...	1.18e4	1.32e4	0.892	1.33	1.41	11.2	12.5	100.3	NO		
13	37 13C3-PFPeA	266. > 221.8	1.60e4	1.88e4	0.848	2.32	2.37	10.6	12.5	100.0	NO		
14	38 13C3-PFBS	302. > 98.8	2.03e3	1.88e4	0.102	2.61	2.65	1.35	13.2	105.8	NO		
15	39 13C2-4:2 FTS	329.2>308.9	4.13e3	1.88e4	0.231	3.02	3.05	2.75	11.9	95.0	NO		
16	40 13C2-PFHxA	315 > 269.8	5.54e3	1.88e4	0.744	3.10	3.14	3.68	4.94	98.9	NO		
17	41 13C4-PFHpA	367.2 > 32...	1.54e4	1.88e4	0.841	3.72	3.75	10.2	12.2	97.5	NO		
18	42 18O2-PFHxS	403.0 > 10...	1.76e3	3.97e3	0.415	3.87	3.90	5.55	13.4	107.0	NO		
19	43 13C2-6:2 FTS	429.1 > 40...	4.22e3	2.23e4	0.232	4.19	4.21	2.36	10.2	81.7	NO		
20	44 13C2-PFOA	414.9 > 36...	2.49e4	2.23e4	1.256	4.25	4.26	13.9	11.1	88.8	NO		
21	45 13C5-PFNA	468.2 > 42...	2.31e4	2.32e4	0.960	4.69	4.69	12.4	13.0	103.7	NO		
22	46 13C8-PFOSA	506.1 > 77.7	3.96e3	2.63e4	0.145	4.75	4.77	1.88	13.0	103.9	NO		
23	47 13C8-PFOS	507.0 > 79.9	4.15e3	4.24e3	1.047	4.77	4.78	12.2	11.7	93.5	NO		
24	48 13C2-PFDA	515.1 > 46...	3.09e4	2.49e4	1.118	5.06	5.06	15.5	13.9	111.1	NO		
25	49 13C2-8:2 FTS	529.1 > 50...	3.80e3	1.88e4	0.211	5.03	5.03	2.53	12.0	95.9	NO		
26	50 d3-N-MeFOSAA	573.3 > 419	5.82e3	2.63e4	0.182	5.21	5.20	2.77	15.2	121.4	NO		
27	51 d5-N-EtFOSAA	589.3 > 419	7.58e3	2.63e4	0.223	5.37	5.36	3.61	16.2	129.6	NO		
28	52 13C2-PFUdA	565 > 519.8	2.93e4	2.63e4	0.958	5.39	5.38	14.0	14.6	116.6	NO		
29	53 13C2-PFDoA	615.0 > 56...	2.76e4	2.49e4	1.138	5.67	5.65	13.9	12.2	97.4	NO		
30	54 d3-N-MeFOSA	515.2 > 16...	1.74e4	2.63e4	0.051	5.85	5.90	8.26	162	108.3	NO		
31	55 13C2-PFTeDA	714.8 > 66...	2.28e4	2.63e4	0.862	6.14	6.11	10.8	12.6	100.5	NO		
32	56 d5-N-ETFOA	531.1 > 16...	2.39e4	2.63e4	0.066	6.26	6.28	11.4	172	114.6	NO		

GM 6/4/2018

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-47.qld

Last Altered: Monday, June 04, 2018 14:07:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:07:53 Pacific Daylight Time

Name: 180603M2_47, Date: 04-Jun-2018, Time: 02:01:52, ID: ST180603M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	57 13C2-PFHxDA	815 > 769.7	1.28e4	2.63e4	1.173	6.48	6.44	6.10	5.20	104.1	NO		
34	58 d7-N-MeFOSE	623.1 > 58.9	1.25e4	2.63e4	0.038	6.40	6.37	5.96	158	105.5	NO		
35	59 d9-N-EtFOSE	639.2 > 58.8	1.15e4	2.63e4	0.035	6.54	6.52	5.46	155	103.1	NO		
36	60 13C4-PFBA	217. > 171.8	1.32e4	1.32e4	1.000	1.33	1.41	12.5	12.5	100.0	NO		
37	61 13C5-PFHxA	318 > 272.9	1.88e4	1.88e4	1.000	3.10	3.14	12.5	12.5	100.0	NO		
38	62 13C3-PFHxS	401.9 > 79.9	3.97e3	3.97e3	1.000	3.87	3.90	12.5	12.5	100.0	NO		
39	63 13C8-PFOA	421.3 > 376	2.23e4	2.23e4	1.000	4.25	4.26	12.5	12.5	100.0	NO		
40	64 13C9-PFNA	472.2 > 42...	2.32e4	2.32e4	1.000	4.69	4.69	12.5	12.5	100.0	NO		
41	65 13C4-PFOS	503 > 79.9	4.24e3	4.24e3	1.000	4.77	4.78	12.5	12.5	100.0	NO		
42	66 13C6-PFDA	519.1 > 47...	2.49e4	2.49e4	1.000	5.06	5.06	12.5	12.5	100.0	NO		
43	67 13C7-PFUDa	570.1 > 52...	2.63e4	2.63e4	1.000	5.39	5.38	12.5	12.5	100.0	NO		

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 09:19:21 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 09:20:15 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180603M2_1	IPA	03-Jun-18	17:55:38
2	2 180603M2_2	ST180603M2-2 PFC CS-2 18E2902	03-Jun-18	18:07:52
3	3 180603M2_3	ST180603M2-2 PFC CS-1 18E2903	03-Jun-18	18:18:22
4	4 180603M2_4	ST180603M2-3 PFC CS0 18E2904	03-Jun-18	18:28:47
5	5 180603M2_5	ST180603M2-4 PFC CS1 18E2905	03-Jun-18	18:39:17
6	6 180603M2_6	ST180603M2-5 PFC CS2 18E2906	03-Jun-18	18:49:42
7	7 180603M2_7	ST180603M2-6 PFC CS3 18E2907	03-Jun-18	19:00:12
8	8 180603M2_8	ST180603M2-7 PFC CS4 18E2908	03-Jun-18	19:10:37
9	9 180603M2_9	ST180603M2-8 PFC CS5 18E2909	03-Jun-18	19:21:07
10	10 180603M2_10	ST180603M2-9 PFC CS6 18E2910	03-Jun-18	19:31:33
11	11 180603M2_11	ST180603M2-10 PFC CS7 18E2911	03-Jun-18	19:42:03
12	12 180603M2_12	IPA	03-Jun-18	19:52:27
13	13 180603M2_13	ICV180603M2-1 PFC 537 ICV 18E2901	03-Jun-18	20:02:58
14	14 180603M2_14	IPA	03-Jun-18	20:13:28
15	15 180603M2_15	B8F0002-BS1 OPR 0.125	03-Jun-18	20:27:03
16	16 180603M2_16	B8F0002-BLK1 Method Blank 0.125	03-Jun-18	20:37:28
17	17 180603M2_17	1801010-01RE1 GSUMW00505101805...	03-Jun-18	20:47:59
18	18 180603M2_18	1801010-02RE1 MW0081819180517G...	03-Jun-18	20:58:23
19	19 180603M2_19	1801010-03RE1 MW0083738180517R...	03-Jun-18	21:08:54
20	20 180603M2_20	1801010-04RE1 MW0052021180517M...	03-Jun-18	21:19:18
21	21 180603M2_21	1801010-05RE1 MW0056061180517R...	03-Jun-18	21:29:49
22	22 180603M2_22	1801010-06RE1 MW0071920180517R...	03-Jun-18	21:40:13
23	23 180603M2_23	1801010-07RE1 MW0074849180517G...	03-Jun-18	21:50:44
24	24 180603M2_24	1801010-08RE1 MW0065051180517R...	03-Jun-18	22:01:08
25	25 180603M2_25	1801010-09RE1 MW0060510180517G...	03-Jun-18	22:11:39
26	26 180603M2_26	1801010-10RE1 MW0010308180518G...	03-Jun-18	22:22:04
27	27 180603M2_27	IPA	03-Jun-18	22:32:34
28	28 180603M2_28	ST180603M2-11 PFC CS3 18E2907	03-Jun-18	22:42:58
29	29 180603M2_29	IPA	03-Jun-18	22:53:29
30	30 180603M2_30	1801010-11RE1 MW0030207180518G...	03-Jun-18	23:03:59
31	31 180603M2_31	1801010-12RE1 MW0034647180518R...	03-Jun-18	23:14:25
32	32 180603M2_32	1801010-13RE1 GSUMW00311161805...	03-Jun-18	23:24:55

Dataset: Untitled

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Compound name: PFBA

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33	33 180603M2_33	1801010-14RE1 MW0093233180518R...	03-Jun-18	23:35:20
34	34 180603M2_34	1801010-15RE1 MW0091516180518M...	03-Jun-18	23:45:50
35	35 180603M2_35	B8F0004-BS1 OPR 0.125	03-Jun-18	23:56:15
36	36 180603M2_36	B8F0004-BSD1 LCSD 0.125	04-Jun-18	00:06:45
37	37 180603M2_37	B8F0004-BLK1 Method Blank 0.125	04-Jun-18	00:17:09
38	38 180603M2_38	1801039-01 A1-MW-13-SA1 0.10967	04-Jun-18	00:27:40
39	39 180603M2_39	1801039-02 A1-MW-11-SA1 0.11624	04-Jun-18	00:38:04
40	40 180603M2_40	1801039-03 A1-MW-14-SA1 0.11194	04-Jun-18	00:48:35
41	41 180603M2_41	1801039-04 A1-MW-15-SA1 0.11248	04-Jun-18	00:59:00
42	42 180603M2_42	1801039-07 A1-MW-25-SA1 0.11252	04-Jun-18	01:09:30
43	43 180603M2_43	1801039-08 FRB-20180524 0.11695	04-Jun-18	01:19:55
44	44 180603M2_44	B8F0003-BS1 OPR 0.125	04-Jun-18	01:30:25
45	45 180603M2_45	B8F0003-BLK1 Method Blank 0.125	04-Jun-18	01:40:51
46	46 180603M2_46	IPA	04-Jun-18	01:51:22
47	47 180603M2_47	ST180603M2-12 PFC CS3 18E2907	04-Jun-18	02:01:52
48	48 180603M2_48	IPA	04-Jun-18	02:12:16
49	49 180603M2_49	1800937-01RE1 CL1TMW0118180503...	04-Jun-18	02:22:47
50	50 180603M2_50	1800937-02RE1 CL1TMW0405180504...	04-Jun-18	02:33:17
51	51 180603M2_51	1800937-03RE1 CL1SW0300180508N ...	04-Jun-18	02:43:42
52	52 180603M2_52	1800937-04RE1 CL1SW0400180508N ...	04-Jun-18	02:54:12
53	53 180603M2_53	1800937-05RE1 CL1SW0500180508N ...	04-Jun-18	03:04:35
54	54 180603M2_54	1800937-06RE1 CL1DR0100180508N ...	04-Jun-18	03:15:06
55	55 180603M2_55	1800937-07RE1 CL1DR0300180508N ...	04-Jun-18	03:25:30
56	56 180603M2_56	1800937-08RE1 CL1DR0200180509N ...	04-Jun-18	03:36:00
57	57 180603M2_57	1800937-09RE1 CL1SW0100180509N ...	04-Jun-18	03:46:30
58	58 180603M2_58	1800937-10RE1 CL1SW0200180509N ...	04-Jun-18	03:56:55
59	59 180603M2_59	IPA	04-Jun-18	04:07:25
60	60 180603M2_60	ST180603M2-13 PFC CS3 18E2907	04-Jun-18	04:17:50
61	61 180603M2_61	IPA	04-Jun-18	04:28:21
62	62 180603M2_62	ST180603M2-14 PFC CS0 18E2904	04-Jun-18	04:38:46
63	63 180603M2_63	IPA	04-Jun-18	04:49:16
64	64 180603M2_64	1800882-02RE1 731 0.12084	04-Jun-18	04:59:39
65	65 180603M2_65	1800882-03RE1 781 0.11874	04-Jun-18	05:10:10
66	66 180603M2_66	1800882-04RE1 702 0.11993	04-Jun-18	05:20:35
67	67 180603M2_67	1800882-05RE1 Trip Blank 0.12132	04-Jun-18	05:31:05
68	68 180603M2_68	1800882-06RE1 Trip Blank 0.12059	04-Jun-18	05:41:30

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Compound name: PFBA

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69	69 180603M2_69	B8E0215-BS1 OPR 1	04-Jun-18	05:52:00
70	70 180603M2_70	B8E0215-BLK1 Method Blank 1	04-Jun-18	06:02:25
71	71 180603M2_71	1800935-05 CL1MC0100180509N 1.11	04-Jun-18	06:12:55
72	72 180603M2_72	B8E0212-BS1 OPR 5	04-Jun-18	06:23:20
73	73 180603M2_73	B8E0212-BLK1 Method Blank 5	04-Jun-18	06:33:50
74	74 180603M2_74	1801036-01 Milk 5	04-Jun-18	06:44:15
75	75 180603M2_75	B8E0173-BS1 OPR 0.25	04-Jun-18	06:54:46
76	76 180603M2_76	B8E0173-BLK1 Method Blank 0.25	04-Jun-18	07:05:11
77	77 180603M2_77	1800999-01 DPH-MW10 0.11774	04-Jun-18	07:15:41
78	78 180603M2_78	1800999-02 DPH-MW19 0.12462	04-Jun-18	07:26:05
79	79 180603M2_79	1800999-03 DPH-MW23 0.1216	04-Jun-18	07:36:36
80	80 180603M2_80	IPA	04-Jun-18	07:47:01
81	81 180603M2_81	ST180603M2-15 PFC CS3 18E2907	04-Jun-18	07:57:31
82	82 180603M2_82	IPA	04-Jun-18	08:07:56
83	83 180603M2_83	1800837-12 REEPDW409FRB 0.12029	04-Jun-18	08:18:27
84	84 180603M2_84	B8E0169-BS1 OPR 0.125	04-Jun-18	08:28:51
85	85 180603M2_85	B8E0169-BSD1 LCSD 0.125	04-Jun-18	08:39:22
86	86 180603M2_86	B8E0169-BLK1 Method Blank 0.125	04-Jun-18	08:49:47
87	87 180603M2_87	1800954-01 REEPDW499 0.12056	04-Jun-18	09:00:17
88	88 180603M2_88	1800954-02 REEPDW1007 0.11869	04-Jun-18	09:10:47
89	89 180603M2_89	1800954-03 REEPDW1008 0.11591	04-Jun-18	09:21:11
90	90 180603M2_90	1800954-04 REEPDW1009 0.11871	04-Jun-18	09:31:42
91	91 180603M2_91	1800954-05 REEPDW1010 0.1202	04-Jun-18	09:42:06
92	92 180603M2_92	1800954-06 REEPDW550 0.11863	04-Jun-18	09:52:36
93	93 180603M2_93	1800954-07 REEPDW1011 0.11919	04-Jun-18	10:03:01
94	94 180603M2_94	1800954-08 REEPDW1012 0.11288	04-Jun-18	10:13:31
95	95 180603M2_95	1800954-09 REEPDW1001 0.12106	04-Jun-18	10:23:57
96	96 180603M2_96	1800954-10 REEPDW1003 0.11189	04-Jun-18	10:34:27
97	97 180603M2_97	IPA	04-Jun-18	10:44:52
98	98 180603M2_98	ST180603M2-16 PFC CS3 18E2907	04-Jun-18	10:55:22
99	99 180603M2_99	IPA	04-Jun-18	11:05:53
100	1... 180603M2_100	1800954-11 REEPDW1004 0.11763	04-Jun-18	11:16:18
101	1... 180603M2_101	1800954-12 REEPDW1006 0.11887	04-Jun-18	11:26:48
102	1... 180603M2_102	1800954-13 REEPDW1013 0.11579	04-Jun-18	11:37:13
103	1... 180603M2_103	1800954-14 REEPDW1014 0.11881	04-Jun-18	11:47:43
104	1... 180603M2_104	1800954-15 REEPDW1002 0.12307	04-Jun-18	11:58:08

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 09:19:21 Pacific Daylight Time

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Compound name: PFBA

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106	1... 180603M2_106	B8E0167-BS1 OPR 0.125	04-Jun-18	12:19:02
107	1... 180603M2_107	B8E0167-BSD1 LCSD 0.125	04-Jun-18	12:29:32
108	1... 180603M2_108	B8E0167-BLK1 Method Blank 0.125	04-Jun-18	12:39:56
109	1... 180603M2_109	1800982-01 REEPDW1037 0.11872	04-Jun-18	12:50:27
110	1... 180603M2_110	1800982-02 REEPDW1048 0.12739	04-Jun-18	13:00:57
111	1... 180603M2_111	1800982-03 REEPDW1049 0.12389	04-Jun-18	13:11:23
112	1... 180603M2_112	1800982-04 REEPDW1050 0.12048	04-Jun-18	13:21:53
113	1... 180603M2_113	IPA	04-Jun-18	13:32:17
114	1... 180603M2_114	ST180603M2-17 PFC CS3 18E2907	04-Jun-18	13:42:48
115	1... 180603M2_115	IPA	04-Jun-18	13:53:18
116	1... 180603M2_116	1800982-05 REEPDW554 0.11977	04-Jun-18	14:03:43
117	1... 180603M2_117	1800982-06 REEPDW1043 0.12141	04-Jun-18	14:14:13
118	1... 180603M2_118	B8E0141-BS1 OPR 0.125	04-Jun-18	14:24:38
119	1... 180603M2_119	B8E0224-BSD1 LCSD 0.125	04-Jun-18	14:35:08
120	1... 180603M2_120	B8E0224-BS1 OPR 0.125	04-Jun-18	14:45:32
121	1... 180603M2_121	B8E0224-BLK1 Method Blank 0.125	04-Jun-18	14:56:03
122	1... 180603M2_122	1800952-13RE1 REEPDW488 0.11053	04-Jun-18	15:06:25
123	1... 180603M2_123	IPA	04-Jun-18	15:16:56
124	1... 180603M2_124	ST180603M2-18 PFC CS3 18E2907	04-Jun-18	15:27:21
125	1... 180603M2_125	IPA	04-Jun-18	15:37:51

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-47.qld

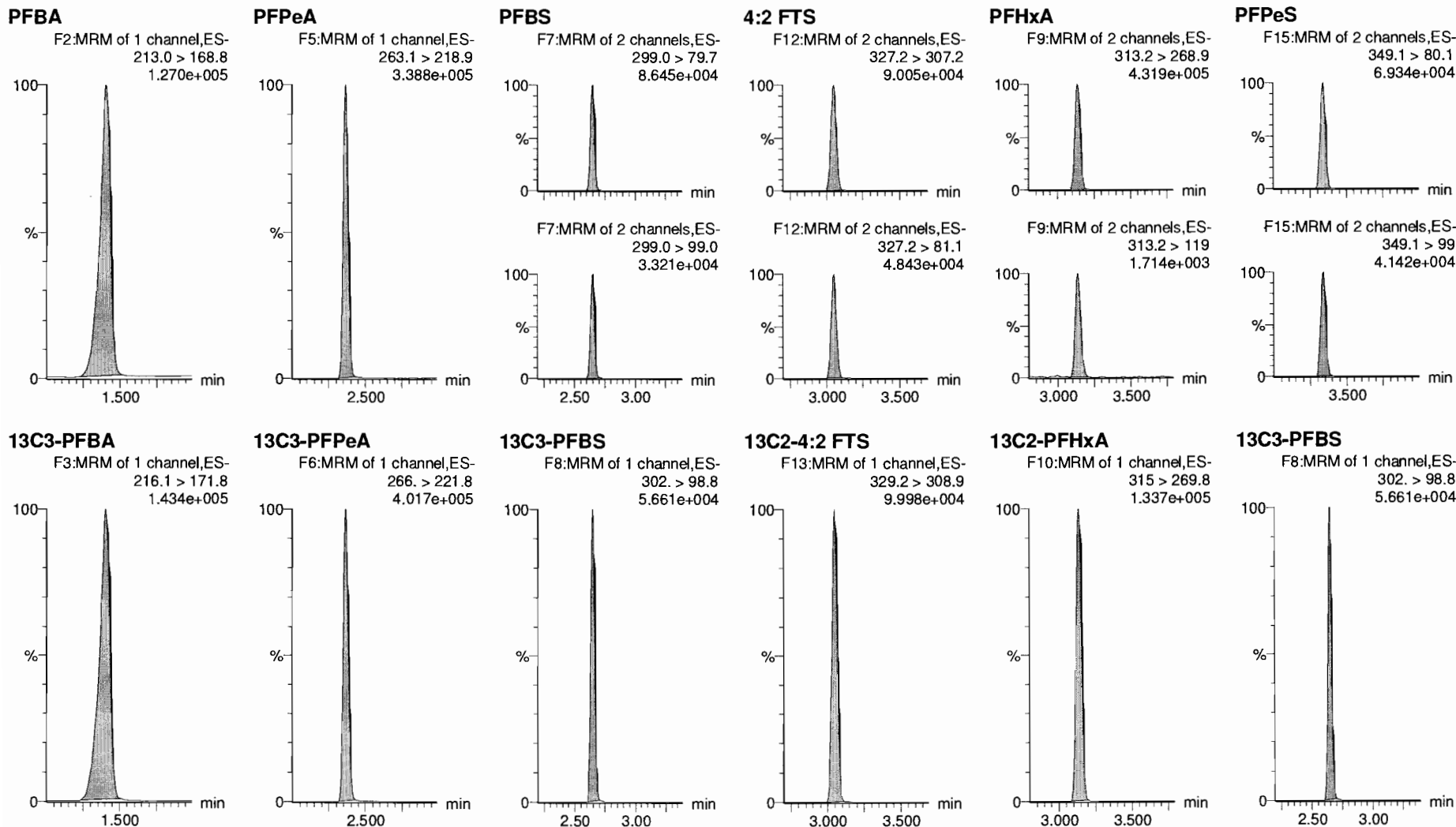
Last Altered: Monday, June 04, 2018 14:07:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:07:53 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

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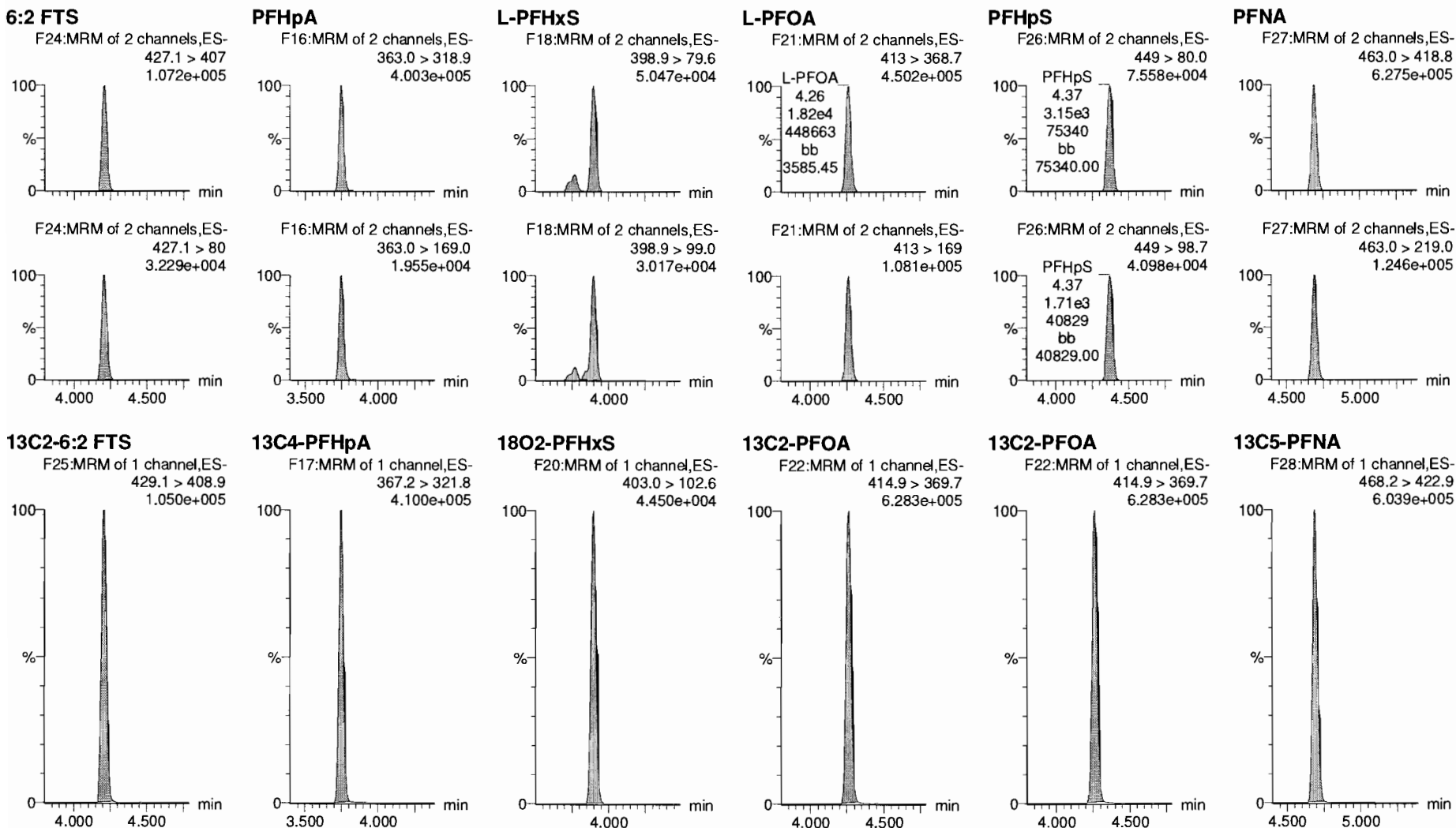
GM 6/4/2018

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Printed: Monday, June 04, 2018 14:07:53 Pacific Daylight Time

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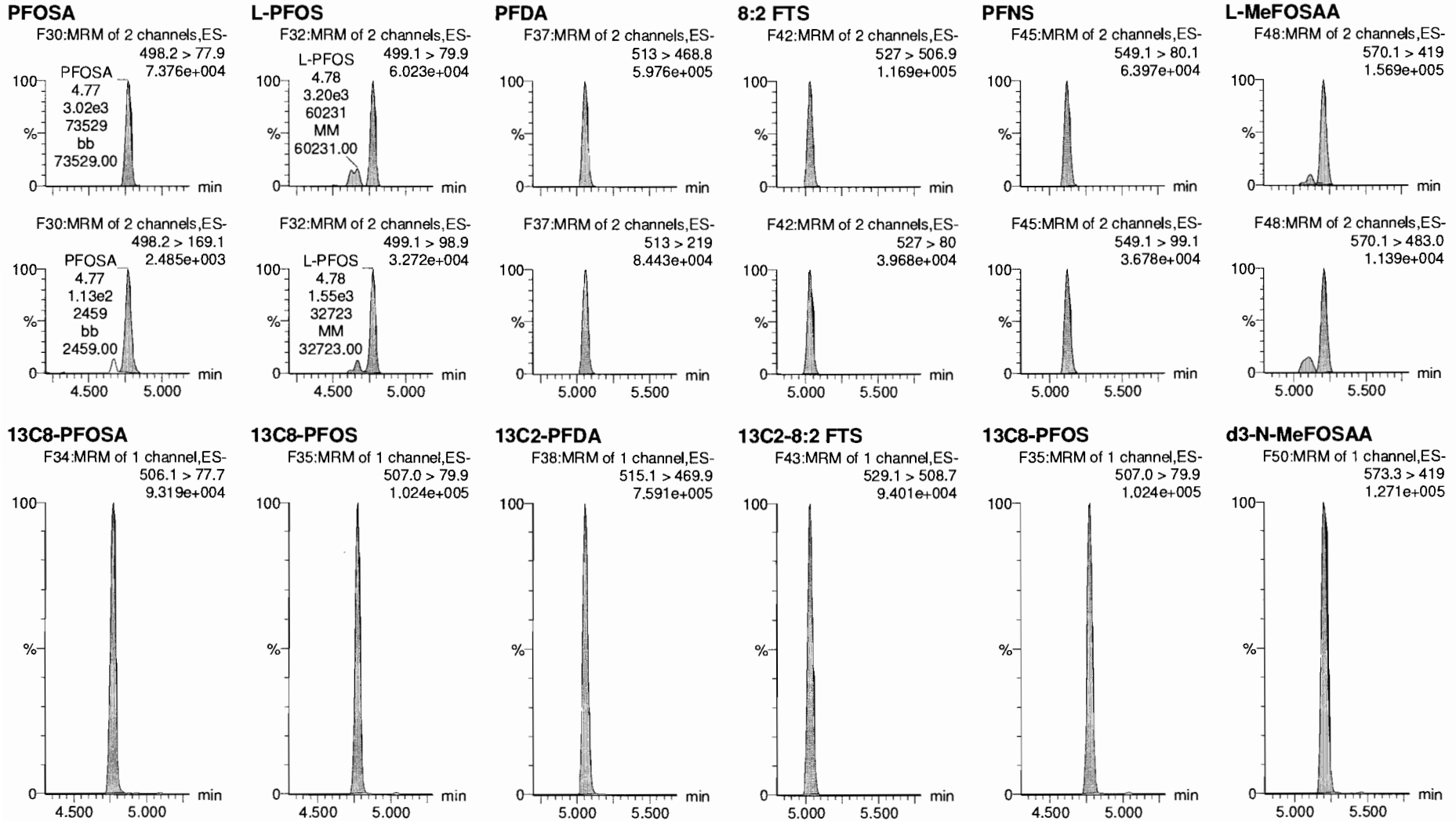


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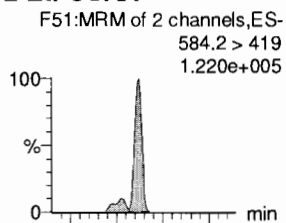
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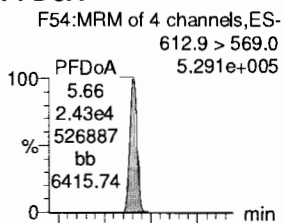
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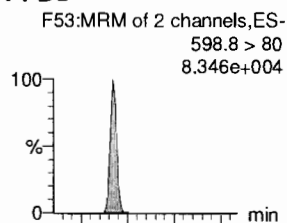
L-EtFOSAA



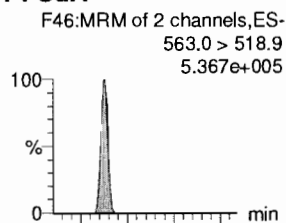
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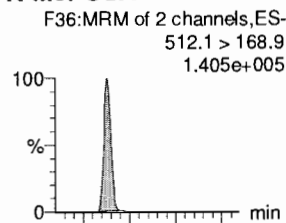
PFDS



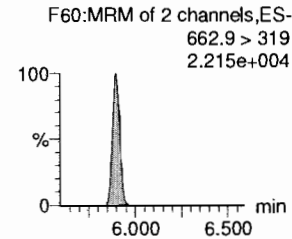
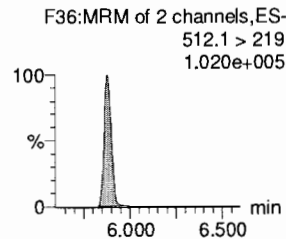
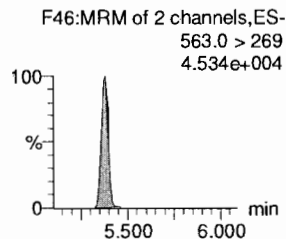
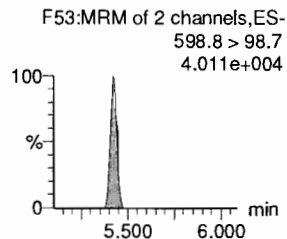
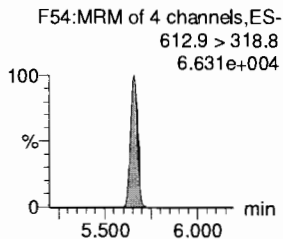
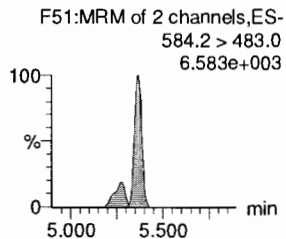
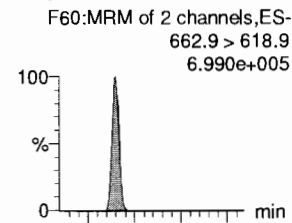
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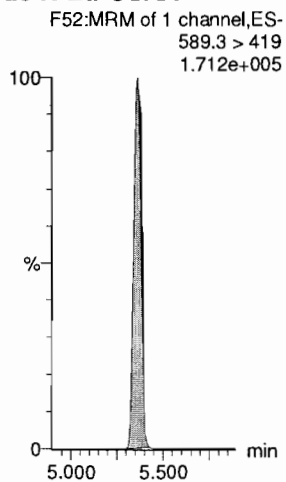
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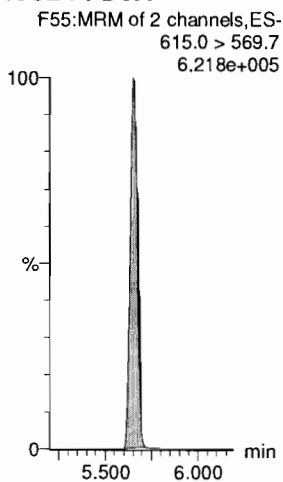
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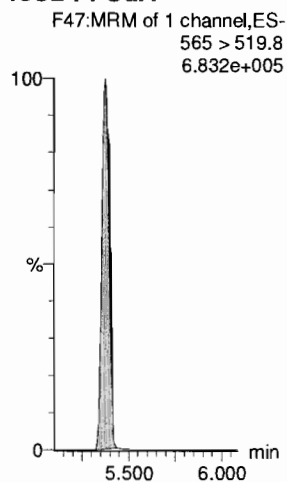
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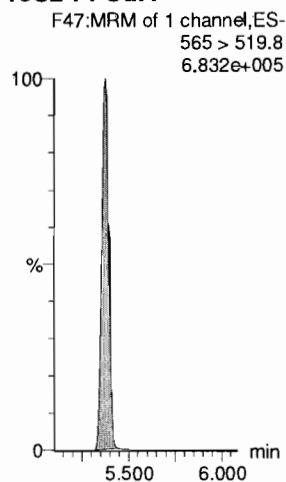
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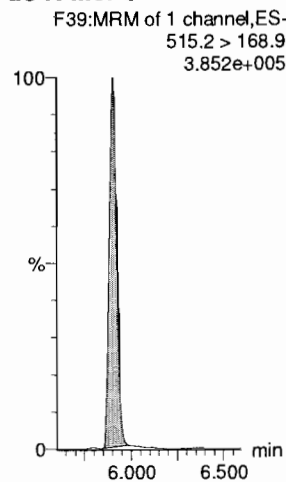
13C2-PFUdA



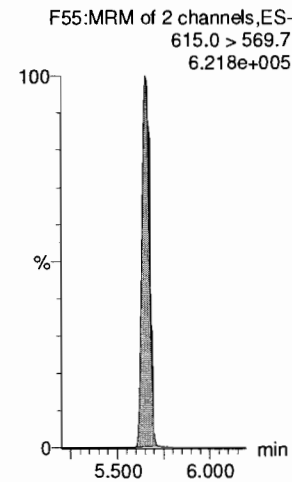
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA

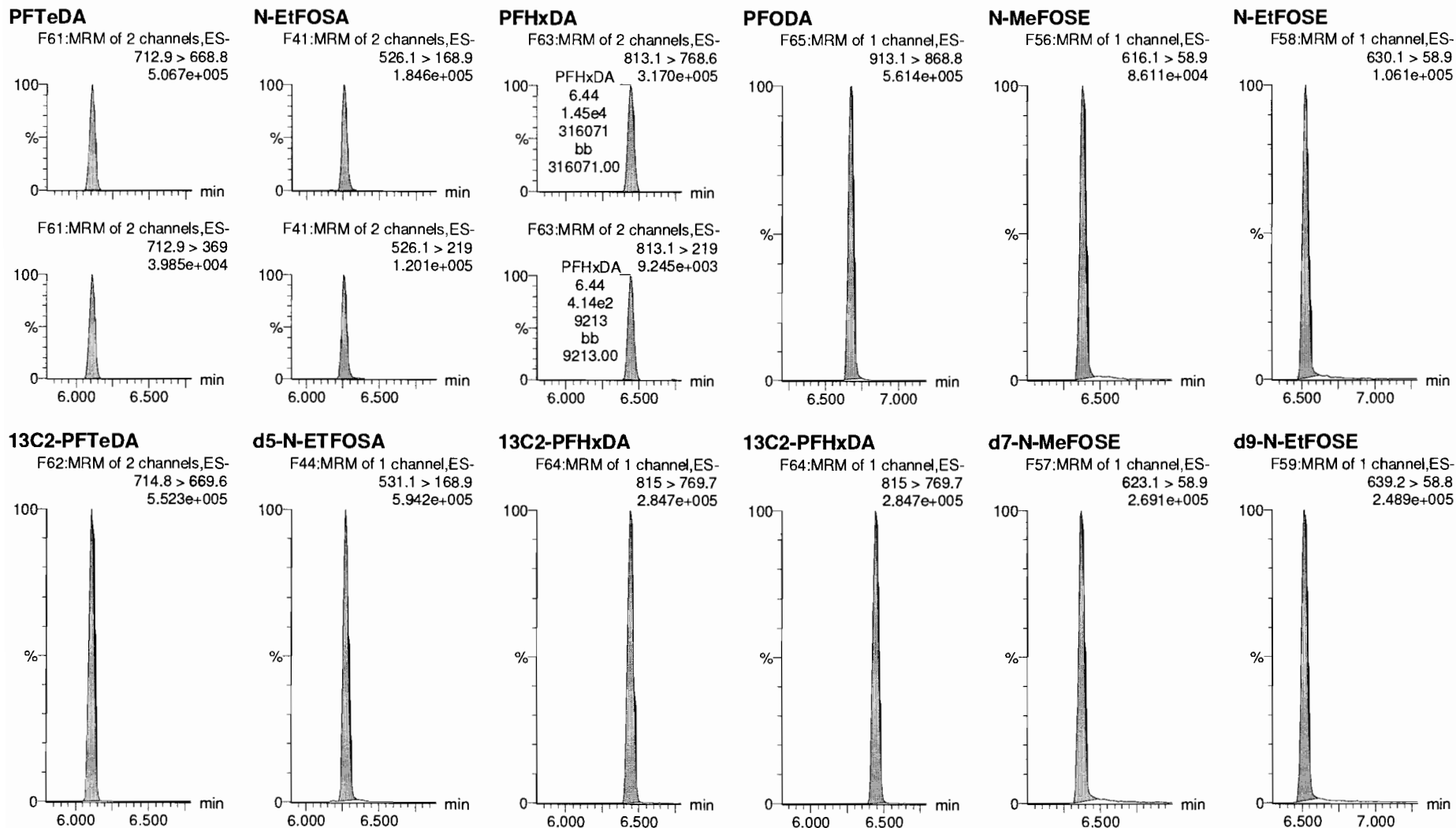


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Last Altered: Monday, June 04, 2018 14:07:15 Pacific Daylight Time

Printed: Monday, June 04, 2018 14:07:53 Pacific Daylight Time

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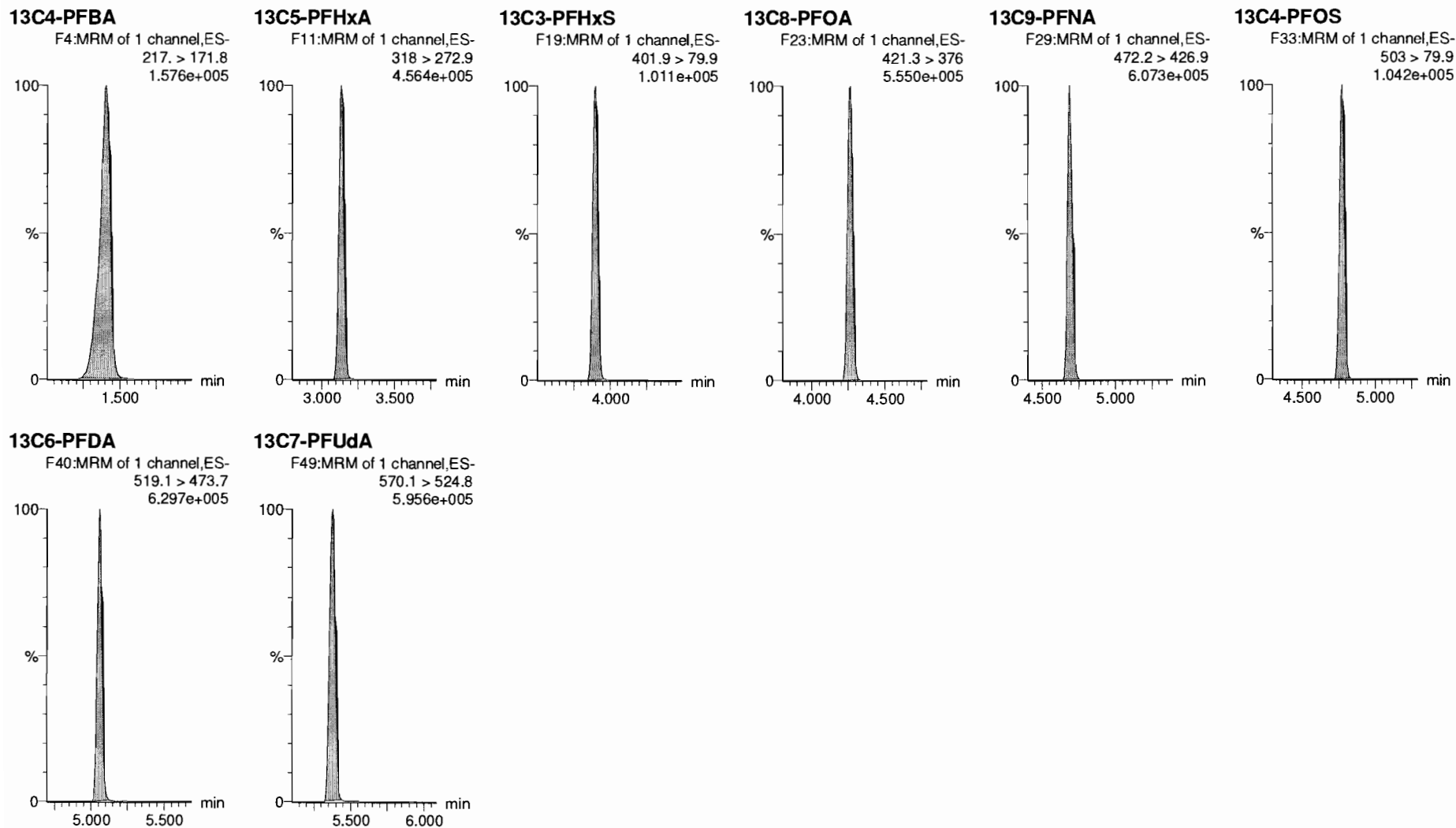


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Name: 180603M2_47, Date: 04-Jun-2018, Time: 02:01:52, ID: ST180603M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907



Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 15:20:11 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 15:21:52 Pacific Daylight Time

Method: F:\Projects\PFAS.PROMethDB\PFAS_RS-5-19-18.mdb 20 May 2018 12:59:37

Calibration: 05 Jun 2018 15:20:11

Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

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3	3 13C3-PFHxS	ST180604M2-6 PFC CS3 18E2907	3.62e3	100.0	NO
4	4 13C8-PFOA	ST180604M2-6 PFC CS3 18E2907	1.60e4	100.0	NO
5	5 13C9-PFNA	ST180604M2-6 PFC CS3 18E2907	1.80e4	100.0	NO
6	6 13C4-PFOS	ST180604M2-6 PFC CS3 18E2907	3.73e3	100.0	NO
7	7 13C6-PFDA	ST180604M2-6 PFC CS3 18E2907	2.37e4	100.0	NO
8	8 13C7-PFUDa	ST180604M2-6 PFC CS3 18E2907	2.92e4	100.0	NO

Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180604M2-7 PFC CS4 18E2908	1.08e4	86.9	NO
2	2 13C5-PFHxA	ST180604M2-7 PFC CS4 18E2908	1.58e4	89.2	NO
3	3 13C3-PFHxS	ST180604M2-7 PFC CS4 18E2908	3.01e3	83.1	NO
4	4 13C8-PFOA	ST180604M2-7 PFC CS4 18E2908	1.45e4	90.6	NO
5	5 13C9-PFNA	ST180604M2-7 PFC CS4 18E2908	1.87e4	103.5	NO
6	6 13C4-PFOS	ST180604M2-7 PFC CS4 18E2908	3.32e3	89.1	NO
7	7 13C6-PFDA	ST180604M2-7 PFC CS4 18E2908	1.88e4	79.3	NO
8	8 13C7-PFUDa	ST180604M2-7 PFC CS4 18E2908	2.64e4	90.2	NO

Name: 180604M2_9, Date: 04-Jun-2018, Time: 20:24:59, ID: ST180604M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180604M2-8 PFC CS5 18E2909	1.06e4	85.4	NO
2	2 13C5-PFHxA	ST180604M2-8 PFC CS5 18E2909	1.47e4	83.5	NO
3	3 13C3-PFHxS	ST180604M2-8 PFC CS5 18E2909	3.12e3	86.3	NO
4	4 13C8-PFOA	ST180604M2-8 PFC CS5 18E2909	1.53e4	95.7	NO
5	5 13C9-PFNA	ST180604M2-8 PFC CS5 18E2909	1.75e4	97.2	NO
6	6 13C4-PFOS	ST180604M2-8 PFC CS5 18E2909	3.20e3	85.7	NO
7	7 13C6-PFDA	ST180604M2-8 PFC CS5 18E2909	1.54e4	65.0	NO
8	8 13C7-PFUDa	ST180604M2-8 PFC CS5 18E2909	2.30e4	78.6	NO

Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180604M2-9 PFC CS6 18E2910	1.04e4	83.9	NO
2	2 13C5-PFHxA	ST180604M2-9 PFC CS6 18E2910	1.41e4	80.1	NO
3	3 13C3-PFHxS	ST180604M2-9 PFC CS6 18E2910	2.85e3	78.8	NO
4	4 13C8-PFOA	ST180604M2-9 PFC CS6 18E2910	1.28e4	80.2	NO
5	5 13C9-PFNA	ST180604M2-9 PFC CS6 18E2910	1.58e4	87.5	NO
6	6 13C4-PFOS	ST180604M2-9 PFC CS6 18E2910	2.83e3	76.0	NO
7	7 13C6-PFDA	ST180604M2-9 PFC CS6 18E2910	1.75e4	73.8	NO
8	8 13C7-PFUDa	ST180604M2-9 PFC CS6 18E2910	1.95e4	66.9	NO

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Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180604M2-10 PFC CS7 18E2911	9.78e3	78.7	NO
2	2 13C5-PFHxA	ST180604M2-10 PFC CS7 18E2911	1.27e4	71.8	NO
3	3 13C3-PFHxS	ST180604M2-10 PFC CS7 18E2911	2.52e3	69.6	NO
4	4 13C8-PFOA	ST180604M2-10 PFC CS7 18E2911	1.29e4	81.0	NO
5	5 13C9-PFNA	ST180604M2-10 PFC CS7 18E2911	1.41e4	78.5	NO
6	6 13C4-PFOS	ST180604M2-10 PFC CS7 18E2911	2.55e3	68.2	NO
7	7 13C6-PFDA	ST180604M2-10 PFC CS7 18E2911	1.59e4	66.9	NO
8	8 13C7-PFUDa	ST180604M2-10 PFC CS7 18E2911	1.64e4	56.1	NO

Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ICV180604M2-1 PFC 537 ICV 18E2901	1.04e4	83.6	NO
2	2 13C5-PFHxA	ICV180604M2-1 PFC 537 ICV 18E2901	1.50e4	85.2	NO
3	3 13C3-PFHxS	ICV180604M2-1 PFC 537 ICV 18E2901	3.08e3	85.2	NO
4	4 13C8-PFOA	ICV180604M2-1 PFC 537 ICV 18E2901	1.53e4	95.6	NO
5	5 13C9-PFNA	ICV180604M2-1 PFC 537 ICV 18E2901	1.66e4	92.4	NO
6	6 13C4-PFOS	ICV180604M2-1 PFC 537 ICV 18E2901	3.23e3	86.6	NO
7	7 13C6-PFDA	ICV180604M2-1 PFC 537 ICV 18E2901	1.90e4	80.1	NO
8	8 13C7-PFUDa	ICV180604M2-1 PFC 537 ICV 18E2901	2.36e4	80.9	NO

Name: 180604M2_14, Date: 04-Jun-2018, Time: 21:17:19, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

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Name: 180604M2_15, Date: 04-Jun-2018, Time: 21:27:44, ID: 1800982-05 REEPDW554 0.11977, Description: REEPDW554

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800982-05 REEPDW554 0.11977	1.07e4	86.0	NO
2	2 13C5-PFHxA	1800982-05 REEPDW554 0.11977	1.54e4	87.3	NO
3	3 13C3-PFHxS	1800982-05 REEPDW554 0.11977	3.70e3	102.4	NO
4	4 13C8-PFOA	1800982-05 REEPDW554 0.11977	1.70e4	106.7	NO
5	5 13C9-PFNA	1800982-05 REEPDW554 0.11977	2.00e4	110.8	NO
6	6 13C4-PFOS	1800982-05 REEPDW554 0.11977	4.18e3	112.0	NO
7	7 13C6-PFDA	1800982-05 REEPDW554 0.11977	2.08e4	87.8	NO
8	8 13C7-PFUDa	1800982-05 REEPDW554 0.11977	2.84e4	97.3	NO

Name: 180604M2_16, Date: 04-Jun-2018, Time: 21:38:15, ID: 1800982-06 REEPDW1043 0.12141, Description: REEPDW1043

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800982-06 REEPDW1043 0.12141	9.01e3	72.6	NO
2	2 13C5-PFHxA	1800982-06 REEPDW1043 0.12141	1.36e4	77.2	NO
3	3 13C3-PFHxS	1800982-06 REEPDW1043 0.12141	3.74e3	103.4	NO
4	4 13C8-PFOA	1800982-06 REEPDW1043 0.12141	1.49e4	93.5	NO
5	5 13C9-PFNA	1800982-06 REEPDW1043 0.12141	1.44e4	79.8	NO
6	6 13C4-PFOS	1800982-06 REEPDW1043 0.12141	3.80e3	101.8	NO
7	7 13C6-PFDA	1800982-06 REEPDW1043 0.12141	1.83e4	77.2	NO
8	8 13C7-PFUDa	1800982-06 REEPDW1043 0.12141	2.16e4	73.8	NO

Name: 180604M2_17, Date: 04-Jun-2018, Time: 21:48:40, ID: B8E0141-BS1 OPR 0.125, Description: OPR

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0141-BS1 OPR 0.125	1.50e4	121.2	NO
2	2 13C5-PFHxA	B8E0141-BS1 OPR 0.125	2.16e4	122.5	NO
3	3 13C3-PFHxS	B8E0141-BS1 OPR 0.125	4.55e3	125.9	NO
4	4 13C8-PFOA	B8E0141-BS1 OPR 0.125	2.14e4	134.0	NO
5	5 13C9-PFNA	B8E0141-BS1 OPR 0.125	2.58e4	143.1	NO
6	6 13C4-PFOS	B8E0141-BS1 OPR 0.125	4.36e3	116.9	NO
7	7 13C6-PFDA	B8E0141-BS1 OPR 0.125	2.60e4	109.9	NO
8	8 13C7-PFUDa	B8E0141-BS1 OPR 0.125	3.21e4	109.7	NO

Name: 180604M2_18, Date: 04-Jun-2018, Time: 21:59:10, ID: B8E0224-BSD1 LCSD 0.125, Description: LCSD

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0224-BSD1 LCSD 0.125	9.02e3	72.6	NO
2	2 13C5-PFHxA	B8E0224-BSD1 LCSD 0.125	1.38e4	78.3	NO
3	3 13C3-PFHxS	B8E0224-BSD1 LCSD 0.125	3.03e3	83.7	NO
4	4 13C8-PFOA	B8E0224-BSD1 LCSD 0.125	1.44e4	89.9	NO
5	5 13C9-PFNA	B8E0224-BSD1 LCSD 0.125	1.62e4	89.8	NO
6	6 13C4-PFOS	B8E0224-BSD1 LCSD 0.125	3.07e3	82.2	NO
7	7 13C6-PFDA	B8E0224-BSD1 LCSD 0.125	1.75e4	73.7	NO
8	8 13C7-PFUDa	B8E0224-BSD1 LCSD 0.125	2.58e4	88.2	NO

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Name: 180604M2_19, Date: 04-Jun-2018, Time: 22:09:36, ID: B8E0224-BS1 OPR 0.125, Description: OPR

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0224-BS1 OPR 0.125	9.26e3	74.6	NO
2	2 13C5-PFHxA	B8E0224-BS1 OPR 0.125	1.29e4	73.1	NO
3	3 13C3-PFHxS	B8E0224-BS1 OPR 0.125	2.82e3	77.9	NO
4	4 13C8-PFOA	B8E0224-BS1 OPR 0.125	1.44e4	90.1	NO
5	5 13C9-PFNA	B8E0224-BS1 OPR 0.125	1.72e4	95.2	NO
6	6 13C4-PFOS	B8E0224-BS1 OPR 0.125	2.98e3	79.9	NO
7	7 13C6-PFDA	B8E0224-BS1 OPR 0.125	1.74e4	73.6	NO
8	8 13C7-PFUDa	B8E0224-BS1 OPR 0.125	2.05e4	70.0	NO

Name: 180604M2_20, Date: 04-Jun-2018, Time: 22:20:06, ID: B8E0224-BLK1 Method Blank 0.125, Description: Method Blank

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0224-BLK1 Method Blank 0.125	8.93e3	72.0	NO
2	2 13C5-PFHxA	B8E0224-BLK1 Method Blank 0.125	1.41e4	79.8	NO
3	3 13C3-PFHxS	B8E0224-BLK1 Method Blank 0.125	3.12e3	86.3	NO
4	4 13C8-PFOA	B8E0224-BLK1 Method Blank 0.125	1.41e4	88.0	NO
5	5 13C9-PFNA	B8E0224-BLK1 Method Blank 0.125	1.82e4	101.2	NO
6	6 13C4-PFOS	B8E0224-BLK1 Method Blank 0.125	3.31e3	88.6	NO
7	7 13C6-PFDA	B8E0224-BLK1 Method Blank 0.125	1.83e4	77.4	NO
8	8 13C7-PFUDa	B8E0224-BLK1 Method Blank 0.125	1.99e4	68.1	NO

Name: 180604M2_21, Date: 04-Jun-2018, Time: 22:30:30, ID: 1800952-13RE1 REEPDW488 0.11053, Description: REEPDW488

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800952-13RE1 REEPDW488 0.11053	6.63e3	53.4	NO
2	2 13C5-PFHxA	1800952-13RE1 REEPDW488 0.11053	1.07e4	60.5	NO
3	3 13C3-PFHxS	1800952-13RE1 REEPDW488 0.11053	3.63e3	100.4	NO
4	4 13C8-PFOA	1800952-13RE1 REEPDW488 0.11053	1.33e4	83.3	NO
5	5 13C9-PFNA	1800952-13RE1 REEPDW488 0.11053	1.66e4	92.3	NO
6	6 13C4-PFOS	1800952-13RE1 REEPDW488 0.11053	3.70e3	99.2	NO
7	7 13C6-PFDA	1800952-13RE1 REEPDW488 0.11053	1.70e4	71.9	NO
8	8 13C7-PFUDa	1800952-13RE1 REEPDW488 0.11053	2.01e4	68.7	NO

Name: 180604M2_22, Date: 04-Jun-2018, Time: 22:41:01, ID: B8E0250-BS1 OPR 0.125, Description: OPR

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0250-BS1 OPR 0.125	8.47e3	68.2	NO
2	2 13C5-PFHxA	B8E0250-BS1 OPR 0.125	1.21e4	68.4	NO
3	3 13C3-PFHxS	B8E0250-BS1 OPR 0.125	2.93e3	80.9	NO
4	4 13C8-PFOA	B8E0250-BS1 OPR 0.125	1.20e4	75.4	NO
5	5 13C9-PFNA	B8E0250-BS1 OPR 0.125	1.54e4	85.3	NO
6	6 13C4-PFOS	B8E0250-BS1 OPR 0.125	2.85e3	76.4	NO
7	7 13C6-PFDA	B8E0250-BS1 OPR 0.125	1.52e4	64.2	NO
8	8 13C7-PFUDa	B8E0250-BS1 OPR 0.125	2.03e4	69.6	NO

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Name: 180604M2_23, Date: 04-Jun-2018, Time: 22:51:31, ID: B8E0250-BSD1 LCSD 0.125, Description: LCSD

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0250-BSD1 LCSD 0.125	8.05e3	64.8	NO
2	2 13C5-PFHxA	B8E0250-BSD1 LCSD 0.125	1.17e4	66.1	NO
3	3 13C3-PFHxS	B8E0250-BSD1 LCSD 0.125	2.64e3	73.0	NO
4	4 13C8-PFOA	B8E0250-BSD1 LCSD 0.125	1.19e4	74.3	NO
5	5 13C9-PFNA	B8E0250-BSD1 LCSD 0.125	1.38e4	76.4	NO
6	6 13C4-PFOS	B8E0250-BSD1 LCSD 0.125	2.76e3	73.8	NO
7	7 13C6-PFDA	B8E0250-BSD1 LCSD 0.125	1.40e4	59.0	NO
8	8 13C7-PFUDa	B8E0250-BSD1 LCSD 0.125	1.62e4	55.5	NO

Name: 180604M2_24, Date: 04-Jun-2018, Time: 23:01:55, ID: B8E0250-BLK1 Method Blank 0.125, Description: Method Blank

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0250-BLK1 Method Blank 0.125	7.28e3	58.7	NO
2	2 13C5-PFHxA	B8E0250-BLK1 Method Blank 0.125	1.10e4	62.3	NO
3	3 13C3-PFHxS	B8E0250-BLK1 Method Blank 0.125	2.39e3	66.2	NO
4	4 13C8-PFOA	B8E0250-BLK1 Method Blank 0.125	1.07e4	66.7	NO
5	5 13C9-PFNA	B8E0250-BLK1 Method Blank 0.125	1.31e4	72.7	NO
6	6 13C4-PFOS	B8E0250-BLK1 Method Blank 0.125	2.60e3	69.6	NO
7	7 13C6-PFDA	B8E0250-BLK1 Method Blank 0.125	1.42e4	59.9	NO
8	8 13C7-PFUDa	B8E0250-BLK1 Method Blank 0.125	2.00e4	68.3	NO

Name: 180604M2_25, Date: 04-Jun-2018, Time: 23:12:26, ID: 1801003-01 GN18057PA 0.11594, Description: GN18057PA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801003-01 GN18057PA 0.11594	9.73e3	78.3	NO
2	2 13C5-PFHxA	1801003-01 GN18057PA 0.11594	1.34e4	76.1	NO
3	3 13C3-PFHxS	1801003-01 GN18057PA 0.11594	3.05e3	84.2	NO
4	4 13C8-PFOA	1801003-01 GN18057PA 0.11594	1.39e4	86.8	NO
5	5 13C9-PFNA	1801003-01 GN18057PA 0.11594	1.74e4	96.5	NO
6	6 13C4-PFOS	1801003-01 GN18057PA 0.11594	3.18e3	85.2	NO
7	7 13C6-PFDA	1801003-01 GN18057PA 0.11594	1.81e4	76.5	NO
8	8 13C7-PFUDa	1801003-01 GN18057PA 0.11594	2.42e4	82.7	NO

Name: 180604M2_26, Date: 04-Jun-2018, Time: 23:22:51, ID: 1801003-02 GN18058PA 0.11833, Description: GN18058PA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801003-02 GN18058PA 0.11833	8.34e3	67.1	NO
2	2 13C5-PFHxA	1801003-02 GN18058PA 0.11833	1.20e4	68.0	NO
3	3 13C3-PFHxS	1801003-02 GN18058PA 0.11833	2.44e3	67.4	NO
4	4 13C8-PFOA	1801003-02 GN18058PA 0.11833	1.12e4	70.0	NO
5	5 13C9-PFNA	1801003-02 GN18058PA 0.11833	1.61e4	89.3	NO
6	6 13C4-PFOS	1801003-02 GN18058PA 0.11833	2.82e3	75.5	NO
7	7 13C6-PFDA	1801003-02 GN18058PA 0.11833	1.37e4	58.0	NO
8	8 13C7-PFUDa	1801003-02 GN18058PA 0.11833	1.94e4	66.4	NO

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Name: 180604M2_27, Date: 04-Jun-2018, Time: 23:33:21, ID: 1801024-01 A1-MW-51-SA1 0.11961, Description: A1-MW-51-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-01 A1-MW-51-SA1 0.11961	3.32e3	26.8	YES
2	2 13C5-PFHxA	1801024-01 A1-MW-51-SA1 0.11961	4.40e3	24.9	YES
3	3 13C3-PFHxS	1801024-01 A1-MW-51-SA1 0.11961	2.26e3	62.6	NO
4	4 13C8-PFOA	1801024-01 A1-MW-51-SA1 0.11961	4.58e3	28.7	YES
5	5 13C9-PFNA	1801024-01 A1-MW-51-SA1 0.11961	5.86e3	32.5	YES
6	6 13C4-PFOS	1801024-01 A1-MW-51-SA1 0.11961	2.45e3	65.6	NO
7	7 13C6-PFDA	1801024-01 A1-MW-51-SA1 0.11961	6.05e3	25.5	YES
8	8 13C7-PFUDa	1801024-01 A1-MW-51-SA1 0.11961	8.35e3	28.6	YES

Name: 180604M2_28, Date: 04-Jun-2018, Time: 23:43:47, ID: 1801024-02 A1-MW-50-SA1 0.12082, Description: A1-MW-50-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-02 A1-MW-50-SA1 0.12082	5.21e3	42.0	YES
2	2 13C5-PFHxA	1801024-02 A1-MW-50-SA1 0.12082	6.80e3	38.5	YES
3	3 13C3-PFHxS	1801024-02 A1-MW-50-SA1 0.12082	2.48e3	68.4	NO
4	4 13C8-PFOA	1801024-02 A1-MW-50-SA1 0.12082	5.83e3	36.5	YES
5	5 13C9-PFNA	1801024-02 A1-MW-50-SA1 0.12082	6.26e3	34.7	YES
6	6 13C4-PFOS	1801024-02 A1-MW-50-SA1 0.12082	2.63e3	70.5	NO
7	7 13C6-PFDA	1801024-02 A1-MW-50-SA1 0.12082	6.10e3	25.7	YES
8	8 13C7-PFUDa	1801024-02 A1-MW-50-SA1 0.12082	6.35e3	21.7	YES

Name: 180604M2_29, Date: 04-Jun-2018, Time: 23:54:17, ID: 1801024-03 A1-MW-49-SA1 0.12317, Description: A1-MW-49-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-03 A1-MW-49-SA1 0.12317	7.80e3	62.9	NO
2	2 13C5-PFHxA	1801024-03 A1-MW-49-SA1 0.12317	1.11e4	63.0	NO
3	3 13C3-PFHxS	1801024-03 A1-MW-49-SA1 0.12317	2.75e3	76.0	NO
4	4 13C8-PFOA	1801024-03 A1-MW-49-SA1 0.12317	1.05e4	65.9	NO
5	5 13C9-PFNA	1801024-03 A1-MW-49-SA1 0.12317	1.35e4	74.6	NO
6	6 13C4-PFOS	1801024-03 A1-MW-49-SA1 0.12317	2.76e3	74.0	NO
7	7 13C6-PFDA	1801024-03 A1-MW-49-SA1 0.12317	1.30e4	54.7	NO
8	8 13C7-PFUDa	1801024-03 A1-MW-49-SA1 0.12317	1.79e4	61.2	NO

Name: 180604M2_30, Date: 05-Jun-2018, Time: 00:04:41, ID: 1801024-04 A1-MW-05-SA1 0.11875, Description: A1-MW-05-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-04 A1-MW-05-SA1 0.11875	8.23e3	66.3	NO
2	2 13C5-PFHxA	1801024-04 A1-MW-05-SA1 0.11875	1.22e4	69.1	NO
3	3 13C3-PFHxS	1801024-04 A1-MW-05-SA1 0.11875	2.65e3	73.3	NO
4	4 13C8-PFOA	1801024-04 A1-MW-05-SA1 0.11875	1.32e4	82.3	NO
5	5 13C9-PFNA	1801024-04 A1-MW-05-SA1 0.11875	1.48e4	82.3	NO
6	6 13C4-PFOS	1801024-04 A1-MW-05-SA1 0.11875	2.89e3	77.4	NO
7	7 13C6-PFDA	1801024-04 A1-MW-05-SA1 0.11875	1.57e4	66.3	NO
8	8 13C7-PFUDa	1801024-04 A1-MW-05-SA1 0.11875	2.07e4	70.8	NO

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Name: 180604M2_31, Date: 05-Jun-2018, Time: 00:15:11, ID: 1801024-05 A1-MW-04-SA1 0.12315, Description: A1-MW-04-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-05 A1-MW-04-SA1 0.12315	6.51e3	52.4	NO
2	2 13C5-PFHxA	1801024-05 A1-MW-04-SA1 0.12315	9.83e3	55.7	NO
3	3 13C3-PFHxS	1801024-05 A1-MW-04-SA1 0.12315	2.97e3	82.0	NO
4	4 13C8-PFOA	1801024-05 A1-MW-04-SA1 0.12315	9.28e3	58.1	NO
5	5 13C9-PFNA	1801024-05 A1-MW-04-SA1 0.12315	1.08e4	59.9	NO
6	6 13C4-PFOS	1801024-05 A1-MW-04-SA1 0.12315	2.92e3	78.1	NO
7	7 13C6-PFDA	1801024-05 A1-MW-04-SA1 0.12315	1.13e4	47.8	YES
8	8 13C7-PFUDa	1801024-05 A1-MW-04-SA1 0.12315	1.54e4	52.6	NO

Name: 180604M2_32, Date: 05-Jun-2018, Time: 00:25:41, ID: 1801024-06 FRB-20180522 0.12068, Description: FRB-20180522

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-06 FRB-20180522 0.12068	1.06e4	85.5	NO
2	2 13C5-PFHxA	1801024-06 FRB-20180522 0.12068	1.48e4	83.7	NO
3	3 13C3-PFHxS	1801024-06 FRB-20180522 0.12068	3.71e3	102.5	NO
4	4 13C8-PFOA	1801024-06 FRB-20180522 0.12068	1.66e4	104.0	NO
5	5 13C9-PFNA	1801024-06 FRB-20180522 0.12068	1.56e4	86.3	NO
6	6 13C4-PFOS	1801024-06 FRB-20180522 0.12068	3.96e3	106.0	NO
7	7 13C6-PFDA	1801024-06 FRB-20180522 0.12068	2.24e4	94.7	NO
8	8 13C7-PFUDa	1801024-06 FRB-20180522 0.12068	2.48e4	85.0	NO

Name: 180604M2_33, Date: 05-Jun-2018, Time: 00:36:06, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA	1.03e1	0.1	YES
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180604M2-11 PFC CS3 18E2907	1.32e4	106.6	NO
2	2 13C5-PFHxA	ST180604M2-11 PFC CS3 18E2907	2.01e4	113.5	NO
3	3 13C3-PFHxS	ST180604M2-11 PFC CS3 18E2907	4.07e3	112.6	NO
4	4 13C8-PFOA	ST180604M2-11 PFC CS3 18E2907	1.97e4	123.5	NO
5	5 13C9-PFNA	ST180604M2-11 PFC CS3 18E2907	2.37e4	131.6	NO
6	6 13C4-PFOS	ST180604M2-11 PFC CS3 18E2907	4.43e3	118.8	NO
7	7 13C6-PFDA	ST180604M2-11 PFC CS3 18E2907	2.47e4	104.2	NO
8	8 13C7-PFUDa	ST180604M2-11 PFC CS3 18E2907	2.82e4	96.5	NO

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Name: 180604M2_35, Date: 05-Jun-2018, Time: 00:57:02, ID: 1801071-01 A1-MW-27-SA1 0.11705, Description: A1-MW-27-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-01 A1-MW-27-SA1 0.11705	6.41e3	51.7	NO
2	2 13C5-PFHxA	1801071-01 A1-MW-27-SA1 0.11705	9.37e3	53.1	NO
3	3 13C3-PFHxS	1801071-01 A1-MW-27-SA1 0.11705	3.54e3	97.8	NO
4	4 13C8-PFOA	1801071-01 A1-MW-27-SA1 0.11705	1.12e4	70.3	NO
5	5 13C9-PFNA	1801071-01 A1-MW-27-SA1 0.11705	1.40e4	77.4	NO
6	6 13C4-PFOS	1801071-01 A1-MW-27-SA1 0.11705	3.54e3	94.9	NO
7	7 13C6-PFDA	1801071-01 A1-MW-27-SA1 0.11705	1.46e4	61.4	NO
8	8 13C7-PFUDa	1801071-01 A1-MW-27-SA1 0.11705	2.23e4	76.1	NO

Name: 180604M2_36, Date: 05-Jun-2018, Time: 01:07:32, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-02 A1-MW-55-SA1 0.11428	5.65e3	45.5	YES
2	2 13C5-PFHxA	1801071-02 A1-MW-55-SA1 0.11428	8.29e3	46.9	YES
3	3 13C3-PFHxS	1801071-02 A1-MW-55-SA1 0.11428	2.91e3	80.5	NO
4	4 13C8-PFOA	1801071-02 A1-MW-55-SA1 0.11428	9.14e3	57.2	NO
5	5 13C9-PFNA	1801071-02 A1-MW-55-SA1 0.11428	1.23e4	68.4	NO
6	6 13C4-PFOS	1801071-02 A1-MW-55-SA1 0.11428	2.95e3	79.1	NO
7	7 13C6-PFDA	1801071-02 A1-MW-55-SA1 0.11428	1.36e4	57.6	NO
8	8 13C7-PFUDa	1801071-02 A1-MW-55-SA1 0.11428	1.84e4	62.9	NO

Name: 180604M2_37, Date: 05-Jun-2018, Time: 01:17:57, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-03 A1-MW-23-SA1 0.11436	6.16e3	49.6	YES
2	2 13C5-PFHxA	1801071-03 A1-MW-23-SA1 0.11436	1.03e4	58.1	NO
3	3 13C3-PFHxS	1801071-03 A1-MW-23-SA1 0.11436	3.15e3	87.0	NO
4	4 13C8-PFOA	1801071-03 A1-MW-23-SA1 0.11436	1.15e4	71.9	NO
5	5 13C9-PFNA	1801071-03 A1-MW-23-SA1 0.11436	1.56e4	86.5	NO
6	6 13C4-PFOS	1801071-03 A1-MW-23-SA1 0.11436	3.29e3	88.3	NO
7	7 13C6-PFDA	1801071-03 A1-MW-23-SA1 0.11436	1.63e4	68.6	NO
8	8 13C7-PFUDa	1801071-03 A1-MW-23-SA1 0.11436	1.96e4	66.9	NO

Name: 180604M2_38, Date: 05-Jun-2018, Time: 01:28:28, ID: 1801071-04 A1-MW-07-SA1 0.11908, Description: A1-MW-07-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-04 A1-MW-07-SA1 0.11908	5.51e3	44.4	YES
2	2 13C5-PFHxA	1801071-04 A1-MW-07-SA1 0.11908	7.72e3	43.7	YES
3	3 13C3-PFHxS	1801071-04 A1-MW-07-SA1 0.11908	3.30e3	91.1	NO
4	4 13C8-PFOA	1801071-04 A1-MW-07-SA1 0.11908	7.49e3	46.9	YES
5	5 13C9-PFNA	1801071-04 A1-MW-07-SA1 0.11908	1.11e4	61.7	NO
6	6 13C4-PFOS	1801071-04 A1-MW-07-SA1 0.11908	3.44e3	92.3	NO
7	7 13C6-PFDA	1801071-04 A1-MW-07-SA1 0.11908	1.29e4	54.5	NO
8	8 13C7-PFUDa	1801071-04 A1-MW-07-SA1 0.11908	1.90e4	65.0	NO

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Name: 180604M2_39, Date: 05-Jun-2018, Time: 01:38:53, ID: 1801071-05 FRB-20180530 0.49878, Description: FRB-20180530

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-05 FRB-20180530 0.49878	9.36e3	75.4	NO
2	2 13C5-PFHxA	1801071-05 FRB-20180530 0.49878	1.59e4	90.1	NO
3	3 13C3-PFHxS	1801071-05 FRB-20180530 0.49878	3.67e3	101.6	NO
4	4 13C8-PFOA	1801071-05 FRB-20180530 0.49878	1.68e4	105.2	NO
5	5 13C9-PFNA	1801071-05 FRB-20180530 0.49878	1.96e4	108.9	NO
6	6 13C4-PFOS	1801071-05 FRB-20180530 0.49878	3.77e3	101.1	NO
7	7 13C6-PFDA	1801071-05 FRB-20180530 0.49878	2.11e4	89.0	NO
8	8 13C7-PFUDa	1801071-05 FRB-20180530 0.49878	2.66e4	90.9	NO

Name: 180604M2_40, Date: 05-Jun-2018, Time: 01:49:23, ID: 1800930-03RE1 WT1805091300GSC 0.25438, Description: WT1805091300GSC

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800930-03RE1 WT1805091300GSC 0...	1.18e4	95.0	NO
2	2 13C5-PFHxA	1800930-03RE1 WT1805091300GSC 0...	1.76e4	99.8	NO
3	3 13C3-PFHxS	1800930-03RE1 WT1805091300GSC 0...	4.07e3	112.4	NO
4	4 13C8-PFOA	1800930-03RE1 WT1805091300GSC 0...	1.65e4	103.3	NO
5	5 13C9-PFNA	1800930-03RE1 WT1805091300GSC 0...	1.98e4	109.6	NO
6	6 13C4-PFOS	1800930-03RE1 WT1805091300GSC 0...	4.00e3	107.3	NO
7	7 13C6-PFDA	1800930-03RE1 WT1805091300GSC 0...	1.95e4	82.2	NO
8	8 13C7-PFUDa	1800930-03RE1 WT1805091300GSC 0...	2.53e4	86.4	NO

Name: 180604M2_41, Date: 05-Jun-2018, Time: 01:59:48, ID: 1800930-12RE1 WT1805100850GSC 0.25112, Description: WT1805100850GSC

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800930-12RE1 WT1805100850GSC 0...	9.85e3	79.3	NO
2	2 13C5-PFHxA	1800930-12RE1 WT1805100850GSC 0...	1.50e4	84.8	NO
3	3 13C3-PFHxS	1800930-12RE1 WT1805100850GSC 0...	3.32e3	91.9	NO
4	4 13C8-PFOA	1800930-12RE1 WT1805100850GSC 0...	1.47e4	91.9	NO
5	5 13C9-PFNA	1800930-12RE1 WT1805100850GSC 0...	1.83e4	101.8	NO
6	6 13C4-PFOS	1800930-12RE1 WT1805100850GSC 0...	3.42e3	91.8	NO
7	7 13C6-PFDA	1800930-12RE1 WT1805100850GSC 0...	1.68e4	71.1	NO
8	8 13C7-PFUDa	1800930-12RE1 WT1805100850GSC 0...	2.29e4	78.5	NO

Name: 180604M2_42, Date: 05-Jun-2018, Time: 02:10:18, ID: 1801021-01 Milk 5, Description: Milk

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801021-01 Milk 5	1.03e4	83.2	NO
2	2 13C5-PFHxA	1801021-01 Milk 5	1.52e4	85.9	NO
3	3 13C3-PFHxS	1801021-01 Milk 5	3.37e3	93.3	NO
4	4 13C8-PFOA	1801021-01 Milk 5	1.48e4	92.9	NO
5	5 13C9-PFNA	1801021-01 Milk 5	1.74e4	96.5	NO
6	6 13C4-PFOS	1801021-01 Milk 5	3.39e3	90.8	NO
7	7 13C6-PFDA	1801021-01 Milk 5	1.95e4	82.4	NO
8	8 13C7-PFUDa	1801021-01 Milk 5	2.59e4	88.7	NO

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Name: 180604M2_43, Date: 05-Jun-2018, Time: 02:20:43, ID: 1801000-01 DPH-MW6 0.10261, Description: DPH-MW6

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801000-01 DPH-MW6 0.10261	8.33e3	67.1	NO
2	2 13C5-PFHxA	1801000-01 DPH-MW6 0.10261	1.19e4	67.4	NO
3	3 13C3-PFHxS	1801000-01 DPH-MW6 0.10261	3.20e3	88.4	NO
4	4 13C8-PFOA	1801000-01 DPH-MW6 0.10261	1.30e4	81.1	NO
5	5 13C9-PFNA	1801000-01 DPH-MW6 0.10261	1.47e4	81.4	NO
6	6 13C4-PFOS	1801000-01 DPH-MW6 0.10261	3.23e3	86.5	NO
7	7 13C6-PFDA	1801000-01 DPH-MW6 0.10261	1.46e4	61.4	NO
8	8 13C7-PFUdA	1801000-01 DPH-MW6 0.10261	2.11e4	72.2	NO

Name: 180604M2_44, Date: 05-Jun-2018, Time: 02:31:14, ID: 1801002-01 Trip Blank 0.25726, Description: Trip Blank

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801002-01 Trip Blank 0.25726	8.87e3	71.4	NO
2	2 13C5-PFHxA	1801002-01 Trip Blank 0.25726	1.32e4	74.6	NO
3	3 13C3-PFHxS	1801002-01 Trip Blank 0.25726	3.03e3	83.6	NO
4	4 13C8-PFOA	1801002-01 Trip Blank 0.25726	1.36e4	85.4	NO
5	5 13C9-PFNA	1801002-01 Trip Blank 0.25726	1.52e4	84.5	NO
6	6 13C4-PFOS	1801002-01 Trip Blank 0.25726	3.14e3	84.0	NO
7	7 13C6-PFDA	1801002-01 Trip Blank 0.25726	1.45e4	61.2	NO
8	8 13C7-PFUdA	1801002-01 Trip Blank 0.25726	2.37e4	81.1	NO

Name: 180604M2_45, Date: 05-Jun-2018, Time: 02:41:38, ID: 1801002-02 P2-3 0.26152, Description: P2-3

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801002-02 P2-3 0.26152	1.01e4	81.7	NO
2	2 13C5-PFHxA	1801002-02 P2-3 0.26152	1.45e4	82.3	NO
3	3 13C3-PFHxS	1801002-02 P2-3 0.26152	3.57e3	98.7	NO
4	4 13C8-PFOA	1801002-02 P2-3 0.26152	1.58e4	98.8	NO
5	5 13C9-PFNA	1801002-02 P2-3 0.26152	1.81e4	100.7	NO
6	6 13C4-PFOS	1801002-02 P2-3 0.26152	3.31e3	88.8	NO
7	7 13C6-PFDA	1801002-02 P2-3 0.26152	2.09e4	88.3	NO
8	8 13C7-PFUdA	1801002-02 P2-3 0.26152	2.56e4	87.5	NO

Name: 180604M2_46, Date: 05-Jun-2018, Time: 02:52:09, ID: 1801002-03 Ditch-1 0.2637, Description: Ditch-1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801002-03 Ditch-1 0.2637	9.53e3	76.8	NO
2	2 13C5-PFHxA	1801002-03 Ditch-1 0.2637	1.37e4	77.6	NO
3	3 13C3-PFHxS	1801002-03 Ditch-1 0.2637	3.05e3	84.3	NO
4	4 13C8-PFOA	1801002-03 Ditch-1 0.2637	1.37e4	85.7	NO
5	5 13C9-PFNA	1801002-03 Ditch-1 0.2637	1.66e4	92.3	NO
6	6 13C4-PFOS	1801002-03 Ditch-1 0.2637	3.06e3	82.0	NO
7	7 13C6-PFDA	1801002-03 Ditch-1 0.2637	1.89e4	79.8	NO
8	8 13C7-PFUdA	1801002-03 Ditch-1 0.2637	2.33e4	79.6	NO

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Name: 180604M2_47, Date: 05-Jun-2018, Time: 03:02:38, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	13C3-PFHxS	IPA			NO
4	4	13C8-PFOA	IPA			NO
5	5	13C9-PFNA	IPA			NO
6	6	13C4-PFOS	IPA			NO
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180604M2_48, Date: 05-Jun-2018, Time: 03:13:03, ID: ST180604M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180604M2-12 PFC CS3 18E2907	1.40e4	112.5	NO
2	2	13C5-PFHxA	ST180604M2-12 PFC CS3 18E2907	2.03e4	114.9	NO
3	3	13C3-PFHxS	ST180604M2-12 PFC CS3 18E2907	4.31e3	119.2	NO
4	4	13C8-PFOA	ST180604M2-12 PFC CS3 18E2907	2.06e4	129.0	NO
5	5	13C9-PFNA	ST180604M2-12 PFC CS3 18E2907	2.31e4	128.4	NO
6	6	13C4-PFOS	ST180604M2-12 PFC CS3 18E2907	4.37e3	117.1	NO
7	7	13C6-PFDA	ST180604M2-12 PFC CS3 18E2907	2.48e4	104.5	NO
8	8	13C7-PFUdA	ST180604M2-12 PFC CS3 18E2907	3.18e4	108.8	NO

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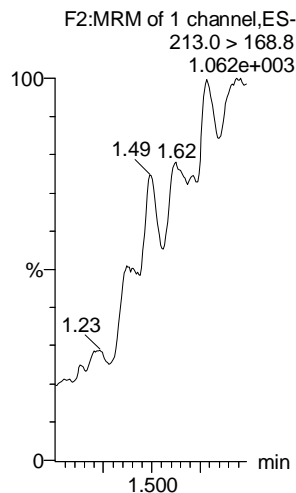
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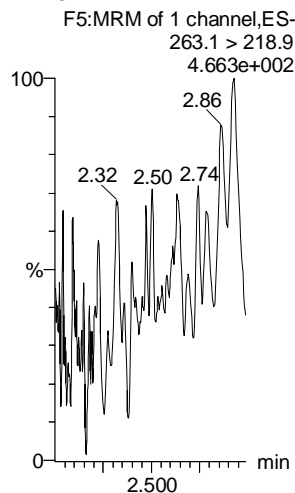
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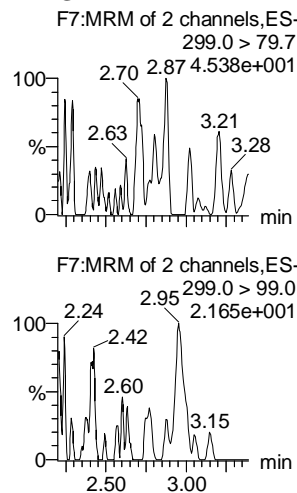
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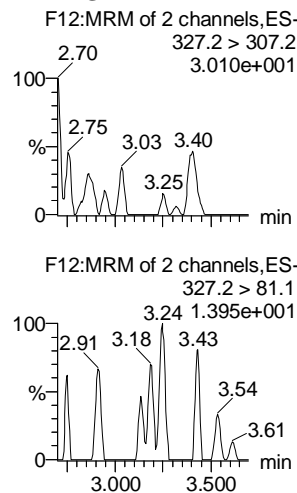
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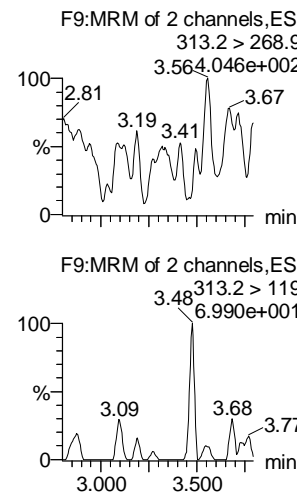
PFBS



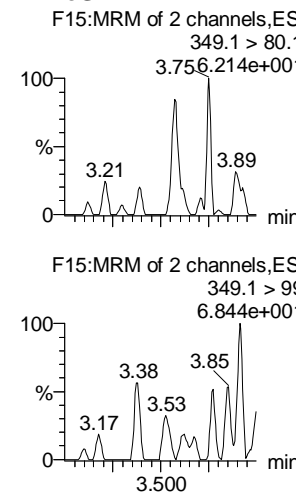
4:2 FTS



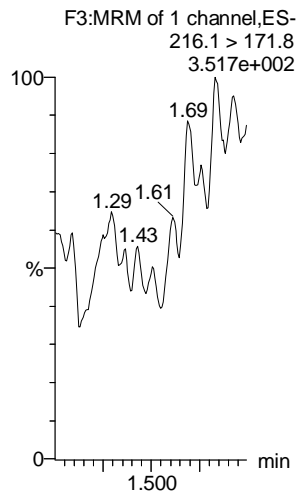
PFHxA



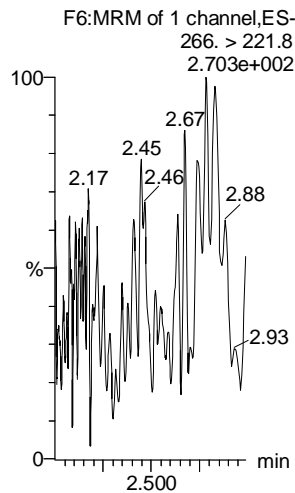
PFPeS



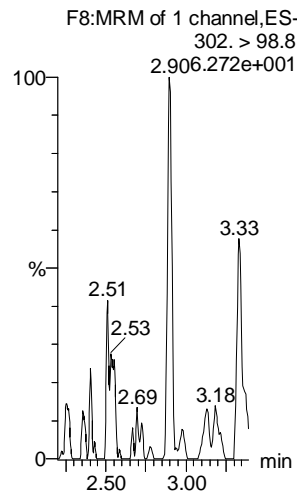
13C3-PFBA



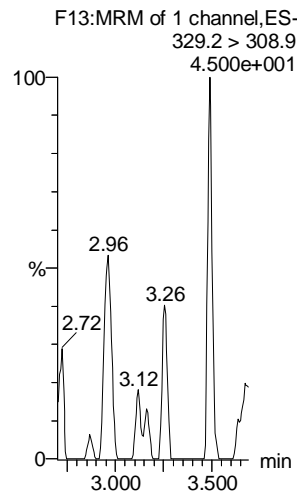
13C3-PFPeA



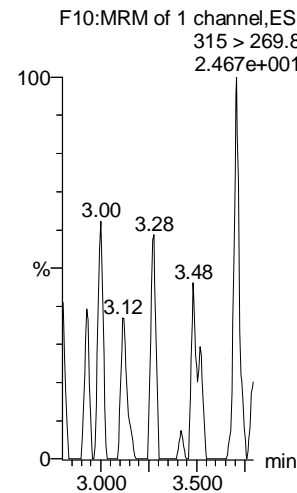
13C3-PFBS



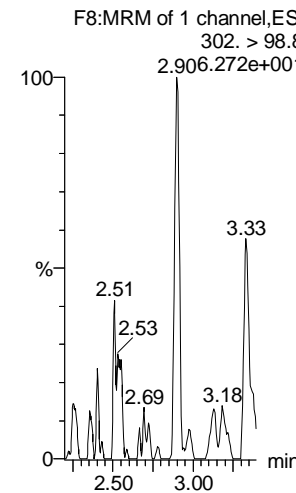
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



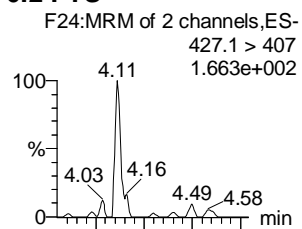
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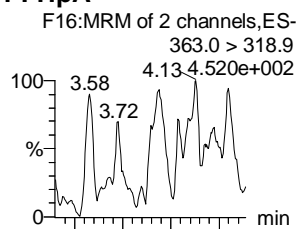
Printed: Tuesday, June 05, 2018 11:17:53 Pacific Daylight Time

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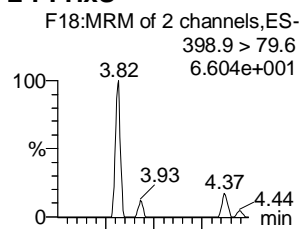
6:2 FTS



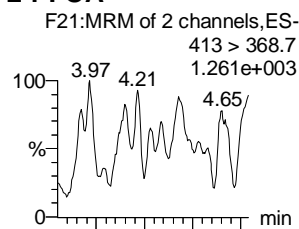
PFHpA



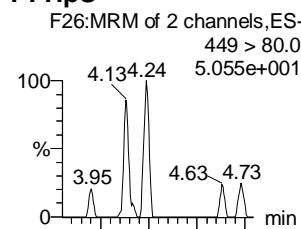
L-PFHxS



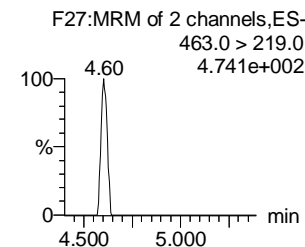
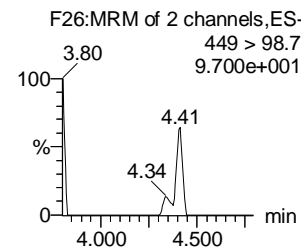
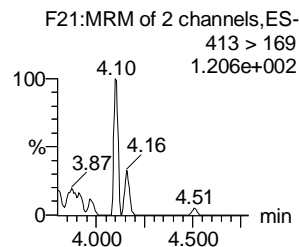
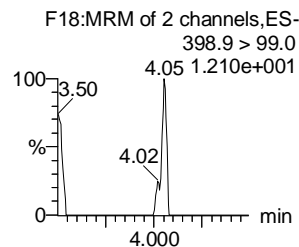
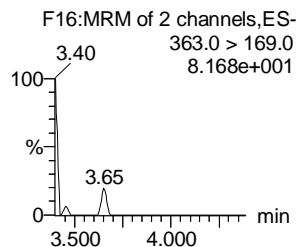
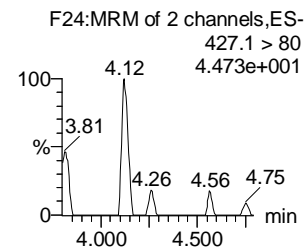
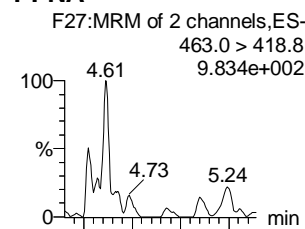
L-PFOA



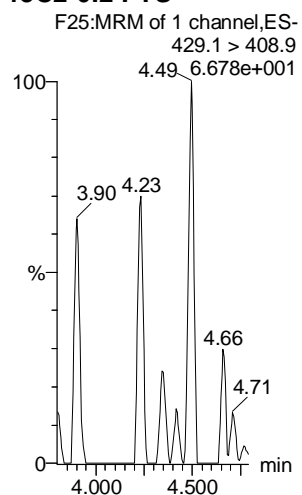
PFHpS



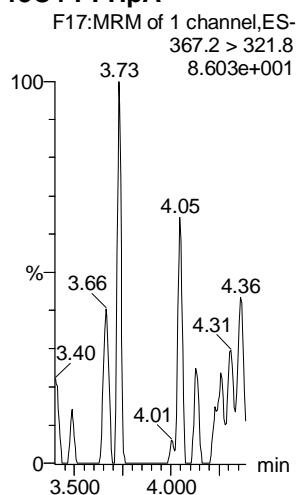
PFNA



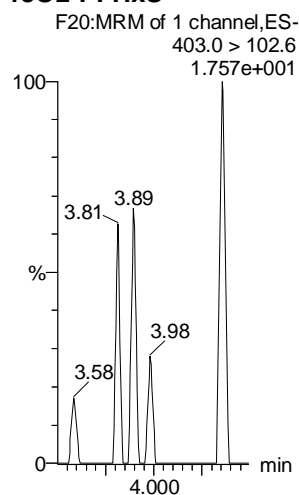
13C2-6:2 FTS



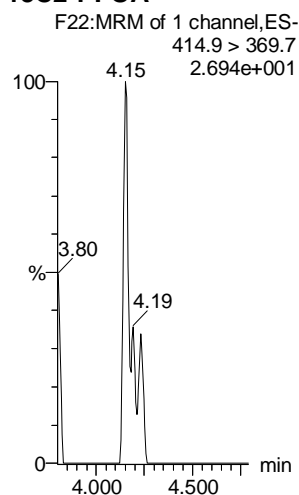
13C4-PFHpA



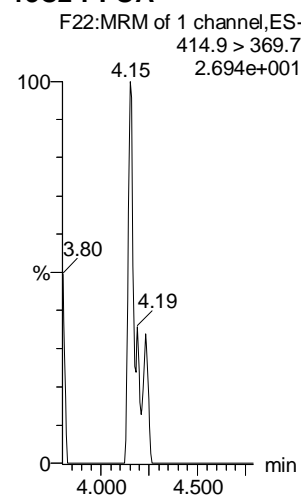
18O2-PFHxS



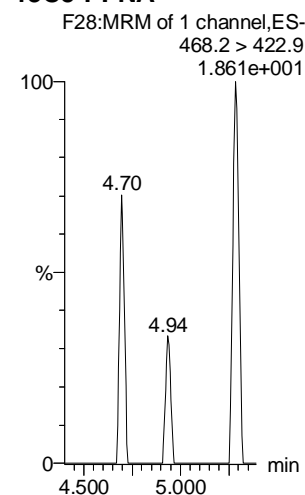
13C2-PFOA



13C2-PFOA



13C5-PFNA



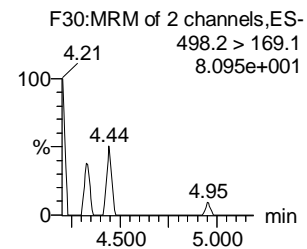
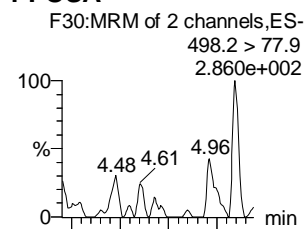
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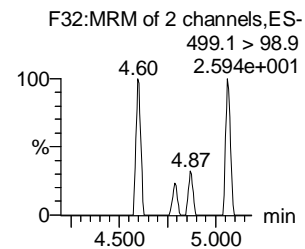
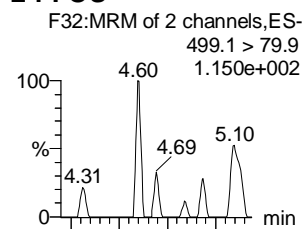
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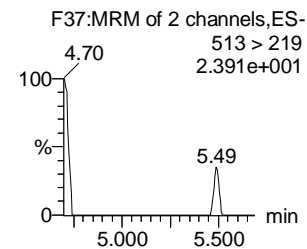
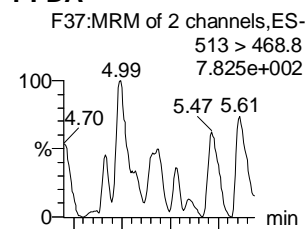
PFOSA



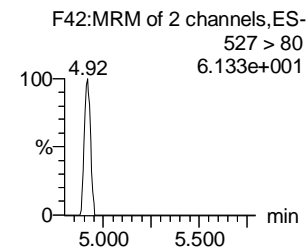
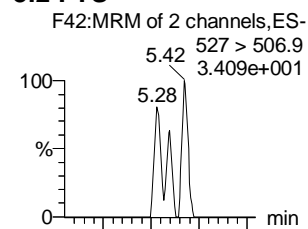
L-PFOS



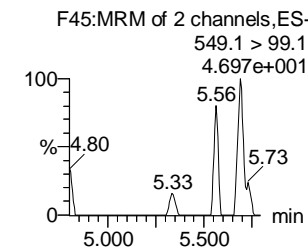
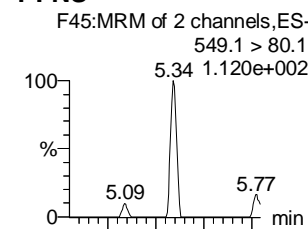
PFDA



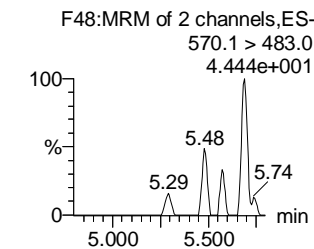
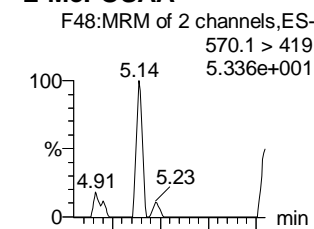
8:2 FTS



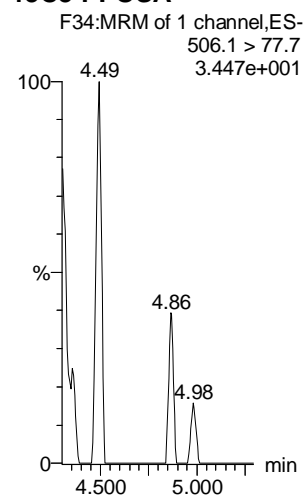
PFNS



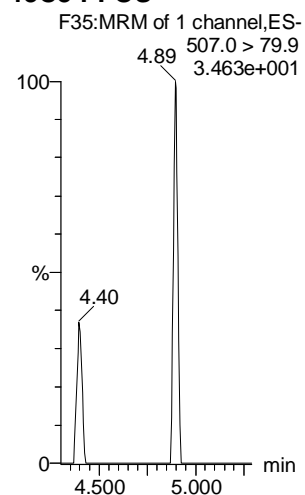
L-MeFOSAA



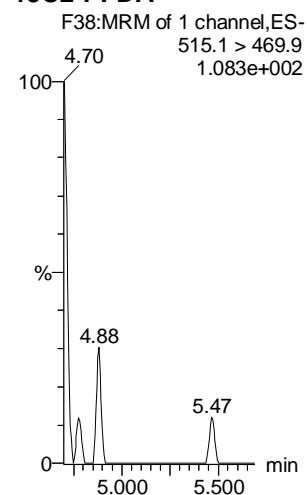
13C8-PFOSA



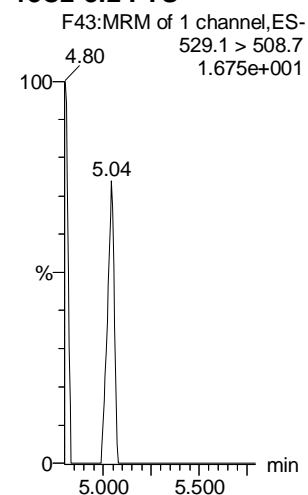
13C8-PFOS



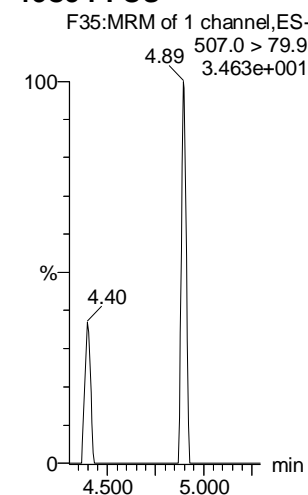
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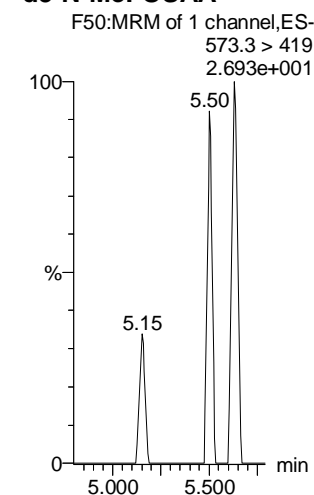
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



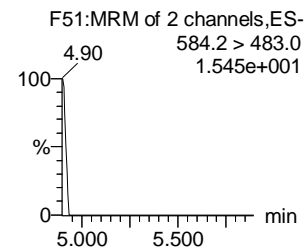
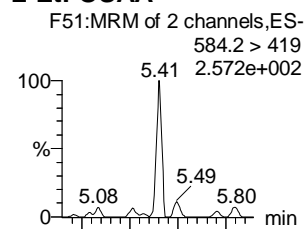
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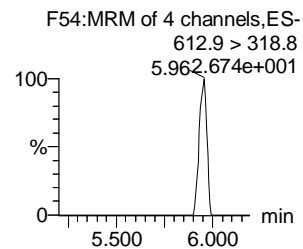
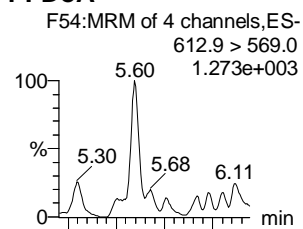
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Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

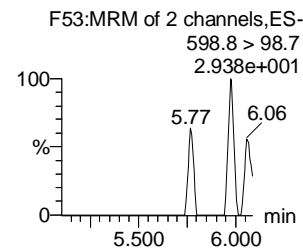
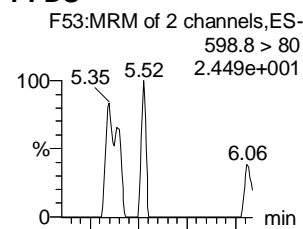
L-EtFOSAA



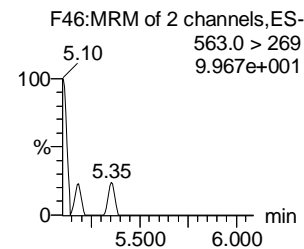
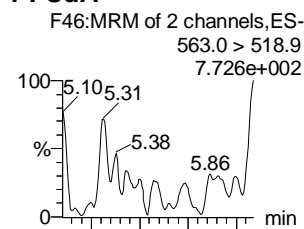
PFDoA



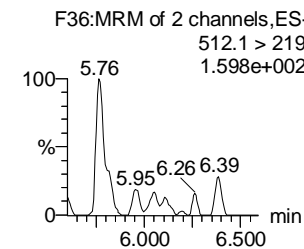
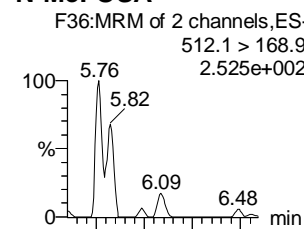
PFDS



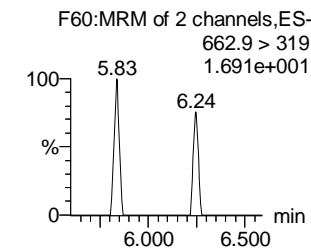
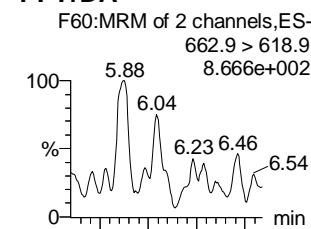
PFUdA



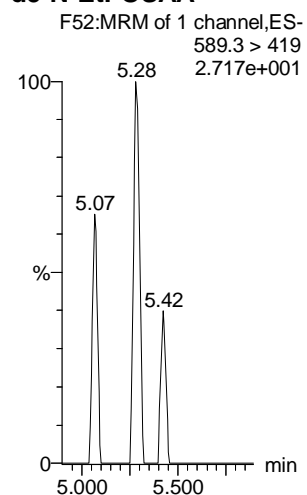
N-MeFOSA



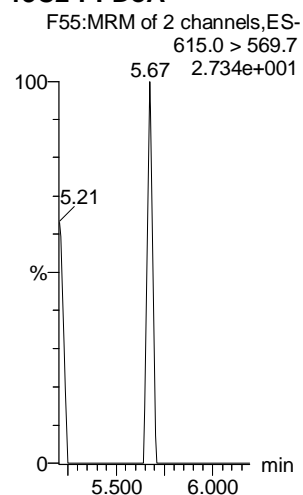
PFTrDA



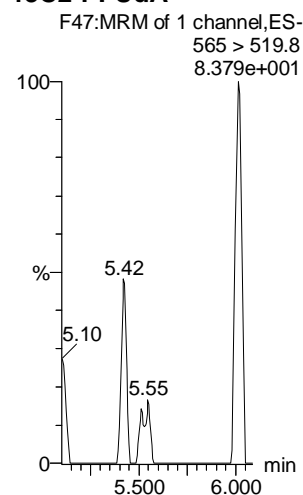
d5-N-EtFOSAA



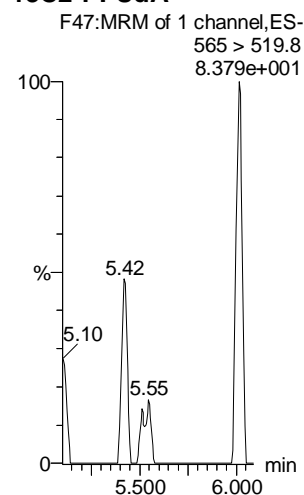
13C2-PFDoA



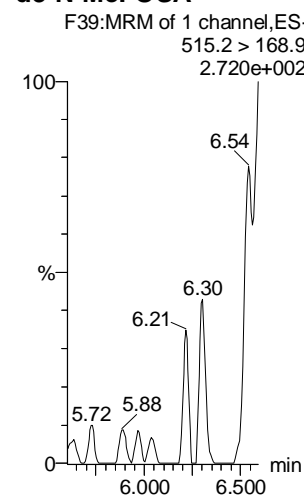
13C2-PFUdA



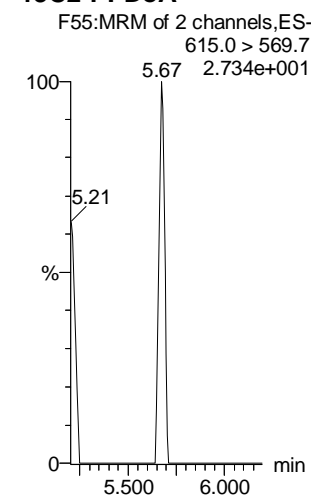
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



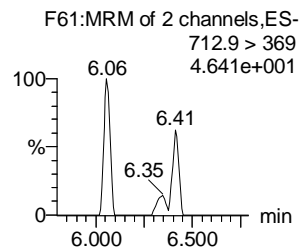
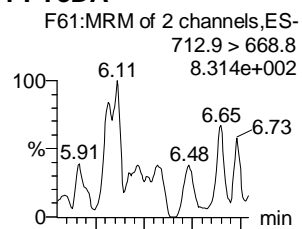
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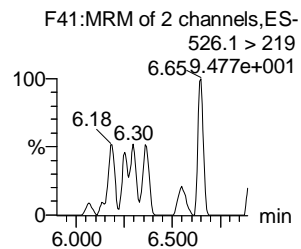
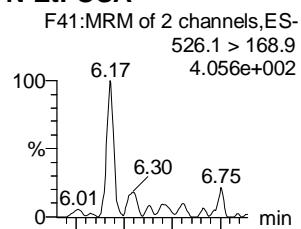
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Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

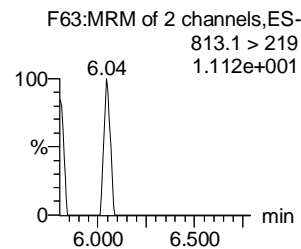
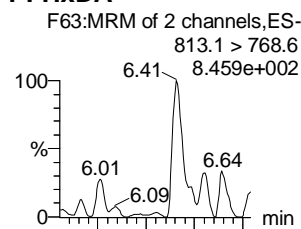
PFTeDA



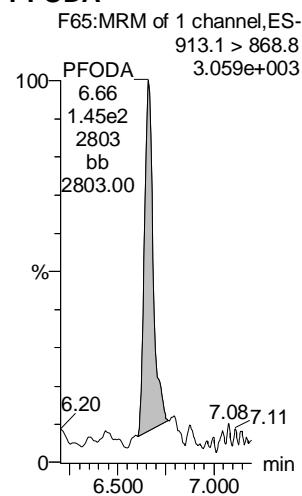
N-EtFOSA



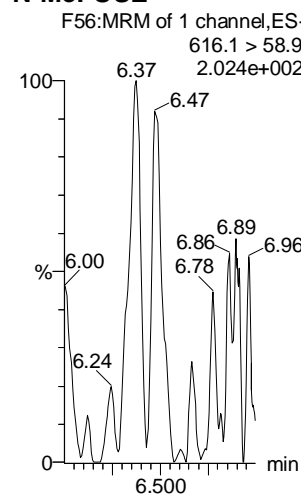
PFHxDA



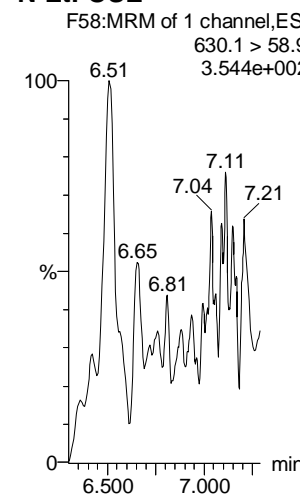
PFODA



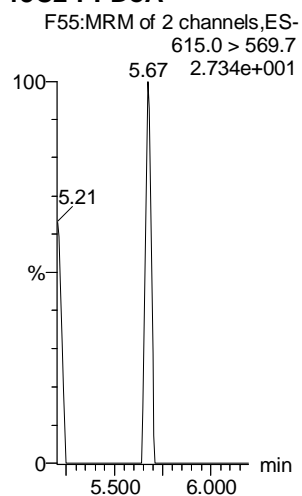
N-MeFOSE



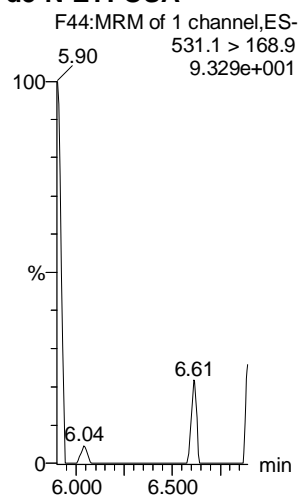
N-EtFOSE



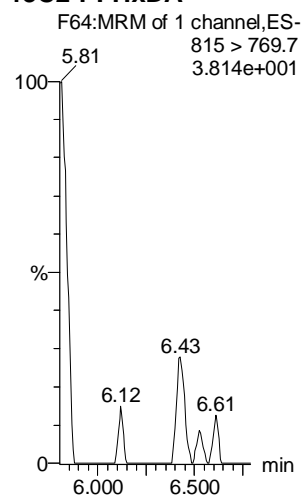
13C2-PFDa



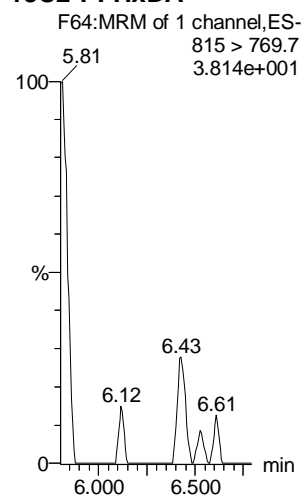
d5-N-ETFOSA



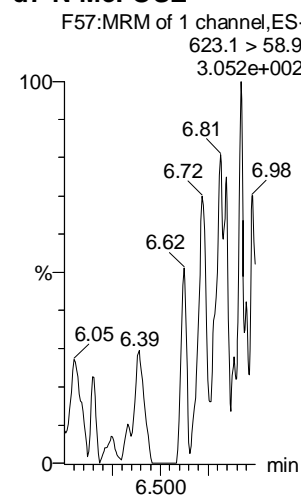
13C2-PFHxDA



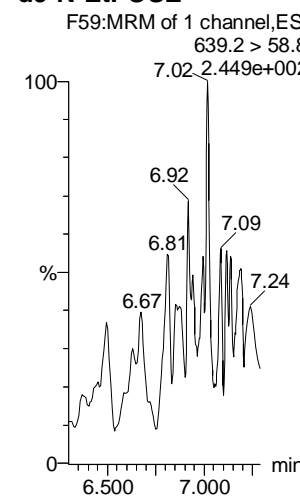
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



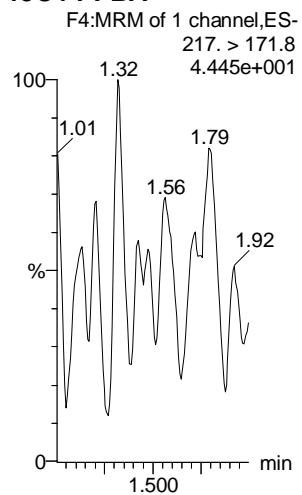
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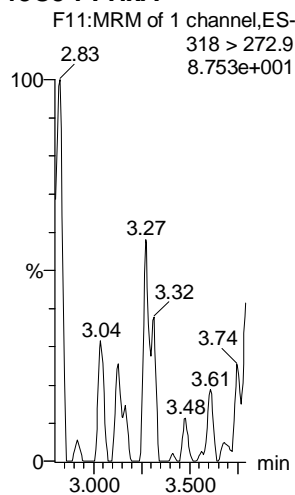
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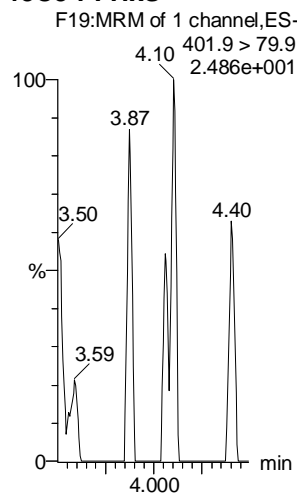
13C4-PFBA



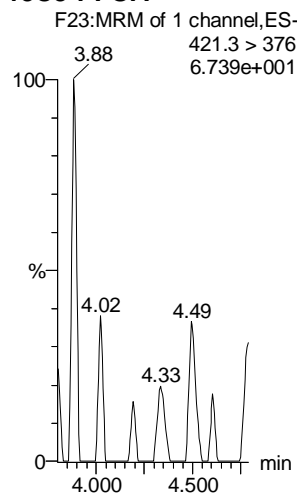
13C5-PFHxA



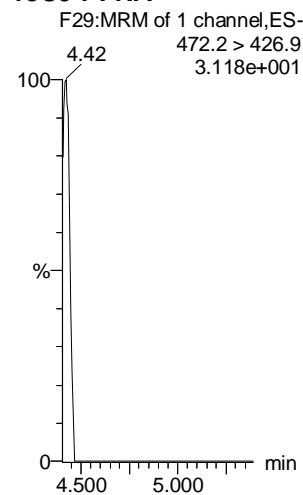
13C3-PFHxS



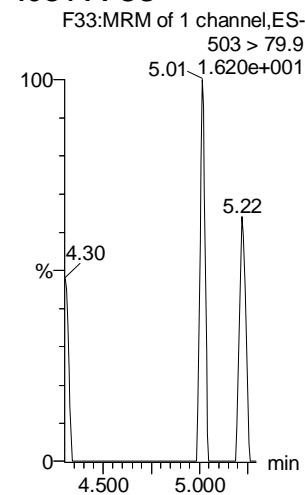
13C8-PFOA



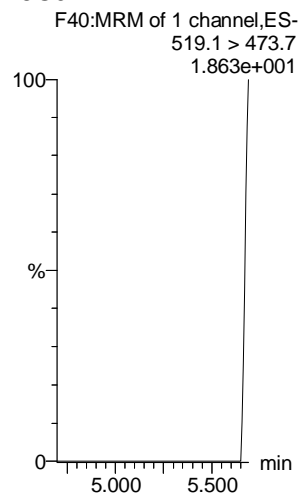
13C9-PFNA



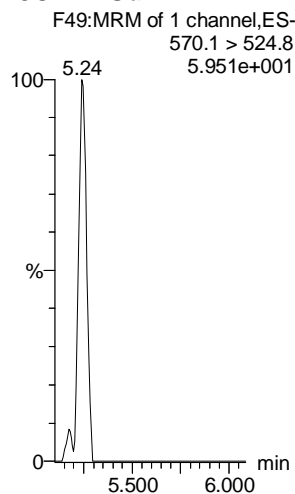
13C4-PFOS



13C6-PFDA



13C7-PFUdA



LC Calibration Standards Review Checklist Q4

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	Other
<u>ST180604M2-11</u>	<u>DM 6/15/18</u> <u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>NA</u>
	<u>-12</u> <u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>-13</u> <u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>-14</u> <u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>-15</u> <u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>-16</u> <u>LMH</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NA AR 6/15/18</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>LMH</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Full Mass Cal. Date: 5/30/18

- Run Log Present:
- # of Samples per Sequence Checked:
- Instrument Blank Saved:
- IIS Area Saved:
- Reviewed By: DM 6/15/18
Initials/Date

Comments:

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 11:35:33 Pacific Daylight Time

JAM 6/5/18

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	1.08e4	1.18e4		1.35	1.35	11.4	10.3	102.9	NO		
2	2 PFPeA	263.1 > 21...	1.40e4	1.73e4		2.31	2.31	10.2	9.90	99.0	NO		
3	3 PFBS	299.0 > 79.7	3.46e3	2.08e3		2.60	2.60	20.7	10.4	104.1	NO	2.610	NO
4	4 4:2 FTS	327.2>307.2	3.75e3	4.80e3		3.00	3.01	9.76	9.03	90.3	NO	1.709	NO
5	5 PFHxA	313.2 > 26...	1.86e4	5.99e3		3.09	3.09	15.6	9.74	97.4	NO	344.757	NO
6	6 PFPeS	349.1>80.1	3.06e3	2.08e3		3.29	3.29	18.4	10.2	101.7	NO	1.686	NO
7	7 PFHpA	363.0 > 31...	1.61e4	1.63e4		3.71	3.71	12.3	10.6	105.6	NO	19.745	NO
8	8 L-PFHxS	398.9 > 79.6	2.82e3	1.87e3		3.86	3.86	18.8	9.81	98.1	NO	1.980	NO
9	10 6:2 FTS	427.1 > 407	4.66e3	4.84e3		4.17	4.17	12.0	9.73	97.3	NO	3.328	NO
10	11 L-PFOA	413 > 368.7	2.02e4	2.48e4		4.25	4.23	10.2	11.3	112.7	NO	4.110	NO
11	13 PFHpS	449 > 80.0	3.31e3	2.48e4		4.33	4.34	1.67	10.6	105.7	NO	1.884	NO
12	14 PFNA	463.0 > 41...	2.41e4	2.32e4		4.66	4.66	13.0	10.1	101.4	NO	5.023	NO
13	15 PFOSA	498.2 > 77.9	3.31e3	4.56e3		4.73	4.73	9.08	9.56	95.6	NO	32.134	YES
14	16 L-PFOS	499.1 > 79.9	3.49e3	4.18e3		4.74	4.74	10.4	11.2	112.2	NO	1.903	NO
15	18 PFDA	513 > 468.8	2.23e4	2.90e4		5.03	5.03	9.61	9.32	93.2	NO	5.719	NO
16	19 8:2 FTS	527 > 506.9	4.48e3	3.98e3		5.00	5.00	14.0	9.78	97.8	NO	2.422	NO
17	20 PFNS	549.1>80.1	2.84e3	4.18e3		5.09	5.09	8.48	10.1	101.4	NO	1.770	NO
18	21 L-MeFOSAA	570.1 > 419	8.50e3	5.89e3		5.18	5.18	18.0	9.52	95.2	NO	12.674	NO

AE 6/5/18

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:35:44 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	23 L-EtFOSAA	584.2 > 419	6.66e3	7.49e3		5.37	5.34	11.1	9.74	97.4	NO	13.790	NO
2	25 PFUDa	563.0 > 51...	2.13e4	2.70e4		5.35	5.35	9.87	10.2	101.7	NO	9.720	NO
3	26 PFDS	598.8 > 80	3.53e3	2.70e4		5.40	5.40	1.63	11.3	113.1	NO	1.973	NO
4	27 PFDa	612.9 > 56...	2.61e4	2.73e4		5.63	5.63	12.0	10.7	107.1	NO	8.613	NO
5	28 N-MeFOSA	512.1 > 16...	6.67e3	1.90e4		5.82	5.82	52.6	50.1	100.2	NO	1.357	NO
6	29 PFTDA	662.9 > 61...	2.77e4	2.73e4		5.88	5.88	12.7	11.7	116.8	NO	25.690	NO
7	30 PFTeDA	712.9 > 66...	2.25e4	1.96e4		6.10	6.09	14.4	11.1	110.8	NO	11.047	NO
8	31 N-EtFOSA	526.1 > 16...	8.45e3	2.72e4		6.23	6.23	46.6	50.3	100.6	NO	1.430	NO
9	32 PFHxDA	813.1 > 76...	1.36e4	1.29e4		6.43	6.43	5.29	8.71	87.1	NO	26.320	NO
10	33 PFODA	913.1 > 86...	2.28e4	1.29e4		6.67	6.67	8.83	9.95	99.5	NO		
11	34 N-MeFOSE	616.1 > 58.9	4.69e3	1.47e4		6.37	6.37	47.8	48.0	96.0	NO		
12	35 N-EtFOSE	630.1 > 58.9	6.05e3	1.38e4		6.52	6.52	65.7	55.0	110.1	NO		
13	36 13C3-PFBA	216.1 > 17...	1.18e4	1.32e4	0.885	1.34	1.35	11.1	12.6	100.6	NO		
14	37 13C3-PFPeA	266. > 221.8	1.73e4	2.01e4	0.849	2.31	2.31	10.8	12.7	101.4	NO		
15	38 13C3-PFBS	302. > 98.8	2.08e3	2.01e4	0.104	2.60	2.60	1.30	12.5	100.1	NO		
16	39 13C2-4:2 FTS	329.2>308.9	4.80e3	2.01e4	0.248	3.01	3.00	2.99	12.1	96.6	NO		
17	40 13C2-PFHxA	315 > 269.8	5.99e3	2.01e4	0.729	3.09	3.09	3.73	5.12	102.4	NO		
18	41 13C4-PFHpA	367.2 > 32...	1.63e4	2.01e4	0.836	3.71	3.71	10.2	12.1	97.2	NO		
19	42 18O2-PFHxS	403.0 > 10...	1.87e3	4.07e3	0.443	3.86	3.86	5.75	13.0	103.9	NO		
20	43 13C2-6:2 FTS	429.1 > 40...	4.84e3	1.97e4	0.249	4.17	4.17	3.07	12.3	98.6	NO		
21	44 13C2-PFOA	414.9 > 36...	2.48e4	1.97e4	1.332	4.23	4.23	15.7	11.8	94.4	NO		
22	45 13C5-PFNA	468.2 > 42...	2.32e4	2.37e4	0.951	4.66	4.66	12.2	12.8	102.7	NO		
23	46 13C8-PFOSA	506.1 > 77.7	4.56e3	2.82e4	0.140	4.73	4.73	2.02	14.5	116.0	NO		
24	47 13C8-PFOS	507.0 > 79.9	4.18e3	4.43e3	1.060	4.74	4.74	11.8	11.1	89.0	NO		
25	48 13C2-PFDA	515.1 > 46...	2.90e4	2.47e4	1.130	5.03	5.03	14.7	13.0	103.8	NO		
26	49 13C2-8:2 FTS	529.1 > 50...	3.98e3	2.01e4	0.217	5.00	5.00	2.48	11.4	91.4	NO		
27	50 d3-N-MeFOSAA	573.3 > 419	5.89e3	2.82e4	0.184	5.18	5.18	2.61	14.2	113.9	NO		
28	51 d5-N-EtFOSAA	589.3 > 419	7.49e3	2.82e4	0.223	5.34	5.34	3.32	14.9	119.1	NO		
29	52 13C2-PFUdA	565 > 519.8	2.70e4	2.82e4	0.936	5.35	5.35	12.0	12.8	102.4	NO		
30	53 13C2-PFDa	615.0 > 56...	2.73e4	2.47e4	1.168	5.63	5.63	13.8	11.8	94.5	NO		
31	54 d3-N-MeFOSA	515.2 > 16...	1.90e4	2.82e4	0.051	5.85	5.85	8.43	165	109.8	NO		
32	55 13C2-PFTeDA	714.8 > 66...	1.96e4	2.82e4	0.706	6.09	6.09	8.67	12.3	98.3	NO		

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:35:44 Pacific Daylight Time

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	56	d5-N-ETFOSA	531.1 > 16...	2.72e4	2.82e4	0.071	6.24	6.24	12.1	169	112.8	NO	
34	57	13C2-PFHxDA	815 > 769.7	1.29e4	2.82e4	1.079	6.43	6.43	5.72	5.30	106.0	NO	
35	58	d7-N-MeFOSE	623.1 > 58.9	1.47e4	2.82e4	0.041	6.37	6.36	6.53	158	105.5	NO	
36	59	d9-N-EtFOSE	639.2 > 58.8	1.38e4	2.82e4	0.038	6.51	6.51	6.12	160	106.5	NO	
37	60	13C4-PFBA	217. > 171.8	1.32e4	1.32e4	1.000	1.35	1.35	12.5	12.5	100.0	NO	
38	61	13C5-PFHxA	318 > 272.9	2.01e4	2.01e4	1.000	3.09	3.09	12.5	12.5	100.0	NO	
39	62	13C3-PFHxS	401.9 > 79.9	4.07e3	4.07e3	1.000	3.86	3.86	12.5	12.5	100.0	NO	
40	63	13C8-PFOA	421.3 > 376	1.97e4	1.97e4	1.000	4.23	4.23	12.5	12.5	100.0	NO	
41	64	13C9-PFNA	472.2 > 42...	2.37e4	2.37e4	1.000	4.66	4.66	12.5	12.5	100.0	NO	
42	65	13C4-PFOS	503 > 79.9	4.43e3	4.43e3	1.000	4.74	4.74	12.5	12.5	100.0	NO	
43	66	13C6-PFDA	519.1 > 47...	2.47e4	2.47e4	1.000	5.03	5.03	12.5	12.5	100.0	NO	
44	67	13C7-PFUdA	570.1 > 52...	2.82e4	2.82e4	1.000	5.35	5.35	12.5	12.5	100.0	NO	

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 13:44:58 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 13:45:07 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180604M2_13	ICV180604M2-1 PFC 537 ICV 18E2901	04-Jun-18	21:06:49
2	2 180604M2_14	IPA	04-Jun-18	21:17:19
3	3 180604M2_15	1800982-05 REEPDW554 0.11977	04-Jun-18	21:27:44
4	4 180604M2_16	1800982-06 REEPDW1043 0.12141	04-Jun-18	21:38:15
5	5 180604M2_17	B8E0141-BS1 OPR 0.125	04-Jun-18	21:48:40
6	6 180604M2_18	B8E0224-BSD1 LCSD 0.125	04-Jun-18	21:59:10
7	7 180604M2_19	B8E0224-BS1 OPR 0.125	04-Jun-18	22:09:36
8	8 180604M2_20	B8E0224-BLK1 Method Blank 0.125	04-Jun-18	22:20:06
9	9 180604M2_21	1800952-13RE1 REEPDW488 0.11053	04-Jun-18	22:30:30
10	10 180604M2_22	B8E0250-BS1 OPR 0.125	04-Jun-18	22:41:01
11	11 180604M2_23	B8E0250-BSD1 LCSD 0.125	04-Jun-18	22:51:31
12	12 180604M2_24	B8E0250-BLK1 Method Blank 0.125	04-Jun-18	23:01:55
13	13 180604M2_25	1801003-01 GN18057PA 0.11594	04-Jun-18	23:12:26
14	14 180604M2_26	1801003-02 GN18058PA 0.11833	04-Jun-18	23:22:51
15	15 180604M2_27	1801024-01 A1-MW-51-SA1 0.11961	04-Jun-18	23:33:21
16	16 180604M2_28	1801024-02 A1-MW-50-SA1 0.12082	04-Jun-18	23:43:47
17	17 180604M2_29	1801024-03 A1-MW-49-SA1 0.12317	04-Jun-18	23:54:17
18	18 180604M2_30	1801024-04 A1-MW-05-SA1 0.11875	05-Jun-18	00:04:41
19	19 180604M2_31	1801024-05 A1-MW-04-SA1 0.12315	05-Jun-18	00:15:11
20	20 180604M2_32	1801024-06 FRB-20180522 0.12068	05-Jun-18	00:25:41
21	21 180604M2_33	IPA	05-Jun-18	00:36:06
22	22 180604M2_34	ST180604M2-11 PFC CS3 18E2907	05-Jun-18	00:46:37
23	23 180604M2_35	1801071-01 A1-MW-27-SA1 0.11705	05-Jun-18	00:57:02
24	24 180604M2_36	1801071-02 A1-MW-55-SA1 0.11428	05-Jun-18	01:07:32
25	25 180604M2_37	1801071-03 A1-MW-23-SA1 0.11436	05-Jun-18	01:17:57
26	26 180604M2_38	1801071-04 A1-MW-07-SA1 0.11908	05-Jun-18	01:28:28
27	27 180604M2_39	1801071-05 FRB-20180530 0.49878	05-Jun-18	01:38:53
28	28 180604M2_40	1800930-03RE1 WT1805091300GSC 0...	05-Jun-18	01:49:23
29	29 180604M2_41	1800930-12RE1 WT1805100850GSC 0...	05-Jun-18	01:59:48
30	30 180604M2_42	1801021-01 Milk 5	05-Jun-18	02:10:18
31	31 180604M2_43	1801000-01 DPH-MW6 0.10261	05-Jun-18	02:20:43

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 13:44:58 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 13:45:07 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
32	32 180604M2_44	1801002-01 Trip Blank 0.25726	05-Jun-18	02:31:14
33	33 180604M2_45	1801002-02 P2-3 0.26152	05-Jun-18	02:41:38
34	34 180604M2_46	1801002-03 Ditch-1 0.2637	05-Jun-18	02:52:09
35	35 180604M2_47	IPA	05-Jun-18	03:02:38
36	36 180604M2_48	ST180604M2-12 PFC CS3 18E2907	05-Jun-18	03:13:03
37	37 180604M2_49	B8E0226-BS1 OPR 1	05-Jun-18	03:23:33
38	38 180604M2_50	B8E0226-BLK1 Method Blank 1	05-Jun-18	03:33:58
39	39 180604M2_51	1800821-02RE1 S-SED-BB2 1.6	05-Jun-18	03:44:28
40	40 180604M2_52	1800821-03RE1 S-SED-5 2.76	05-Jun-18	03:54:53
41	41 180604M2_53	1800821-04RE1 S-SED-5-DUP 2.91	05-Jun-18	04:05:24
42	42 180604M2_54	1800821-05RE1 S-SED-110 1.51	05-Jun-18	04:15:48
43	43 180604M2_55	1800821-06RE1 S-SED-111 2.01	05-Jun-18	04:26:18
44	44 180604M2_56	1800821-07RE1 S-SED-LR 1.44	05-Jun-18	04:36:43
45	45 180604M2_57	1800821-08RE1 S-SED-BB1 1.19	05-Jun-18	04:47:14
46	46 180604M2_58	1800821-09RE1 S-SED-4 2.68	05-Jun-18	04:57:38
47	47 180604M2_59	B8E0104-BS1 OPR 0.125	05-Jun-18	05:08:09
48	48 180604M2_60	B8E0104-BLK1 Method Blank 0.125	05-Jun-18	05:18:34
49	49 180604M2_61	1800917-01 NB-3 0.12018	05-Jun-18	05:29:04
50	50 180604M2_62	1800917-02 NB-2 0.11907	05-Jun-18	05:39:29
51	51 180604M2_63	IPA	05-Jun-18	05:49:51
52	52 180604M2_64	ST180604M2-13 PFC CS3 18E2907	05-Jun-18	06:00:21
53	53 180604M2_65	1800917-03 NB-4 0.11583	05-Jun-18	06:10:52
54	54 180604M2_66	1800917-04 NB-5 0.11709	05-Jun-18	06:21:16
55	55 180604M2_67	1800917-05 FIELD DUP 0.11588	05-Jun-18	06:31:47
56	56 180604M2_68	1800917-06 NB-1 0.11536	05-Jun-18	06:42:17
57	57 180604M2_69	1800920-01 MW-DEP-1 0.11504	05-Jun-18	06:52:41
58	58 180604M2_70	1800920-02 MW-DEP-2 0.11632	05-Jun-18	07:03:11
59	59 180604M2_71	1800920-03 Field Reagent blank 0.11615	05-Jun-18	07:13:36
60	60 180604M2_72	B8E0129-BS1 OPR 0.125	05-Jun-18	07:24:06
61	61 180604M2_73	B8E0129-BLK1 Method Blank 0.125	05-Jun-18	07:34:36
62	62 180604M2_74	1800919-01 MW-1A 0.02004	05-Jun-18	07:45:01
63	63 180604M2_75	1800919-02 MW-1B 0.01985	05-Jun-18	07:55:32
64	64 180604M2_76	1800919-03 MW-8A 0.01961	05-Jun-18	08:05:56
65	65 180604M2_77	1800919-04 MW-8B 0.01952	05-Jun-18	08:16:27

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 13:44:58 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 13:45:07 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
66	66 180604M2_78	IPA	05-Jun-18	08:26:52
67	67 180604M2_79	ST180604M2-14 PFC CS3 18E2907	05-Jun-18	08:37:22
68	68 180604M2_80	1800919-05 MW-8C 0.01981	05-Jun-18	08:47:47
69	69 180604M2_81	1800919-06 Field Reagent Blank 0.12527	05-Jun-18	08:58:18
70	70 180604M2_82	B8E0135-BS1 OPR 1	05-Jun-18	09:08:41
71	71 180604M2_83	B8E0135-BLK1 Method Blank 1	05-Jun-18	09:19:12
72	72 180604M2_84	1800945-01 SS-1 1.25	05-Jun-18	09:29:36
73	73 180604M2_85	1800945-02 SS-2 1.16	05-Jun-18	09:40:07
74	74 180604M2_86	1800945-03 SS-3 1.46	05-Jun-18	09:50:32
75	75 180604M2_87	1800945-04 SS-4 1.24	05-Jun-18	10:01:03
76	76 180604M2_88	1800945-05 SS-5 1.6	05-Jun-18	10:11:28
77	77 180604M2_89	1800945-06 SS-6 1.25	05-Jun-18	10:21:58
78	78 180604M2_90	1800945-07 SS-7 1.32	05-Jun-18	10:32:23
79	79 180604M2_91	IPA	05-Jun-18	10:42:53
80	80 180604M2_92	ST180604M2-15 PFC CS3 18E2907	05-Jun-18	10:53:18
81	81 180604M2_93	1800945-08 SS-8 1.15	05-Jun-18	11:03:48
82	82 180604M2_94	1800945-09 SS-9 1.37	05-Jun-18	11:14:14
83	83 180604M2_95	1800945-10 SS-10 1.91	05-Jun-18	11:24:44
84	84 180604M2_96	1800945-11 SS-11 1.55	05-Jun-18	11:35:09
85	85 180604M2_97	1800945-12 SS-12 1.18	05-Jun-18	11:45:39
86	86 180604M2_98	1800945-13 SS-20 1.48	05-Jun-18	11:56:04
87	87 180604M2_99	IPA	05-Jun-18	12:06:34
88	88 180604M2_100	ST180604M2-16 PFC CS3 18E2907	05-Jun-18	12:16:59

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:35:44 Pacific Daylight Time

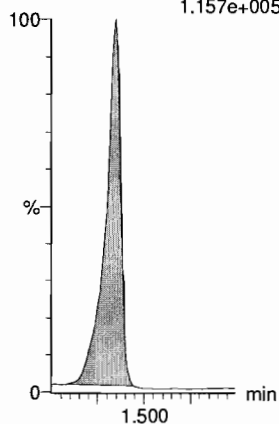
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Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

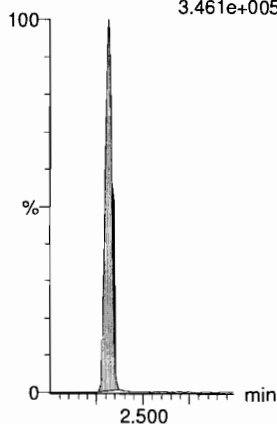
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
1.157e+005



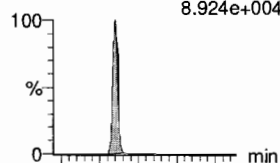
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
3.461e+005

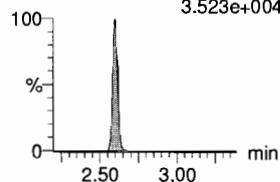


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
8.924e+004

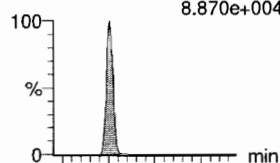


F7:MRM of 2 channels,ES-
299.0 > 99.0
3.523e+004

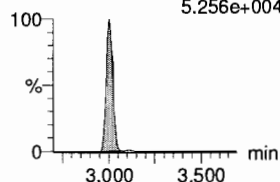


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
8.870e+004

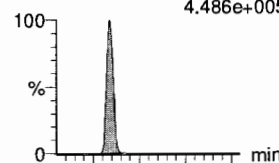


F12:MRM of 2 channels,ES-
327.2 > 81.1
5.256e+004

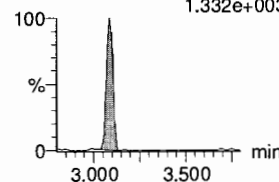


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
4.486e+005

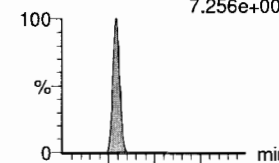


F9:MRM of 2 channels,ES-
313.2 > 119
1.332e+003

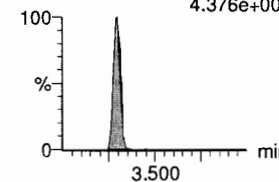


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
7.256e+004

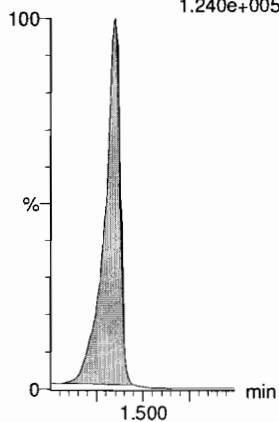


F15:MRM of 2 channels,ES-
349.1 > 99
4.376e+004



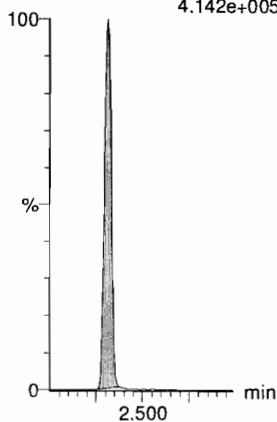
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.240e+005



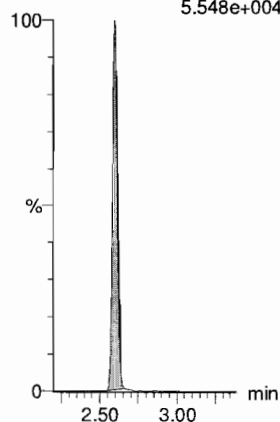
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
4.142e+005



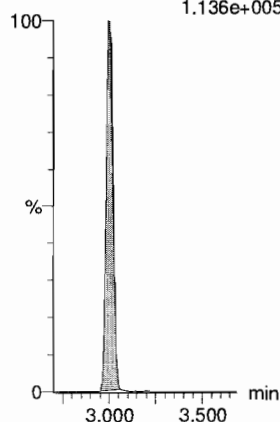
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.548e+004



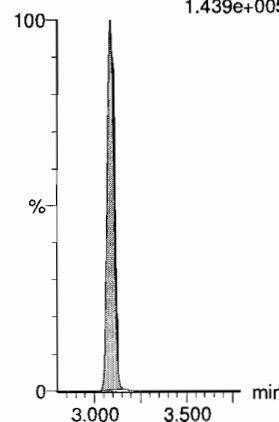
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
1.136e+005



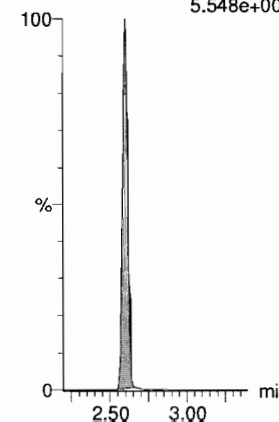
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.439e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.548e+004



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

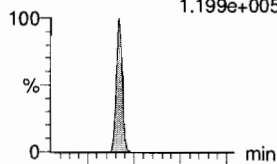
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Printed: Tuesday, June 05, 2018 11:35:44 Pacific Daylight Time

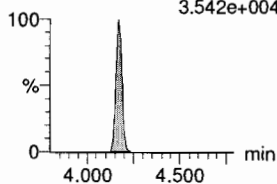
Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
1.199e+005

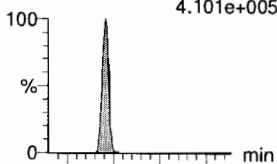


F24:MRM of 2 channels,ES-
427.1 > 80
3.542e+004

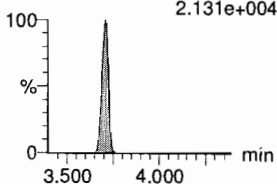


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
4.101e+005

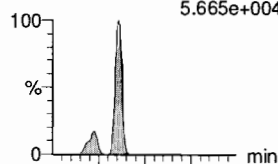


F16:MRM of 2 channels,ES-
363.0 > 169.0
2.131e+004

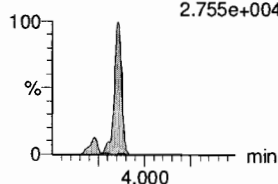


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
5.665e+004

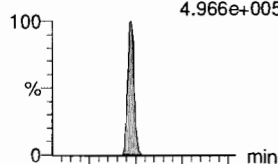


F18:MRM of 2 channels,ES-
398.9 > 99.0
2.755e+004

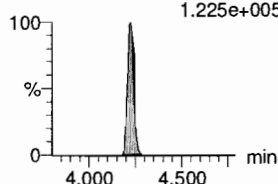


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
4.966e+005

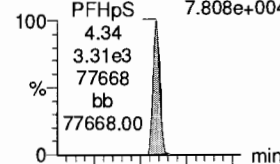


F21:MRM of 2 channels,ES-
413 > 169
1.225e+005

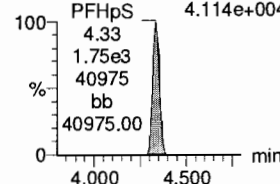


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
7.808e+004

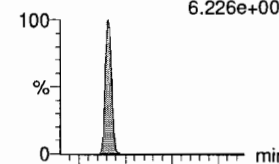


F26:MRM of 2 channels,ES-
449 > 98.7
4.114e+004

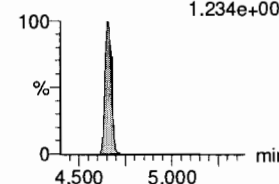


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
6.226e+005

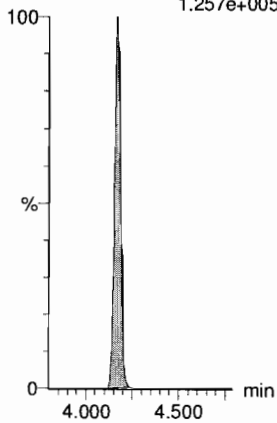


F27:MRM of 2 channels,ES-
463.0 > 219.0
1.234e+005



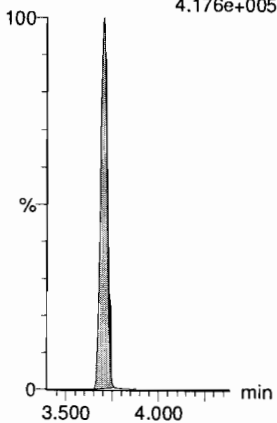
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
1.257e+005



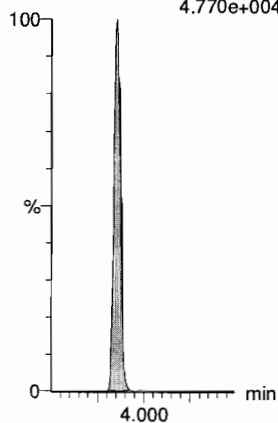
13C4-PFHpA

F17:MRM of 1 channel,ES-
367.2 > 321.8
4.176e+005



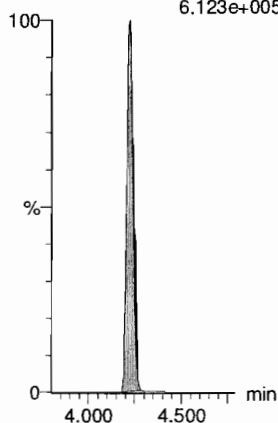
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
4.770e+004



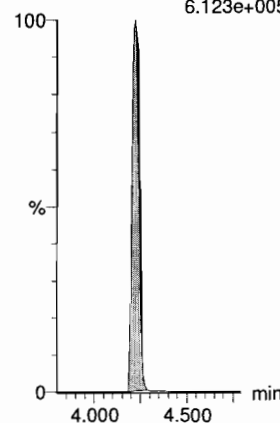
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
6.123e+005



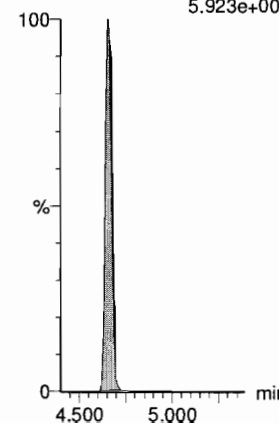
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
6.123e+005



13C5-PFNA

F28:MRM of 1 channel,ES-
468.2 > 422.9
5.923e+005



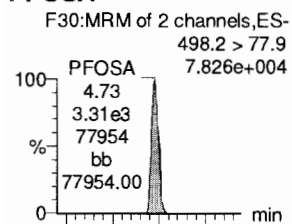
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Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time

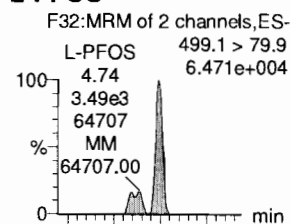
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Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

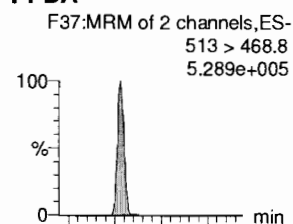
PFOSA



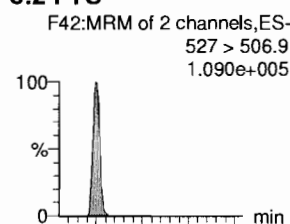
L-PFOS



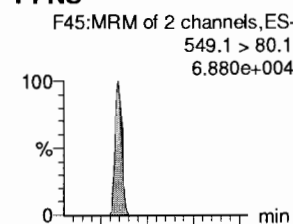
PFDA



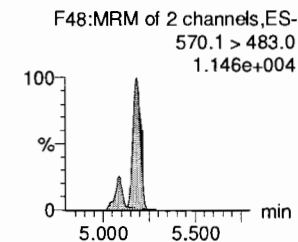
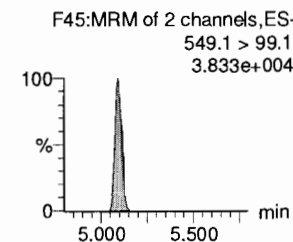
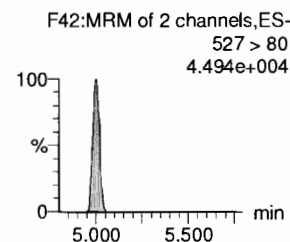
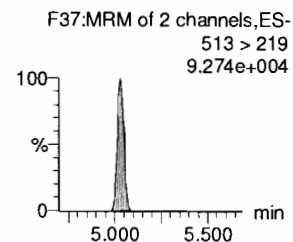
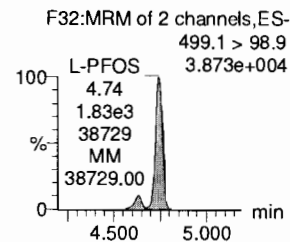
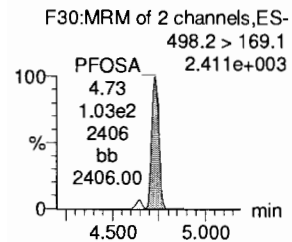
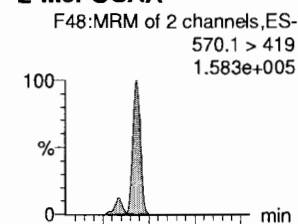
8:2 FTS



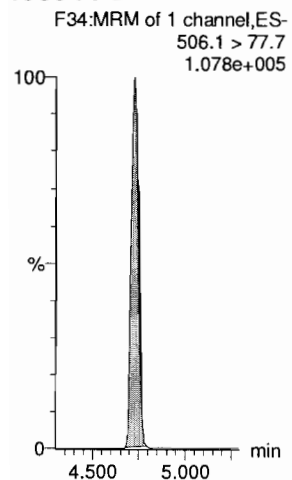
PFNS



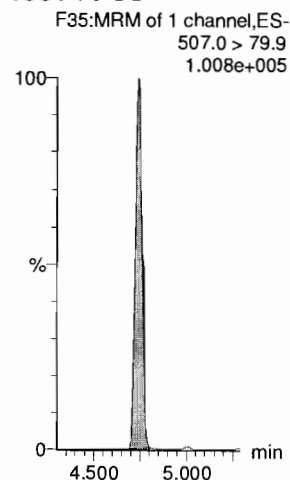
L-MeFOSAA



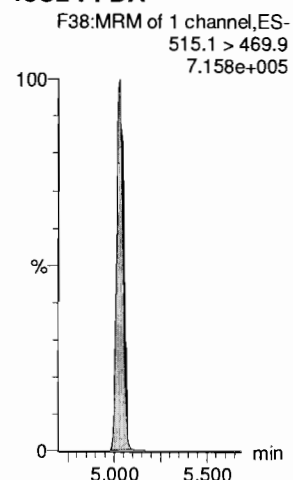
13C8-PFOSA



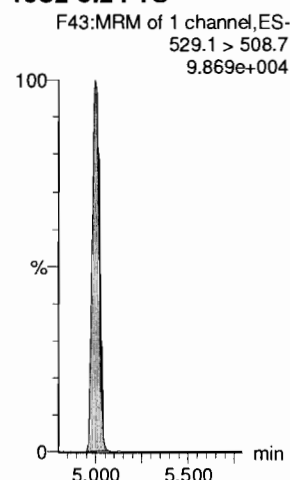
13C8-PFOS



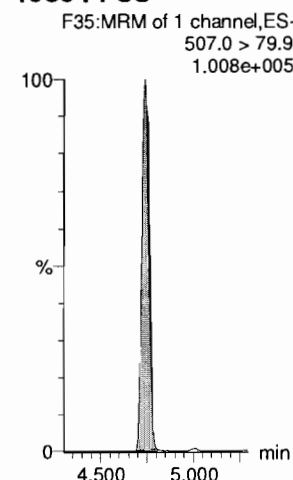
13C2-PFDA



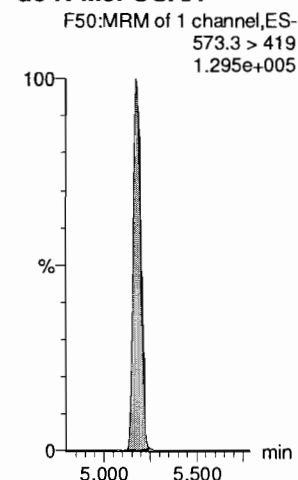
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



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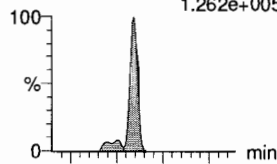
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Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

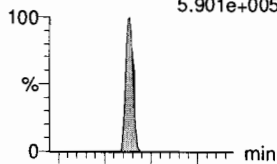
L-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
1.262e+005



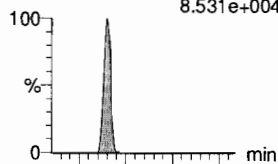
PFDoA

F54:MRM of 4 channels,ES-
612.9 > 569.0
5.901e+005



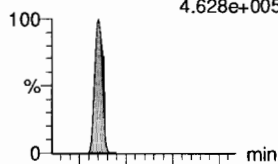
PFDS

F53:MRM of 2 channels,ES-
598.8 > 80
8.531e+004



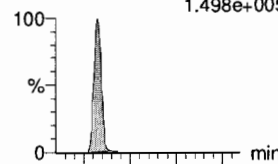
PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
4.628e+005



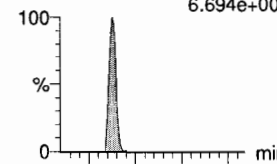
N-MeFOSA

F36:MRM of 2 channels,ES-
512.1 > 168.9
1.498e+005

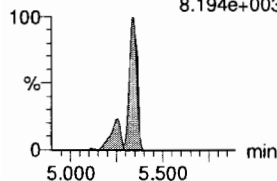


PFTTrDA

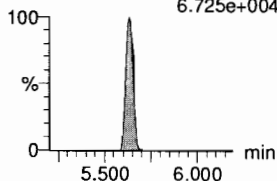
F60:MRM of 2 channels,ES-
662.9 > 618.9
6.694e+005



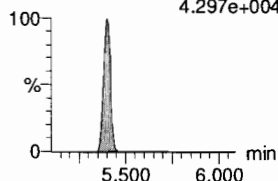
F51:MRM of 2 channels,ES-
584.2 > 483.0
8.194e+003



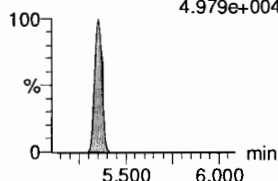
F54:MRM of 4 channels,ES-
612.9 > 318.8
6.725e+004



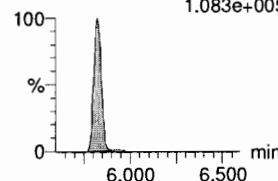
F53:MRM of 2 channels,ES-
598.8 > 98.7
4.297e+004



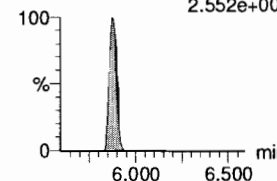
F46:MRM of 2 channels,ES-
563.0 > 269
4.979e+004



F36:MRM of 2 channels,ES-
512.1 > 219
1.083e+005

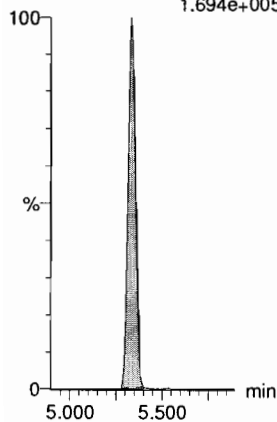


F60:MRM of 2 channels,ES-
662.9 > 319
2.552e+004



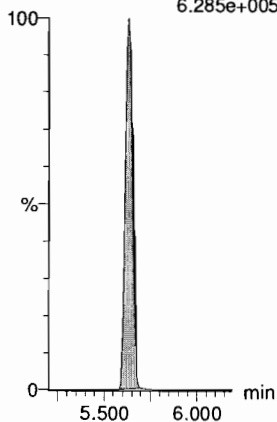
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
1.694e+005



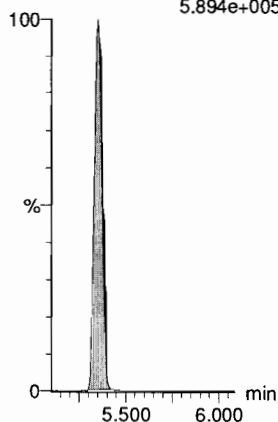
13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.285e+005



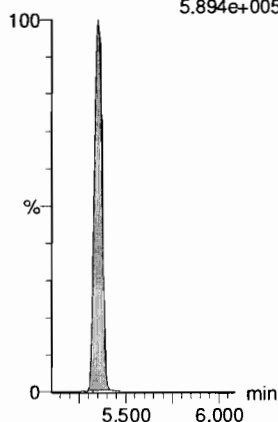
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
5.894e+005



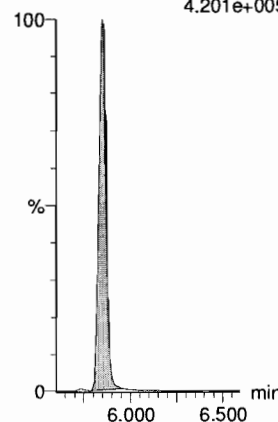
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
5.894e+005



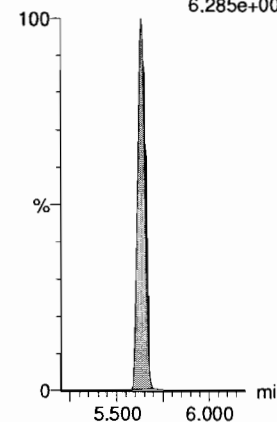
d3-N-MeFOSA

F39:MRM of 1 channel,ES-
515.2 > 168.9
4.201e+005



13C2-PFDoA

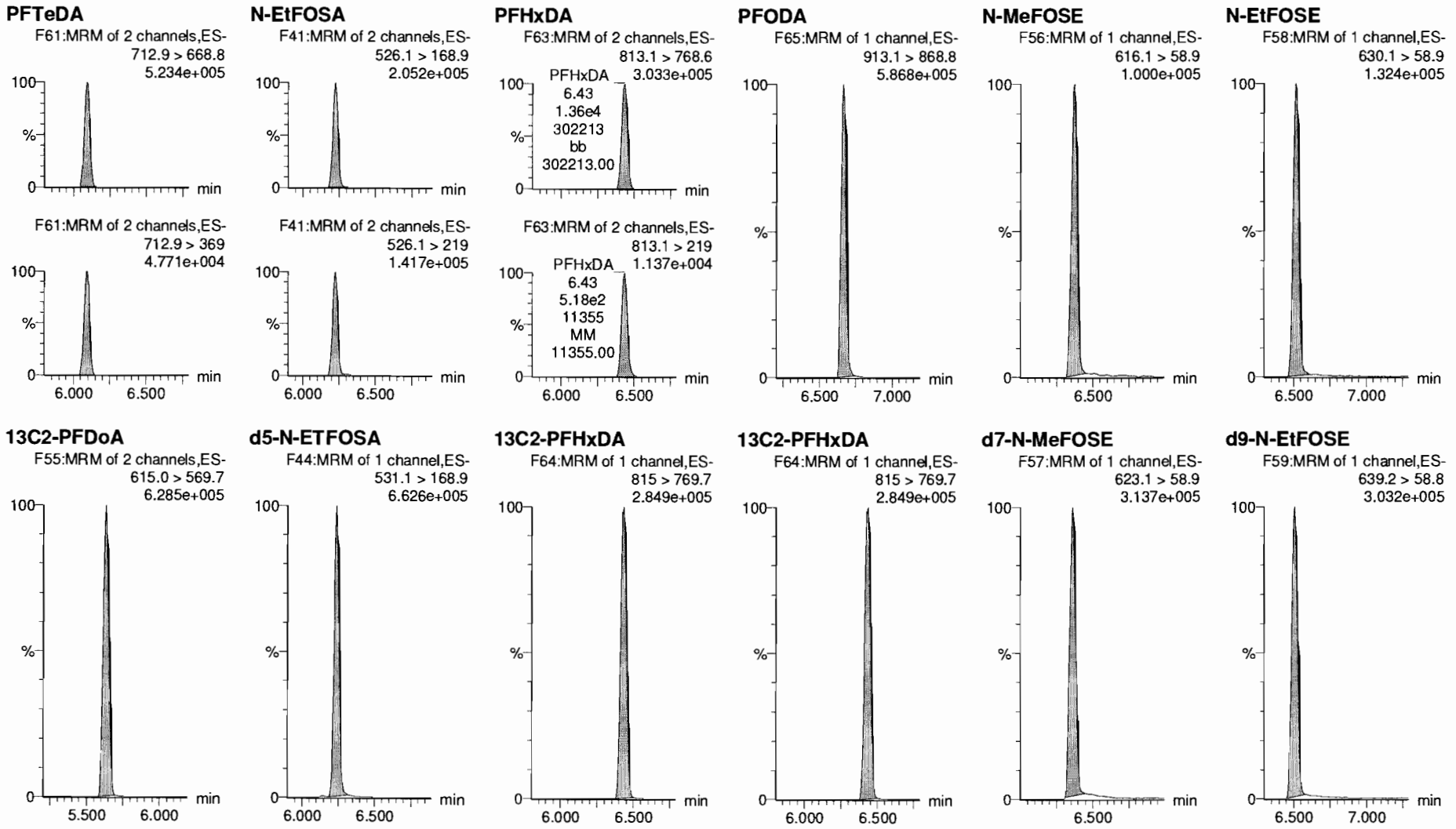
F55:MRM of 2 channels,ES-
615.0 > 569.7
6.285e+005



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 11:35:44 Pacific Daylight Time

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-34.qld

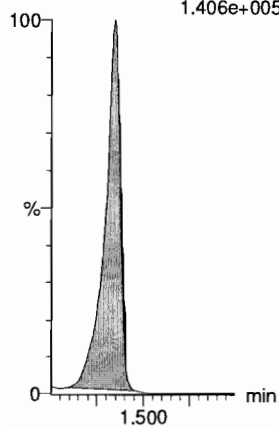
Last Altered: Tuesday, June 05, 2018 11:34:46 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:35:44 Pacific Daylight Time

Name: 180604M2_34, Date: 05-Jun-2018, Time: 00:46:37, ID: ST180604M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

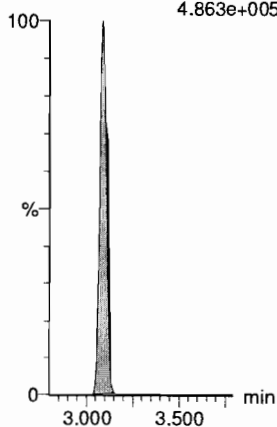
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.406e+005



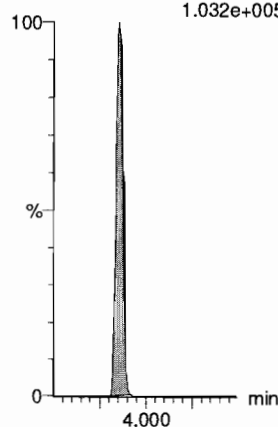
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.863e+005



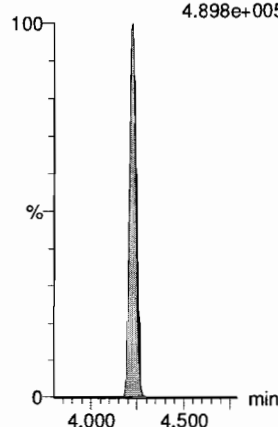
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
1.032e+005



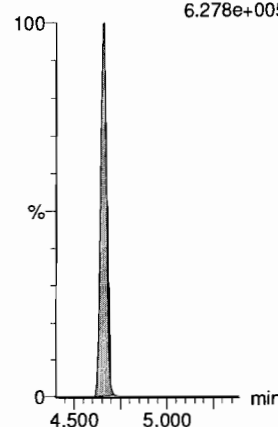
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.898e+005



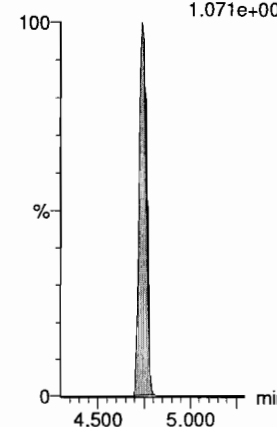
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
6.278e+005



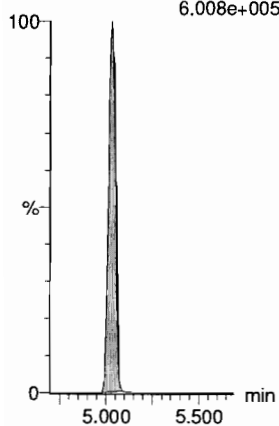
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
1.071e+005



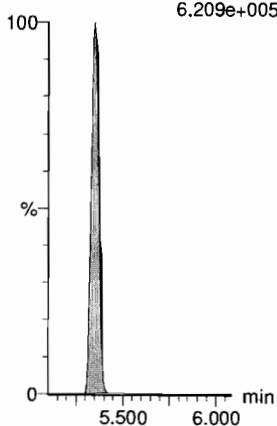
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
6.008e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.209e+005



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-48.qld

Last Altered: Tuesday, June 05, 2018 11:40:06 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:40:58 Pacific Daylight Time

Jan 6/5/18

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_48, Date: 05-Jun-2018, Time: 03:13:03, ID: ST180604M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	1.10e4	1.22e4		1.34	1.35	11.3	10.2	101.7	NO		
2	2 PFPeA	263.1 > 21...	1.44e4	1.77e4		2.31	2.31	10.1	9.85	98.5	NO		
3	3 PFBS	299.0 > 79.7	3.52e3	2.19e3		2.60	2.60	20.1	10.1	101.0	NO	2.731	NO
4	4 4:2 FTS	327.2>307.2	4.02e3	4.75e3		3.00	3.01	10.6	9.82	98.2	NO	1.906	NO
5	5 PFHxA	313.2 > 26...	1.85e4	5.68e3		3.09	3.09	16.3	10.2	102.2	NO	205.913	YES
6	6 PFPeS	349.1>80.1	3.14e3	2.19e3		3.29	3.29	17.9	9.92	99.2	NO	1.625	NO
7	7 PFHpA	363.0 > 31...	1.68e4	1.68e4		3.70	3.70	12.5	10.7	106.8	NO	19.891	NO
8	8 L-PFHxS	398.9 > 79.6	2.92e3	1.92e3		3.85	3.86	19.0	9.91	99.1	NO	1.886	NO
9	10 6:2 FTS	427.1 > 407	4.34e3	4.61e3		4.17	4.17	11.8	9.50	95.0	NO	3.358	NO
10	11 L-PFOA	413 > 368.7	2.02e4	2.64e4		4.25	4.22	9.58	10.6	106.1	NO	4.177	NO
11	13 PFHpS	449 > 80.0	3.54e3	2.64e4		4.33	4.33	1.68	10.6	106.4	NO	1.903	NO
12	14 PFNA	463.0 > 41...	2.32e4	2.22e4		4.66	4.66	13.1	10.2	102.2	NO	4.521	NO
13	15 PFOSA	498.2 > 77.9	3.15e3	4.34e3		4.73	4.72	9.08	9.56	95.6	NO	34.623	YES
14	16 L-PFOS	499.1 > 79.9	3.14e3	4.76e3		4.74	4.74	8.23	8.87	88.7	NO	1.856	NO
15	18 PFDA	513 > 468.8	2.53e4	3.03e4		5.03	5.03	10.4	10.1	101.4	NO	6.395	NO
16	19 8:2 FTS	527 > 506.9	4.73e3	4.20e3		5.00	5.00	14.1	9.81	98.1	NO	2.505	NO
17	20 PFNS	549.1>80.1	2.92e3	4.76e3		5.09	5.09	7.67	9.19	91.9	NO	1.900	NO
18	21 L-MeFOSAA	570.1 > 419	9.06e3	6.08e3		5.18	5.18	18.6	9.84	98.4	NO	15.000	NO

AN 6/5/18

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-48.qld

Last Altered: Tuesday, June 05, 2018 11:40:06 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:41:06 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_48, Date: 05-Jun-2018, Time: 03:13:03, ID: ST180604M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?	
1	23	L-EtFOSAA	584.2 > 419	7.04e3	7.63e3	5.37	5.34	11.5	10.1	101.0	NO	14.912	NO	
2	25	PFUdA	563.0 > 51...	2.41e4	3.15e4	5.35	5.35	9.56	9.85	98.5	NO	12.417	NO	
3	26	PFDS	598.8 > 80	3.52e3	3.15e4	5.40	5.40	1.40	9.66	96.6	NO	1.984	NO	
4	27	PFDoA	612.9 > 56...	3.18e4	2.81e4	5.63	5.63	14.2	12.7	127.1	NO	9.983	NO	
5	28	N-MeFOSA	512.1 > 16...	6.75e3	1.91e4	5.82	5.82	53.0	50.5	100.9	NO	1.352	NO	
6	29	PFTrDA	662.9 > 61...	3.10e4	2.81e4	5.88	5.88	13.8	12.7	127.2	NO	27.273	NO	
7	30	PFTeDA	712.9 > 66...	2.28e4	1.76e4	6.10	6.09	16.2	12.5	125.0	NO	11.238	NO	
8	31	N-EtFOSA	526.1 > 16...	8.69e3	2.78e4	6.23	6.22	46.9	50.7	101.4	NO	1.490	NO	
9	32	PFHxDA	813.1 > 76...	1.33e4	1.22e4	6.43	6.43	5.46	9.00	90.0	NO	30.117	NO	
10	33	PFODA	913.1 > 86...	2.29e4	1.22e4	6.67	6.66	9.37	10.6	105.5	NO			
11	34	N-MeFOSE	616.1 > 58.9	4.43e3	1.43e4	6.37	6.37	46.4	46.6	93.3	NO			
12	35	N-EtFOSE	630.1 > 58.9	5.61e3	1.47e4	6.52	6.52	57.4	48.1	96.1	NO			
13	36	13C3-PFBA	216.1 > 17...	1.22e4	1.40e4	0.885	1.34	1.34	10.9	12.4	98.8	NO		
14	37	13C3-PFPeA	266. > 221.8	1.77e4	2.03e4	0.849	2.31	2.31	10.9	12.9	102.8	NO		
15	38	13C3-PFBS	302. > 98.8	2.19e3	2.03e4	0.104	2.60	2.60	1.35	13.0	103.8	NO		
16	39	13C2-4:2 FTS	329.2>308.9	4.75e3	2.03e4	0.248	3.01	3.00	2.92	11.8	94.4	NO		
17	40	13C2-PFHxA	315 > 269.8	5.68e3	2.03e4	0.729	3.09	3.09	3.50	4.80	95.9	NO		
18	41	13C4-PFHpA	367.2 > 32...	1.68e4	2.03e4	0.836	3.71	3.70	10.4	12.4	99.1	NO		
19	42	18O2-PFHxS	403.0 > 10...	1.92e3	4.31e3	0.443	3.86	3.85	5.56	12.6	100.6	NO		
20	43	13C2-6:2 FTS	429.1 > 40...	4.61e3	2.06e4	0.249	4.17	4.17	2.80	11.2	89.9	NO		
21	44	13C2-PFOA	414.9 > 36...	2.64e4	2.06e4	1.332	4.23	4.22	16.0	12.0	96.2	NO		
22	45	13C5-PFNA	468.2 > 42...	2.22e4	2.31e4	0.951	4.66	4.66	12.0	12.6	100.7	NO		
23	46	13C8-PFOSA	506.1 > 77.7	4.34e3	3.18e4	0.140	4.73	4.72	1.71	12.2	97.8	NO		
24	47	13C8-PFOS	507.0 > 79.9	4.76e3	4.37e3	1.060	4.74	4.74	13.6	12.9	102.9	NO		
25	48	13C2-PFDA	515.1 > 46...	3.03e4	2.48e4	1.130	5.03	5.03	15.3	13.5	108.1	NO		
26	49	13C2-8:2 FTS	529.1 > 50...	4.20e3	2.03e4	0.217	5.00	5.00	2.58	11.9	95.1	NO		
27	50	d3-N-MeFOSAA	573.3 > 419	6.08e3	3.18e4	0.184	5.18	5.18	2.39	13.0	104.2	NO		
28	51	d5-N-EtFOSAA	589.3 > 419	7.63e3	3.18e4	0.223	5.34	5.34	3.00	13.4	107.5	NO		
29	52	13C2-PFUdA	565 > 519.8	3.15e4	3.18e4	0.936	5.35	5.35	12.4	13.2	106.0	NO		
30	53	13C2-PFDoA	615.0 > 56...	2.81e4	2.48e4	1.168	5.63	5.63	14.2	12.1	97.0	NO		
31	54	d3-N-MeFOSA	515.2 > 16...	1.91e4	3.18e4	0.051	5.85	5.85	7.50	147	97.7	NO		
32	55	13C2-PFTeDA	714.8 > 66...	1.76e4	3.18e4	0.706	6.09	6.09	6.92	9.80	78.4	NO		

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-48.qld

Last Altered: Tuesday, June 05, 2018 11:40:06 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:41:06 Pacific Daylight Time

Name: 180604M2_48, Date: 05-Jun-2018, Time: 03:13:03, ID: ST180604M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	56 d5-N-ETFOSA	531.1 > 16...	2.78e4	3.18e4	0.071	6.24	6.24	10.9	153	102.2	NO		
34	57 13C2-PFHxDA	815 > 769.7	1.22e4	3.18e4	1.079	6.43	6.43	4.80	4.45	89.1	NO		
35	58 d7-N-MeFOSE	623.1 > 58.9	1.43e4	3.18e4	0.041	6.37	6.36	5.63	137	91.0	NO		
36	59 d9-N-EiFOSE	639.2 > 58.8	1.47e4	3.18e4	0.038	6.51	6.50	5.77	150	100.3	NO		
37	60 13C4-PFBA	217. > 171.8	1.40e4	1.40e4	1.000	1.35	1.35	12.5	12.5	100.0	NO		
38	61 13C5-PFHxA	318 > 272.9	2.03e4	2.03e4	1.000	3.09	3.09	12.5	12.5	100.0	NO		
39	62 13C3-PFHxS	401.9 > 79.9	4.31e3	4.31e3	1.000	3.86	3.85	12.5	12.5	100.0	NO		
40	63 13C8-PFOA	421.3 > 376	2.06e4	2.06e4	1.000	4.23	4.22	12.5	12.5	100.0	NO		
41	64 13C9-PFNA	472.2 > 42...	2.31e4	2.31e4	1.000	4.66	4.66	12.5	12.5	100.0	NO		
42	65 13C4-PFOS	503 > 79.9	4.37e3	4.37e3	1.000	4.74	4.74	12.5	12.5	100.0	NO		
43	66 13C6-PFDA	519.1 > 47...	2.48e4	2.48e4	1.000	5.03	5.03	12.5	12.5	100.0	NO		
44	67 13C7-PFUdA	570.1 > 52...	3.18e4	3.18e4	1.000	5.35	5.35	12.5	12.5	100.0	NO		

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 13:44:58 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 13:45:07 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180604M2_13	ICV180604M2-1 PFC 537 ICV 18E2901	04-Jun-18	21:06:49
2	2 180604M2_14	IPA	04-Jun-18	21:17:19
3	3 180604M2_15	1800982-05 REEPDW554 0.11977	04-Jun-18	21:27:44
4	4 180604M2_16	1800982-06 REEPDW1043 0.12141	04-Jun-18	21:38:15
5	5 180604M2_17	B8E0141-BS1 OPR 0.125	04-Jun-18	21:48:40
6	6 180604M2_18	B8E0224-BSD1 LCSD 0.125	04-Jun-18	21:59:10
7	7 180604M2_19	B8E0224-BS1 OPR 0.125	04-Jun-18	22:09:36
8	8 180604M2_20	B8E0224-BLK1 Method Blank 0.125	04-Jun-18	22:20:06
9	9 180604M2_21	1800952-13RE1 REEPDW488 0.11053	04-Jun-18	22:30:30
10	10 180604M2_22	B8E0250-BS1 OPR 0.125	04-Jun-18	22:41:01
11	11 180604M2_23	B8E0250-BSD1 LCSD 0.125	04-Jun-18	22:51:31
12	12 180604M2_24	B8E0250-BLK1 Method Blank 0.125	04-Jun-18	23:01:55
13	13 180604M2_25	1801003-01 GN18057PA 0.11594	04-Jun-18	23:12:26
14	14 180604M2_26	1801003-02 GN18058PA 0.11833	04-Jun-18	23:22:51
15	15 180604M2_27	1801024-01 A1-MW-51-SA1 0.11961	04-Jun-18	23:33:21
16	16 180604M2_28	1801024-02 A1-MW-50-SA1 0.12082	04-Jun-18	23:43:47
17	17 180604M2_29	1801024-03 A1-MW-49-SA1 0.12317	04-Jun-18	23:54:17
18	18 180604M2_30	1801024-04 A1-MW-05-SA1 0.11875	05-Jun-18	00:04:41
19	19 180604M2_31	1801024-05 A1-MW-04-SA1 0.12315	05-Jun-18	00:15:11
20	20 180604M2_32	1801024-06 FRB-20180522 0.12068	05-Jun-18	00:25:41
21	21 180604M2_33	IPA	05-Jun-18	00:36:06
22	22 180604M2_34	ST180604M2-11 PFC CS3 18E2907	05-Jun-18	00:46:37
23	23 180604M2_35	1801071-01 A1-MW-27-SA1 0.11705	05-Jun-18	00:57:02
24	24 180604M2_36	1801071-02 A1-MW-55-SA1 0.11428	05-Jun-18	01:07:32
25	25 180604M2_37	1801071-03 A1-MW-23-SA1 0.11436	05-Jun-18	01:17:57
26	26 180604M2_38	1801071-04 A1-MW-07-SA1 0.11908	05-Jun-18	01:28:28
27	27 180604M2_39	1801071-05 FRB-20180530 0.49878	05-Jun-18	01:38:53
28	28 180604M2_40	1800930-03RE1 WT1805091300GSC 0...	05-Jun-18	01:49:23
29	29 180604M2_41	1800930-12RE1 WT1805100850GSC 0...	05-Jun-18	01:59:48
30	30 180604M2_42	1801021-01 Milk 5	05-Jun-18	02:10:18
31	31 180604M2_43	1801000-01 DPH-MW6 0.10261	05-Jun-18	02:20:43

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 13:44:58 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 13:45:07 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq Date	Acq Time
32	32 180604M2_44	1801002-01 Trip Blank 0.25726	05-Jun-18	02:31:14
33	33 180604M2_45	1801002-02 P2-3 0.26152	05-Jun-18	02:41:38
34	34 180604M2_46	1801002-03 Ditch-1 0.2637	05-Jun-18	02:52:09
35	35 180604M2_47	IPA	05-Jun-18	03:02:38
36	36 180604M2_48	ST180604M2-12 PFC CS3 18E2907	05-Jun-18	03:13:03
37	37 180604M2_49	B8E0226-BS1 OPR 1	05-Jun-18	03:23:33
38	38 180604M2_50	B8E0226-BLK1 Method Blank 1	05-Jun-18	03:33:58
39	39 180604M2_51	1800821-02RE1 S-SED-BB2 1.6	05-Jun-18	03:44:28
40	40 180604M2_52	1800821-03RE1 S-SED-5 2.76	05-Jun-18	03:54:53
41	41 180604M2_53	1800821-04RE1 S-SED-5-DUP 2.91	05-Jun-18	04:05:24
42	42 180604M2_54	1800821-05RE1 S-SED-110 1.51	05-Jun-18	04:15:48
43	43 180604M2_55	1800821-06RE1 S-SED-111 2.01	05-Jun-18	04:26:18
44	44 180604M2_56	1800821-07RE1 S-SED-LR 1.44	05-Jun-18	04:36:43
45	45 180604M2_57	1800821-08RE1 S-SED-BB1 1.19	05-Jun-18	04:47:14
46	46 180604M2_58	1800821-09RE1 S-SED-4 2.68	05-Jun-18	04:57:38
47	47 180604M2_59	B8E0104-BS1 OPR 0.125	05-Jun-18	05:08:09
48	48 180604M2_60	B8E0104-BLK1 Method Blank 0.125	05-Jun-18	05:18:34
49	49 180604M2_61	1800917-01 NB-3 0.12018	05-Jun-18	05:29:04
50	50 180604M2_62	1800917-02 NB-2 0.11907	05-Jun-18	05:39:29
51	51 180604M2_63	IPA	05-Jun-18	05:49:51
52	52 180604M2_64	ST180604M2-13 PFC CS3 18E2907	05-Jun-18	06:00:21
53	53 180604M2_65	1800917-03 NB-4 0.11583	05-Jun-18	06:10:52
54	54 180604M2_66	1800917-04 NB-5 0.11709	05-Jun-18	06:21:16
55	55 180604M2_67	1800917-05 FIELD DUP 0.11588	05-Jun-18	06:31:47
56	56 180604M2_68	1800917-06 NB-1 0.11536	05-Jun-18	06:42:17
57	57 180604M2_69	1800920-01 MW-DEP-1 0.11504	05-Jun-18	06:52:41
58	58 180604M2_70	1800920-02 MW-DEP-2 0.11632	05-Jun-18	07:03:11
59	59 180604M2_71	1800920-03 Field Reagent blank 0.11615	05-Jun-18	07:13:36
60	60 180604M2_72	B8E0129-BS1 OPR 0.125	05-Jun-18	07:24:06
61	61 180604M2_73	B8E0129-BLK1 Method Blank 0.125	05-Jun-18	07:34:36
62	62 180604M2_74	1800919-01 MW-1A 0.02004	05-Jun-18	07:45:01
63	63 180604M2_75	1800919-02 MW-1B 0.01985	05-Jun-18	07:55:32
64	64 180604M2_76	1800919-03 MW-8A 0.01961	05-Jun-18	08:05:56
65	65 180604M2_77	1800919-04 MW-8B 0.01952	05-Jun-18	08:16:27

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 13:44:58 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 13:45:07 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
66	180604M2_78	IPA	05-Jun-18	08:26:52
67	180604M2_79	ST180604M2-14 PFC CS3 18E2907	05-Jun-18	08:37:22
68	180604M2_80	1800919-05 MW-8C 0.01981	05-Jun-18	08:47:47
69	180604M2_81	1800919-06 Field Reagent Blank 0.12527	05-Jun-18	08:58:18
70	180604M2_82	B8E0135-BS1 OPR 1	05-Jun-18	09:08:41
71	180604M2_83	B8E0135-BLK1 Method Blank 1	05-Jun-18	09:19:12
72	180604M2_84	1800945-01 SS-1 1.25	05-Jun-18	09:29:36
73	180604M2_85	1800945-02 SS-2 1.16	05-Jun-18	09:40:07
74	180604M2_86	1800945-03 SS-3 1.46	05-Jun-18	09:50:32
75	180604M2_87	1800945-04 SS-4 1.24	05-Jun-18	10:01:03
76	180604M2_88	1800945-05 SS-5 1.6	05-Jun-18	10:11:28
77	180604M2_89	1800945-06 SS-6 1.25	05-Jun-18	10:21:58
78	180604M2_90	1800945-07 SS-7 1.32	05-Jun-18	10:32:23
79	180604M2_91	IPA	05-Jun-18	10:42:53
80	180604M2_92	ST180604M2-15 PFC CS3 18E2907	05-Jun-18	10:53:18
81	180604M2_93	1800945-08 SS-8 1.15	05-Jun-18	11:03:48
82	180604M2_94	1800945-09 SS-9 1.37	05-Jun-18	11:14:14
83	180604M2_95	1800945-10 SS-10 1.91	05-Jun-18	11:24:44
84	180604M2_96	1800945-11 SS-11 1.55	05-Jun-18	11:35:09
85	180604M2_97	1800945-12 SS-12 1.18	05-Jun-18	11:45:39
86	180604M2_98	1800945-13 SS-20 1.48	05-Jun-18	11:56:04
87	180604M2_99	IPA	05-Jun-18	12:06:34
88	180604M2_100	ST180604M2-16 PFC CS3 18E2907	05-Jun-18	12:16:59

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-48.qld

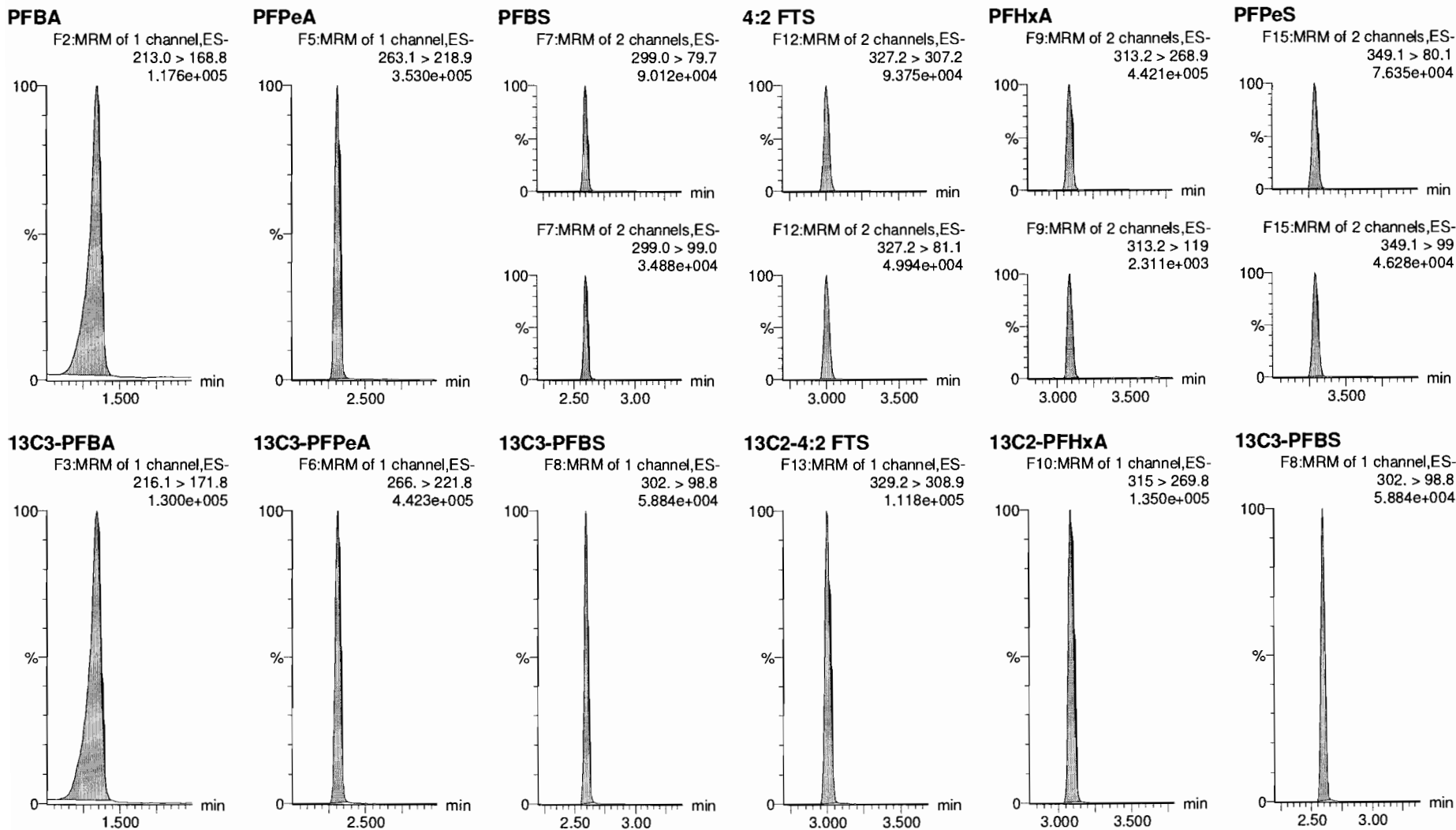
Last Altered: Tuesday, June 05, 2018 11:40:06 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:41:06 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_48, Date: 05-Jun-2018, Time: 03:13:03, ID: ST180604M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

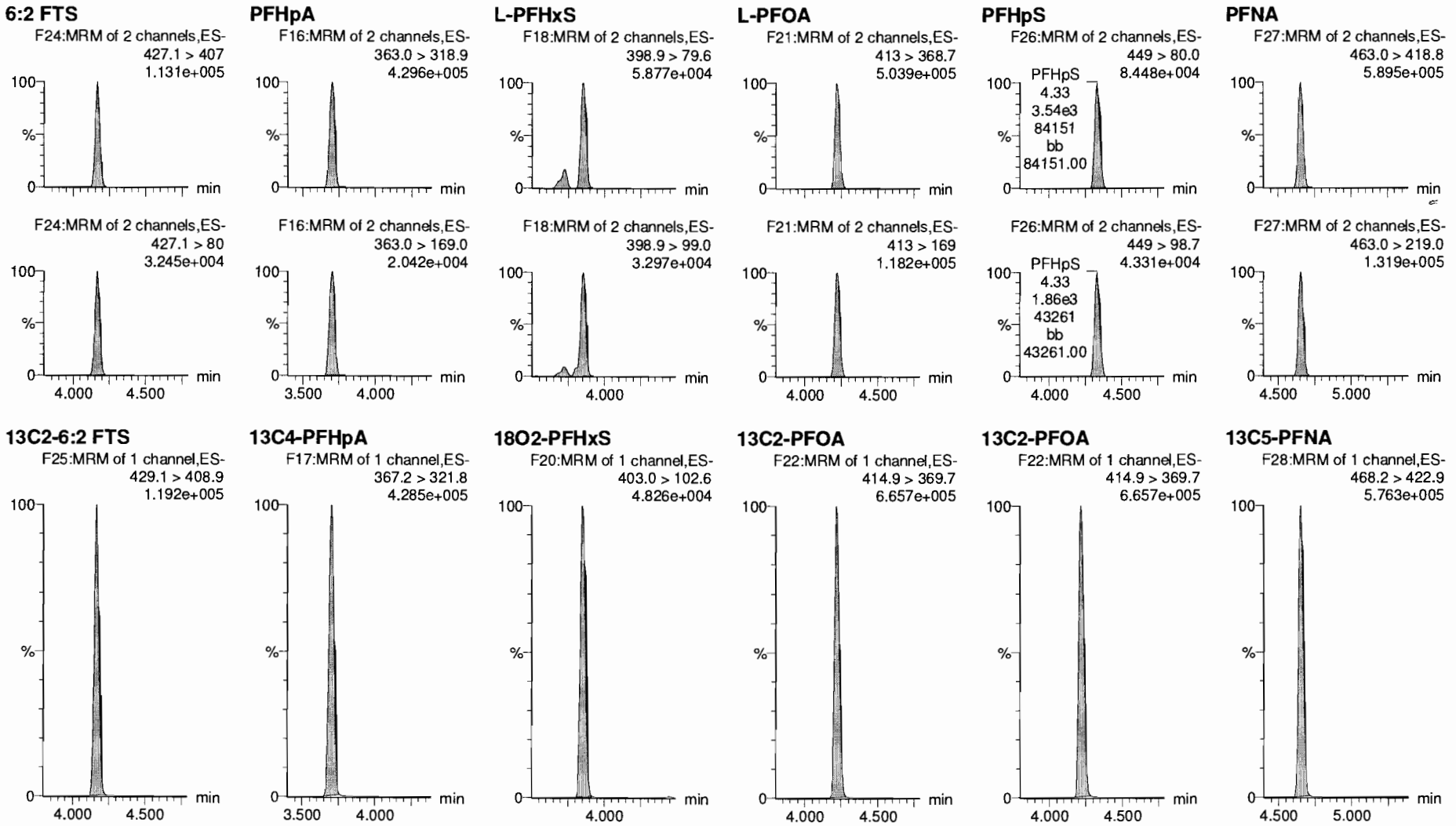


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Last Altered: Tuesday, June 05, 2018 11:40:06 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:41:06 Pacific Daylight Time

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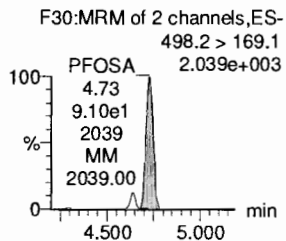
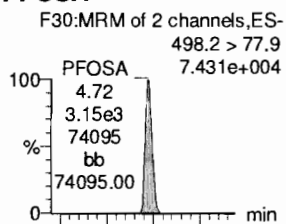
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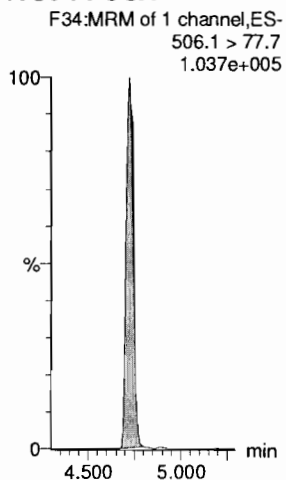
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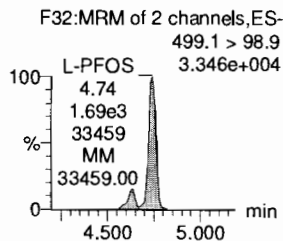
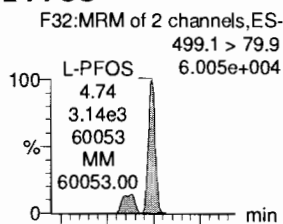
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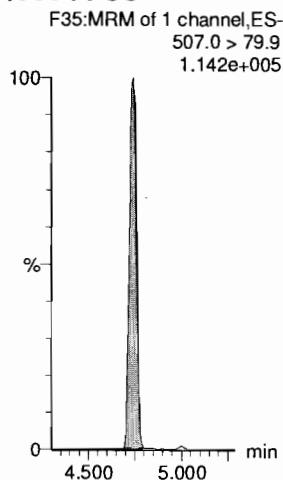
13C8-PFOSA



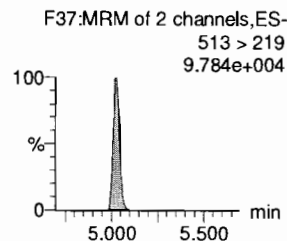
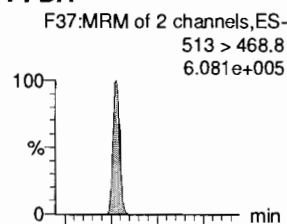
L-PFOS



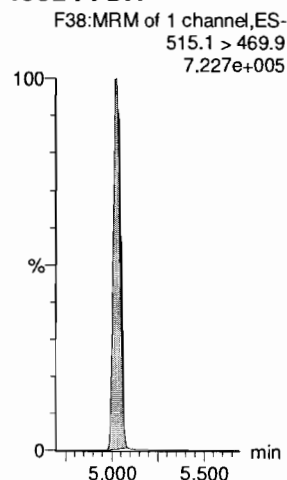
13C8-PFOS



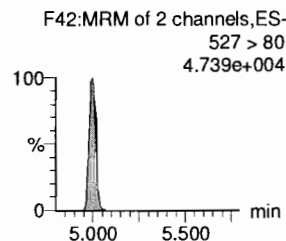
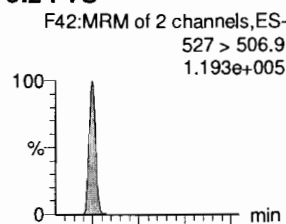
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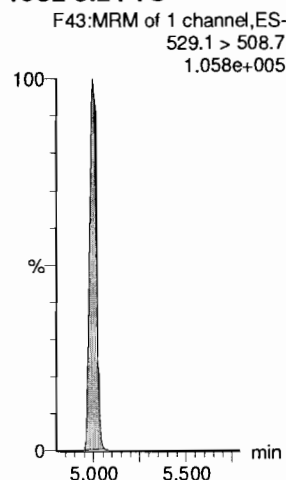
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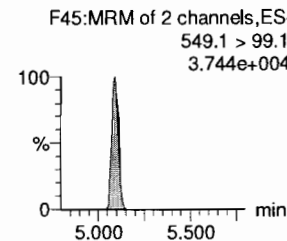
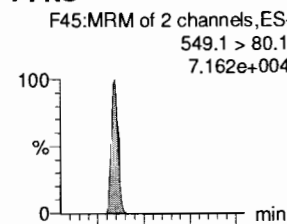
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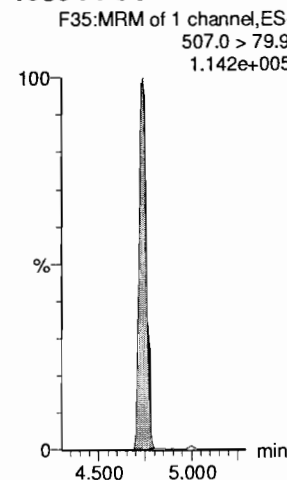
13C2-8:2 FTS



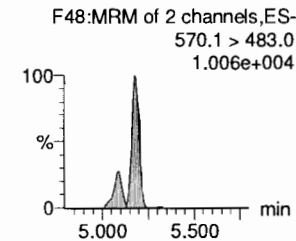
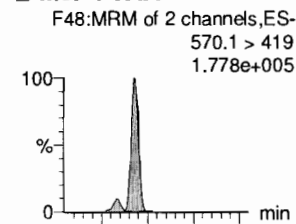
PFNS



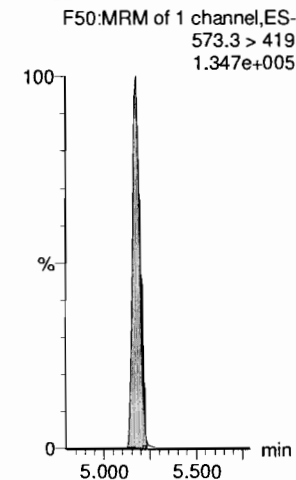
13C8-PFOS



L-MeFOSAA



d3-N-MeFOSAA

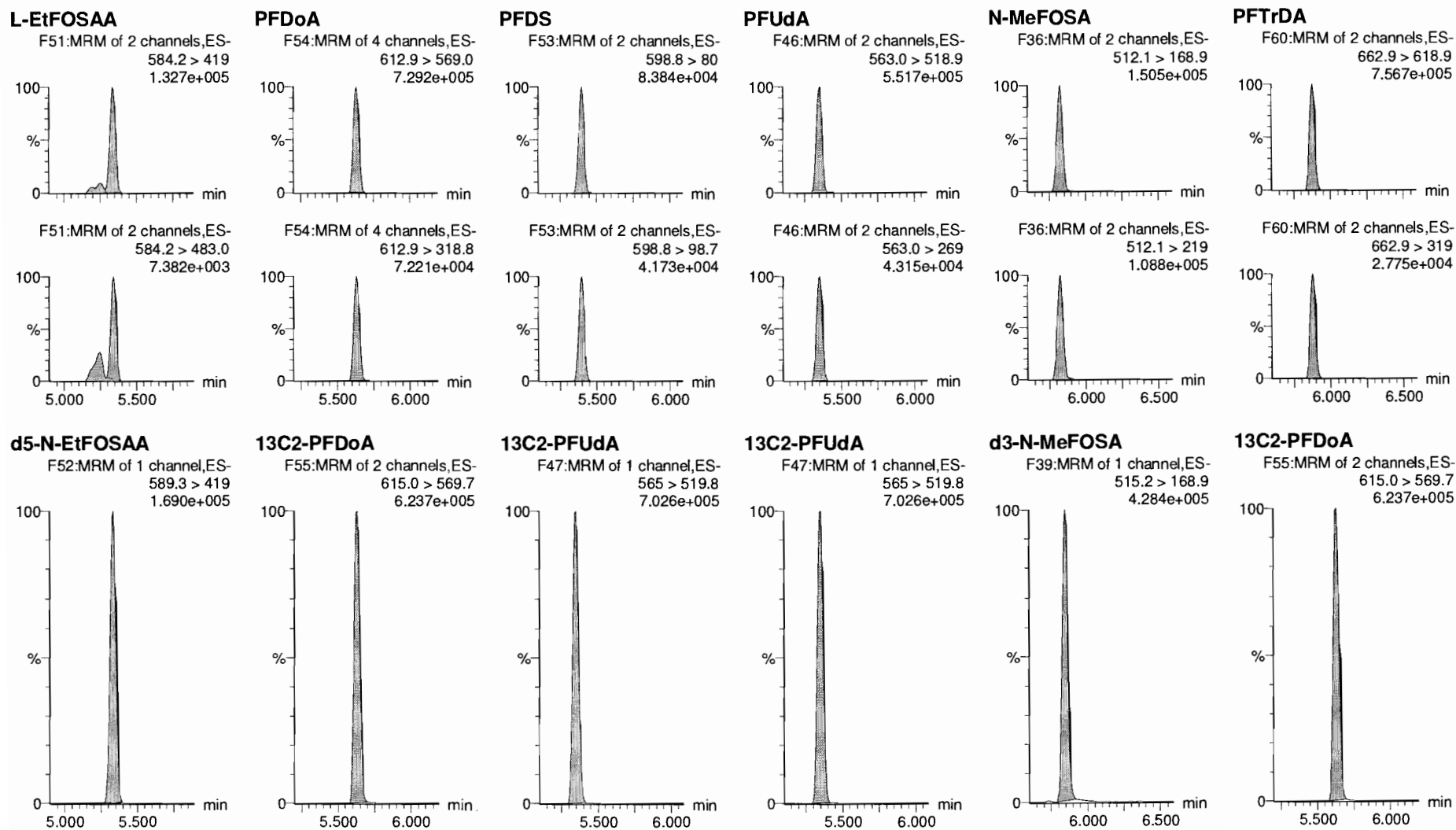


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Last Altered: Tuesday, June 05, 2018 11:40:06 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:41:06 Pacific Daylight Time

Name: 180604M2_48, Date: 05-Jun-2018, Time: 03:13:03, ID: ST180604M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907



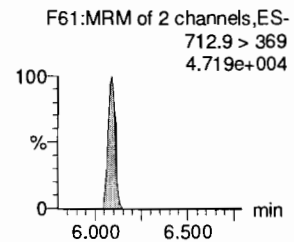
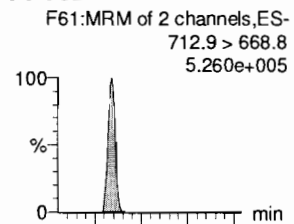
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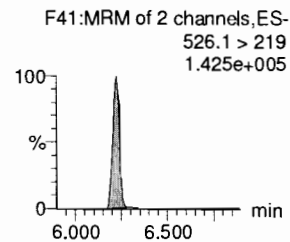
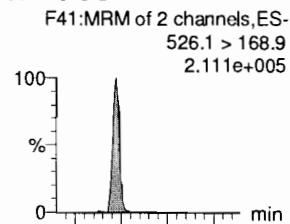
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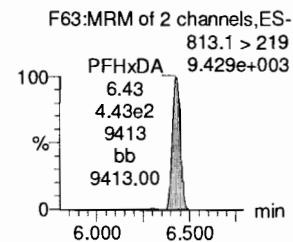
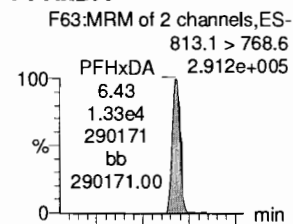
PFTeDA



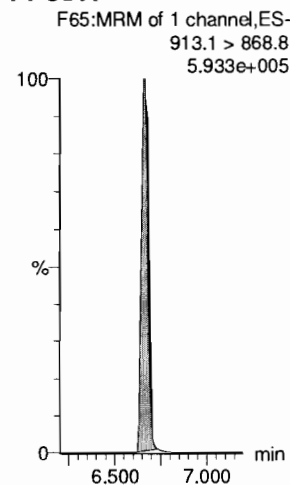
N-EtFOFA



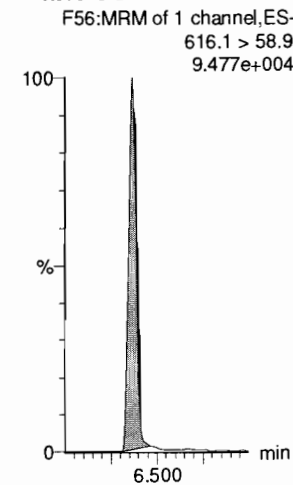
PFHxDA



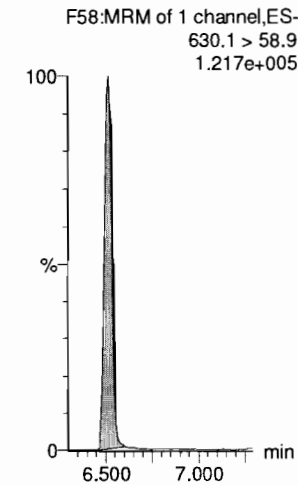
PFODA



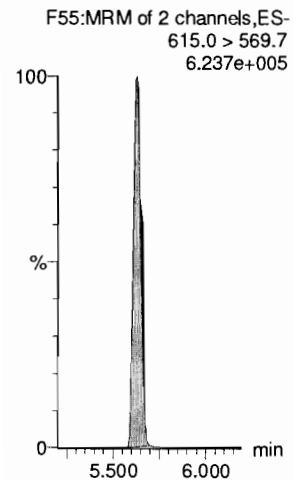
N-MeFOSE



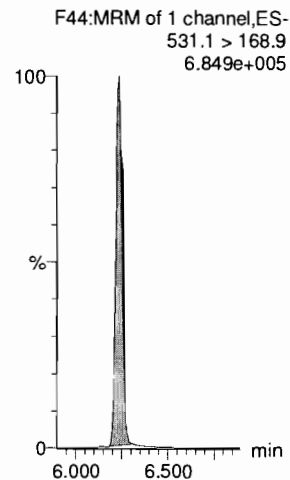
N-EtFOSE



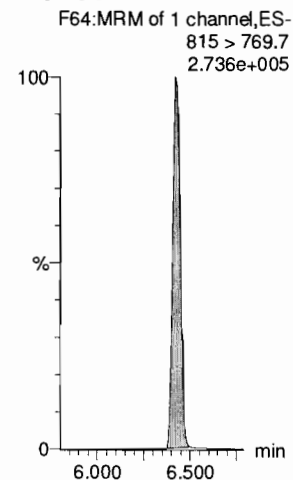
13C2-PFDoA



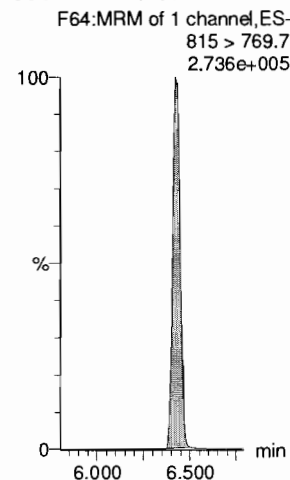
d5-N-ETFOSA



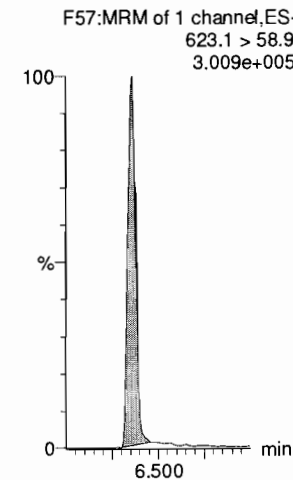
13C2-PFHxDA



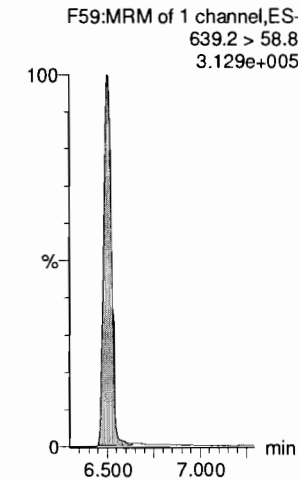
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-48.qld

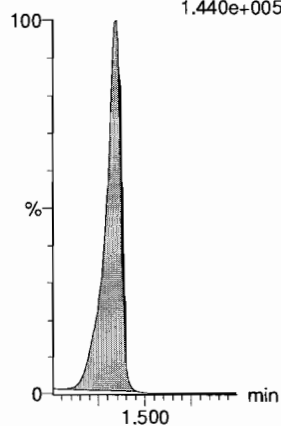
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Printed: Tuesday, June 05, 2018 11:41:06 Pacific Daylight Time

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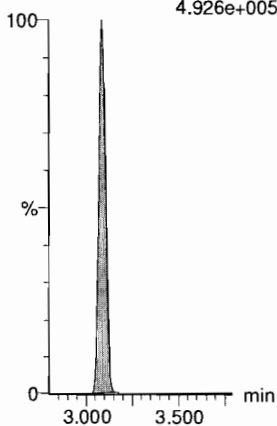
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.440e+005



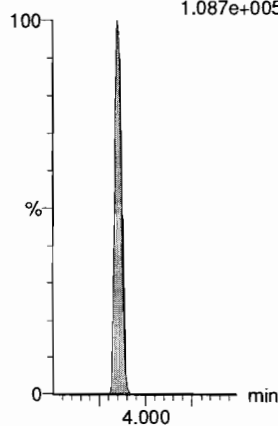
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.926e+005



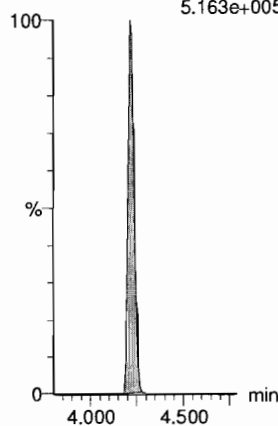
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
1.087e+005



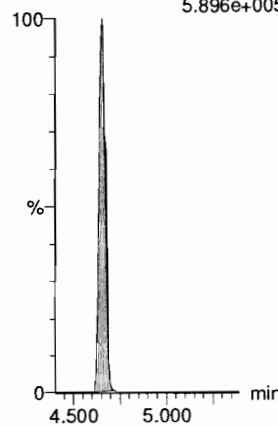
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
5.163e+005



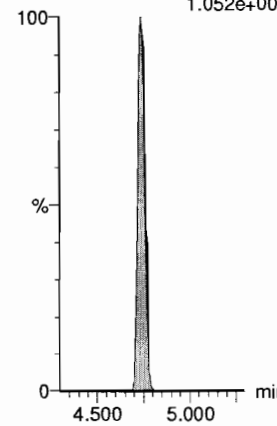
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.896e+005



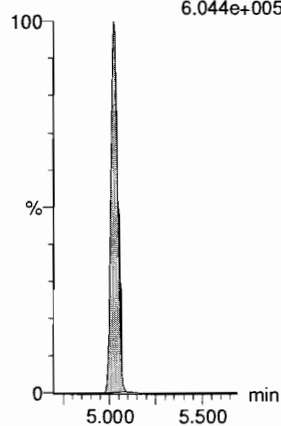
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
1.052e+005



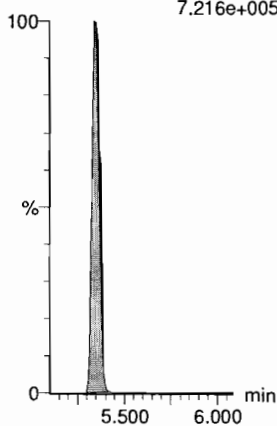
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
6.044e+005



13C7-PFUDa

F49:MRM of 1 channel,ES-
570.1 > 524.8
7.216e+005



Dataset: F:\Projects\PFAS.PRO\Results\180605M2\AREAS.qld

Last Altered: Wednesday, June 06, 2018 14:05:22 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 14:05:30 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_RS-5-19-18.mdb 20 May 2018 12:59:37

Calibration: 06 Jun 2018 13:41:40

Name: 180605M2_7, Date: 05-Jun-2018, Time: 17:30:59, ID: ST180605M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-6 PFC CS3 18E2907	1.00e4	100.0	NO
2	2 13C5-PFHxA	ST180605M2-6 PFC CS3 18E2907	1.39e4	100.0	NO
3	3 13C3-PFHxS	ST180605M2-6 PFC CS3 18E2907	2.89e3	100.0	NO
4	4 13C8-PFOA	ST180605M2-6 PFC CS3 18E2907	1.40e4	100.0	NO
5	5 13C9-PFNA	ST180605M2-6 PFC CS3 18E2907	1.69e4	100.0	NO
6	6 13C4-PFOS	ST180605M2-6 PFC CS3 18E2907	2.89e3	100.0	NO
7	7 13C6-PFDA	ST180605M2-6 PFC CS3 18E2907	2.14e4	100.0	NO
8	8 13C7-PFUDa	ST180605M2-6 PFC CS3 18E2907	2.44e4	100.0	NO

Name: 180605M2_8, Date: 05-Jun-2018, Time: 17:41:30, ID: ST180605M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-7 PFC CS4 18E2908	9.35e3	93.5	NO
2	2 13C5-PFHxA	ST180605M2-7 PFC CS4 18E2908	1.34e4	96.1	NO
3	3 13C3-PFHxS	ST180605M2-7 PFC CS4 18E2908	2.69e3	93.4	NO
4	4 13C8-PFOA	ST180605M2-7 PFC CS4 18E2908	1.38e4	98.5	NO
5	5 13C9-PFNA	ST180605M2-7 PFC CS4 18E2908	1.75e4	103.7	NO
6	6 13C4-PFOS	ST180605M2-7 PFC CS4 18E2908	2.69e3	93.2	NO
7	7 13C6-PFDA	ST180605M2-7 PFC CS4 18E2908	1.85e4	86.4	NO
8	8 13C7-PFUDa	ST180605M2-7 PFC CS4 18E2908	2.19e4	89.5	NO

Name: 180605M2_9, Date: 05-Jun-2018, Time: 17:52:00, ID: ST180605M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-8 PFC CS5 18E2909	9.64e3	96.4	NO
2	2 13C5-PFHxA	ST180605M2-8 PFC CS5 18E2909	1.33e4	95.8	NO
3	3 13C3-PFHxS	ST180605M2-8 PFC CS5 18E2909	2.82e3	97.7	NO
4	4 13C8-PFOA	ST180605M2-8 PFC CS5 18E2909	1.49e4	106.1	NO
5	5 13C9-PFNA	ST180605M2-8 PFC CS5 18E2909	1.71e4	101.1	NO
6	6 13C4-PFOS	ST180605M2-8 PFC CS5 18E2909	2.71e3	93.9	NO
7	7 13C6-PFDA	ST180605M2-8 PFC CS5 18E2909	2.01e4	93.8	NO
8	8 13C7-PFUDa	ST180605M2-8 PFC CS5 18E2909	2.36e4	96.9	NO

Name: 180605M2_10, Date: 05-Jun-2018, Time: 18:02:25, ID: ST180605M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-9 PFC CS6 18E2910	8.86e3	88.6	NO
2	2 13C5-PFHxA	ST180605M2-9 PFC CS6 18E2910	1.37e4	98.3	NO
3	3 13C3-PFHxS	ST180605M2-9 PFC CS6 18E2910	2.81e3	97.5	NO
4	4 13C8-PFOA	ST180605M2-9 PFC CS6 18E2910	1.55e4	110.2	NO
5	5 13C9-PFNA	ST180605M2-9 PFC CS6 18E2910	1.76e4	104.3	NO
6	6 13C4-PFOS	ST180605M2-9 PFC CS6 18E2910	2.87e3	99.2	NO
7	7 13C6-PFDA	ST180605M2-9 PFC CS6 18E2910	1.93e4	90.1	NO
8	8 13C7-PFUDa	ST180605M2-9 PFC CS6 18E2910	2.24e4	91.9	NO

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Name: 180605M2_11, Date: 05-Jun-2018, Time: 18:12:47, ID: ST180605M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-10 PFC CS7 18E2911	9.65e3	96.4	NO
2	2 13C5-PFHxA	ST180605M2-10 PFC CS7 18E2911	1.13e4	81.0	NO
3	3 13C3-PFHxS	ST180605M2-10 PFC CS7 18E2911	2.42e3	84.0	NO
4	4 13C8-PFOA	ST180605M2-10 PFC CS7 18E2911	1.30e4	92.6	NO
5	5 13C9-PFNA	ST180605M2-10 PFC CS7 18E2911	1.25e4	74.3	NO
6	6 13C4-PFOS	ST180605M2-10 PFC CS7 18E2911	2.39e3	82.7	NO
7	7 13C6-PFDA	ST180605M2-10 PFC CS7 18E2911	1.87e4	87.2	NO
8	8 13C7-PFUDa	ST180605M2-10 PFC CS7 18E2911	1.80e4	73.8	NO

Name: 180605M2_12, Date: 05-Jun-2018, Time: 18:23:17, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180605M2_13, Date: 05-Jun-2018, Time: 18:33:43, ID: ICV180605M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ICV180605M2-1 PFC 537 ICV 18E2901	9.64e3	96.3	NO
2	2 13C5-PFHxA	ICV180605M2-1 PFC 537 ICV 18E2901	1.32e4	94.6	NO
3	3 13C3-PFHxS	ICV180605M2-1 PFC 537 ICV 18E2901	2.81e3	97.2	NO
4	4 13C8-PFOA	ICV180605M2-1 PFC 537 ICV 18E2901	1.55e4	110.3	NO
5	5 13C9-PFNA	ICV180605M2-1 PFC 537 ICV 18E2901	1.69e4	99.9	NO
6	6 13C4-PFOS	ICV180605M2-1 PFC 537 ICV 18E2901	2.62e3	90.5	NO
7	7 13C6-PFDA	ICV180605M2-1 PFC 537 ICV 18E2901	1.97e4	92.2	NO
8	8 13C7-PFUDa	ICV180605M2-1 PFC 537 ICV 18E2901	2.33e4	95.4	NO

Name: 180605M2_14, Date: 05-Jun-2018, Time: 18:44:13, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

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Name: 180605M2_15, Date: 05-Jun-2018, Time: 18:54:40, ID: B8E0097-BS1 OPR 0.25, Description: OPR

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0097-BS1 OPR 0.25	7.06e3	70.6	NO
2	2 13C5-PFHxA	B8E0097-BS1 OPR 0.25	9.46e3	68.0	NO
3	3 13C3-PFHxS	B8E0097-BS1 OPR 0.25	2.16e3	75.0	NO
4	4 13C8-PFOA	B8E0097-BS1 OPR 0.25	1.04e4	74.0	NO
5	5 13C9-PFNA	B8E0097-BS1 OPR 0.25	1.24e4	73.3	NO
6	6 13C4-PFOS	B8E0097-BS1 OPR 0.25	2.34e3	81.0	NO
7	7 13C6-PFDA	B8E0097-BS1 OPR 0.25	1.56e4	73.1	NO
8	8 13C7-PFUDa	B8E0097-BS1 OPR 0.25	1.66e4	68.2	NO

Name: 180605M2_16, Date: 05-Jun-2018, Time: 19:05:08, ID: B8E0097-BSD1 LCSD 0.25, Description: LCSD

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0097-BSD1 LCSD 0.25	7.61e3	76.1	NO
2	2 13C5-PFHxA	B8E0097-BSD1 LCSD 0.25	1.10e4	78.9	NO
3	3 13C3-PFHxS	B8E0097-BSD1 LCSD 0.25	2.40e3	83.1	NO
4	4 13C8-PFOA	B8E0097-BSD1 LCSD 0.25	1.22e4	86.8	NO
5	5 13C9-PFNA	B8E0097-BSD1 LCSD 0.25	1.51e4	89.7	NO
6	6 13C4-PFOS	B8E0097-BSD1 LCSD 0.25	2.26e3	78.4	NO
7	7 13C6-PFDA	B8E0097-BSD1 LCSD 0.25	1.81e4	84.4	NO
8	8 13C7-PFUDa	B8E0097-BSD1 LCSD 0.25	2.00e4	82.1	NO

Name: 180605M2_17, Date: 05-Jun-2018, Time: 19:15:33, ID: B8E0097-BLK1 Method Blank 0.25, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0097-BLK1 Method Blank 0.25	7.76e3	77.6	NO
2	2 13C5-PFHxA	B8E0097-BLK1 Method Blank 0.25	1.08e4	77.5	NO
3	3 13C3-PFHxS	B8E0097-BLK1 Method Blank 0.25	2.28e3	78.9	NO
4	4 13C8-PFOA	B8E0097-BLK1 Method Blank 0.25	1.25e4	88.9	NO
5	5 13C9-PFNA	B8E0097-BLK1 Method Blank 0.25	1.38e4	81.6	NO
6	6 13C4-PFOS	B8E0097-BLK1 Method Blank 0.25	2.23e3	77.2	NO
7	7 13C6-PFDA	B8E0097-BLK1 Method Blank 0.25	1.53e4	71.5	NO
8	8 13C7-PFUDa	B8E0097-BLK1 Method Blank 0.25	2.01e4	82.3	NO

Name: 180605M2_18, Date: 05-Jun-2018, Time: 19:26:03, ID: 1800863-01 Bemidji Pilot APR2 lead 0.25765, Description: Bemidji Pilot APR2 lead

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800863-01 Bemidji Pilot APR2 lead 0.2...	7.01e3	70.1	NO
2	2 13C5-PFHxA	1800863-01 Bemidji Pilot APR2 lead 0.2...	9.67e3	69.5	NO
3	3 13C3-PFHxS	1800863-01 Bemidji Pilot APR2 lead 0.2...	2.14e3	74.0	NO
4	4 13C8-PFOA	1800863-01 Bemidji Pilot APR2 lead 0.2...	1.12e4	79.5	NO
5	5 13C9-PFNA	1800863-01 Bemidji Pilot APR2 lead 0.2...	1.28e4	75.7	NO
6	6 13C4-PFOS	1800863-01 Bemidji Pilot APR2 lead 0.2...	2.20e3	76.3	NO
7	7 13C6-PFDA	1800863-01 Bemidji Pilot APR2 lead 0.2...	1.49e4	69.5	NO
8	8 13C7-PFUDa	1800863-01 Bemidji Pilot APR2 lead 0.2...	1.71e4	70.0	NO

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Name: 180605M2_19, Date: 05-Jun-2018, Time: 19:36:27, ID: 1800863-02 Bemidji Pilot PSR2 + 0.26433, Description: Bemidji Pilot PSR2 +

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800863-02 Bemidji Pilot PSR2 + 0.26433	7.35e3	73.5	NO
2	2 13C5-PFHxA	1800863-02 Bemidji Pilot PSR2 + 0.26433	9.54e3	68.5	NO
3	3 13C3-PFHxS	1800863-02 Bemidji Pilot PSR2 + 0.26433	2.34e3	81.0	NO
4	4 13C8-PFOA	1800863-02 Bemidji Pilot PSR2 + 0.26433	1.21e4	86.3	NO
5	5 13C9-PFNA	1800863-02 Bemidji Pilot PSR2 + 0.26433	1.35e4	79.8	NO
6	6 13C4-PFOS	1800863-02 Bemidji Pilot PSR2 + 0.26433	2.21e3	76.6	NO
7	7 13C6-PFDA	1800863-02 Bemidji Pilot PSR2 + 0.26433	1.69e4	78.9	NO
8	8 13C7-PFUDa	1800863-02 Bemidji Pilot PSR2 + 0.26433	1.66e4	67.8	NO

Name: 180605M2_20, Date: 05-Jun-2018, Time: 19:46:57, ID: 1800863-03 Bemidji Pilot INF 0.26399, Description: Bemidji Pilot INF

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800863-03 Bemidji Pilot INF 0.26399	7.14e3	71.4	NO
2	2 13C5-PFHxA	1800863-03 Bemidji Pilot INF 0.26399	9.37e3	67.3	NO
3	3 13C3-PFHxS	1800863-03 Bemidji Pilot INF 0.26399	2.04e3	70.8	NO
4	4 13C8-PFOA	1800863-03 Bemidji Pilot INF 0.26399	1.14e4	81.3	NO
5	5 13C9-PFNA	1800863-03 Bemidji Pilot INF 0.26399	1.24e4	73.6	NO
6	6 13C4-PFOS	1800863-03 Bemidji Pilot INF 0.26399	2.21e3	76.5	NO
7	7 13C6-PFDA	1800863-03 Bemidji Pilot INF 0.26399	1.52e4	71.0	NO
8	8 13C7-PFUDa	1800863-03 Bemidji Pilot INF 0.26399	1.78e4	73.0	NO

Name: 180605M2_21, Date: 05-Jun-2018, Time: 19:57:21, ID: 1800901-01 ACT Sample -16 0.23838, Description: ACT Sample -16

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800901-01 ACT Sample -16 0.23838	7.24e3	72.4	NO
2	2 13C5-PFHxA	1800901-01 ACT Sample -16 0.23838	1.02e4	73.2	NO
3	3 13C3-PFHxS	1800901-01 ACT Sample -16 0.23838	2.48e3	86.1	NO
4	4 13C8-PFOA	1800901-01 ACT Sample -16 0.23838	1.14e4	81.0	NO
5	5 13C9-PFNA	1800901-01 ACT Sample -16 0.23838	1.40e4	82.7	NO
6	6 13C4-PFOS	1800901-01 ACT Sample -16 0.23838	2.52e3	87.1	NO
7	7 13C6-PFDA	1800901-01 ACT Sample -16 0.23838	1.54e4	71.7	NO
8	8 13C7-PFUDa	1800901-01 ACT Sample -16 0.23838	1.90e4	77.8	NO

Name: 180605M2_22, Date: 05-Jun-2018, Time: 20:07:52, ID: 1800901-02 ACT Sample -19 0.23487, Description: ACT Sample -19

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800901-02 ACT Sample -19 0.23487	7.04e3	70.4	NO
2	2 13C5-PFHxA	1800901-02 ACT Sample -19 0.23487	9.91e3	71.2	NO
3	3 13C3-PFHxS	1800901-02 ACT Sample -19 0.23487	2.28e3	79.2	NO
4	4 13C8-PFOA	1800901-02 ACT Sample -19 0.23487	1.08e4	76.9	NO
5	5 13C9-PFNA	1800901-02 ACT Sample -19 0.23487	1.27e4	75.5	NO
6	6 13C4-PFOS	1800901-02 ACT Sample -19 0.23487	2.28e3	78.7	NO
7	7 13C6-PFDA	1800901-02 ACT Sample -19 0.23487	1.38e4	64.5	NO
8	8 13C7-PFUDa	1800901-02 ACT Sample -19 0.23487	1.88e4	76.8	NO

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Name: 180605M2_23, Date: 05-Jun-2018, Time: 20:18:16, ID: 1801071-02 A1-MW-55-SA1 0.11428, Description: A1-MW-55-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-02 A1-MW-55-SA1 0.11428	6.08e3	60.8	NO
2	2 13C5-PFHxA	1801071-02 A1-MW-55-SA1 0.11428	8.13e3	58.4	NO
3	3 13C3-PFHxS	1801071-02 A1-MW-55-SA1 0.11428	2.85e3	98.7	NO
4	4 13C8-PFOA	1801071-02 A1-MW-55-SA1 0.11428	1.09e4	77.7	NO
5	5 13C9-PFNA	1801071-02 A1-MW-55-SA1 0.11428	1.25e4	73.8	NO
6	6 13C4-PFOS	1801071-02 A1-MW-55-SA1 0.11428	2.75e3	95.3	NO
7	7 13C6-PFDA	1801071-02 A1-MW-55-SA1 0.11428	1.62e4	75.8	NO
8	8 13C7-PFUDa	1801071-02 A1-MW-55-SA1 0.11428	2.13e4	87.4	NO

Name: 180605M2_24, Date: 05-Jun-2018, Time: 20:28:47, ID: 1801071-03 A1-MW-23-SA1 0.11436, Description: A1-MW-23-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-03 A1-MW-23-SA1 0.11436	6.22e3	62.2	NO
2	2 13C5-PFHxA	1801071-03 A1-MW-23-SA1 0.11436	1.02e4	73.3	NO
3	3 13C3-PFHxS	1801071-03 A1-MW-23-SA1 0.11436	3.02e3	104.6	NO
4	4 13C8-PFOA	1801071-03 A1-MW-23-SA1 0.11436	1.32e4	94.0	NO
5	5 13C9-PFNA	1801071-03 A1-MW-23-SA1 0.11436	1.46e4	86.3	NO
6	6 13C4-PFOS	1801071-03 A1-MW-23-SA1 0.11436	2.97e3	102.9	NO
7	7 13C6-PFDA	1801071-03 A1-MW-23-SA1 0.11436	1.81e4	84.6	NO
8	8 13C7-PFUDa	1801071-03 A1-MW-23-SA1 0.11436	2.28e4	93.4	NO

Name: 180605M2_25, Date: 05-Jun-2018, Time: 20:39:12, ID: 1801071-04 A1-MW-07-SA1 0.11908, Description: A1-MW-07-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801071-04 A1-MW-07-SA1 0.11908	5.68e3	56.8	NO
2	2 13C5-PFHxA	1801071-04 A1-MW-07-SA1 0.11908	7.27e3	52.2	NO
3	3 13C3-PFHxS	1801071-04 A1-MW-07-SA1 0.11908	3.16e3	109.5	NO
4	4 13C8-PFOA	1801071-04 A1-MW-07-SA1 0.11908	9.00e3	64.2	NO
5	5 13C9-PFNA	1801071-04 A1-MW-07-SA1 0.11908	1.16e4	69.0	NO
6	6 13C4-PFOS	1801071-04 A1-MW-07-SA1 0.11908	3.27e3	113.2	NO
7	7 13C6-PFDA	1801071-04 A1-MW-07-SA1 0.11908	1.47e4	68.5	NO
8	8 13C7-PFUDa	1801071-04 A1-MW-07-SA1 0.11908	1.82e4	74.4	NO

Name: 180605M2_26, Date: 05-Jun-2018, Time: 20:49:42, ID: 1801039-01 A1-MW-13-SA1 0.10967, Description: A1-MW-13-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801039-01 A1-MW-13-SA1 0.10967	3.07e3	30.7	YES
2	2 13C5-PFHxA	1801039-01 A1-MW-13-SA1 0.10967	4.88e3	35.0	YES
3	3 13C3-PFHxS	1801039-01 A1-MW-13-SA1 0.10967	4.13e3	143.3	NO
4	4 13C8-PFOA	1801039-01 A1-MW-13-SA1 0.10967	8.00e3	57.1	NO
5	5 13C9-PFNA	1801039-01 A1-MW-13-SA1 0.10967	1.23e4	72.8	NO
6	6 13C4-PFOS	1801039-01 A1-MW-13-SA1 0.10967	4.20e3	145.4	NO
7	7 13C6-PFDA	1801039-01 A1-MW-13-SA1 0.10967	1.81e4	84.8	NO
8	8 13C7-PFUDa	1801039-01 A1-MW-13-SA1 0.10967	2.65e4	108.6	NO

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Name: 180605M2_27, Date: 05-Jun-2018, Time: 21:00:07, ID: 1801039-02 A1-MW-11-SA1 0.11624, Description: A1-MW-11-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801039-02 A1-MW-11-SA1 0.11624	4.60e3	46.0	YES
2	2 13C5-PFHxA	1801039-02 A1-MW-11-SA1 0.11624	6.51e3	46.8	YES
3	3 13C3-PFHxS	1801039-02 A1-MW-11-SA1 0.11624	3.84e3	133.0	NO
4	4 13C8-PFOA	1801039-02 A1-MW-11-SA1 0.11624	8.95e3	63.8	NO
5	5 13C9-PFNA	1801039-02 A1-MW-11-SA1 0.11624	1.22e4	72.4	NO
6	6 13C4-PFOS	1801039-02 A1-MW-11-SA1 0.11624	3.79e3	131.0	NO
7	7 13C6-PFDA	1801039-02 A1-MW-11-SA1 0.11624	1.44e4	67.3	NO
8	8 13C7-PFUDa	1801039-02 A1-MW-11-SA1 0.11624	2.49e4	102.0	NO

Name: 180605M2_28, Date: 05-Jun-2018, Time: 21:10:37, ID: 1801039-03 A1-MW-14-SA1 0.11194, Description: A1-MW-14-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801039-03 A1-MW-14-SA1 0.11194	2.44e3	24.3	YES
2	2 13C5-PFHxA	1801039-03 A1-MW-14-SA1 0.11194	3.78e3	27.1	YES
3	3 13C3-PFHxS	1801039-03 A1-MW-14-SA1 0.11194	4.67e3	161.7	YES
4	4 13C8-PFOA	1801039-03 A1-MW-14-SA1 0.11194	7.12e3	50.8	NO
5	5 13C9-PFNA	1801039-03 A1-MW-14-SA1 0.11194	8.67e3	51.4	NO
6	6 13C4-PFOS	1801039-03 A1-MW-14-SA1 0.11194	4.48e3	155.1	YES
7	7 13C6-PFDA	1801039-03 A1-MW-14-SA1 0.11194	1.31e4	61.3	NO
8	8 13C7-PFUDa	1801039-03 A1-MW-14-SA1 0.11194	2.36e4	96.5	NO

Name: 180605M2_29, Date: 05-Jun-2018, Time: 21:21:07, ID: 1801039-04 A1-MW-15-SA1 0.11248, Description: A1-MW-15-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801039-04 A1-MW-15-SA1 0.11248	4.70e3	47.0	YES
2	2 13C5-PFHxA	1801039-04 A1-MW-15-SA1 0.11248	7.74e3	55.6	NO
3	3 13C3-PFHxS	1801039-04 A1-MW-15-SA1 0.11248	3.96e3	137.4	NO
4	4 13C8-PFOA	1801039-04 A1-MW-15-SA1 0.11248	1.28e4	91.3	NO
5	5 13C9-PFNA	1801039-04 A1-MW-15-SA1 0.11248	1.59e4	94.2	NO
6	6 13C4-PFOS	1801039-04 A1-MW-15-SA1 0.11248	3.95e3	136.5	NO
7	7 13C6-PFDA	1801039-04 A1-MW-15-SA1 0.11248	2.03e4	94.9	NO
8	8 13C7-PFUDa	1801039-04 A1-MW-15-SA1 0.11248	2.53e4	103.6	NO

Name: 180605M2_30, Date: 05-Jun-2018, Time: 21:31:32, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

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Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-11 PFC CS3 18E2907	9.00e3	90.0	NO
2	2 13C5-PFHxA	ST180605M2-11 PFC CS3 18E2907	1.48e4	106.6	NO
3	3 13C3-PFHxS	ST180605M2-11 PFC CS3 18E2907	3.26e3	113.1	NO
4	4 13C8-PFOA	ST180605M2-11 PFC CS3 18E2907	1.71e4	121.6	NO
5	5 13C9-PFNA	ST180605M2-11 PFC CS3 18E2907	1.96e4	116.1	NO
6	6 13C4-PFOS	ST180605M2-11 PFC CS3 18E2907	3.25e3	112.4	NO
7	7 13C6-PFDA	ST180605M2-11 PFC CS3 18E2907	2.49e4	116.3	NO
8	8 13C7-PFUDa	ST180605M2-11 PFC CS3 18E2907	2.67e4	109.5	NO

Name: 180605M2_32, Date: 05-Jun-2018, Time: 21:52:27, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180605M2_33, Date: 05-Jun-2018, Time: 22:02:57, ID: 1801039-07 A1-MW-25-SA1 0.11252, Description: A1-MW-25-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801039-07 A1-MW-25-SA1 0.11252	2.63e3	26.2	YES
2	2 13C5-PFHxA	1801039-07 A1-MW-25-SA1 0.11252	4.03e3	28.9	YES
3	3 13C3-PFHxS	1801039-07 A1-MW-25-SA1 0.11252	3.65e3	126.6	NO
4	4 13C8-PFOA	1801039-07 A1-MW-25-SA1 0.11252	5.58e3	39.8	YES
5	5 13C9-PFNA	1801039-07 A1-MW-25-SA1 0.11252	9.32e3	55.2	NO
6	6 13C4-PFOS	1801039-07 A1-MW-25-SA1 0.11252	3.89e3	134.7	NO
7	7 13C6-PFDA	1801039-07 A1-MW-25-SA1 0.11252	1.41e4	65.9	NO
8	8 13C7-PFUDa	1801039-07 A1-MW-25-SA1 0.11252	1.70e4	69.6	NO

Name: 180605M2_34, Date: 05-Jun-2018, Time: 22:13:21, ID: 1801024-01 A1-MW-51-SA1 0.11961, Description: A1-MW-51-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-01 A1-MW-51-SA1 0.11961	3.50e3	35.0	YES
2	2 13C5-PFHxA	1801024-01 A1-MW-51-SA1 0.11961	4.37e3	31.4	YES
3	3 13C3-PFHxS	1801024-01 A1-MW-51-SA1 0.11961	2.37e3	82.2	NO
4	4 13C8-PFOA	1801024-01 A1-MW-51-SA1 0.11961	5.30e3	37.8	YES
5	5 13C9-PFNA	1801024-01 A1-MW-51-SA1 0.11961	6.11e3	36.2	YES
6	6 13C4-PFOS	1801024-01 A1-MW-51-SA1 0.11961	2.36e3	81.8	NO
7	7 13C6-PFDA	1801024-01 A1-MW-51-SA1 0.11961	5.78e3	27.0	YES
8	8 13C7-PFUDa	1801024-01 A1-MW-51-SA1 0.11961	8.85e3	36.3	YES

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Name: 180605M2_35, Date: 05-Jun-2018, Time: 22:23:52, ID: 1801024-02 A1-MW-50-SA1 0.12082, Description: A1-MW-50-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-02 A1-MW-50-SA1 0.12082	8.68e3	86.8	NO
2	2 13C5-PFHxA	1801024-02 A1-MW-50-SA1 0.12082	1.15e4	82.8	NO
3	3 13C3-PFHxS	1801024-02 A1-MW-50-SA1 0.12082	2.74e3	95.0	NO
4	4 13C8-PFOA	1801024-02 A1-MW-50-SA1 0.12082	1.30e4	92.6	NO
5	5 13C9-PFNA	1801024-02 A1-MW-50-SA1 0.12082	1.57e4	92.8	NO
6	6 13C4-PFOS	1801024-02 A1-MW-50-SA1 0.12082	2.59e3	89.5	NO
7	7 13C6-PFDA	1801024-02 A1-MW-50-SA1 0.12082	1.59e4	74.2	NO
8	8 13C7-PFUDa	1801024-02 A1-MW-50-SA1 0.12082	2.02e4	82.7	NO

Name: 180605M2_36, Date: 05-Jun-2018, Time: 22:34:22, ID: 1801024-05 A1-MW-04-SA1 0.12315, Description: A1-MW-04-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801024-05 A1-MW-04-SA1 0.12315	6.30e3	63.0	NO
2	2 13C5-PFHxA	1801024-05 A1-MW-04-SA1 0.12315	8.42e3	60.4	NO
3	3 13C3-PFHxS	1801024-05 A1-MW-04-SA1 0.12315	2.52e3	87.3	NO
4	4 13C8-PFOA	1801024-05 A1-MW-04-SA1 0.12315	9.62e3	68.6	NO
5	5 13C9-PFNA	1801024-05 A1-MW-04-SA1 0.12315	1.06e4	62.8	NO
6	6 13C4-PFOS	1801024-05 A1-MW-04-SA1 0.12315	2.79e3	96.7	NO
7	7 13C6-PFDA	1801024-05 A1-MW-04-SA1 0.12315	1.20e4	56.3	NO
8	8 13C7-PFUDa	1801024-05 A1-MW-04-SA1 0.12315	1.53e4	62.6	NO

Name: 180605M2_37, Date: 05-Jun-2018, Time: 22:44:46, ID: B8E0078-BS1 OPR 0.125, Description: OPR

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0078-BS1 OPR 0.125	5.57e3	55.7	NO
2	2 13C5-PFHxA	B8E0078-BS1 OPR 0.125	8.53e3	61.2	NO
3	3 13C3-PFHxS	B8E0078-BS1 OPR 0.125	2.30e3	79.9	NO
4	4 13C8-PFOA	B8E0078-BS1 OPR 0.125	1.11e4	79.0	NO
5	5 13C9-PFNA	B8E0078-BS1 OPR 0.125	1.28e4	75.9	NO
6	6 13C4-PFOS	B8E0078-BS1 OPR 0.125	2.25e3	77.8	NO
7	7 13C6-PFDA	B8E0078-BS1 OPR 0.125	1.34e4	62.8	NO
8	8 13C7-PFUDa	B8E0078-BS1 OPR 0.125	1.76e4	72.1	NO

Name: 180605M2_38, Date: 05-Jun-2018, Time: 22:55:16, ID: B8E0078-BSD1 LCSD 0.125, Description: LCSD

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0078-BSD1 LCSD 0.125	4.71e3	47.1	YES
2	2 13C5-PFHxA	B8E0078-BSD1 LCSD 0.125	8.79e3	63.1	NO
3	3 13C3-PFHxS	B8E0078-BSD1 LCSD 0.125	2.19e3	76.1	NO
4	4 13C8-PFOA	B8E0078-BSD1 LCSD 0.125	1.09e4	77.6	NO
5	5 13C9-PFNA	B8E0078-BSD1 LCSD 0.125	1.33e4	78.6	NO
6	6 13C4-PFOS	B8E0078-BSD1 LCSD 0.125	2.12e3	73.3	NO
7	7 13C6-PFDA	B8E0078-BSD1 LCSD 0.125	1.62e4	75.6	NO
8	8 13C7-PFUDa	B8E0078-BSD1 LCSD 0.125	1.85e4	75.8	NO

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Name: 180605M2_39, Date: 05-Jun-2018, Time: 23:05:40, ID: B8E0078-BLK1 Method Blank 0.125, Description: Method Blank

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0078-BLK1 Method Blank 0.125	6.78e3	67.7	NO
2	2 13C5-PFHxA	B8E0078-BLK1 Method Blank 0.125	1.05e4	75.3	NO
3	3 13C3-PFHxS	B8E0078-BLK1 Method Blank 0.125	2.46e3	85.2	NO
4	4 13C8-PFOA	B8E0078-BLK1 Method Blank 0.125	1.25e4	89.4	NO
5	5 13C9-PFNA	B8E0078-BLK1 Method Blank 0.125	1.42e4	84.3	NO
6	6 13C4-PFOS	B8E0078-BLK1 Method Blank 0.125	2.49e3	86.0	NO
7	7 13C6-PFDA	B8E0078-BLK1 Method Blank 0.125	1.78e4	83.3	NO
8	8 13C7-PFUDa	B8E0078-BLK1 Method Blank 0.125	1.94e4	79.5	NO

Name: 180605M2_40, Date: 05-Jun-2018, Time: 23:16:11, ID: 1800862-01 REEPDW451FRB 0.11732, Description: REEPDW451FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-01 REEPDW451FRB 0.11732	6.66e3	66.6	NO
2	2 13C5-PFHxA	1800862-01 REEPDW451FRB 0.11732	9.43e3	67.7	NO
3	3 13C3-PFHxS	1800862-01 REEPDW451FRB 0.11732	2.36e3	81.9	NO
4	4 13C8-PFOA	1800862-01 REEPDW451FRB 0.11732	1.07e4	76.6	NO
5	5 13C9-PFNA	1800862-01 REEPDW451FRB 0.11732	1.43e4	84.5	NO
6	6 13C4-PFOS	1800862-01 REEPDW451FRB 0.11732	2.32e3	80.1	NO
7	7 13C6-PFDA	1800862-01 REEPDW451FRB 0.11732	1.52e4	70.8	NO
8	8 13C7-PFUDa	1800862-01 REEPDW451FRB 0.11732	1.53e4	62.8	NO

Name: 180605M2_41, Date: 05-Jun-2018, Time: 23:26:35, ID: 1800862-02 REEPDW452FRB 0.11393, Description: REEPDW452FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-02 REEPDW452FRB 0.11393	5.92e3	59.2	NO
2	2 13C5-PFHxA	1800862-02 REEPDW452FRB 0.11393	9.99e3	71.8	NO
3	3 13C3-PFHxS	1800862-02 REEPDW452FRB 0.11393	2.43e3	84.1	NO
4	4 13C8-PFOA	1800862-02 REEPDW452FRB 0.11393	1.26e4	89.7	NO
5	5 13C9-PFNA	1800862-02 REEPDW452FRB 0.11393	1.38e4	81.9	NO
6	6 13C4-PFOS	1800862-02 REEPDW452FRB 0.11393	2.38e3	82.3	NO
7	7 13C6-PFDA	1800862-02 REEPDW452FRB 0.11393	1.51e4	70.6	NO
8	8 13C7-PFUDa	1800862-02 REEPDW452FRB 0.11393	2.05e4	84.0	NO

Name: 180605M2_42, Date: 05-Jun-2018, Time: 23:37:05, ID: 1800862-03 REEPDW453FRB 0.11381, Description: REEPDW453FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-03 REEPDW453FRB 0.11381	5.06e3	50.5	NO
2	2 13C5-PFHxA	1800862-03 REEPDW453FRB 0.11381	8.57e3	61.5	NO
3	3 13C3-PFHxS	1800862-03 REEPDW453FRB 0.11381	2.25e3	77.9	NO
4	4 13C8-PFOA	1800862-03 REEPDW453FRB 0.11381	1.03e4	73.5	NO
5	5 13C9-PFNA	1800862-03 REEPDW453FRB 0.11381	1.16e4	68.8	NO
6	6 13C4-PFOS	1800862-03 REEPDW453FRB 0.11381	2.28e3	78.9	NO
7	7 13C6-PFDA	1800862-03 REEPDW453FRB 0.11381	1.54e4	71.7	NO
8	8 13C7-PFUDa	1800862-03 REEPDW453FRB 0.11381	1.63e4	66.7	NO

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Name: 180605M2_43, Date: 05-Jun-2018, Time: 23:47:29, ID: 1800862-04 REEPDW454FRB 0.11483, Description: REEPDW454FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-04 REEPDW454FRB 0.11483	5.90e3	58.9	NO
2	2 13C5-PFHxA	1800862-04 REEPDW454FRB 0.11483	8.89e3	63.8	NO
3	3 13C3-PFHxS	1800862-04 REEPDW454FRB 0.11483	2.33e3	80.7	NO
4	4 13C8-PFOA	1800862-04 REEPDW454FRB 0.11483	1.09e4	77.4	NO
5	5 13C9-PFNA	1800862-04 REEPDW454FRB 0.11483	1.17e4	69.3	NO
6	6 13C4-PFOS	1800862-04 REEPDW454FRB 0.11483	2.34e3	81.1	NO
7	7 13C6-PFDA	1800862-04 REEPDW454FRB 0.11483	1.50e4	70.2	NO
8	8 13C7-PFUDa	1800862-04 REEPDW454FRB 0.11483	1.71e4	69.9	NO

Name: 180605M2_44, Date: 05-Jun-2018, Time: 23:58:00, ID: 1800862-05 REEPDW456FRB 0.1202, Description: REEPDW456FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-05 REEPDW456FRB 0.1202	6.32e3	63.1	NO
2	2 13C5-PFHxA	1800862-05 REEPDW456FRB 0.1202	8.62e3	61.9	NO
3	3 13C3-PFHxS	1800862-05 REEPDW456FRB 0.1202	2.09e3	72.5	NO
4	4 13C8-PFOA	1800862-05 REEPDW456FRB 0.1202	8.77e3	62.5	NO
5	5 13C9-PFNA	1800862-05 REEPDW456FRB 0.1202	1.19e4	70.5	NO
6	6 13C4-PFOS	1800862-05 REEPDW456FRB 0.1202	2.18e3	75.6	NO
7	7 13C6-PFDA	1800862-05 REEPDW456FRB 0.1202	1.04e4	48.7	YES
8	8 13C7-PFUDa	1800862-05 REEPDW456FRB 0.1202	1.43e4	58.8	NO

Name: 180605M2_45, Date: 06-Jun-2018, Time: 00:08:25, ID: 1800862-06 REEPDW446FRB 0.11919, Description: REEPDW446FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-06 REEPDW446FRB 0.11919	5.56e3	55.6	NO
2	2 13C5-PFHxA	1800862-06 REEPDW446FRB 0.11919	9.00e3	64.6	NO
3	3 13C3-PFHxS	1800862-06 REEPDW446FRB 0.11919	2.20e3	76.4	NO
4	4 13C8-PFOA	1800862-06 REEPDW446FRB 0.11919	1.11e4	79.4	NO
5	5 13C9-PFNA	1800862-06 REEPDW446FRB 0.11919	1.23e4	72.8	NO
6	6 13C4-PFOS	1800862-06 REEPDW446FRB 0.11919	2.21e3	76.5	NO
7	7 13C6-PFDA	1800862-06 REEPDW446FRB 0.11919	1.44e4	67.1	NO
8	8 13C7-PFUDa	1800862-06 REEPDW446FRB 0.11919	1.95e4	79.8	NO

Name: 180605M2_46, Date: 06-Jun-2018, Time: 00:18:55, ID: 1800862-07 REEPDW455FRB 0.12259, Description: REEPDW455FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-07 REEPDW455FRB 0.12259	5.25e3	52.5	NO
2	2 13C5-PFHxA	1800862-07 REEPDW455FRB 0.12259	8.44e3	60.6	NO
3	3 13C3-PFHxS	1800862-07 REEPDW455FRB 0.12259	2.27e3	78.7	NO
4	4 13C8-PFOA	1800862-07 REEPDW455FRB 0.12259	1.04e4	74.4	NO
5	5 13C9-PFNA	1800862-07 REEPDW455FRB 0.12259	1.28e4	75.9	NO
6	6 13C4-PFOS	1800862-07 REEPDW455FRB 0.12259	2.13e3	73.7	NO
7	7 13C6-PFDA	1800862-07 REEPDW455FRB 0.12259	1.50e4	70.1	NO
8	8 13C7-PFUDa	1800862-07 REEPDW455FRB 0.12259	1.61e4	66.1	NO

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Name: 180605M2_47, Date: 06-Jun-2018, Time: 00:29:20, ID: 1800862-08 REEPDW447FRB 0.11683, Description: REEPDW447FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-08 REEPDW447FRB 0.11683	4.34e3	43.4	YES
2	2 13C5-PFHxA	1800862-08 REEPDW447FRB 0.11683	7.20e3	51.7	NO
3	3 13C3-PFHxS	1800862-08 REEPDW447FRB 0.11683	1.89e3	65.5	NO
4	4 13C8-PFOA	1800862-08 REEPDW447FRB 0.11683	9.87e3	70.3	NO
5	5 13C9-PFNA	1800862-08 REEPDW447FRB 0.11683	1.10e4	65.0	NO
6	6 13C4-PFOS	1800862-08 REEPDW447FRB 0.11683	1.92e3	66.6	NO
7	7 13C6-PFDA	1800862-08 REEPDW447FRB 0.11683	1.34e4	62.5	NO
8	8 13C7-PFUDa	1800862-08 REEPDW447FRB 0.11683	1.60e4	65.4	NO

Name: 180605M2_48, Date: 06-Jun-2018, Time: 00:39:51, ID: 1800862-09 REEPDW448FRB 0.12114, Description: REEPDW448FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-09 REEPDW448FRB 0.12114	6.10e3	61.0	NO
2	2 13C5-PFHxA	1800862-09 REEPDW448FRB 0.12114	9.74e3	69.9	NO
3	3 13C3-PFHxS	1800862-09 REEPDW448FRB 0.12114	2.37e3	82.2	NO
4	4 13C8-PFOA	1800862-09 REEPDW448FRB 0.12114	1.12e4	79.7	NO
5	5 13C9-PFNA	1800862-09 REEPDW448FRB 0.12114	1.28e4	76.1	NO
6	6 13C4-PFOS	1800862-09 REEPDW448FRB 0.12114	2.43e3	84.2	NO
7	7 13C6-PFDA	1800862-09 REEPDW448FRB 0.12114	1.44e4	67.4	NO
8	8 13C7-PFUDa	1800862-09 REEPDW448FRB 0.12114	1.94e4	79.6	NO

Name: 180605M2_49, Date: 06-Jun-2018, Time: 00:50:16, ID: 1800862-10 REEPDW449FRB 0.11798, Description: REEPDW449FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-10 REEPDW449FRB 0.11798	6.56e3	65.6	NO
2	2 13C5-PFHxA	1800862-10 REEPDW449FRB 0.11798	9.07e3	65.1	NO
3	3 13C3-PFHxS	1800862-10 REEPDW449FRB 0.11798	2.08e3	71.9	NO
4	4 13C8-PFOA	1800862-10 REEPDW449FRB 0.11798	1.16e4	82.4	NO
5	5 13C9-PFNA	1800862-10 REEPDW449FRB 0.11798	1.05e4	62.1	NO
6	6 13C4-PFOS	1800862-10 REEPDW449FRB 0.11798	2.26e3	78.3	NO
7	7 13C6-PFDA	1800862-10 REEPDW449FRB 0.11798	1.52e4	71.1	NO
8	8 13C7-PFUDa	1800862-10 REEPDW449FRB 0.11798	1.75e4	71.8	NO

Name: 180605M2_50, Date: 06-Jun-2018, Time: 01:00:38, ID: 1800862-11 REEPDW450FRB 0.12118, Description: REEPDW450FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-11 REEPDW450FRB 0.12118	6.64e3	66.4	NO
2	2 13C5-PFHxA	1800862-11 REEPDW450FRB 0.12118	9.47e3	68.0	NO
3	3 13C3-PFHxS	1800862-11 REEPDW450FRB 0.12118	2.35e3	81.5	NO
4	4 13C8-PFOA	1800862-11 REEPDW450FRB 0.12118	1.06e4	75.6	NO
5	5 13C9-PFNA	1800862-11 REEPDW450FRB 0.12118	1.08e4	63.7	NO
6	6 13C4-PFOS	1800862-11 REEPDW450FRB 0.12118	2.19e3	75.9	NO
7	7 13C6-PFDA	1800862-11 REEPDW450FRB 0.12118	1.29e4	60.1	NO
8	8 13C7-PFUDa	1800862-11 REEPDW450FRB 0.12118	1.61e4	65.9	NO

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Name: 180605M2_51, Date: 06-Jun-2018, Time: 01:11:08, ID: 1800862-12 REEPDW457FRB 0.12446, Description: REEPDW457FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-12 REEPDW457FRB 0.12446	6.33e3	63.3	NO
2	2 13C5-PFHxA	1800862-12 REEPDW457FRB 0.12446	9.53e3	68.4	NO
3	3 13C3-PFHxS	1800862-12 REEPDW457FRB 0.12446	2.31e3	80.2	NO
4	4 13C8-PFOA	1800862-12 REEPDW457FRB 0.12446	1.19e4	85.1	NO
5	5 13C9-PFNA	1800862-12 REEPDW457FRB 0.12446	1.08e4	63.9	NO
6	6 13C4-PFOS	1800862-12 REEPDW457FRB 0.12446	2.42e3	83.7	NO
7	7 13C6-PFDA	1800862-12 REEPDW457FRB 0.12446	1.26e4	59.0	NO
8	8 13C7-PFUDa	1800862-12 REEPDW457FRB 0.12446	1.58e4	64.6	NO

Name: 180605M2_52, Date: 06-Jun-2018, Time: 01:21:33, ID: 1800862-13 REEPDW459FRB 0.12147, Description: REEPDW459FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-13 REEPDW459FRB 0.12147	6.33e3	63.3	NO
2	2 13C5-PFHxA	1800862-13 REEPDW459FRB 0.12147	9.67e3	69.5	NO
3	3 13C3-PFHxS	1800862-13 REEPDW459FRB 0.12147	2.25e3	78.0	NO
4	4 13C8-PFOA	1800862-13 REEPDW459FRB 0.12147	1.10e4	78.5	NO
5	5 13C9-PFNA	1800862-13 REEPDW459FRB 0.12147	1.31e4	77.5	NO
6	6 13C4-PFOS	1800862-13 REEPDW459FRB 0.12147	2.23e3	77.2	NO
7	7 13C6-PFDA	1800862-13 REEPDW459FRB 0.12147	1.54e4	71.8	NO
8	8 13C7-PFUDa	1800862-13 REEPDW459FRB 0.12147	1.46e4	59.9	NO

Name: 180605M2_53, Date: 06-Jun-2018, Time: 01:32:03, ID: 1800862-14 REEPDW458FRB 0.11703, Description: REEPDW458FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-14 REEPDW458FRB 0.11703	5.40e3	54.0	NO
2	2 13C5-PFHxA	1800862-14 REEPDW458FRB 0.11703	8.89e3	63.8	NO
3	3 13C3-PFHxS	1800862-14 REEPDW458FRB 0.11703	2.29e3	79.5	NO
4	4 13C8-PFOA	1800862-14 REEPDW458FRB 0.11703	1.14e4	81.2	NO
5	5 13C9-PFNA	1800862-14 REEPDW458FRB 0.11703	1.22e4	72.1	NO
6	6 13C4-PFOS	1800862-14 REEPDW458FRB 0.11703	2.24e3	77.5	NO
7	7 13C6-PFDA	1800862-14 REEPDW458FRB 0.11703	1.41e4	65.8	NO
8	8 13C7-PFUDa	1800862-14 REEPDW458FRB 0.11703	1.75e4	71.7	NO

Name: 180605M2_54, Date: 06-Jun-2018, Time: 01:42:28, ID: 1800862-15 REEPDW460FRB 0.11944, Description: REEPDW460FRB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800862-15 REEPDW460FRB 0.11944	4.83e3	48.3	YES
2	2 13C5-PFHxA	1800862-15 REEPDW460FRB 0.11944	7.56e3	54.3	NO
3	3 13C3-PFHxS	1800862-15 REEPDW460FRB 0.11944	1.89e3	65.3	NO
4	4 13C8-PFOA	1800862-15 REEPDW460FRB 0.11944	9.07e3	64.6	NO
5	5 13C9-PFNA	1800862-15 REEPDW460FRB 0.11944	8.96e3	53.1	NO
6	6 13C4-PFOS	1800862-15 REEPDW460FRB 0.11944	1.90e3	65.8	NO
7	7 13C6-PFDA	1800862-15 REEPDW460FRB 0.11944	1.21e4	56.4	NO
8	8 13C7-PFUDa	1800862-15 REEPDW460FRB 0.11944	1.37e4	56.1	NO

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Name: 180605M2_55, Date: 06-Jun-2018, Time: 01:52:59, ID: B8E0244-BS1 OPR 0.125, Description: OPR

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0244-BS1 OPR 0.125	7.12e3	71.2	NO
2	2 13C5-PFHxA	B8E0244-BS1 OPR 0.125	1.13e4	81.1	NO
3	3 13C3-PFHxS	B8E0244-BS1 OPR 0.125	2.63e3	91.0	NO
4	4 13C8-PFOA	B8E0244-BS1 OPR 0.125	1.30e4	92.9	NO
5	5 13C9-PFNA	B8E0244-BS1 OPR 0.125	1.60e4	95.0	NO
6	6 13C4-PFOS	B8E0244-BS1 OPR 0.125	2.65e3	91.6	NO
7	7 13C6-PFDA	B8E0244-BS1 OPR 0.125	1.57e4	73.5	NO
8	8 13C7-PFUDa	B8E0244-BS1 OPR 0.125	1.93e4	79.2	NO

Name: 180605M2_56, Date: 06-Jun-2018, Time: 02:03:23, ID: B8E0244-BLK1 Method Blank 0.125, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0244-BLK1 Method Blank 0.125	8.94e3	89.4	NO
2	2 13C5-PFHxA	B8E0244-BLK1 Method Blank 0.125	1.17e4	84.3	NO
3	3 13C3-PFHxS	B8E0244-BLK1 Method Blank 0.125	2.79e3	96.6	NO
4	4 13C8-PFOA	B8E0244-BLK1 Method Blank 0.125	1.46e4	103.9	NO
5	5 13C9-PFNA	B8E0244-BLK1 Method Blank 0.125	1.57e4	92.9	NO
6	6 13C4-PFOS	B8E0244-BLK1 Method Blank 0.125	2.67e3	92.5	NO
7	7 13C6-PFDA	B8E0244-BLK1 Method Blank 0.125	1.72e4	80.5	NO
8	8 13C7-PFUDa	B8E0244-BLK1 Method Blank 0.125	2.20e4	90.1	NO

Name: 180605M2_57, Date: 06-Jun-2018, Time: 02:13:53, ID: B8E0244-MS1 Matrix Spike 0.11028, Description: Matrix Spike

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0244-MS1 Matrix Spike 0.11028	8.15e3	81.4	NO
2	2 13C5-PFHxA	B8E0244-MS1 Matrix Spike 0.11028	9.91e3	71.1	NO
3	3 13C3-PFHxS	B8E0244-MS1 Matrix Spike 0.11028	3.74e3	129.6	NO
4	4 13C8-PFOA	B8E0244-MS1 Matrix Spike 0.11028	1.58e4	112.9	NO
5	5 13C9-PFNA	B8E0244-MS1 Matrix Spike 0.11028	1.84e4	109.3	NO
6	6 13C4-PFOS	B8E0244-MS1 Matrix Spike 0.11028	3.71e3	128.4	NO
7	7 13C6-PFDA	B8E0244-MS1 Matrix Spike 0.11028	2.25e4	105.1	NO
8	8 13C7-PFUDa	B8E0244-MS1 Matrix Spike 0.11028	2.54e4	104.2	NO

Name: 180605M2_58, Date: 06-Jun-2018, Time: 02:24:17, ID: B8E0244-MSD1 Matrix Spike Dup 0.11324, Description: Matrix Spike Dup

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0244-MSD1 Matrix Spike Dup 0.113...	5.81e3	58.1	NO
2	2 13C5-PFHxA	B8E0244-MSD1 Matrix Spike Dup 0.113...	6.73e3	48.3	YES
3	3 13C3-PFHxS	B8E0244-MSD1 Matrix Spike Dup 0.113...	2.69e3	93.3	NO
4	4 13C8-PFOA	B8E0244-MSD1 Matrix Spike Dup 0.113...	1.03e4	73.3	NO
5	5 13C9-PFNA	B8E0244-MSD1 Matrix Spike Dup 0.113...	1.01e4	59.8	NO
6	6 13C4-PFOS	B8E0244-MSD1 Matrix Spike Dup 0.113...	2.60e3	89.8	NO
7	7 13C6-PFDA	B8E0244-MSD1 Matrix Spike Dup 0.113...	1.56e4	72.7	NO
8	8 13C7-PFUDa	B8E0244-MSD1 Matrix Spike Dup 0.113...	1.65e4	67.7	NO

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Name: 180605M2_59, Date: 06-Jun-2018, Time: 02:34:48, ID: B8E0244-MS2 Matrix Spike 0.11122, Description: Matrix Spike

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0244-MS2 Matrix Spike 0.11122	4.07e3	40.7	YES
2	2 13C5-PFHxA	B8E0244-MS2 Matrix Spike 0.11122	6.19e3	44.5	YES
3	3 13C3-PFHxS	B8E0244-MS2 Matrix Spike 0.11122	2.37e3	82.2	NO
4	4 13C8-PFOA	B8E0244-MS2 Matrix Spike 0.11122	9.31e3	66.3	NO
5	5 13C9-PFNA	B8E0244-MS2 Matrix Spike 0.11122	1.01e4	59.8	NO
6	6 13C4-PFOS	B8E0244-MS2 Matrix Spike 0.11122	2.34e3	81.1	NO
7	7 13C6-PFDA	B8E0244-MS2 Matrix Spike 0.11122	1.09e4	50.8	NO
8	8 13C7-PFUDa	B8E0244-MS2 Matrix Spike 0.11122	1.36e4	55.8	NO

Name: 180605M2_60, Date: 06-Jun-2018, Time: 02:45:18, ID: B8E0244-MSD2 Matrix Spike Dup 0.11512, Description: Matrix Spike Dup

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0244-MSD2 Matrix Spike Dup 0.115...	5.24e3	52.4	NO
2	2 13C5-PFHxA	B8E0244-MSD2 Matrix Spike Dup 0.115...	8.01e3	57.5	NO
3	3 13C3-PFHxS	B8E0244-MSD2 Matrix Spike Dup 0.115...	2.65e3	91.9	NO
4	4 13C8-PFOA	B8E0244-MSD2 Matrix Spike Dup 0.115...	1.05e4	74.8	NO
5	5 13C9-PFNA	B8E0244-MSD2 Matrix Spike Dup 0.115...	1.15e4	68.4	NO
6	6 13C4-PFOS	B8E0244-MSD2 Matrix Spike Dup 0.115...	3.10e3	107.3	NO
7	7 13C6-PFDA	B8E0244-MSD2 Matrix Spike Dup 0.115...	1.42e4	66.5	NO
8	8 13C7-PFUDa	B8E0244-MSD2 Matrix Spike Dup 0.115...	1.67e4	68.4	NO

Name: 180605M2_61, Date: 06-Jun-2018, Time: 02:55:42, ID: 1801037-01 A1-MW-18-SA1 0.11265, Description: A1-MW-18-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-01 A1-MW-18-SA1 0.11265	5.85e3	58.5	NO
2	2 13C5-PFHxA	1801037-01 A1-MW-18-SA1 0.11265	7.59e3	54.5	NO
3	3 13C3-PFHxS	1801037-01 A1-MW-18-SA1 0.11265	2.81e3	97.3	NO
4	4 13C8-PFOA	1801037-01 A1-MW-18-SA1 0.11265	9.72e3	69.3	NO
5	5 13C9-PFNA	1801037-01 A1-MW-18-SA1 0.11265	1.09e4	64.8	NO
6	6 13C4-PFOS	1801037-01 A1-MW-18-SA1 0.11265	2.88e3	99.5	NO
7	7 13C6-PFDA	1801037-01 A1-MW-18-SA1 0.11265	1.22e4	57.2	NO
8	8 13C7-PFUDa	1801037-01 A1-MW-18-SA1 0.11265	1.62e4	66.2	NO

Name: 180605M2_62, Date: 06-Jun-2018, Time: 03:06:13, ID: 1801037-02 16-MW-08-SA1 0.11493, Description: 16-MW-08-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-02 16-MW-08-SA1 0.11493	5.47e3	54.7	NO
2	2 13C5-PFHxA	1801037-02 16-MW-08-SA1 0.11493	6.53e3	46.9	YES
3	3 13C3-PFHxS	1801037-02 16-MW-08-SA1 0.11493	2.91e3	101.0	NO
4	4 13C8-PFOA	1801037-02 16-MW-08-SA1 0.11493	9.09e3	64.8	NO
5	5 13C9-PFNA	1801037-02 16-MW-08-SA1 0.11493	1.11e4	65.7	NO
6	6 13C4-PFOS	1801037-02 16-MW-08-SA1 0.11493	2.80e3	96.8	NO
7	7 13C6-PFDA	1801037-02 16-MW-08-SA1 0.11493	9.64e3	45.0	YES
8	8 13C7-PFUDa	1801037-02 16-MW-08-SA1 0.11493	1.73e4	70.8	NO

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Name: 180605M2_63, Date: 06-Jun-2018, Time: 03:16:38, ID: 1801037-03 A1-MW-19-SA1 0.11827, Description: A1-MW-19-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-03 A1-MW-19-SA1 0.11827	4.90e3	49.0	YES
2	2 13C5-PFHxA	1801037-03 A1-MW-19-SA1 0.11827	6.32e3	45.4	YES
3	3 13C3-PFHxS	1801037-03 A1-MW-19-SA1 0.11827	2.76e3	95.5	NO
4	4 13C8-PFOA	1801037-03 A1-MW-19-SA1 0.11827	6.90e3	49.2	YES
5	5 13C9-PFNA	1801037-03 A1-MW-19-SA1 0.11827	7.39e3	43.8	YES
6	6 13C4-PFOS	1801037-03 A1-MW-19-SA1 0.11827	2.83e3	97.9	NO
7	7 13C6-PFDA	1801037-03 A1-MW-19-SA1 0.11827	1.01e4	47.3	YES
8	8 13C7-PFUDa	1801037-03 A1-MW-19-SA1 0.11827	1.31e4	53.5	NO

Name: 180605M2_64, Date: 06-Jun-2018, Time: 03:27:09, ID: 1801037-04 A1-MW-37-SA1 0.11915, Description: A1-MW-37-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-04 A1-MW-37-SA1 0.11915	3.78e3	37.8	YES
2	2 13C5-PFHxA	1801037-04 A1-MW-37-SA1 0.11915	4.69e3	33.7	YES
3	3 13C3-PFHxS	1801037-04 A1-MW-37-SA1 0.11915	2.31e3	80.2	NO
4	4 13C8-PFOA	1801037-04 A1-MW-37-SA1 0.11915	5.85e3	41.7	YES
5	5 13C9-PFNA	1801037-04 A1-MW-37-SA1 0.11915	5.45e3	32.3	YES
6	6 13C4-PFOS	1801037-04 A1-MW-37-SA1 0.11915	2.20e3	76.1	NO
7	7 13C6-PFDA	1801037-04 A1-MW-37-SA1 0.11915	6.33e3	29.6	YES
8	8 13C7-PFUDa	1801037-04 A1-MW-37-SA1 0.11915	1.01e4	41.3	YES

Name: 180605M2_65, Date: 06-Jun-2018, Time: 03:37:33, ID: 1801037-05 A1-MW-37-SA1D 0.11595, Description: A1-MW-37-SA1D

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-05 A1-MW-37-SA1D 0.11595	6.65e3	66.5	NO
2	2 13C5-PFHxA	1801037-05 A1-MW-37-SA1D 0.11595	8.48e3	60.9	NO
3	3 13C3-PFHxS	1801037-05 A1-MW-37-SA1D 0.11595	2.97e3	102.9	NO
4	4 13C8-PFOA	1801037-05 A1-MW-37-SA1D 0.11595	9.70e3	69.1	NO
5	5 13C9-PFNA	1801037-05 A1-MW-37-SA1D 0.11595	1.21e4	71.7	NO
6	6 13C4-PFOS	1801037-05 A1-MW-37-SA1D 0.11595	3.03e3	104.8	NO
7	7 13C6-PFDA	1801037-05 A1-MW-37-SA1D 0.11595	1.38e4	64.4	NO
8	8 13C7-PFUDa	1801037-05 A1-MW-37-SA1D 0.11595	1.67e4	68.3	NO

Name: 180605M2_66, Date: 06-Jun-2018, Time: 03:48:03, ID: 1801037-06 16-H5-03-SA1 0.12456, Description: 16-H5-03-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-06 16-H5-03-SA1 0.12456	6.80e3	68.0	NO
2	2 13C5-PFHxA	1801037-06 16-H5-03-SA1 0.12456	7.66e3	55.0	NO
3	3 13C3-PFHxS	1801037-06 16-H5-03-SA1 0.12456	2.52e3	87.2	NO
4	4 13C8-PFOA	1801037-06 16-H5-03-SA1 0.12456	1.05e4	75.1	NO
5	5 13C9-PFNA	1801037-06 16-H5-03-SA1 0.12456	1.05e4	62.2	NO
6	6 13C4-PFOS	1801037-06 16-H5-03-SA1 0.12456	2.64e3	91.2	NO
7	7 13C6-PFDA	1801037-06 16-H5-03-SA1 0.12456	1.39e4	64.9	NO
8	8 13C7-PFUDa	1801037-06 16-H5-03-SA1 0.12456	1.60e4	65.4	NO

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Name: 180605M2_67, Date: 06-Jun-2018, Time: 03:58:29, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA	8.53e0	0.1	YES
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

Name: 180605M2_68, Date: 06-Jun-2018, Time: 04:08:59, ID: ST180605M2-12 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-12 PFC CS3 18E2907	1.03e4	103.1	NO
2	2 13C5-PFHxA	ST180605M2-12 PFC CS3 18E2907	1.62e4	116.3	NO
3	3 13C3-PFHxS	ST180605M2-12 PFC CS3 18E2907	3.57e3	123.7	NO
4	4 13C8-PFOA	ST180605M2-12 PFC CS3 18E2907	1.93e4	137.3	NO
5	5 13C9-PFNA	ST180605M2-12 PFC CS3 18E2907	2.00e4	118.2	NO
6	6 13C4-PFOS	ST180605M2-12 PFC CS3 18E2907	3.42e3	118.4	NO
7	7 13C6-PFDA	ST180605M2-12 PFC CS3 18E2907	2.26e4	105.8	NO
8	8 13C7-PFUdA	ST180605M2-12 PFC CS3 18E2907	2.80e4	114.6	NO

Name: 180605M2_69, Date: 06-Jun-2018, Time: 04:19:24, ID: ST180605M2-13 PFC CS0 18E2904, Description: PFC CS0 18E2904

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-13 PFC CS0 18E2904	1.07e4	106.9	NO
2	2 13C5-PFHxA	ST180605M2-13 PFC CS0 18E2904	1.61e4	115.8	NO
3	3 13C3-PFHxS	ST180605M2-13 PFC CS0 18E2904	3.53e3	122.4	NO
4	4 13C8-PFOA	ST180605M2-13 PFC CS0 18E2904	1.66e4	118.6	NO
5	5 13C9-PFNA	ST180605M2-13 PFC CS0 18E2904	1.84e4	109.2	NO
6	6 13C4-PFOS	ST180605M2-13 PFC CS0 18E2904	3.35e3	115.9	NO
7	7 13C6-PFDA	ST180605M2-13 PFC CS0 18E2904	2.05e4	96.0	NO
8	8 13C7-PFUdA	ST180605M2-13 PFC CS0 18E2904	2.73e4	111.6	NO

Name: 180605M2_70, Date: 06-Jun-2018, Time: 04:29:54, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

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Name: 180605M2_71, Date: 06-Jun-2018, Time: 04:40:20, ID: 1801037-07 16-MW-09-SA1 0.1148, Description: 16-MW-09-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-07 16-MW-09-SA1 0.1148	6.32e3	63.2	NO
2	2 13C5-PFHxA	1801037-07 16-MW-09-SA1 0.1148	8.30e3	59.6	NO
3	3 13C3-PFHxS	1801037-07 16-MW-09-SA1 0.1148	2.94e3	101.9	NO
4	4 13C8-PFOA	1801037-07 16-MW-09-SA1 0.1148	9.38e3	66.9	NO
5	5 13C9-PFNA	1801037-07 16-MW-09-SA1 0.1148	9.68e3	57.4	NO
6	6 13C4-PFOS	1801037-07 16-MW-09-SA1 0.1148	2.96e3	102.5	NO
7	7 13C6-PFDA	1801037-07 16-MW-09-SA1 0.1148	1.07e4	50.0	NO
8	8 13C7-PFUDa	1801037-07 16-MW-09-SA1 0.1148	1.48e4	60.8	NO

Name: 180605M2_72, Date: 06-Jun-2018, Time: 04:50:50, ID: 1801037-08 16-MW-06-5A1 0.11143, Description: 16-MW-06-5A1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-08 16-MW-06-5A1 0.11143	4.79e3	47.9	YES
2	2 13C5-PFHxA	1801037-08 16-MW-06-5A1 0.11143	6.03e3	43.3	YES
3	3 13C3-PFHxS	1801037-08 16-MW-06-5A1 0.11143	2.79e3	96.8	NO
4	4 13C8-PFOA	1801037-08 16-MW-06-5A1 0.11143	7.54e3	53.7	NO
5	5 13C9-PFNA	1801037-08 16-MW-06-5A1 0.11143	9.19e3	54.5	NO
6	6 13C4-PFOS	1801037-08 16-MW-06-5A1 0.11143	3.01e3	104.2	NO
7	7 13C6-PFDA	1801037-08 16-MW-06-5A1 0.11143	1.02e4	47.5	YES
8	8 13C7-PFUDa	1801037-08 16-MW-06-5A1 0.11143	1.31e4	53.5	NO

Name: 180605M2_73, Date: 06-Jun-2018, Time: 05:01:15, ID: 1801037-09 FRB-20180523 0.11719, Description: FRB-20180523

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801037-09 FRB-20180523 0.11719	6.15e3	61.5	NO
2	2 13C5-PFHxA	1801037-09 FRB-20180523 0.11719	8.66e3	62.2	NO
3	3 13C3-PFHxS	1801037-09 FRB-20180523 0.11719	2.72e3	94.1	NO
4	4 13C8-PFOA	1801037-09 FRB-20180523 0.11719	1.01e4	71.9	NO
5	5 13C9-PFNA	1801037-09 FRB-20180523 0.11719	1.22e4	72.1	NO
6	6 13C4-PFOS	1801037-09 FRB-20180523 0.11719	2.63e3	91.0	NO
7	7 13C6-PFDA	1801037-09 FRB-20180523 0.11719	1.44e4	67.2	NO
8	8 13C7-PFUDa	1801037-09 FRB-20180523 0.11719	1.94e4	79.5	NO

Name: 180605M2_74, Date: 06-Jun-2018, Time: 05:11:45, ID: 1801054-01 A1-MW-42-SA1 0.11279, Description: A1-MW-42-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-01 A1-MW-42-SA1 0.11279	3.39e3	33.9	YES
2	2 13C5-PFHxA	1801054-01 A1-MW-42-SA1 0.11279	4.45e3	32.0	YES
3	3 13C3-PFHxS	1801054-01 A1-MW-42-SA1 0.11279	2.73e3	94.6	NO
4	4 13C8-PFOA	1801054-01 A1-MW-42-SA1 0.11279	4.52e3	32.2	YES
5	5 13C9-PFNA	1801054-01 A1-MW-42-SA1 0.11279	5.18e3	30.7	YES
6	6 13C4-PFOS	1801054-01 A1-MW-42-SA1 0.11279	2.69e3	93.1	NO
7	7 13C6-PFDA	1801054-01 A1-MW-42-SA1 0.11279	6.69e3	31.2	YES
8	8 13C7-PFUDa	1801054-01 A1-MW-42-SA1 0.11279	9.43e3	38.6	YES

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Name: 180605M2_75, Date: 06-Jun-2018, Time: 05:22:09, ID: 1801054-02 A1-MW-54-SA1 0.11211, Description: A1-MW-54-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-02 A1-MW-54-SA1 0.11211	5.50e3	55.0	NO
2	2 13C5-PFHxA	1801054-02 A1-MW-54-SA1 0.11211	6.77e3	48.6	YES
3	3 13C3-PFHxS	1801054-02 A1-MW-54-SA1 0.11211	2.58e3	89.3	NO
4	4 13C8-PFOA	1801054-02 A1-MW-54-SA1 0.11211	8.47e3	60.4	NO
5	5 13C9-PFNA	1801054-02 A1-MW-54-SA1 0.11211	9.09e3	53.9	NO
6	6 13C4-PFOS	1801054-02 A1-MW-54-SA1 0.11211	2.75e3	95.1	NO
7	7 13C6-PFDA	1801054-02 A1-MW-54-SA1 0.11211	1.18e4	55.3	NO
8	8 13C7-PFUDa	1801054-02 A1-MW-54-SA1 0.11211	1.46e4	59.8	NO

Name: 180605M2_76, Date: 06-Jun-2018, Time: 05:32:40, ID: 1801054-03 A1-MW-53-SA1 0.1139, Description: A1-MW-53-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-03 A1-MW-53-SA1 0.1139	7.14e3	71.4	NO
2	2 13C5-PFHxA	1801054-03 A1-MW-53-SA1 0.1139	8.98e3	64.5	NO
3	3 13C3-PFHxS	1801054-03 A1-MW-53-SA1 0.1139	3.01e3	104.4	NO
4	4 13C8-PFOA	1801054-03 A1-MW-53-SA1 0.1139	1.13e4	80.8	NO
5	5 13C9-PFNA	1801054-03 A1-MW-53-SA1 0.1139	1.32e4	78.4	NO
6	6 13C4-PFOS	1801054-03 A1-MW-53-SA1 0.1139	3.10e3	107.2	NO
7	7 13C6-PFDA	1801054-03 A1-MW-53-SA1 0.1139	1.63e4	76.1	NO
8	8 13C7-PFUDa	1801054-03 A1-MW-53-SA1 0.1139	1.95e4	80.0	NO

Name: 180605M2_77, Date: 06-Jun-2018, Time: 05:43:10, ID: 1801054-04 A1-P2-19-SA1 0.11736, Description: A1-P2-19-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-04 A1-P2-19-SA1 0.11736	5.13e3	51.2	NO
2	2 13C5-PFHxA	1801054-04 A1-P2-19-SA1 0.11736	6.56e3	47.1	YES
3	3 13C3-PFHxS	1801054-04 A1-P2-19-SA1 0.11736	2.76e3	95.6	NO
4	4 13C8-PFOA	1801054-04 A1-P2-19-SA1 0.11736	7.25e3	51.7	NO
5	5 13C9-PFNA	1801054-04 A1-P2-19-SA1 0.11736	8.07e3	47.8	YES
6	6 13C4-PFOS	1801054-04 A1-P2-19-SA1 0.11736	2.75e3	95.1	NO
7	7 13C6-PFDA	1801054-04 A1-P2-19-SA1 0.11736	1.06e4	49.7	YES
8	8 13C7-PFUDa	1801054-04 A1-P2-19-SA1 0.11736	1.23e4	50.3	NO

Name: 180605M2_78, Date: 06-Jun-2018, Time: 05:53:35, ID: 1801054-05 A1-MW-52-SA1 0.11509, Description: A1-MW-52-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-05 A1-MW-52-SA1 0.11509	4.90e3	49.0	YES
2	2 13C5-PFHxA	1801054-05 A1-MW-52-SA1 0.11509	6.43e3	46.2	YES
3	3 13C3-PFHxS	1801054-05 A1-MW-52-SA1 0.11509	2.76e3	95.6	NO
4	4 13C8-PFOA	1801054-05 A1-MW-52-SA1 0.11509	7.41e3	52.9	NO
5	5 13C9-PFNA	1801054-05 A1-MW-52-SA1 0.11509	9.14e3	54.2	NO
6	6 13C4-PFOS	1801054-05 A1-MW-52-SA1 0.11509	2.68e3	92.9	NO
7	7 13C6-PFDA	1801054-05 A1-MW-52-SA1 0.11509	8.09e3	37.8	YES
8	8 13C7-PFUDa	1801054-05 A1-MW-52-SA1 0.11509	1.37e4	56.3	NO

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Name: 180605M2_79, Date: 06-Jun-2018, Time: 06:04:05, ID: 1801054-06 A1-MW-01-SA1 0.1102, Description: A1-MW-01-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-06 A1-MW-01-SA1 0.1102	5.07e3	50.7	NO
2	2 13C5-PFHxA	1801054-06 A1-MW-01-SA1 0.1102	6.24e3	44.8	YES
3	3 13C3-PFHxS	1801054-06 A1-MW-01-SA1 0.1102	2.64e3	91.6	NO
4	4 13C8-PFOA	1801054-06 A1-MW-01-SA1 0.1102	7.74e3	55.1	NO
5	5 13C9-PFNA	1801054-06 A1-MW-01-SA1 0.1102	8.57e3	50.8	NO
6	6 13C4-PFOS	1801054-06 A1-MW-01-SA1 0.1102	2.52e3	87.2	NO
7	7 13C6-PFDA	1801054-06 A1-MW-01-SA1 0.1102	1.05e4	49.2	YES
8	8 13C7-PFUDa	1801054-06 A1-MW-01-SA1 0.1102	1.26e4	51.5	NO

Name: 180605M2_80, Date: 06-Jun-2018, Time: 06:14:31, ID: 1801054-07 A1-MW-01-SA1D 0.11715, Description: A1-MW-01-SA1D

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-07 A1-MW-01-SA1D 0.11715	4.94e3	49.4	YES
2	2 13C5-PFHxA	1801054-07 A1-MW-01-SA1D 0.11715	6.15e3	44.2	YES
3	3 13C3-PFHxS	1801054-07 A1-MW-01-SA1D 0.11715	2.90e3	100.6	NO
4	4 13C8-PFOA	1801054-07 A1-MW-01-SA1D 0.11715	7.76e3	55.3	NO
5	5 13C9-PFNA	1801054-07 A1-MW-01-SA1D 0.11715	9.09e3	53.8	NO
6	6 13C4-PFOS	1801054-07 A1-MW-01-SA1D 0.11715	3.00e3	103.9	NO
7	7 13C6-PFDA	1801054-07 A1-MW-01-SA1D 0.11715	9.57e3	44.7	YES
8	8 13C7-PFUDa	1801054-07 A1-MW-01-SA1D 0.11715	1.32e4	54.1	NO

Name: 180605M2_81, Date: 06-Jun-2018, Time: 06:25:01, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180605M2_82, Date: 06-Jun-2018, Time: 06:35:26, ID: ST180605M2-14 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-14 PFC CS3 18E2907	1.06e4	105.5	NO
2	2 13C5-PFHxA	ST180605M2-14 PFC CS3 18E2907	1.67e4	120.2	NO
3	3 13C3-PFHxS	ST180605M2-14 PFC CS3 18E2907	3.58e3	124.2	NO
4	4 13C8-PFOA	ST180605M2-14 PFC CS3 18E2907	1.77e4	125.8	NO
5	5 13C9-PFNA	ST180605M2-14 PFC CS3 18E2907	1.80e4	106.9	NO
6	6 13C4-PFOS	ST180605M2-14 PFC CS3 18E2907	3.41e3	118.1	NO
7	7 13C6-PFDA	ST180605M2-14 PFC CS3 18E2907	2.12e4	99.0	NO
8	8 13C7-PFUDa	ST180605M2-14 PFC CS3 18E2907	2.58e4	105.8	NO

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Name: 180605M2_83, Date: 06-Jun-2018, Time: 06:45:57, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

Name: 180605M2_84, Date: 06-Jun-2018, Time: 06:56:27, ID: 1801054-08 A1-MW-31-SA1 0.11276, Description: A1-MW-31-SA1

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-08 A1-MW-31-SA1 0.11276	4.33e3	43.3	YES
2	2 13C5-PFHxA	1801054-08 A1-MW-31-SA1 0.11276	5.42e3	38.9	YES
3	3 13C3-PFHxS	1801054-08 A1-MW-31-SA1 0.11276	2.97e3	103.1	NO
4	4 13C8-PFOA	1801054-08 A1-MW-31-SA1 0.11276	6.01e3	42.8	YES
5	5 13C9-PFNA	1801054-08 A1-MW-31-SA1 0.11276	8.44e3	50.0	NO
6	6 13C4-PFOS	1801054-08 A1-MW-31-SA1 0.11276	2.84e3	98.4	NO
7	7 13C6-PFDA	1801054-08 A1-MW-31-SA1 0.11276	1.06e4	49.7	YES
8	8 13C7-PFUdA	1801054-08 A1-MW-31-SA1 0.11276	1.33e4	54.6	NO

Name: 180605M2_85, Date: 06-Jun-2018, Time: 07:06:52, ID: 1801054-09 FRB-20180525 0.11663, Description: FRB-20180525

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1801054-09 FRB-20180525 0.11663	6.72e3	67.2	NO
2	2 13C5-PFHxA	1801054-09 FRB-20180525 0.11663	9.55e3	68.6	NO
3	3 13C3-PFHxS	1801054-09 FRB-20180525 0.11663	2.70e3	93.5	NO
4	4 13C8-PFOA	1801054-09 FRB-20180525 0.11663	1.14e4	81.1	NO
5	5 13C9-PFNA	1801054-09 FRB-20180525 0.11663	1.37e4	81.1	NO
6	6 13C4-PFOS	1801054-09 FRB-20180525 0.11663	2.52e3	87.2	NO
7	7 13C6-PFDA	1801054-09 FRB-20180525 0.11663	1.68e4	78.3	NO
8	8 13C7-PFUdA	1801054-09 FRB-20180525 0.11663	1.98e4	81.3	NO

Name: 180605M2_86, Date: 06-Jun-2018, Time: 07:17:22, ID: B8E0161-BS1 OPR 0.25, Description: OPR

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0161-BS1 OPR 0.25	8.78e3	87.8	NO
2	2 13C5-PFHxA	B8E0161-BS1 OPR 0.25	1.19e4	85.2	NO
3	3 13C3-PFHxS	B8E0161-BS1 OPR 0.25	2.75e3	95.2	NO
4	4 13C8-PFOA	B8E0161-BS1 OPR 0.25	1.35e4	96.5	NO
5	5 13C9-PFNA	B8E0161-BS1 OPR 0.25	1.54e4	91.1	NO
6	6 13C4-PFOS	B8E0161-BS1 OPR 0.25	2.61e3	90.4	NO
7	7 13C6-PFDA	B8E0161-BS1 OPR 0.25	1.81e4	84.5	NO
8	8 13C7-PFUdA	B8E0161-BS1 OPR 0.25	1.88e4	77.2	NO

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Name: 180605M2_87, Date: 06-Jun-2018, Time: 07:27:47, ID: B8E0161-BLK1 Method Blank 0.25, Description: Method Blank

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	B8E0161-BLK1 Method Blank 0.25	8.59e3	85.9	NO
2	2 13C5-PFHxA	B8E0161-BLK1 Method Blank 0.25	1.21e4	86.6	NO
3	3 13C3-PFHxS	B8E0161-BLK1 Method Blank 0.25	2.73e3	94.5	NO
4	4 13C8-PFOA	B8E0161-BLK1 Method Blank 0.25	1.39e4	99.0	NO
5	5 13C9-PFNA	B8E0161-BLK1 Method Blank 0.25	1.47e4	87.1	NO
6	6 13C4-PFOS	B8E0161-BLK1 Method Blank 0.25	2.82e3	97.7	NO
7	7 13C6-PFDA	B8E0161-BLK1 Method Blank 0.25	1.47e4	68.8	NO
8	8 13C7-PFUDa	B8E0161-BLK1 Method Blank 0.25	2.02e4	82.7	NO

Name: 180605M2_88, Date: 06-Jun-2018, Time: 07:38:17, ID: 1800989-01 KE-RD6954-MW01 0.11761, Description: KE-RD6954-MW01

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-01 KE-RD6954-MW01 0.11761	7.98e3	79.7	NO
2	2 13C5-PFHxA	1800989-01 KE-RD6954-MW01 0.11761	1.03e4	74.2	NO
3	3 13C3-PFHxS	1800989-01 KE-RD6954-MW01 0.11761	2.68e3	92.9	NO
4	4 13C8-PFOA	1800989-01 KE-RD6954-MW01 0.11761	1.29e4	92.0	NO
5	5 13C9-PFNA	1800989-01 KE-RD6954-MW01 0.11761	1.33e4	79.0	NO
6	6 13C4-PFOS	1800989-01 KE-RD6954-MW01 0.11761	2.75e3	95.2	NO
7	7 13C6-PFDA	1800989-01 KE-RD6954-MW01 0.11761	1.46e4	68.2	NO
8	8 13C7-PFUDa	1800989-01 KE-RD6954-MW01 0.11761	1.59e4	65.0	NO

Name: 180605M2_89, Date: 06-Jun-2018, Time: 07:48:48, ID: 1800989-02 KE-BBW-MW01 0.11717, Description: KE-BBW-MW01

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-02 KE-BBW-MW01 0.11717	8.07e3	80.7	NO
2	2 13C5-PFHxA	1800989-02 KE-BBW-MW01 0.11717	1.05e4	75.6	NO
3	3 13C3-PFHxS	1800989-02 KE-BBW-MW01 0.11717	2.55e3	88.2	NO
4	4 13C8-PFOA	1800989-02 KE-BBW-MW01 0.11717	1.25e4	88.8	NO
5	5 13C9-PFNA	1800989-02 KE-BBW-MW01 0.11717	1.31e4	77.9	NO
6	6 13C4-PFOS	1800989-02 KE-BBW-MW01 0.11717	2.47e3	85.4	NO
7	7 13C6-PFDA	1800989-02 KE-BBW-MW01 0.11717	1.43e4	66.7	NO
8	8 13C7-PFUDa	1800989-02 KE-BBW-MW01 0.11717	1.87e4	76.7	NO

Name: 180605M2_90, Date: 06-Jun-2018, Time: 07:59:12, ID: 1800989-03 KE-6954-MW01 0.11556, Description: KE-6954-MW01

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-03 KE-6954-MW01 0.11556	7.48e3	74.8	NO
2	2 13C5-PFHxA	1800989-03 KE-6954-MW01 0.11556	1.02e4	72.9	NO
3	3 13C3-PFHxS	1800989-03 KE-6954-MW01 0.11556	2.61e3	90.5	NO
4	4 13C8-PFOA	1800989-03 KE-6954-MW01 0.11556	1.19e4	84.9	NO
5	5 13C9-PFNA	1800989-03 KE-6954-MW01 0.11556	1.33e4	79.0	NO
6	6 13C4-PFOS	1800989-03 KE-6954-MW01 0.11556	2.57e3	89.1	NO
7	7 13C6-PFDA	1800989-03 KE-6954-MW01 0.11556	1.39e4	64.7	NO
8	8 13C7-PFUDa	1800989-03 KE-6954-MW01 0.11556	1.74e4	71.5	NO

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Name: 180605M2_91, Date: 06-Jun-2018, Time: 08:09:43, ID: 1800989-04 KE-APN-MW01 0.11557, Description: KE-APN-MW01

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-04 KE-APN-MW01 0.11557	8.58e3	85.8	NO
2	2 13C5-PFHxA	1800989-04 KE-APN-MW01 0.11557	1.15e4	82.4	NO
3	3 13C3-PFHxS	1800989-04 KE-APN-MW01 0.11557	2.50e3	86.8	NO
4	4 13C8-PFOA	1800989-04 KE-APN-MW01 0.11557	1.36e4	96.7	NO
5	5 13C9-PFNA	1800989-04 KE-APN-MW01 0.11557	1.46e4	86.6	NO
6	6 13C4-PFOS	1800989-04 KE-APN-MW01 0.11557	2.56e3	88.7	NO
7	7 13C6-PFDA	1800989-04 KE-APN-MW01 0.11557	1.60e4	74.8	NO
8	8 13C7-PFUDa	1800989-04 KE-APN-MW01 0.11557	1.77e4	72.4	NO

Name: 180605M2_92, Date: 06-Jun-2018, Time: 08:20:06, ID: 1800989-05 KE-FBA-MW01 0.11631, Description: KE-FBA-MW01

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-05 KE-FBA-MW01 0.11631	8.23e3	82.3	NO
2	2 13C5-PFHxA	1800989-05 KE-FBA-MW01 0.11631	1.04e4	74.4	NO
3	3 13C3-PFHxS	1800989-05 KE-FBA-MW01 0.11631	2.35e3	81.5	NO
4	4 13C8-PFOA	1800989-05 KE-FBA-MW01 0.11631	1.18e4	84.2	NO
5	5 13C9-PFNA	1800989-05 KE-FBA-MW01 0.11631	1.43e4	84.6	NO
6	6 13C4-PFOS	1800989-05 KE-FBA-MW01 0.11631	2.49e3	86.3	NO
7	7 13C6-PFDA	1800989-05 KE-FBA-MW01 0.11631	1.54e4	71.9	NO
8	8 13C7-PFUDa	1800989-05 KE-FBA-MW01 0.11631	1.68e4	68.8	NO

Name: 180605M2_93, Date: 06-Jun-2018, Time: 08:30:37, ID: 1800989-06 KE-FBA-MW01D 0.11705, Description: KE-FBA-MW01D

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-06 KE-FBA-MW01D 0.11705	8.37e3	83.7	NO
2	2 13C5-PFHxA	1800989-06 KE-FBA-MW01D 0.11705	1.13e4	81.2	NO
3	3 13C3-PFHxS	1800989-06 KE-FBA-MW01D 0.11705	2.39e3	82.7	NO
4	4 13C8-PFOA	1800989-06 KE-FBA-MW01D 0.11705	1.26e4	89.8	NO
5	5 13C9-PFNA	1800989-06 KE-FBA-MW01D 0.11705	1.31e4	77.5	NO
6	6 13C4-PFOS	1800989-06 KE-FBA-MW01D 0.11705	2.57e3	89.0	NO
7	7 13C6-PFDA	1800989-06 KE-FBA-MW01D 0.11705	1.58e4	73.8	NO
8	8 13C7-PFUDa	1800989-06 KE-FBA-MW01D 0.11705	1.74e4	71.3	NO

Name: 180605M2_94, Date: 06-Jun-2018, Time: 08:41:02, ID: 1800989-07 KE-NNTA-MW01 0.11356, Description: KE-NNTA-MW01

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-07 KE-NNTA-MW01 0.11356	8.56e3	85.5	NO
2	2 13C5-PFHxA	1800989-07 KE-NNTA-MW01 0.11356	1.15e4	82.8	NO
3	3 13C3-PFHxS	1800989-07 KE-NNTA-MW01 0.11356	2.19e3	76.1	NO
4	4 13C8-PFOA	1800989-07 KE-NNTA-MW01 0.11356	1.25e4	89.4	NO
5	5 13C9-PFNA	1800989-07 KE-NNTA-MW01 0.11356	1.43e4	84.6	NO
6	6 13C4-PFOS	1800989-07 KE-NNTA-MW01 0.11356	2.41e3	83.5	NO
7	7 13C6-PFDA	1800989-07 KE-NNTA-MW01 0.11356	1.53e4	71.4	NO
8	8 13C7-PFUDa	1800989-07 KE-NNTA-MW01 0.11356	2.04e4	83.6	NO

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Name: 180605M2_95, Date: 06-Jun-2018, Time: 08:51:32, ID: 1800989-08 KE-6918-MW01 0.11438, Description: KE-6918-MW01

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-08 KE-6918-MW01 0.11438	9.09e3	90.9	NO
2	2 13C5-PFHxA	1800989-08 KE-6918-MW01 0.11438	1.22e4	87.5	NO
3	3 13C3-PFHxS	1800989-08 KE-6918-MW01 0.11438	2.59e3	89.8	NO
4	4 13C8-PFOA	1800989-08 KE-6918-MW01 0.11438	1.41e4	100.4	NO
5	5 13C9-PFNA	1800989-08 KE-6918-MW01 0.11438	1.58e4	93.3	NO
6	6 13C4-PFOS	1800989-08 KE-6918-MW01 0.11438	1.44e3	49.8	YES
7	7 13C6-PFDA	1800989-08 KE-6918-MW01 0.11438	1.64e4	76.8	NO
8	8 13C7-PFUDa	1800989-08 KE-6918-MW01 0.11438	2.23e4	91.4	NO

Name: 180605M2_96, Date: 06-Jun-2018, Time: 09:01:58, ID: 1800989-09 KE-6917-MW01 0.11542, Description: KE-6917-MW01

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-09 KE-6917-MW01 0.11542	8.13e3	81.3	NO
2	2 13C5-PFHxA	1800989-09 KE-6917-MW01 0.11542	1.09e4	78.5	NO
3	3 13C3-PFHxS	1800989-09 KE-6917-MW01 0.11542	2.69e3	93.1	NO
4	4 13C8-PFOA	1800989-09 KE-6917-MW01 0.11542	1.33e4	94.7	NO
5	5 13C9-PFNA	1800989-09 KE-6917-MW01 0.11542	1.35e4	79.8	NO
6	6 13C4-PFOS	1800989-09 KE-6917-MW01 0.11542	2.48e3	85.9	NO
7	7 13C6-PFDA	1800989-09 KE-6917-MW01 0.11542	1.52e4	71.0	NO
8	8 13C7-PFUDa	1800989-09 KE-6917-MW01 0.11542	1.81e4	73.9	NO

Name: 180605M2_97, Date: 06-Jun-2018, Time: 09:12:28, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180605M2_98, Date: 06-Jun-2018, Time: 09:22:52, ID: ST180605M2-15 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-15 PFC CS3 18E2907	1.07e4	107.4	NO
2	2 13C5-PFHxA	ST180605M2-15 PFC CS3 18E2907	1.65e4	118.7	NO
3	3 13C3-PFHxS	ST180605M2-15 PFC CS3 18E2907	3.39e3	117.6	NO
4	4 13C8-PFOA	ST180605M2-15 PFC CS3 18E2907	1.88e4	133.7	NO
5	5 13C9-PFNA	ST180605M2-15 PFC CS3 18E2907	2.22e4	131.8	NO
6	6 13C4-PFOS	ST180605M2-15 PFC CS3 18E2907	3.68e3	127.3	NO
7	7 13C6-PFDA	ST180605M2-15 PFC CS3 18E2907	2.15e4	100.2	NO
8	8 13C7-PFUDa	ST180605M2-15 PFC CS3 18E2907	2.87e4	117.5	NO

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Name: 180605M2_99, Date: 06-Jun-2018, Time: 09:33:23, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUdA	IPA			NO

Name: 180605M2_100, Date: 06-Jun-2018, Time: 09:43:53, ID: 1800989-10 KE-EB-5-11-18 0.26165, Description: KE-EB-5-11-18

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-10 KE-EB-5-11-18 0.26165	8.22e3	82.2	NO
2	2 13C5-PFHxA	1800989-10 KE-EB-5-11-18 0.26165	1.04e4	74.5	NO
3	3 13C3-PFHxS	1800989-10 KE-EB-5-11-18 0.26165	2.58e3	89.6	NO
4	4 13C8-PFOA	1800989-10 KE-EB-5-11-18 0.26165	1.34e4	95.3	NO
5	5 13C9-PFNA	1800989-10 KE-EB-5-11-18 0.26165	1.42e4	84.4	NO
6	6 13C4-PFOS	1800989-10 KE-EB-5-11-18 0.26165	2.37e3	82.0	NO
7	7 13C6-PFDA	1800989-10 KE-EB-5-11-18 0.26165	1.62e4	75.6	NO
8	8 13C7-PFUdA	1800989-10 KE-EB-5-11-18 0.26165	1.72e4	70.3	NO

Name: 180605M2_101, Date: 06-Jun-2018, Time: 09:54:18, ID: 1800989-11 KE-FTA-MW01 0.1098, Description: KE-FTA-MW01

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800989-11 KE-FTA-MW01 0.1098	7.88e3	78.8	NO
2	2 13C5-PFHxA	1800989-11 KE-FTA-MW01 0.1098	6.70e3	48.1	YES
3	3 13C3-PFHxS	1800989-11 KE-FTA-MW01 0.1098	1.00e3	34.8	YES
4	4 13C8-PFOA	1800989-11 KE-FTA-MW01 0.1098	7.31e3	52.1	NO
5	5 13C9-PFNA	1800989-11 KE-FTA-MW01 0.1098	1.13e4	67.1	NO
6	6 13C4-PFOS	1800989-11 KE-FTA-MW01 0.1098	1.21e3	42.0	YES
7	7 13C6-PFDA	1800989-11 KE-FTA-MW01 0.1098	1.62e4	75.7	NO
8	8 13C7-PFUdA	1800989-11 KE-FTA-MW01 0.1098	1.74e4	71.1	NO

Name: 180605M2_102, Date: 06-Jun-2018, Time: 10:04:48, ID: 1800986-01 FR Fld Blk 0.25955, Description: FR Fld Blk

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800986-01 FR Fld Blk 0.25955	9.45e3	94.5	NO
2	2 13C5-PFHxA	1800986-01 FR Fld Blk 0.25955	1.23e4	88.0	NO
3	3 13C3-PFHxS	1800986-01 FR Fld Blk 0.25955	2.80e3	97.2	NO
4	4 13C8-PFOA	1800986-01 FR Fld Blk 0.25955	1.38e4	98.1	NO
5	5 13C9-PFNA	1800986-01 FR Fld Blk 0.25955	1.58e4	93.9	NO
6	6 13C4-PFOS	1800986-01 FR Fld Blk 0.25955	2.84e3	98.3	NO
7	7 13C6-PFDA	1800986-01 FR Fld Blk 0.25955	1.74e4	81.5	NO
8	8 13C7-PFUdA	1800986-01 FR Fld Blk 0.25955	2.19e4	89.6	NO

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Name: 180605M2_103, Date: 06-Jun-2018, Time: 10:27:41, ID: IS SUP TESTER, Description: IS SUP TESTER

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IS SUP TESTER	7.67e3	76.7	NO
2	2 13C5-PFHxA	IS SUP TESTER	1.27e4	91.2	NO
3	3 13C3-PFHxS	IS SUP TESTER	2.89e3	100.3	NO
4	4 13C8-PFOA	IS SUP TESTER	1.45e4	103.2	NO
5	5 13C9-PFNA	IS SUP TESTER	1.66e4	98.6	NO
6	6 13C4-PFOS	IS SUP TESTER	2.79e3	96.4	NO
7	7 13C6-PFDA	IS SUP TESTER	1.86e4	87.1	NO
8	8 13C7-PFUDa	IS SUP TESTER	2.64e4	108.3	NO

Name: 180605M2_104, Date: 06-Jun-2018, Time: 10:38:06, ID: 1800986-02 Forest Ridge 0.27675, Description: Forest Ridge

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800986-02 Forest Ridge 0.27675	7.92e3	79.1	NO
2	2 13C5-PFHxA	1800986-02 Forest Ridge 0.27675	1.02e4	73.4	NO
3	3 13C3-PFHxS	1800986-02 Forest Ridge 0.27675	2.47e3	85.8	NO
4	4 13C8-PFOA	1800986-02 Forest Ridge 0.27675	1.18e4	84.2	NO
5	5 13C9-PFNA	1800986-02 Forest Ridge 0.27675	1.55e4	92.0	NO
6	6 13C4-PFOS	1800986-02 Forest Ridge 0.27675	2.48e3	85.8	NO
7	7 13C6-PFDA	1800986-02 Forest Ridge 0.27675	1.53e4	71.6	NO
8	8 13C7-PFUDa	1800986-02 Forest Ridge 0.27675	2.03e4	83.3	NO

Name: 180605M2_105, Date: 06-Jun-2018, Time: 10:48:37, ID: 1800986-03 K & V Fld Blk 0.25454, Description: K & V Fld Blk

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800986-03 K_V Fld Blk 0.25454	8.95e3	89.5	NO
2	2 13C5-PFHxA	1800986-03 K_V Fld Blk 0.25454	1.25e4	89.7	NO
3	3 13C3-PFHxS	1800986-03 K_V Fld Blk 0.25454	2.72e3	94.2	NO
4	4 13C8-PFOA	1800986-03 K_V Fld Blk 0.25454	1.43e4	101.8	NO
5	5 13C9-PFNA	1800986-03 K_V Fld Blk 0.25454	1.47e4	87.3	NO
6	6 13C4-PFOS	1800986-03 K_V Fld Blk 0.25454	2.74e3	94.8	NO
7	7 13C6-PFDA	1800986-03 K_V Fld Blk 0.25454	1.80e4	83.9	NO
8	8 13C7-PFUDa	1800986-03 K_V Fld Blk 0.25454	2.09e4	85.5	NO

Name: 180605M2_106, Date: 06-Jun-2018, Time: 10:59:02, ID: 1800986-04 K & V 0.27397, Description: K & V

#	Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800986-04 K_V 0.27397	9.86e3	98.6	NO
2	2 13C5-PFHxA	1800986-04 K_V 0.27397	1.06e4	75.9	NO
3	3 13C3-PFHxS	1800986-04 K_V 0.27397	2.97e3	103.1	NO
4	4 13C8-PFOA	1800986-04 K_V 0.27397	1.59e4	113.6	NO
5	5 13C9-PFNA	1800986-04 K_V 0.27397	1.59e4	94.0	NO
6	6 13C4-PFOS	1800986-04 K_V 0.27397	2.91e3	100.8	NO
7	7 13C6-PFDA	1800986-04 K_V 0.27397	1.91e4	89.1	NO
8	8 13C7-PFUDa	1800986-04 K_V 0.27397	2.19e4	89.6	NO

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Name: 180605M2_107, Date: 06-Jun-2018, Time: 11:09:32, ID: 1800990-01 WIRR1805171315JLB 0.24616, Description: WIRR1805171315JLB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800990-01 WIRR1805171315JLB 0.2...	8.35e3	83.5	NO
2	2 13C5-PFHxA	1800990-01 WIRR1805171315JLB 0.2...	1.20e4	86.5	NO
3	3 13C3-PFHxS	1800990-01 WIRR1805171315JLB 0.2...	2.96e3	102.4	NO
4	4 13C8-PFOA	1800990-01 WIRR1805171315JLB 0.2...	1.34e4	95.6	NO
5	5 13C9-PFNA	1800990-01 WIRR1805171315JLB 0.2...	1.55e4	91.8	NO
6	6 13C4-PFOS	1800990-01 WIRR1805171315JLB 0.2...	2.89e3	100.1	NO
7	7 13C6-PFDA	1800990-01 WIRR1805171315JLB 0.2...	1.76e4	82.1	NO
8	8 13C7-PFUDa	1800990-01 WIRR1805171315JLB 0.2...	2.00e4	82.0	NO

Name: 180605M2_108, Date: 06-Jun-2018, Time: 11:19:56, ID: 1800990-02 FB1805171320JLB 0.25861, Description: FB1805171320JLB

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	1800990-02 FB1805171320JLB 0.25861	8.59e3	85.9	NO
2	2 13C5-PFHxA	1800990-02 FB1805171320JLB 0.25861	1.25e4	89.6	NO
3	3 13C3-PFHxS	1800990-02 FB1805171320JLB 0.25861	2.81e3	97.3	NO
4	4 13C8-PFOA	1800990-02 FB1805171320JLB 0.25861	1.49e4	106.4	NO
5	5 13C9-PFNA	1800990-02 FB1805171320JLB 0.25861	1.41e4	83.7	NO
6	6 13C4-PFOS	1800990-02 FB1805171320JLB 0.25861	2.93e3	101.4	NO
7	7 13C6-PFDA	1800990-02 FB1805171320JLB 0.25861	1.90e4	88.8	NO
8	8 13C7-PFUDa	1800990-02 FB1805171320JLB 0.25861	2.24e4	91.8	NO

Name: 180605M2_109, Date: 06-Jun-2018, Time: 11:30:26, ID: IPA, Description: IPA

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	IPA			NO
2	2 13C5-PFHxA	IPA			NO
3	3 13C3-PFHxS	IPA			NO
4	4 13C8-PFOA	IPA			NO
5	5 13C9-PFNA	IPA			NO
6	6 13C4-PFOS	IPA			NO
7	7 13C6-PFDA	IPA			NO
8	8 13C7-PFUDa	IPA			NO

Name: 180605M2_110, Date: 06-Jun-2018, Time: 11:40:57, ID: ST180605M2-16 PFC CS3 18E2907, Description: PFC CS3 18E2907

	# Name	ID	Area	%Rec	Area Out
1	1 13C4-PFBA	ST180605M2-16 PFC CS3 18E2907	1.09e4	108.5	NO
2	2 13C5-PFHxA	ST180605M2-16 PFC CS3 18E2907	1.67e4	119.8	NO
3	3 13C3-PFHxS	ST180605M2-16 PFC CS3 18E2907	3.57e3	123.7	NO
4	4 13C8-PFOA	ST180605M2-16 PFC CS3 18E2907	1.83e4	130.7	NO
5	5 13C9-PFNA	ST180605M2-16 PFC CS3 18E2907	2.22e4	131.3	NO
6	6 13C4-PFOS	ST180605M2-16 PFC CS3 18E2907	3.72e3	128.9	NO
7	7 13C6-PFDA	ST180605M2-16 PFC CS3 18E2907	2.45e4	114.6	NO
8	8 13C7-PFUDa	ST180605M2-16 PFC CS3 18E2907	2.87e4	117.6	NO

Dataset: Untitled

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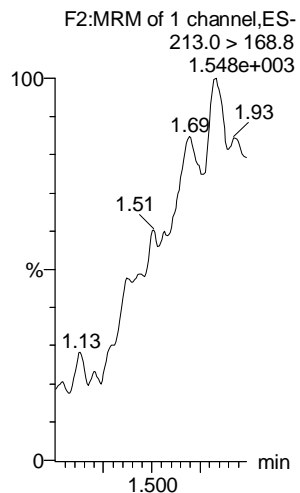
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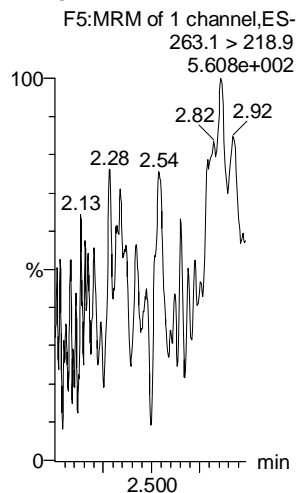
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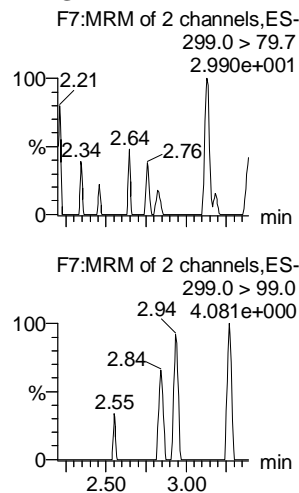
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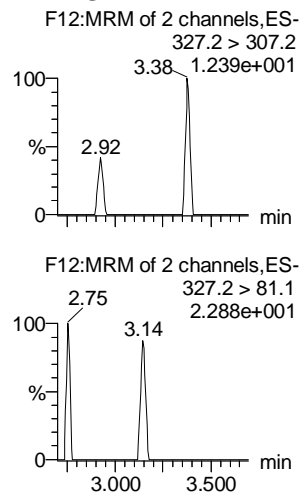
PFPeA



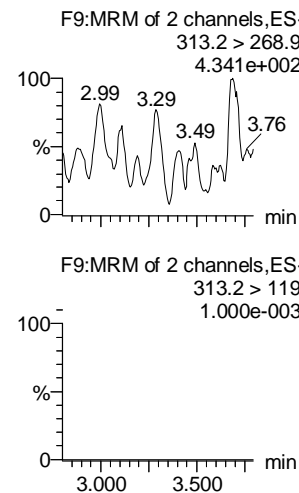
PFBS



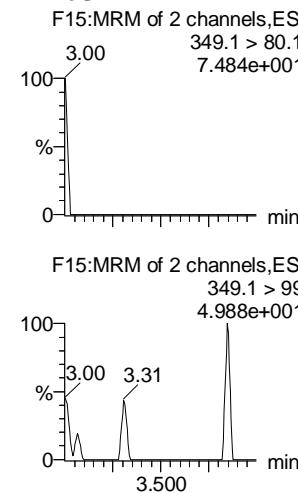
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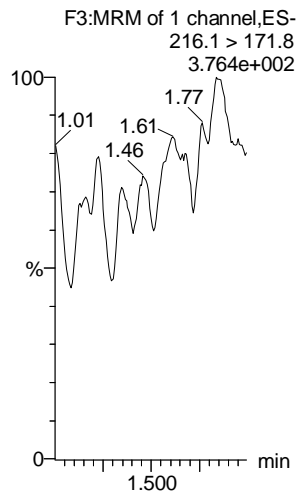
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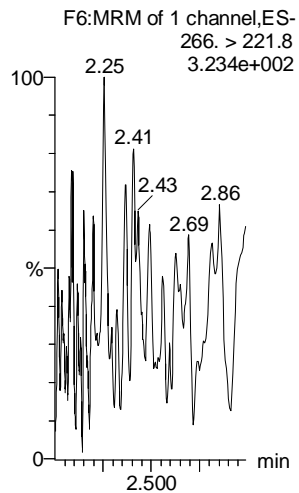
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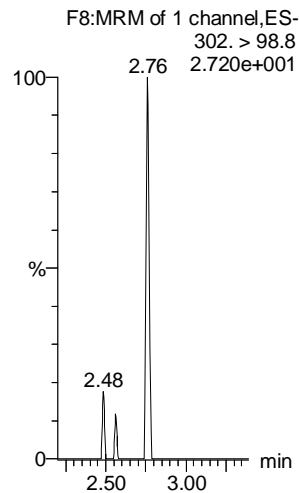
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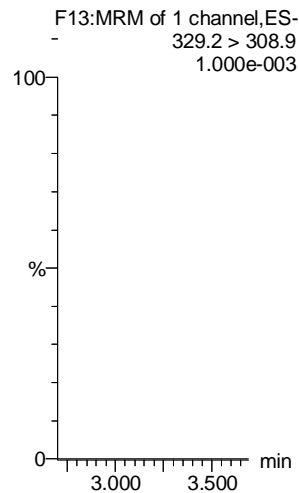
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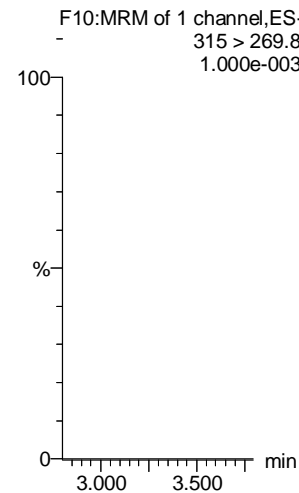
13C3-PFBS



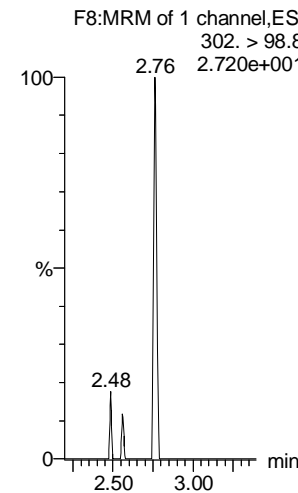
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



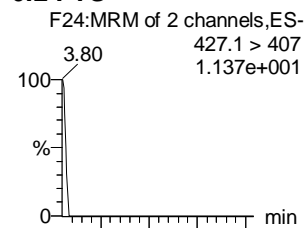
Dataset: Untitled

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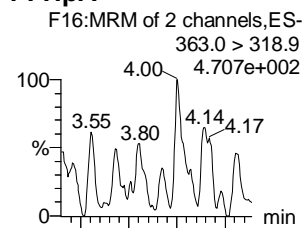
Printed: Thursday, June 07, 2018 11:05:53 Pacific Daylight Time

Name: 180605M2_12, Date: 05-Jun-2018, Time: 18:23:17, ID: IPA, Description: IPA

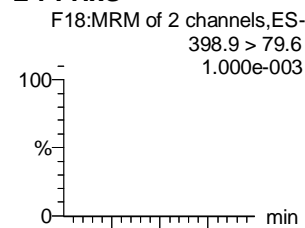
6:2 FTS



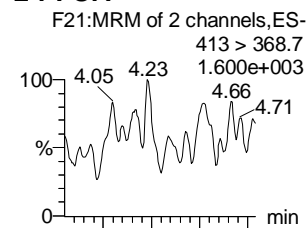
PFHpA



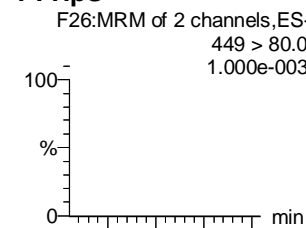
L-PFHxS



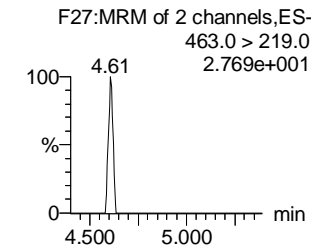
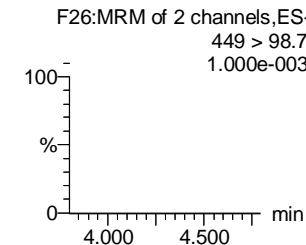
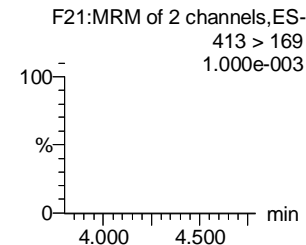
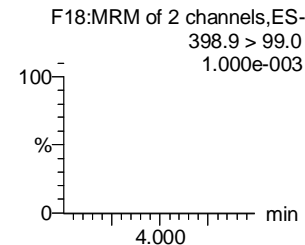
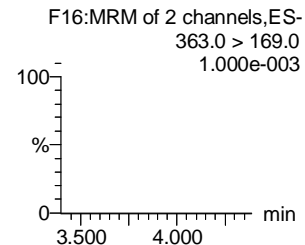
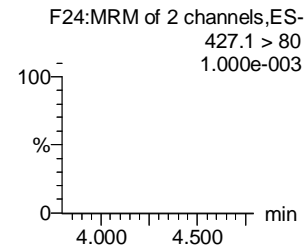
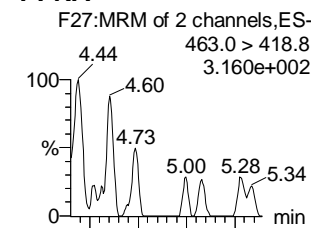
L-PFOA



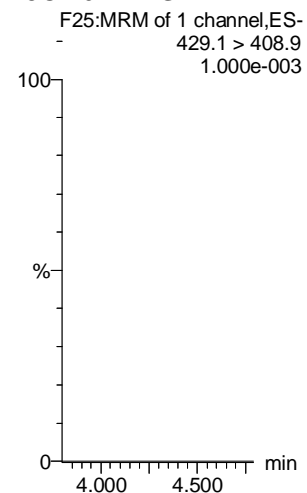
PFHpS



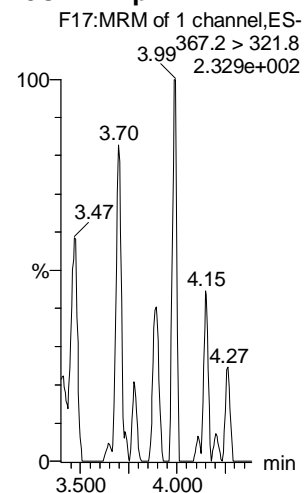
PFNA



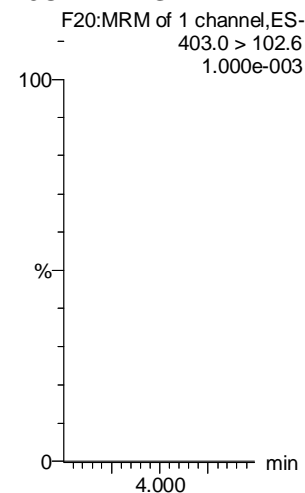
13C2-6:2 FTS



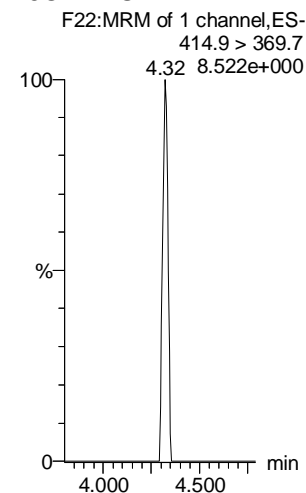
13C4-PFHpA



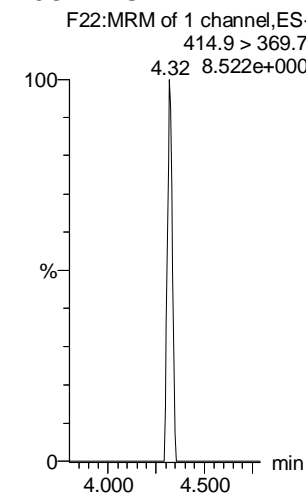
18O2-PFHxS



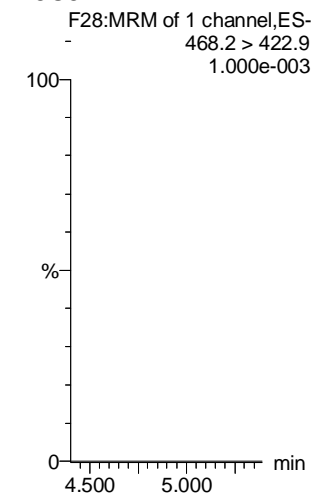
13C2-PFOA



13C2-PFOA



13C5-PFNA



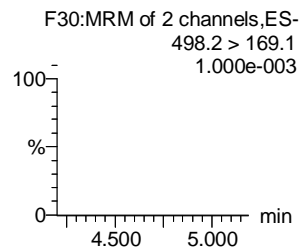
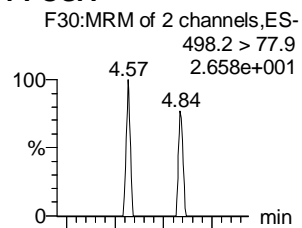
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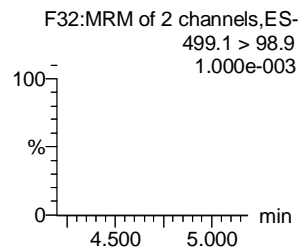
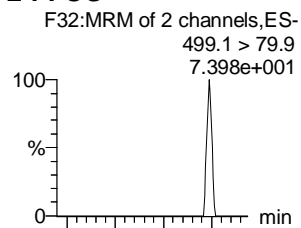
Printed: Thursday, June 07, 2018 11:05:53 Pacific Daylight Time

Name: 180605M2_12, Date: 05-Jun-2018, Time: 18:23:17, ID: IPA, Description: IPA

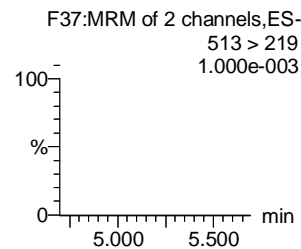
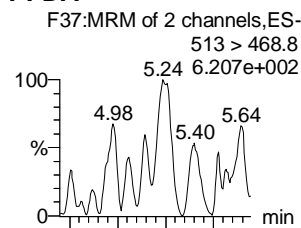
PFOSA



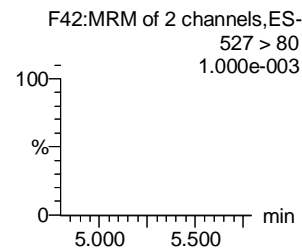
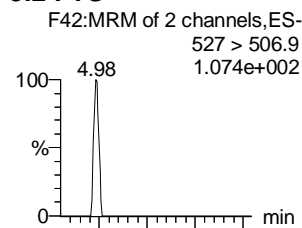
L-PFOS



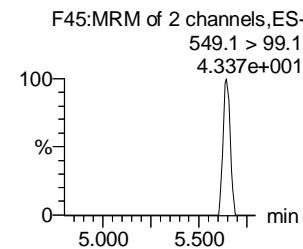
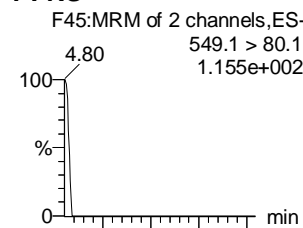
PFDA



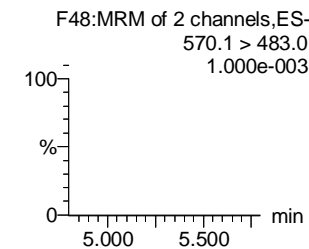
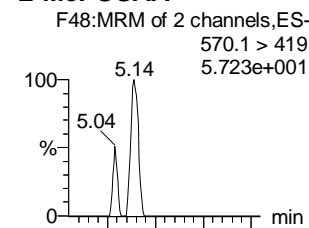
8:2 FTS



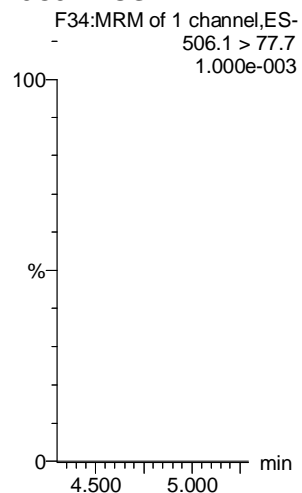
PFNS



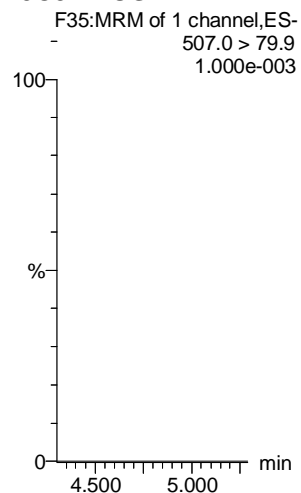
L-MeFOSAA



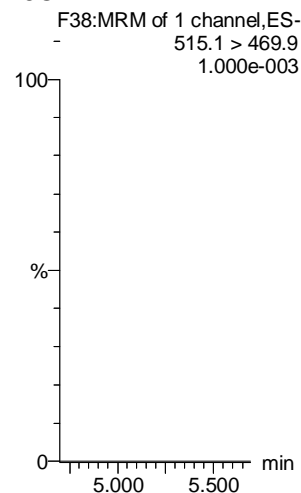
13C8-PFOSA



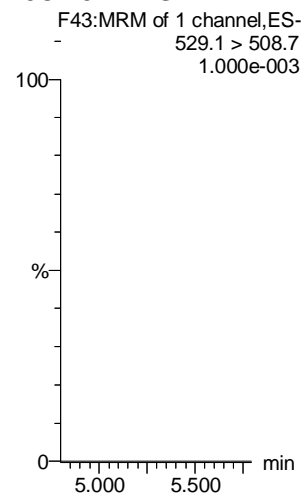
13C8-PFOS



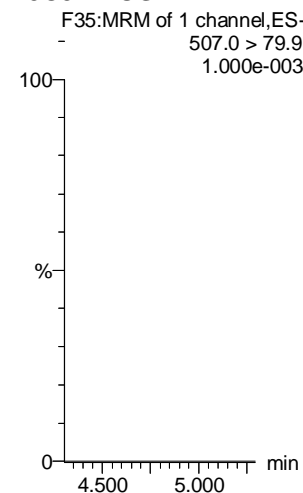
13C2-PFDA



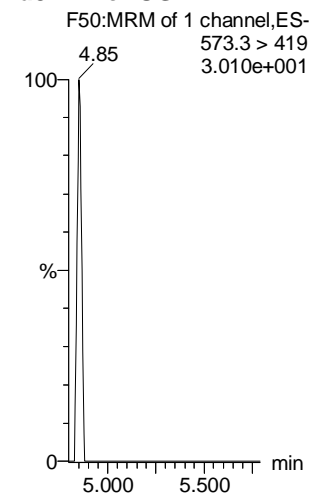
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



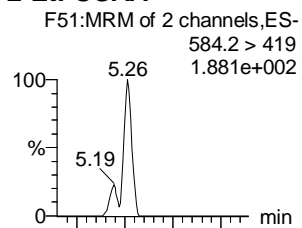
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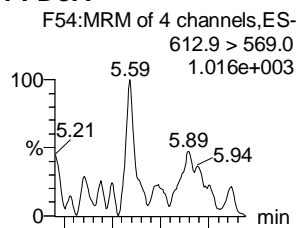
Printed: Thursday, June 07, 2018 11:05:53 Pacific Daylight Time

Name: 180605M2_12, Date: 05-Jun-2018, Time: 18:23:17, ID: IPA, Description: IPA

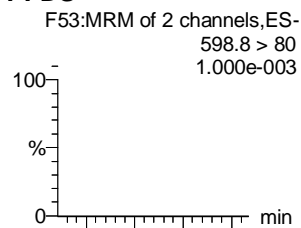
L-EtFOSAA



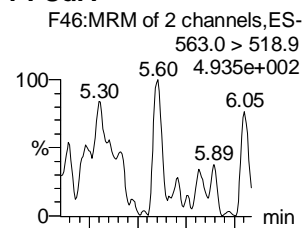
PFDoA



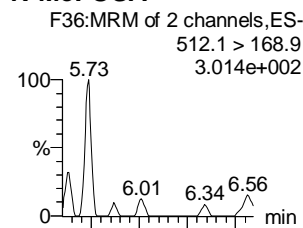
PFDS



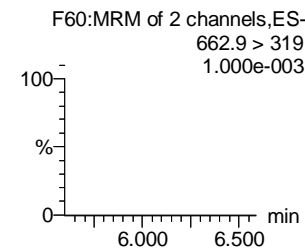
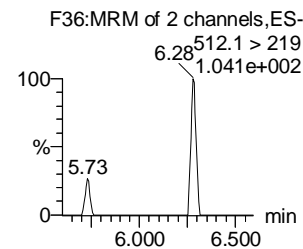
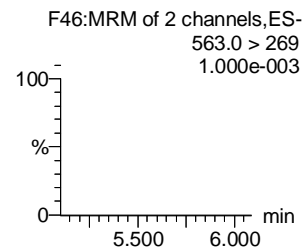
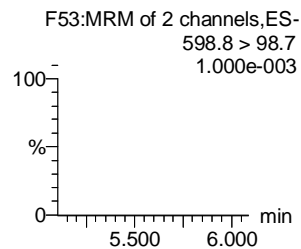
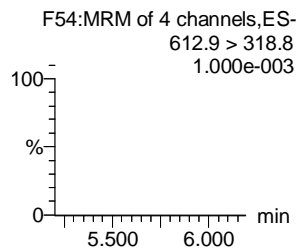
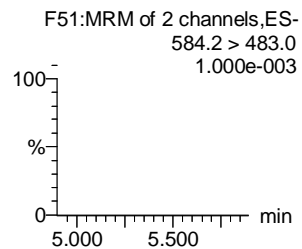
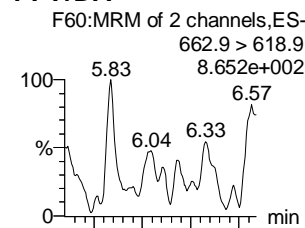
PFUdA



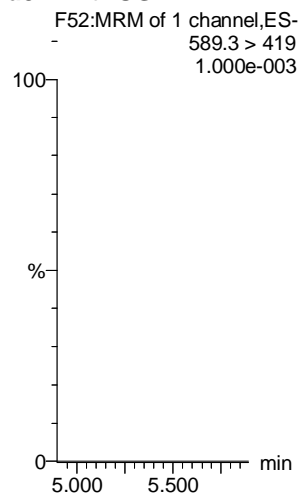
N-MeFOSA



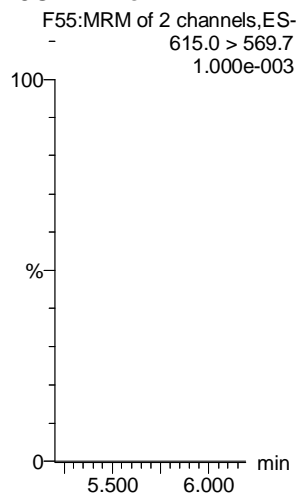
PFTrDA



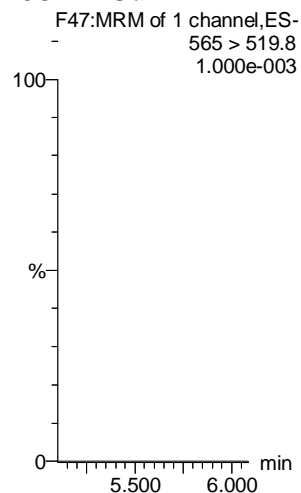
d5-N-EtFOSAA



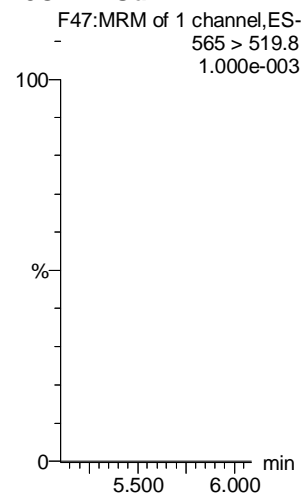
13C2-PFDoA



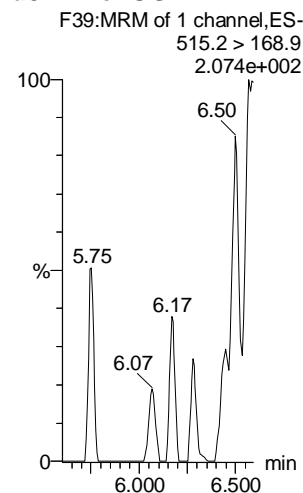
13C2-PFUdA



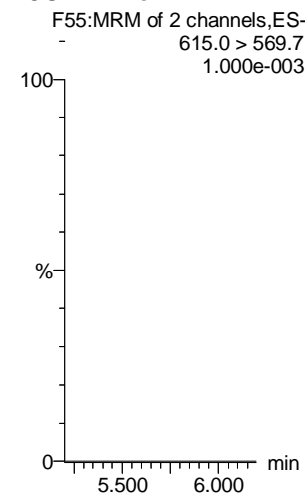
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



Dataset: Untitled

Last Altered: Thursday, June 07, 2018 11:05:46 Pacific Daylight Time

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Name: 180605M2_12, Date: 05-Jun-2018, Time: 18:23:17, ID: IPA, Description: IPA

PFTeDA

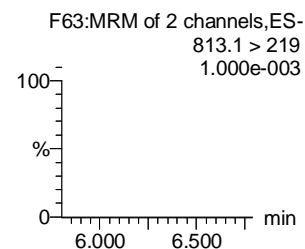
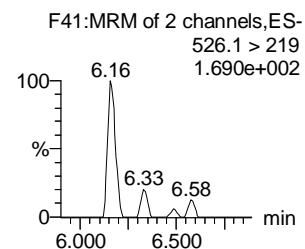
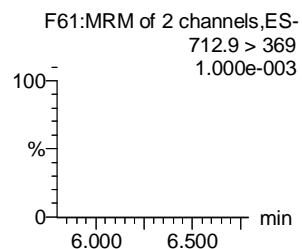
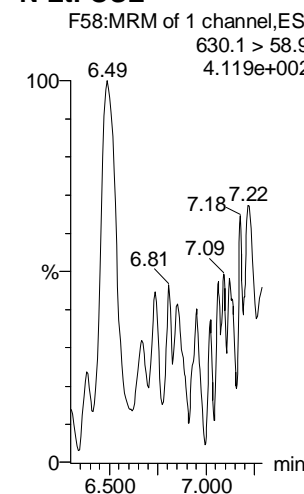
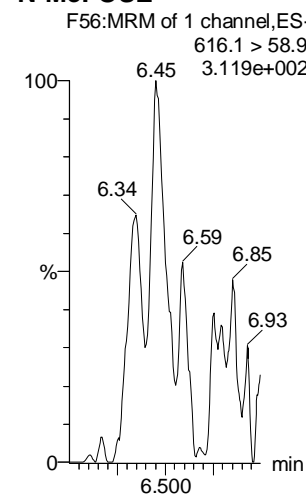
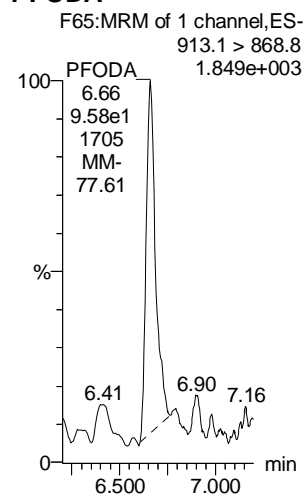
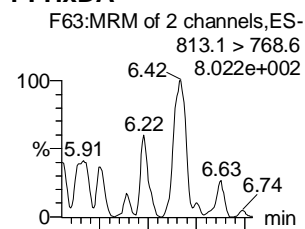
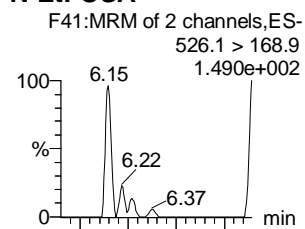
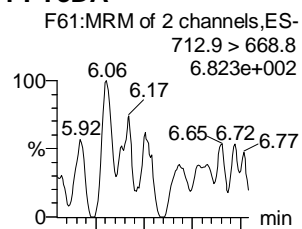
N-EtFOSA

PFHxDA

PFODA

N-MeFOSE

N-EtFOSE



13C2-PFTeDA

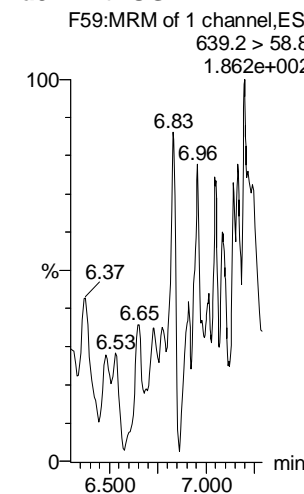
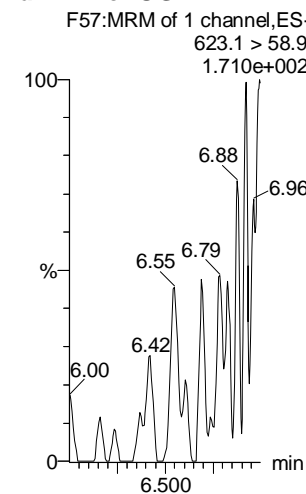
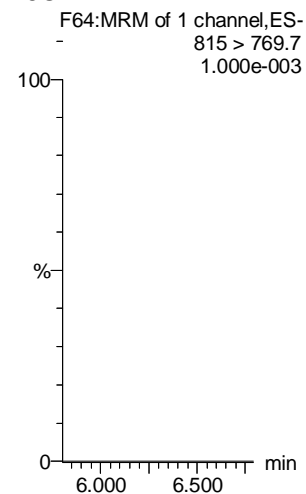
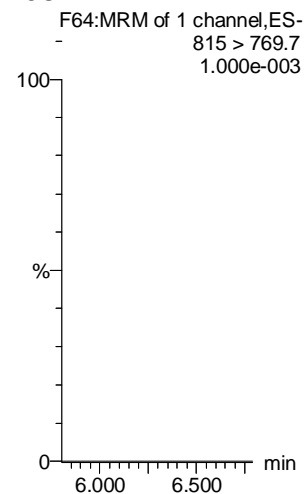
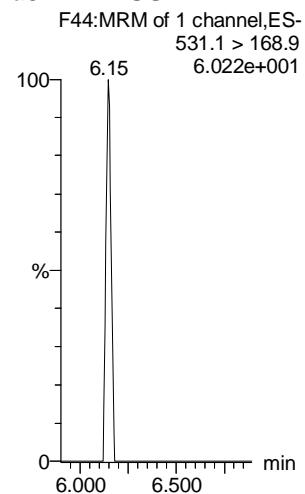
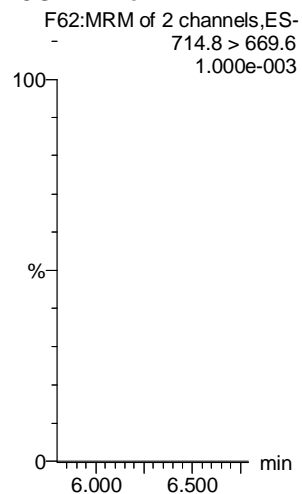
d5-N-ETFOSA

13C2-PFHxDA

13C2-PFHxDA

d7-N-MeFOSE

d9-N-EtFOSE



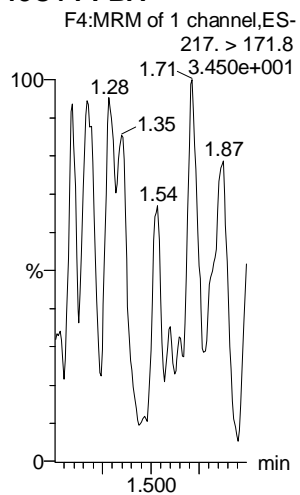
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Last Altered: Thursday, June 07, 2018 11:05:46 Pacific Daylight Time

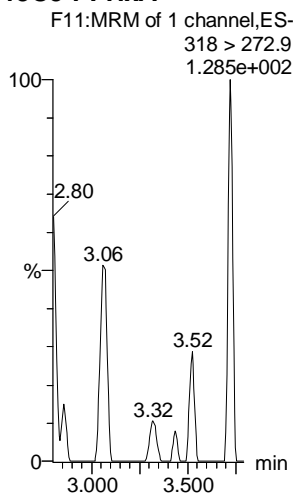
Printed: Thursday, June 07, 2018 11:05:53 Pacific Daylight Time

Name: 180605M2_12, Date: 05-Jun-2018, Time: 18:23:17, ID: IPA, Description: IPA

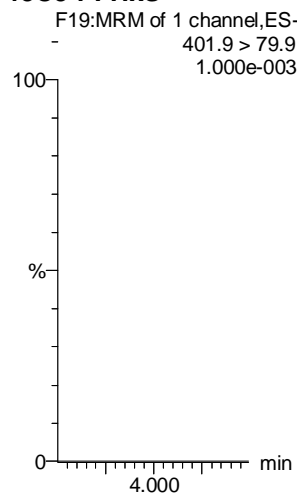
13C4-PFBA



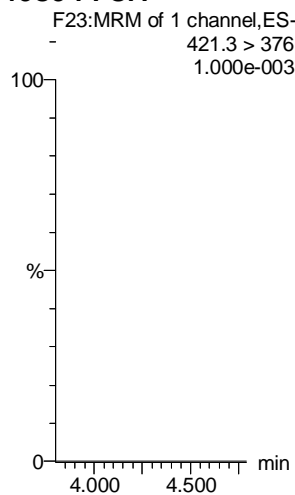
13C5-PFHxA



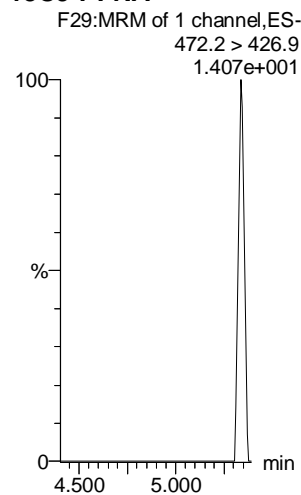
13C3-PFHxS



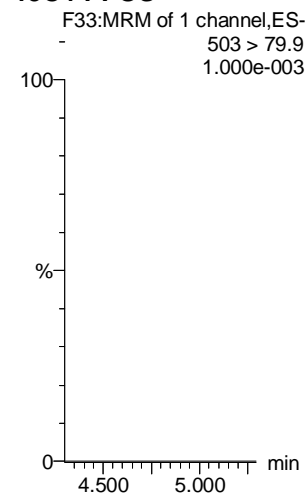
13C8-PFOA



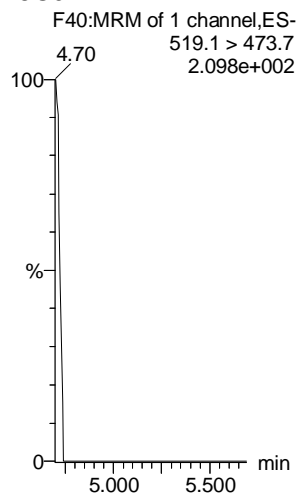
13C9-PFNA



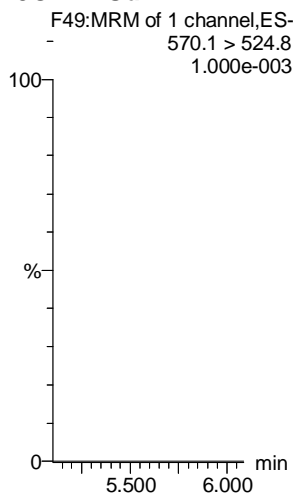
13C4-PFOS



13C6-PFDA



13C7-PFUdA



LC Calibration Standards Review Checklist

CLY

*AM 6/16/18
by MT*

Calibration ID:	ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
STL 800005M2-3 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-11 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-12 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-13 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-14 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-15 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-16 LMH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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Run Log Present:

of Samples per Sequence Checked:

Instrument Blank Saved:

IIS Area Saved:

Reviewed By: KBF 6/7/18
Initials/Date

Full Mass Cal. Date: 6/15/18
AM 6/16/18

Comments:
AM 6/16/18
① DETECT PFT/DA > 130%

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

Last Altered: Wednesday, June 06, 2018 17:12:46 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:12:49 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	7.84e2	8.88e3		1.36	1.36	1.10	0.991	99.1	NO		
2	2 PFPeA	263.1 > 21...	1.03e3	1.23e4		2.32	2.32	1.04	0.993	99.3	NO		
3	3 PFBS	299.0 > 79.7	2.25e2	1.48e3		2.61	2.61	1.91	0.960	96.0	NO	2.438	NO
4	4 4:2 FTS	327.2>307.2	2.68e2	3.26e3		3.01	3.01	1.03	0.933	93.3	NO	1.485	NO
5	5 PFHxA	313.2 > 26...	1.44e3	4.21e3		3.10	3.10	1.71	1.05	104.8	NO	1569.429	YES
6	6 PFPeS	349.1>80.1	2.15e2	1.48e3		3.30	3.30	1.82	0.967	96.7	NO	2.096	NO
7	7 PFHpA	363.0 > 31...	1.15e3	1.13e4		3.71	3.72	1.27	1.03	103.4	NO	20.867	YES
8	8 L-PFHxS	398.9 > 79.6	2.03e2	1.29e3		3.86	3.86	1.96	1.03	102.6	NO	1.778	NO
9	10 6:2 FTS	427.1 > 407	3.18e2	3.34e3		4.17	4.18	1.19	0.963	96.3	NO	3.036	NO
10	11 L-PFOA	413 > 368.7	1.52e3	1.84e4		4.25	4.23	1.04	1.06	106.3	NO	3.846	NO
11	13 PFHpS	449 > 80.0	2.20e2	1.84e4		4.33	4.34	0.150	0.933	93.3	NO	1.924	NO
12	14 PFNA	463.0 > 41...	1.57e3	1.56e4		4.66	4.66	1.26	0.914	91.4	NO	4.676	NO
13	15 PFOSA	498.2 > 77.9	2.10e2	3.01e3		4.73	4.73	0.872	0.951	95.1	NO		
14	16 L-PFOS	499.1 > 79.9	2.38e2	2.91e3		4.74	4.75	1.02	1.16	116.1	NO	2.350	NO
15	18 PFDA	513 > 468.8	1.79e3	1.82e4		5.03	5.03	1.22	1.10	110.4	NO	5.911	NO
16	19 8:2 FTS	527 > 506.9	3.25e2	3.18e3		5.00	5.00	1.28	0.862	86.2	NO	2.981	NO
17	20 PFNS	549.1>80.1	1.85e2	2.91e3		5.09	5.10	0.796	1.05	104.8	NO	1.404	NO
18	21 L-MeFOSAA	570.1 > 419	5.67e2	4.82e3		5.18	5.18	1.47	0.869	86.9	NO	37.909	YES
19	23 L-EtFOSAA	584.2 > 419	3.81e2	5.95e3		5.37	5.34	0.801	0.749	74.9	NO	122.940	YES

JVB 6/6/18

GM 6/6/2018

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

Last Altered: Wednesday, June 06, 2018 17:17:31 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:17:36 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	25 PFUdA	563.0 > 51...	1.89e3	2.21e4		5.35	5.35	1.07	1.06	106.4	NO	16.478	YES
2	26 PFDS	598.8 > 80	2.45e2	2.21e4		5.40	5.41	0.139	0.992	99.2	NO	2.705	YES
3	27 PFDoA	612.9 > 56...	2.07e3	2.04e4		5.63	5.63	1.27	1.07	107.5	NO	10.395	NO
4	28 N-MeFOSA	512.1 > 16...	4.19e2	1.24e4		5.82	5.84	5.05	4.80	95.9	NO	1.454	NO
5	29 PFTeDA	662.9 > 61...	2.24e3	2.04e4		5.88	5.88	1.37	1.15	114.9	NO	25.760	NO
6	30 PFTeDA	712.9 > 66...	1.65e3	1.50e4		6.10	6.09	1.37	1.02	101.7	NO	11.476	NO
7	31 N-EtFOSA	526.1 > 16...	5.67e2	1.79e4		6.23	6.23	4.75	5.10	102.0	NO	1.551	NO
8	32 PFHxDA	813.1 > 76...	1.17e3	1.00e4		6.43	6.43	0.581	0.896	89.6	NO	26.770	NO
9	33 PFODA	913.1 > 86...	1.38e3	1.00e4		6.67	6.67	0.689	0.796	79.6	NO		
10	34 N-MeFOSE	616.1 > 58.9	3.03e2	1.00e4		6.37	6.37	4.54	4.91	98.1	NO		
11	35 N-EtFOSE	630.1 > 58.9	3.59e2	9.70e3		6.52	6.51	5.55	4.74	94.9	NO		
12	36 13C3-PFBA	216.1 > 17...	8.88e3	1.02e4	0.885	1.34	1.36	10.9	12.3	98.2	NO		
13	37 13C3-PFPeA	266. > 221.8	1.23e4	1.42e4	0.849	2.31	2.32	10.9	12.8	102.3	NO		
14	38 13C3-PFBS	302. > 98.8	1.48e3	1.42e4	0.104	2.60	2.61	1.30	12.5	100.0	NO		
15	39 13C2-4:2 FTS	329.2>308.9	3.26e3	1.42e4	0.248	3.01	3.01	2.87	11.6	92.6	NO		
16	40 13C2-PFHxA	315 > 269.8	4.21e3	1.42e4	0.729	3.09	3.10	3.70	5.07	101.5	NO		
17	41 13C4-PFHpA	367.2 > 32...	1.13e4	1.42e4	0.836	3.71	3.71	9.92	11.9	94.9	NO		
18	42 18O2-PFHxS	403.0 > 10...	1.29e3	2.82e3	0.443	3.86	3.86	5.72	12.9	103.4	NO		
19	43 13C2-6:2 FTS	429.1 > 40...	3.34e3	1.69e4	0.249	4.17	4.18	2.47	9.94	79.5	NO		
20	44 13C2-PFOA	414.9 > 36...	1.84e4	1.69e4	1.332	4.23	4.23	13.6	10.2	81.8	NO		
21	45 13C5-PFNA	468.2 > 42...	1.56e4	1.74e4	0.951	4.66	4.67	11.2	11.8	94.1	NO		
22	46 13C8-PFOSA	506.1 > 77.7	3.01e3	2.25e4	0.140	4.73	4.74	1.68	12.0	96.1	NO		
23	47 13C8-PFOS	507.0 > 79.9	2.91e3	2.97e3	1.060	4.74	4.75	12.2	11.5	92.4	NO		
24	48 13C2-PFDA	515.1 > 46...	1.82e4	2.04e4	1.130	5.03	5.03	11.2	9.90	79.2	NO		
25	49 13C2-8:2 FTS	529.1 > 50...	3.18e3	1.42e4	0.217	5.00	5.00	2.79	12.9	102.8	NO		
26	50 d3-N-MeFOSAA	573.3 > 419	4.82e3	2.25e4	0.184	5.18	5.19	2.68	14.6	116.9	NO		
27	51 d5-N-EtFOSAA	589.3 > 419	5.95e3	2.25e4	0.223	5.34	5.34	3.31	14.8	118.7	NO		
28	52 13C2-PFUdA	565 > 519.8	2.21e4	2.25e4	0.936	5.35	5.35	12.3	13.1	104.8	NO		
29	53 13C2-PFDoA	615.0 > 56...	2.04e4	2.04e4	1.168	5.63	5.63	12.5	10.7	85.6	NO		
30	54 d3-N-MeFOSA	515.2 > 16...	1.24e4	2.25e4	0.051	5.85	5.86	6.92	135	90.1	NO		
31	55 13C2-PFTeDA	714.8 > 66...	1.50e4	2.25e4	0.706	6.09	6.09	8.35	11.8	94.6	NO		
32	56 d5-N-ETFOSA	531.1 > 16...	1.79e4	2.25e4	0.071	6.24	6.24	9.97	140	93.3	NO		

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

Last Altered: Wednesday, June 06, 2018 17:17:31 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:17:36 Pacific Daylight Time

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	57 13C2-PFHxDA	815 > 769.7	1.00e4	2.25e4	1.079	6.43	6.43	5.58	5.17	103.4	NO		
34	58 d7-N-MeFOSE	623.1 > 58.9	1.00e4	2.25e4	0.041	6.37	6.36	5.57	135	90.1	NO		
35	59 d9-N-EtFOSE	639.2 > 58.8	9.70e3	2.25e4	0.038	6.51	6.51	5.40	141	93.9	NO		
36	60 13C4-PFBA	217. > 171.8	1.02e4	1.02e4	1.000	1.35	1.36	12.5	12.5	100.0	NO		
37	61 13C5-PFHxA	318 > 272.9	1.42e4	1.42e4	1.000	3.09	3.10	12.5	12.5	100.0	NO		
38	62 13C3-PFHxS	401.9 > 79.9	2.82e3	2.82e3	1.000	3.86	3.86	12.5	12.5	100.0	NO		
39	63 13C8-PFOA	421.3 > 376	1.69e4	1.69e4	1.000	4.23	4.23	12.5	12.5	100.0	NO		
40	64 13C9-PFNA	472.2 > 42...	1.74e4	1.74e4	1.000	4.66	4.67	12.5	12.5	100.0	NO		
41	65 13C4-PFOS	503 > 79.9	2.97e3	2.97e3	1.000	4.74	4.75	12.5	12.5	100.0	NO		
42	66 13C6-PFDA	519.1 > 47...	2.04e4	2.04e4	1.000	5.03	5.03	12.5	12.5	100.0	NO		
43	67 13C7-PFUdA	570.1 > 52...	2.25e4	2.25e4	1.000	5.35	5.35	12.5	12.5	100.0	NO		

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	180605M2_1	IPA	05-Jun-18	16:28:10
2	180605M2_2	ST180605M2-1 PFC CS-2 18E2902	05-Jun-18	16:38:43
3	180605M2_3	ST180605M2-2 PFC CS-1 18E2903	05-Jun-18	16:49:08
4	180605M2_4	ST180605M2-3 PFC CS0 18E2904 *	05-Jun-18	16:59:39
5	180605M2_5	ST180605M2-4 PFC CS1 18E2905	05-Jun-18	17:10:04
6	180605M2_6	ST180605M2-5 PFC CS2 18E2906	05-Jun-18	17:20:34
7	180605M2_7	ST180605M2-6 PFC CS3 18E2907	05-Jun-18	17:30:59
8	180605M2_8	ST180605M2-7 PFC CS4 18E2908	05-Jun-18	17:41:30
9	180605M2_9	ST180605M2-8 PFC CS5 18E2909	05-Jun-18	17:52:00
10	180605M2_10	ST180605M2-9 PFC CS6 18E2910	05-Jun-18	18:02:25
11	180605M2_11	ST180605M2-10 PFC CS7 18E2911	05-Jun-18	18:12:47
12	180605M2_12	IPA	05-Jun-18	18:23:17
13	180605M2_13	ICV180605M2-1 PFC 537 ICV 18E2901	05-Jun-18	18:33:43
14	180605M2_14	IPA	05-Jun-18	18:44:13
15	180605M2_15	B8E0097-BS1 OPR 0.25	05-Jun-18	18:54:40
16	180605M2_16	B8E0097-BSD1 LCSD 0.25	05-Jun-18	19:05:08
17	180605M2_17	B8E0097-BLK1 Method Blank 0.25	05-Jun-18	19:15:33
18	180605M2_18	1800863-01 Bemidji Pilot APR2 lead 0.2...	05-Jun-18	19:26:03
19	180605M2_19	1800863-02 Bemidji Pilot PSR2 + 0.26433	05-Jun-18	19:36:27
20	180605M2_20	1800863-03 Bemidji Pilot INF 0.26399	05-Jun-18	19:46:57
21	180605M2_21	1800901-01 ACT Sample -16 0.23838	05-Jun-18	19:57:21
22	180605M2_22	1800901-02 ACT Sample -19 0.23487	05-Jun-18	20:07:52
23	180605M2_23	1801071-02 A1-MW-55-SA1 0.11428	05-Jun-18	20:18:16
24	180605M2_24	1801071-03 A1-MW-23-SA1 0.11436	05-Jun-18	20:28:47
25	180605M2_25	1801071-04 A1-MW-07-SA1 0.11908	05-Jun-18	20:39:12
26	180605M2_26	1801039-01 A1-MW-13-SA1 0.10967	05-Jun-18	20:49:42
27	180605M2_27	1801039-02 A1-MW-11-SA1 0.11624	05-Jun-18	21:00:07
28	180605M2_28	1801039-03 A1-MW-14-SA1 0.11194	05-Jun-18	21:10:37
29	180605M2_29	1801039-04 A1-MW-15-SA1 0.11248	05-Jun-18	21:21:07
30	180605M2_30	IPA	05-Jun-18	21:31:32
31	180605M2_31	ST180605M2-11 PFC CS3 18E2907	05-Jun-18	21:42:02
32	180605M2_32	IPA	05-Jun-18	21:52:27

Ⓟ over 10 samples. All calcs

*CS0 fell in with previous calibration; curve not used KBF 6/8/18

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time
 Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
33	33 180605M2_33	1801039-07 A1-MW-25-SA1 0.11252	05-Jun-18	22:02:57
34	34 180605M2_34	1801024-01 A1-MW-51-SA1 0.11961	05-Jun-18	22:13:21
35	35 180605M2_35	1801024-02 A1-MW-50-SA1 0.12082	05-Jun-18	22:23:52
36	36 180605M2_36	1801024-05 A1-MW-04-SA1 0.12315	05-Jun-18	22:34:22
37	37 180605M2_37	B8E0078-BS1 OPR 0.125	05-Jun-18	22:44:46
38	38 180605M2_38	B8E0078-BSD1 LCSD 0.125	05-Jun-18	22:55:16
39	39 180605M2_39	B8E0078-BLK1 Method Blank 0.125	05-Jun-18	23:05:40
40	40 180605M2_40	1800862-01 REEPDW451FRB 0.11732	05-Jun-18	23:16:11
41	41 180605M2_41	1800862-02 REEPDW452FRB 0.11393	05-Jun-18	23:26:35
42	42 180605M2_42	1800862-03 REEPDW453FRB 0.11381	05-Jun-18	23:37:05
43	43 180605M2_43	1800862-04 REEPDW454FRB 0.11483	05-Jun-18	23:47:29
44	44 180605M2_44	1800862-05 REEPDW456FRB 0.1202	05-Jun-18	23:58:00
45	45 180605M2_45	1800862-06 REEPDW446FRB 0.11919	06-Jun-18	00:08:25
46	46 180605M2_46	1800862-07 REEPDW455FRB 0.12259	06-Jun-18	00:18:55
47	47 180605M2_47	1800862-08 REEPDW447FRB 0.11683	06-Jun-18	00:29:20
48	48 180605M2_48	1800862-09 REEPDW448FRB 0.12114	06-Jun-18	00:39:51
49	49 180605M2_49	1800862-10 REEPDW449FRB 0.11798	06-Jun-18	00:50:16
50	50 180605M2_50	1800862-11 REEPDW450FRB 0.12118	06-Jun-18	01:00:38
51	51 180605M2_51	1800862-12 REEPDW457FRB 0.12446	06-Jun-18	01:11:08
52	52 180605M2_52	1800862-13 REEPDW459FRB 0.12147	06-Jun-18	01:21:33
53	53 180605M2_53	1800862-14 REEPDW458FRB 0.11703	06-Jun-18	01:32:03
54	54 180605M2_54	1800862-15 REEPDW460FRB 0.11944	06-Jun-18	01:42:28
55	55 180605M2_55	B8E0244-BS1 OPR 0.125	06-Jun-18	01:52:59
56	56 180605M2_56	B8E0244-BLK1 Method Blank 0.125	06-Jun-18	02:03:23
57	57 180605M2_57	B8E0244-MS1 Matrix Spike 0.11028	06-Jun-18	02:13:53
58	58 180605M2_58	B8E0244-MSD1 Matrix Spike Dup 0.113...	06-Jun-18	02:24:17
59	59 180605M2_59	B8E0244-MS2 Matrix Spike 0.11122	06-Jun-18	02:34:48
60	60 180605M2_60	B8E0244-MSD2 Matrix Spike Dup 0.115...	06-Jun-18	02:45:18
61	61 180605M2_61	1801037-01 A1-MW-18-SA1 0.11265	06-Jun-18	02:55:42
62	62 180605M2_62	1801037-02 16-MW-08-SA1 0.11493	06-Jun-18	03:06:13
63	63 180605M2_63	1801037-03 A1-MW-19-SA1 0.11827	06-Jun-18	03:16:38
64	64 180605M2_64	1801037-04 A1-MW-37-SA1 0.11915	06-Jun-18	03:27:09
65	65 180605M2_65	1801037-05 A1-MW-37-SA1D 0.11595	06-Jun-18	03:37:33
66	66 180605M2_66	1801037-06 16-H5-03-SA1 0.12456	06-Jun-18	03:48:03
67	67 180605M2_67	IPA	06-Jun-18	03:58:29
68	68 180605M2_68	ST180605M2-12 PFC CS3 18E2907	06-Jun-18	04:08:59

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
69	69 180605M2_69	ST180605M2-13 PFC CS0 18E2904	06-Jun-18	04:19:24
70	70 180605M2_70	IPA	06-Jun-18	04:29:54
71	71 180605M2_71	1801037-07 16-MW-09-SA1 0.1148	06-Jun-18	04:40:20
72	72 180605M2_72	1801037-08 16-MW-06-5A1 0.11143	06-Jun-18	04:50:50
73	73 180605M2_73	1801037-09 FRB-20180523 0.11719	06-Jun-18	05:01:15
74	74 180605M2_74	1801054-01 A1-MW-42-SA1 0.11279	06-Jun-18	05:11:45
75	75 180605M2_75	1801054-02 A1-MW-54-SA1 0.11211	06-Jun-18	05:22:09
76	76 180605M2_76	1801054-03 A1-MW-53-SA1 0.1139	06-Jun-18	05:32:40
77	77 180605M2_77	1801054-04 A1-P2-19-SA1 0.11736	06-Jun-18	05:43:10
78	78 180605M2_78	1801054-05 A1-MW-52-SA1 0.11509	06-Jun-18	05:53:35
79	79 180605M2_79	1801054-06 A1-MW-01-SA1 0.1102	06-Jun-18	06:04:05
80	80 180605M2_80	1801054-07 A1-MW-01-SA1D 0.11715	06-Jun-18	06:14:31
81	81 180605M2_81	IPA	06-Jun-18	06:25:01
82	82 180605M2_82	ST180605M2-14 PFC CS3 18E2907	06-Jun-18	06:35:26
83	83 180605M2_83	IPA	06-Jun-18	06:45:57
84	84 180605M2_84	1801054-08 A1-MW-31-SA1 0.11276	06-Jun-18	06:56:27
85	85 180605M2_85	1801054-09 FRB-20180525 0.11663	06-Jun-18	07:06:52
86	86 180605M2_86	B8E0161-BS1 OPR 0.25	06-Jun-18	07:17:22
87	87 180605M2_87	B8E0161-BLK1 Method Blank 0.25	06-Jun-18	07:27:47
88	88 180605M2_88	1800989-01 KE-RD6954-MW01 0.11761	06-Jun-18	07:38:17
89	89 180605M2_89	1800989-02 KE-BBW-MW01 0.11717	06-Jun-18	07:48:48
90	90 180605M2_90	1800989-03 KE-6954-MW01 0.11556	06-Jun-18	07:59:12
91	91 180605M2_91	1800989-04 KE-APN-MW01 0.11557	06-Jun-18	08:09:43
92	92 180605M2_92	1800989-05 KE-FBA-MW01 0.11631	06-Jun-18	08:20:06
93	93 180605M2_93	1800989-06 KE-FBA-MW01D 0.11705	06-Jun-18	08:30:37
94	94 180605M2_94	1800989-07 KE-NNTA-MW01 0.11356	06-Jun-18	08:41:02
95	95 180605M2_95	1800989-08 KE-6918-MW01 0.11438	06-Jun-18	08:51:32
96	96 180605M2_96	1800989-09 KE-6917-MW01 0.11542	06-Jun-18	09:01:58
97	97 180605M2_97	IPA	06-Jun-18	09:12:28
98	98 180605M2_98	ST180605M2-15 PFC CS3 18E2907	06-Jun-18	09:22:52
99	99 180605M2_99	IPA	06-Jun-18	09:33:23
100	1... 180605M2_100	1800989-10 KE-EB-5-11-18 0.26165	06-Jun-18	09:43:53
101	1... 180605M2_101	1800989-11 KE-FTA-MW01 0.1098	06-Jun-18	09:54:18
102	1... 180605M2_102	1800986-01 FR Fld Blk 0.25955	06-Jun-18	10:04:48
103	1... 180605M2_103	IS SUP TESTER	06-Jun-18	10:27:41
104	1... 180605M2_104	1800986-02 Forest Ridge 0.27675	06-Jun-18	10:38:06

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
105	1... 180605M2_105	1800986-03 K_V Fld Blk 0.25454	06-Jun-18	10:48:37
106	1... 180605M2_106	1800986-04 K_V 0.27397	06-Jun-18	10:59:02
107	1... 180605M2_107	1800990-01 WIRR1805171315JLB 0.2...	06-Jun-18	11:09:32
108	1... 180605M2_108	1800990-02 FB1805171320JLB 0.25861	06-Jun-18	11:19:56
109	1... 180605M2_109	IPA	06-Jun-18	11:30:26
110	1... 180605M2_110	ST180605M2-16 PFC CS3 18E2907	06-Jun-18	11:40:57
111	1... 180605M2_111	IPA	06-Jun-18	11:51:21

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

Last Altered: Wednesday, June 06, 2018 17:17:31 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:17:36 Pacific Daylight Time

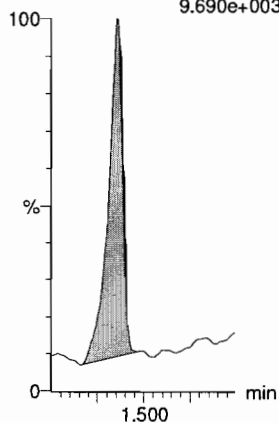
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

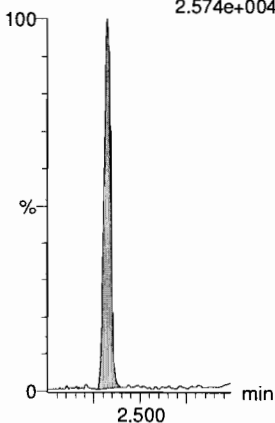
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
9.690e+003



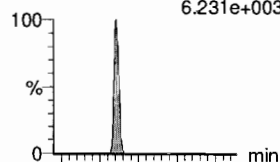
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
2.574e+004

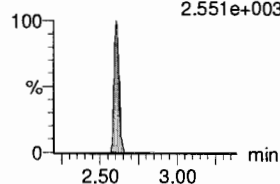


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
6.231e+003

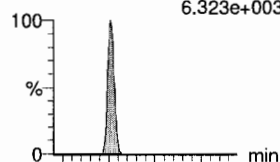


F7:MRM of 2 channels,ES-
299.0 > 99.0
2.551e+003

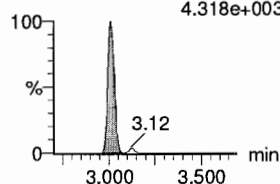


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
6.323e+003

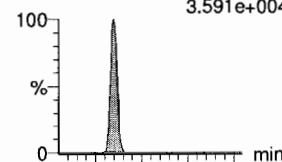


F12:MRM of 2 channels,ES-
327.2 > 81.1
4.318e+003

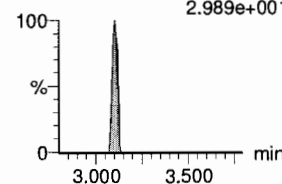


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
3.591e+004

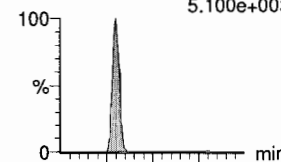


F9:MRM of 2 channels,ES-
313.2 > 119
2.989e+001

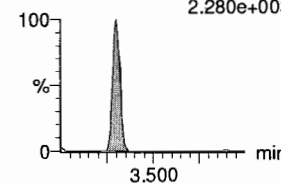


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
5.100e+003

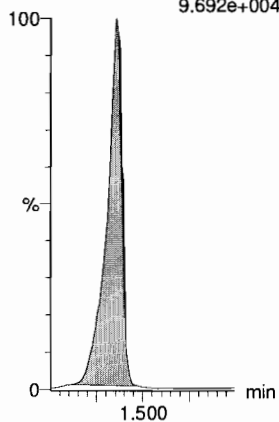


F15:MRM of 2 channels,ES-
349.1 > 99
2.280e+003



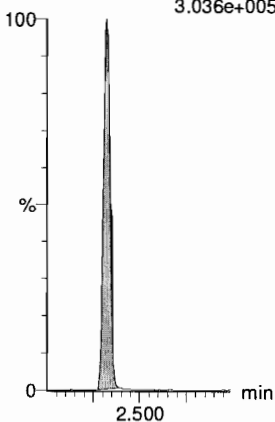
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
9.692e+004



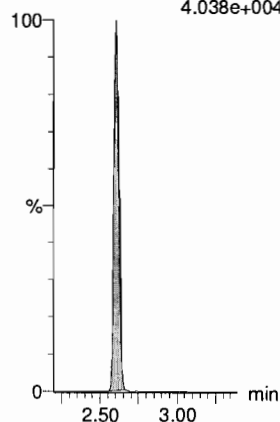
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.036e+005



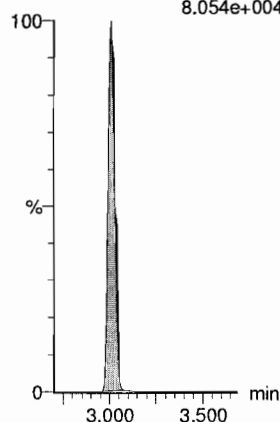
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.038e+004



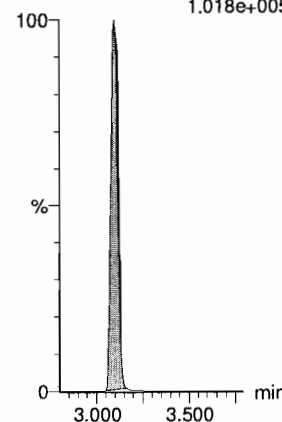
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
8.054e+004



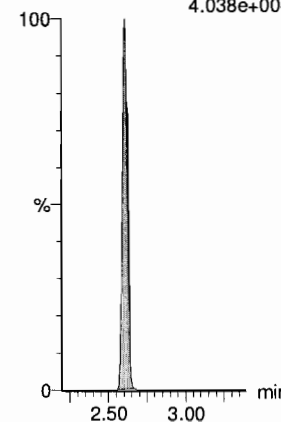
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.018e+005



13C3-PFBS

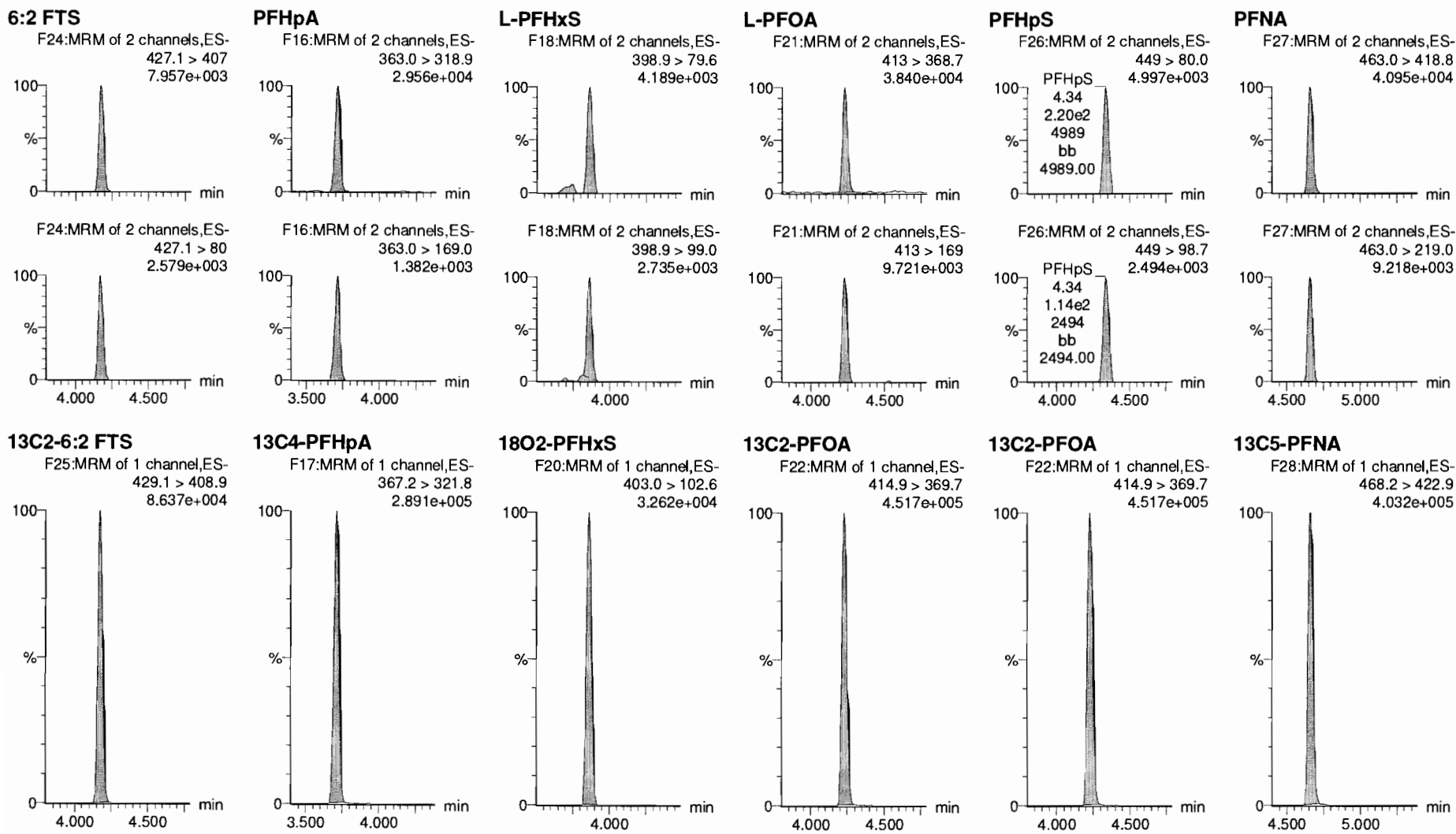
F8:MRM of 1 channel,ES-
302. > 98.8
4.038e+004



Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

Last Altered: Wednesday, June 06, 2018 17:17:31 Pacific Daylight Time
Printed: Wednesday, June 06, 2018 17:17:36 Pacific Daylight Time

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904



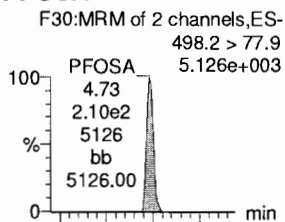
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Last Altered: Wednesday, June 06, 2018 17:17:31 Pacific Daylight Time

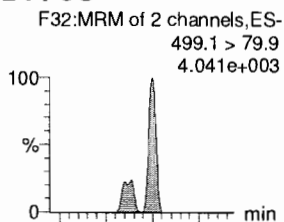
Printed: Wednesday, June 06, 2018 17:17:36 Pacific Daylight Time

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

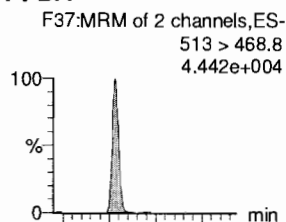
PFOSA



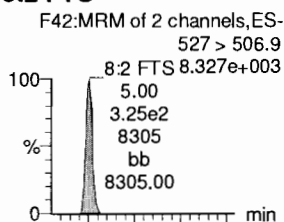
L-PFOS



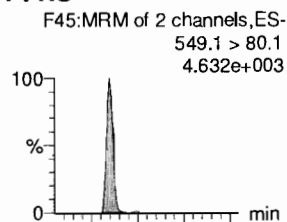
PFDA



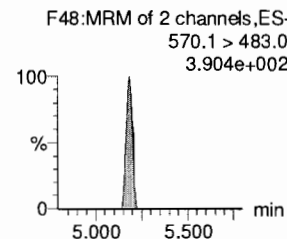
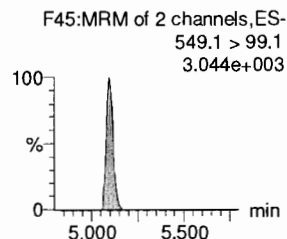
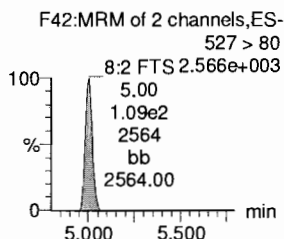
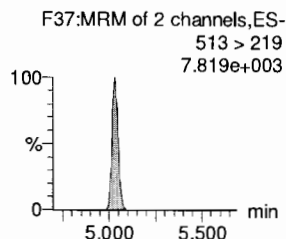
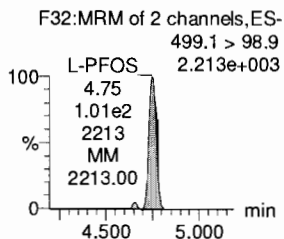
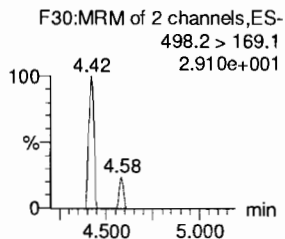
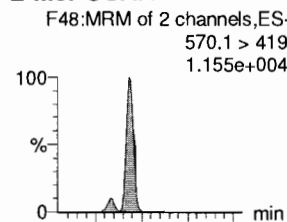
8:2 FTS



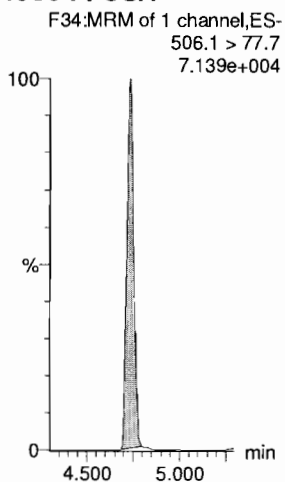
PFNS



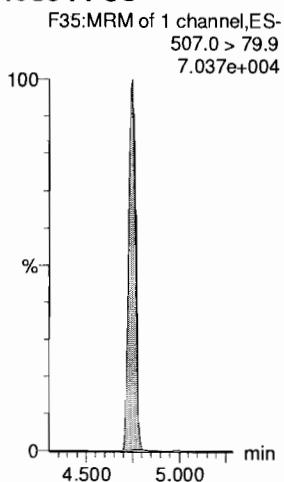
L-MeFOSAA



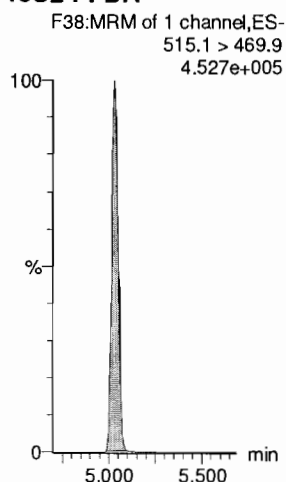
13C8-PFOSA



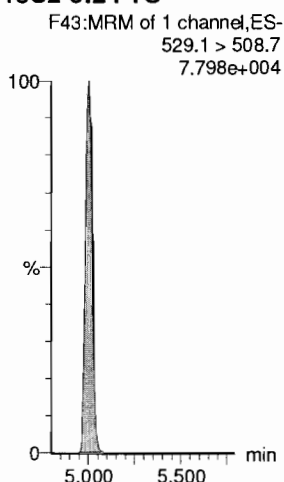
13C8-PFOS



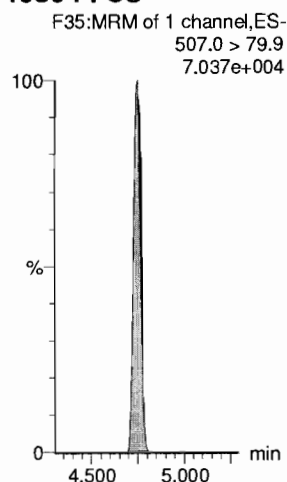
13C2-PFDA



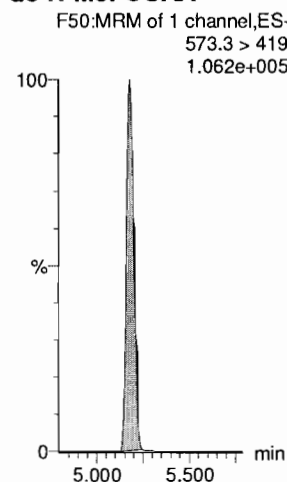
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

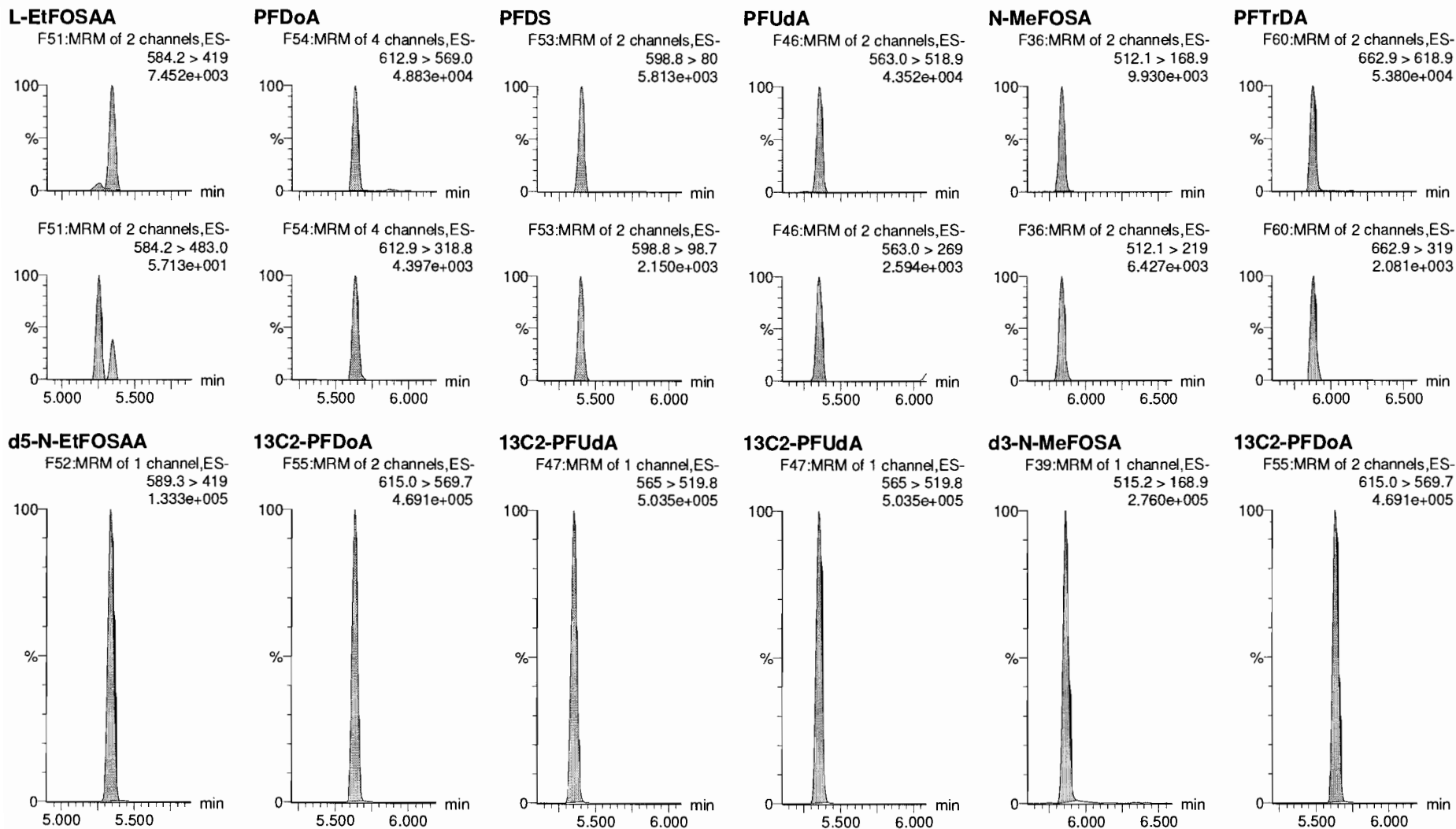


Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

Last Altered: Wednesday, June 06, 2018 17:17:31 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:17:36 Pacific Daylight Time

Name: 180605M2_4, Date: 05-Jun-2018, Time: 16:59:39, ID: ST180605M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904



Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-4.qld

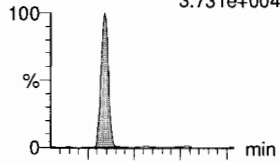
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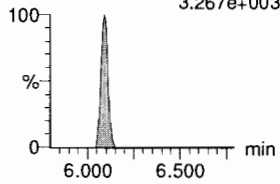
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PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
3.731e+004

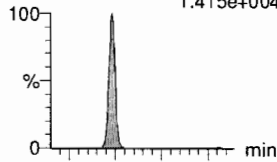


F61:MRM of 2 channels,ES-
712.9 > 369
3.267e+003

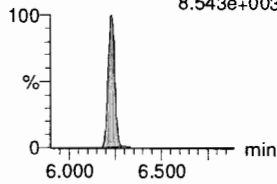


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
1.415e+004

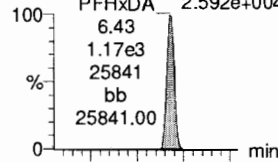


F41:MRM of 2 channels,ES-
526.1 > 219
8.543e+003

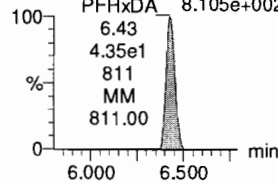


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
2.592e+004

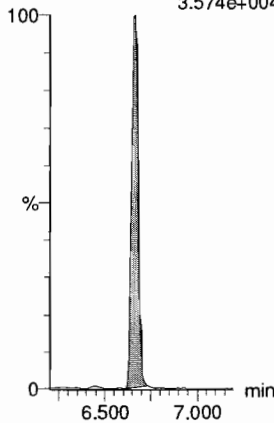


F63:MRM of 2 channels,ES-
813.1 > 219
8.105e+002



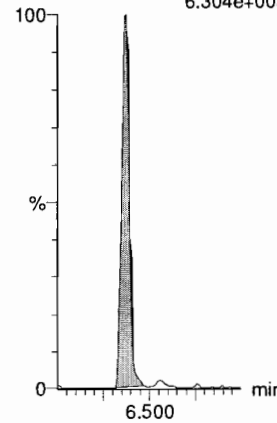
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
3.574e+004



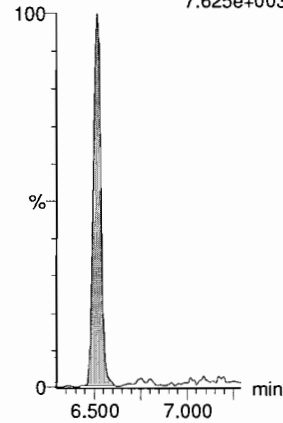
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
6.304e+003



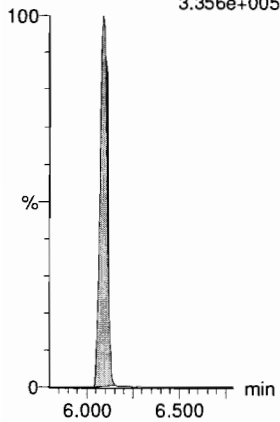
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
7.625e+003



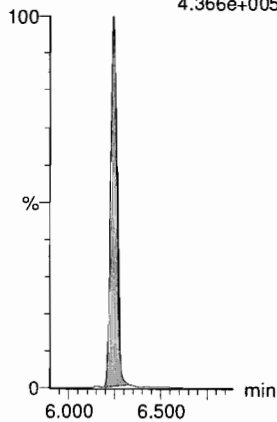
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
3.356e+005



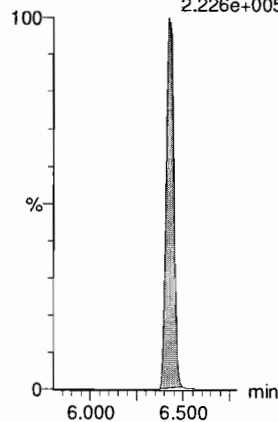
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.366e+005



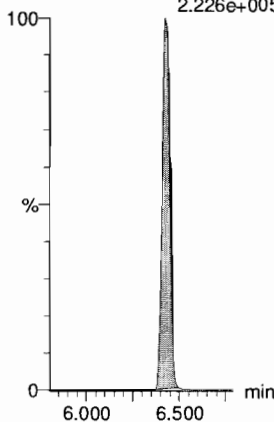
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.226e+005



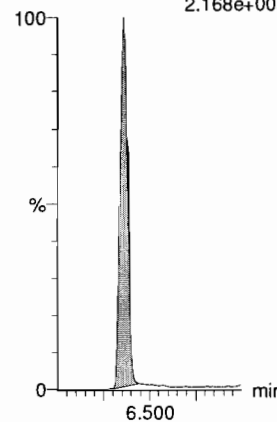
13C2-PFODA

F64:MRM of 1 channel,ES-
815 > 769.7
2.226e+005



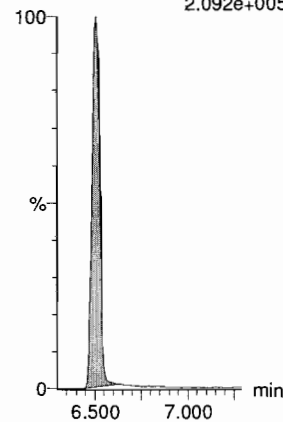
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.168e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.092e+005



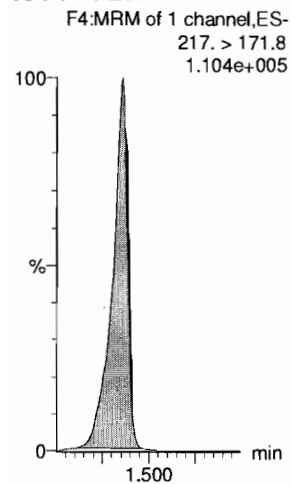
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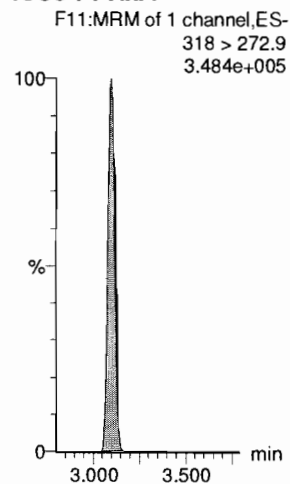
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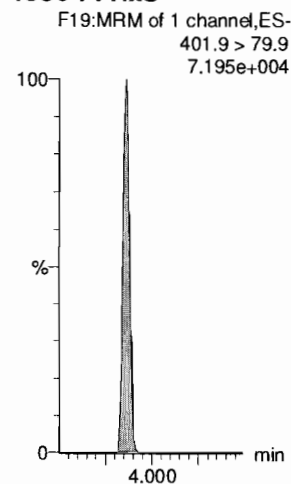
13C4-PFBA



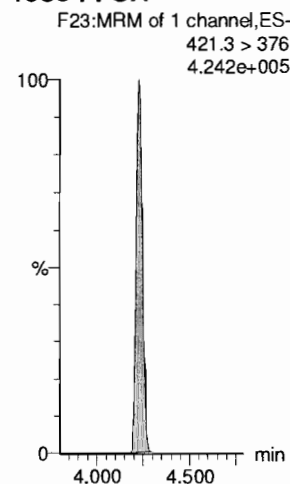
13C5-PFHxA



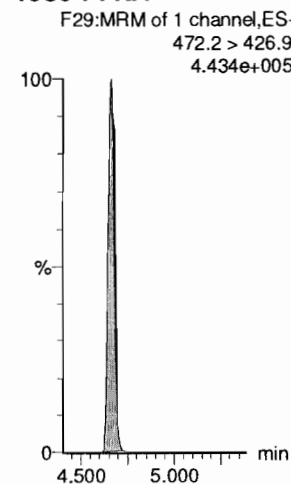
13C3-PFHxS



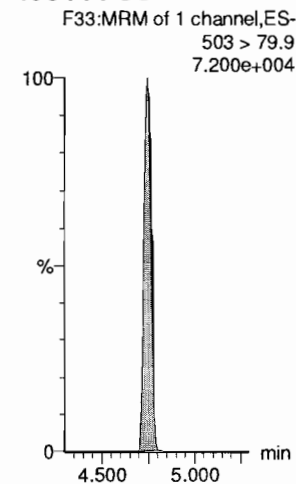
13C8-PFOA



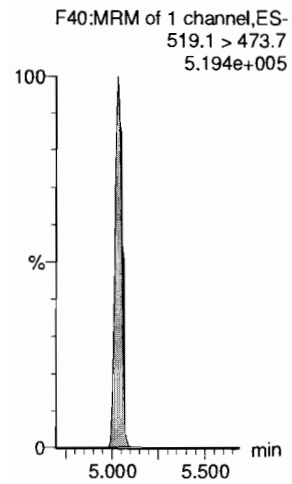
13C9-PFNA



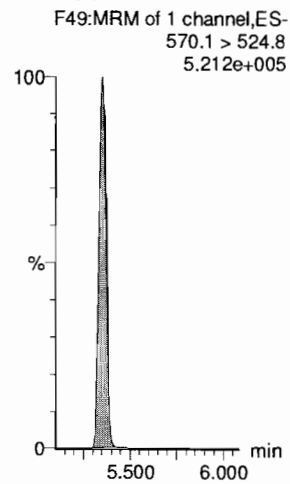
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:22 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	7.45e3	8.01e3		1.31	1.31	11.6	10.5	104.7	NO		
2	2 PFPeA	263.1 > 21...	1.10e4	1.32e4		2.28	2.28	10.4	10.1	101.0	NO		
3	3 PFBS	299.0 > 79.7	2.71e3	1.59e3		2.57	2.57	21.3	10.7	106.9	NO	2.833	NO
4	4 4:2 FTS	327.2>307.2	3.66e3	3.55e3		2.98	2.98	12.9	12.1	120.6	NO	1.945	NO
5	5 PFHxA	313.2 > 26...	1.60e4	4.34e3		3.06	3.06	18.5	11.6	115.8	NO	215.779	NO
6	6 PFPeS	349.1>80.1	2.51e3	1.59e3		3.26	3.26	19.8	10.9	109.4	NO	1.820	NO
7	7 PFHpA	363.0 > 31...	1.21e4	1.20e4		3.67	3.68	12.6	10.8	107.6	NO	12.607	NO
8	8 L-PFHxS	398.9 > 79.6	2.02e3	1.43e3		3.83	3.83	17.7	9.20	92.0	NO	1.700	NO
9	10 6:2 FTS	427.1 > 407	4.00e3	3.52e3		4.17	4.15	14.2	11.5	115.1	NO	3.103	NO
10	11 L-PFOA	413 > 368.7	1.64e4	2.08e4		4.25	4.20	9.86	10.9	109.3	NO	4.101	NO
11	13 PFHpS	449 > 80.0	2.45e3	2.08e4		4.33	4.32	1.47	9.35	93.5	NO	1.816	NO
12	14 PFNA	463.0 > 41...	1.62e4	1.79e4		4.66	4.64	11.3	8.79	87.9	NO	4.289	NO
13	15 PFOSA	498.2 > 77.9	2.62e3	3.50e3		4.73	4.71	9.34	9.84	98.4	NO	33.170	NO
14	16 L-PFOS	499.1 > 79.9	2.58e3	3.53e3		4.74	4.72	9.14	9.84	98.4	NO	1.934	NO
15	18 PFDA	513 > 468.8	2.25e4	2.42e4		5.03	5.01	11.6	11.3	112.5	NO	6.594	NO
16	19 8:2 FTS	527 > 506.9	3.47e3	3.49e3		5.00	4.99	12.4	8.62	86.2	NO	2.686	NO
17	20 PFNS	549.1>80.1	2.35e3	3.53e3		5.09	5.08	8.33	9.97	99.7	NO	1.787	NO
18	21 L-MeFOSAA	570.1 > 419	6.22e3	4.89e3		5.18	5.17	15.9	8.42	84.2	NO	23.046	NO
19	23 L-EtFOSAA	584.2 > 419	4.98e3	6.39e3		5.37	5.33	9.73	8.53	85.3	NO	27.517	NO

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6/6/18

GM 6/6/2018

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	25 PFUDa	563.0 > 51...	2.04e4	2.36e4		5.35	5.34	10.8	11.2	111.8	NO	10.558	NO
2	26 PFDS	598.8 > 80	2.66e3	2.36e4		5.40	5.39	1.41	9.78	97.8	NO	2.371	NO
3	27 PFDa	612.9 > 56...	1.85e4	2.48e4		5.63	5.63	9.34	8.36	83.6	NO	7.041	YES
4	28 N-MeFOSA	512.1 > 16...	5.08e3	1.45e4		5.82	5.79	52.5	50.0	100.0	NO	1.430	NO
5	29 PFTTrDA	662.9 > 61...	2.23e4	2.48e4		5.88	5.87	11.3	10.4	103.6	NO	23.759	NO
6	30 PFTeDA	712.9 > 66...	1.87e4	1.99e4		6.10	6.08	11.7	9.03	90.3	NO	13.102	NO
7	31 N-EtFOSA	526.1 > 16...	6.18e3	2.04e4		6.23	6.20	45.4	49.1	98.1	NO	1.561	NO
8	32 PFHxDA	813.1 > 76...	1.34e4	1.02e4		6.43	6.43	6.56	10.8	108.2	NO	27.305	NO
9	33 PFODA	913.1 > 86...	1.54e4	1.02e4		6.67	6.66	7.56	8.51	85.1	NO		
10	34 N-MeFOSE	616.1 > 58.9	3.99e3	1.19e4		6.37	6.37	50.1	50.4	100.8	NO		
11	35 N-EtFOSE	630.1 > 58.9	4.49e3	1.19e4		6.52	6.52	56.7	47.5	95.0	NO		
12	36 13C3-PFBA	216.1 > 17...	8.01e3	9.00e3	0.885	1.34	1.31	11.1	12.6	100.6	NO		
13	37 13C3-PFPeA	266. > 221.8	1.32e4	1.48e4	0.849	2.31	2.28	11.1	13.1	104.6	NO		
14	38 13C3-PFBS	302. > 98.8	1.59e3	1.48e4	0.104	2.60	2.57	1.34	12.9	103.2	NO		
15	39 13C2-4:2 FTS	329.2>308.9	3.55e3	1.48e4	0.248	3.01	2.98	2.99	12.1	96.5	NO		
16	40 13C2-PFHxA	315 > 269.8	4.34e3	1.48e4	0.729	3.09	3.06	3.66	5.02	100.3	NO		
17	41 13C4-PFHpA	367.2 > 32...	1.20e4	1.48e4	0.836	3.71	3.67	10.1	12.1	96.8	NO		
18	42 18O2-PFHxS	403.0 > 10...	1.43e3	3.26e3	0.443	3.86	3.83	5.48	12.4	99.0	NO		
19	43 13C2-6:2 FTS	429.1 > 40...	3.52e3	1.71e4	0.249	4.17	4.15	2.58	10.4	83.0	NO		
20	44 13C2-PFOA	414.9 > 36...	2.08e4	1.71e4	1.332	4.23	4.20	15.2	11.4	91.4	NO		
21	45 13C5-PFNA	468.2 > 42...	1.79e4	1.96e4	0.951	4.66	4.64	11.4	12.0	96.3	NO		
22	46 13C8-PFOSA	506.1 > 77.7	3.50e3	2.67e4	0.140	4.73	4.71	1.64	11.7	93.9	NO		
23	47 13C8-PFOS	507.0 > 79.9	3.53e3	3.25e3	1.060	4.74	4.72	13.6	12.8	102.4	NO		
24	48 13C2-PFDA	515.1 > 46...	2.42e4	2.49e4	1.130	5.03	5.01	12.2	10.8	86.2	NO		
25	49 13C2-8:2 FTS	529.1 > 50...	3.49e3	1.48e4	0.217	5.00	4.98	2.94	13.5	108.1	NO		
26	50 d3-N-MeFOSAA	573.3 > 419	4.89e3	2.67e4	0.184	5.18	5.17	2.29	12.5	99.7	NO		
27	51 d5-N-EtFOSAA	589.3 > 419	6.39e3	2.67e4	0.223	5.34	5.32	2.99	13.4	107.1	NO		
28	52 13C2-PFUDa	565 > 519.8	2.36e4	2.67e4	0.936	5.35	5.34	11.0	11.8	94.2	NO		
29	53 13C2-PFDa	615.0 > 56...	2.48e4	2.49e4	1.168	5.63	5.62	12.5	10.7	85.3	NO		
30	54 d3-N-MeFOSA	515.2 > 16...	1.45e4	2.67e4	0.051	5.85	5.82	6.78	132	88.3	NO		
31	55 13C2-PFTeDA	714.8 > 66...	1.99e4	2.67e4	0.706	6.09	6.09	9.31	13.2	105.5	NO		
32	56 d5-N-ETFOSA	531.1 > 16...	2.04e4	2.67e4	0.071	6.24	6.22	9.54	134	89.3	NO		

GM 6/6/2018

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

	#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	57	13C2-PFHxDA	815 > 769.7	1.02e4	2.67e4	1.079	6.43	6.43	4.77	4.42	88.4	NO		
34	58	d7-N-MeFOSE	623.1 > 58.9	1.19e4	2.67e4	0.041	6.37	6.36	5.58	135	90.2	NO		
35	59	d9-N-EtFOSE	639.2 > 58.8	1.19e4	2.67e4	0.038	6.51	6.50	5.55	145	96.6	NO		
36	60	13C4-PFBA	217. > 171.8	9.00e3	9.00e3	1.000	1.35	1.30	12.5	12.5	100.0	NO		
37	61	13C5-PFHxA	318 > 272.9	1.48e4	1.48e4	1.000	3.09	3.06	12.5	12.5	100.0	NO		
38	62	13C3-PFHxS	401.9 > 79.9	3.26e3	3.26e3	1.000	3.86	3.83	12.5	12.5	100.0	NO		
39	63	13C8-PFOA	421.3 > 376	1.71e4	1.71e4	1.000	4.23	4.20	12.5	12.5	100.0	NO		
40	64	13C9-PFNA	472.2 > 42...	1.96e4	1.96e4	1.000	4.66	4.64	12.5	12.5	100.0	NO		
41	65	13C4-PFOS	503 > 79.9	3.25e3	3.25e3	1.000	4.74	4.72	12.5	12.5	100.0	NO		
42	66	13C6-PFDA	519.1 > 47...	2.49e4	2.49e4	1.000	5.03	5.01	12.5	12.5	100.0	NO		
43	67	13C7-PFUDa	570.1 > 52...	2.67e4	2.67e4	1.000	5.35	5.34	12.5	12.5	100.0	NO		

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180605M2_1	IPA	05-Jun-18	16:28:10
2	2 180605M2_2	ST180605M2-1 PFC CS-2 18E2902	05-Jun-18	16:38:43
3	3 180605M2_3	ST180605M2-2 PFC CS-1 18E2903	05-Jun-18	16:49:08
4	4 180605M2_4	ST180605M2-3 PFC CS0 18E2904 *	05-Jun-18	16:59:39
5	5 180605M2_5	ST180605M2-4 PFC CS1 18E2905	05-Jun-18	17:10:04
6	6 180605M2_6	ST180605M2-5 PFC CS2 18E2906	05-Jun-18	17:20:34
7	7 180605M2_7	ST180605M2-6 PFC CS3 18E2907	05-Jun-18	17:30:59
8	8 180605M2_8	ST180605M2-7 PFC CS4 18E2908	05-Jun-18	17:41:30
9	9 180605M2_9	ST180605M2-8 PFC CS5 18E2909	05-Jun-18	17:52:00
10	10 180605M2_10	ST180605M2-9 PFC CS6 18E2910	05-Jun-18	18:02:25
11	11 180605M2_11	ST180605M2-10 PFC CS7 18E2911	05-Jun-18	18:12:47
12	12 180605M2_12	IPA	05-Jun-18	18:23:17
13	13 180605M2_13	ICV180605M2-1 PFC 537 ICV 18E2901	05-Jun-18	18:33:43
14	14 180605M2_14	IPA	05-Jun-18	18:44:13
15	15 180605M2_15	B8E0097-BS1 OPR 0.25	05-Jun-18	18:54:40
16	16 180605M2_16	B8E0097-BSD1 LCSD 0.25	05-Jun-18	19:05:08
17	17 180605M2_17	B8E0097-BLK1 Method Blank 0.25	05-Jun-18	19:15:33
18	18 180605M2_18	1800863-01 Bemidji Pilot APR2 lead 0.2...	05-Jun-18	19:26:03
19	19 180605M2_19	1800863-02 Bemidji Pilot PSR2 + 0.26433	05-Jun-18	19:36:27
20	20 180605M2_20	1800863-03 Bemidji Pilot INF 0.26399	05-Jun-18	19:46:57
21	21 180605M2_21	1800901-01 ACT Sample -16 0.23838	05-Jun-18	19:57:21
22	22 180605M2_22	1800901-02 ACT Sample -19 0.23487	05-Jun-18	20:07:52
23	23 180605M2_23	1801071-02 A1-MW-55-SA1 0.11428	05-Jun-18	20:18:16
24	24 180605M2_24	1801071-03 A1-MW-23-SA1 0.11436	05-Jun-18	20:28:47
25	25 180605M2_25	1801071-04 A1-MW-07-SA1 0.11908	05-Jun-18	20:39:12
26	26 180605M2_26	1801039-01 A1-MW-13-SA1 0.10967	05-Jun-18	20:49:42
27	27 180605M2_27	1801039-02 A1-MW-11-SA1 0.11624	05-Jun-18	21:00:07
28	28 180605M2_28	1801039-03 A1-MW-14-SA1 0.11194	05-Jun-18	21:10:37
29	29 180605M2_29	1801039-04 A1-MW-15-SA1 0.11248	05-Jun-18	21:21:07
30	30 180605M2_30	IPA	05-Jun-18	21:31:32
31	31 180605M2_31	ST180605M2-11 PFC CS3 18E2907	05-Jun-18	21:42:02
32	32 180605M2_32	IPA	05-Jun-18	21:52:27

Ⓟ over 10 samples. All labels

*CS0 fell in with previous calibration;
curve not used KBF 6/8/18

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
33	33 180605M2_33	1801039-07 A1-MW-25-SA1 0.11252	05-Jun-18	22:02:57
34	34 180605M2_34	1801024-01 A1-MW-51-SA1 0.11961	05-Jun-18	22:13:21
35	35 180605M2_35	1801024-02 A1-MW-50-SA1 0.12082	05-Jun-18	22:23:52
36	36 180605M2_36	1801024-05 A1-MW-04-SA1 0.12315	05-Jun-18	22:34:22
37	37 180605M2_37	B8E0078-BS1 OPR 0.125	05-Jun-18	22:44:46
38	38 180605M2_38	B8E0078-BSD1 LCSD 0.125	05-Jun-18	22:55:16
39	39 180605M2_39	B8E0078-BLK1 Method Blank 0.125	05-Jun-18	23:05:40
40	40 180605M2_40	1800862-01 REEPDW451FRB 0.11732	05-Jun-18	23:16:11
41	41 180605M2_41	1800862-02 REEPDW452FRB 0.11393	05-Jun-18	23:26:35
42	42 180605M2_42	1800862-03 REEPDW453FRB 0.11381	05-Jun-18	23:37:05
43	43 180605M2_43	1800862-04 REEPDW454FRB 0.11483	05-Jun-18	23:47:29
44	44 180605M2_44	1800862-05 REEPDW456FRB 0.1202	05-Jun-18	23:58:00
45	45 180605M2_45	1800862-06 REEPDW446FRB 0.11919	06-Jun-18	00:08:25
46	46 180605M2_46	1800862-07 REEPDW455FRB 0.12259	06-Jun-18	00:18:55
47	47 180605M2_47	1800862-08 REEPDW447FRB 0.11683	06-Jun-18	00:29:20
48	48 180605M2_48	1800862-09 REEPDW448FRB 0.12114	06-Jun-18	00:39:51
49	49 180605M2_49	1800862-10 REEPDW449FRB 0.11798	06-Jun-18	00:50:16
50	50 180605M2_50	1800862-11 REEPDW450FRB 0.12118	06-Jun-18	01:00:38
51	51 180605M2_51	1800862-12 REEPDW457FRB 0.12446	06-Jun-18	01:11:08
52	52 180605M2_52	1800862-13 REEPDW459FRB 0.12147	06-Jun-18	01:21:33
53	53 180605M2_53	1800862-14 REEPDW458FRB 0.11703	06-Jun-18	01:32:03
54	54 180605M2_54	1800862-15 REEPDW460FRB 0.11944	06-Jun-18	01:42:28
55	55 180605M2_55	B8E0244-BS1 OPR 0.125	06-Jun-18	01:52:59
56	56 180605M2_56	B8E0244-BLK1 Method Blank 0.125	06-Jun-18	02:03:23
57	57 180605M2_57	B8E0244-MS1 Matrix Spike 0.11028	06-Jun-18	02:13:53
58	58 180605M2_58	B8E0244-MSD1 Matrix Spike Dup 0.113...	06-Jun-18	02:24:17
59	59 180605M2_59	B8E0244-MS2 Matrix Spike 0.11122	06-Jun-18	02:34:48
60	60 180605M2_60	B8E0244-MSD2 Matrix Spike Dup 0.115...	06-Jun-18	02:45:18
61	61 180605M2_61	1801037-01 A1-MW-18-SA1 0.11265	06-Jun-18	02:55:42
62	62 180605M2_62	1801037-02 16-MW-08-SA1 0.11493	06-Jun-18	03:06:13
63	63 180605M2_63	1801037-03 A1-MW-19-SA1 0.11827	06-Jun-18	03:16:38
64	64 180605M2_64	1801037-04 A1-MW-37-SA1 0.11915	06-Jun-18	03:27:09
65	65 180605M2_65	1801037-05 A1-MW-37-SA1D 0.11595	06-Jun-18	03:37:33
66	66 180605M2_66	1801037-06 16-H5-03-SA1 0.12456	06-Jun-18	03:48:03
67	67 180605M2_67	IPA	06-Jun-18	03:58:29
68	68 180605M2_68	ST180605M2-12 PFC CS3 18E2907	06-Jun-18	04:08:59

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
69	69 180605M2_69	ST180605M2-13 PFC CS0 18E2904	06-Jun-18	04:19:24
70	70 180605M2_70	IPA	06-Jun-18	04:29:54
71	71 180605M2_71	1801037-07 16-MW-09-SA1 0.1148	06-Jun-18	04:40:20
72	72 180605M2_72	1801037-08 16-MW-06-SA1 0.11143	06-Jun-18	04:50:50
73	73 180605M2_73	1801037-09 FRB-20180523 0.11719	06-Jun-18	05:01:15
74	74 180605M2_74	1801054-01 A1-MW-42-SA1 0.11279	06-Jun-18	05:11:45
75	75 180605M2_75	1801054-02 A1-MW-54-SA1 0.11211	06-Jun-18	05:22:09
76	76 180605M2_76	1801054-03 A1-MW-53-SA1 0.1139	06-Jun-18	05:32:40
77	77 180605M2_77	1801054-04 A1-P2-19-SA1 0.11736	06-Jun-18	05:43:10
78	78 180605M2_78	1801054-05 A1-MW-52-SA1 0.11509	06-Jun-18	05:53:35
79	79 180605M2_79	1801054-06 A1-MW-01-SA1 0.1102	06-Jun-18	06:04:05
80	80 180605M2_80	1801054-07 A1-MW-01-SA1D 0.11715	06-Jun-18	06:14:31
81	81 180605M2_81	IPA	06-Jun-18	06:25:01
82	82 180605M2_82	ST180605M2-14 PFC CS3 18E2907	06-Jun-18	06:35:26
83	83 180605M2_83	IPA	06-Jun-18	06:45:57
84	84 180605M2_84	1801054-08 A1-MW-31-SA1 0.11276	06-Jun-18	06:56:27
85	85 180605M2_85	1801054-09 FRB-20180525 0.11663	06-Jun-18	07:06:52
86	86 180605M2_86	B8E0161-BS1 OPR 0.25	06-Jun-18	07:17:22
87	87 180605M2_87	B8E0161-BLK1 Method Blank 0.25	06-Jun-18	07:27:47
88	88 180605M2_88	1800989-01 KE-RD6954-MW01 0.11761	06-Jun-18	07:38:17
89	89 180605M2_89	1800989-02 KE-BBW-MW01 0.11717	06-Jun-18	07:48:48
90	90 180605M2_90	1800989-03 KE-6954-MW01 0.11556	06-Jun-18	07:59:12
91	91 180605M2_91	1800989-04 KE-APN-MW01 0.11557	06-Jun-18	08:09:43
92	92 180605M2_92	1800989-05 KE-FBA-MW01 0.11631	06-Jun-18	08:20:06
93	93 180605M2_93	1800989-06 KE-FBA-MW01D 0.11705	06-Jun-18	08:30:37
94	94 180605M2_94	1800989-07 KE-NNTA-MW01 0.11356	06-Jun-18	08:41:02
95	95 180605M2_95	1800989-08 KE-6918-MW01 0.11438	06-Jun-18	08:51:32
96	96 180605M2_96	1800989-09 KE-6917-MW01 0.11542	06-Jun-18	09:01:58
97	97 180605M2_97	IPA	06-Jun-18	09:12:28
98	98 180605M2_98	ST180605M2-15 PFC CS3 18E2907	06-Jun-18	09:22:52
99	99 180605M2_99	IPA	06-Jun-18	09:33:23
100	1... 180605M2_100	1800989-10 KE-EB-5-11-18 0.26165	06-Jun-18	09:43:53
101	1... 180605M2_101	1800989-11 KE-FTA-MW01 0.1098	06-Jun-18	09:54:18
102	1... 180605M2_102	1800986-01 FR Fid Blk 0.25955	06-Jun-18	10:04:48
103	1... 180605M2_103	IS SUP TESTER	06-Jun-18	10:27:41
104	1... 180605M2_104	1800986-02 Forest Ridge 0.27675	06-Jun-18	10:38:06

Dataset: Untitled

Last Altered: Wednesday, June 06, 2018 17:00:17 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 17:00:28 Pacific Daylight Time

Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
105	1... 180605M2_105	1800986-03 K_V Fld Blk 0.25454	06-Jun-18	10:48:37
106	1... 180605M2_106	1800986-04 K_V 0.27397	06-Jun-18	10:59:02
107	1... 180605M2_107	1800990-01 WIRR1805171315JLB 0.2...	06-Jun-18	11:09:32
108	1... 180605M2_108	1800990-02 FB1805171320JLB 0.25861	06-Jun-18	11:19:56
109	1... 180605M2_109	IPA	06-Jun-18	11:30:26
110	1... 180605M2_110	ST180605M2-16 PFC CS3 18E2907	06-Jun-18	11:40:57
111	1... 180605M2_111	IPA	06-Jun-18	11:51:21

Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

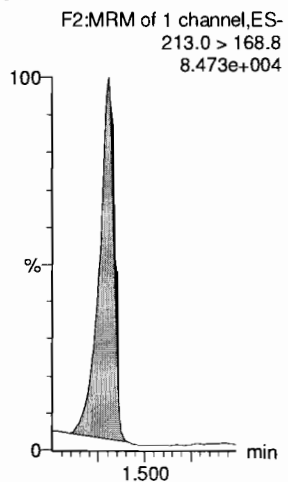
Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060518.mdb 06 Jun 2018 13:40:46

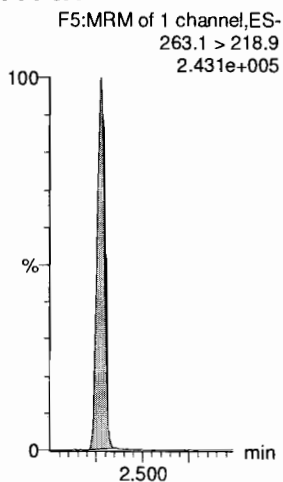
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

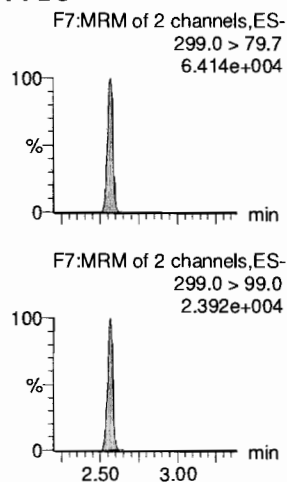
PFBA



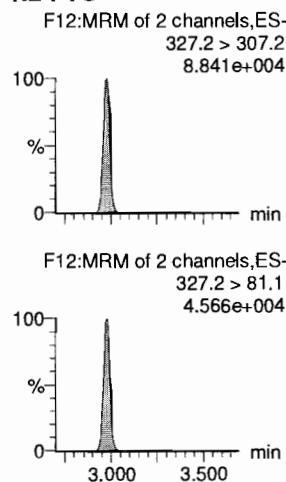
PFPeA



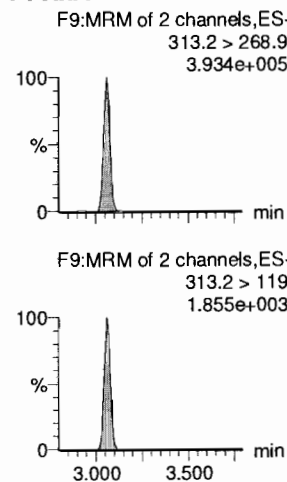
PFBS



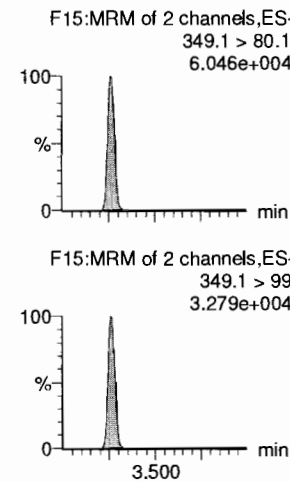
4:2 FTS



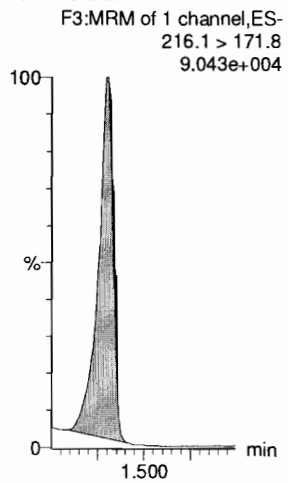
PFHxA



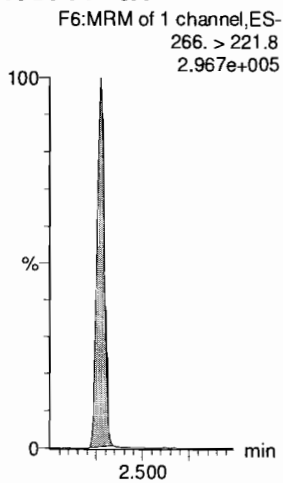
PFPeS



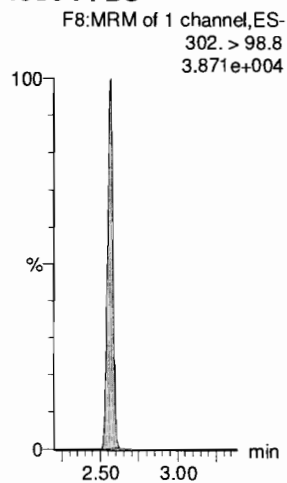
13C3-PFBA



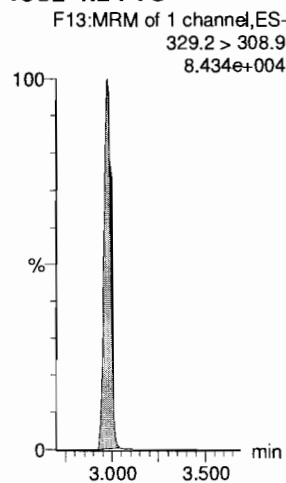
13C3-PFPeA



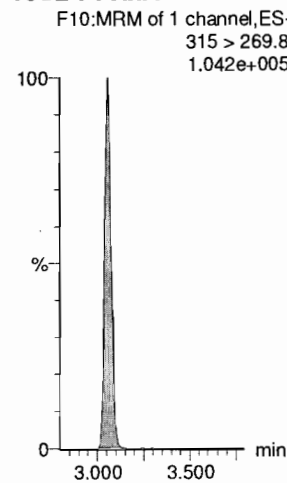
13C3-PFBS



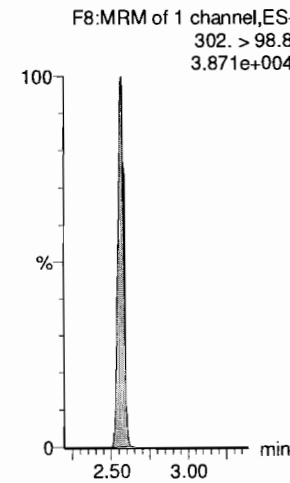
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS

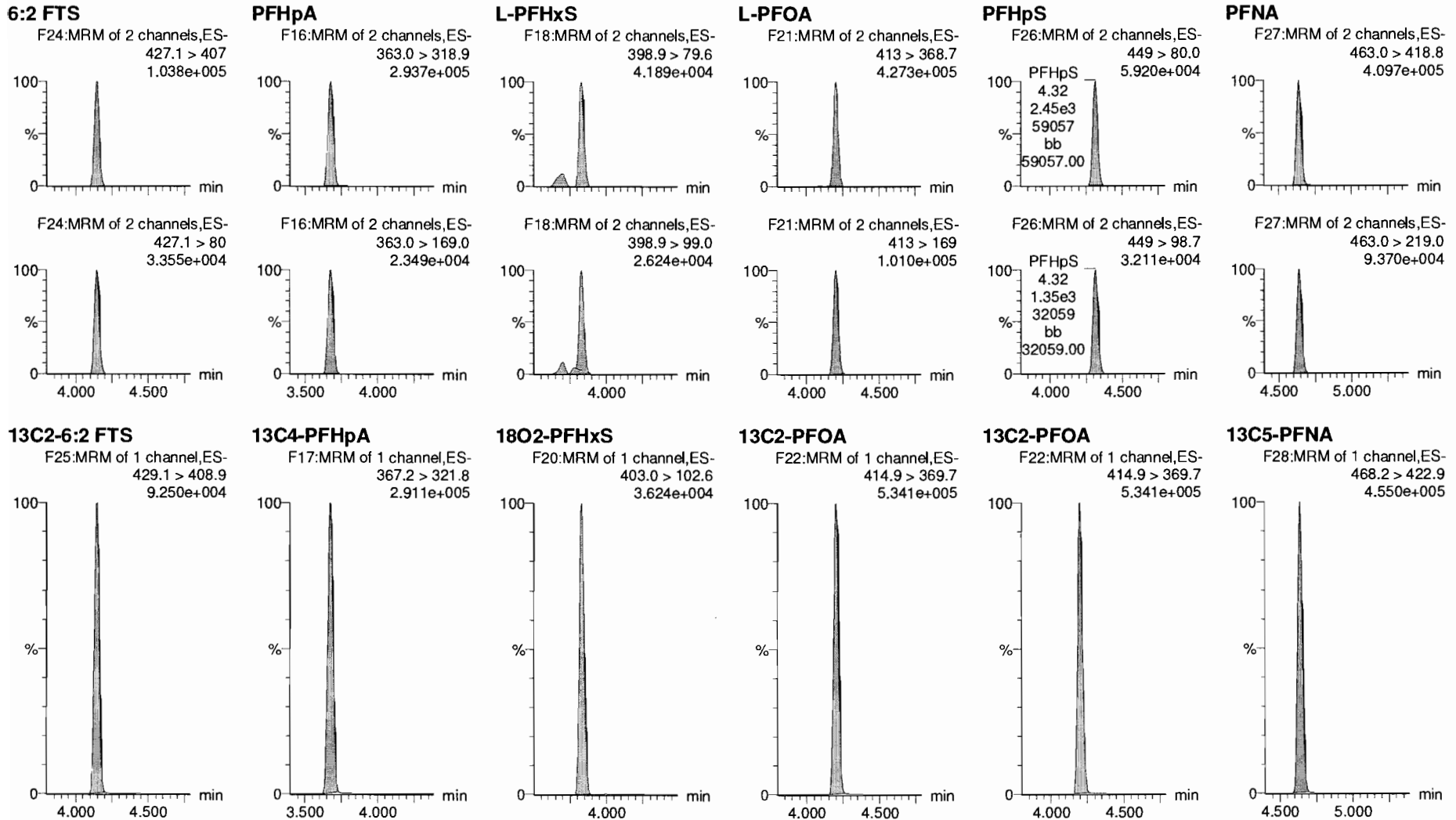


Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907



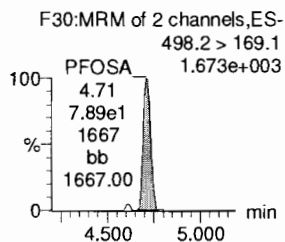
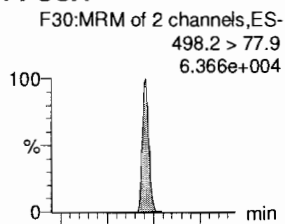
Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

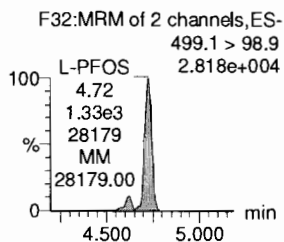
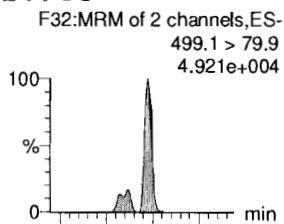
Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

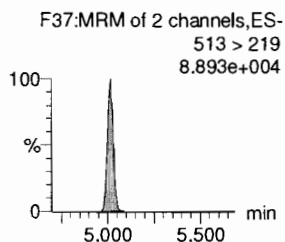
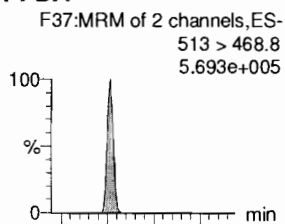
PFOSA



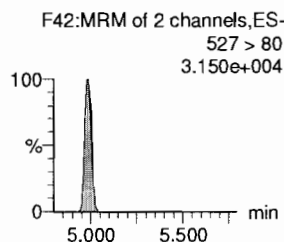
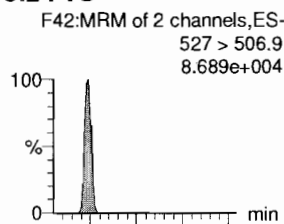
L-PFOS



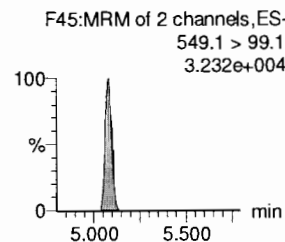
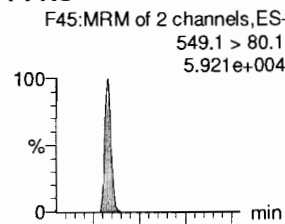
PFDA



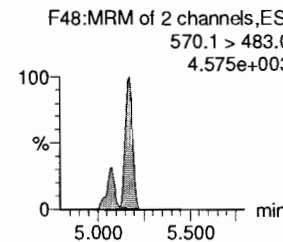
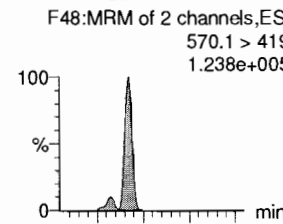
8:2 FTS



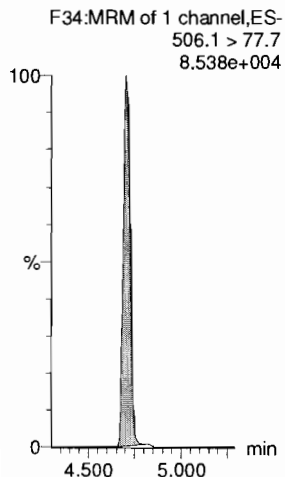
PFNS



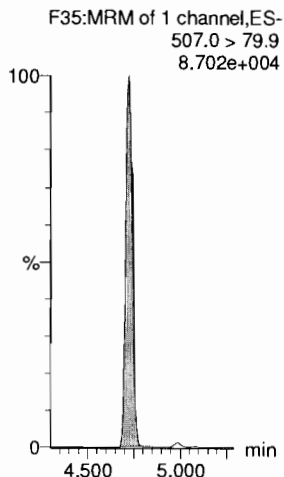
L-MeFOSAA



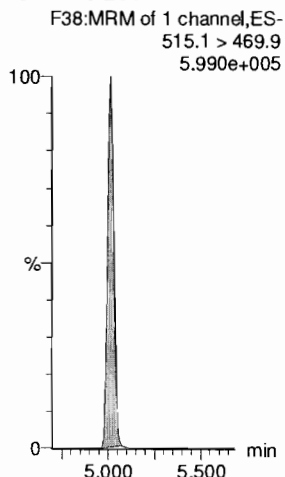
13C8-PFOA



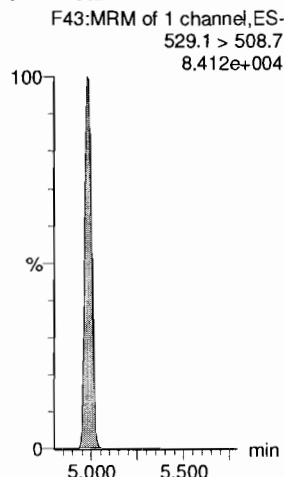
13C8-PFOS



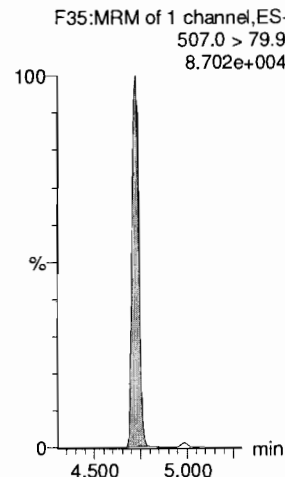
13C2-PFDA



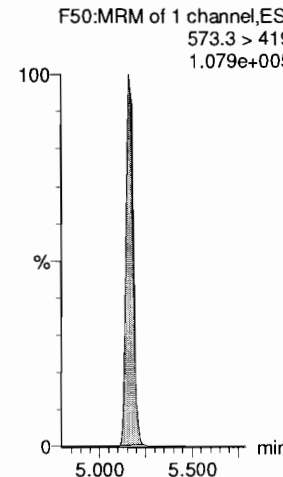
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

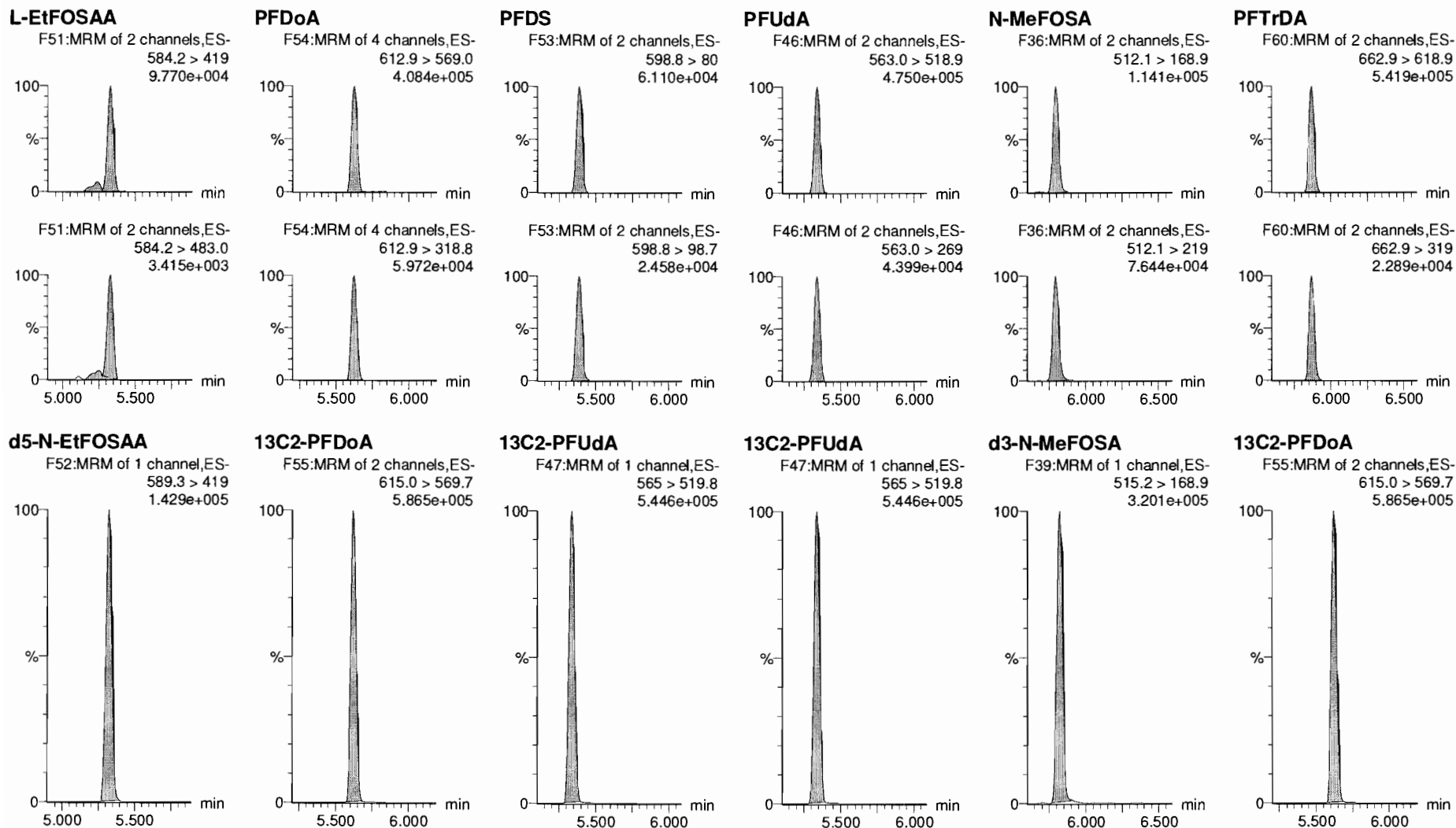


Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907



Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

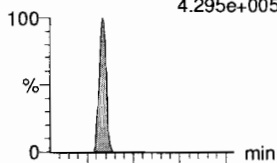
Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

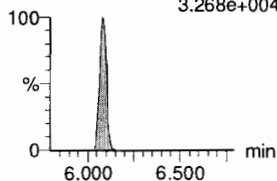
Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
4.295e+005

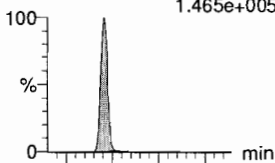


F61:MRM of 2 channels,ES-
712.9 > 369
3.268e+004

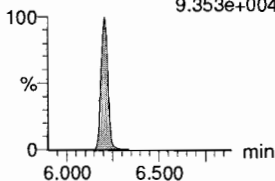


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
1.465e+005

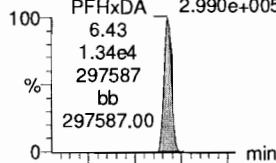


F41:MRM of 2 channels,ES-
526.1 > 219
9.353e+004

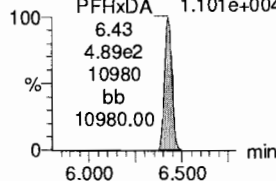


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
2.990e+005

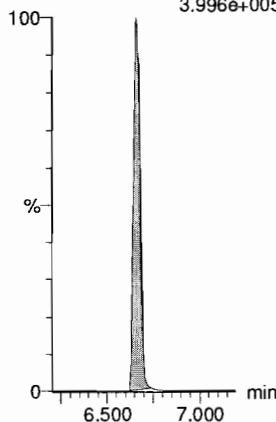


F63:MRM of 2 channels,ES-
813.1 > 219
1.101e+004



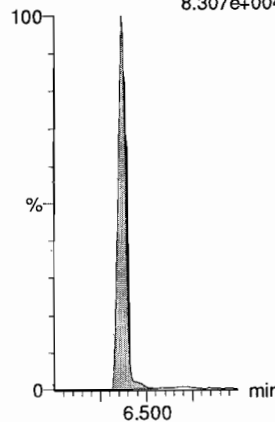
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
3.996e+005



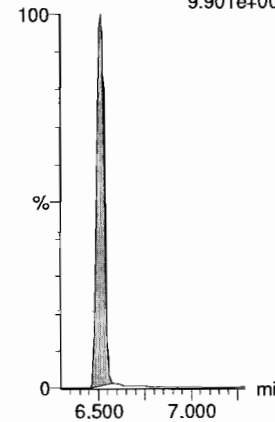
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
8.307e+004



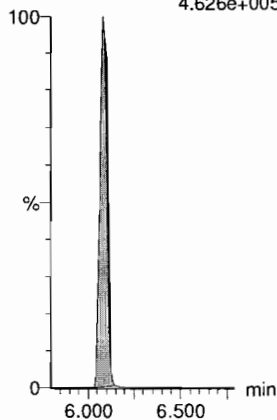
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
9.901e+004



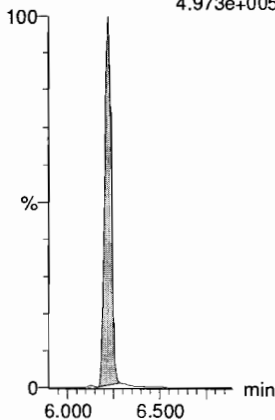
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
4.626e+005



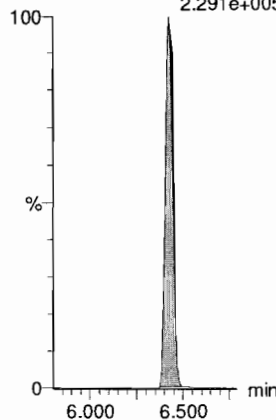
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.973e+005



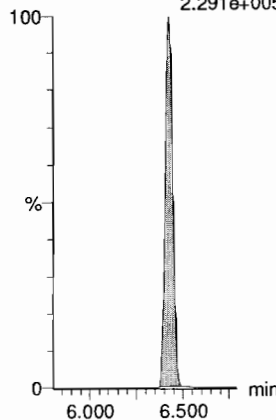
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.291e+005



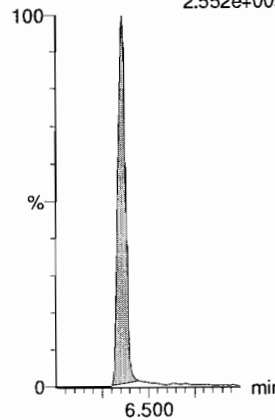
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.291e+005



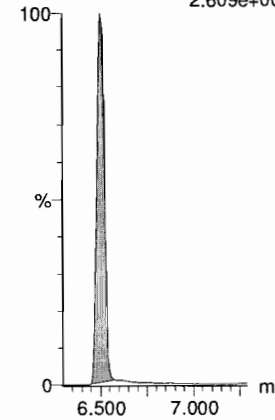
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.552e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.609e+005



Dataset: F:\Projects\PFAS.PRO\Results\180605M2\180605M2-31.qld

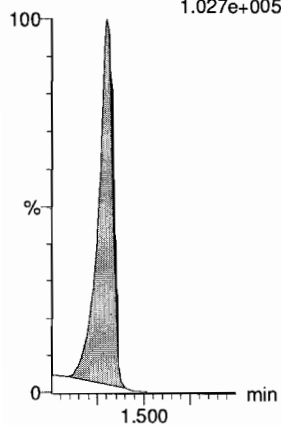
Last Altered: Wednesday, June 06, 2018 16:43:59 Pacific Daylight Time

Printed: Wednesday, June 06, 2018 16:44:30 Pacific Daylight Time

Name: 180605M2_31, Date: 05-Jun-2018, Time: 21:42:02, ID: ST180605M2-11 PFC CS3 18E2907, Description: PFC CS3 18E2907

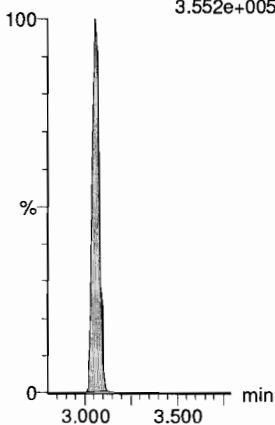
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.027e+005



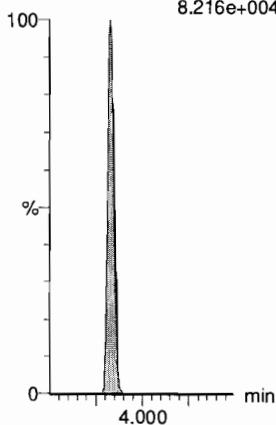
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
3.552e+005



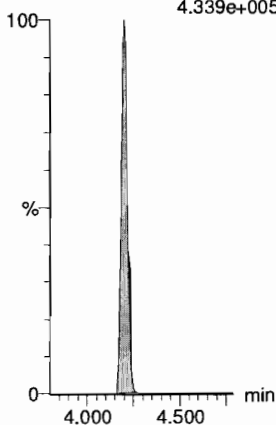
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.216e+004



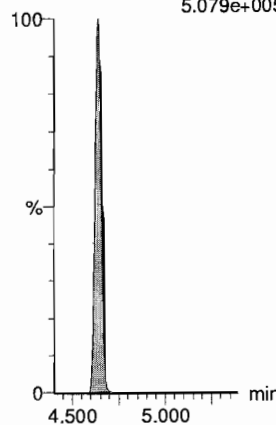
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.339e+005



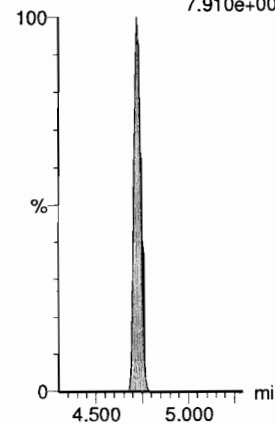
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.079e+005



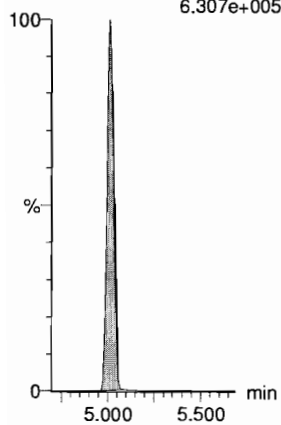
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
7.910e+004



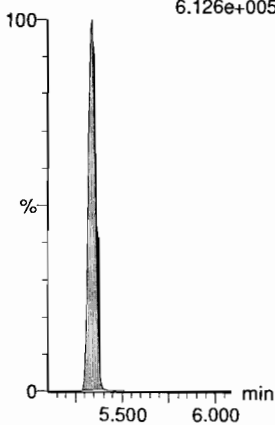
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
6.307e+005



13C7-PFUDa

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.126e+005



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

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time
 Printed: Monday, June 04, 2018 08:48:04 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34
 Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Compound name: PFBA

Correlation coefficient: $r = 0.999917$, $r^2 = 0.999834$
 Calibration curve: $1.11767 * x + 0.0424299$
 Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
 Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None

Handwritten notes:
 high pt
 low pt
 $4.2 \text{ PFS} = 100$
 $6.2 \text{ PFS} = 100$
 $\text{PFBA} = 250$
 $\text{PFDS} = 50$
 $\text{PFDOA} = 100$
 $\text{PFTRDA} = 100$
 ~~$\text{PFHxDA} = 250$~~
 $\text{PFHxDA} = 250$
 ✓ 6/4/18
 ✓ 6/4/18
 AM 6/4/18

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180603M2_2	Standard	0.250	1.38	286.551	11057.410	0.324	0.3	0.7	NO	1.000	NO	MM
2	2 180603M2_3	Standard	0.500	1.38	525.447	10852.338	0.605	0.5	0.7	NO	1.000	NO	MM
3	3 180603M2_4	Standard	1.000	1.37	1104.250	11239.817	1.228	1.1	6.1	NO	1.000	NO	MM
4	4 180603M2_5	Standard	2.000	1.38	2024.444	11221.023	2.255	2.0	-1.0	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	1.38	4964.079	10714.076	5.792	5.1	2.9	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	1.38	9701.181	10688.383	11.345	10.1	1.1	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	1.38	51839.383	11217.190	57.768	51.6	3.3	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	1.38	94748.172	10361.961	114.298	102.2	2.2	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	1.38	232989.359	10428.025	279.283	249.8	-0.1	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	1.38	439369.313	9906.605	554.389	496.0	-0.8	NO	1.000	NO	bb

Compound name: PFPeA

Correlation coefficient: $r = 0.999979$, $r^2 = 0.999958$
 Calibration curve: $1.01016 * x + 0.0157886$
 Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)
 Curve type: Linear, Origin: Exclude, 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 180603M2_2	Standard	0.250	2.34	310.555	14942.807	0.260	0.2	-3.4	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	2.34	582.212	14112.663	0.516	0.5	-1.0	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	2.34	1274.344	15401.912	1.034	1.0	0.8	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	2.34	2427.608	15167.869	2.001	2.0	-1.8	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	2.34	6160.964	14695.008	5.241	5.2	3.4	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	2.34	11782.319	14556.021	10.118	10.0	0.0	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	2.35	62629.465	15159.774	51.641	51.1	2.2	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	2.34	114228.859	14101.499	101.256	100.2	0.2	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	2.34	270507.875	13457.060	251.269	248.7	-0.5	NO	1.000	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: PFPeA

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
10	10 180603M2_11	Standard	500.000	2.35	498344.125	12337.635	504.902	499.8	-0.0	NO	1.000	NO	bb

Compound name: PFBS

Coefficient of Determination: R² = 0.999815

Calibration curve: 0.000223532 * x² + 1.94727 * x + 0.0273154

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	2.62	74.906	1835.080	0.510	0.2	-0.8	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	2.62	133.534	1810.358	0.922	0.5	-8.1	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	2.62	293.311	1862.340	1.969	1.0	-0.3	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	2.63	598.211	1827.688	4.091	2.1	4.3	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	2.63	1476.721	1851.845	9.968	5.1	2.0	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	2.63	2849.810	1823.998	19.530	10.0	0.0	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	2.63	14726.879	1818.162	101.248	51.7	3.3	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	2.63	26329.846	1654.700	198.902	101.0	1.0	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	2.63	62087.715	1579.831	491.253	245.4	-1.9	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	2.63	108591.102	1313.247	1033.613	501.9	0.4	NO	1.000	NO	bb

Compound name: 4:2 FTS

Coefficient of Determination: R² = 0.998088

Calibration curve: -0.00365524 * x² + 1.16824 * x + -0.00106813

Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	3.02	89.738	3696.335	0.303	0.3	4.4	NO	0.998	NO	bb
2	2 180603M2_3	Standard	0.500	3.02	174.562	3663.609	0.596	0.5	2.3	NO	0.998	NO	bb
3	3 180603M2_4	Standard	1.000	3.02	381.686	4043.533	1.180	1.0	1.4	NO	0.998	NO	bb
4	4 180603M2_5	Standard	2.000	3.03	649.867	4135.085	1.964	1.7	-15.4	NO	0.998	NO	bb
5	5 180603M2_6	Standard	5.000	3.03	1772.508	3892.281	5.692	5.0	-1.0	NO	0.998	NO	bb
6	6 180603M2_7	Standard	10.000	3.03	3550.676	3554.119	12.488	11.1	10.7	NO	0.998	NO	bb
7	7 180603M2_8	Standard	50.000	3.03	16842.332	4396.625	47.884	48.3	-3.4	NO	0.998	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 4:2 FTS

#	Name	Type	Std. Conc.	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
8	8 180603M2_9	Standard	100.000	3.03	30500.734	4715.182	80.858	101.4	1.4	NO	0.998	NO	bb
9	9 180603M2_10	Standard	250.000	3.03	67775.594	6011.217	140.936			NO	0.998	YES	bbXI
10	10 180603M2_11	Standard	500.000	3.03	115218.445	7896.673	182.384			NO	0.998	YES	bbXI

Compound name: PFHxA

Coefficient of Determination: R² = 0.999878

Calibration curve: 0.000139344 * x² + 1.52767 * x + 0.0390743

Response type: Internal Std (Ref 40), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180603M2_2	Standard	0.250	3.11	447.201	5140.567	0.435	0.3	3.7	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	3.11	810.592	4993.331	0.812	0.5	1.1	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	3.11	1690.606	5403.152	1.564	1.0	-0.2	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	3.12	3210.010	5252.656	3.056	2.0	-1.3	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	3.12	8063.087	4943.626	8.155	5.3	6.2	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	3.12	16252.355	5255.675	15.462	10.1	0.9	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	3.12	80081.844	5289.254	75.702	49.3	-1.4	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	3.12	161610.250	5130.039	157.514	102.1	2.1	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	3.12	373608.781	4837.902	386.127	247.2	-1.1	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	3.12	684514.625	4275.990	800.417	501.0	0.2	NO	1.000	NO	bb

Compound name: PFPeS

Correlation coefficient: r = 0.999461, r² = 0.998922

Calibration curve: 1.84123 * x + -0.0692894

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, 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 180603M2_2	Standard	0.250	3.31	59.087	1835.080	0.402	0.3	2.5	NO	0.999	NO	MM
2	2 180603M2_3	Standard	0.500	3.31	138.987	1810.358	0.960	0.6	11.8	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	3.31	273.028	1862.340	1.833	1.0	3.3	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	3.31	507.099	1827.688	3.468	1.9	-3.9	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	3.32	1309.499	1851.845	8.839	4.8	-3.2	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: PFPeS

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
6	6 180603M2_7	Standard	10.000	3.32	2394.907	1823.998	16.412	9.0	-10.5	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	3.32	13382.591	1818.162	92.006	50.0	0.0	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	3.32	25042.957	1654.700	189.180	102.8	2.8	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	3.32	55407.176	1579.831	438.395	238.1	-4.7	NO	0.999	NO	bb
10	10 180603M2_11	Standard	500.000	3.32	98697.797	1313.247	939.444	510.3	2.1	NO	0.999	NO	bb

Compound name: PFHpA

Coefficient of Determination: R² = 0.999980

Calibration curve: 0.000463938 * x² + 1.14345 * x + 0.0577121

Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	3.72	446.629	15583.414	0.358	0.3	5.1	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	3.72	687.279	14360.869	0.598	0.5	-5.5	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	3.72	1460.633	15052.655	1.213	1.0	1.0	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	3.73	2725.334	14984.784	2.273	1.9	-3.2	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	3.73	6677.411	14228.897	5.866	5.1	1.4	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	3.73	13455.714	14349.260	11.722	10.2	1.6	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	3.73	74517.766	16035.928	58.087	49.7	-0.5	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	3.73	134000.703	14057.480	119.154	100.1	0.1	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	3.73	300126.250	11912.625	314.925	250.0	0.0	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	3.73	537888.813	12317.354	545.865	409.3	-18.1	NO	1.000	NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: L-PFHxS

Correlation coefficient: $r = 0.999509$, $r^2 = 0.999018$

Calibration curve: $1.91268 * x + 0.0612931$

Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, 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 180603M2_2	Standard	0.250	3.87	62.591	1569.461	0.499	0.2	-8.6	NO	0.999	NO	MM
2	2 180603M2_3	Standard	0.500	3.87	123.751	1468.555	1.053	0.5	3.7	NO	0.999	NO	MM
3	3 180603M2_4	Standard	1.000	3.88	238.473	1523.706	1.956	1.0	-0.9	NO	0.999	NO	MM
4	4 180603M2_5	Standard	2.000	3.88	401.807	1579.854	3.179	1.6	-18.5	NO	0.999	NO	MM
5	5 180603M2_6	Standard	5.000	3.88	1119.416	1445.307	9.681	5.0	0.6	NO	0.999	NO	MM
6	6 180603M2_7	Standard	10.000	3.88	2364.440	1321.032	22.373	11.7	16.7	NO	0.999	NO	MM
7	7 180603M2_8	Standard	50.000	3.88	11503.629	1434.082	100.270	52.4	4.8	NO	0.999	NO	MM
8	8 180603M2_9	Standard	100.000	3.88	21132.445	1312.576	201.250	105.2	5.2	NO	0.999	NO	MM
9	9 180603M2_10	Standard	250.000	3.88	50240.836	1345.168	466.864	244.1	-2.4	NO	0.999	NO	MM
10	10 180603M2_11	Standard	500.000	3.88	92474.094	1215.786	950.765	497.1	-0.6	NO	0.999	NO	MM

Compound name: 6:2 FTS

Coefficient of Determination: $R^2 = 0.999137$

Calibration curve: $-0.0035598 * x^2 + 1.20118 * x + 0.0541796$

Response type: Internal Std (Ref 43), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	4.18	87.986	4037.636	0.272	0.2	-27.3	NO	0.999	NO	bb
2	2 180603M2_3	Standard	0.500	4.19	239.779	3826.547	0.783	0.6	21.6	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	4.19	460.277	4275.934	1.346	1.1	7.9	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	4.19	794.809	4334.623	2.292	1.9	-6.3	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	4.19	1981.093	3887.852	6.369	5.3	6.8	NO	0.999	NO	bb
6	6 180603M2_7	Standard	10.000	4.19	3926.914	4284.948	11.456	9.8	-2.3	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	4.19	19953.633	4897.353	50.930	49.7	-0.7	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	4.19	33197.195	4897.862	84.724	100.3	0.3	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	4.19	73101.953	6074.168	150.436			NO	0.999	NO	bbXI
10	10 180603M2_11	Standard	500.000	4.19	136067.703	8700.849	195.480			NO	0.999	NO	bbXI

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: L-PFOA

Coefficient of Determination: $R^2 = 0.999677$

Calibration curve: $-0.000155657 * x^2 + 0.987655 * x + 0.0270012$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	4.24	400.645	22788.426	0.220	0.2	-21.9	NO	1.000	NO	MM
2	2 180603M2_3	Standard	0.500	4.24	1064.795	24507.855	0.543	0.5	4.5	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	4.24	1973.284	20461.670	1.205	1.2	19.3	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	4.25	3714.788	21747.594	2.135	2.1	6.8	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	4.25	9208.882	24783.598	4.645	4.7	-6.4	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	4.25	17243.697	22439.563	9.606	9.7	-2.9	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	4.25	93982.422	24377.400	48.191	49.1	-1.7	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	4.25	169589.406	21079.920	100.563	103.5	3.5	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	4.25	404866.969	21629.521	233.978	246.4	-1.4	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	4.25	730202.813	20017.283	455.983	501.3	0.3	NO	1.000	NO	bb

Compound name: PFHpS

Coefficient of Determination: $R^2 = 0.999582$

Calibration curve: $-4.10026e-005 * x^2 + 0.161763 * x + -0.00185584$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	4.36	77.028	22788.426	0.042	0.3	9.1	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	4.35	137.685	24507.855	0.070	0.4	-10.9	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	4.35	275.145	20461.670	0.168	1.1	5.1	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	4.36	605.363	21747.594	0.348	2.2	8.2	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	4.36	1351.098	24783.598	0.681	4.2	-15.4	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	4.36	2974.053	22439.563	1.657	10.3	2.8	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	4.36	15446.921	24377.400	7.921	49.6	-0.8	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	4.36	27450.936	21079.920	16.278	103.3	3.3	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	4.36	64486.059	21629.521	37.267	245.7	-1.7	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	4.36	113437.180	20017.283	70.837	501.7	0.3	NO	1.000	NO	bb

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Compound name: PFNA

Coefficient of Determination: R² = 0.999693

Calibration curve: -0.000217884 * x² + 1.35711 * x + -0.0685492

Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	4.68	455.861	18769.938	0.304	0.3	9.7	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	4.68	991.397	19999.146	0.620	0.5	1.4	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	4.68	2256.575	21268.121	1.326	1.0	2.8	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	4.68	4515.422	21763.053	2.594	2.0	-1.9	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	4.68	9690.759	20024.189	6.049	4.5	-9.8	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	4.68	20174.797	18644.572	13.526	10.0	0.3	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	4.68	110124.781	21593.049	63.750	47.4	-5.2	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	4.68	202862.750	18663.838	135.866	101.8	1.8	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	4.68	456948.063	17350.898	329.196	252.9	1.2	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	4.68	819872.125	16474.229	622.087	498.3	-0.3	NO	1.000	NO	bb

Compound name: PFOSA

Coefficient of Determination: R² = 0.999799

Calibration curve: 0.000223926 * x² + 0.845984 * x + -0.00644957

Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	4.75	75.893	4192.226	0.226	0.3	10.0	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	4.75	132.574	4063.638	0.408	0.5	-2.1	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	4.75	273.436	4162.143	0.821	1.0	-2.2	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	4.75	481.785	4279.650	1.407	1.7	-16.5	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	4.75	1426.368	3993.287	4.465	5.3	5.6	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	4.76	2810.253	4037.472	8.701	10.3	2.6	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	4.76	14588.447	4124.677	44.211	51.6	3.1	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	4.76	26476.270	3787.264	87.386	100.6	0.6	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	4.76	59064.559	3328.501	221.814	246.2	-1.5	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	4.75	107827.313	2804.786	480.551	501.5	0.3	NO	1.000	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: L-PFOS

Coefficient of Determination: $R^2 = 0.999820$

Calibration curve: $-4.1577e-006 * x^2 + 0.922959 * x + -0.0602006$

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	4.76	55.488	3858.577	0.180	0.3	4.0	NO	1.000	NO	MM
2	2 180603M2_3	Standard	0.500	4.75	127.855	3737.641	0.428	0.5	5.7	NO	1.000	NO	MM
3	3 180603M2_4	Standard	1.000	4.76	250.208	3996.144	0.783	0.9	-8.7	NO	1.000	NO	MM
4	4 180603M2_5	Standard	2.000	4.76	584.407	4026.793	1.814	2.0	1.5	NO	1.000	NO	MM
5	5 180603M2_6	Standard	5.000	4.76	1372.660	3687.167	4.654	5.1	2.1	NO	1.000	NO	MM
6	6 180603M2_7	Standard	10.000	4.76	2784.985	3904.877	8.915	9.7	-2.8	NO	1.000	NO	MM
7	7 180603M2_8	Standard	50.000	4.77	13870.730	3932.378	44.091	47.8	-4.3	NO	1.000	NO	MM
8	8 180603M2_9	Standard	100.000	4.76	25634.572	3402.080	94.187	102.2	2.2	NO	1.000	NO	MM
9	9 180603M2_10	Standard	250.000	4.76	62176.391	3362.496	231.139	250.8	0.3	NO	1.000	NO	MM
10	10 180603M2_11	Standard	500.000	4.76	112323.016	3053.424	459.824	499.4	-0.1	NO	1.000	NO	MM

Compound name: PFDA

Coefficient of Determination: $R^2 = 0.999020$

Calibration curve: $-5.14851e-005 * x^2 + 1.0054 * x + 0.115839$

Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.04	606.281	19146.543	0.396	0.3	11.4	NO	0.999	NO	bb
2	2 180603M2_3	Standard	0.500	5.05	1156.627	24584.350	0.588	0.5	-6.1	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	5.05	2444.568	25779.711	1.185	1.1	6.4	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	5.05	4028.061	28702.930	1.754	1.6	-18.5	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	5.05	10516.037	22483.127	5.847	5.7	14.0	NO	0.999	NO	bb
6	6 180603M2_7	Standard	10.000	5.05	20838.709	25993.691	10.021	9.9	-1.4	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	5.05	108621.992	30067.543	45.157	44.9	-10.2	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	5.05	218180.609	26322.408	103.610	103.5	3.5	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	5.05	535189.563	26612.340	251.382	253.2	1.3	NO	0.999	NO	bb
10	10 180603M2_11	Standard	500.000	5.05	801119.688	20512.344	488.194	498.2	-0.4	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 8:2 FTS

Coefficient of Determination: $R^2 = 0.999540$

Calibration curve: $-0.00513967 * x^2 + 1.47988 * x + -0.0800285$

Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.01	77.105	3490.642	0.276	0.2	-3.7	NO	1.000	NO	bb
2	2 180603M2_3	Standard	0.500	5.02	171.627	3449.516	0.622	0.5	-5.0	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	5.02	354.847	3255.954	1.362	1.0	-2.2	NO	1.000	NO	MM
4	4 180603M2_5	Standard	2.000	5.02	869.792	3546.990	3.065	2.1	7.1	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	5.02	2000.263	3392.747	7.370	5.1	2.5	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	5.02	4110.259	3514.228	14.620	10.3	3.0	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	5.03	20445.855	4278.210	59.738	48.6	-2.7	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	5.02	33879.699	4360.501	97.121	101.4	1.4	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	5.02	75701.227	5610.659	168.655			NO	1.000	YES	bbXI
10	10 180603M2_11	Standard	500.000	5.02	128454.219	7991.470	200.924			NO	1.000	YES	bbXI

Compound name: PFNS

Coefficient of Determination: $R^2 = 0.999614$

Calibration curve: $-0.000139909 * x^2 + 0.813563 * x + -0.0732691$

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.11	39.185	3858.577	0.127	0.2	-1.6	NO	1.000	NO	MM
2	2 180603M2_3	Standard	0.500	5.11	110.038	3737.641	0.368	0.5	8.5	NO	1.000	NO	bb
3	3 180603M2_4	Standard	1.000	5.12	238.574	3996.144	0.746	1.0	0.8	NO	1.000	NO	bb
4	4 180603M2_5	Standard	2.000	5.12	489.052	4026.793	1.518	2.0	-2.2	NO	1.000	NO	bb
5	5 180603M2_6	Standard	5.000	5.12	1227.593	3687.167	4.162	5.2	4.2	NO	1.000	NO	bb
6	6 180603M2_7	Standard	10.000	5.12	2344.380	3904.877	7.505	9.3	-6.7	NO	1.000	NO	bb
7	7 180603M2_8	Standard	50.000	5.12	11916.333	3932.378	37.879	47.0	-5.9	NO	1.000	NO	bb
8	8 180603M2_9	Standard	100.000	5.12	22160.154	3402.080	81.421	102.0	2.0	NO	1.000	NO	bb
9	9 180603M2_10	Standard	250.000	5.12	53023.473	3362.496	197.114	253.4	1.4	NO	1.000	NO	bb
10	10 180603M2_11	Standard	500.000	5.11	90479.094	3053.424	370.400	498.0	-0.4	NO	1.000	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: L-MeFOSAA

Coefficient of Determination: $R^2 = 0.999746$
 Calibration curve: $-0.000512206 * x^2 + 2.03689 * x + -0.180528$
 Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
 Curve type: 2nd Order, Origin: Include, 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 180603M2_2	Standard	0.250	5.20	96.344	5166.020	0.233	0.2	-18.8	NO	1.000	NO	MM
2	2 180603M2_3	Standard	0.500	5.20	359.172	5019.486	0.894	0.5	5.6	NO	1.000	NO	MM
3	3 180603M2_4	Standard	1.000	5.20	738.561	5033.387	1.834	1.0	-1.1	NO	1.000	NO	MM
4	4 180603M2_5	Standard	2.000	5.20	1424.651	4867.027	3.659	1.9	-5.7	NO	1.000	NO	MM
5	5 180603M2_6	Standard	5.000	5.20	3491.628	4913.452	8.883	4.5	-10.9	NO	1.000	NO	MM
6	6 180603M2_7	Standard	10.000	5.20	7710.028	5024.185	19.182	9.5	-4.7	NO	1.000	NO	MM
7	7 180603M2_8	Standard	50.000	5.20	40902.418	5116.544	99.927	49.8	-0.5	NO	1.000	NO	MM
8	8 180603M2_9	Standard	100.000	5.20	71466.523	4530.335	197.189	99.4	-0.6	NO	1.000	NO	MM
9	9 180603M2_10	Standard	250.000	5.20	176961.563	4566.378	484.414	254.2	1.7	NO	1.000	NO	MM
10	10 180603M2_11	Standard	500.000	5.20	295891.813	4170.621	886.834	497.8	-0.4	NO	1.000	NO	MM

Compound name: L-EtFOSAA

Coefficient of Determination: $R^2 = 0.999632$
 Calibration curve: $-8.02336e-005 * x^2 + 1.19845 * x + -0.0686469$
 Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
 Curve type: 2nd Order, Origin: Include, 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 180603M2_2	Standard	0.250	5.35	134.087	6561.538	0.255	0.3	8.2	NO	1.000	NO	MM
2	2 180603M2_3	Standard	0.500	5.35	243.079	6339.493	0.479	0.5	-8.6	NO	1.000	NO	MM
3	3 180603M2_4	Standard	1.000	5.36	574.807	6870.538	1.046	0.9	-7.0	NO	1.000	NO	MM
4	4 180603M2_5	Standard	2.000	5.36	1077.656	6666.748	2.021	1.7	-12.8	NO	1.000	NO	MM
5	5 180603M2_6	Standard	5.000	5.36	2744.886	6075.031	5.648	4.8	-4.6	NO	1.000	NO	MM
6	6 180603M2_7	Standard	10.000	5.36	5733.157	5966.752	12.011	10.1	0.9	NO	1.000	NO	MM
7	7 180603M2_8	Standard	50.000	5.36	29068.436	6199.922	58.606	49.1	-1.8	NO	1.000	NO	MM
8	8 180603M2_9	Standard	100.000	5.36	53240.363	5371.537	123.895	104.2	4.2	NO	1.000	NO	MM
9	9 180603M2_10	Standard	250.000	5.36	117902.656	5087.055	289.712	245.8	-1.7	NO	1.000	NO	MM
10	10 180603M2_11	Standard	500.000	5.35	202765.750	4365.234	580.627	501.4	0.3	NO	1.000	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Compound name: PFUdA

Coefficient of Determination: $R^2 = 0.993431$

Calibration curve: $7.49062e-005 * x^2 + 0.907352 * x + 0.092432$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.37	672.602	28893.295	0.291	0.2	-12.5	NO	0.993	NO	bb
2	2 180603M2_3	Standard	0.500	5.37	919.764	25446.445	0.452	0.4	-20.8	NO	0.993	NO	bb
3	3 180603M2_4	Standard	1.000	5.37	2522.366	29251.656	1.078	1.1	8.6	NO	0.993	NO	bb
4	4 180603M2_5	Standard	2.000	5.37	4952.942	29319.832	2.112	2.2	11.2	NO	0.993	NO	bb
5	5 180603M2_6	Standard	5.000	5.37	10516.431	25472.016	5.161	5.6	11.7	NO	0.993	NO	bb
6	6 180603M2_7	Standard	10.000	5.37	20506.277	24071.061	10.649	11.6	16.2	NO	0.993	NO	bb
7	7 180603M2_8	Standard	50.000	5.38	70669.508	26738.559	33.037	36.2	-27.6	NO	0.993	NO	bb
8	8 180603M2_9	Standard	100.000	5.37	191166.375	22839.299	104.626	114.1	14.1	NO	0.993	NO	bb
9	9 180603M2_10	Standard	250.000	5.37	396499.125	21626.578	229.174	247.4	-1.0	NO	0.993	NO	bb
10	10 180603M2_11	Standard	500.000	5.37	814809.688	21563.584	472.330	499.8	-0.0	NO	0.993	NO	bb

Compound name: PFDS

Coefficient of Determination: $R^2 = 0.999337$

Calibration curve: $3.37363e-005 * x^2 + 0.151074 * x + 0.00103366$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.41	76.075	28893.295	0.033	0.2	-15.6	NO	0.999	NO	bbX
2	2 180603M2_3	Standard	0.500	5.41	198.623	25446.445	0.098	0.6	27.8	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	5.42	309.305	29251.656	0.132	0.9	-13.2	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	5.42	626.270	29319.832	0.267	1.8	-12.0	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	5.42	1508.822	25472.016	0.740	4.9	-2.2	NO	0.999	NO	bb
6	6 180603M2_7	Standard	10.000	5.42	2948.322	24071.061	1.531	10.1	1.0	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	5.42	15648.399	26738.559	7.315	47.9	-4.2	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	5.42	29120.176	22839.299	15.938	103.1	3.1	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	5.42	68765.688	21626.578	39.746	249.2	-0.3	NO	0.999	NO	bb

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Compound name: PFDS

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
10	10 180603M2_11	Standard	500.000	5.42	125058.352	21563.584	72.494	437.2	-12.6	NO	0.999	NO	bbX

Compound name: PFDaA

Coefficient of Determination: R² = 0.997043

Calibration curve: -0.0110656 * x² + 1.52836 * x + -0.124406

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.65	611.902	27089.834	0.282	0.3	6.7	NO	0.997	NO	bb
2	2 180603M2_3	Standard	0.500	5.65	1223.981	25434.553	0.602	0.5	-4.7	NO	0.997	NO	bb
3	3 180603M2_4	Standard	1.000	5.65	2665.908	20996.686	1.587	1.1	12.9	NO	0.997	NO	bb
4	4 180603M2_5	Standard	2.000	5.65	5081.723	25954.611	2.447	1.7	-14.8	NO	0.997	NO	bb
5	5 180603M2_6	Standard	5.000	5.65	13357.369	24319.283	6.866	4.7	-5.3	NO	0.997	NO	bb
6	6 180603M2_7	Standard	10.000	5.65	27840.262	23548.979	14.778	10.6	5.6	NO	0.997	NO	bb
7	7 180603M2_8	Standard	50.000	5.65	111015.328	28591.041	48.536	49.8	-0.4	NO	0.997	NO	bb
8	8 180603M2_9	Standard	100.000	5.65	220454.250	26644.039	103.426			NO	0.997	YES	bbXI
9	9 180603M2_10	Standard	250.000	5.65	595843.313	25941.885	287.105			NO	0.997	NO	bbXI
10	10 180603M2_11	Standard	500.000	5.65	1123108.875	23659.391	593.374			NO	0.997	NO	bbXI

Compound name: N-MeFOSA

Coefficient of Determination: R² = 0.999650

Calibration curve: -2.95889e-005 * x² + 1.0319 * x + 0.180174

Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180603M2_2	Standard	1.250	5.85	147.178	16316.126	1.353	1.1	-9.1	NO	1.000	NO	bb
2	2 180603M2_3	Standard	2.500	5.85	318.136	15902.306	3.001	2.7	9.3	NO	1.000	NO	bb
3	3 180603M2_4	Standard	5.000	5.85	603.899	17272.928	5.244	4.9	-1.8	NO	1.000	NO	bb
4	4 180603M2_5	Standard	10.000	5.86	1238.090	16655.211	11.150	10.6	6.3	NO	1.000	NO	bb
5	5 180603M2_6	Standard	25.000	5.86	2948.163	16771.635	26.367	25.4	1.6	NO	1.000	NO	bb
6	6 180603M2_7	Standard	50.000	5.87	5739.637	15901.850	54.141	52.4	4.7	NO	1.000	NO	bb
7	7 180603M2_8	Standard	250.000	5.87	30080.166	16876.580	267.354	260.9	4.3	NO	1.000	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: N-MeFOSA

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
8	8 180603M2_9	Standard	500.000	5.87	54334.594	15954.447	510.841	502.1	0.4	NO	1.000	NO	bb
9	9 180603M2_10	Standard	1250.000	5.87	127343.031	15739.222	1213.621	1218.5	-2.5	NO	1.000	NO	bb
10	10 180603M2_11	Standard	2500.000	5.87	226441.766	14102.471	2408.533	2515.3	0.6	NO	1.000	NO	bb

Compound name: PFTrDA

Coefficient of Determination: R² = 0.999367

Calibration curve: -0.00564413 * x² + 1.50166 * x + -0.0916805

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	5.89	646.807	27089.834	0.298	0.3	4.0	NO	0.999	NO	bb
2	2 180603M2_3	Standard	0.500	5.89	1324.573	25434.553	0.651	0.5	-0.9	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	5.89	2593.420	20996.686	1.544	1.1	9.4	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	5.89	5216.774	25954.611	2.512	1.7	-12.7	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	5.89	13752.351	24319.283	7.069	4.9	-2.9	NO	0.999	NO	bb
6	6 180603M2_7	Standard	10.000	5.89	27854.697	23548.979	14.786	10.3	3.1	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	5.89	139420.359	28591.041	60.955	50.1	0.2	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	5.89	199448.344	26644.039	93.571	99.8	-0.2	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	5.89	635908.375	25941.885	306.410			NO	0.999	YES	bbXI
10	10 180603M2_11	Standard	500.000	5.89	987634.313	23659.391	521.798			NO	0.999	YES	bbXI

Compound name: PFTeDA

Coefficient of Determination: R² = 0.999342

Calibration curve: -0.000283258 * x² + 1.08661 * x + 0.131629

Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	6.10	589.160	21462.785	0.343	0.2	-22.1	NO	0.999	NO	bb
2	2 180603M2_3	Standard	0.500	6.11	1060.987	20578.910	0.644	0.5	-5.6	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	6.11	2137.071	22493.512	1.188	1.0	-2.8	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	6.11	4478.981	21672.035	2.583	2.3	12.9	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	6.11	11080.009	22196.295	6.240	5.6	12.6	NO	0.999	NO	bb

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Compound name: PFTeDA

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
6	6 180603M2_7	Standard	10.000	6.11	20780.854	22325.559	11.635	10.6	6.2	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	6.11	108525.688	24476.057	55.424	51.6	3.2	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	6.11	194406.453	24183.275	100.486	94.7	-5.3	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	6.11	497414.563	24206.561	256.859	252.9	1.2	NO	0.999	NO	bb
10	10 180603M2_11	Standard	500.000	6.11	856963.125	22688.400	472.137	499.4	-0.1	NO	0.999	NO	bb

Compound name: N-EtFOSA

Coefficient of Determination: R² = 0.999923

Calibration curve: $-3.23078e-005 * x^2 + 0.917289 * x + -0.023268$

Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	1.250	6.24	156.003	22190.391	1.055	1.2	-6.0	NO	1.000	NO	MM
2	2 180603M2_3	Standard	2.500	6.24	335.743	21433.010	2.350	2.6	3.5	NO	1.000	NO	bb
3	3 180603M2_4	Standard	5.000	6.25	674.030	22178.873	4.559	5.0	-0.1	NO	1.000	NO	bb
4	4 180603M2_5	Standard	10.000	6.25	1428.180	22210.188	9.645	10.5	5.4	NO	1.000	NO	bb
5	5 180603M2_6	Standard	25.000	6.25	3234.898	22281.158	21.778	23.8	-4.9	NO	1.000	NO	bb
6	6 180603M2_7	Standard	50.000	6.25	6629.320	21612.400	46.011	50.3	0.5	NO	1.000	NO	bb
7	7 180603M2_8	Standard	250.000	6.25	34265.512	22298.518	230.501	253.6	1.4	NO	1.000	NO	bb
8	8 180603M2_9	Standard	500.000	6.25	60645.512	20023.377	454.310	504.3	0.9	NO	1.000	NO	bb
9	9 180603M2_10	Standard	1250.000	6.25	140657.344	19445.982	1084.985	1236.7	-1.1	NO	1.000	NO	bb
10	10 180603M2_11	Standard	2500.000	6.25	243064.703	17396.836	2095.766	2505.9	0.2	NO	1.000	NO	bb

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Compound name: PFHxDA

Coefficient of Determination: R² = 0.998869

Calibration curve: 3.05812e-005 * x² + 0.593492 * x + 0.0405458

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	0.250	6.44	359.357	11781.388	0.153	0.2	-24.5	NO	0.999	NO	bb
2	2 180603M2_3	Standard	0.500	6.44	874.038	11436.419	0.382	0.6	15.1	NO	0.999	NO	bb
3	3 180603M2_4	Standard	1.000	6.44	1716.728	12740.659	0.674	1.1	6.7	NO	0.999	NO	bb
4	4 180603M2_5	Standard	2.000	6.44	3067.526	12174.550	1.260	2.1	2.7	NO	0.999	NO	bb
5	5 180603M2_6	Standard	5.000	6.44	7148.614	12790.587	2.794	4.6	-7.2	NO	0.999	NO	bb
6	6 180603M2_7	Standard	10.000	6.44	15429.646	12262.140	6.292	10.5	5.3	NO	0.999	NO	bb
7	7 180603M2_8	Standard	50.000	6.45	80981.695	12825.989	31.569	53.0	6.0	NO	0.999	NO	bb
8	8 180603M2_9	Standard	100.000	6.44	146653.563	12855.009	57.041	95.6	-4.4	NO	0.999	NO	bb
9	9 180603M2_10	Standard	250.000	6.44	363454.000	12033.121	151.022	251.1	0.5	NO	0.999	NO	bb
10	10 180603M2_11	Standard	500.000	6.44	650310.500	12648.990	257.060	423.8	-15.2	NO	0.999	NO	bbX

Compound name: PFOA

Coefficient of Determination: R² = 0.998051

Calibration curve: -0.000306754 * x² + 0.779034 * x + 0.0170433

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180603M2_2	Standard	0.250	6.67	539.721	11781.388	0.229	0.3	8.9	NO	0.998	NO	bb
2	2 180603M2_3	Standard	0.500	6.67	979.894	11436.419	0.428	0.5	5.6	NO	0.998	NO	bb
3	3 180603M2_4	Standard	1.000	6.67	2009.271	12740.659	0.789	1.0	-0.9	NO	0.998	NO	bb
4	4 180603M2_5	Standard	2.000	6.68	3908.802	12174.550	1.605	2.0	2.0	NO	0.998	NO	bb
5	5 180603M2_6	Standard	5.000	6.68	9559.715	12790.587	3.737	4.8	-4.3	NO	0.998	NO	bb
6	6 180603M2_7	Standard	10.000	6.68	18974.896	12262.140	7.737	9.9	-0.5	NO	0.998	NO	MM
7	7 180603M2_8	Standard	50.000	6.68	100644.023	12825.989	39.234	51.4	2.8	NO	0.998	NO	MM
8	8 180603M2_9	Standard	100.000	6.68	175568.188	12855.009	68.288	90.9	-9.1	NO	0.998	NO	MM
9	9 180603M2_10	Standard	250.000	6.68	444097.875	12033.121	184.531	264.4	5.7	NO	0.998	NO	MM
10	10 180603M2_11	Standard	500.000	6.68	783208.813	12648.990	309.593	493.1	-1.4	NO	0.998	NO	MM

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Compound name: N-MeFOSE

Coefficient of Determination: $R^2 = 0.999572$

Calibration curve: $-3.91662e-005 * x^2 + 0.983423 * x + -0.00480812$

Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	1.250	6.38	95.922	11628.039	1.237	1.3	1.1	NO	1.000	NO	bb
2	2 180603M2_3	Standard	2.500	6.38	221.428	11147.111	2.980	3.0	21.4	NO	1.000	NO	bb
3	3 180603M2_4	Standard	5.000	6.38	371.733	12015.749	4.641	4.7	-5.5	NO	1.000	NO	bb
4	4 180603M2_5	Standard	10.000	6.38	770.934	11662.517	9.916	10.1	0.9	NO	1.000	NO	bb
5	5 180603M2_6	Standard	25.000	6.38	1783.383	11666.826	22.929	23.3	-6.6	NO	1.000	NO	bb
6	6 180603M2_7	Standard	50.000	6.38	3512.457	11845.252	44.479	45.3	-9.4	NO	1.000	NO	bb
7	7 180603M2_8	Standard	250.000	6.39	19763.857	12670.946	233.967	240.2	-3.9	NO	1.000	NO	MM
8	8 180603M2_9	Standard	500.000	6.38	37095.145	11510.365	483.414	501.6	0.3	NO	1.000	NO	MM
9	9 180603M2_10	Standard	1250.000	6.39	96539.555	12126.395	1194.166	1279.5	2.4	NO	1.000	NO	bb
10	10 180603M2_11	Standard	2500.000	6.38	182751.734	12452.011	2201.473	2484.4	-0.6	NO	1.000	NO	MM

Compound name: N-EtFOSE

Coefficient of Determination: $R^2 = 0.999756$

Calibration curve: $-1.63295e-005 * x^2 + 1.23645 * x + -0.173527$

Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180603M2_2	Standard	1.250	6.52	119.109	11307.576	1.580	1.4	13.5	NO	1.000	NO	bb
2	2 180603M2_3	Standard	2.500	6.53	211.440	11422.320	2.777	2.4	-4.6	NO	1.000	NO	bb
3	3 180603M2_4	Standard	5.000	6.53	458.865	11465.017	6.003	5.0	-0.1	NO	1.000	NO	bb
4	4 180603M2_5	Standard	10.000	6.53	869.957	11764.180	11.092	9.1	-8.9	NO	1.000	NO	bb
5	5 180603M2_6	Standard	25.000	6.53	2293.827	10799.432	31.860	25.9	3.7	NO	1.000	NO	bb
6	6 180603M2_7	Standard	50.000	6.53	4370.568	10715.487	61.181	49.7	-0.7	NO	1.000	NO	bb
7	7 180603M2_8	Standard	250.000	6.53	23031.424	11835.431	291.896	237.0	-5.2	NO	1.000	NO	bb
8	8 180603M2_9	Standard	500.000	6.53	44147.000	10613.874	623.905	508.1	1.6	NO	1.000	NO	bb
9	9 180603M2_10	Standard	1250.000	6.53	112786.555	11032.510	1533.466	1261.4	0.9	NO	1.000	NO	MM
10	10 180603M2_11	Standard	2500.000	6.53	218495.094	10991.780	2981.707	2493.8	-0.2	NO	1.000	NO	MM

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Compound name: 13C3-PFBA

Response Factor: 0.891546

RRF SD: 0.0117184, Relative SD: 1.31439

Response type: Internal Std (Ref 60), 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 180603M2_2	Standard	12.500	1.37	11057.410	12438.893	11.112	12.5	-0.3	NO		NO	bb
2	2 180603M2_3	Standard	12.500	1.37	10852.338	11874.155	11.424	12.8	2.5	NO		NO	bb
3	3 180603M2_4	Standard	12.500	1.37	11239.817	12632.165	11.122	12.5	-0.2	NO		NO	bb
4	4 180603M2_5	Standard	12.500	1.37	11221.023	12725.610	11.022	12.4	-1.1	NO		NO	bb
5	5 180603M2_6	Standard	12.500	1.38	10714.076	12050.026	11.114	12.5	-0.3	NO		NO	bb
6	6 180603M2_7	Standard	12.500	1.38	10688.383	11901.224	11.226	12.6	0.7	NO		NO	bb
7	7 180603M2_8	Standard	12.500	1.38	11217.190	12816.611	10.940	12.3	-1.8	NO		NO	bb
8	8 180603M2_9	Standard	12.500	1.38	10361.961	11575.312	11.190	12.6	0.4	NO		NO	bb
9	9 180603M2_10	Standard	12.500	1.38	10428.025	11857.146	10.993	12.3	-1.4	NO		NO	bb
10	10 180603M2_11	Standard	12.500	1.38	9906.605	10959.182	11.299	12.7	1.4	NO		NO	bb

Compound name: 13C3-PFPeA

Response Factor: 0.848002

RRF SD: 0.0343672, Relative SD: 4.05273

Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	12.500	2.33	14942.807	17369.111	10.754	12.7	1.5	NO		NO	bb
2	2 180603M2_3	Standard	12.500	2.33	14112.663	17353.324	10.166	12.0	-4.1	NO		NO	bb
3	3 180603M2_4	Standard	12.500	2.34	15401.912	16617.988	11.585	13.7	9.3	NO		NO	bb
4	4 180603M2_5	Standard	12.500	2.34	15167.869	17547.277	10.805	12.7	1.9	NO		NO	bb
5	5 180603M2_6	Standard	12.500	2.34	14695.008	18200.756	10.092	11.9	-4.8	NO		NO	bb
6	6 180603M2_7	Standard	12.500	2.34	14556.021	17679.705	10.291	12.1	-2.9	NO		NO	bb
7	7 180603M2_8	Standard	12.500	2.34	15159.774	17705.752	10.703	12.6	1.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	2.34	14101.499	16636.857	10.595	12.5	-0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	2.34	13457.060	16268.162	10.340	12.2	-2.5	NO		NO	bb
10	10 180603M2_11	Standard	12.500	2.34	12337.635	14454.978	10.669	12.6	0.7	NO		NO	bb

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Compound name: 13C3-PFBS

Response Factor: 0.102123
 RRF SD: 0.00558922, Relative SD: 5.47305
 Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	12.500	2.62	1835.080	17369.111	1.321	12.9	3.5	NO		NO	bb
2	2 180603M2_3	Standard	12.500	2.62	1810.358	17353.324	1.304	12.8	2.2	NO		NO	bb
3	3 180603M2_4	Standard	12.500	2.62	1862.340	16617.988	1.401	13.7	9.7	NO		NO	bb
4	4 180603M2_5	Standard	12.500	2.62	1827.688	17547.277	1.302	12.7	2.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	2.63	1851.845	18200.756	1.272	12.5	-0.4	NO		NO	bb
6	6 180603M2_7	Standard	12.500	2.62	1823.998	17679.705	1.290	12.6	1.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	2.63	1818.162	17705.752	1.284	12.6	0.6	NO		NO	bb
8	8 180603M2_9	Standard	12.500	2.63	1654.700	16636.857	1.243	12.2	-2.6	NO		NO	bb
9	9 180603M2_10	Standard	12.500	2.63	1579.831	16268.162	1.214	11.9	-4.9	NO		NO	bb
10	10 180603M2_11	Standard	12.500	2.63	1313.247	14454.978	1.136	11.1	-11.0	NO		NO	bb

Compound name: 13C2-4:2 FTS

Response Factor: 0.23119
 RRF SD: 0.0270955, Relative SD: 11.72
 Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	12.500	3.02	3696.335	17369.111	2.660	11.5	-7.9	NO		NO	bb
2	2 180603M2_3	Standard	12.500	3.02	3663.609	17353.324	2.639	11.4	-8.7	NO		NO	bb
3	3 180603M2_4	Standard	12.500	3.02	4043.533	16617.988	3.042	13.2	5.2	NO		NO	bb
4	4 180603M2_5	Standard	12.500	3.02	4135.085	17547.277	2.946	12.7	1.9	NO		NO	bb
5	5 180603M2_6	Standard	12.500	3.03	3892.281	18200.756	2.673	11.6	-7.5	NO		NO	bb
6	6 180603M2_7	Standard	12.500	3.03	3554.119	17679.705	2.513	10.9	-13.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	3.03	4396.625	17705.752	3.104	13.4	7.4	NO		NO	bb
8	8 180603M2_9	Standard	12.500	3.03	4715.182	16636.857	3.543	15.3	22.6	NO		NO	bb
9	9 180603M2_10	Standard	12.500	3.03	6011.217	16268.162	4.619	20.0	59.8	NO		NO	bbX
10	10 180603M2_11	Standard	12.500	3.03	7896.673	14454.978	6.829	29.5	136.3	NO		NO	bbX

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Compound name: 13C2-PFHxA

Response Factor: 0.74434

RRF SD: 0.0339163, Relative SD: 4.55656

Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	5.000	3.11	5140.567	17369.111	3.700	5.0	-0.6	NO		NO	bb
2	2 180603M2_3	Standard	5.000	3.11	4993.331	17353.324	3.597	4.8	-3.4	NO		NO	bb
3	3 180603M2_4	Standard	5.000	3.11	5403.152	16617.988	4.064	5.5	9.2	NO		NO	bb
4	4 180603M2_5	Standard	5.000	3.11	5252.656	17547.277	3.742	5.0	0.5	NO		NO	bb
5	5 180603M2_6	Standard	5.000	3.12	4943.626	18200.756	3.395	4.6	-8.8	NO		NO	bb
6	6 180603M2_7	Standard	5.000	3.12	5255.675	17679.705	3.716	5.0	-0.2	NO		NO	bb
7	7 180603M2_8	Standard	5.000	3.12	5289.254	17705.752	3.734	5.0	0.3	NO		NO	bb
8	8 180603M2_9	Standard	5.000	3.12	5130.039	16636.857	3.854	5.2	3.6	NO		NO	bb
9	9 180603M2_10	Standard	5.000	3.12	4837.902	16268.162	3.717	5.0	-0.1	NO		NO	bb
10	10 180603M2_11	Standard	5.000	3.12	4275.990	14454.978	3.698	5.0	-0.6	NO		NO	bb

Compound name: 13C4-PFHpA

Response Factor: 0.841295

RRF SD: 0.0559989, Relative SD: 6.65627

Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	12.500	3.72	15583.414	17369.111	11.215	13.3	6.6	NO		NO	bb
2	2 180603M2_3	Standard	12.500	3.72	14360.869	17353.324	10.344	12.3	-1.6	NO		NO	bb
3	3 180603M2_4	Standard	12.500	3.72	15052.655	16617.988	11.323	13.5	7.7	NO		NO	bb
4	4 180603M2_5	Standard	12.500	3.73	14984.784	17547.277	10.675	12.7	1.5	NO		NO	bb
5	5 180603M2_6	Standard	12.500	3.73	14228.897	18200.756	9.772	11.6	-7.1	NO		NO	bb
6	6 180603M2_7	Standard	12.500	3.73	14349.260	17679.705	10.145	12.1	-3.5	NO		NO	bb
7	7 180603M2_8	Standard	12.500	3.73	16035.928	17705.752	11.321	13.5	7.7	NO		NO	bb
8	8 180603M2_9	Standard	12.500	3.73	14057.480	16636.857	10.562	12.6	0.4	NO		NO	bb
9	9 180603M2_10	Standard	12.500	3.73	11912.625	16268.162	9.153	10.9	-13.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	3.73	12317.354	14454.978	10.651	12.7	1.3	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 18O2-PFHxS

Response Factor: 0.414742

RRF SD: 0.019201, Relative SD: 4.62963

Response type: Internal Std (Ref 62), 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 180603M2_2	Standard	12.500	3.87	1569.461	3649.349	5.376	13.0	3.7	NO		NO	bb
2	2 180603M2_3	Standard	12.500	3.87	1468.555	3566.594	5.147	12.4	-0.7	NO		NO	bb
3	3 180603M2_4	Standard	12.500	3.88	1523.706	3531.828	5.393	13.0	4.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	3.88	1579.854	3647.114	5.415	13.1	4.4	NO		NO	bb
5	5 180603M2_6	Standard	12.500	3.88	1445.307	3511.669	5.145	12.4	-0.8	NO		NO	bb
6	6 180603M2_7	Standard	12.500	3.88	1321.032	3355.920	4.921	11.9	-5.1	NO		NO	bb
7	7 180603M2_8	Standard	12.500	3.88	1434.082	3635.302	4.931	11.9	-4.9	NO		NO	bb
8	8 180603M2_9	Standard	12.500	3.88	1312.576	3435.816	4.775	11.5	-7.9	NO		NO	bb
9	9 180603M2_10	Standard	12.500	3.88	1345.168	3176.855	5.293	12.8	2.1	NO		NO	bb
10	10 180603M2_11	Standard	12.500	3.88	1215.786	2789.534	5.448	13.1	5.1	NO		NO	bb

Compound name: 13C2-6:2 FTS

Response Factor: 0.231582

RRF SD: 0.0307411, Relative SD: 13.2744

Response type: Internal Std (Ref 63), 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 180603M2_2	Standard	12.500	4.19	4037.636	17243.055	2.927	12.6	1.1	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.19	3826.547	19366.088	2.470	10.7	-14.7	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.19	4275.934	19639.508	2.722	11.8	-6.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.19	4334.623	19325.984	2.804	12.1	-3.1	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.19	3887.852	19348.805	2.512	10.8	-13.2	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.19	4284.948	17256.188	3.104	13.4	7.2	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.19	4897.353	20839.855	2.937	12.7	1.5	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.19	4897.862	16622.969	3.683	15.9	27.2	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.19	6074.168	16830.904	4.511	19.5	55.8	NO		NO	bbX
10	10 180603M2_11	Standard	12.500	4.19	8700.849	13356.788	8.143	35.2	181.3	NO		NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 13C2-PFOA

Response Factor: 1.25572

RRF SD: 0.123484, Relative SD: 9.83376

Response type: Internal Std (Ref 63), 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 180603M2_2	Standard	12.500	4.24	22788.426	17243.055	16.520	13.2	5.2	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.24	24507.855	19366.088	15.819	12.6	0.8	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.24	20461.670	19639.508	13.023	10.4	-17.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.25	21747.594	19325.984	14.066	11.2	-10.4	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.25	24783.598	19348.805	16.011	12.8	2.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.25	22439.563	17256.188	16.255	12.9	3.6	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.25	24377.400	20839.855	14.622	11.6	-6.8	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.25	21079.920	16622.969	15.852	12.6	1.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.25	21629.521	16830.904	16.064	12.8	2.3	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.25	20017.283	13356.788	18.733	14.9	19.3	NO		NO	bb

Compound name: 13C5-PFNA

Response Factor: 0.959622

RRF SD: 0.0746783, Relative SD: 7.78206

Response type: Internal Std (Ref 64), 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 180603M2_2	Standard	12.500	4.67	18769.938	21271.105	11.030	11.5	-8.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.68	19999.146	18996.654	13.160	13.7	9.7	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.68	21268.121	20756.463	12.808	13.3	6.8	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.68	21763.053	21194.082	12.836	13.4	7.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.68	20024.189	22315.174	11.217	11.7	-6.5	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.68	18644.572	20178.691	11.550	12.0	-3.7	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.69	21593.049	20832.438	12.956	13.5	8.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.68	18663.838	21461.229	10.871	11.3	-9.4	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.68	17350.898	17350.639	12.500	13.0	4.2	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.68	16474.229	18677.258	11.026	11.5	-8.1	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 13C8-PFOSA

Response Factor: 0.145124
 RRF SD: 0.0146183, Relative SD: 10.073
 Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	12.500	4.75	4192.226	30976.199	1.692	11.7	-6.7	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.75	4063.638	30286.340	1.677	11.6	-7.5	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.75	4162.143	28408.111	1.831	12.6	1.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.75	4279.650	28944.660	1.848	12.7	1.9	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.75	3993.287	26693.467	1.870	12.9	3.1	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.75	4037.472	29381.432	1.718	11.8	-5.3	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.75	4124.677	22912.762	2.250	15.5	24.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.75	3787.264	28219.096	1.678	11.6	-7.5	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.76	3328.501	21508.281	1.934	13.3	6.6	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.75	2804.786	21351.475	1.642	11.3	-9.5	NO		NO	bb

Compound name: 13C8-PFOS

Response Factor: 1.04659
 RRF SD: 0.0294897, Relative SD: 2.81769
 Response type: Internal Std (Ref 65), 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 180603M2_2	Standard	12.500	4.76	3858.577	3607.125	13.371	12.8	2.2	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.76	3737.641	3724.928	12.543	12.0	-4.1	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.76	3996.144	4010.002	12.457	11.9	-4.8	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.76	4026.793	3842.256	13.100	12.5	0.1	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.76	3687.167	3557.653	12.955	12.4	-1.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.76	3904.877	3590.565	13.594	13.0	3.9	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.76	3932.378	3653.382	13.455	12.9	2.8	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.76	3402.080	3204.611	13.270	12.7	1.4	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.76	3362.496	3218.791	13.058	12.5	-0.2	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.76	3053.424	2931.359	13.021	12.4	-0.5	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 13C2-PFDA

Response Factor: 1.11821

RRF SD: 0.109082, Relative SD: 9.75501

Response type: Internal Std (Ref 66), 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 180603M2_2	Standard	12.500	5.05	19146.543	19808.373	12.082	10.8	-13.6	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.04	24584.350	23192.090	13.250	11.8	-5.2	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.05	25779.711	24616.742	13.091	11.7	-6.3	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.05	28702.930	22939.766	15.640	14.0	11.9	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.05	22483.127	23315.555	12.054	10.8	-13.8	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.05	25993.691	23125.375	14.050	12.6	0.5	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.05	30067.543	26363.756	14.256	12.7	2.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.05	26322.408	21092.996	15.599	13.9	11.6	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.05	26612.340	21331.662	15.594	13.9	11.6	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.05	20512.344	18108.209	14.160	12.7	1.3	NO		NO	bb

Compound name: 13C2-8:2 FTS

Response Factor: 0.210841

RRF SD: 0.0263463, Relative SD: 12.4958

Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	12.500	5.02	3490.642	17369.111	2.512	11.9	-4.7	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.02	3449.516	17353.324	2.485	11.8	-5.7	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.02	3255.954	16617.988	2.449	11.6	-7.1	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.02	3546.990	17547.277	2.527	12.0	-4.1	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.02	3392.747	18200.756	2.330	11.1	-11.6	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.02	3514.228	17679.705	2.485	11.8	-5.7	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.03	4278.210	17705.752	3.020	14.3	14.6	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.02	4360.501	16636.857	3.276	15.5	24.3	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.02	5610.659	16268.162	4.311	20.4	63.6	NO		NO	bbX
10	10 180603M2_11	Standard	12.500	5.02	7991.470	14454.978	6.911	32.8	162.2	NO		NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: d3-N-MeFOSAA

Response Factor: 0.182439

RRF SD: 0.0213379, Relative SD: 11.6959

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	12.500	5.19	5166.020	30976.199	2.085	11.4	-8.6	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.19	5019.486	30286.340	2.072	11.4	-9.2	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.20	5033.387	28408.111	2.215	12.1	-2.9	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.20	4867.027	28944.660	2.102	11.5	-7.8	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.20	4913.452	26693.467	2.301	12.6	0.9	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.20	5024.185	29381.432	2.137	11.7	-6.3	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.20	5116.544	22912.762	2.791	15.3	22.4	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.20	4530.335	28219.096	2.007	11.0	-12.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.20	4566.378	21508.281	2.654	14.5	16.4	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.20	4170.621	21351.475	2.442	13.4	7.1	NO		NO	bb

Compound name: d5-N-EtFOSAA

Response Factor: 0.222589

RRF SD: 0.023558, Relative SD: 10.5836

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	12.500	5.35	6561.538	30976.199	2.648	11.9	-4.8	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.35	6339.493	30286.340	2.616	11.8	-6.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.35	6870.538	28408.111	3.023	13.6	8.7	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.36	6666.748	28944.660	2.879	12.9	3.5	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.36	6075.031	26693.467	2.845	12.8	2.2	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.36	5966.752	29381.432	2.538	11.4	-8.8	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.35	6199.922	22912.762	3.382	15.2	21.6	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.35	5371.537	28219.096	2.379	10.7	-14.5	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.35	5087.055	21508.281	2.956	13.3	6.3	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.35	4365.234	21351.475	2.556	11.5	-8.2	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 13C2-PFUdA

Response Factor: 0.958087

RRF SD: 0.111881, Relative SD: 11.6775

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	12.500	5.37	28893.295	30976.199	11.659	12.2	-2.6	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.37	25446.445	30286.340	10.502	11.0	-12.3	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.37	29251.656	28408.111	12.871	13.4	7.5	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.37	29319.832	28944.660	12.662	13.2	5.7	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.37	25472.016	26693.467	11.928	12.4	-0.4	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.37	24071.061	29381.432	10.241	10.7	-14.5	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.37	26738.559	22912.762	14.587	15.2	21.8	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.37	22839.299	28219.096	10.117	10.6	-15.5	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.37	21626.578	21508.281	12.569	13.1	4.9	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.37	21563.584	21351.475	12.624	13.2	5.4	NO		NO	bb

Compound name: 13C2-PFDoA

Response Factor: 1.13804

RRF SD: 0.153517, Relative SD: 13.4896

Response type: Internal Std (Ref 66), 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 180603M2_2	Standard	12.500	5.65	27089.834	19808.373	17.095	15.0	20.2	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.65	25434.553	23192.090	13.709	12.0	-3.6	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.65	20996.686	24616.742	10.662	9.4	-25.1	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.65	25954.611	22939.766	14.143	12.4	-0.6	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.65	24319.283	23315.555	13.038	11.5	-8.3	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.65	23548.979	23125.375	12.729	11.2	-10.5	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.65	28591.041	26363.756	13.556	11.9	-4.7	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.65	26644.039	21092.996	15.790	13.9	11.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.65	25941.885	21331.662	15.202	13.4	6.9	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.65	23659.391	18108.209	16.332	14.4	14.8	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: d3-N-MeFOSA

Response Factor: 0.0508247

RRF SD: 0.00656166, Relative SD: 12.9104

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	150.000	5.88	16316.126	30976.199	6.584	129.5	-13.6	NO		NO	bb
2	2 180603M2_3	Standard	150.000	5.88	15902.306	30286.340	6.563	129.1	-13.9	NO		NO	bb
3	3 180603M2_4	Standard	150.000	5.88	17272.928	28408.111	7.600	149.5	-0.3	NO		NO	bb
4	4 180603M2_5	Standard	150.000	5.88	16655.211	28944.660	7.193	141.5	-5.7	NO		NO	bb
5	5 180603M2_6	Standard	150.000	5.88	16771.635	26693.467	7.854	154.5	3.0	NO		NO	bb
6	6 180603M2_7	Standard	150.000	5.89	15901.850	29381.432	6.765	133.1	-11.3	NO		NO	bb
7	7 180603M2_8	Standard	150.000	5.89	16876.580	22912.762	9.207	181.2	20.8	NO		NO	bb
8	8 180603M2_9	Standard	150.000	5.89	15954.447	28219.096	7.067	139.1	-7.3	NO		NO	bb
9	9 180603M2_10	Standard	150.000	5.89	15739.222	21508.281	9.147	180.0	20.0	NO		NO	bb
10	10 180603M2_11	Standard	150.000	5.89	14102.471	21351.475	8.256	162.4	8.3	NO		NO	bb

Compound name: 13C2-PFTeDA

Response Factor: 0.861755

RRF SD: 0.164399, Relative SD: 19.0772

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	12.500	6.10	21462.785	30976.199	8.661	10.1	-19.6	NO		NO	bb
2	2 180603M2_3	Standard	12.500	6.10	20578.910	30286.340	8.493	9.9	-21.2	NO		NO	bb
3	3 180603M2_4	Standard	12.500	6.11	22493.512	28408.111	9.897	11.5	-8.1	NO		NO	bb
4	4 180603M2_5	Standard	12.500	6.11	21672.035	28944.660	9.359	10.9	-13.1	NO		NO	bb
5	5 180603M2_6	Standard	12.500	6.11	22196.295	26693.467	10.394	12.1	-3.5	NO		NO	bb
6	6 180603M2_7	Standard	12.500	6.11	22325.559	29381.432	9.498	11.0	-11.8	NO		NO	bb
7	7 180603M2_8	Standard	12.500	6.11	24476.057	22912.762	13.353	15.5	24.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	6.11	24183.275	28219.096	10.712	12.4	-0.6	NO		NO	bb
9	9 180603M2_10	Standard	12.500	6.11	24206.561	21508.281	14.068	16.3	30.6	NO		NO	bb
10	10 180603M2_11	Standard	12.500	6.11	22688.400	21351.475	13.283	15.4	23.3	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time
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Compound name: d5-N-ETFOSA

Response Factor: 0.0662004

RRF SD: 0.00741356, Relative SD: 11.1987

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	150.000	6.26	22190.391	30976.199	8.955	135.3	-9.8	NO		NO	bb
2	2 180603M2_3	Standard	150.000	6.26	21433.010	30286.340	8.846	133.6	-10.9	NO		NO	bb
3	3 180603M2_4	Standard	150.000	6.26	22178.873	28408.111	9.759	147.4	-1.7	NO		NO	bb
4	4 180603M2_5	Standard	150.000	6.26	22210.188	28944.660	9.592	144.9	-3.4	NO		NO	bb
5	5 180603M2_6	Standard	150.000	6.26	22281.158	26693.467	10.434	157.6	5.1	NO		NO	bb
6	6 180603M2_7	Standard	150.000	6.26	21612.400	29381.432	9.195	138.9	-7.4	NO		NO	bb
7	7 180603M2_8	Standard	150.000	6.27	22298.518	22912.762	12.165	183.8	22.5	NO		NO	bb
8	8 180603M2_9	Standard	150.000	6.27	20023.377	28219.096	8.870	134.0	-10.7	NO		NO	bb
9	9 180603M2_10	Standard	150.000	6.27	19445.982	21508.281	11.301	170.7	13.8	NO		NO	bb
10	10 180603M2_11	Standard	150.000	6.27	17396.836	21351.475	10.185	153.8	2.6	NO		NO	bb

Compound name: 13C2-PFHxDA

Response Factor: 1.17269

RRF SD: 0.192902, Relative SD: 16.4495

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	5.000	6.44	11781.388	30976.199	4.754	4.1	-18.9	NO		NO	bb
2	2 180603M2_3	Standard	5.000	6.44	11436.419	30286.340	4.720	4.0	-19.5	NO		NO	bb
3	3 180603M2_4	Standard	5.000	6.44	12740.659	28408.111	5.606	4.8	-4.4	NO		NO	bb
4	4 180603M2_5	Standard	5.000	6.44	12174.550	28944.660	5.258	4.5	-10.3	NO		NO	bb
5	5 180603M2_6	Standard	5.000	6.44	12790.587	26693.467	5.990	5.1	2.2	NO		NO	bb
6	6 180603M2_7	Standard	5.000	6.44	12262.140	29381.432	5.217	4.4	-11.0	NO		NO	bb
7	7 180603M2_8	Standard	5.000	6.45	12825.989	22912.762	6.997	6.0	19.3	NO		NO	bb
8	8 180603M2_9	Standard	5.000	6.44	12855.009	28219.096	5.694	4.9	-2.9	NO		NO	bb
9	9 180603M2_10	Standard	5.000	6.44	12033.121	21508.281	6.993	6.0	19.3	NO		NO	bb
10	10 180603M2_11	Standard	5.000	6.44	12648.990	21351.475	7.405	6.3	26.3	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: d7-N-MeFOSE

Response Factor: 0.0376454
 RRF SD: 0.00684002, Relative SD: 18.1696
 Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	150.000	6.37	11628.039	30976.199	4.692	124.6	-16.9	NO		NO	MM
2	2 180603M2_3	Standard	150.000	6.37	11147.11	30286.340	4.601	122.2	-18.5	NO		NO	bb
3	3 180603M2_4	Standard	150.000	6.37	12015.749	28408.111	5.287	140.4	-6.4	NO		NO	bb
4	4 180603M2_5	Standard	150.000	6.37	11662.517	28944.660	5.037	133.8	-10.8	NO		NO	bb
5	5 180603M2_6	Standard	150.000	6.37	11666.826	26693.467	5.463	145.1	-3.2	NO		NO	MM
6	6 180603M2_7	Standard	150.000	6.37	11845.252	29381.432	5.039	133.9	-10.8	NO		NO	MM
7	7 180603M2_8	Standard	150.000	6.37	12670.946	22912.762	6.913	183.6	22.4	NO		NO	MM
8	8 180603M2_9	Standard	150.000	6.37	11510.365	28219.096	5.099	135.4	-9.7	NO		NO	bb
9	9 180603M2_10	Standard	150.000	6.37	12126.395	21508.281	7.048	187.2	24.8	NO		NO	MM
10	10 180603M2_11	Standard	150.000	6.37	12452.011	21351.475	7.290	193.6	29.1	NO		NO	MM

Compound name: d9-N-EtFOSE

Response Factor: 0.0353491
 RRF SD: 0.00536495, Relative SD: 15.1771
 Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	150.000	6.52	11307.576	30976.199	4.563	129.1	-13.9	NO		NO	MM
2	2 180603M2_3	Standard	150.000	6.52	11422.320	30286.340	4.714	133.4	-11.1	NO		NO	bb
3	3 180603M2_4	Standard	150.000	6.52	11465.017	28408.111	5.045	142.7	-4.9	NO		NO	bb
4	4 180603M2_5	Standard	150.000	6.52	11764.180	28944.660	5.080	143.7	-4.2	NO		NO	bb
5	5 180603M2_6	Standard	150.000	6.52	10799.432	26693.467	5.057	143.1	-4.6	NO		NO	bb
6	6 180603M2_7	Standard	150.000	6.52	10715.487	29381.432	4.559	129.0	-14.0	NO		NO	bb
7	7 180603M2_8	Standard	150.000	6.52	11835.431	22912.762	6.457	182.7	21.8	NO		NO	bb
8	8 180603M2_9	Standard	150.000	6.52	10613.874	28219.096	4.702	133.0	-11.3	NO		NO	bb
9	9 180603M2_10	Standard	150.000	6.52	11032.510	21508.281	6.412	181.4	20.9	NO		NO	bb
10	10 180603M2_11	Standard	150.000	6.52	10991.780	21351.475	6.435	182.0	21.4	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 13C4-PFBA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 60), 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 180603M2_2	Standard	12.500	1.37	12438.893	12438.893	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	1.37	11874.155	11874.155	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	1.37	12632.165	12632.165	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	1.37	12725.610	12725.610	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	1.37	12050.026	12050.026	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	1.37	11901.224	11901.224	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	1.38	12816.611	12816.611	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	1.38	11575.312	11575.312	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	1.38	11857.146	11857.146	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	1.38	10959.182	10959.182	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C5-PFHxA

Response Factor: 1

RRF SD: 8.27511e-017, Relative SD: 8.27511e-015

Response type: Internal Std (Ref 61), 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 180603M2_2	Standard	12.500	3.11	17369.111	17369.111	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	3.10	17353.324	17353.324	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	3.11	16617.988	16617.988	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	3.11	17547.277	17547.277	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	3.12	18200.756	18200.756	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	3.12	17679.705	17679.705	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	3.12	17705.752	17705.752	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	3.12	16636.857	16636.857	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	3.12	16268.162	16268.162	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	3.12	14454.978	14454.978	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C3-PFHxS

Response Factor: 1

RRF SD: 3.70074e-017, Relative SD: 3.70074e-015

Response type: Internal Std (Ref 62), 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 180603M2_2	Standard	12.500	3.87	3649.349	3649.349	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	3.87	3566.594	3566.594	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	3.88	3531.828	3531.828	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	3.88	3647.114	3647.114	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	3.88	3511.669	3511.669	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	3.88	3355.920	3355.920	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	3.88	3635.302	3635.302	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	3.88	3435.816	3435.816	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	3.88	3176.855	3176.855	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	3.88	2789.534	2789.534	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C8-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 63), 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 180603M2_2	Standard	12.500	4.24	17243.055	17243.055	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.24	19366.088	19366.088	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.24	19639.508	19639.508	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.25	19325.984	19325.984	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.25	19348.805	19348.805	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.25	17256.188	17256.188	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.25	20839.855	20839.855	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.25	16622.969	16622.969	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.25	16830.904	16830.904	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.25	13356.788	13356.788	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C9-PFNA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 64), 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 180603M2_2	Standard	12.500	4.67	21271.105	21271.105	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.68	18996.654	18996.654	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.68	20756.463	20756.463	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.68	21194.082	21194.082	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.68	22315.174	22315.174	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.68	20178.691	20178.691	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.68	20832.438	20832.438	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.69	21461.229	21461.229	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.68	17350.639	17350.639	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.68	18677.258	18677.258	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 65), 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 180603M2_2	Standard	12.500	4.76	3607.125	3607.125	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	4.76	3724.928	3724.928	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	4.76	4010.002	4010.002	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	4.76	3842.256	3842.256	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	4.76	3557.653	3557.653	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	4.76	3590.565	3590.565	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	4.76	3653.382	3653.382	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	4.76	3204.611	3204.611	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	4.76	3218.791	3218.791	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	4.76	2931.359	2931.359	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Compound name: 13C6-PFDA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 66), 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 180603M2_2	Standard	12.500	5.05	19808.373	19808.373	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.05	23192.090	23192.090	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.05	24616.742	24616.742	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.05	22939.766	22939.766	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.05	23315.555	23315.555	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.05	23125.375	23125.375	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.05	26363.756	26363.756	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.05	21092.996	21092.996	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.05	21331.662	21331.662	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.05	18108.209	18108.209	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C7-PFUdA

Response Factor: 1

RRF SD: 7.40149e-017, Relative SD: 7.40149e-015

Response type: Internal Std (Ref 67), 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 180603M2_2	Standard	12.500	5.37	30976.199	30976.199	12.500	12.5	0.0	NO		NO	bb
2	2 180603M2_3	Standard	12.500	5.37	30286.340	30286.340	12.500	12.5	0.0	NO		NO	bb
3	3 180603M2_4	Standard	12.500	5.37	28408.111	28408.111	12.500	12.5	0.0	NO		NO	bb
4	4 180603M2_5	Standard	12.500	5.37	28944.660	28944.660	12.500	12.5	0.0	NO		NO	bb
5	5 180603M2_6	Standard	12.500	5.37	26693.467	26693.467	12.500	12.5	0.0	NO		NO	bb
6	6 180603M2_7	Standard	12.500	5.37	29381.432	29381.432	12.500	12.5	0.0	NO		NO	bb
7	7 180603M2_8	Standard	12.500	5.37	22912.762	22912.762	12.500	12.5	0.0	NO		NO	bb
8	8 180603M2_9	Standard	12.500	5.37	28219.096	28219.096	12.500	12.5	0.0	NO		NO	bb
9	9 180603M2_10	Standard	12.500	5.37	21508.281	21508.281	12.500	12.5	0.0	NO		NO	bb
10	10 180603M2_11	Standard	12.500	5.37	21351.475	21351.475	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:48:04 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

	# Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBA	36	0.9998	NO	
2	2 PFPeA	37	1.0000	NO	
3	3 PFBS	38	0.9998	NO	
4	4 4:2 FTS	39	0.9981	NO	
5	5 PFHxA	40	0.9999	NO	
6	6 PFPeS	38	0.9989	NO	
7	7 PFHpA	41	1.0000	NO	
8	8 L-PFHxS	42	0.9990	NO	
9	10 6:2 FTS	43	0.9991	NO	
10	11 L-PFOA	44	0.9997	NO	
11	13 PFHpS	44	0.9996	NO	
12	14 PFNA	45	0.9997	NO	
13	15 PFOSA	46	0.9998	NO	
14	16 L-PFOS	47	0.9998	NO	
15	18 PFDA	48	0.9990	NO	
16	19 8:2 FTS	49	0.9995	NO	
17	20 PFNS	47	0.9996	NO	
18	21 L-MeFOSAA	50	0.9997	NO	
19	23 L-EtFOSAA	51	0.9996	NO	

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:48:17 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

#	Name	IS#	CoD	CoD Flag	%RSD
1	25 PFUdA	52	0.9934	NO	
2	26 PFDS	52	0.9993	NO	
3	27 PFDoA	53	0.9970	NO	
4	28 N-MeFOSA	54	0.9996	NO	
5	29 PFTrDA	53	0.9994	NO	
6	30 PFTeDA	55	0.9993	NO	
7	31 N-EtFOSA	56	0.9999	NO	
8	32 PFHxDA	57	0.9989	NO	
9	33 PFODA	57	0.9981	NO	
10	34 N-MeFOSE	58	0.9996	NO	
11	35 N-EtFOSE	59	0.9998	NO	
12	36 13C3-PFBA	60		NO	1.314
13	37 13C3-PFPeA	61		NO	4.053
14	38 13C3-PFBS	61		NO	5.473
15	39 13C2-4:2 FTS	61		NO	11.720
16	40 13C2-PFHxA	61		NO	4.557
17	41 13C4-PFHpA	61		NO	6.656
18	42 18O2-PFHxS	62		NO	4.630
19	43 13C2-6:2 FTS	63		NO	13.274
20	44 13C2-PFOA	63		NO	9.834
21	45 13C5-PFNA	64		NO	7.782
22	46 13C8-PFOSA	67		NO	10.073
23	47 13C8-PFOS	65		NO	2.818
24	48 13C2-PFDA	66		NO	9.755
25	49 13C2-8:2 FTS	61		NO	12.496
26	50 d3-N-MeFOSAA	67		NO	11.696
27	51 d5-N-EtFOSAA	67		NO	10.584
28	52 13C2-PFUdA	67		NO	11.678
29	53 13C2-PFDoA	66		NO	13.490
30	54 d3-N-MeFOSA	67		NO	12.910
31	55 13C2-PFTeDA	67		NO	19.077

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:48:17 Pacific Daylight Time

Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

#	Name	IS#	CoD	CoD Flag	%RSD
32	56 d5-N-ETFOSA	67		NO	11.199
33	57 13C2-PFHxDA	67		NO	16.450
34	58 d7-N-MeFOSE	67		NO	18.170
35	59 d9-N-EtFOSE	67		NO	15.177
36	60 13C4-PFBA	60		NO	0.000
37	61 13C5-PFHxA	61		NO	0.000
38	62 13C3-PFHxS	62		NO	0.000
39	63 13C8-PFOA	63		NO	0.000
40	64 13C9-PFNA	64		NO	0.000
41	65 13C4-PFOS	65		NO	0.000
42	66 13C6-PFDA	66		NO	0.000
43	67 13C7-PFUdA	67		NO	0.000

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:03:06 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

	Name	Ion Ratio	Ratio out?
1	PFBA		
2	PFPeA		
3	PFBS	2.638	NO
4	4:2 FTS	1.894	NO
5	PFHxA	186.035	NO
6	PFPeS	1.660	NO
7	PFHpA	17.747	NO
8	L-PFHxS	1.719	NO
9	6:2 FTS	3.055	NO
10	L-PFOA	4.213	NO
11	PFHpS	2.095	NO
12	PFNA	5.321	NO
13	PFOSA	20.979	NO
14	L-PFOS	1.919	NO
15	PFDA	5.728	NO
16	8:2 FTS	2.581	NO
17	PFNS	1.942	NO
18	L-MeFOSAA	12.946	NO
19	L-EtFOSAA	14.455	NO

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:03:13 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

	Name	Ion Ratio	Ratio out?
1	PFUdA	11.410	NO
2	PFDS	2.020	NO
3	PFDoA	9.313	NO
4	N-MeFOSA	1.402	NO
5	PFTrDA	29.196	NO
6	PFTeDA	12.393	NO
7	N-EtFOSA	1.446	NO
8	PFHxDA	39.327	NO
9	PFODA		
10	N-MeFOSE		
11	N-EtFOSE		

Dataset: Untitled

Last Altered: Monday, June 04, 2018 09:10:30 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:10:49 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180603M2_1	IPA	03-Jun-18	17:55:38
2	2 180603M2_2	ST180603M2-2 PFC CS-2 18E2902	03-Jun-18	18:07:52
3	3 180603M2_3	ST180603M2-2 PFC CS-1 18E2903	03-Jun-18	18:18:22
4	4 180603M2_4	ST180603M2-3 PFC CS0 18E2904	03-Jun-18	18:28:47
5	5 180603M2_5	ST180603M2-4 PFC CS1 18E2905	03-Jun-18	18:39:17
6	6 180603M2_6	ST180603M2-5 PFC CS2 18E2906	03-Jun-18	18:49:42
7	7 180603M2_7	ST180603M2-6 PFC CS3 18E2907	03-Jun-18	19:00:12
8	8 180603M2_8	ST180603M2-7 PFC CS4 18E2908	03-Jun-18	19:10:37
9	9 180603M2_9	ST180603M2-8 PFC CS5 18E2909	03-Jun-18	19:21:07
10	10 180603M2_10	ST180603M2-9 PFC CS6 18E2910	03-Jun-18	19:31:33
11	11 180603M2_11	ST180603M2-10 PFC CS7 18E2911	03-Jun-18	19:42:03
12	12 180603M2_12	IPA	03-Jun-18	19:52:27
13	13 180603M2_13	ICV180603M2-1 PFC 537 ICV 18E2901	03-Jun-18	20:02:58
14	14 180603M2_14	IPA	03-Jun-18	20:13:28

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

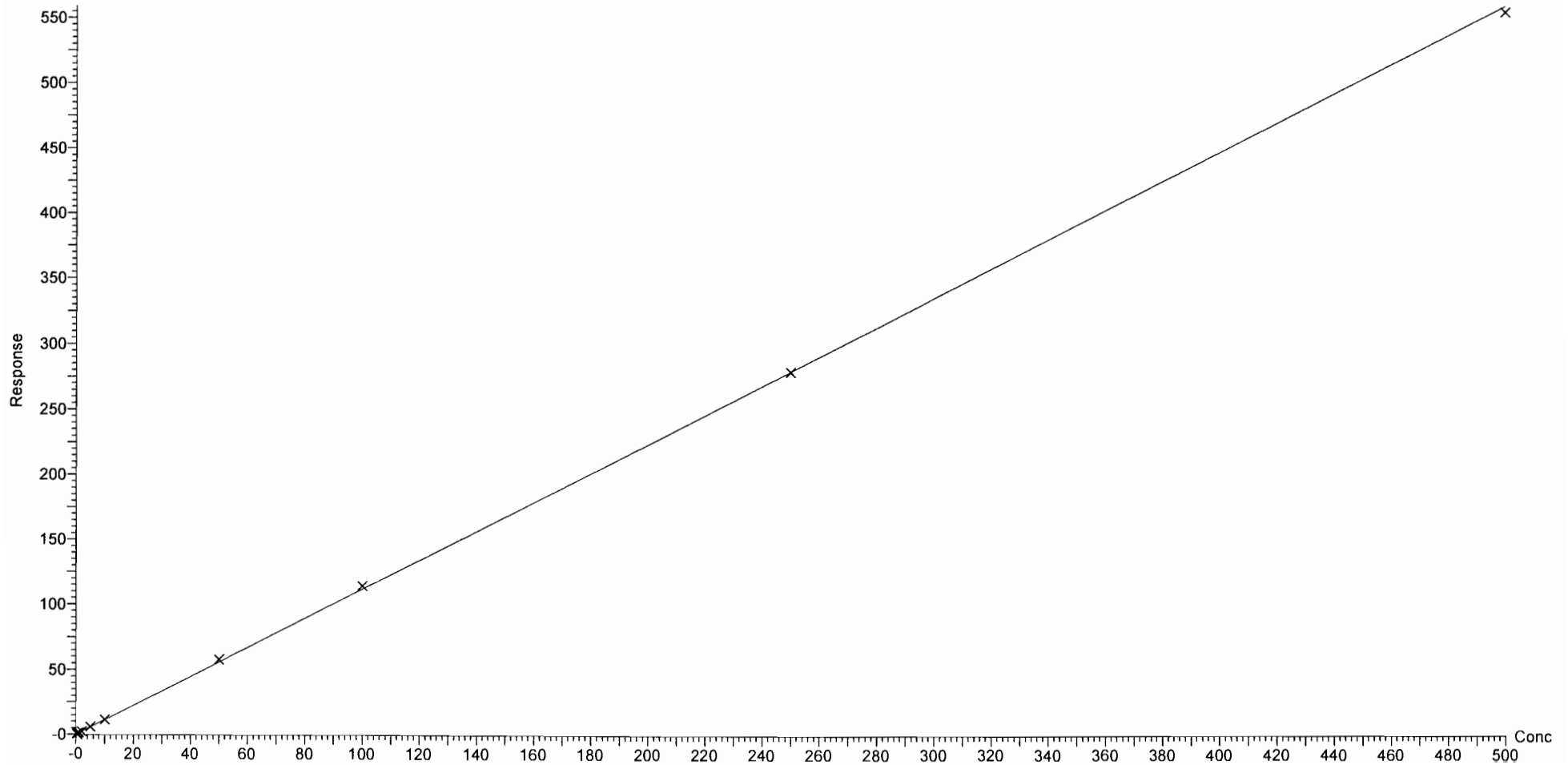
Compound name: PFBA

Correlation coefficient: $r = 0.999917$, $r^2 = 0.999834$

Calibration curve: $1.11767 * x + 0.0424299$

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

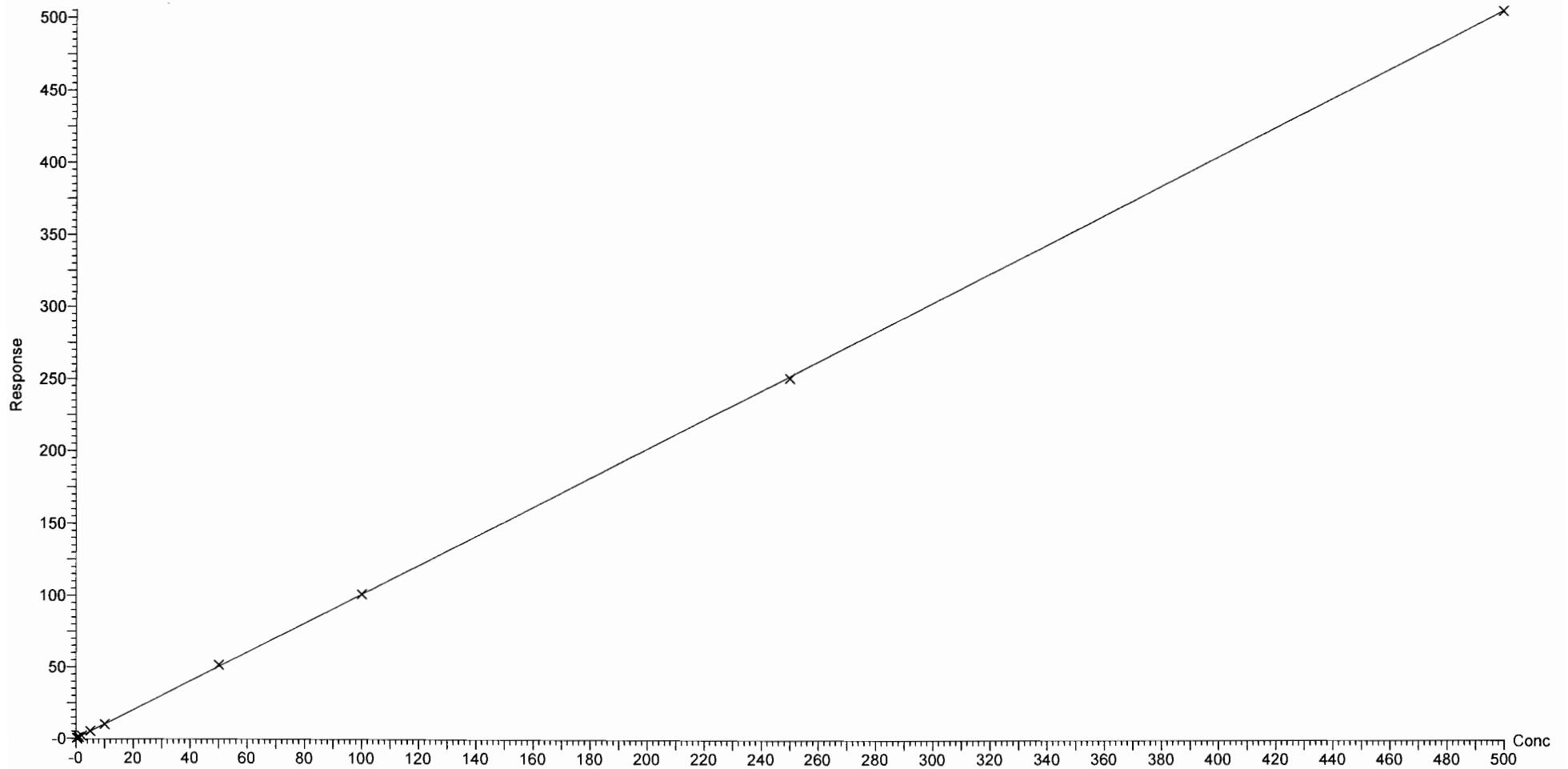
Compound name: PFPeA

Correlation coefficient: $r = 0.999979$, $r^2 = 0.999958$

Calibration curve: $1.01016 * x + 0.0157886$

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

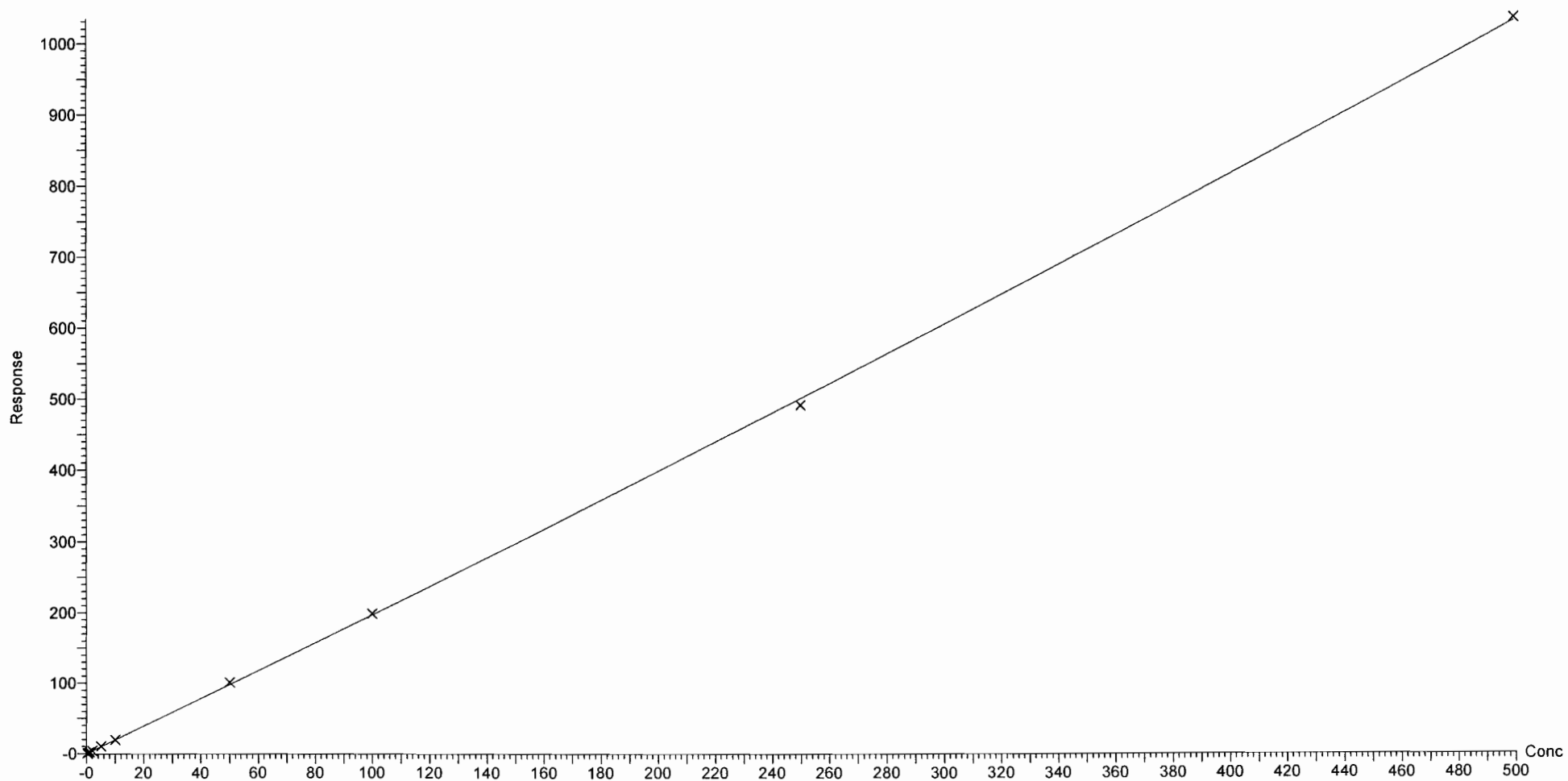
Compound name: PFBS

Coefficient of Determination: $R^2 = 0.999815$

Calibration curve: $0.000223532 * x^2 + 1.94727 * x + 0.0273154$

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

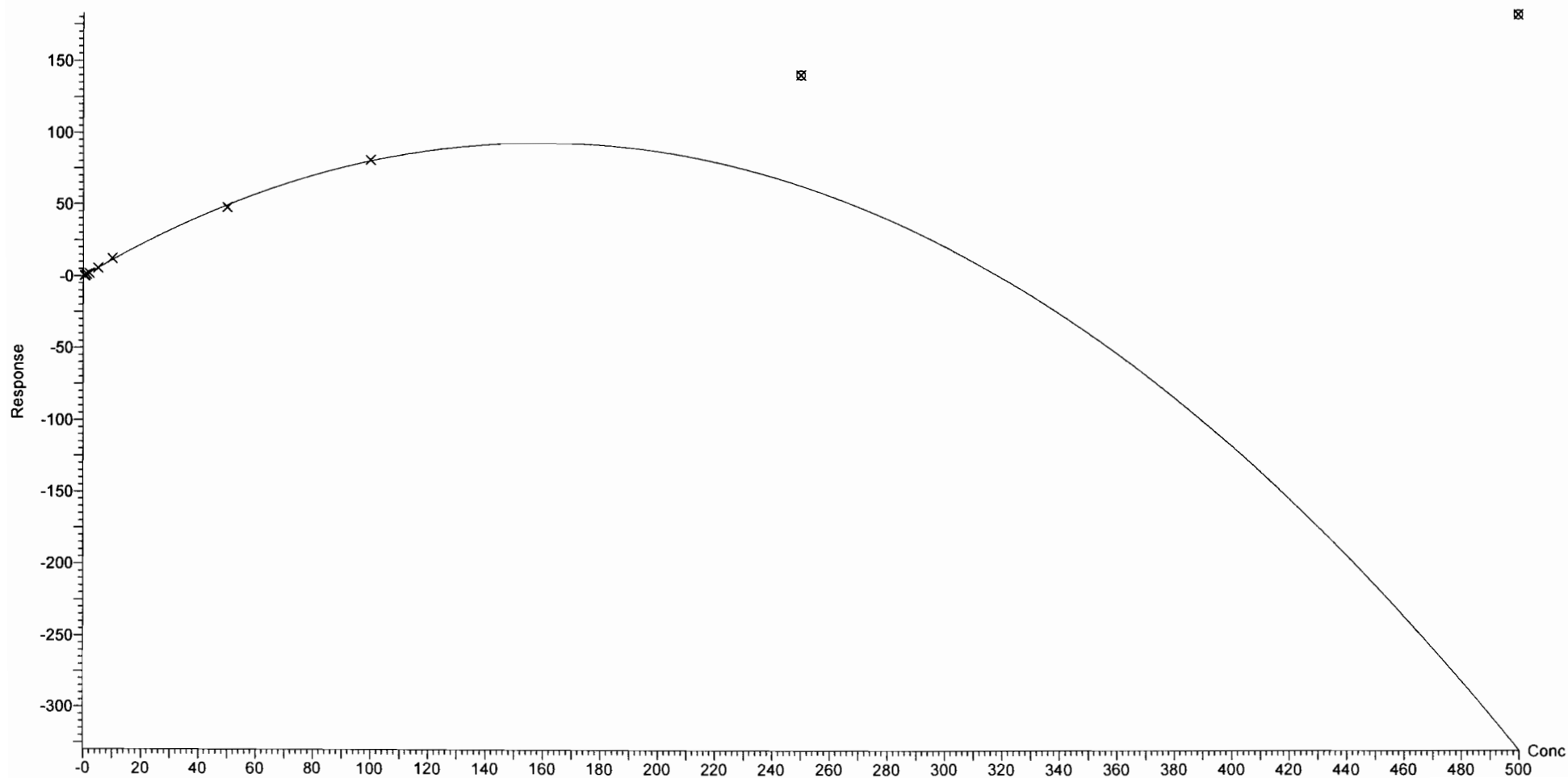
Compound name: 4:2 FTS

Coefficient of Determination: $R^2 = 0.998088$

Calibration curve: $-0.00365524 * x^2 + 1.16824 * x - 0.00106813$

Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

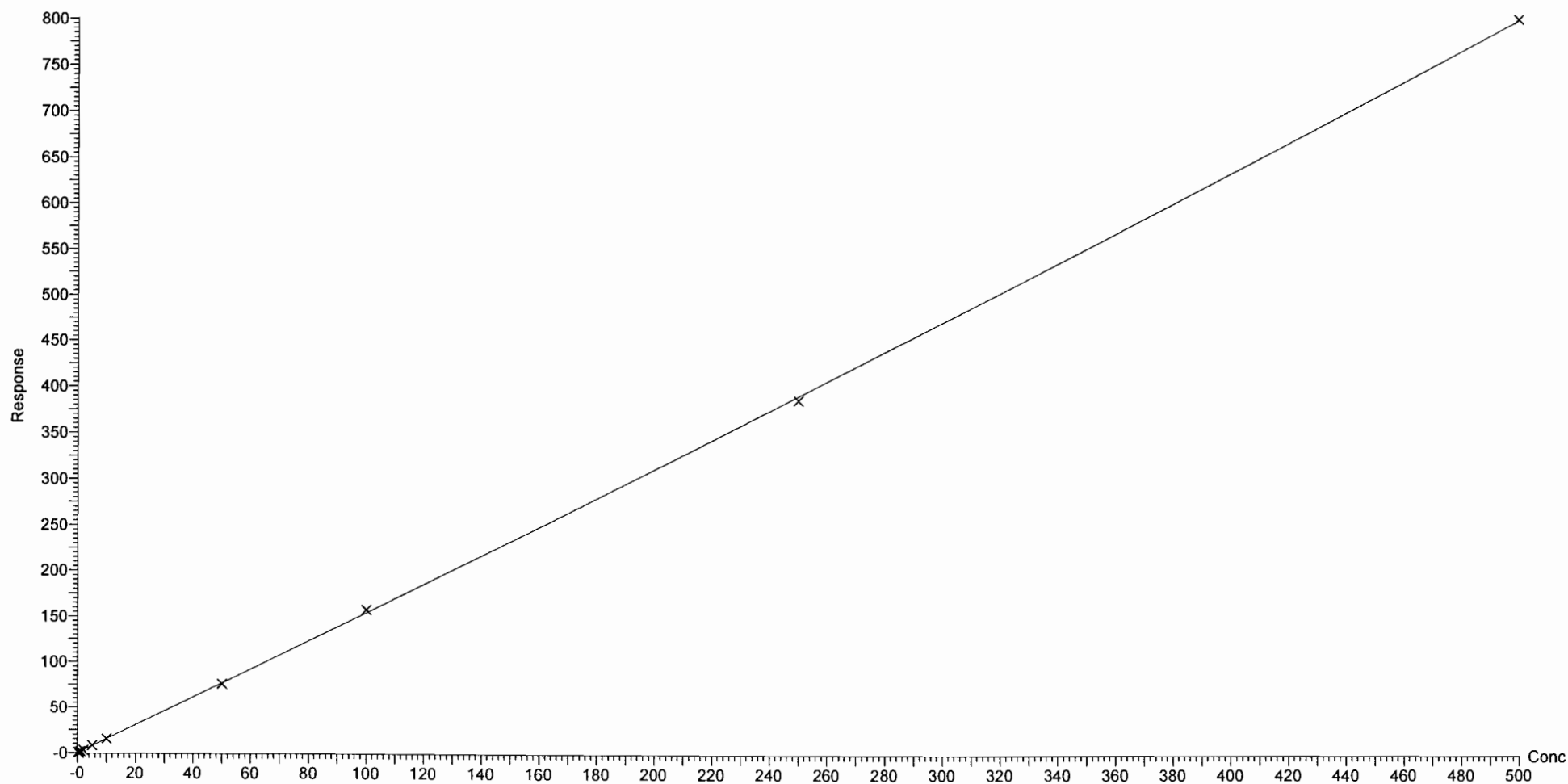
Compound name: PFHxA

Coefficient of Determination: $R^2 = 0.999878$

Calibration curve: $0.000139344 * x^2 + 1.52767 * x + 0.0390743$

Response type: Internal Std (Ref 40), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

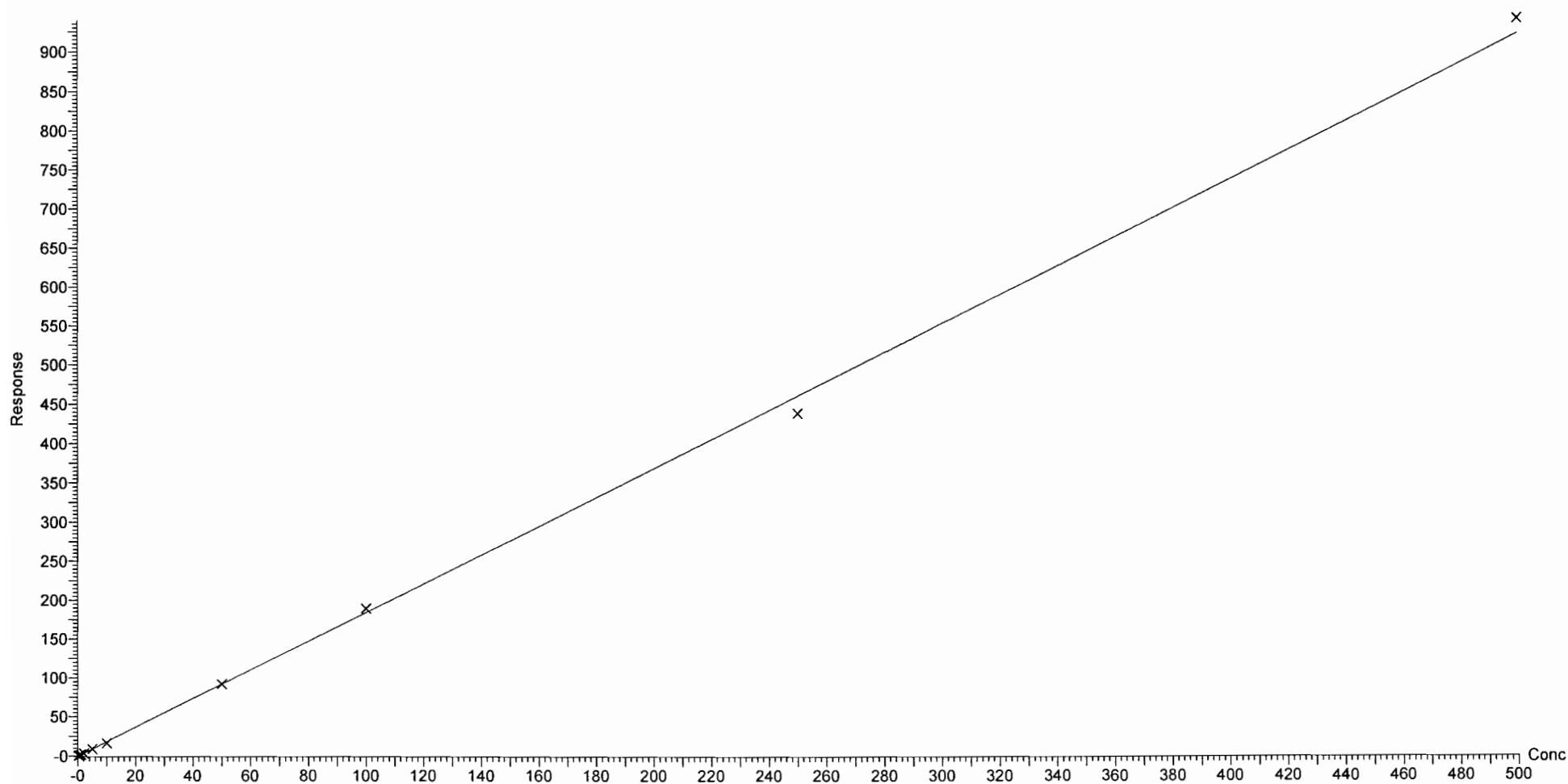
Compound name: PFPeS

Correlation coefficient: $r = 0.999461$, $r^2 = 0.998922$

Calibration curve: $1.84123 * x + -0.0692894$

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

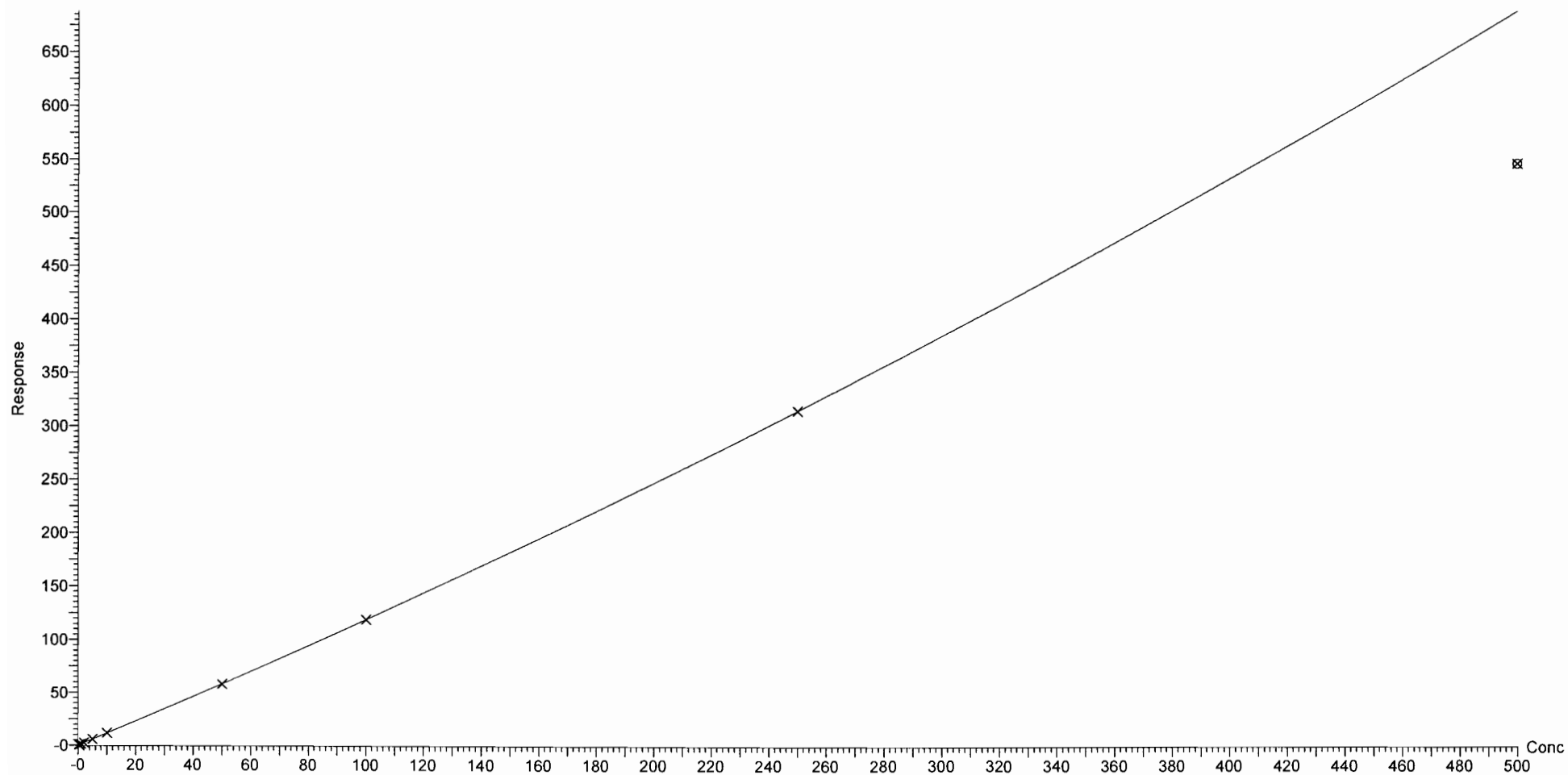
Compound name: PFHpA

Coefficient of Determination: $R^2 = 0.999980$

Calibration curve: $0.000463938 * x^2 + 1.14345 * x + 0.0577121$

Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

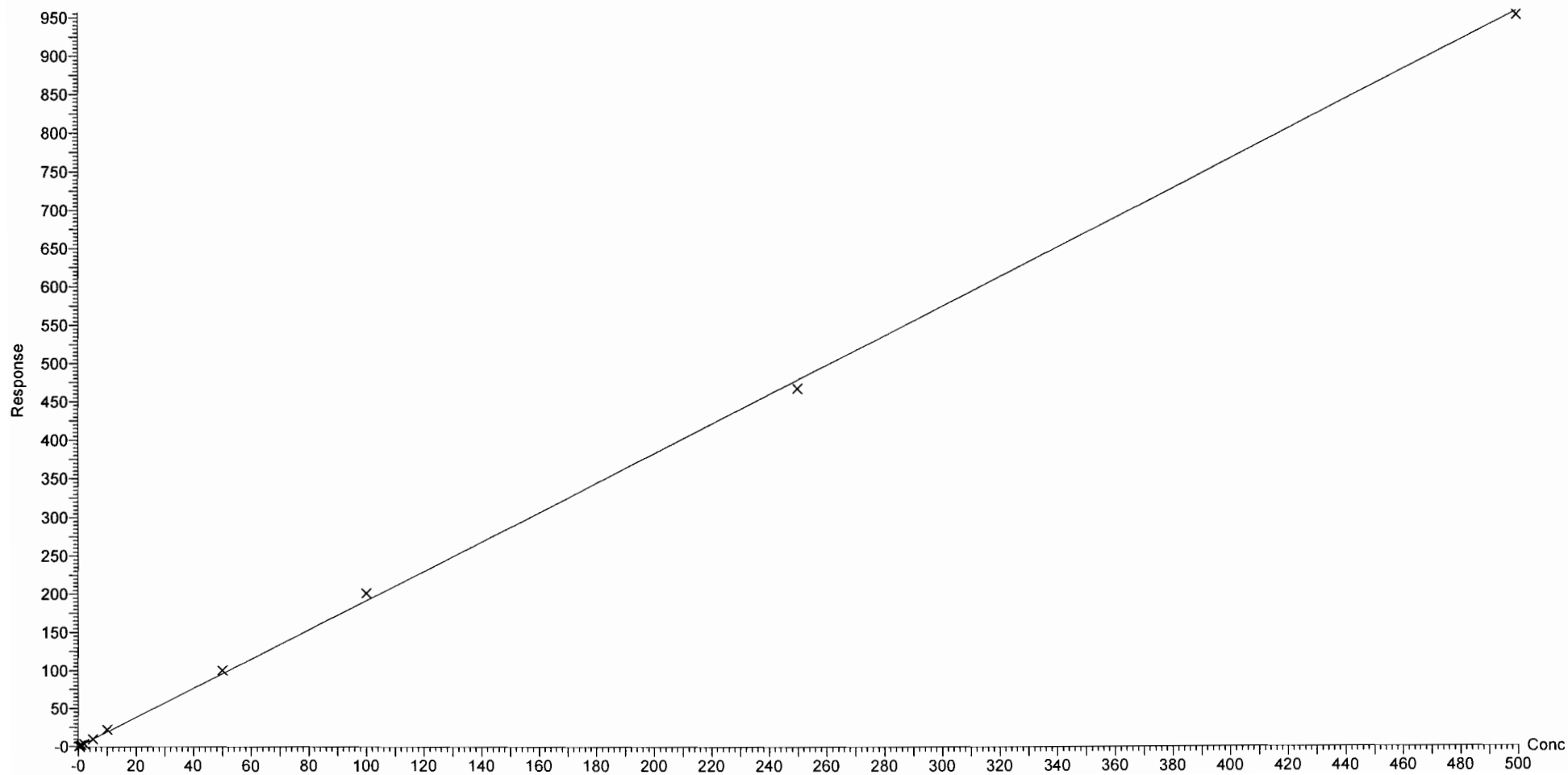
Compound name: L-PFHxS

Correlation coefficient: $r = 0.999509$, $r^2 = 0.999018$

Calibration curve: $1.91268 * x + 0.0612931$

Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

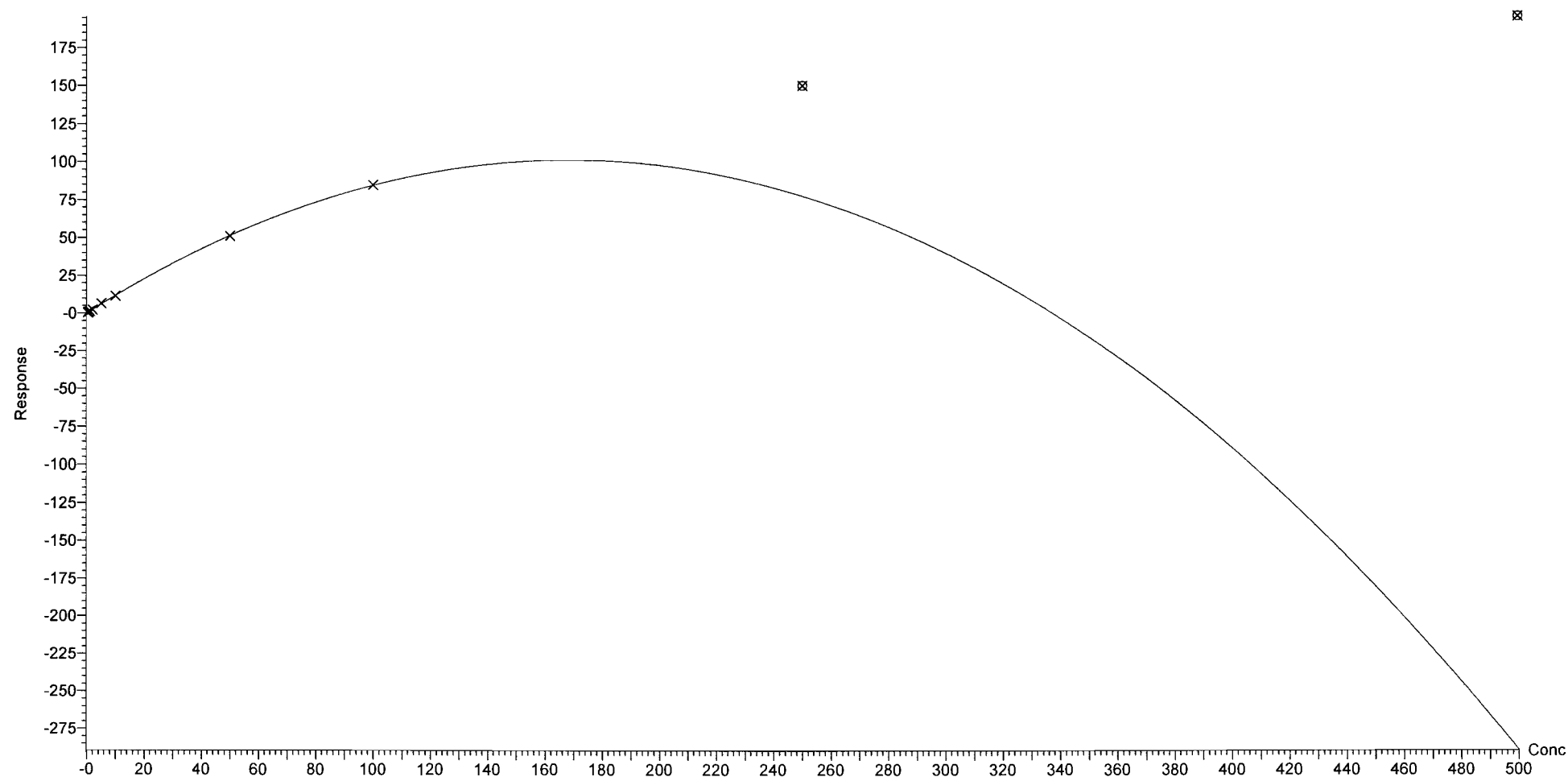
Compound name: 6:2 FTS

Coefficient of Determination: $R^2 = 0.999137$

Calibration curve: $-0.0035598 * x^2 + 1.20118 * x + 0.0541796$

Response type: Internal Std (Ref 43), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

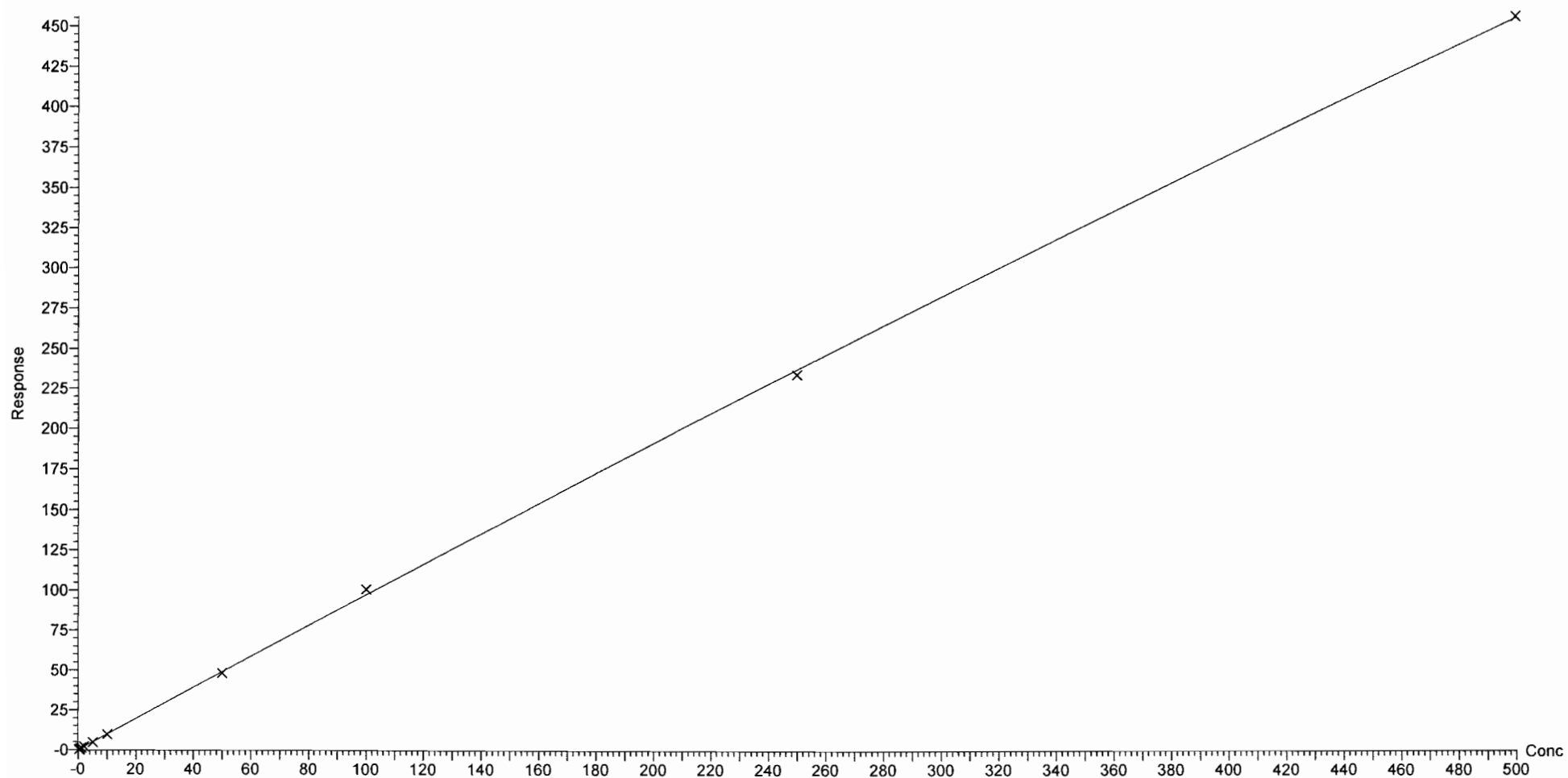
Compound name: L-PFOA

Coefficient of Determination: $R^2 = 0.999677$

Calibration curve: $-0.000155657 * x^2 + 0.987655 * x + 0.0270012$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

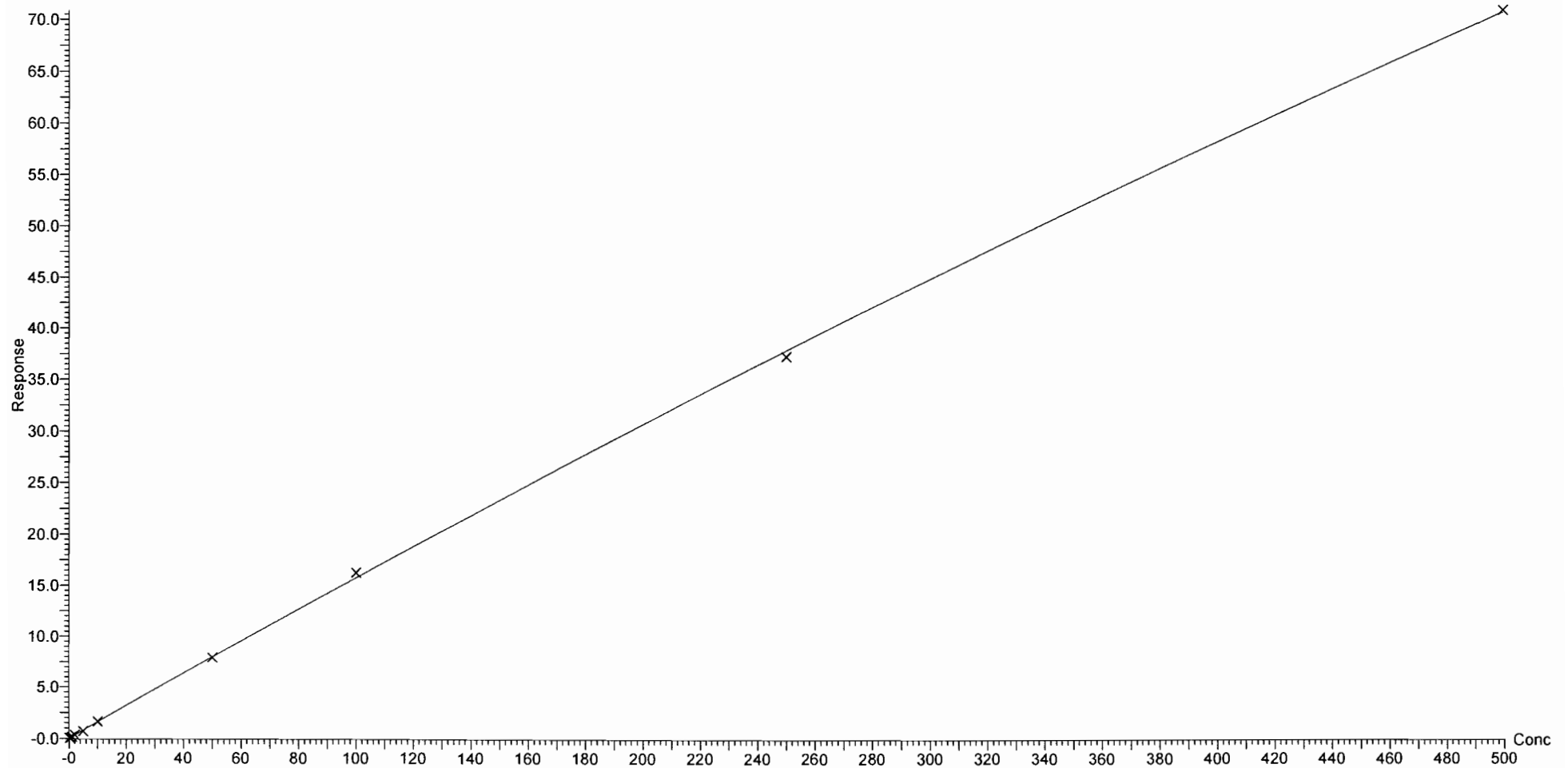
Compound name: PFHpS

Coefficient of Determination: $R^2 = 0.999582$

Calibration curve: $-4.10026e-005 * x^2 + 0.161763 * x + -0.00185584$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

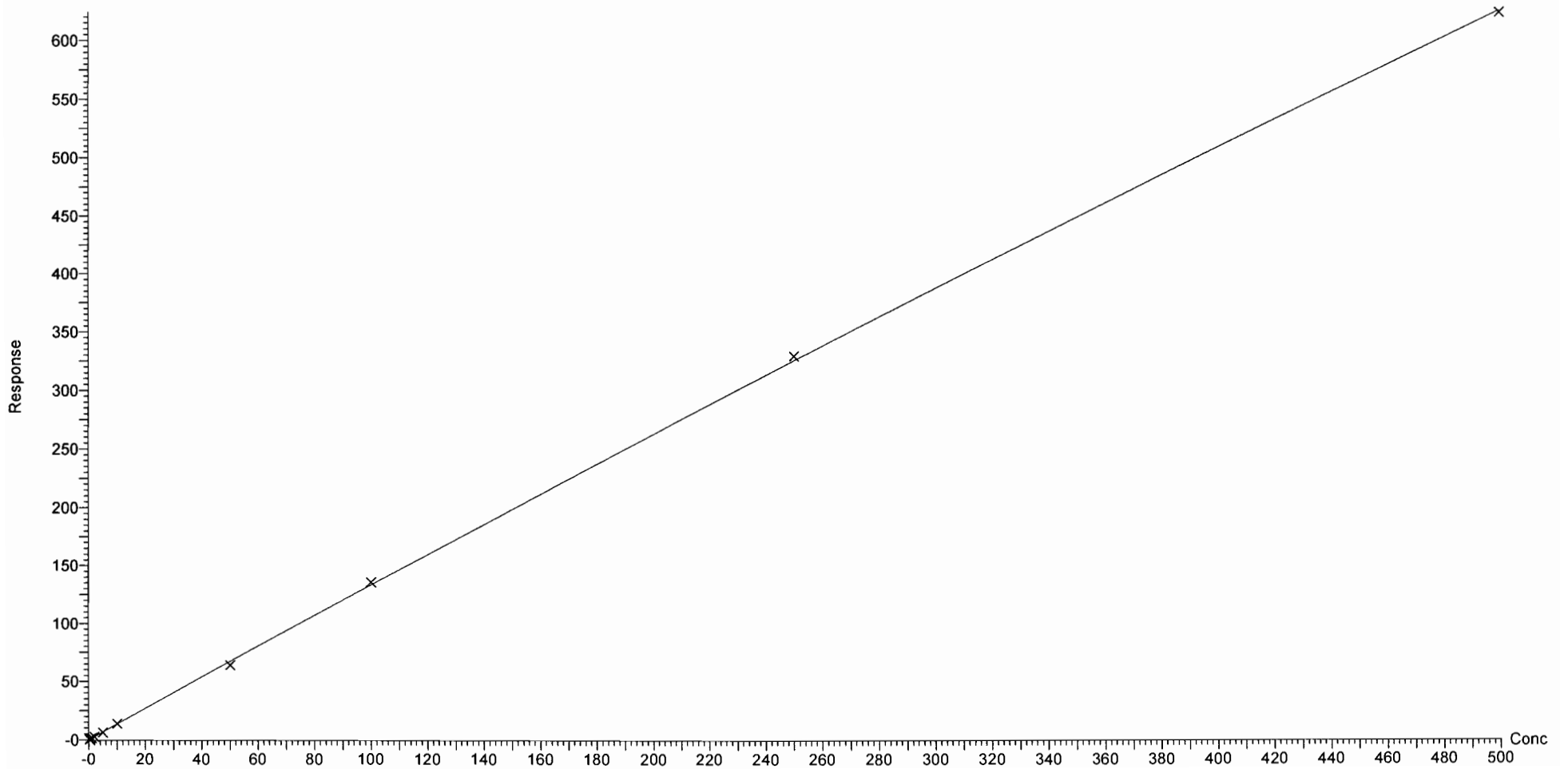
Compound name: PFNA

Coefficient of Determination: $R^2 = 0.999693$

Calibration curve: $-0.000217884 * x^2 + 1.35711 * x + -0.0685492$

Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

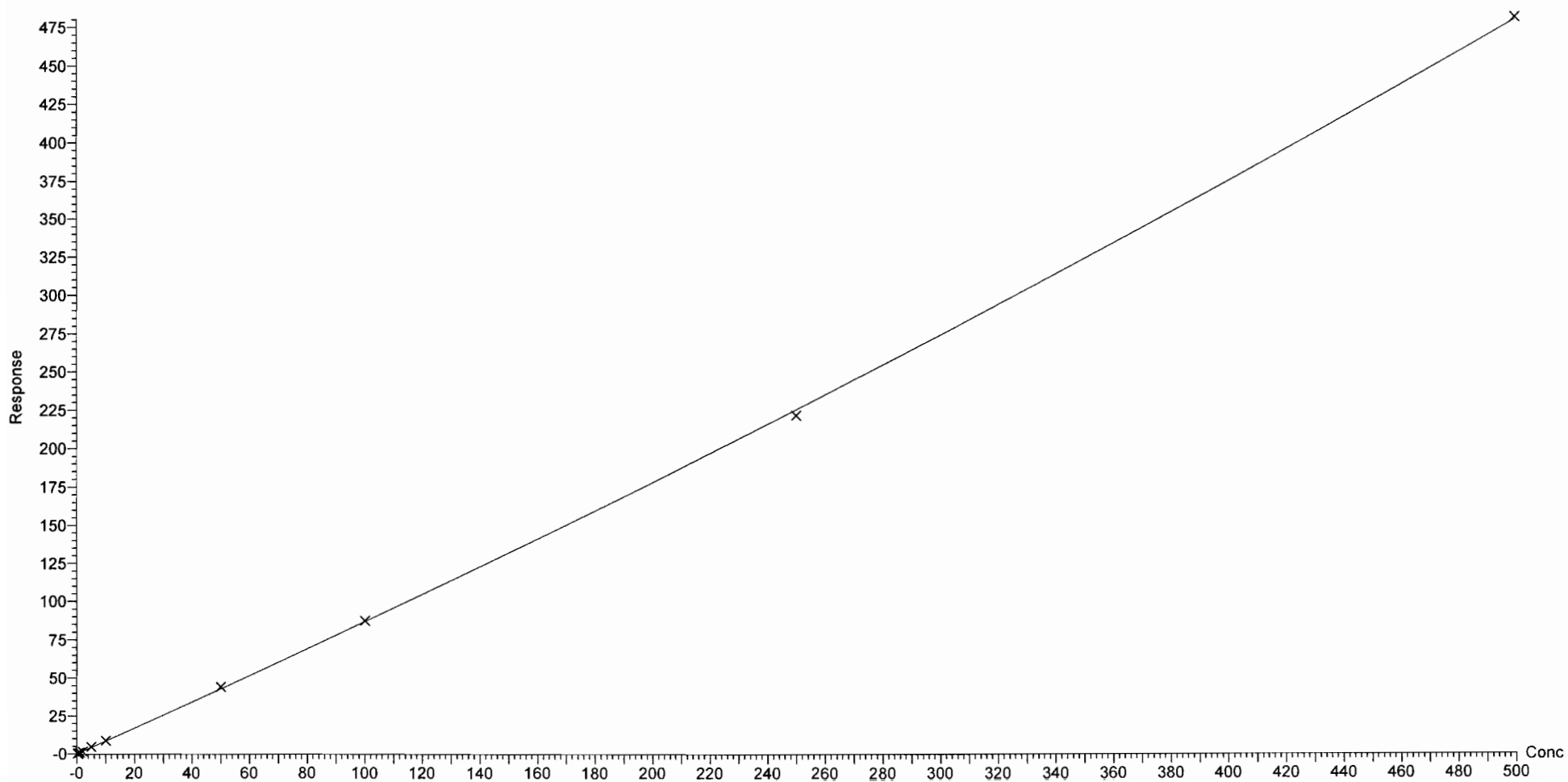
Compound name: PFOSA

Coefficient of Determination: $R^2 = 0.999799$

Calibration curve: $0.000223926 * x^2 + 0.845984 * x + -0.00644957$

Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

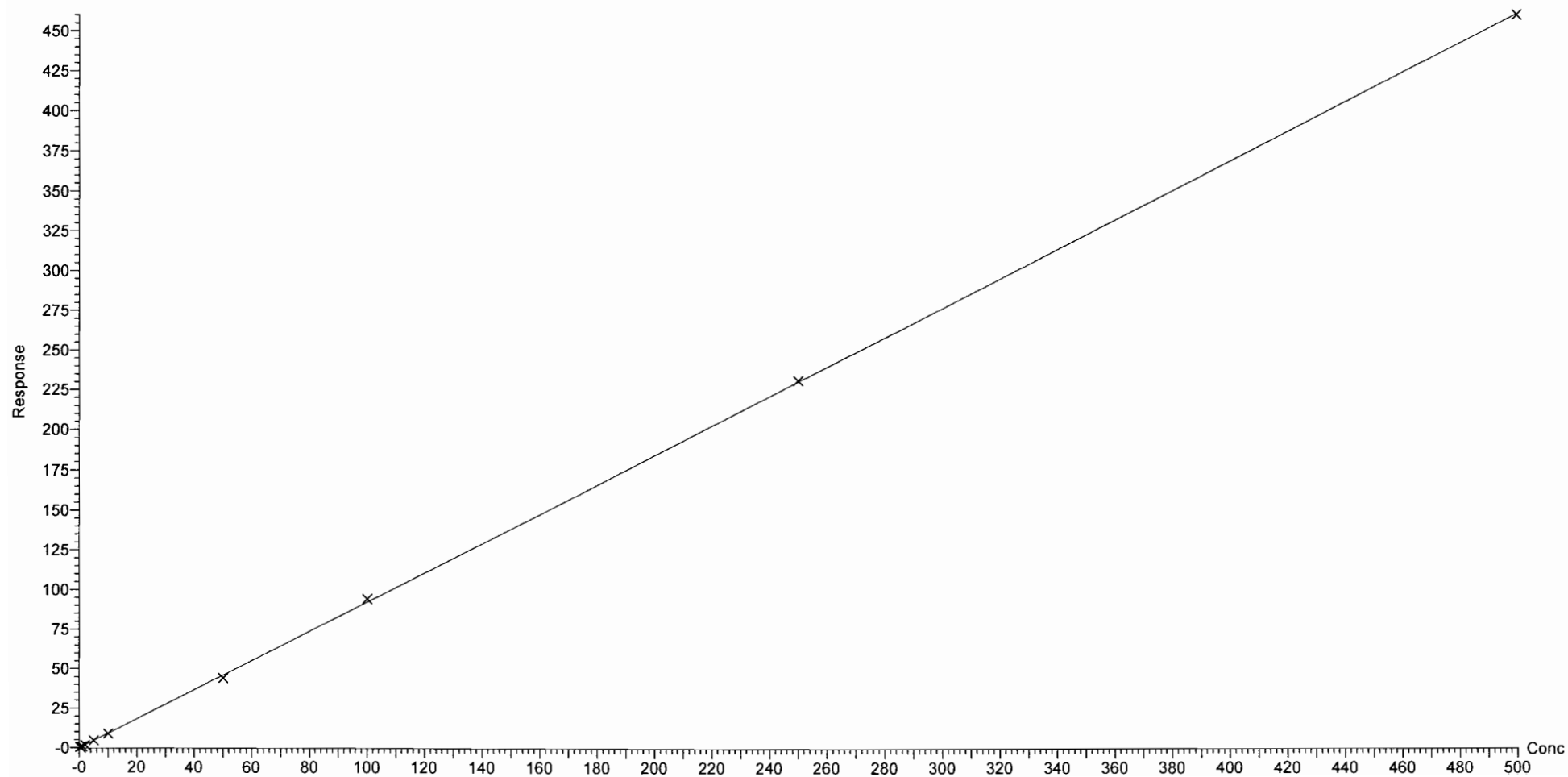
Compound name: L-PFOS

Coefficient of Determination: $R^2 = 0.999820$

Calibration curve: $-4.1577e-006 * x^2 + 0.922959 * x + -0.0602006$

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

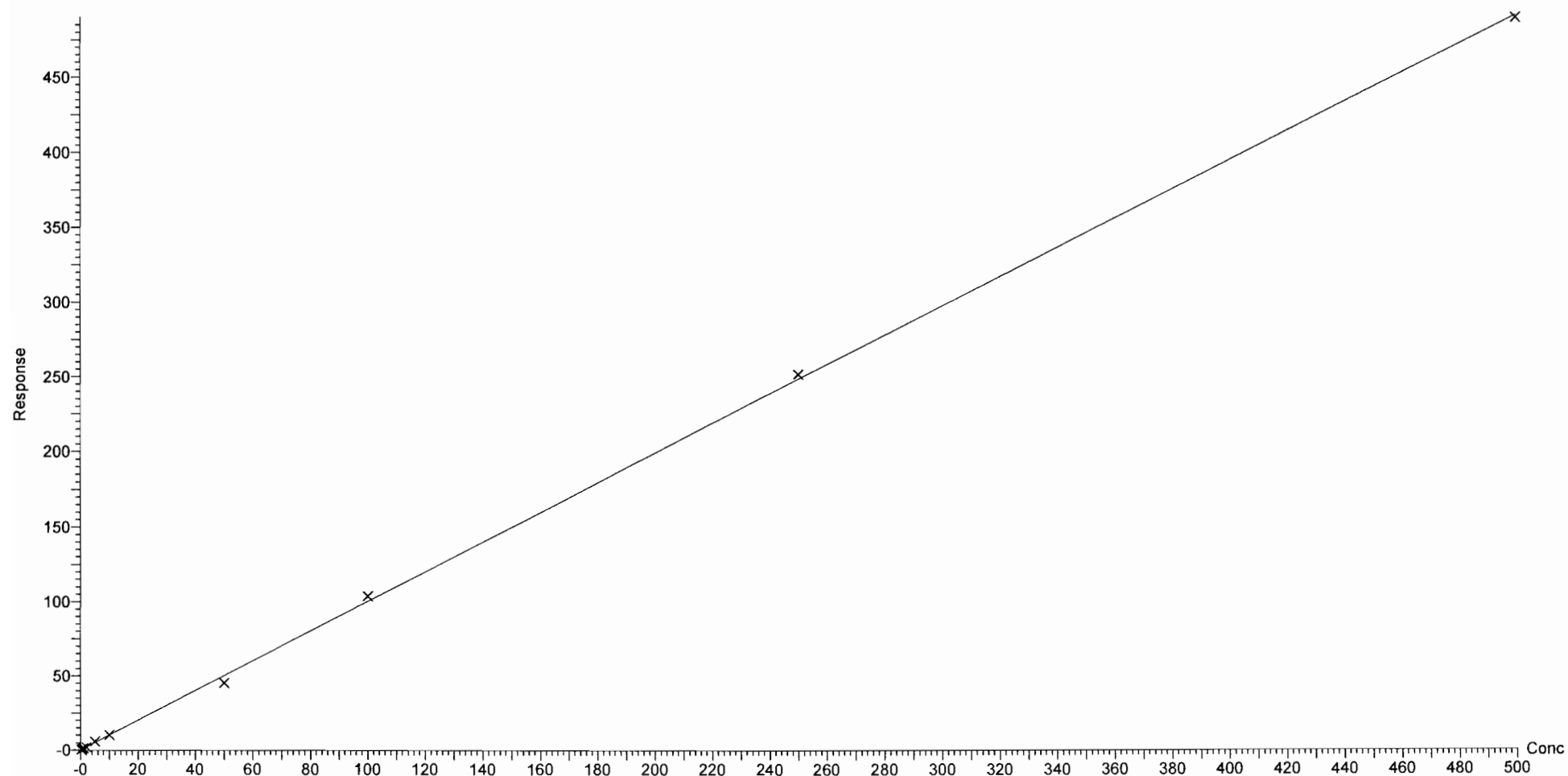
Compound name: PFDA

Coefficient of Determination: $R^2 = 0.999020$

Calibration curve: $-5.14851e-005 * x^2 + 1.0054 * x + 0.115839$

Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

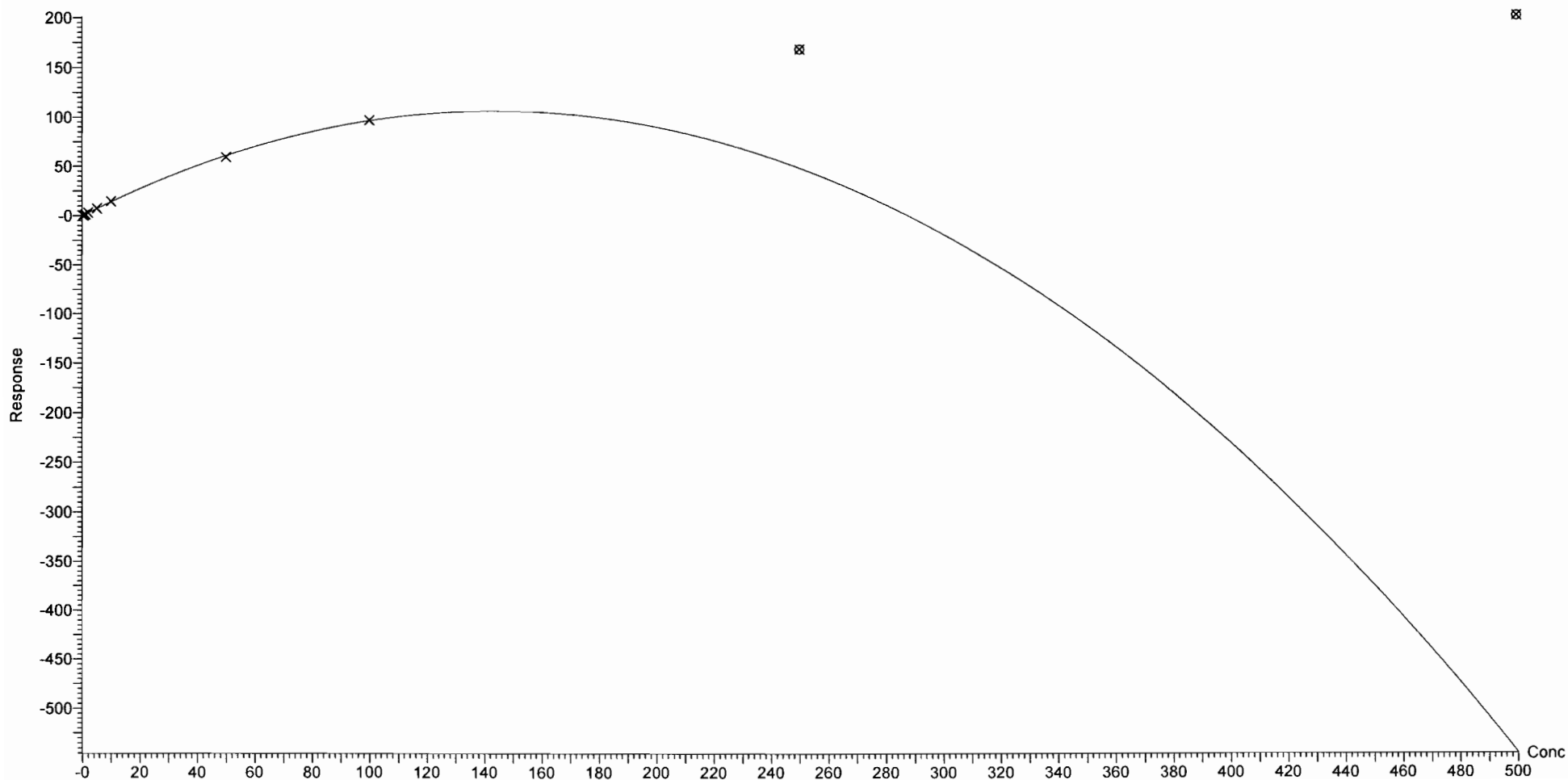
Compound name: 8:2 FTS

Coefficient of Determination: $R^2 = 0.999540$

Calibration curve: $-0.00513967 * x^2 + 1.47988 * x + -0.0800285$

Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

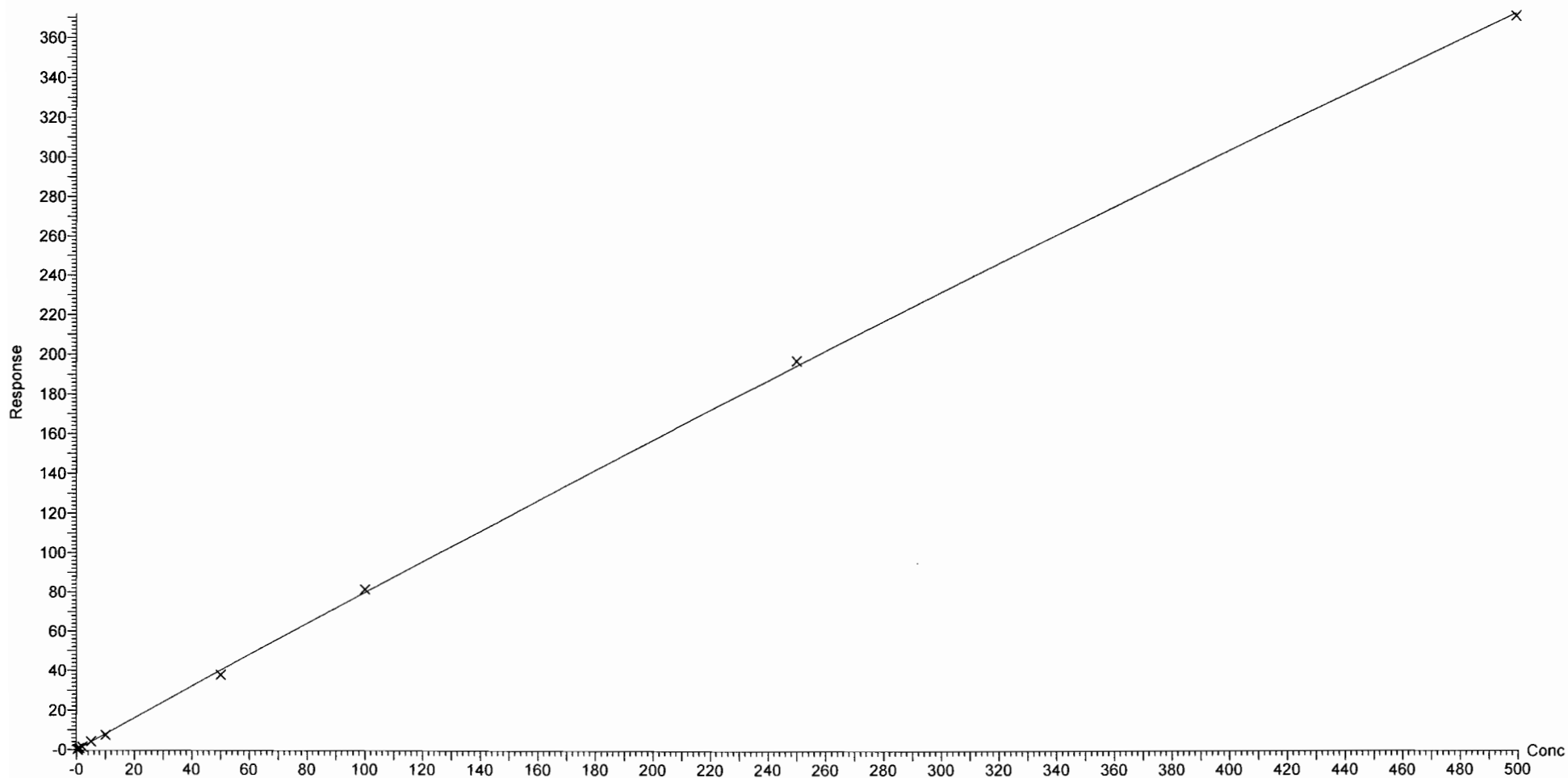
Compound name: PFNS

Coefficient of Determination: $R^2 = 0.999614$

Calibration curve: $-0.000139909 * x^2 + 0.813563 * x + -0.0732691$

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

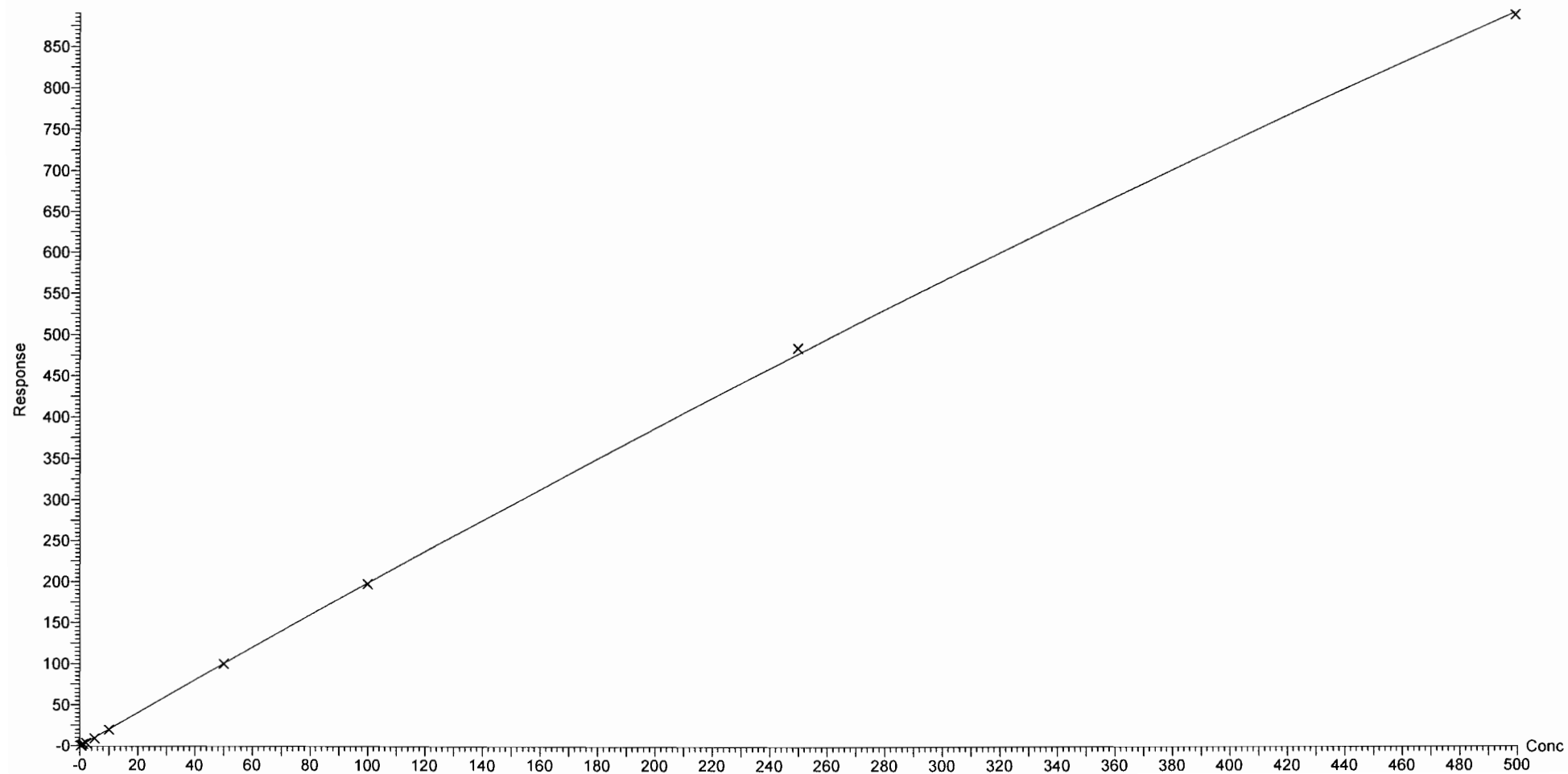
Compound name: L-MeFOSAA

Coefficient of Determination: $R^2 = 0.999746$

Calibration curve: $-0.000512206 * x^2 + 2.03689 * x + -0.180528$

Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:02 Pacific Daylight Time

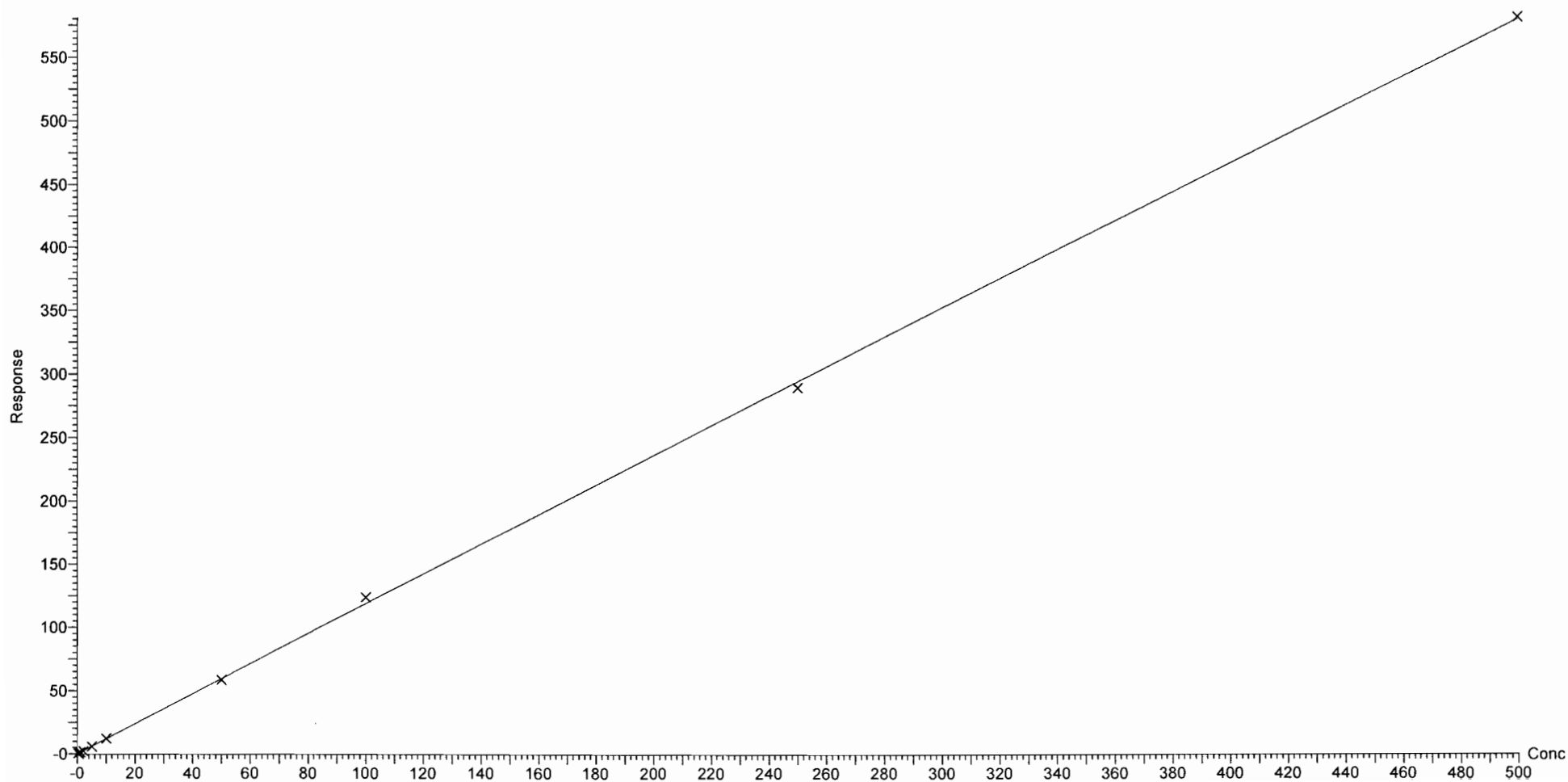
Compound name: L-EtFOSAA

Coefficient of Determination: $R^2 = 0.999632$

Calibration curve: $-8.02336e-005 * x^2 + 1.19845 * x + -0.0686469$

Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

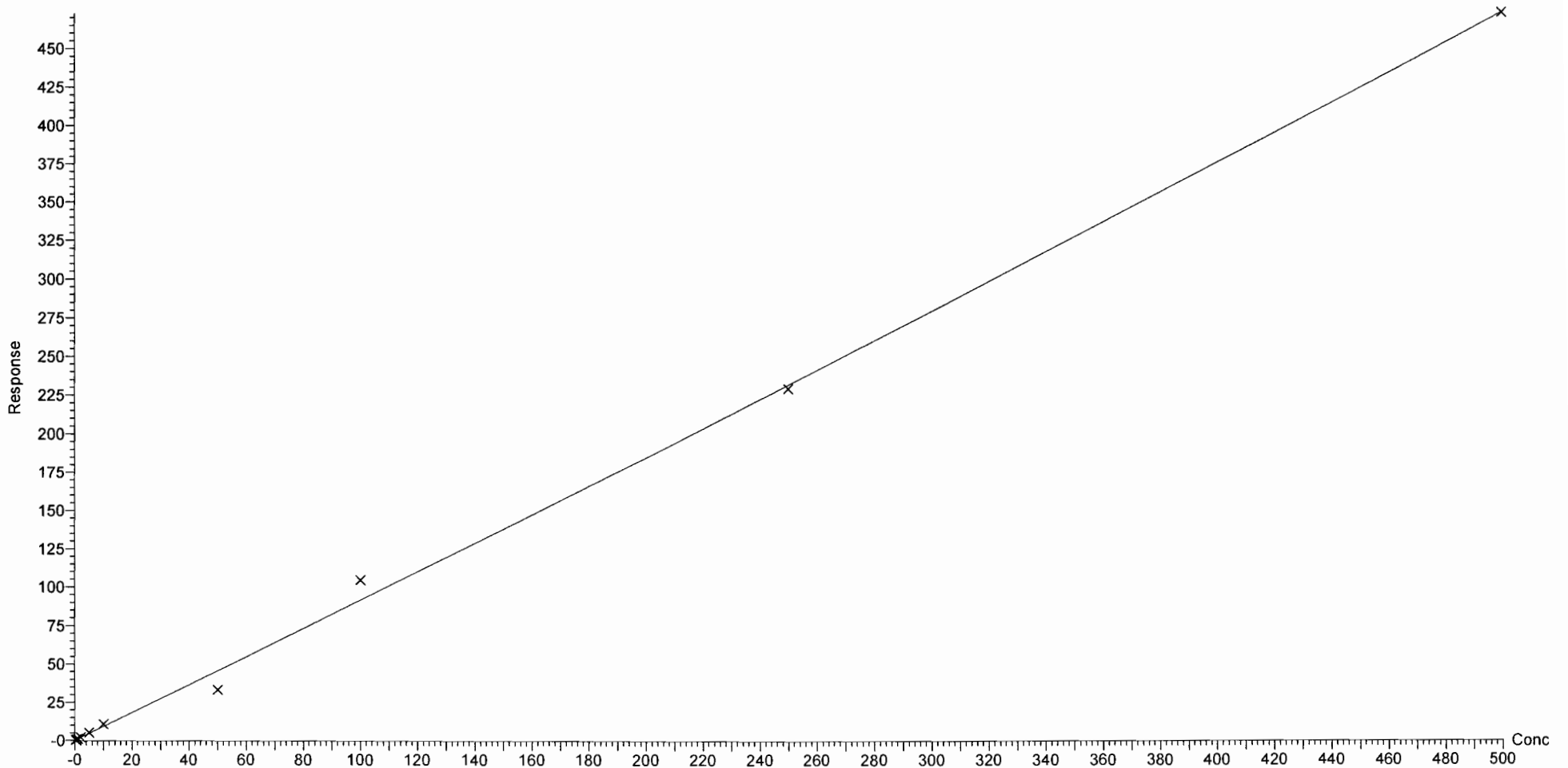
Compound name: PFUdA

Coefficient of Determination: $R^2 = 0.993431$

Calibration curve: $7.49062e-005 * x^2 + 0.907352 * x + 0.092432$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

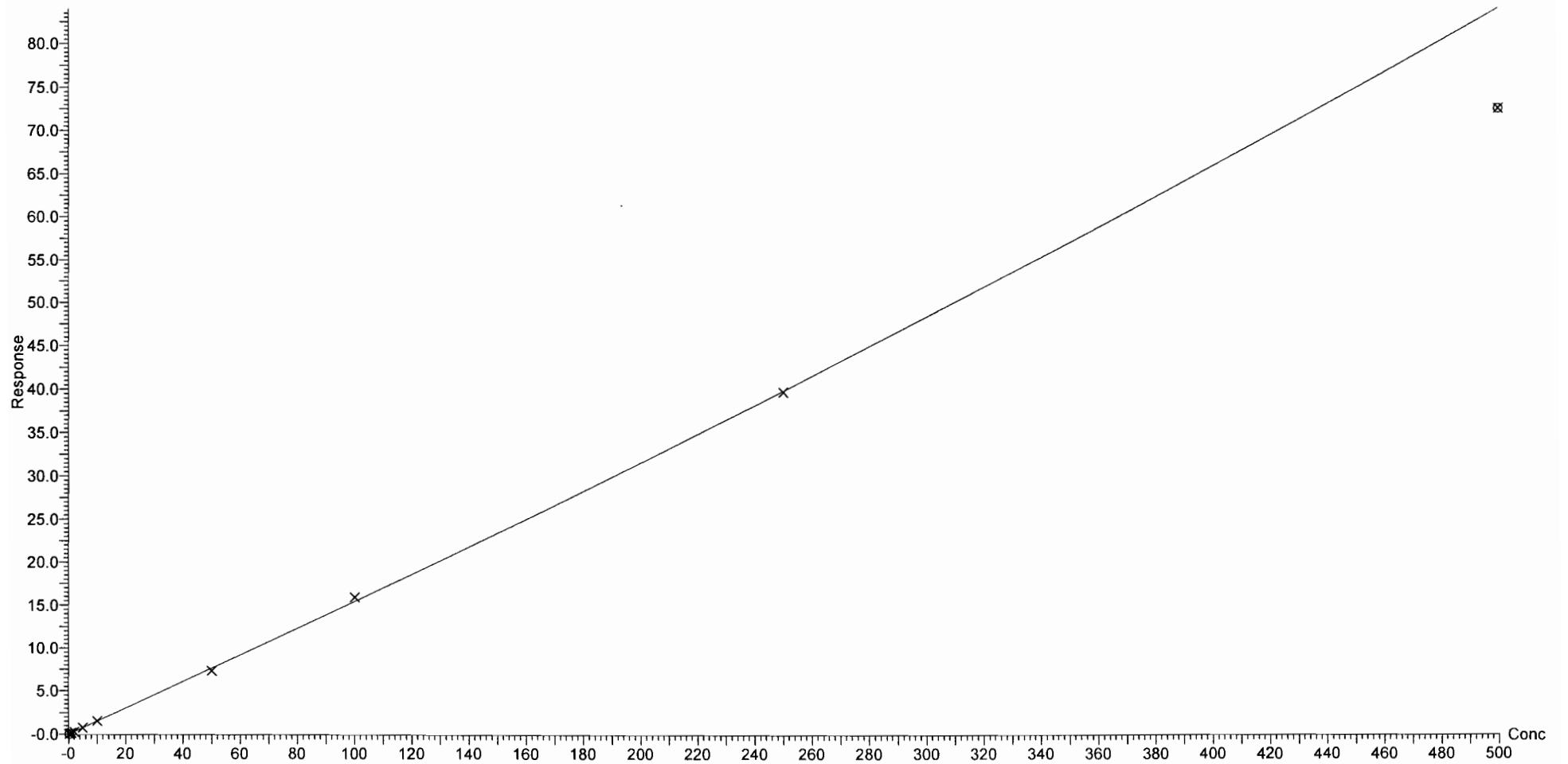
Compound name: PFDS

Coefficient of Determination: $R^2 = 0.999337$

Calibration curve: $3.37363e-005 * x^2 + 0.151074 * x + 0.00103366$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

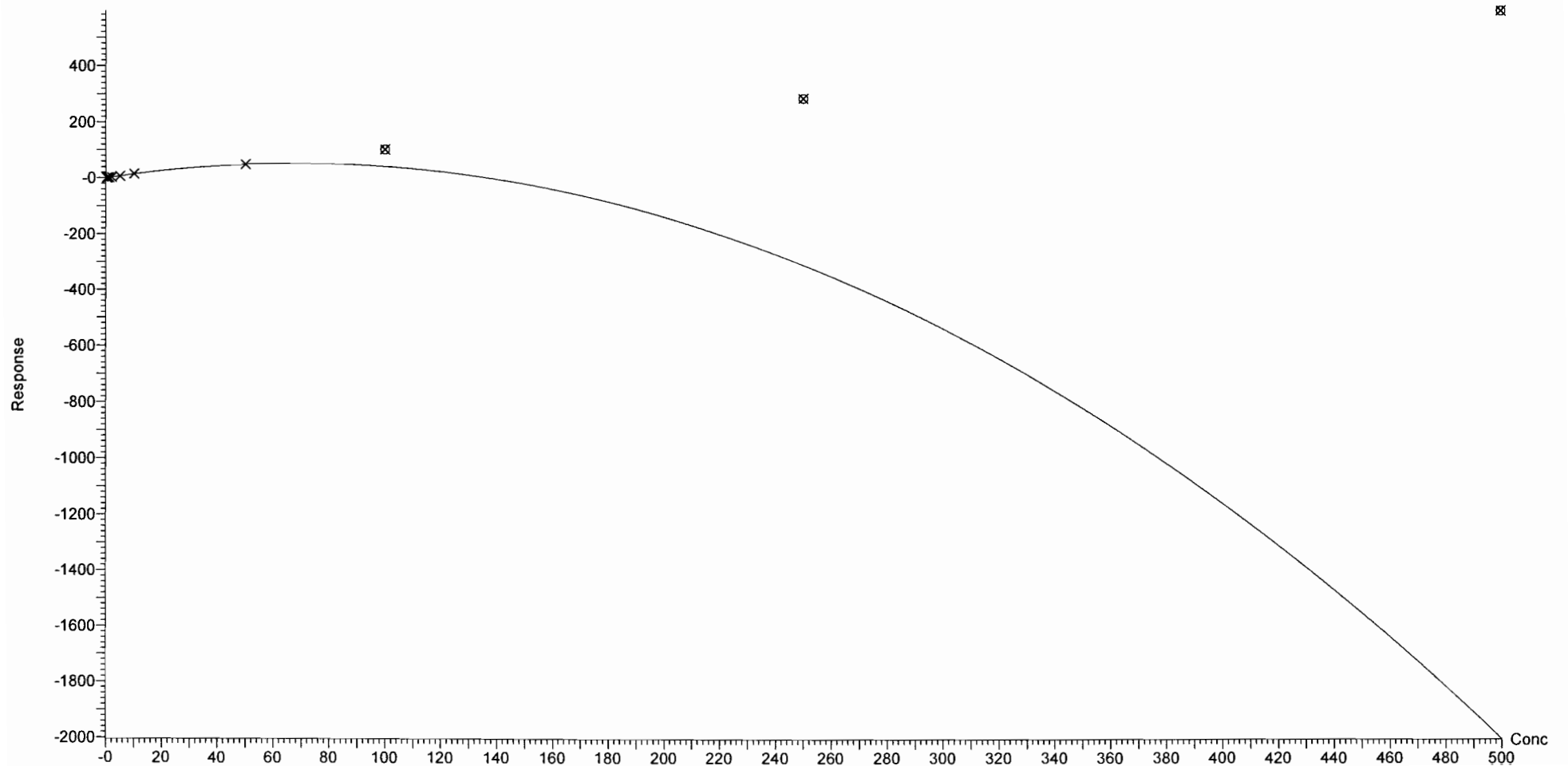
Compound name: PFDaA

Coefficient of Determination: $R^2 = 0.997043$

Calibration curve: $-0.0110656 * x^2 + 1.52836 * x + -0.124406$

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

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

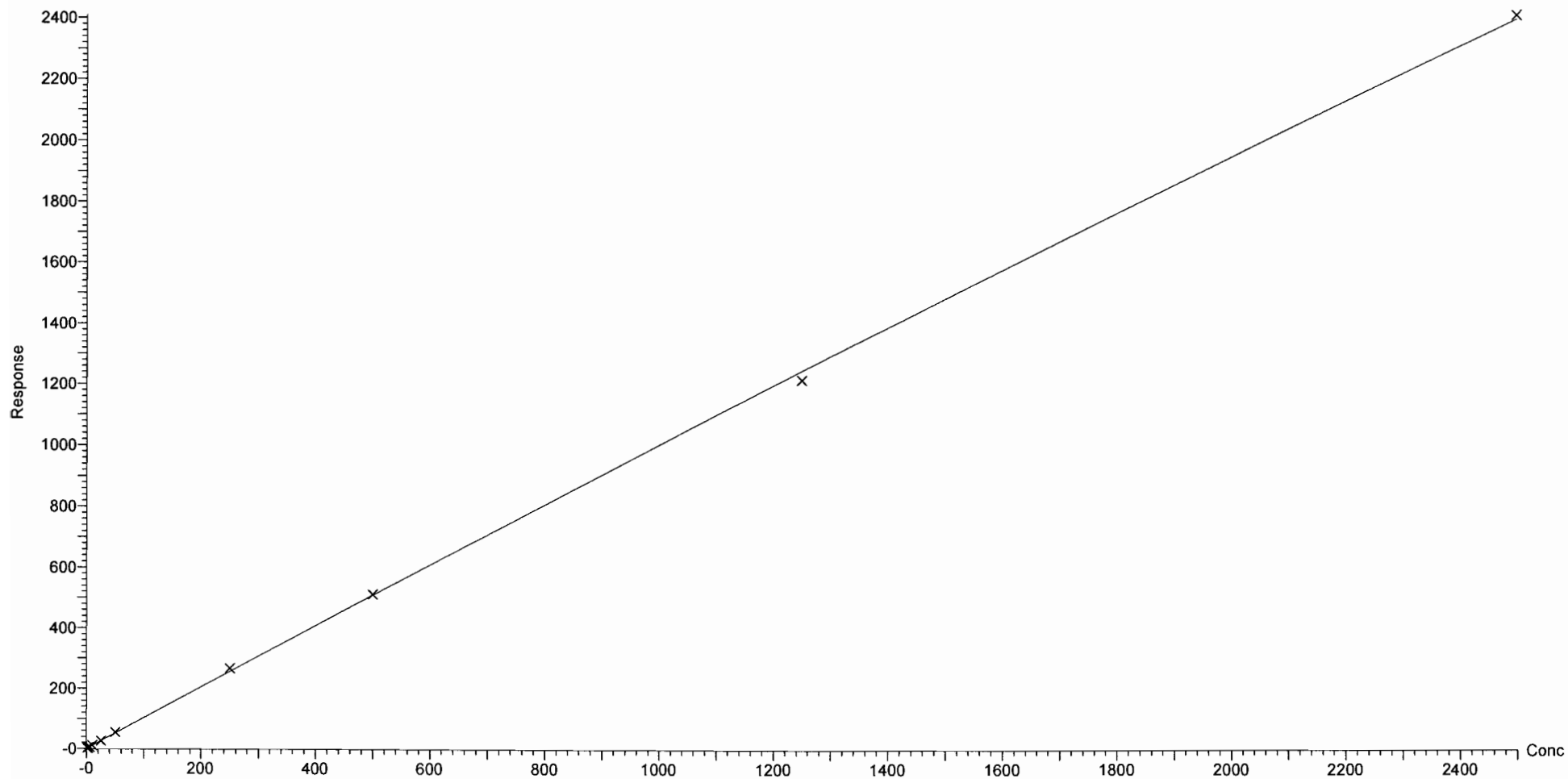


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

Compound name: N-MeFOSA
Coefficient of Determination: $R^2 = 0.999650$
Calibration curve: $-2.95889e-005 * x^2 + 1.0319 * x + 0.180174$
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

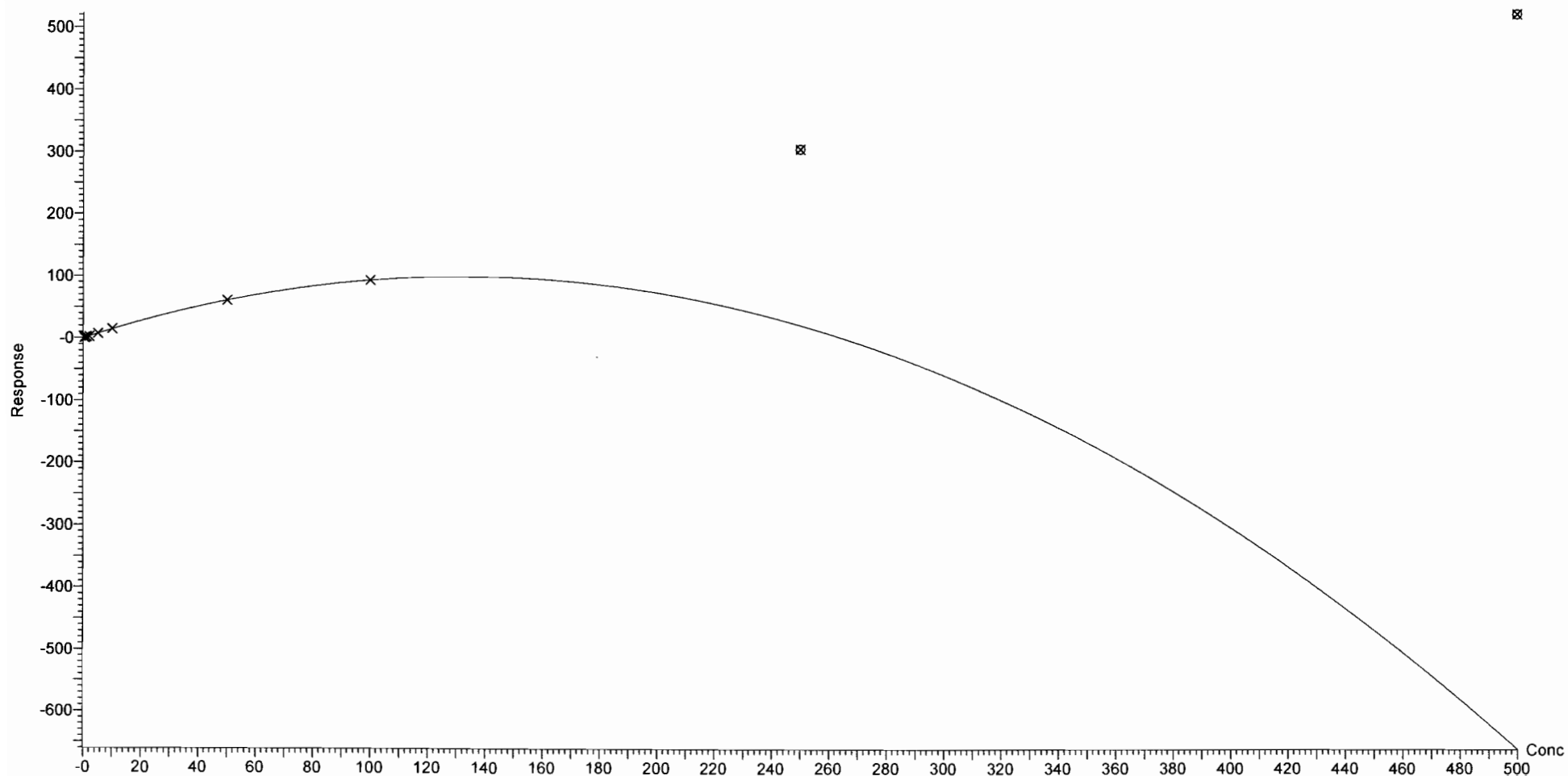
Compound name: PFTTrDA

Coefficient of Determination: $R^2 = 0.999367$

Calibration curve: $-0.00564413 * x^2 + 1.50166 * x + -0.0916805$

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

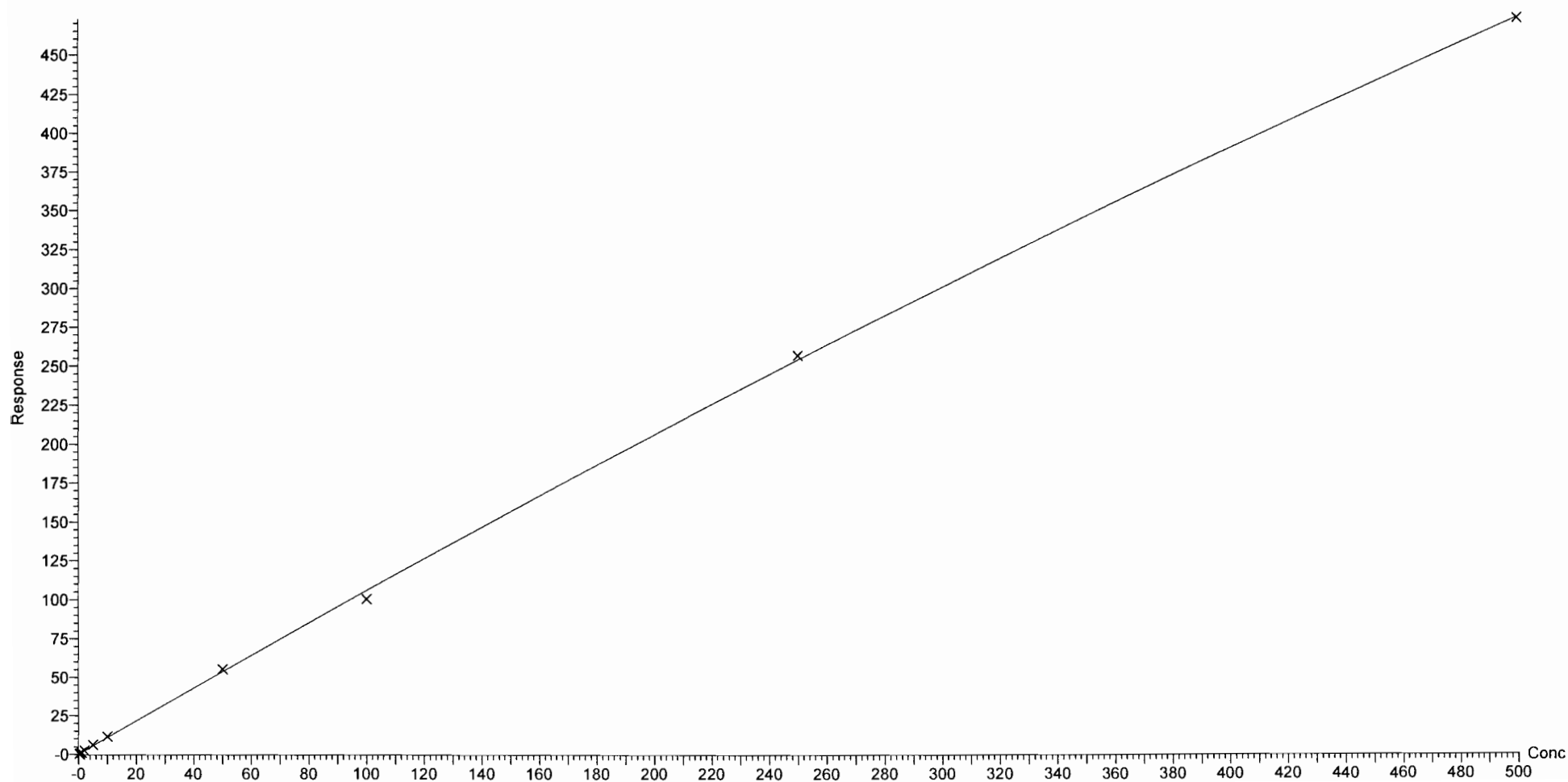
Compound name: PFTeDA

Coefficient of Determination: $R^2 = 0.999342$

Calibration curve: $-0.000283258 * x^2 + 1.08661 * x + 0.131629$

Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

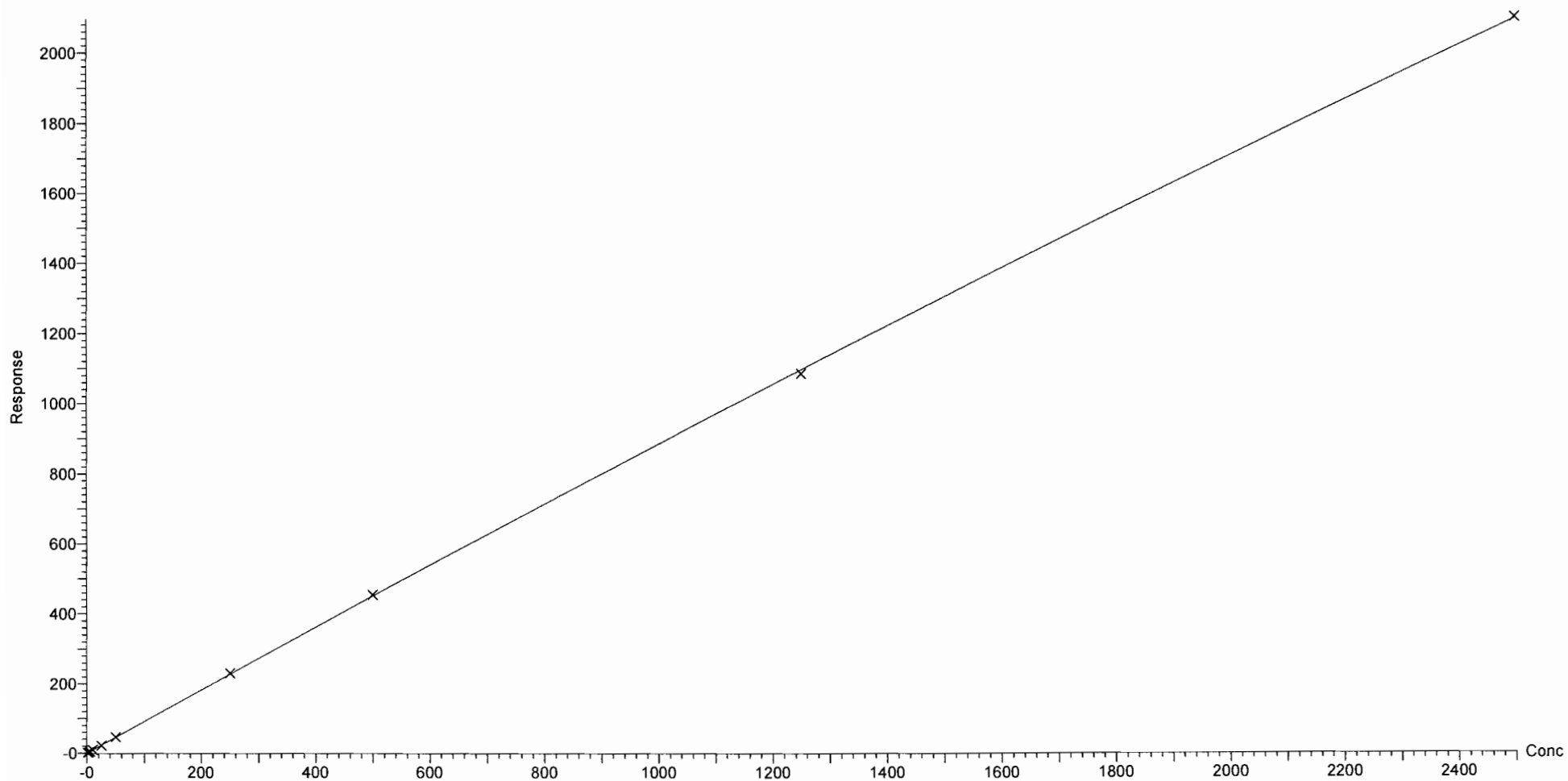
Compound name: N-EtFOSA

Coefficient of Determination: $R^2 = 0.999923$

Calibration curve: $-3.23078e-005 * x^2 + 0.917289 * x + -0.023268$

Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

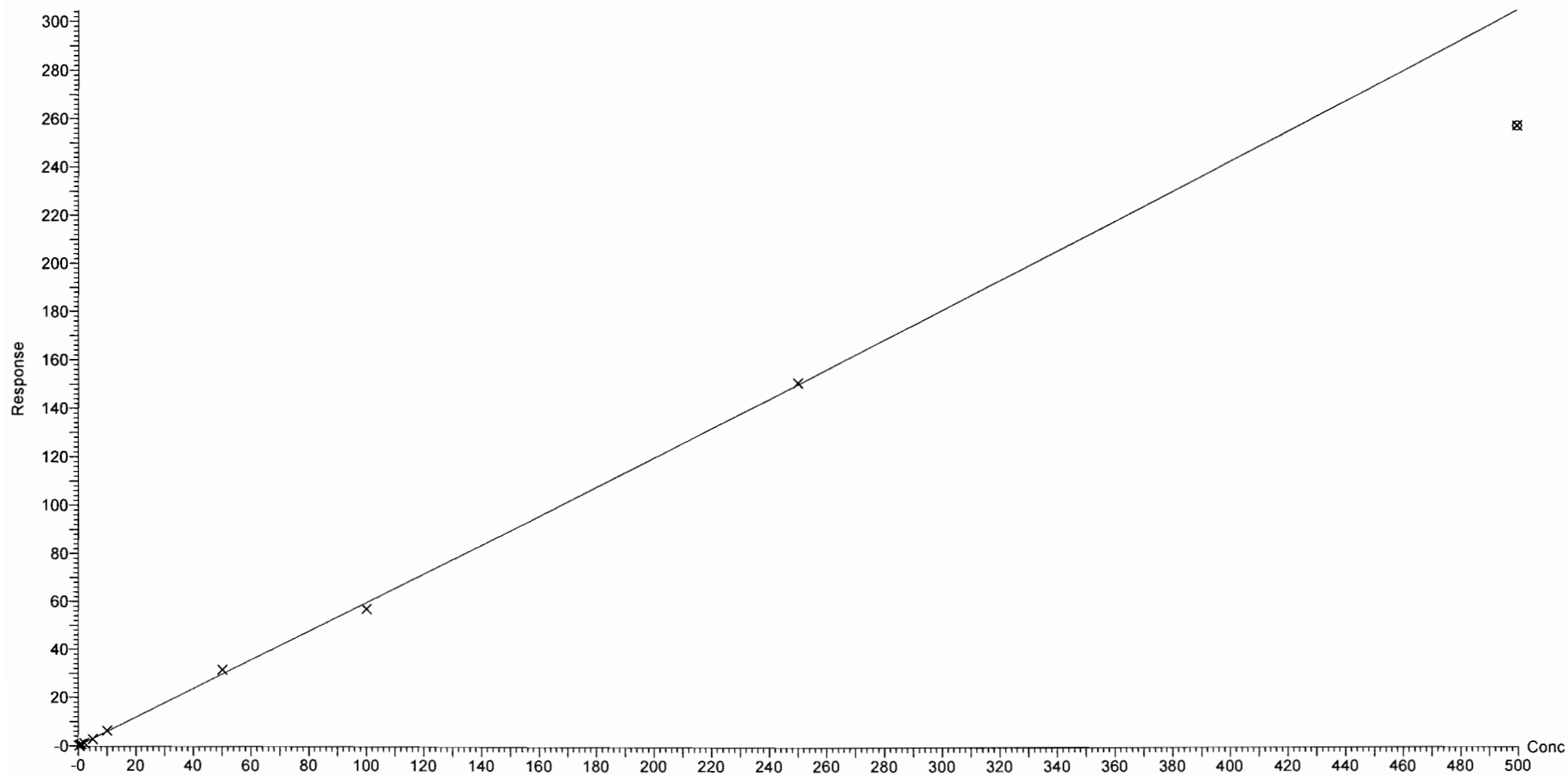
Compound name: PFHxDA

Coefficient of Determination: $R^2 = 0.998869$

Calibration curve: $3.05812e-005 * x^2 + 0.593492 * x + 0.0405458$

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

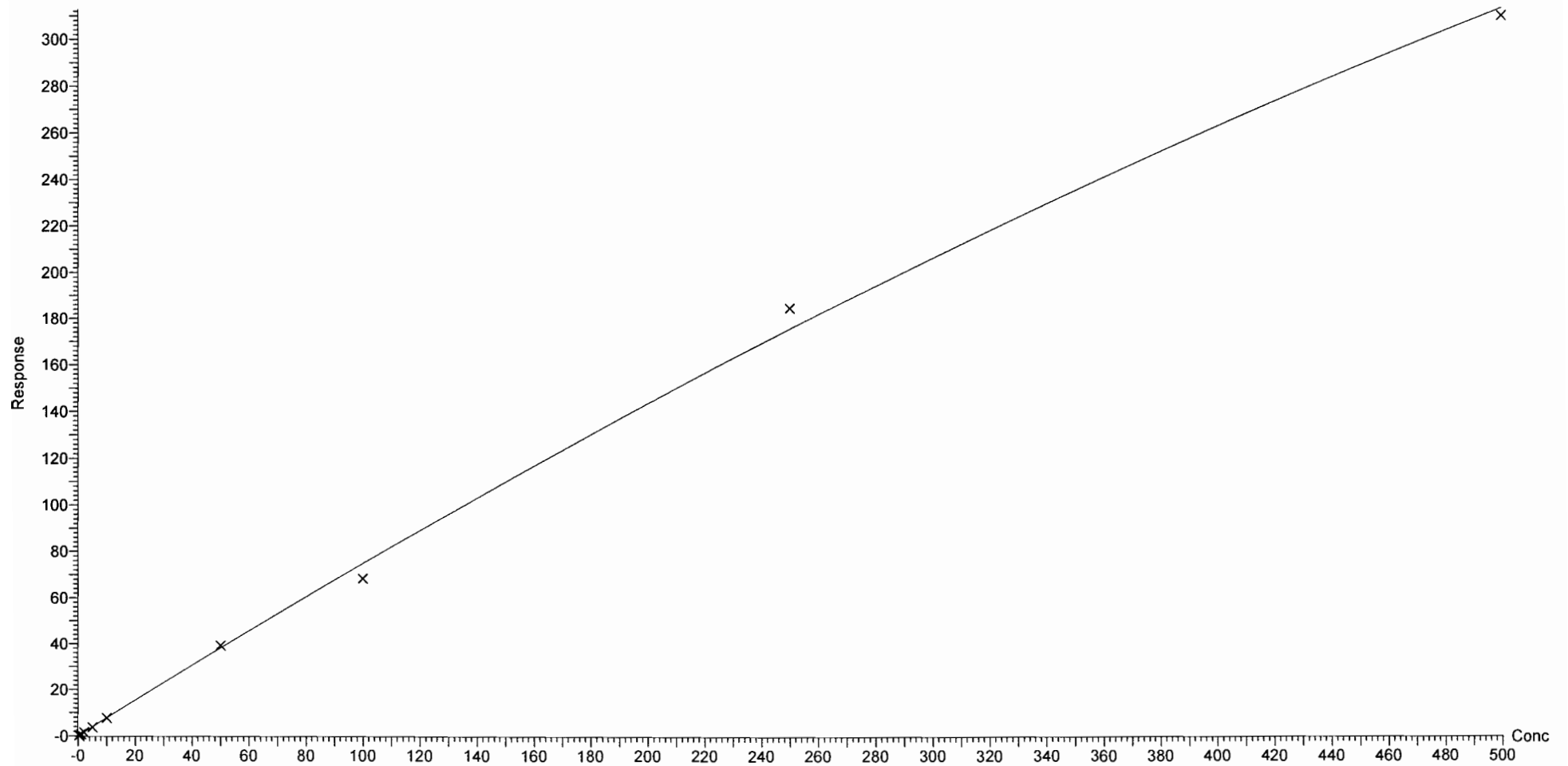
Compound name: PFODA

Coefficient of Determination: $R^2 = 0.998051$

Calibration curve: $-0.000306754 * x^2 + 0.779034 * x + 0.0170433$

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

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

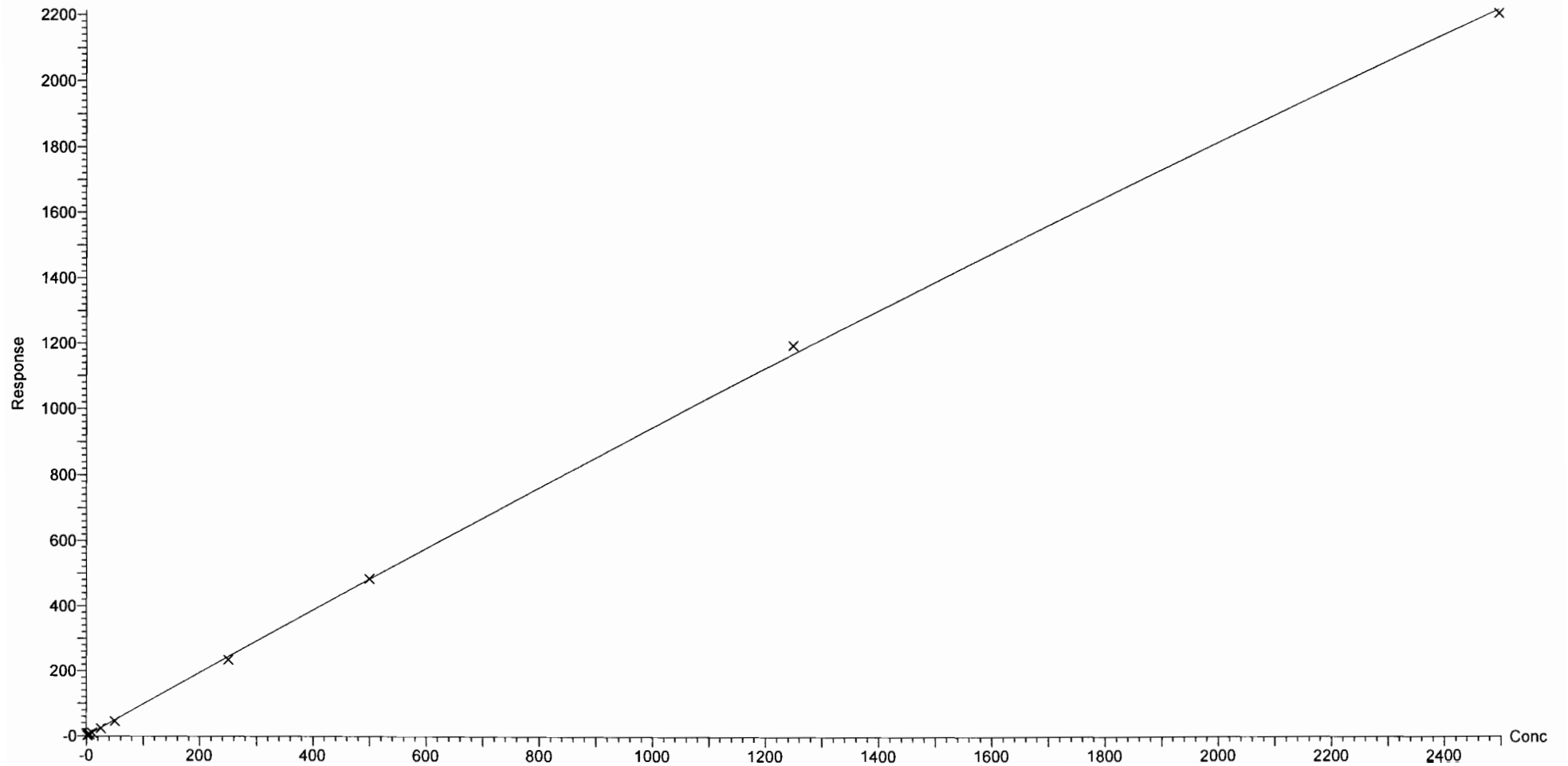


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

Compound name: N-MeFOSE
Coefficient of Determination: $R^2 = 0.999572$
Calibration curve: $-3.91662e-005 * x^2 + 0.983423 * x + -0.00480812$
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:00:28 Pacific Daylight Time

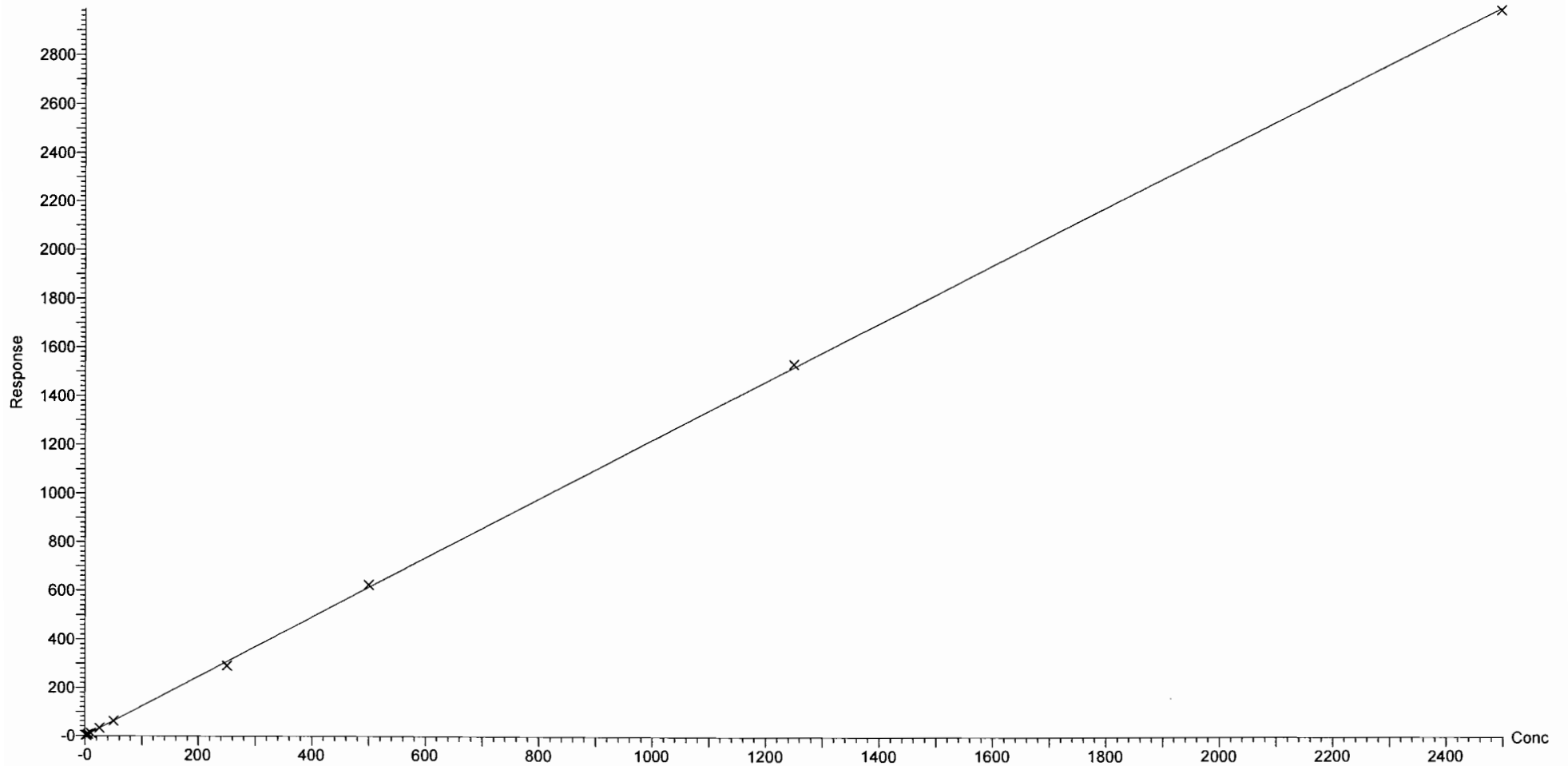
Compound name: N-EtFOSE

Coefficient of Determination: $R^2 = 0.999756$

Calibration curve: $-1.63295e-005 * x^2 + 1.23645 * x + -0.173527$

Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

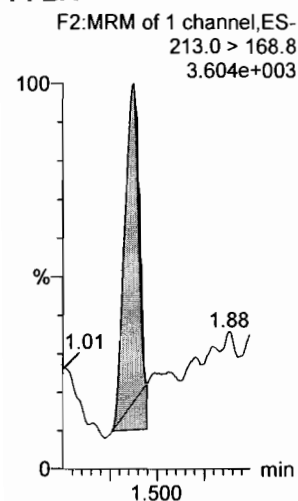
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

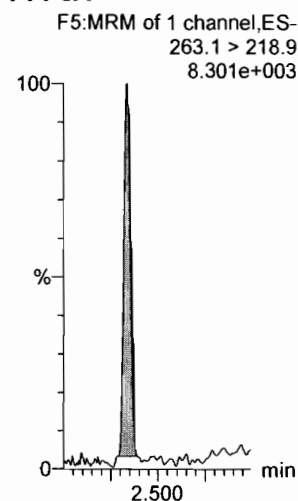
Calibration: 04 Jun 2018 08:44:22

Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

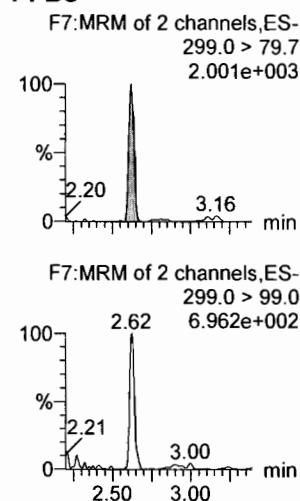
PFBA



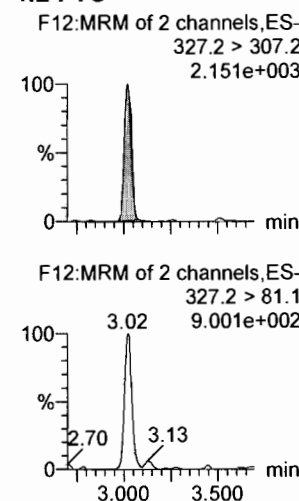
PFPeA



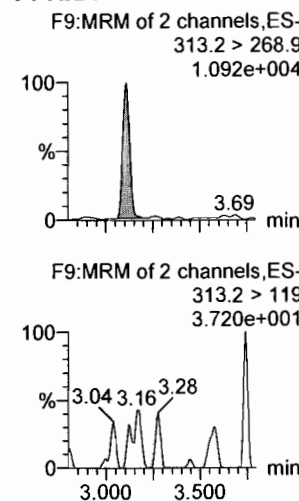
PFBS



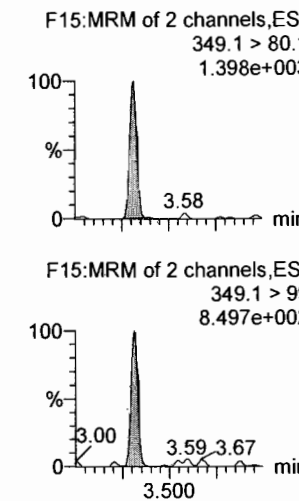
4:2 FTS



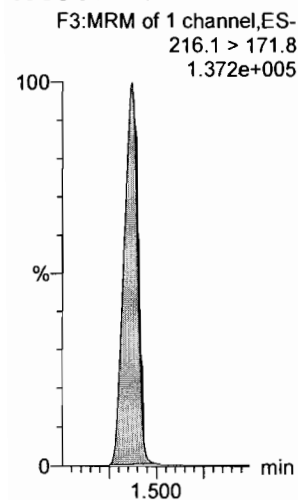
PFHxA



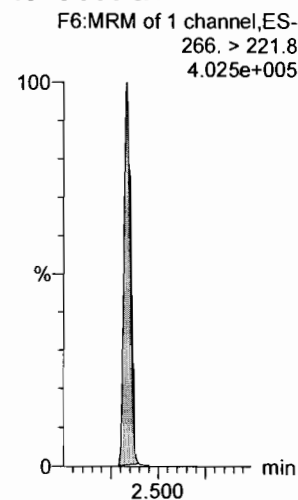
PFPeS



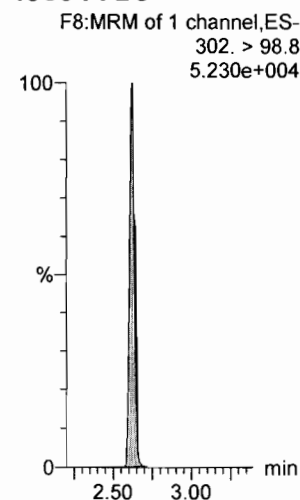
13C3-PFBA



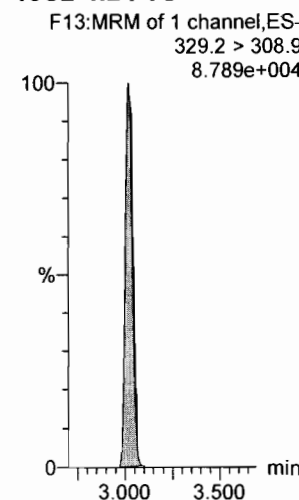
13C3-PFPeA



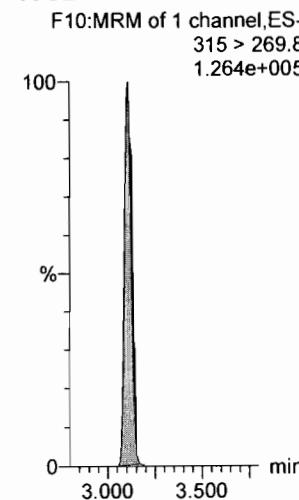
13C3-PFBS



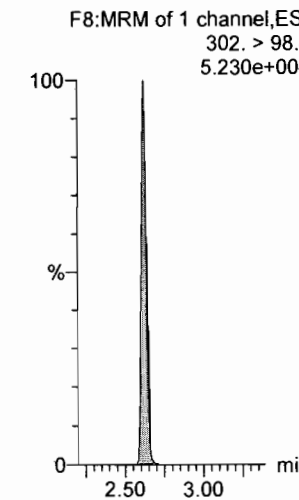
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



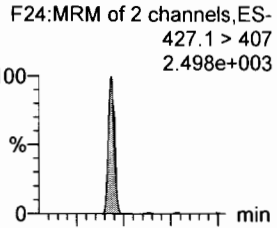
Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

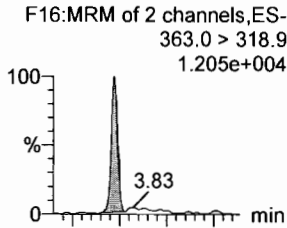
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

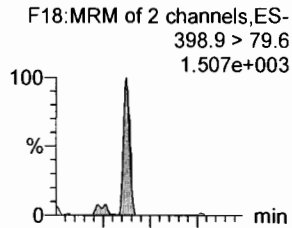
6:2 FTS



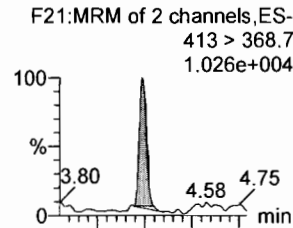
PFHpa



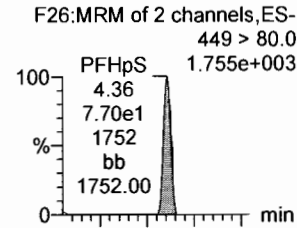
L-PFHxS



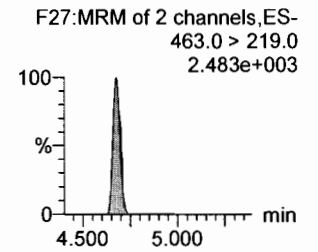
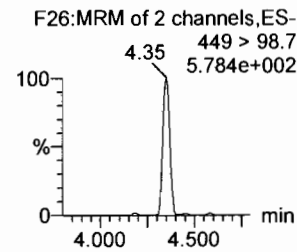
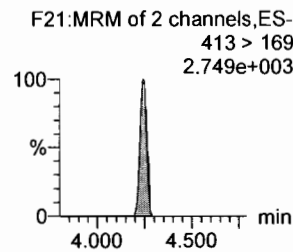
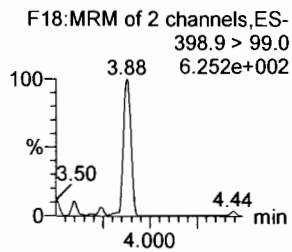
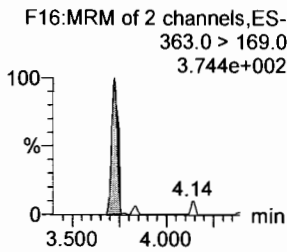
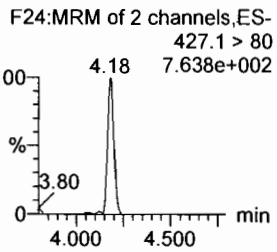
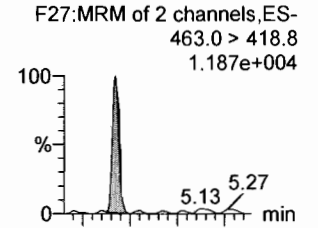
L-PFOA



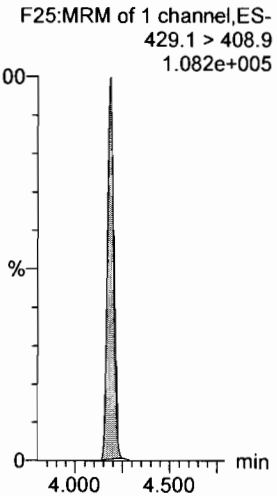
PFHpS



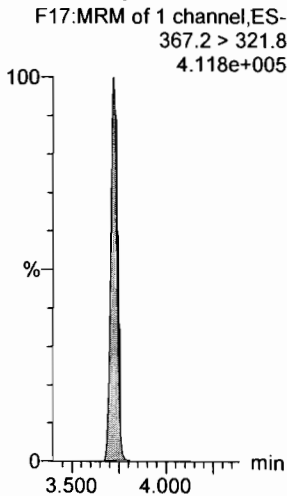
PFNA



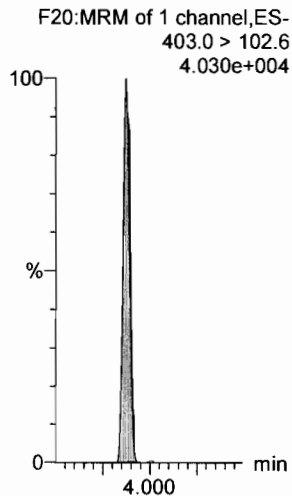
13C2-6:2 FTS



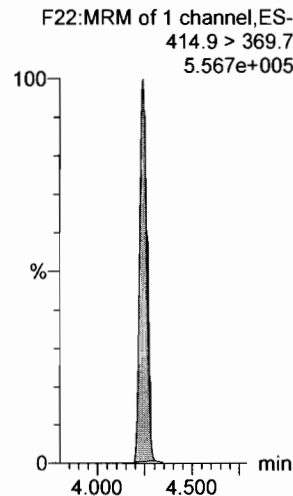
13C4-PFHpa



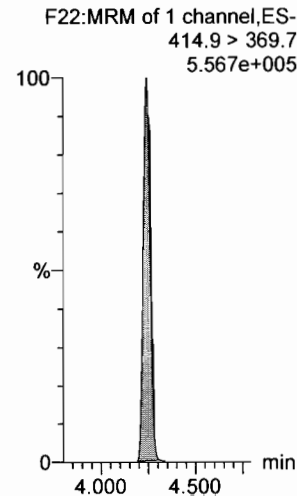
18O2-PFHxS



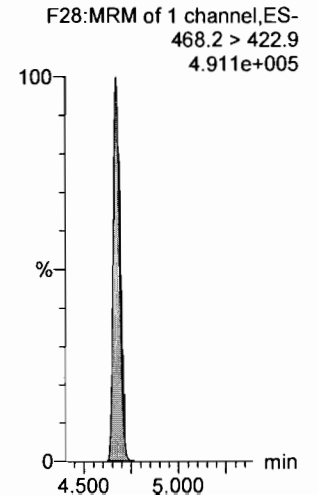
13C2-PFOA



13C2-PFOA



13C5-PFNA



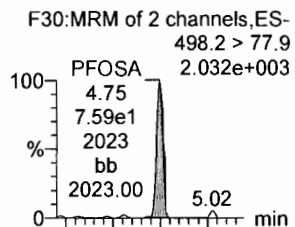
Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

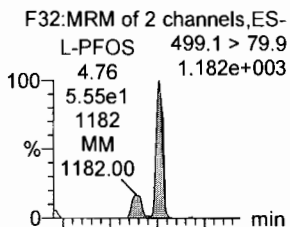
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

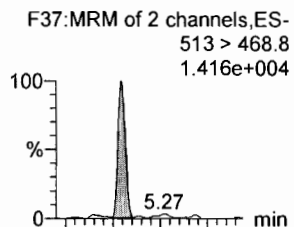
PFOSA



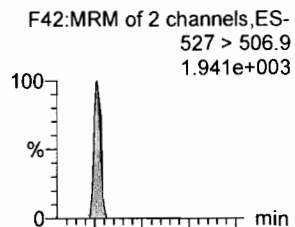
L-PFOS



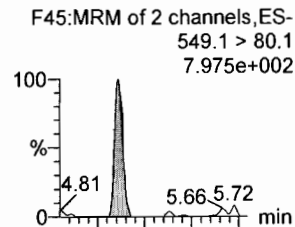
PFDA



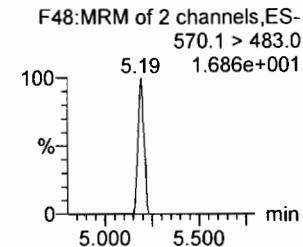
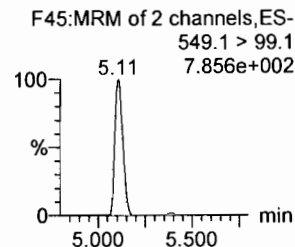
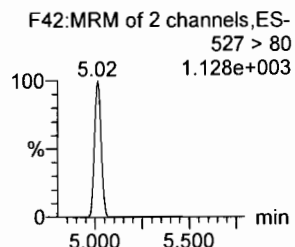
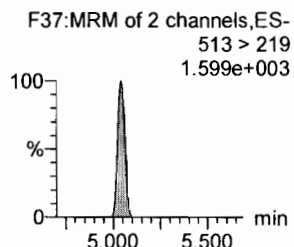
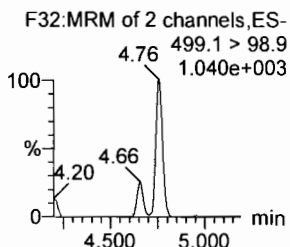
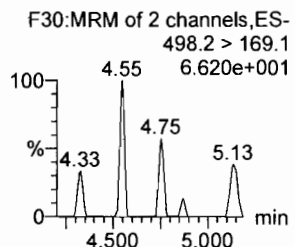
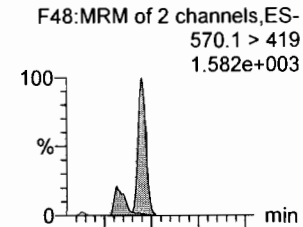
8:2 FTS



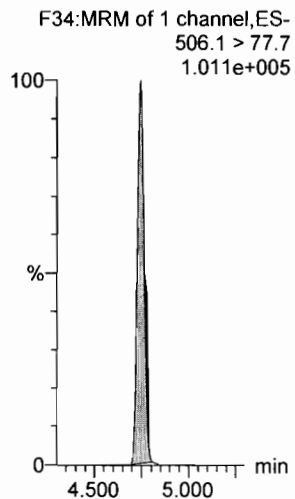
PFNS



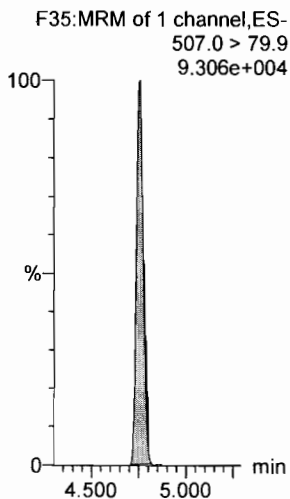
L-MeFOSAA



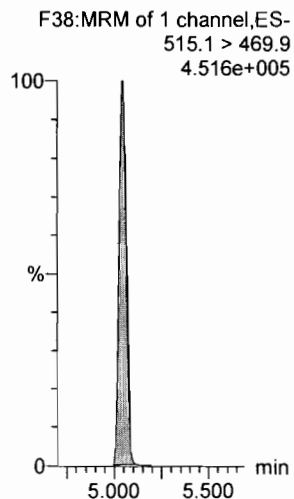
13C8-PFOSA



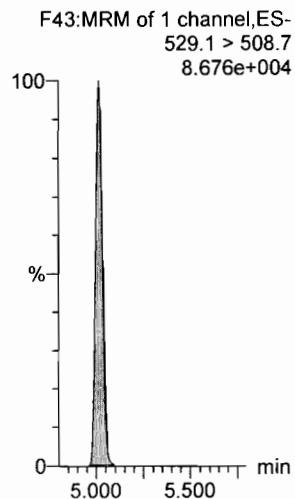
13C8-PFOS



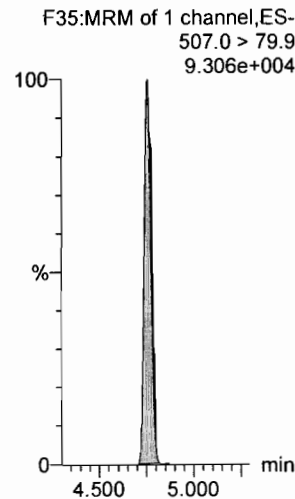
13C2-PFDA



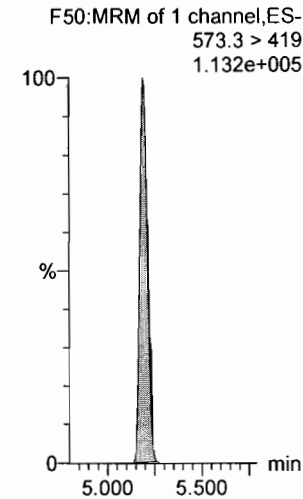
13C2-8:2 FTS



13C8-PFNS



d3-N-MeFOSAA



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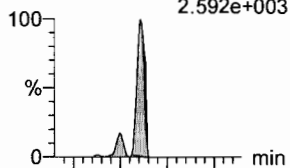
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

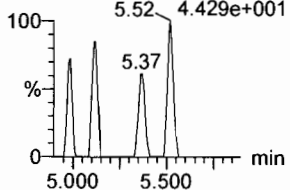
Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

L-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
2.592e+003

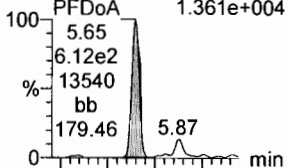


F51:MRM of 2 channels,ES-
584.2 > 483.0
4.429e+001

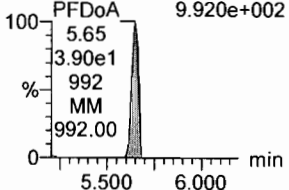


PFDoA

F54:MRM of 4 channels,ES-
612.9 > 569.0
1.361e+004

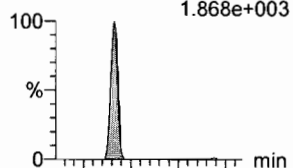


F54:MRM of 4 channels,ES-
612.9 > 318.8
9.920e+002

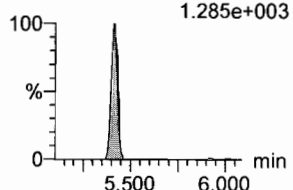


PFDS

F53:MRM of 2 channels,ES-
598.8 > 80
1.868e+003



F53:MRM of 2 channels,ES-
598.8 > 98.7
1.285e+003

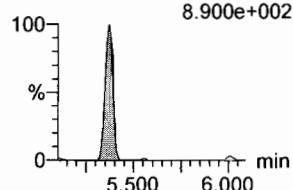


PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
1.578e+004

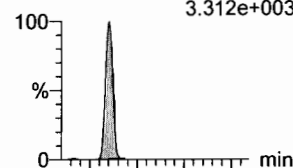


F46:MRM of 2 channels,ES-
563.0 > 269
8.900e+002

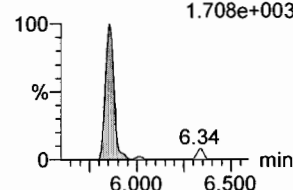


N-MeFOSA

F36:MRM of 2 channels,ES-
512.1 > 168.9
3.312e+003

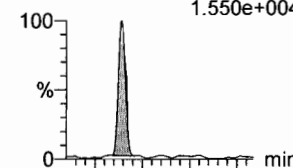


F36:MRM of 2 channels,ES-
512.1 > 219
1.708e+003

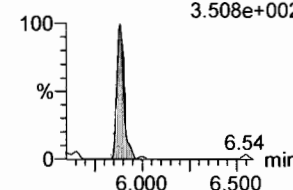


PFTrDA

F60:MRM of 2 channels,ES-
662.9 > 618.9
1.550e+004

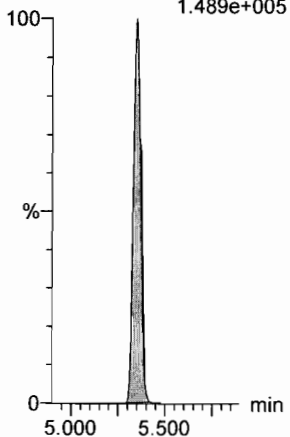


F60:MRM of 2 channels,ES-
662.9 > 319
3.508e+002



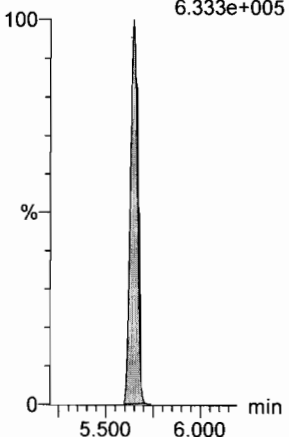
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
1.489e+005



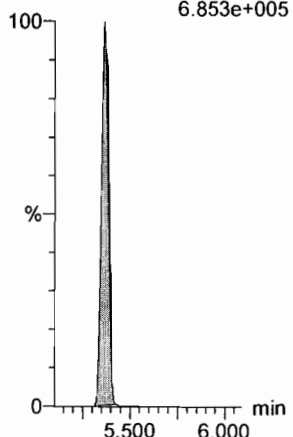
13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.333e+005



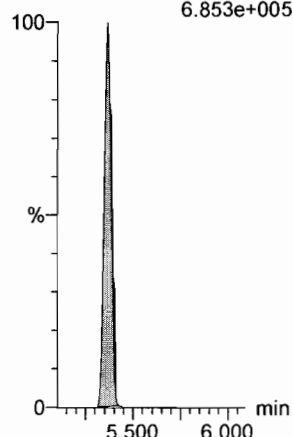
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
6.853e+005



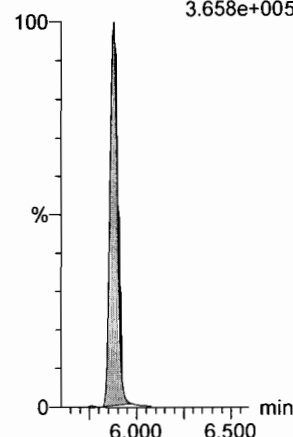
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
6.853e+005



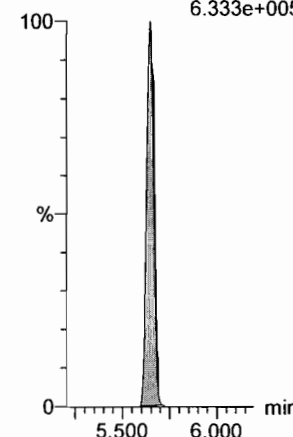
d3-N-MeFOSA

F39:MRM of 1 channel,ES-
515.2 > 168.9
3.658e+005



13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.333e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

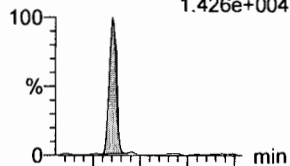
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

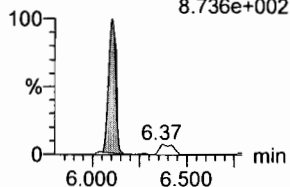
Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
1.426e+004

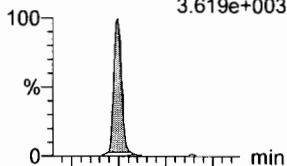


F61:MRM of 2 channels,ES-
712.9 > 369
8.736e+002

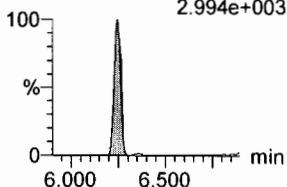


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
3.619e+003

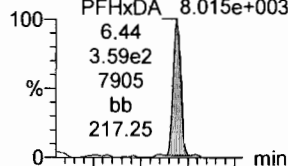


F41:MRM of 2 channels,ES-
526.1 > 219
2.994e+003

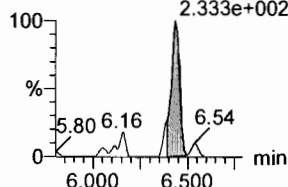


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
8.015e+003

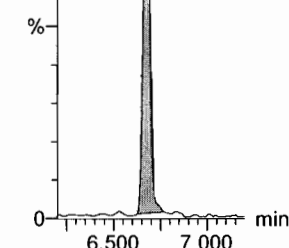


F63:MRM of 2 channels,ES-
813.1 > 219
2.333e+002



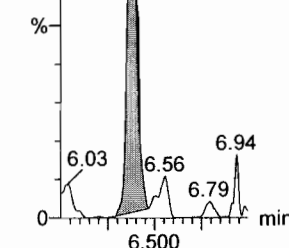
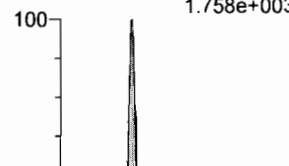
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
1.374e+004



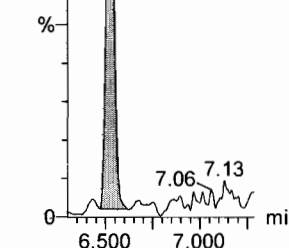
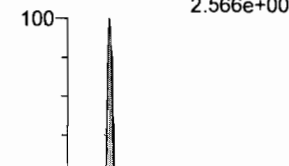
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
1.758e+003



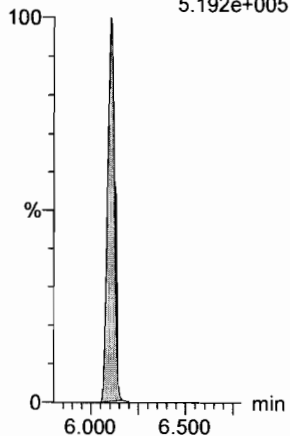
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
2.566e+003



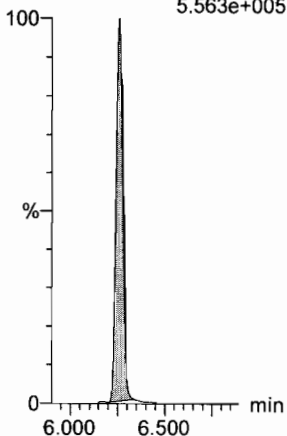
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
5.192e+005



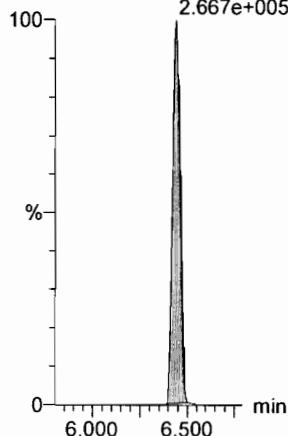
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
5.563e+005



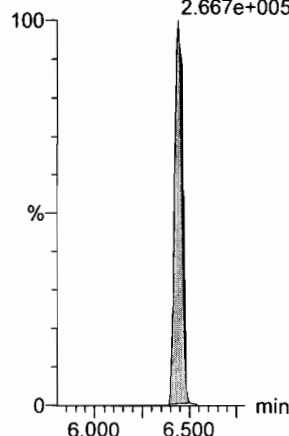
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.667e+005



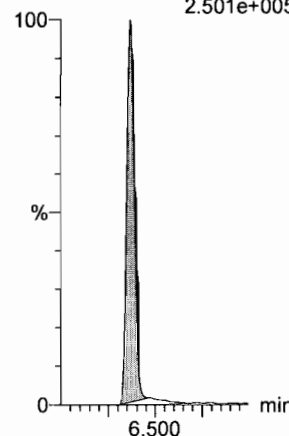
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.667e+005



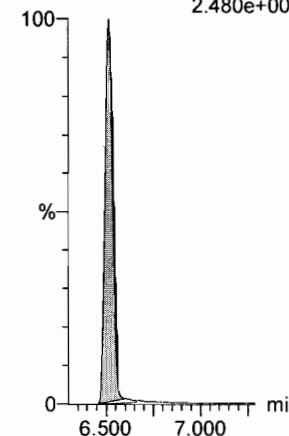
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.501e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.480e+005

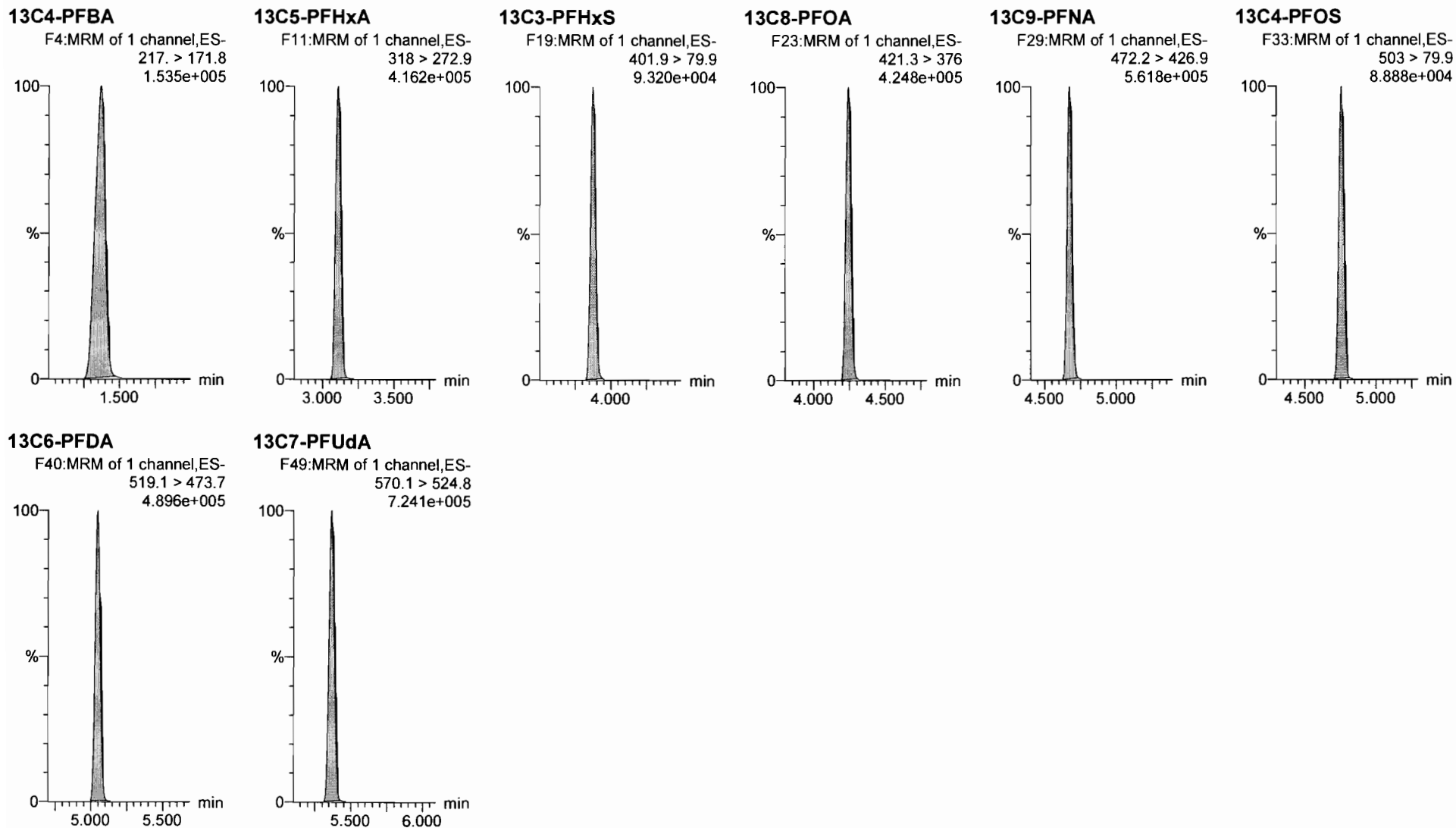


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

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Name: 180603M2_2, Date: 03-Jun-2018, Time: 18:07:52, ID: ST180603M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902



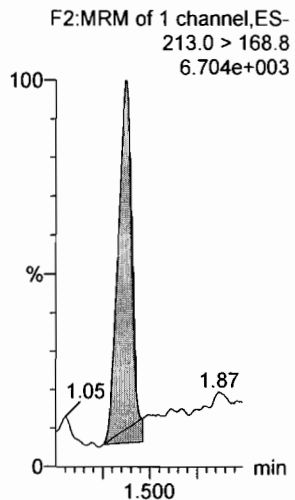
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

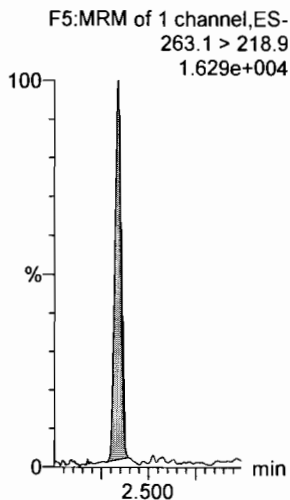
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_3, Date: 03-Jun-2018, Time: 18:18:22, ID: ST180603M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903

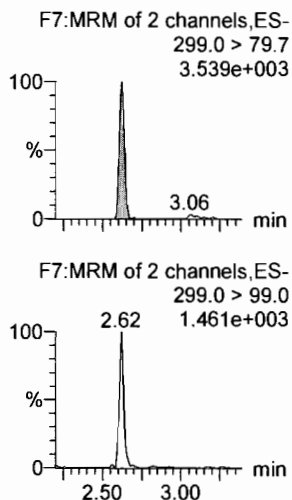
PFBA



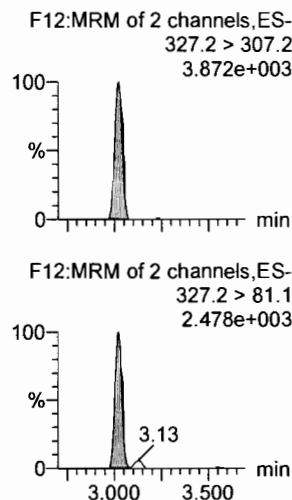
PFPeA



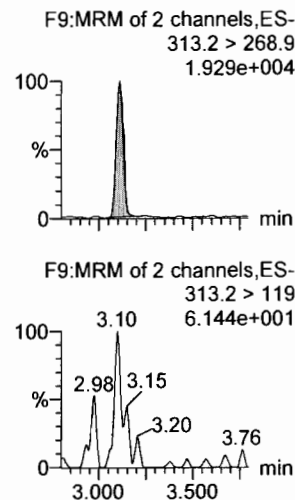
PFBS



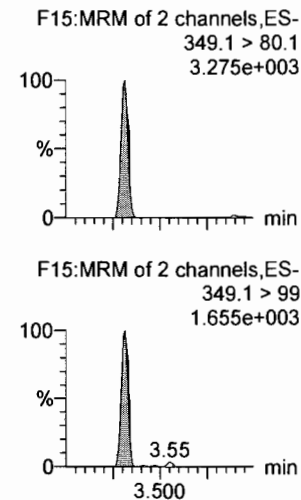
4:2 FTS



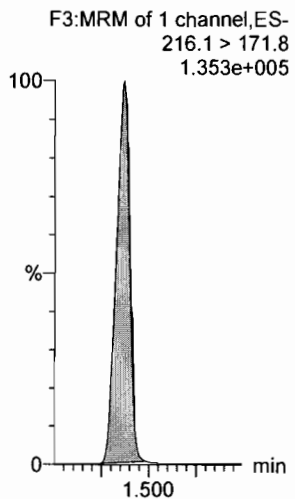
PFHxA



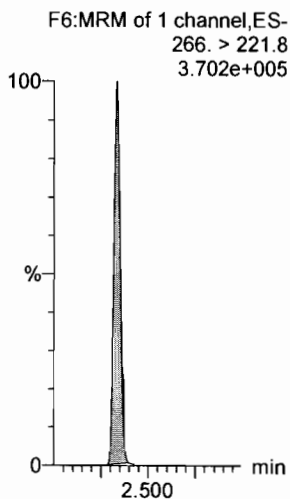
PFPeS



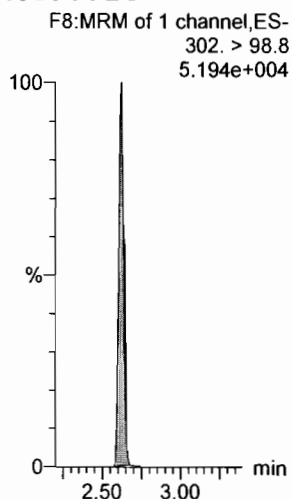
13C3-PFBA



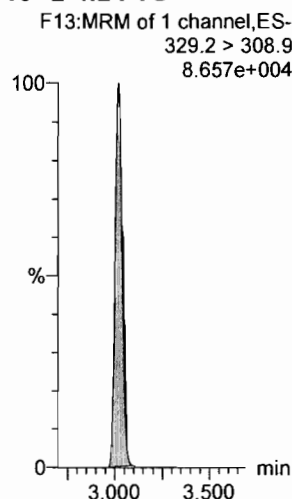
13C3-PFPeA



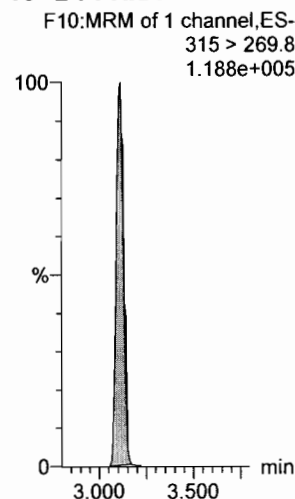
13C3-PFBS



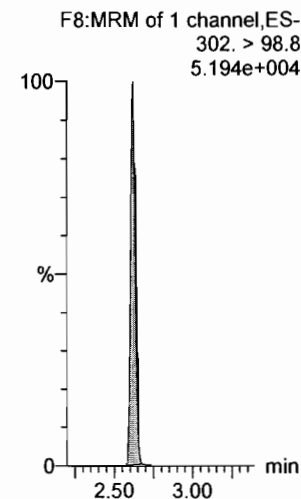
13C2-4:2 FTS



13C2-PFHxA



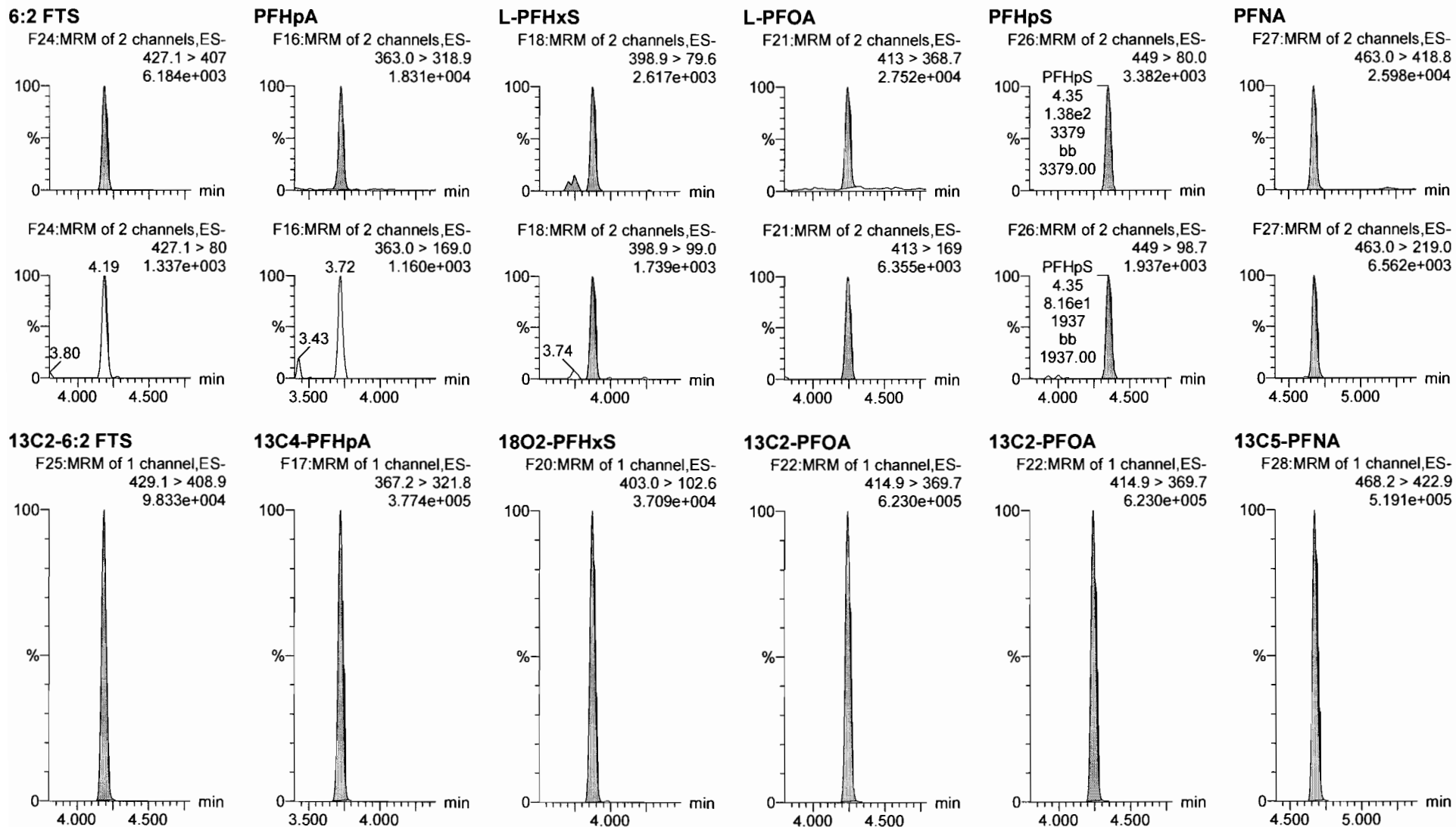
13C3-PFBS



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_3, Date: 03-Jun-2018, Time: 18:18:22, ID: ST180603M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903



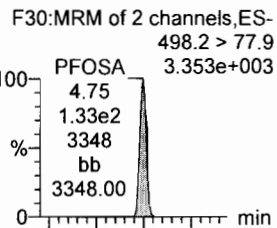
Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

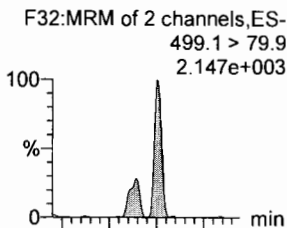
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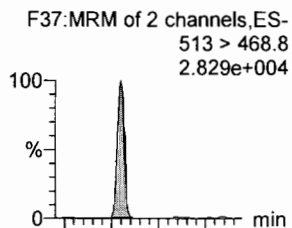
PFOSA



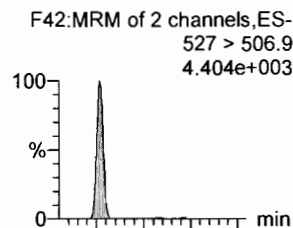
L-PFOS



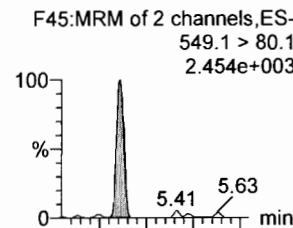
PFDA



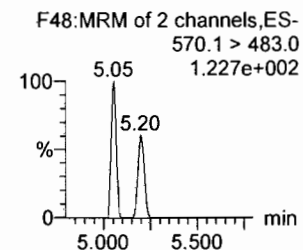
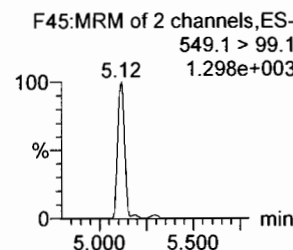
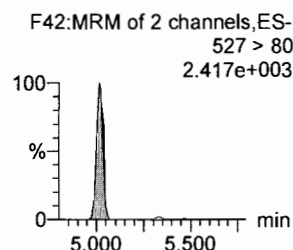
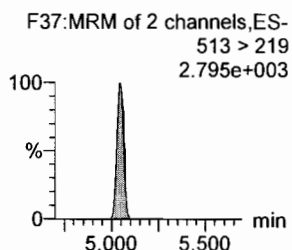
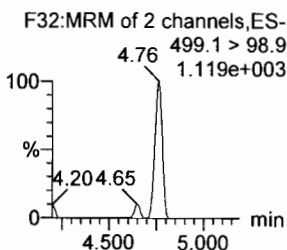
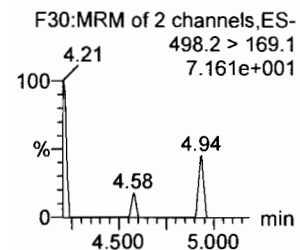
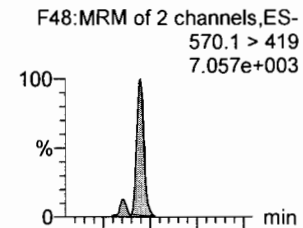
8:2 FTS



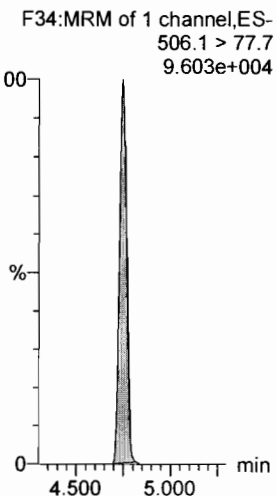
PFNS



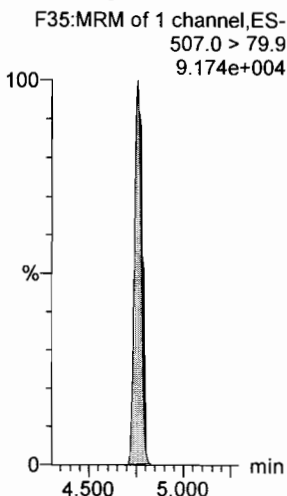
L-MeFOSAA



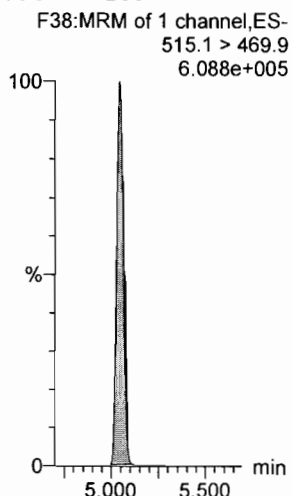
13C8-PFOSA



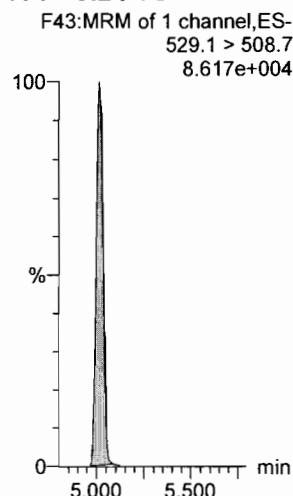
13C8-PFOS



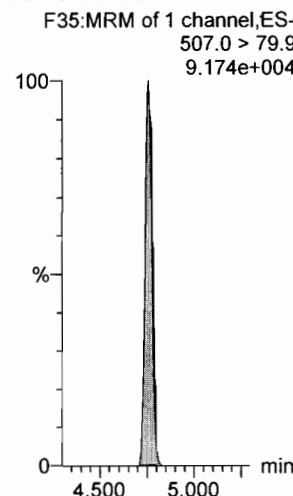
13C2-PFDA



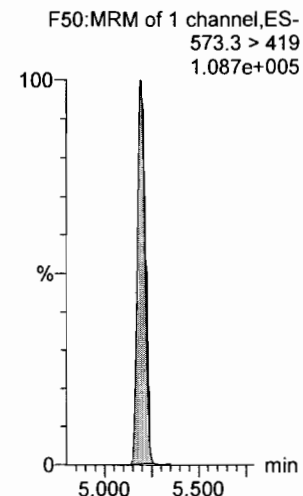
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

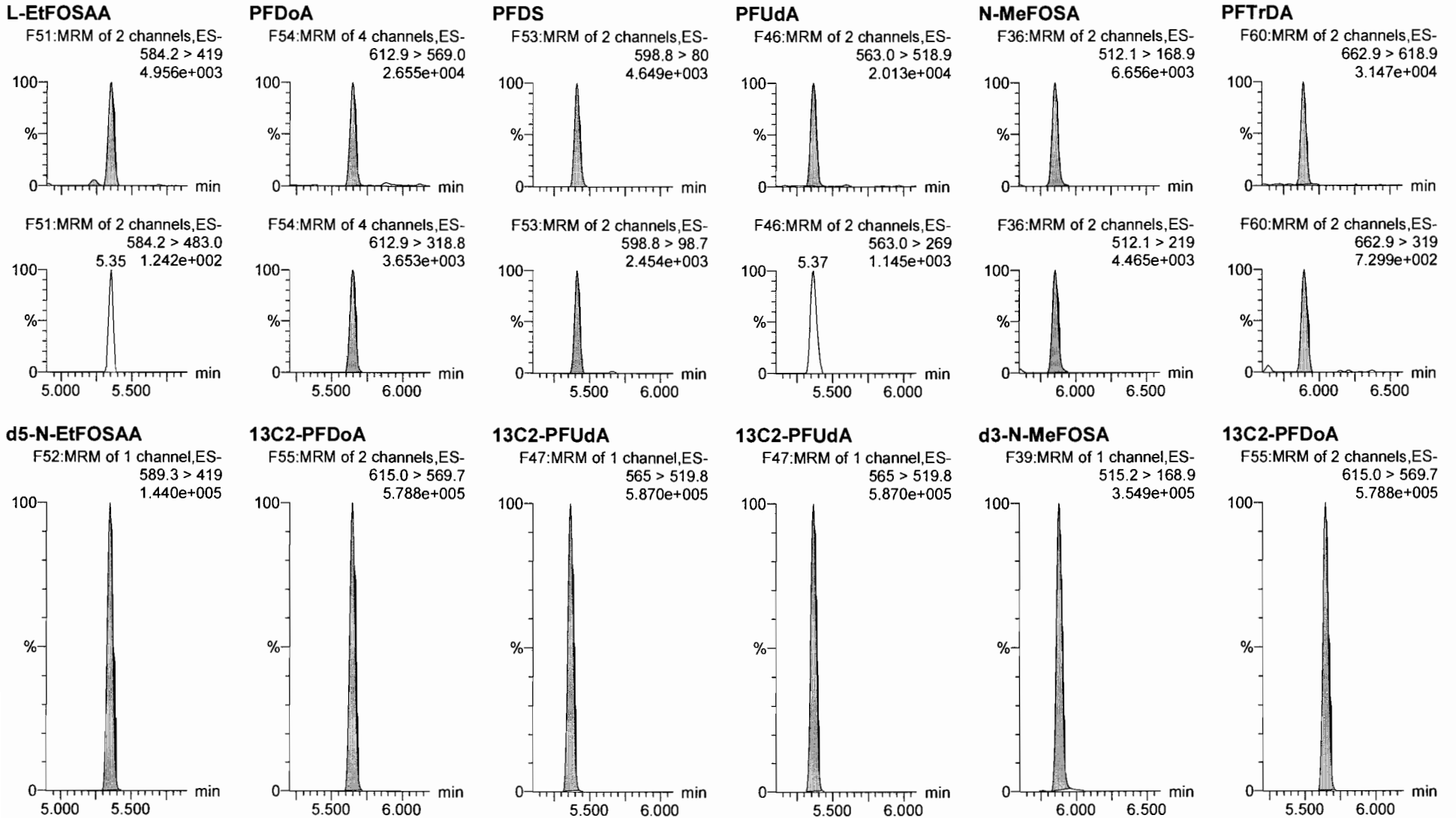


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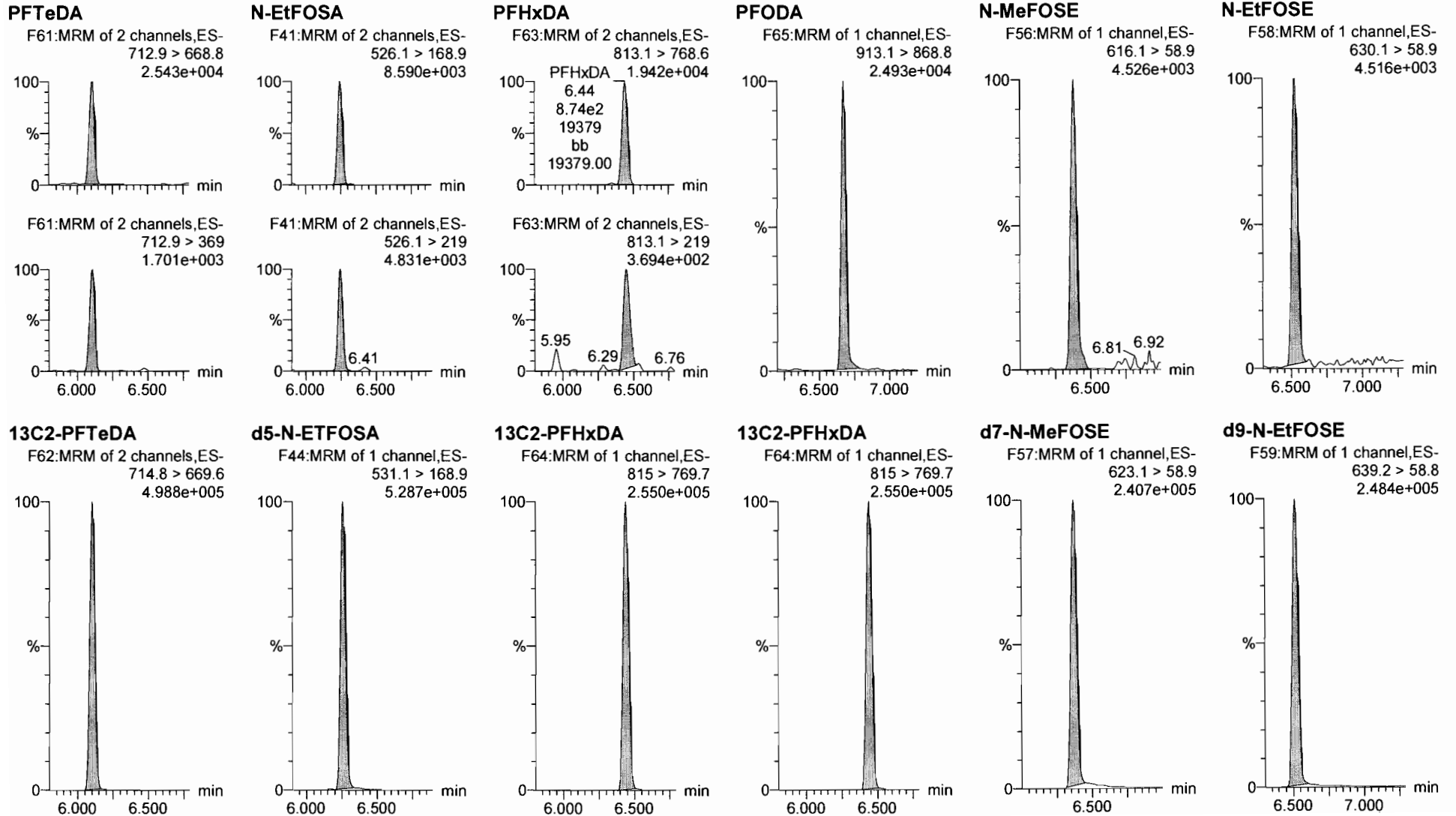


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Name: 180603M2_3, Date: 03-Jun-2018, Time: 18:18:22, ID: ST180603M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

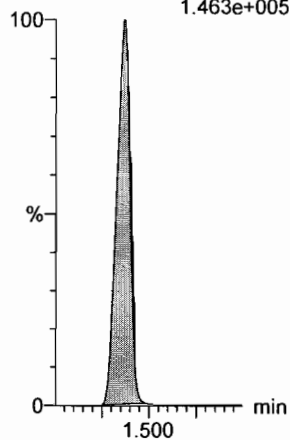
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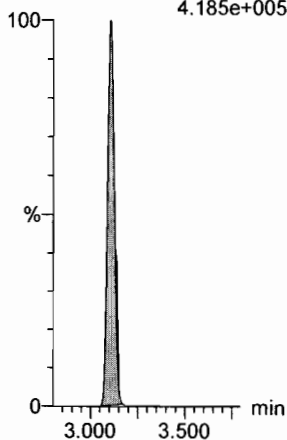
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.463e+005



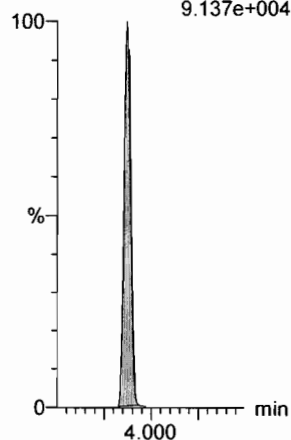
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.185e+005



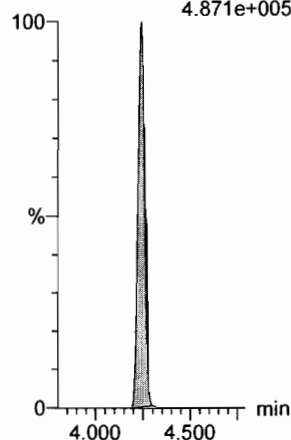
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
9.137e+004



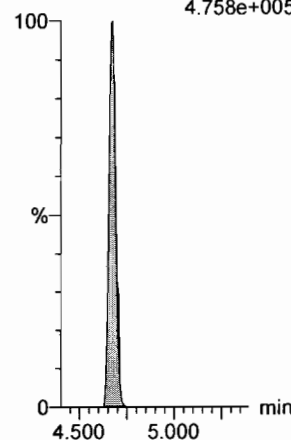
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.871e+005



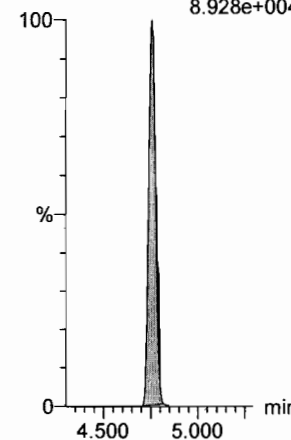
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
4.758e+005



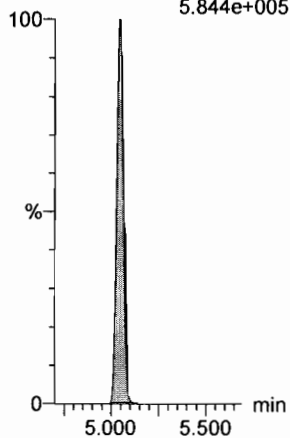
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.928e+004



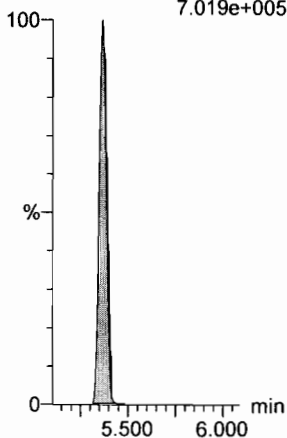
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.844e+005



13C7-PFUDa

F49:MRM of 1 channel,ES-
570.1 > 524.8
7.019e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

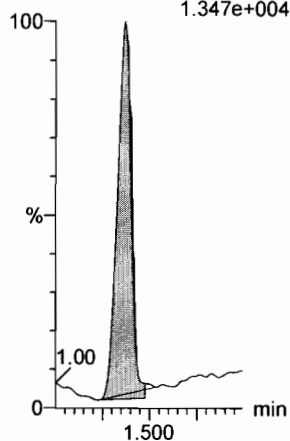
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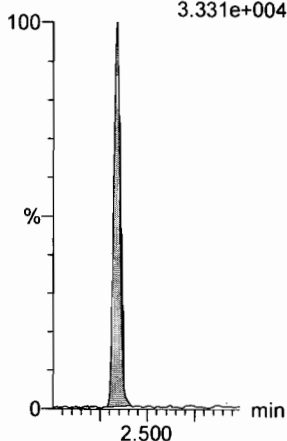
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
1.347e+004



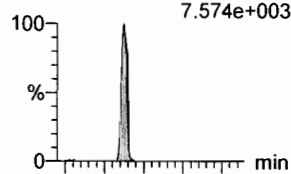
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
3.331e+004

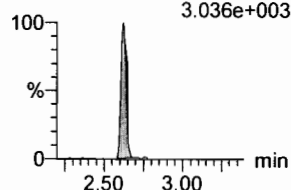


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
7.574e+003

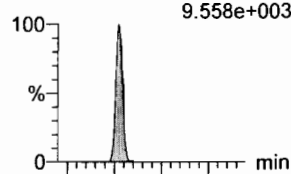


F7:MRM of 2 channels,ES-
299.0 > 99.0
3.036e+003

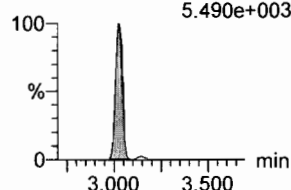


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
9.558e+003

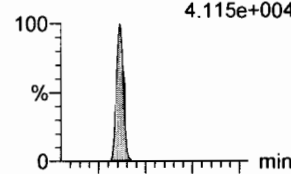


F12:MRM of 2 channels,ES-
327.2 > 81.1
5.490e+003

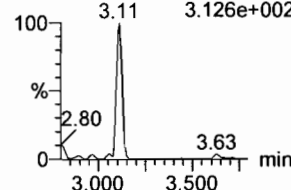


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
4.115e+004

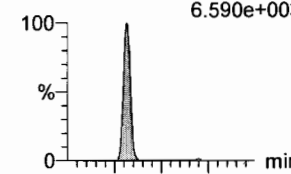


F9:MRM of 2 channels,ES-
313.2 > 119
3.126e+002

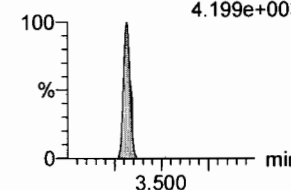


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
6.590e+003

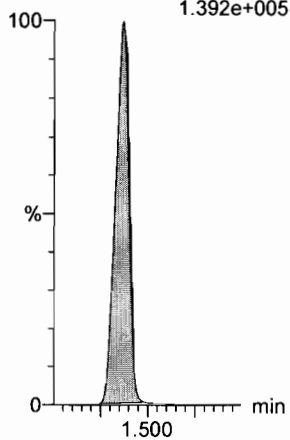


F15:MRM of 2 channels,ES-
349.1 > 99
4.199e+003



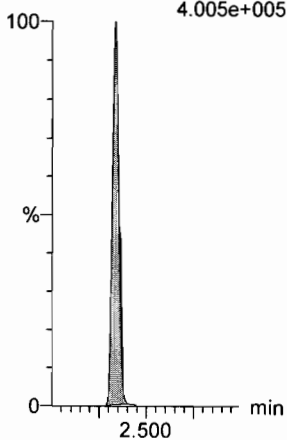
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.392e+005



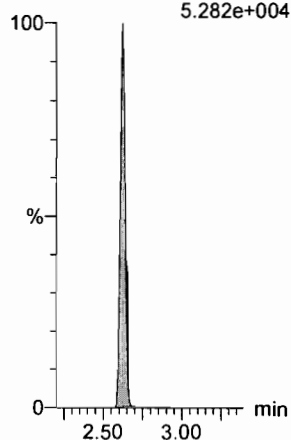
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
4.005e+005



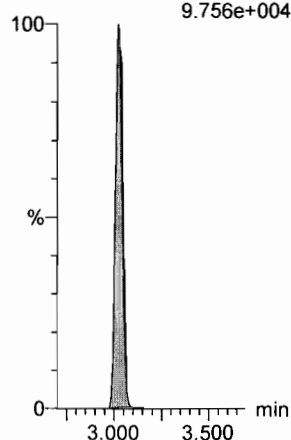
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.282e+004



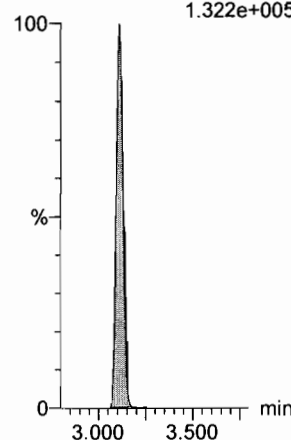
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
9.756e+004



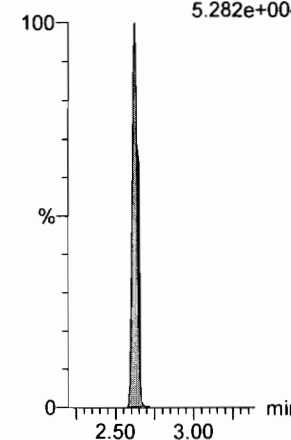
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.322e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.282e+004



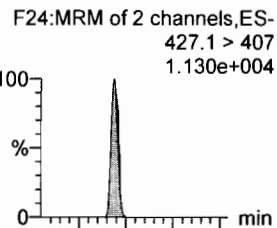
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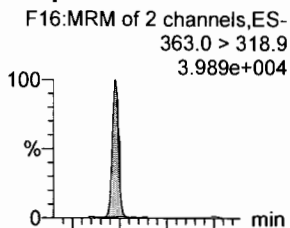
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Name: 180603M2_4, Date: 03-Jun-2018, Time: 18:28:47, ID: ST180603M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

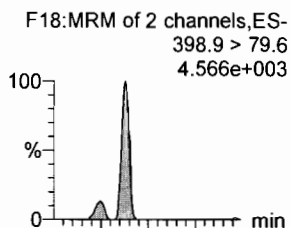
6:2 FTS



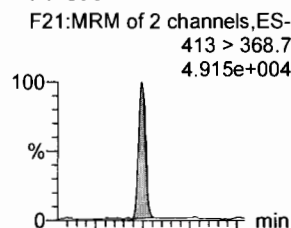
PFHpA



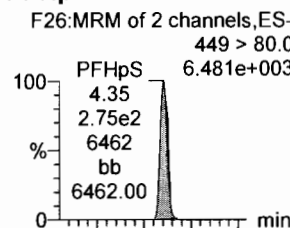
L-PFHxS



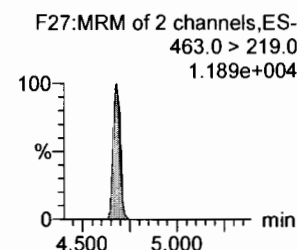
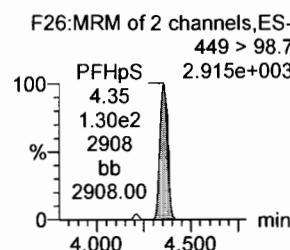
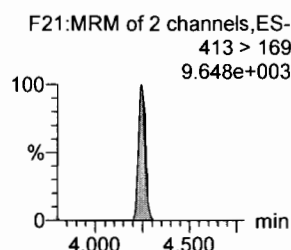
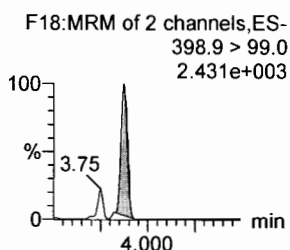
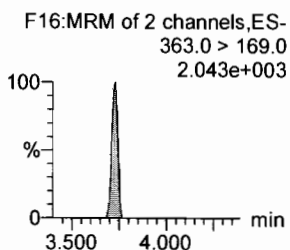
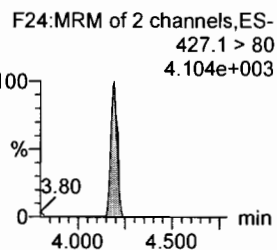
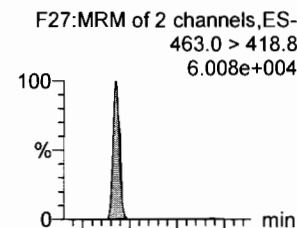
L-PFOA



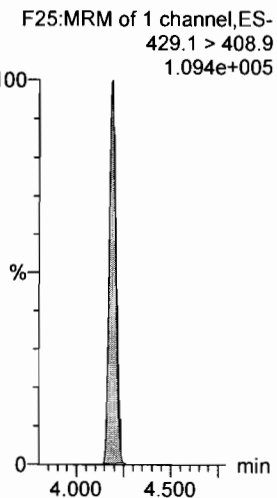
PFHpS



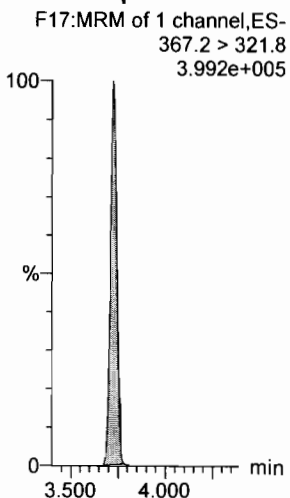
PFNA



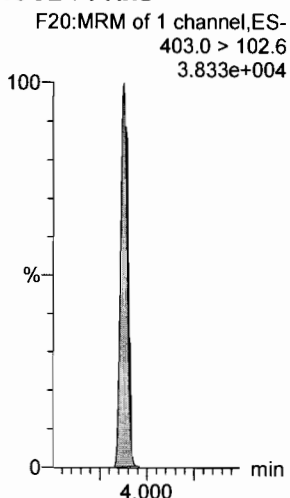
13C2-6:2 FTS



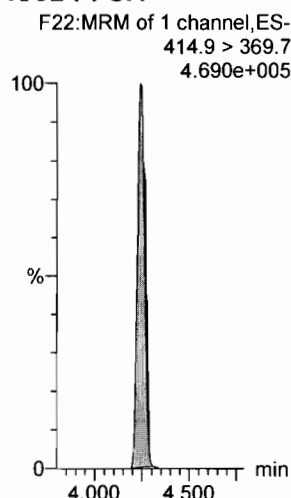
13C4-PFHpA



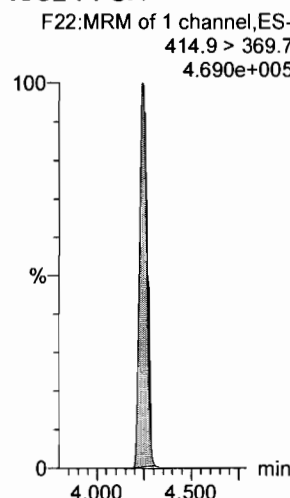
18O2-PFHxS



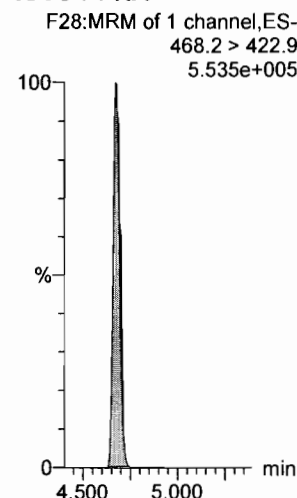
13C2-PFOA



13C2-PFOA



13C5-PFNA



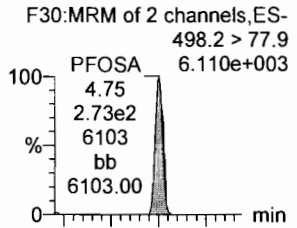
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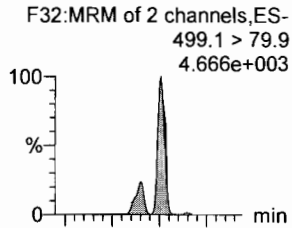
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Name: 180603M2_4, Date: 03-Jun-2018, Time: 18:28:47, ID: ST180603M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

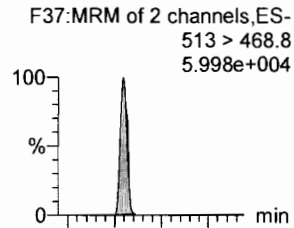
PFOSA



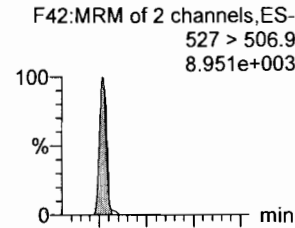
L-PFOS



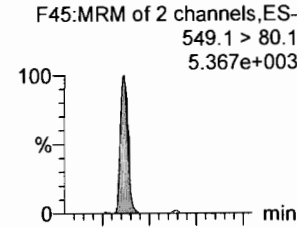
PFDA



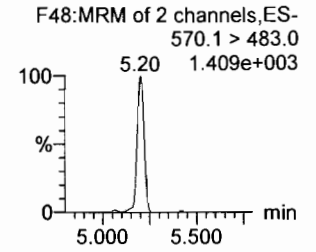
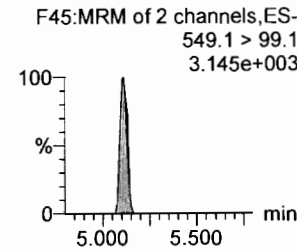
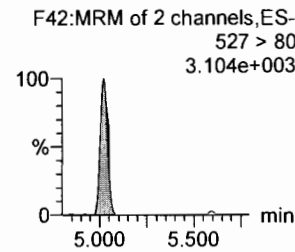
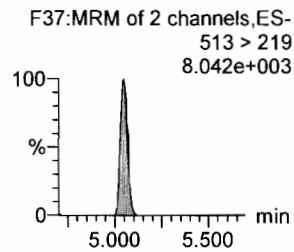
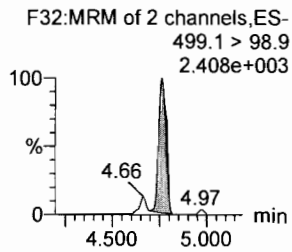
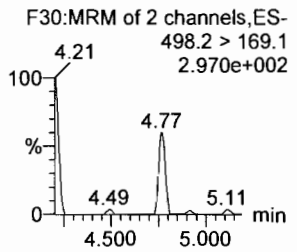
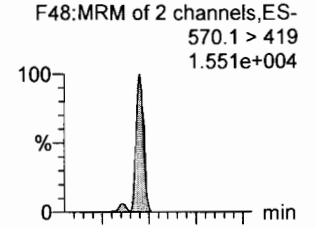
8:2 FTS



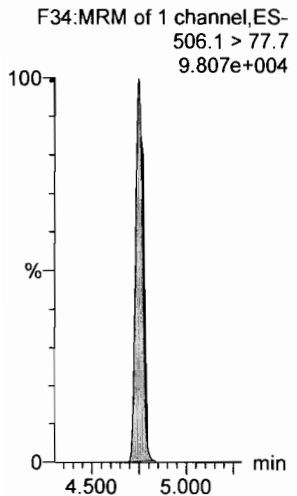
PFNS



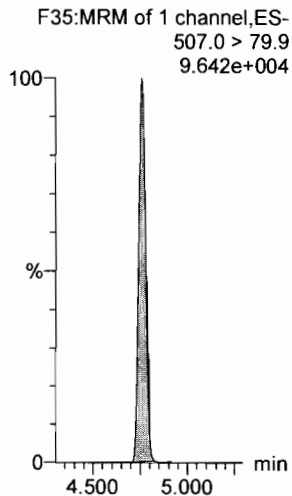
L-MeFOSAA



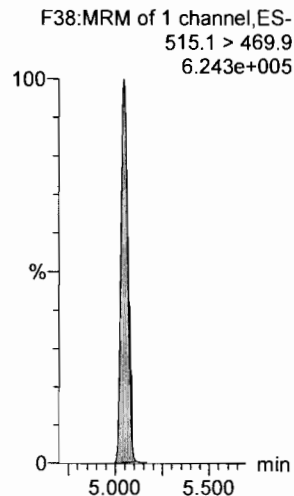
13C8-PFOSA



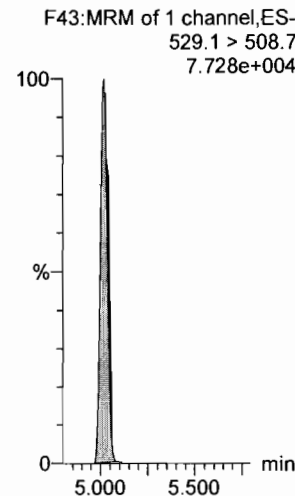
13C8-PFOS



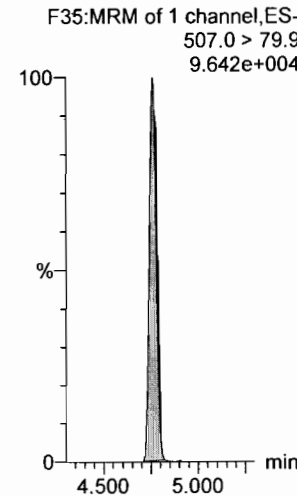
13C2-PFDA



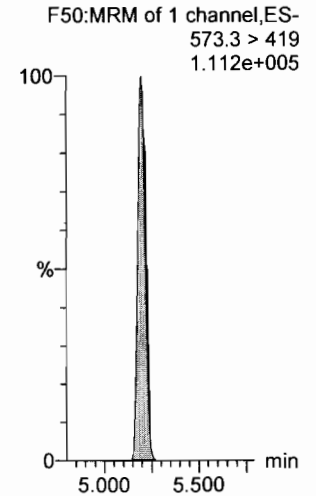
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

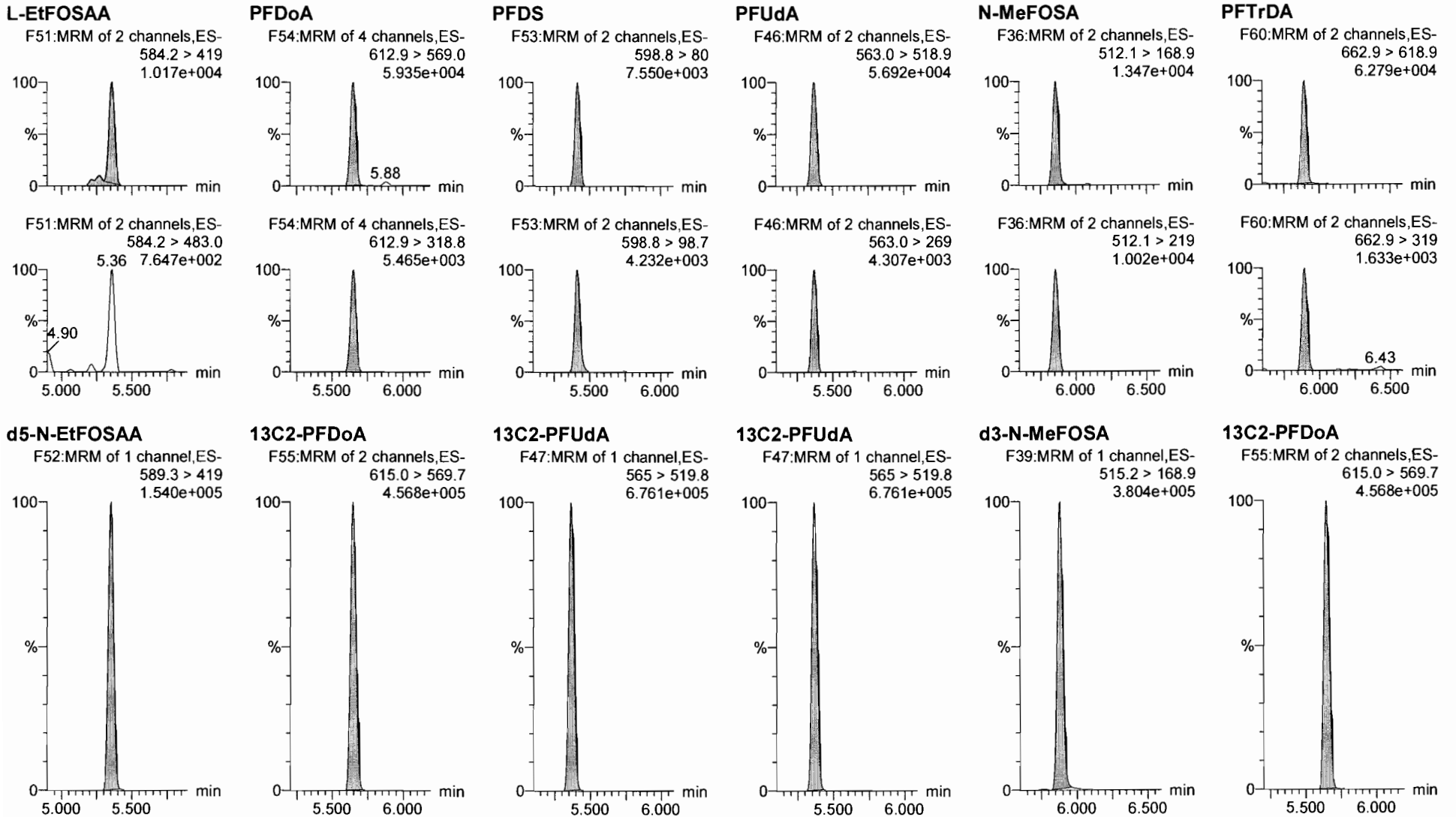


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

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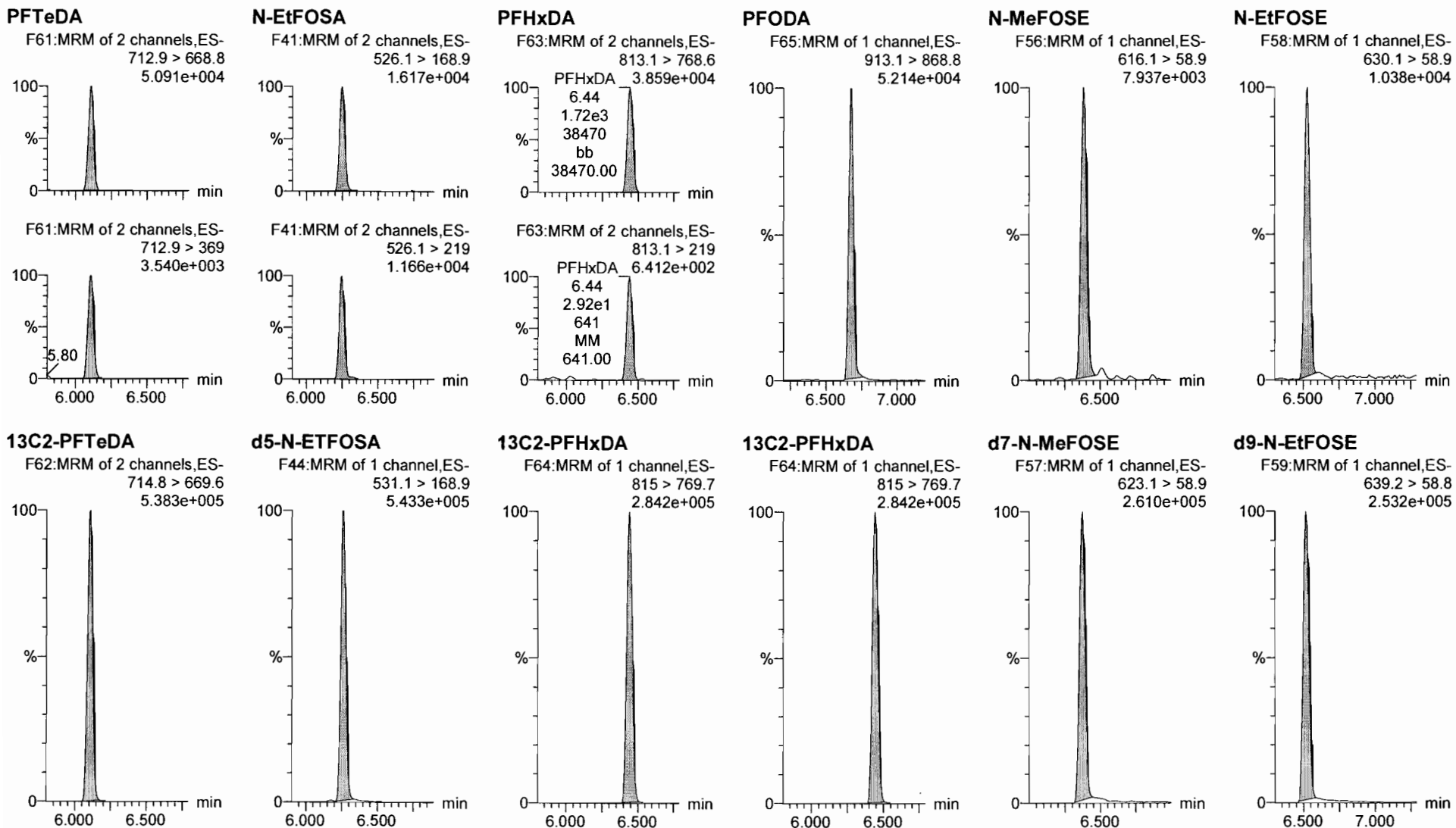


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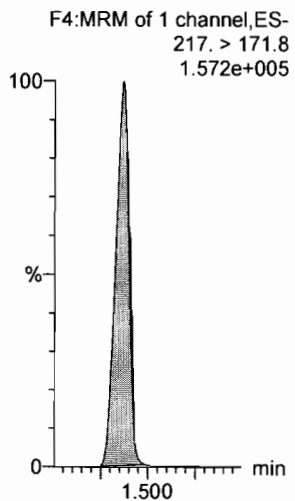
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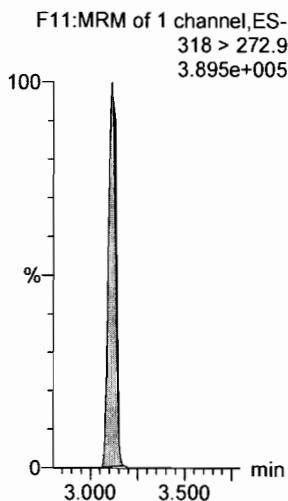
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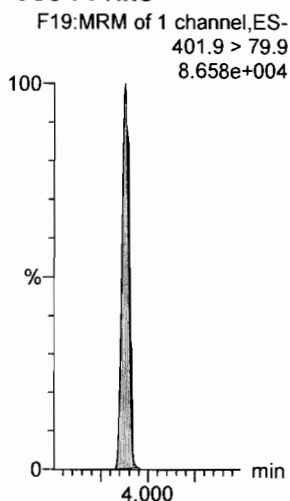
13C4-PFBA



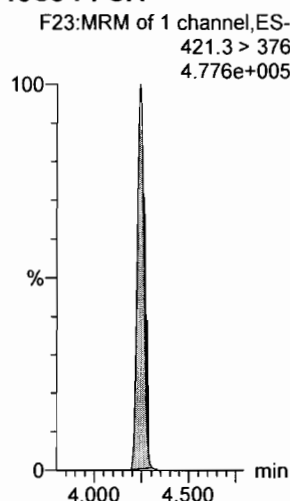
13C5-PFHxA



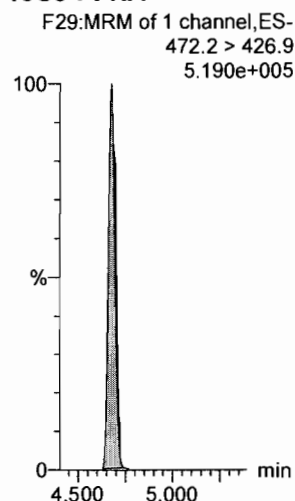
13C3-PFHxS



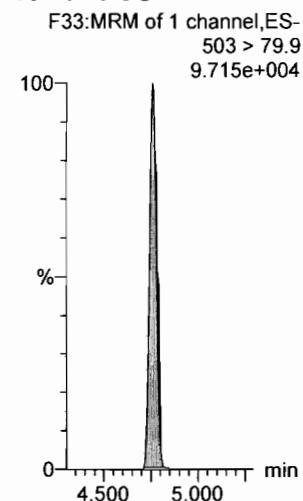
13C8-PFOA



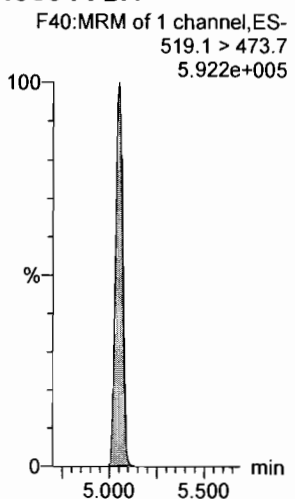
13C9-PFNA



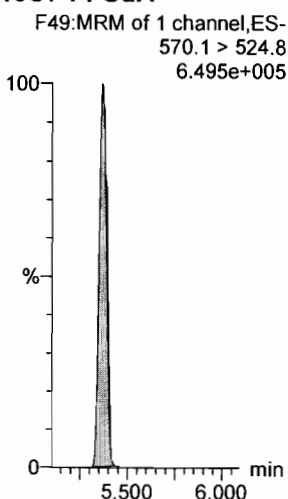
13C4-PFOS



13C6-PFDA



13C7-PFUdA



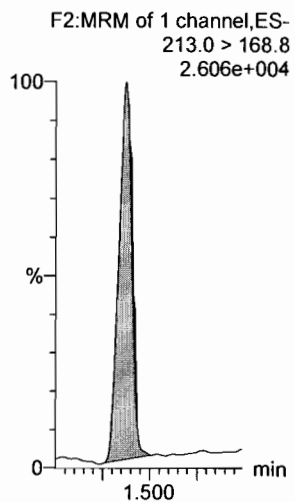
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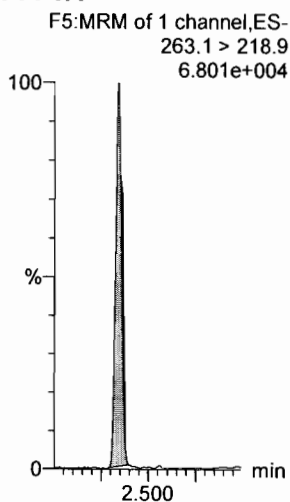
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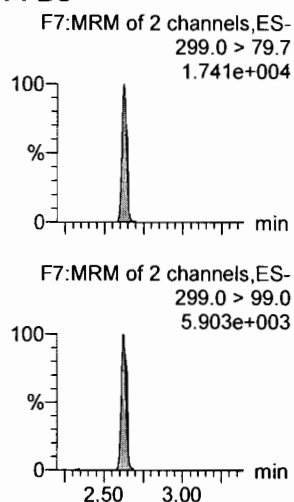
PFBA



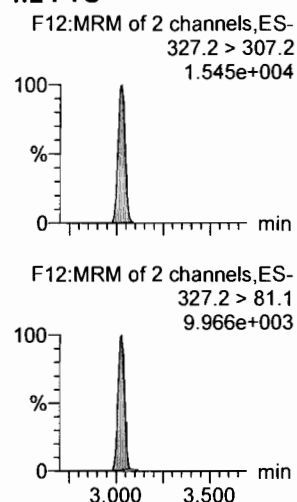
PFPeA



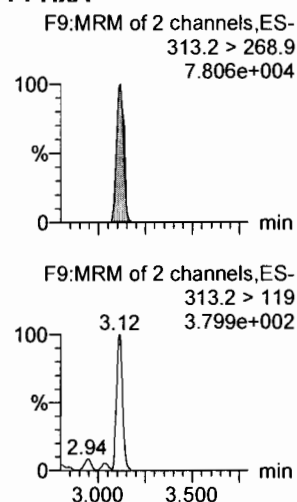
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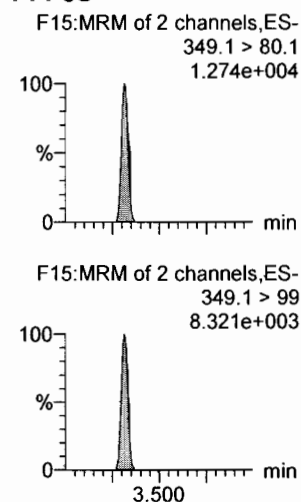
4:2 FTS



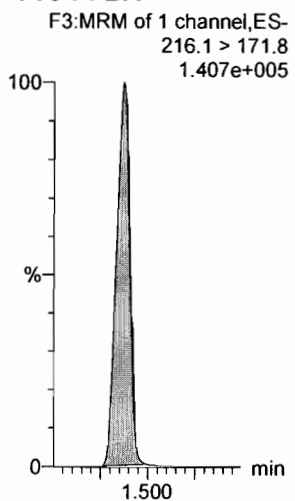
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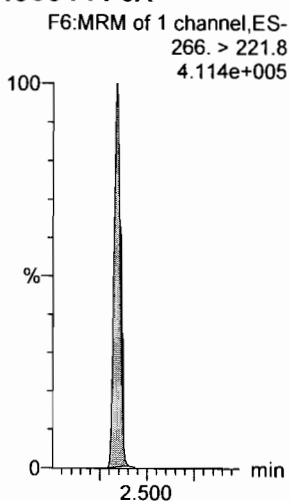
PFPeS



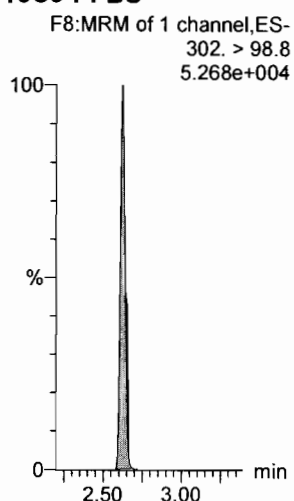
13C3-PFBA



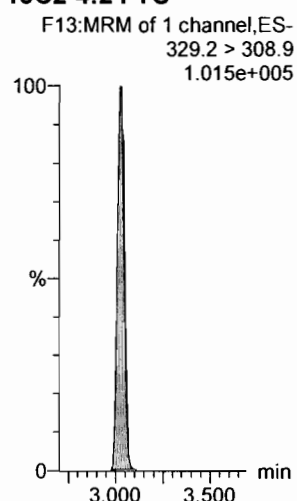
13C3-PFPeA



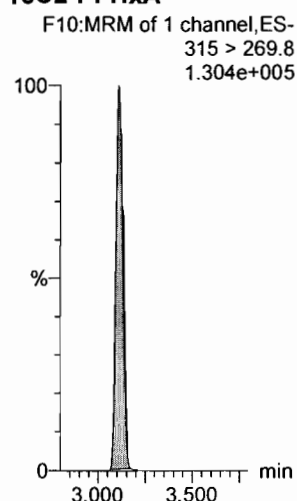
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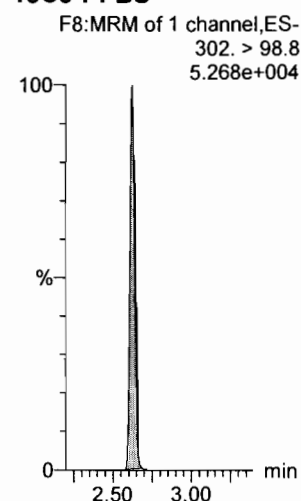
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



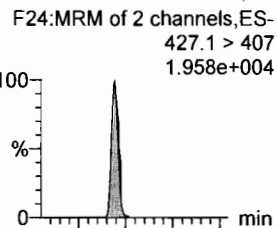
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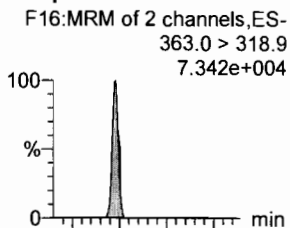
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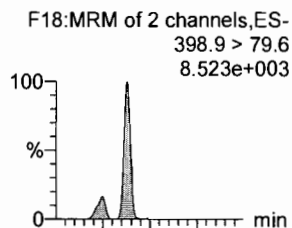
6:2 FTS



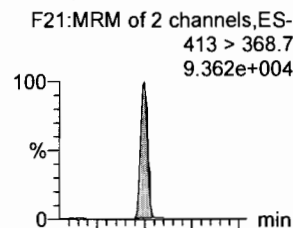
PFHpA



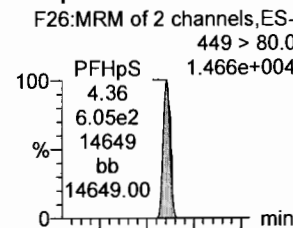
L-PFHxS



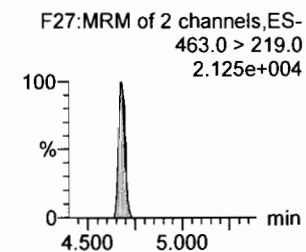
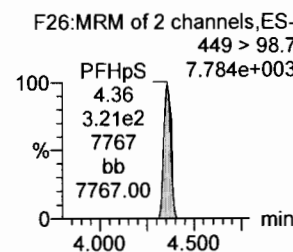
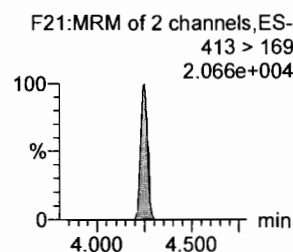
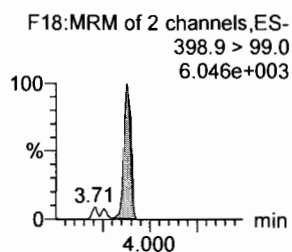
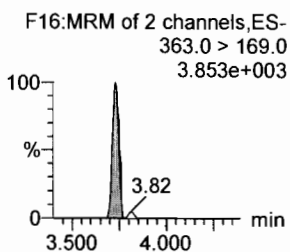
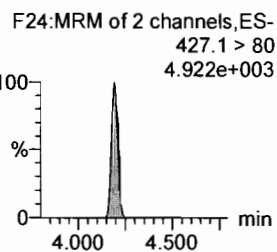
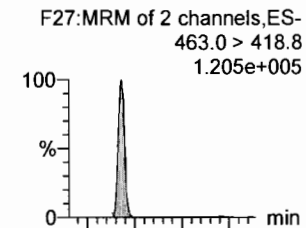
L-PFOA



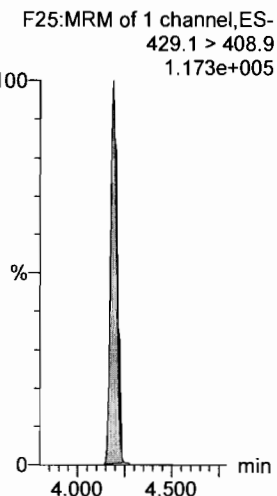
PFHpS



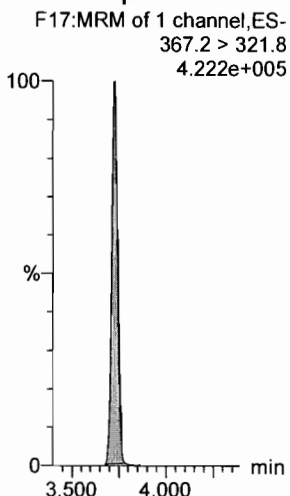
PFNA



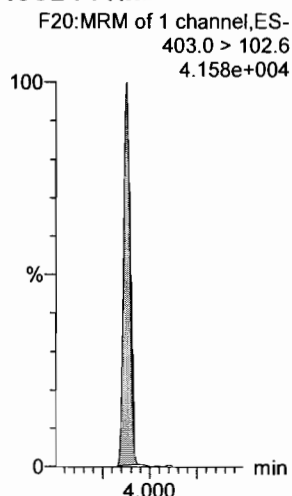
13C2-6:2 FTS



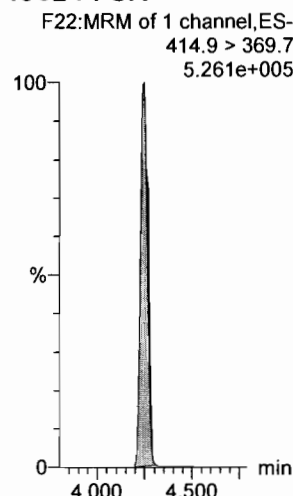
13C4-PFHpA



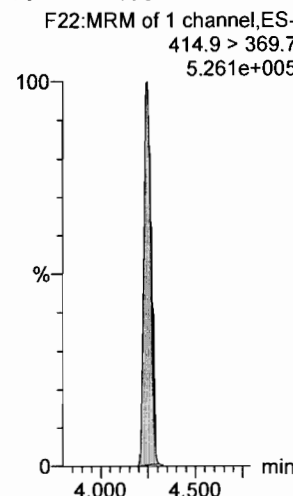
18O2-PFHxS



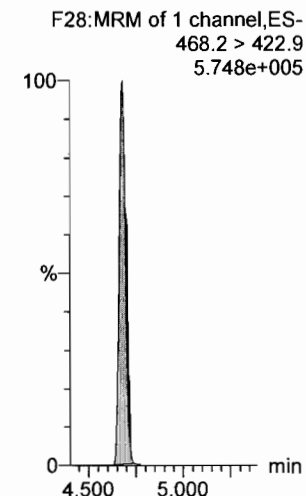
13C2-PFOA



13C2-PFOA



13C5-PFNA



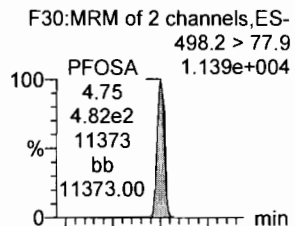
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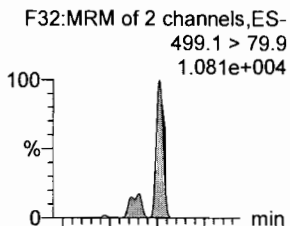
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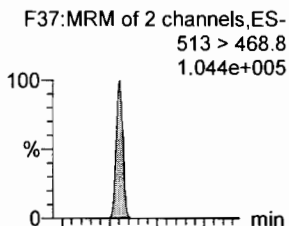
PFOSA



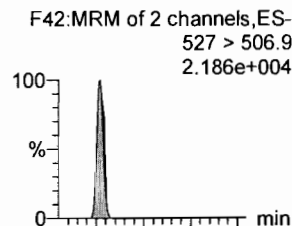
L-PFOS



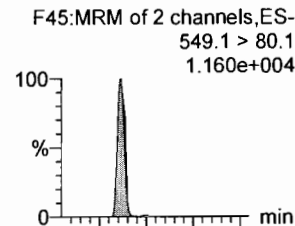
PFDA



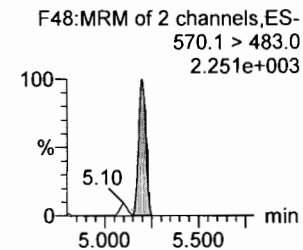
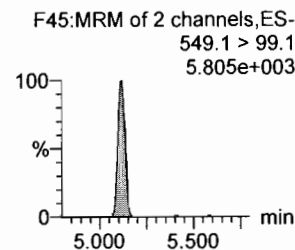
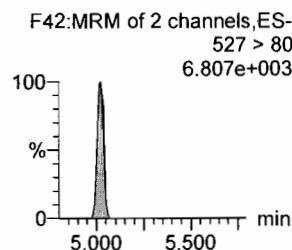
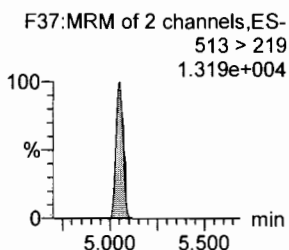
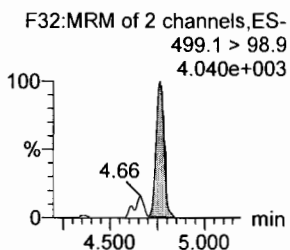
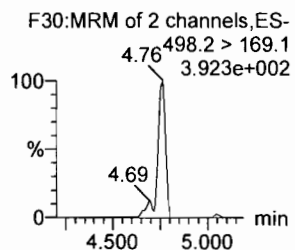
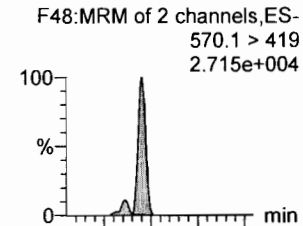
8:2 FTS



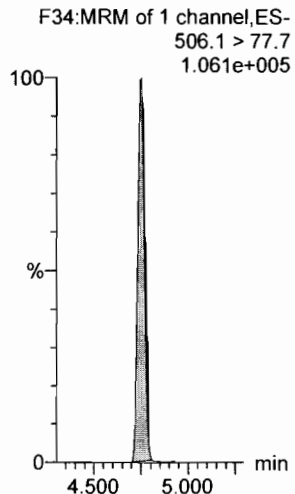
PFNS



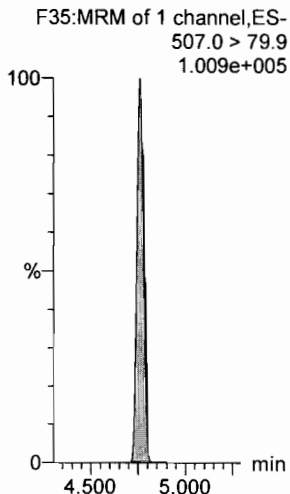
L-MeFOSAA



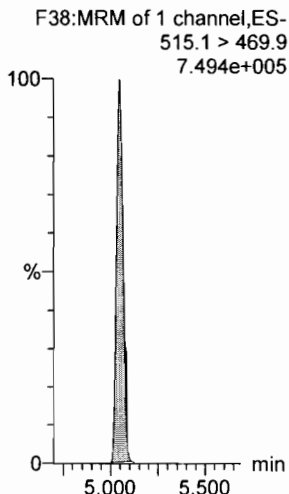
13C8-PFOSA



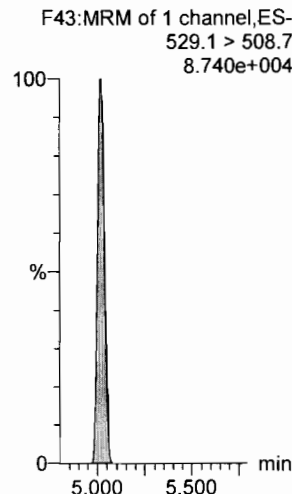
13C8-PFOS



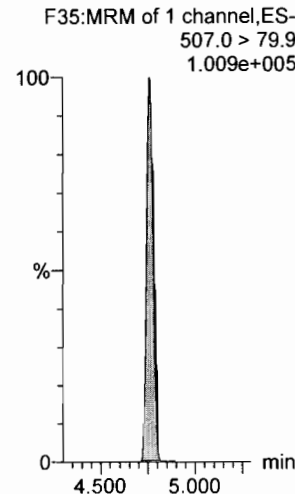
13C2-PFDA



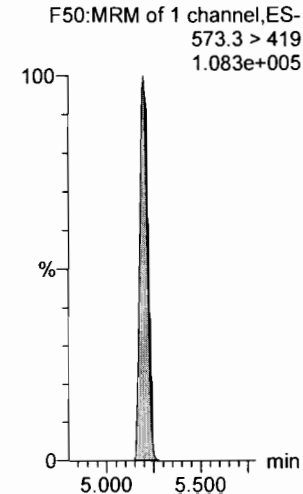
13C2-8:2 FTS



13C8-PFNS



d3-N-MeFOSAA

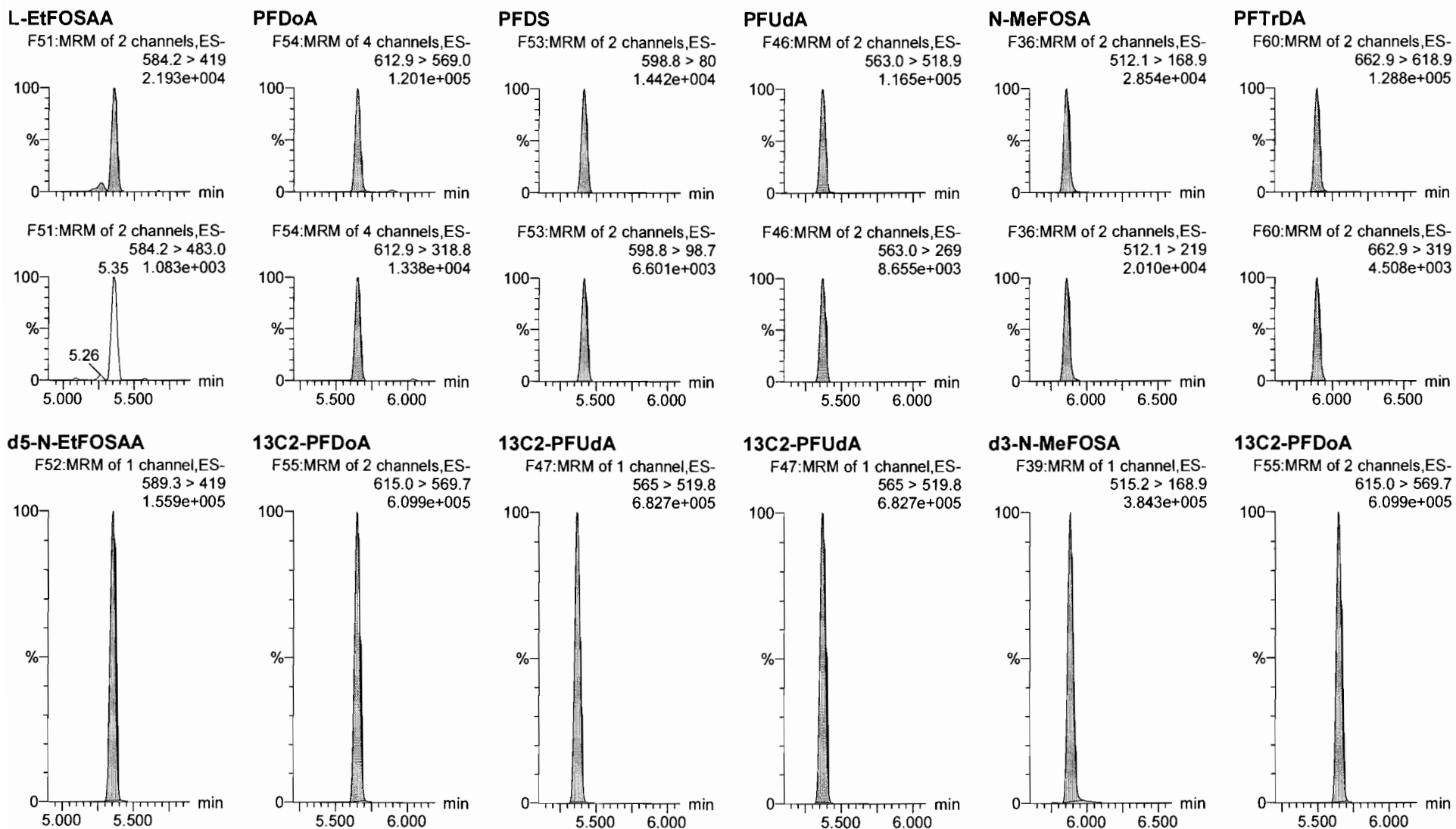


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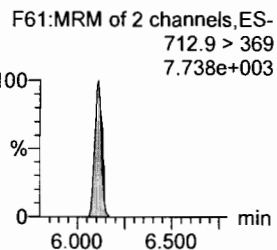
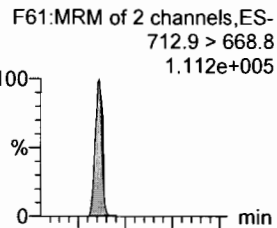
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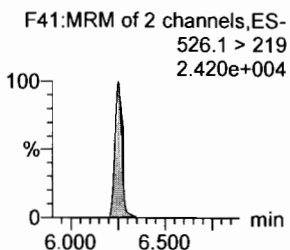
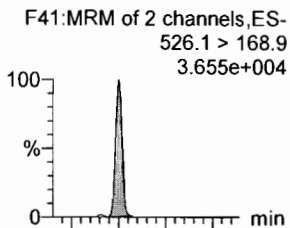
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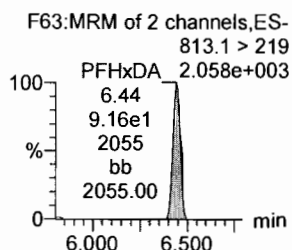
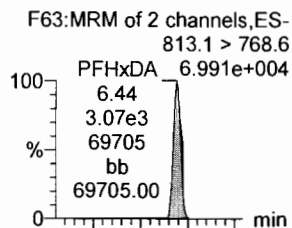
PFTeDA



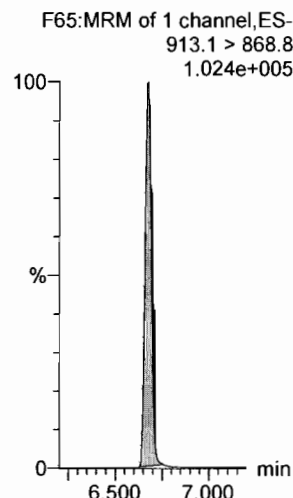
N-EtFOSA



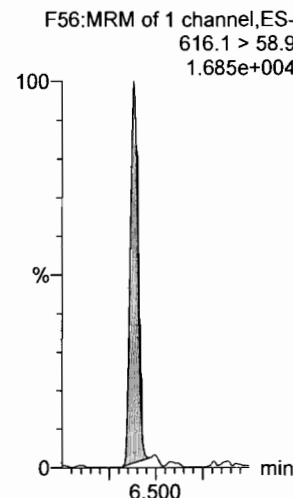
PFHxDA



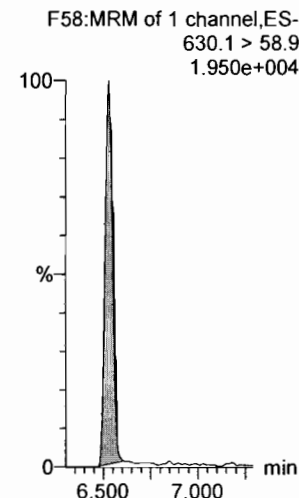
PFODA



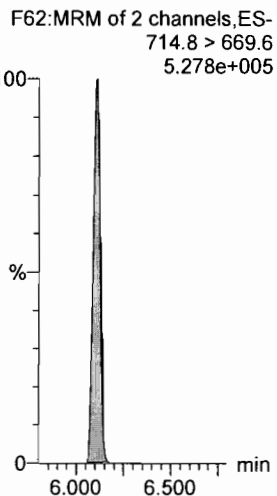
N-MeFOSE



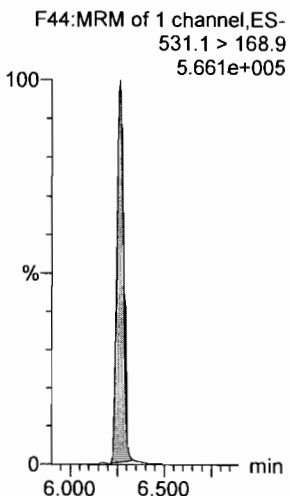
N-EtFOSE



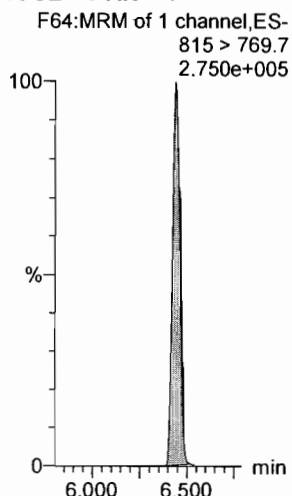
13C2-PFTeDA



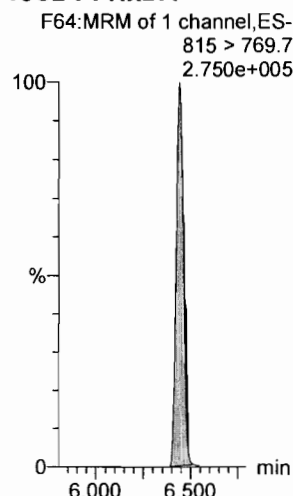
d5-N-ETFOSA



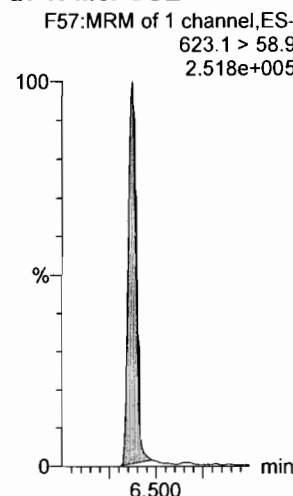
13C2-PFHxDA



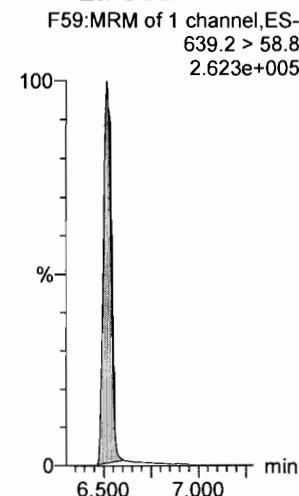
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

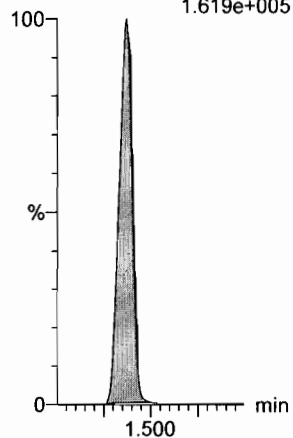
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_5, Date: 03-Jun-2018, Time: 18:39:17, ID: ST180603M2-4 PFC CS1 18E2905, Description: PFC CS1 18E2905

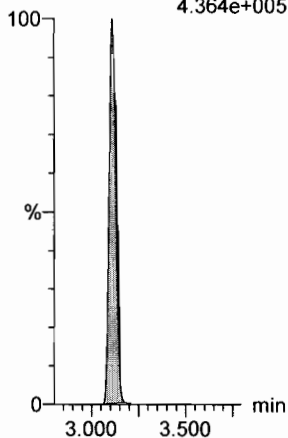
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.619e+005



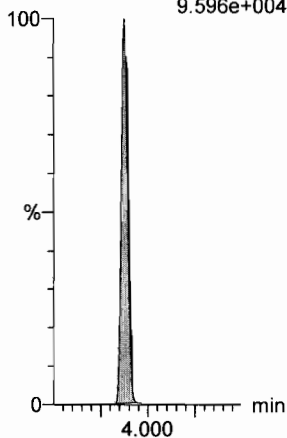
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.364e+005



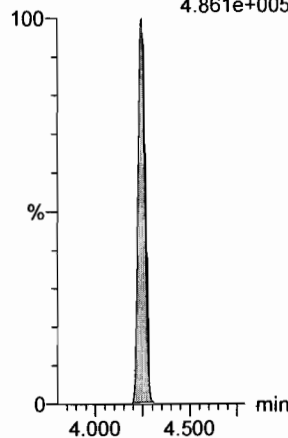
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
9.596e+004



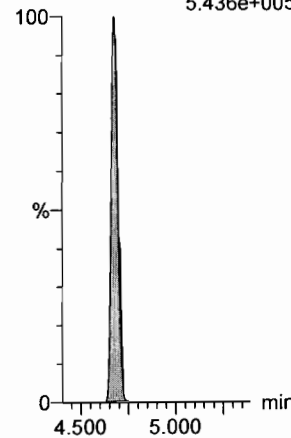
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.861e+005



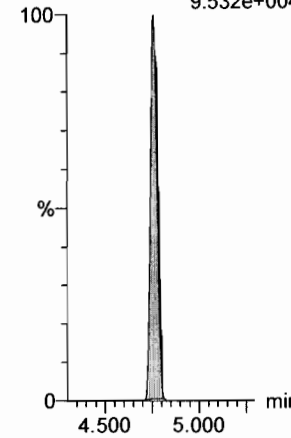
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.436e+005



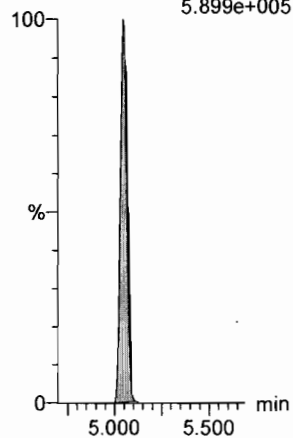
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
9.532e+004



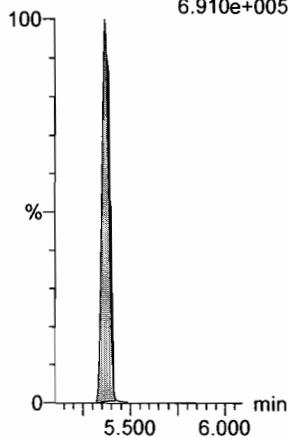
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.899e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.910e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

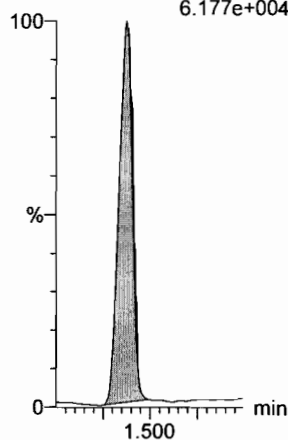
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_6, Date: 03-Jun-2018, Time: 18:49:42, ID: ST180603M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

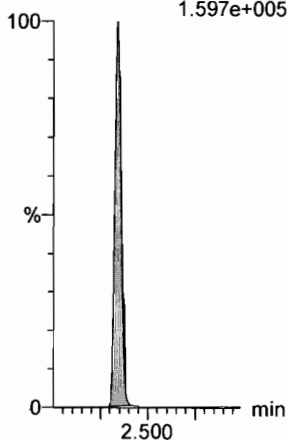
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
6.177e+004



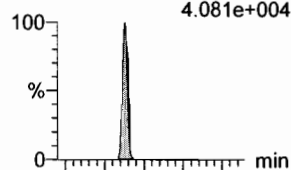
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
1.597e+005

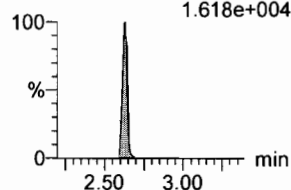


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
4.081e+004

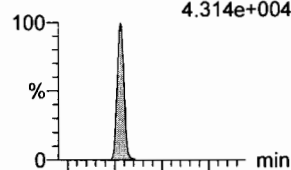


F7:MRM of 2 channels,ES-
299.0 > 99.0
1.618e+004

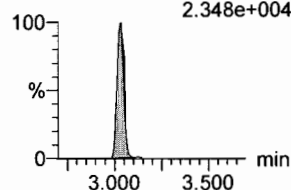


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
4.314e+004

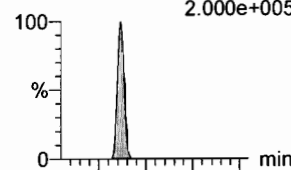


F12:MRM of 2 channels,ES-
327.2 > 81.1
2.348e+004

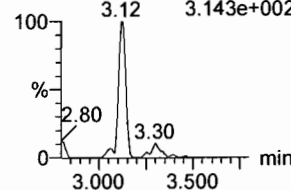


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
2.000e+005

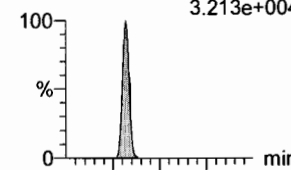


F9:MRM of 2 channels,ES-
313.2 > 119
3.143e+002

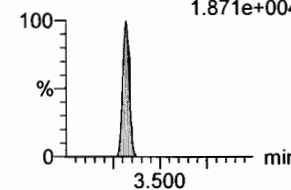


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
3.213e+004

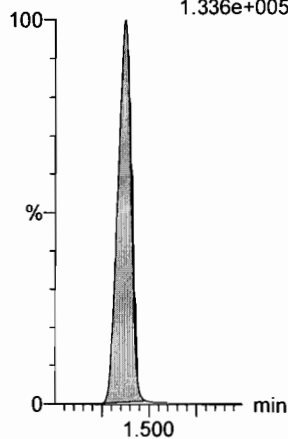


F15:MRM of 2 channels,ES-
349.1 > 99
1.871e+004



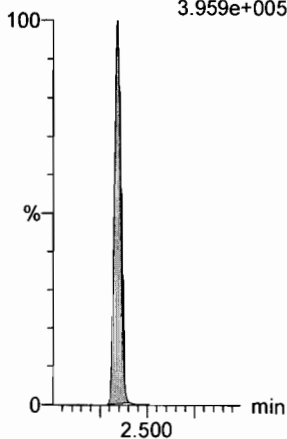
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.336e+005



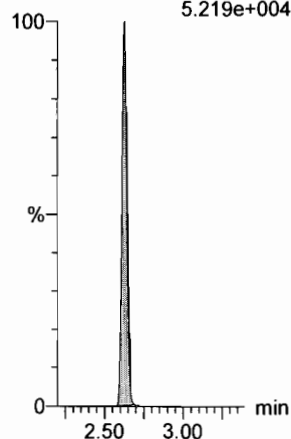
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.959e+005



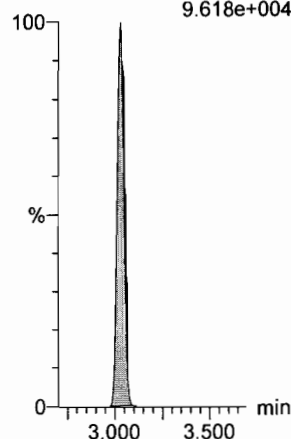
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.219e+004



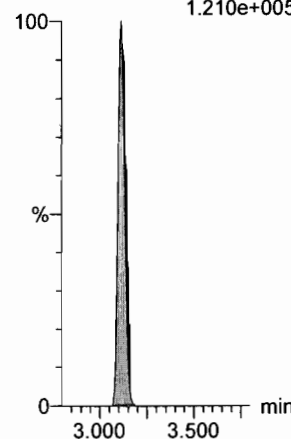
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
9.618e+004



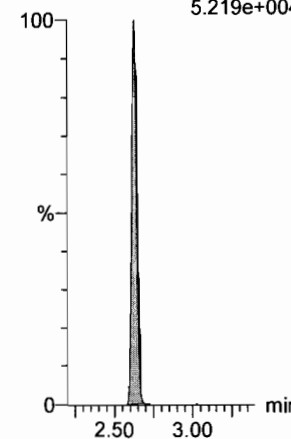
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.210e+005



13C3-PFBS

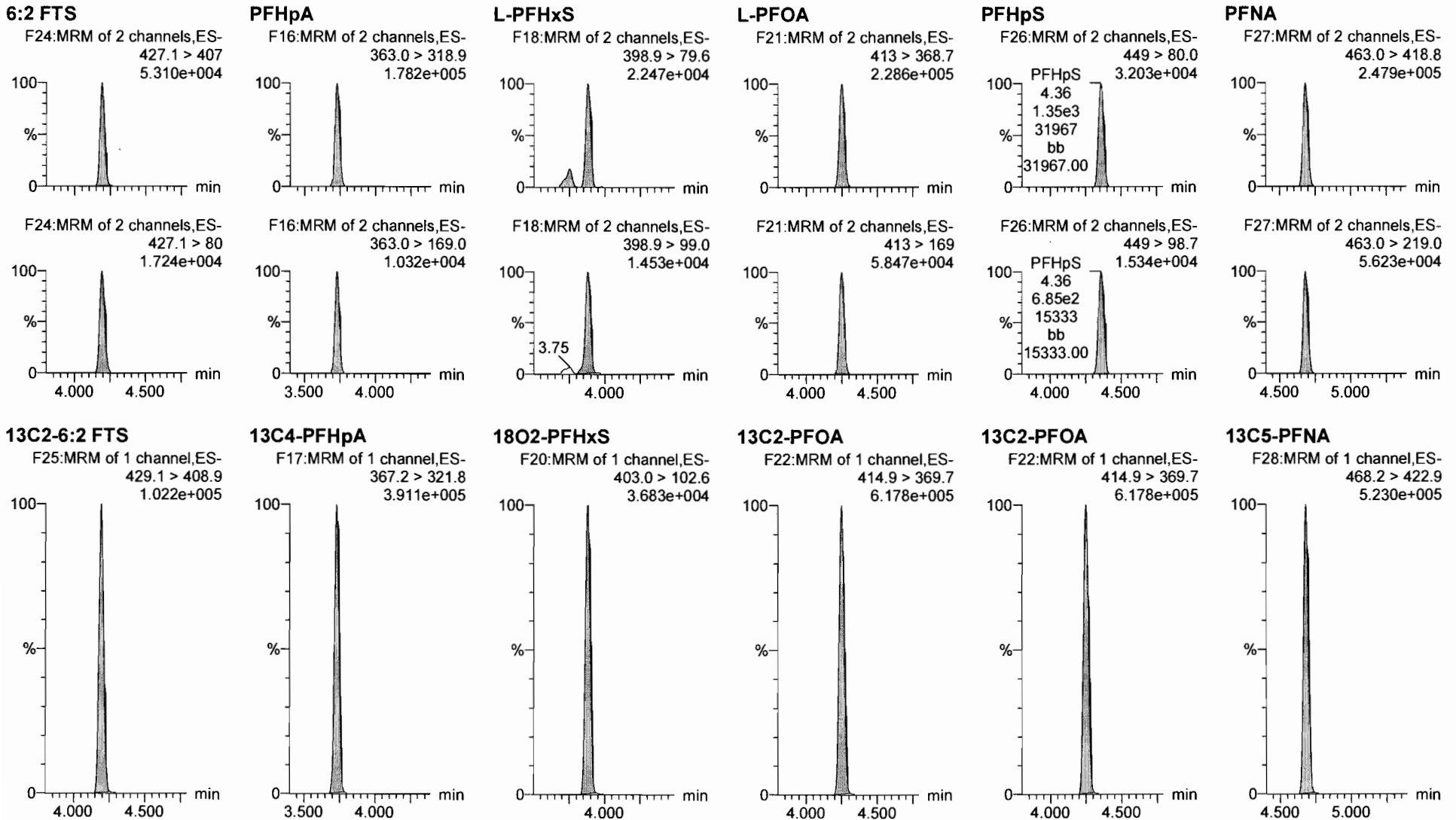
F8:MRM of 1 channel,ES-
302. > 98.8
5.219e+004



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_6, Date: 03-Jun-2018, Time: 18:49:42, ID: ST180603M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906



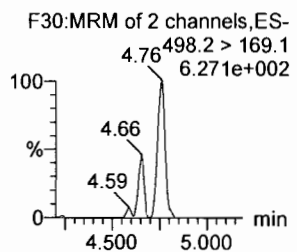
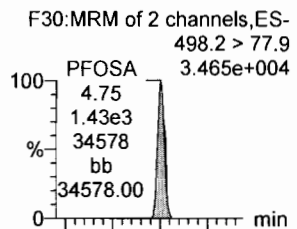
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

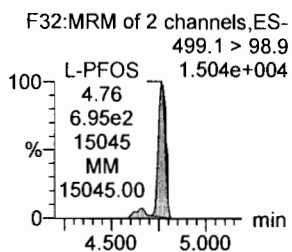
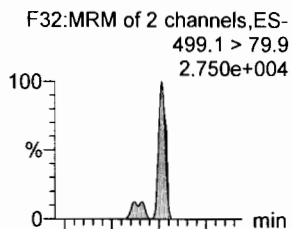
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Name: 180603M2_6, Date: 03-Jun-2018, Time: 18:49:42, ID: ST180603M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

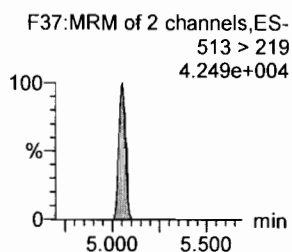
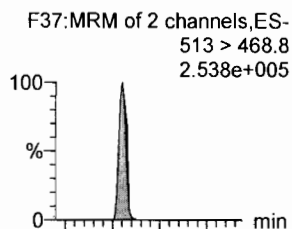
PFOSA



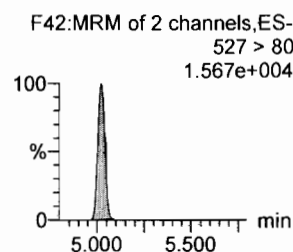
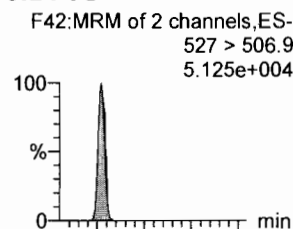
L-PFOS



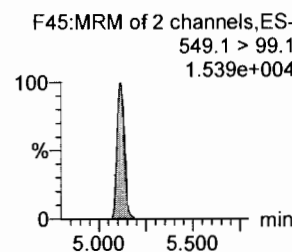
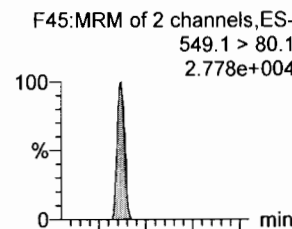
PFDA



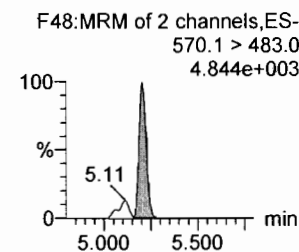
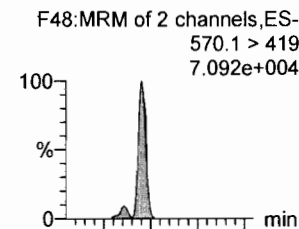
8:2 FTS



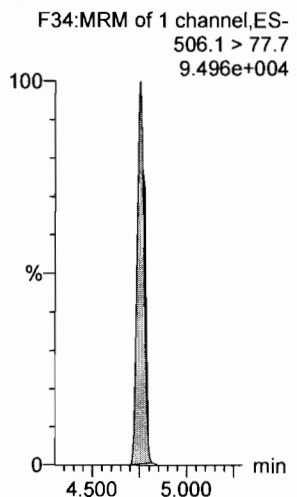
PFNS



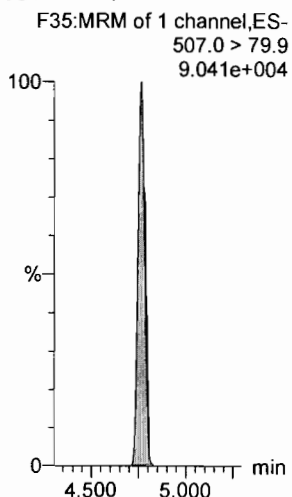
L-MeFOSAA



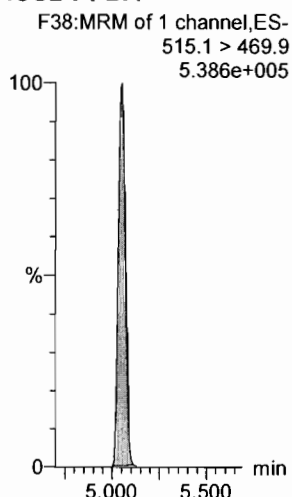
13C8-PFOSA



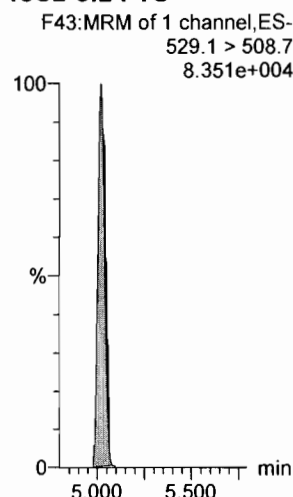
13C8-PFOS



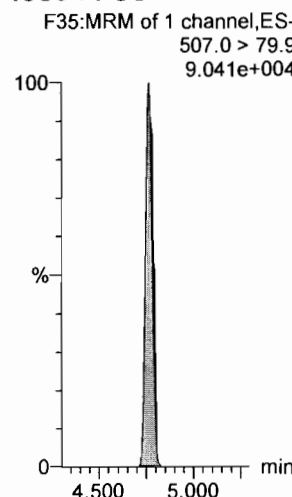
13C2-PFDA



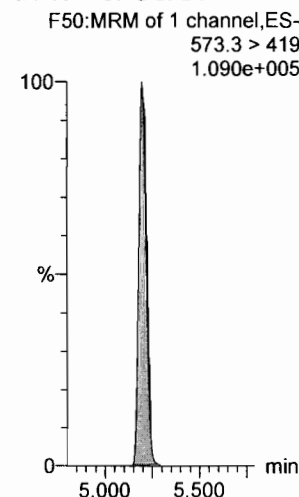
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

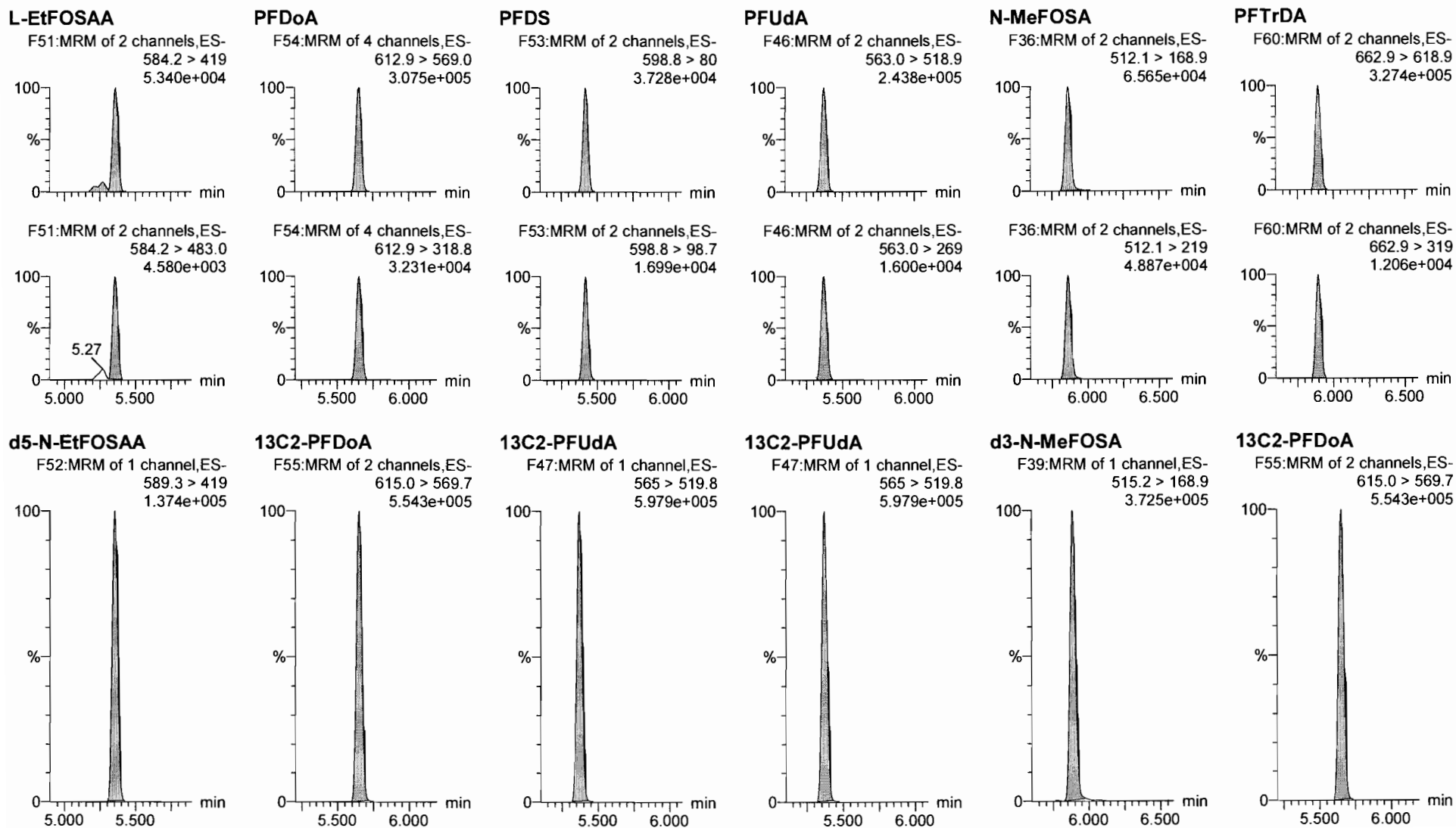


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_6, Date: 03-Jun-2018, Time: 18:49:42, ID: ST180603M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906



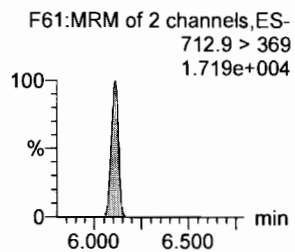
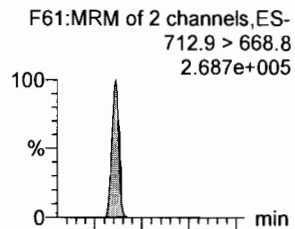
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

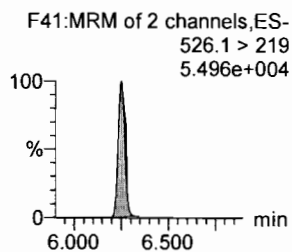
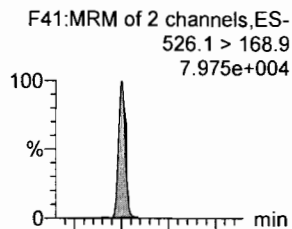
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_6, Date: 03-Jun-2018, Time: 18:49:42, ID: ST180603M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

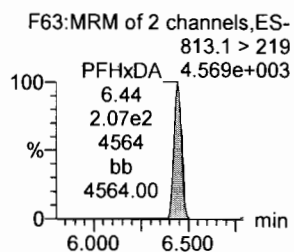
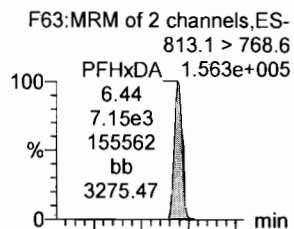
PFTeDA



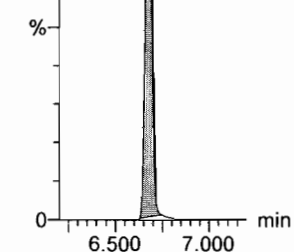
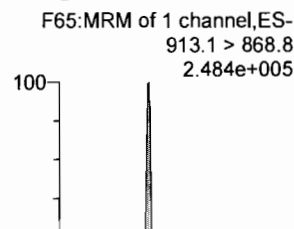
N-EtFOSA



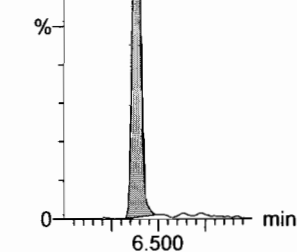
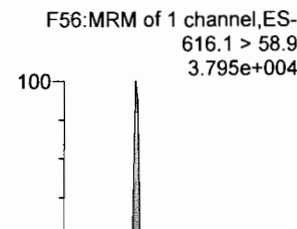
PFHxDA



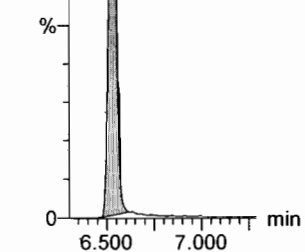
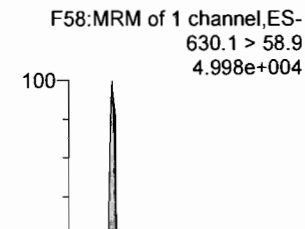
PFODA



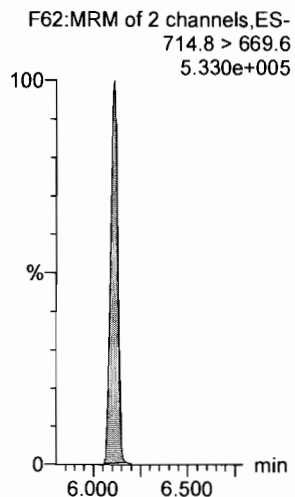
N-MeFOSE



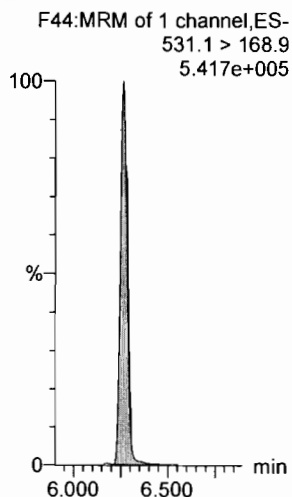
N-EtFOSE



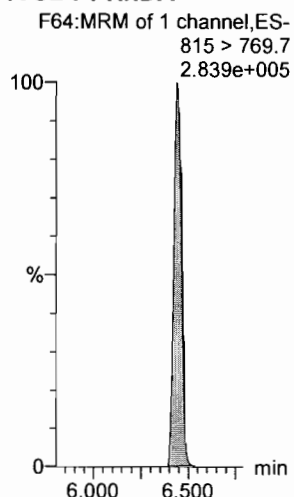
13C2-PFTeDA



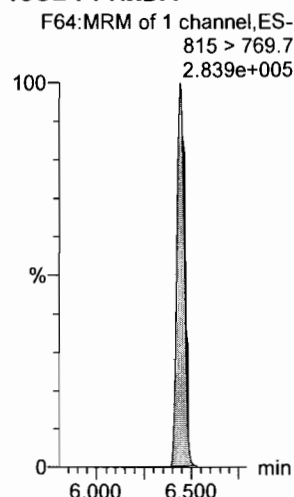
d5-N-ETFOSA



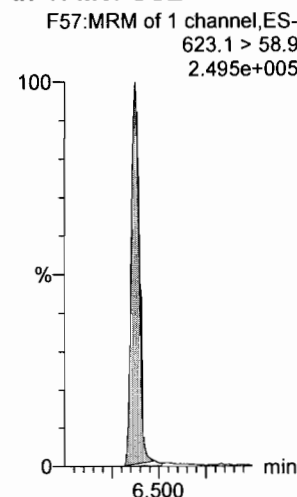
13C2-PFHxDA



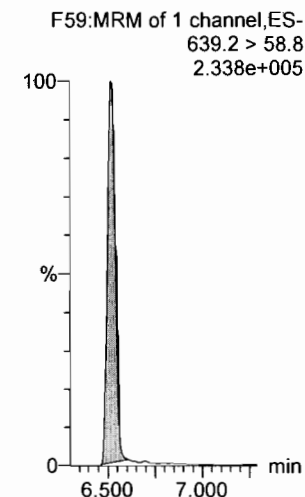
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

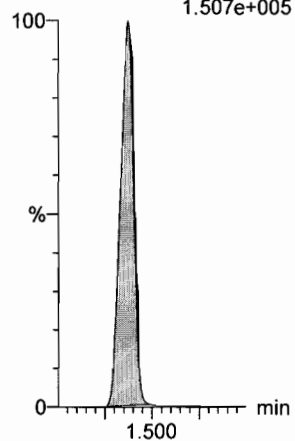
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_6, Date: 03-Jun-2018, Time: 18:49:42, ID: ST180603M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

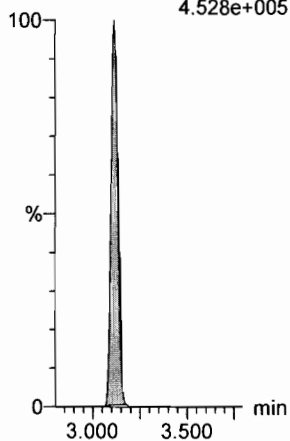
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.507e+005



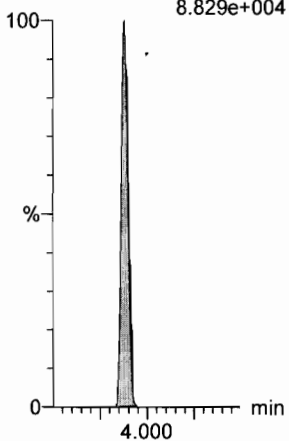
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.528e+005



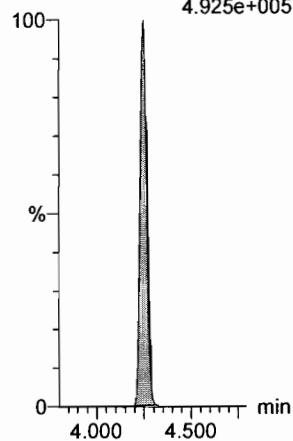
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.829e+004



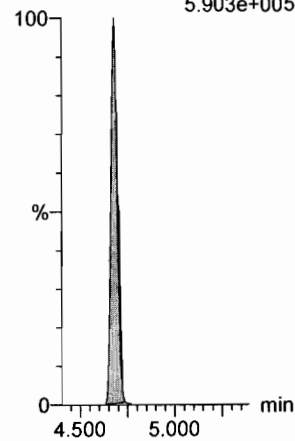
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.925e+005



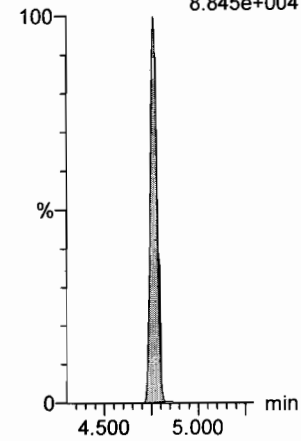
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.903e+005



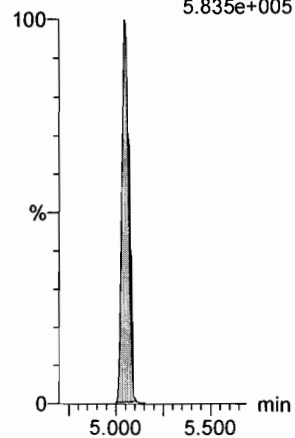
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.845e+004



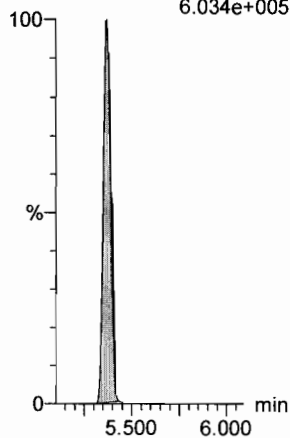
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.835e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.034e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

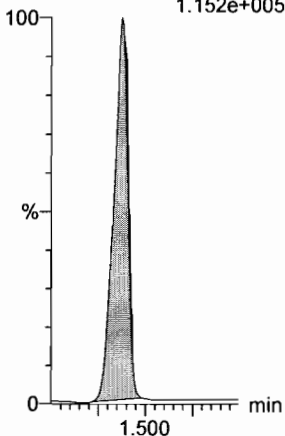
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Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

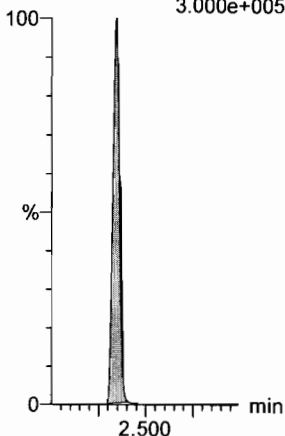
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
1.152e+005



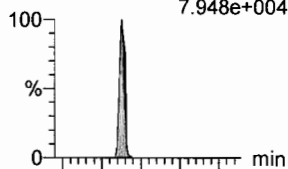
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
3.000e+005

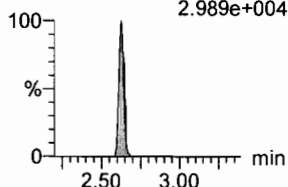


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
7.948e+004

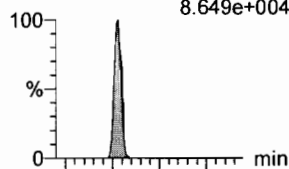


F7:MRM of 2 channels,ES-
299.0 > 99.0
2.989e+004

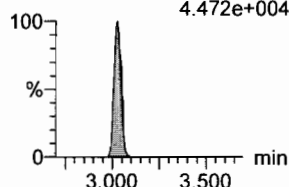


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
8.649e+004

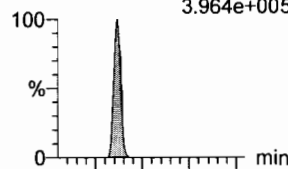


F12:MRM of 2 channels,ES-
327.2 > 81.1
4.472e+004

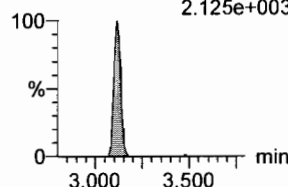


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
3.964e+005

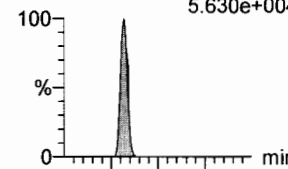


F9:MRM of 2 channels,ES-
313.2 > 119
2.125e+003

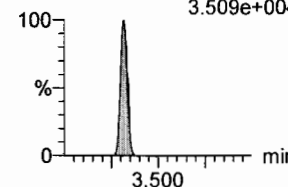


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
5.630e+004

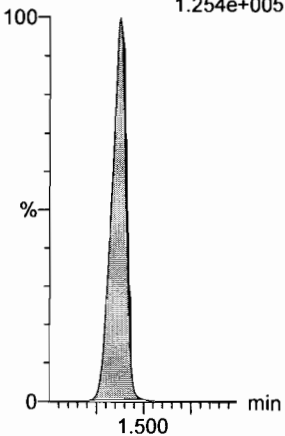


F15:MRM of 2 channels,ES-
349.1 > 99
3.509e+004



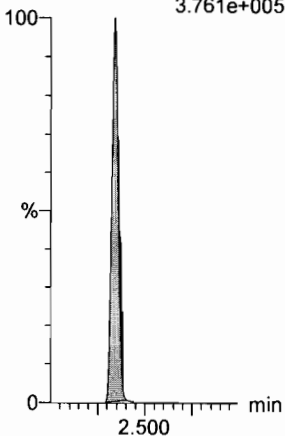
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.254e+005



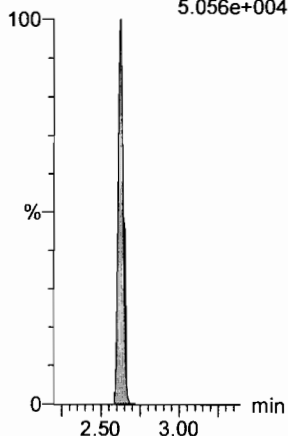
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.761e+005



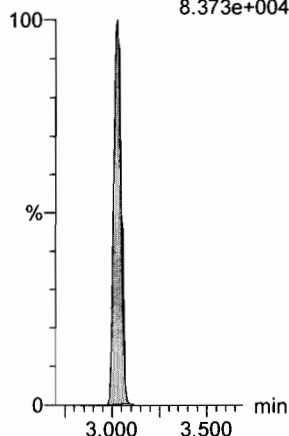
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.056e+004



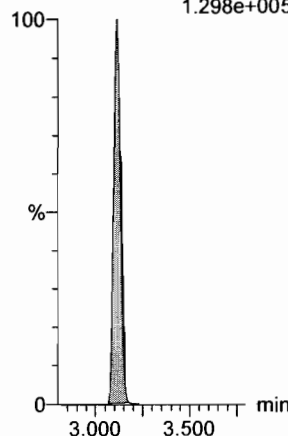
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
8.373e+004



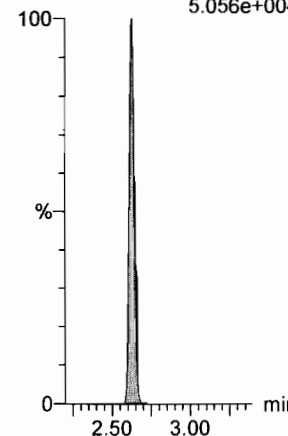
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.298e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
5.056e+004



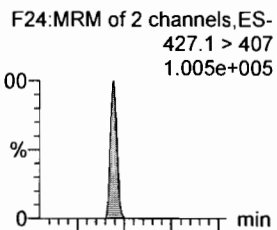
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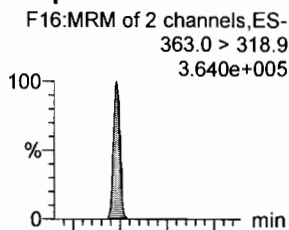
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Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

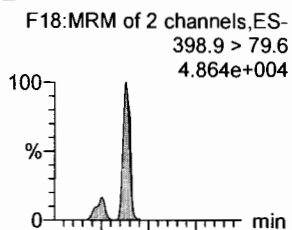
6:2 FTS



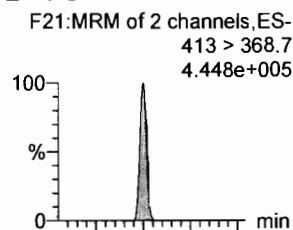
PFHpA



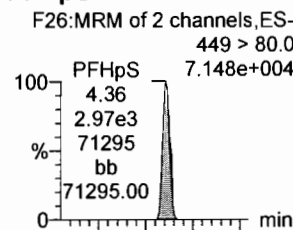
L-PFHxS



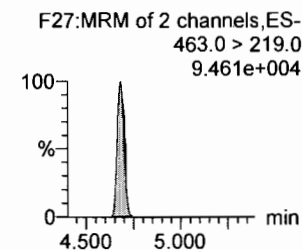
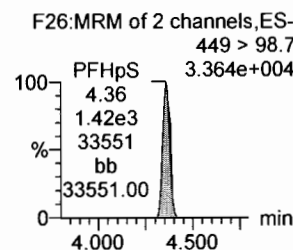
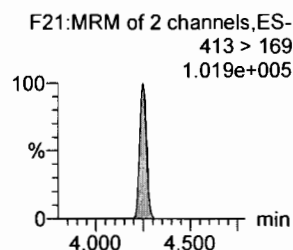
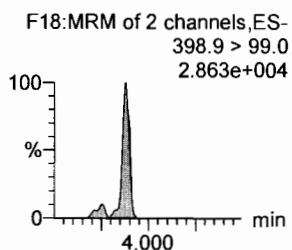
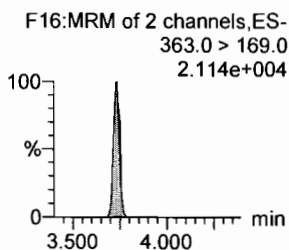
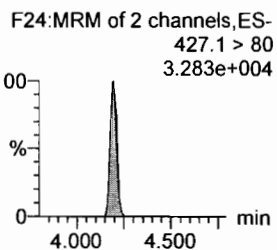
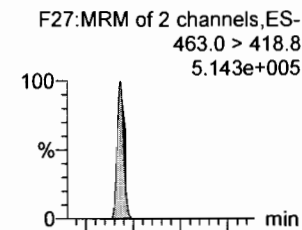
L-PFOA



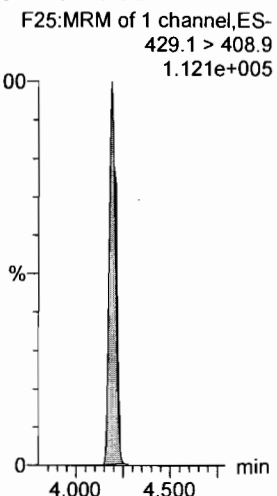
PFHpS



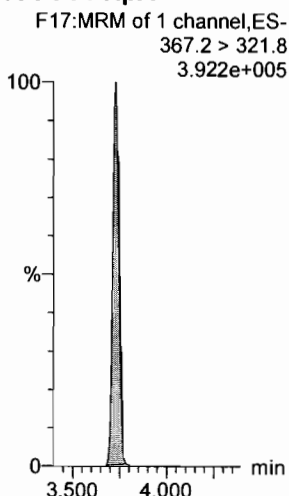
PFNA



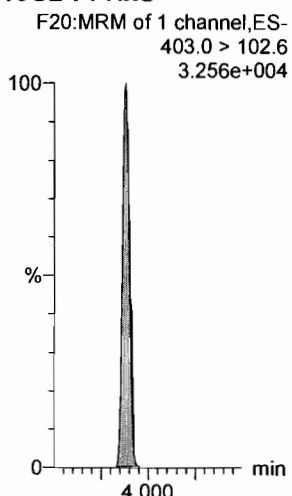
13C2-6:2 FTS



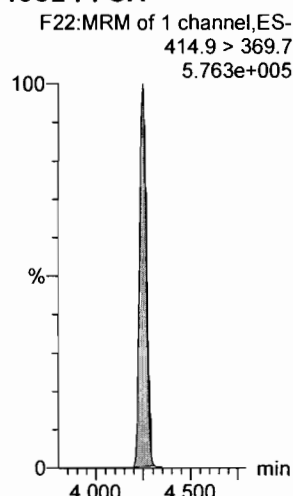
13C4-PFHpA



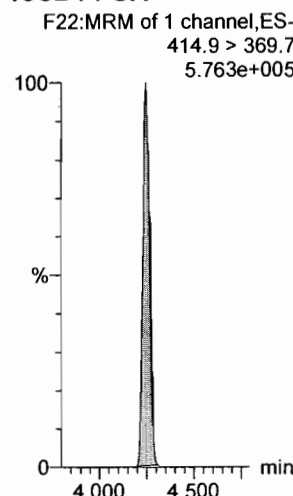
18O2-PFHxS



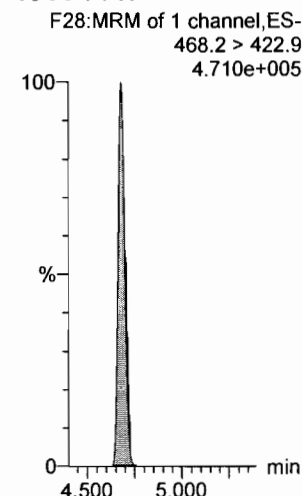
13C2-PFOA



13C2-PFOA



13C5-PFNA

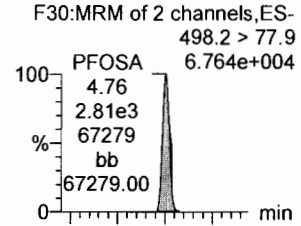


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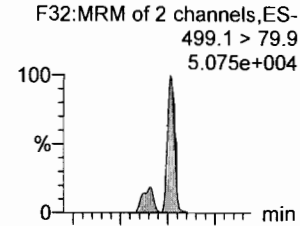
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Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

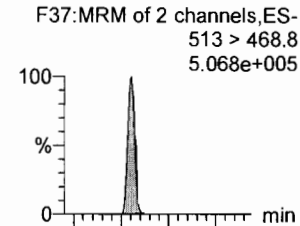
PFOSA



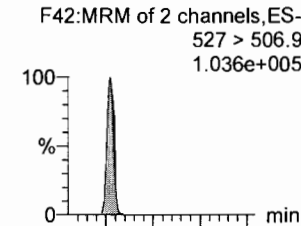
L-PFOS



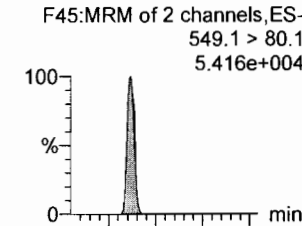
PFDA



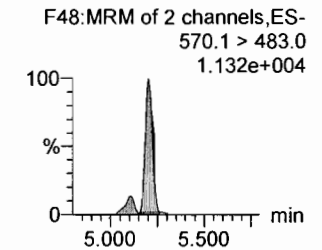
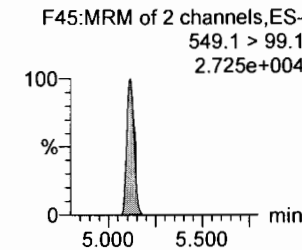
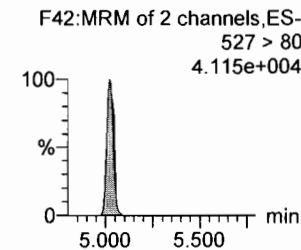
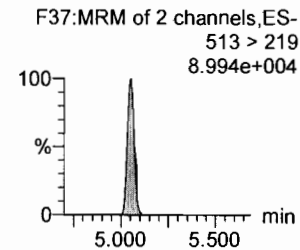
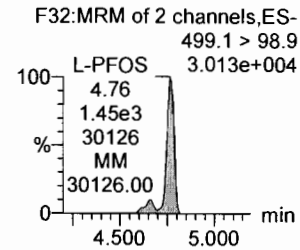
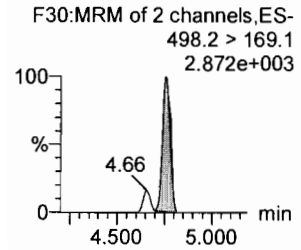
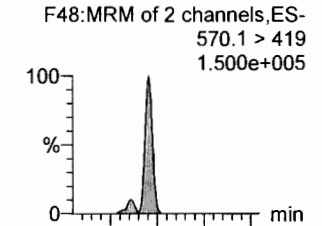
8:2 FTS



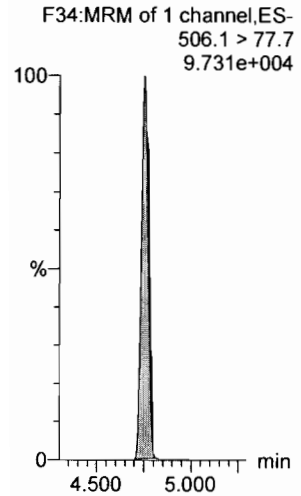
PFNS



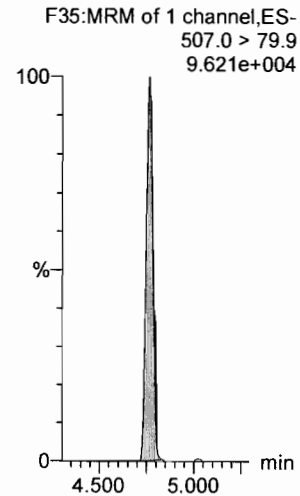
L-MeFOSAA



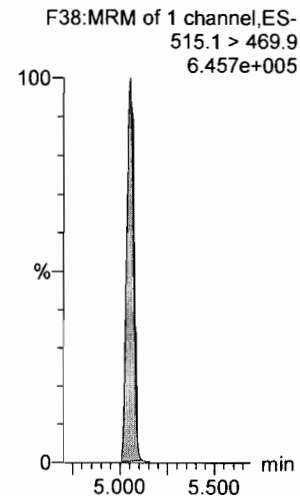
13C8-PFOSA



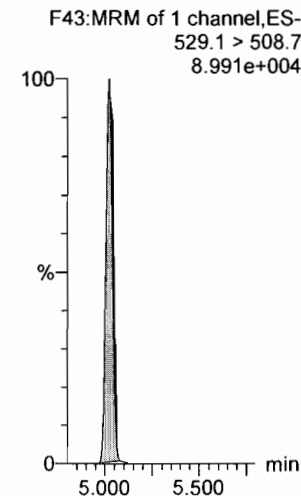
13C8-PFOS



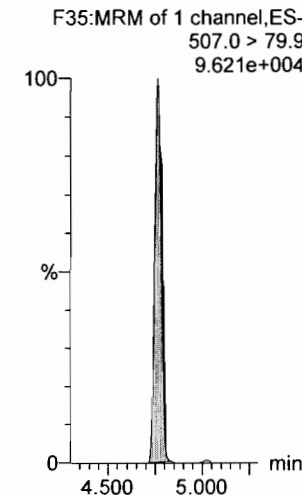
13C2-PFDA



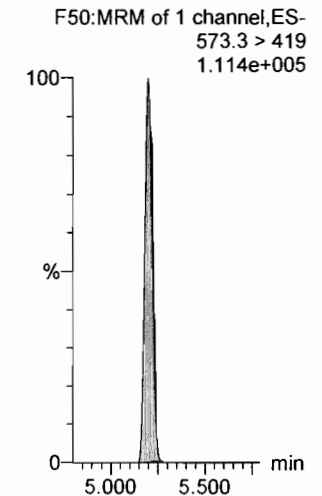
13C2-8:2 FTS



13C8-PFNS



d3-N-MeFOSAA



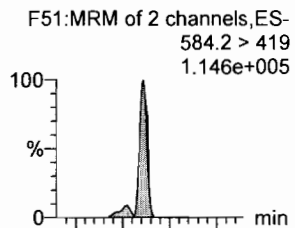
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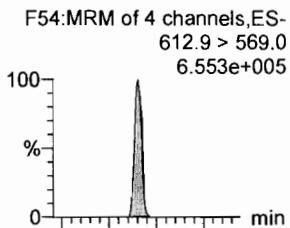
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Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

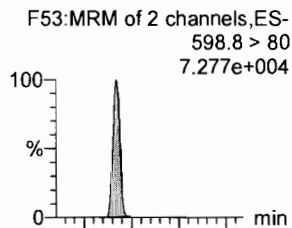
L-EtFOSAA



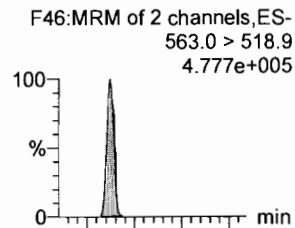
PFDoA



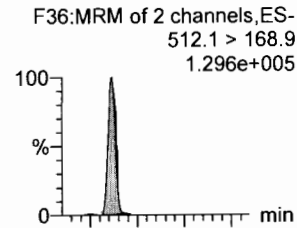
PFDS



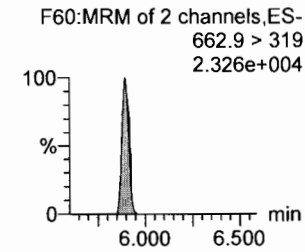
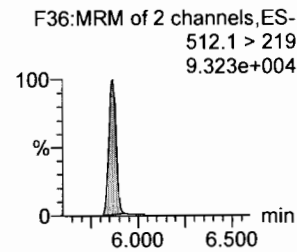
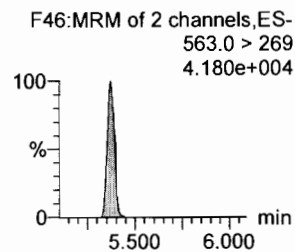
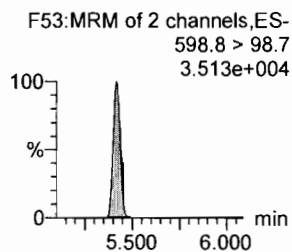
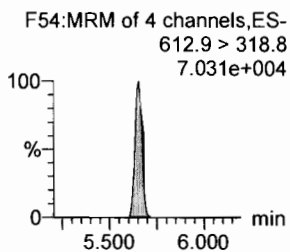
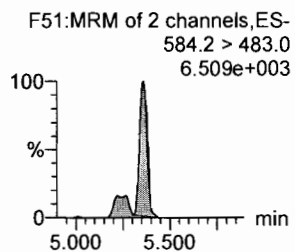
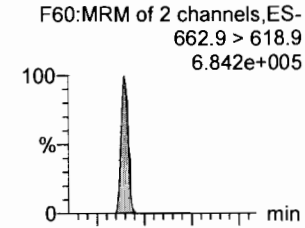
PFUdA



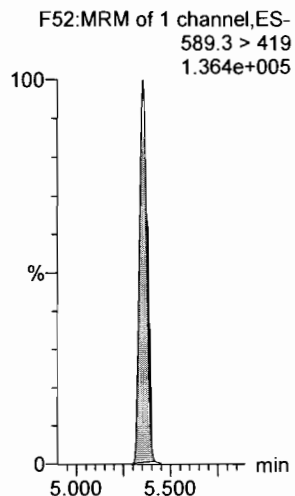
N-MeFOSA



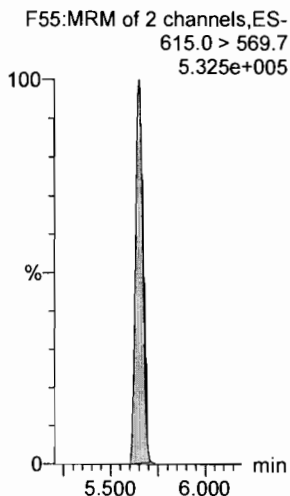
PFTrDA



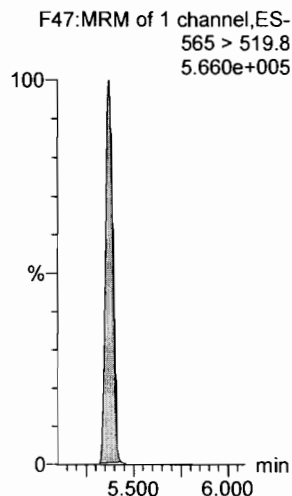
d5-N-EtFOSAA



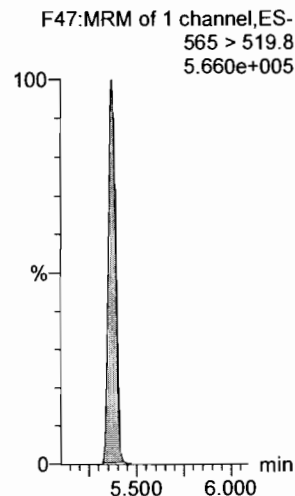
13C2-PFDoA



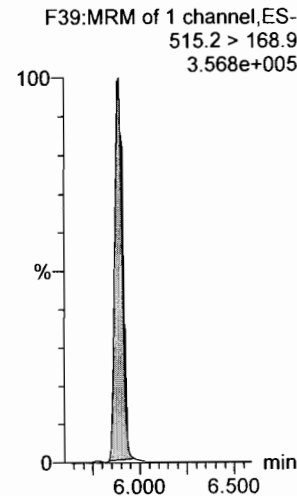
13C2-PFUdA



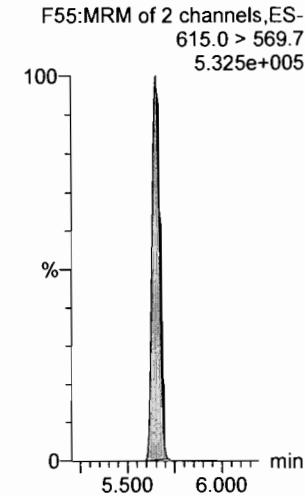
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA

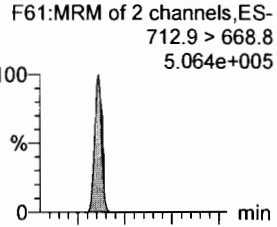


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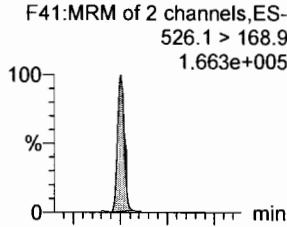
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Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

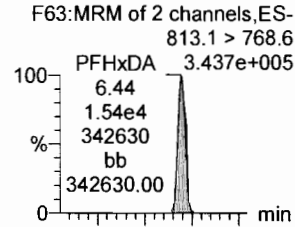
PFTeDA



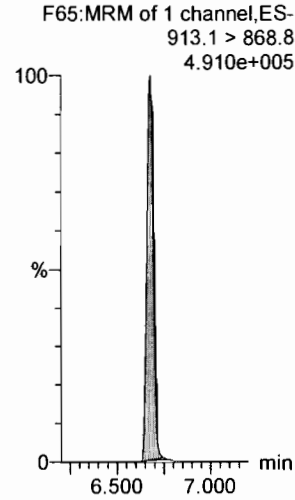
N-EtFOSA



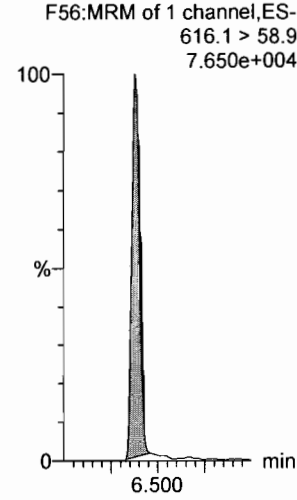
PFHxDA



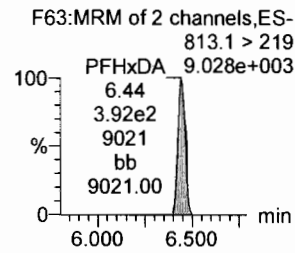
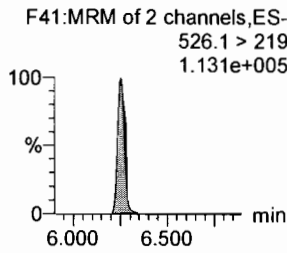
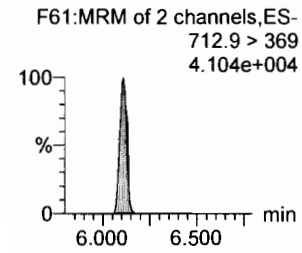
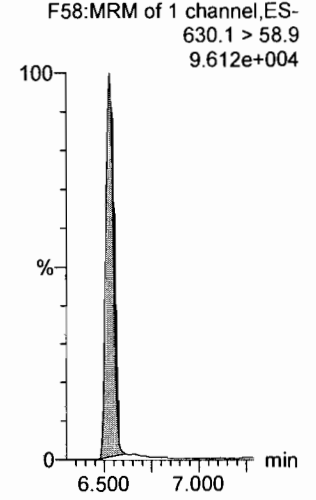
PFODA



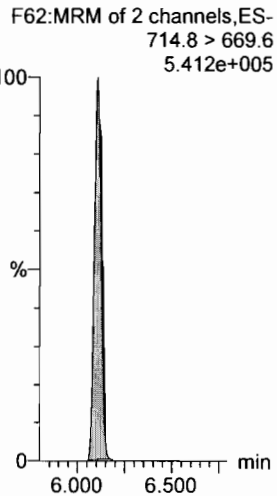
N-MeFOSE



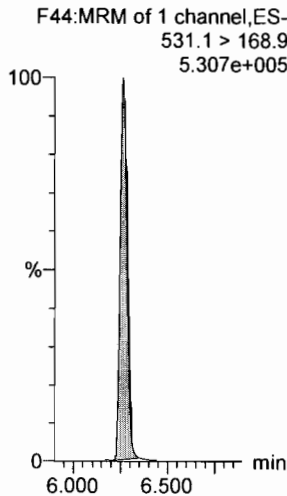
N-EtFOSE



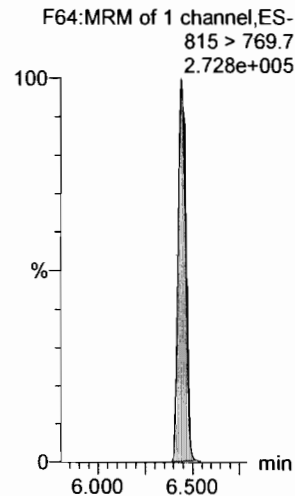
13C2-PFTeDA



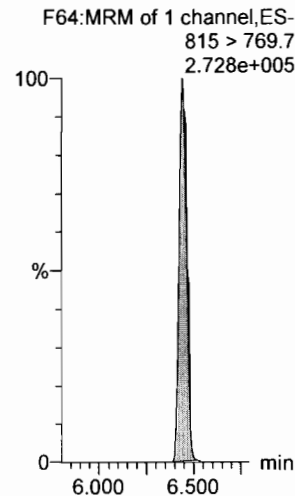
d5-N-ETFOSA



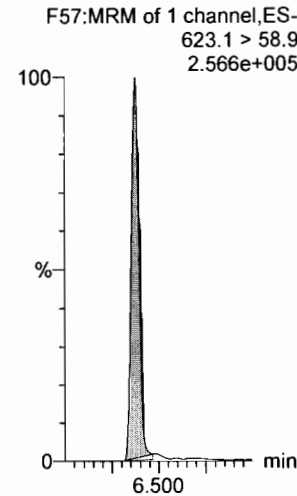
13C2-PFHxDA



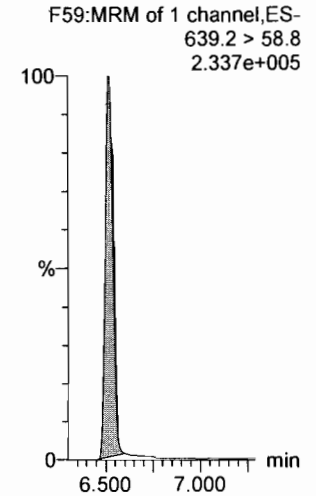
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

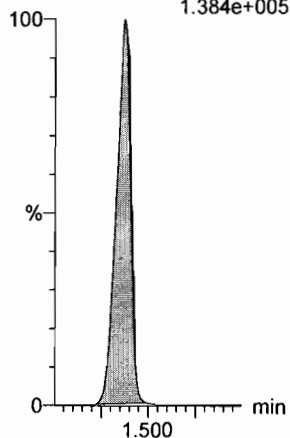
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Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_7, Date: 03-Jun-2018, Time: 19:00:12, ID: ST180603M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

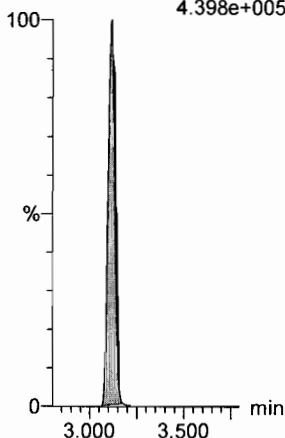
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.384e+005



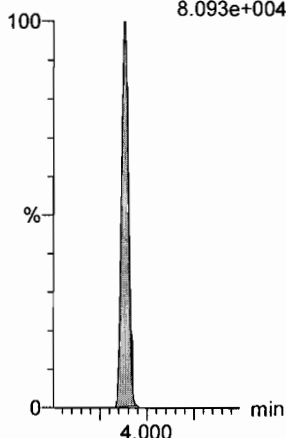
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.398e+005



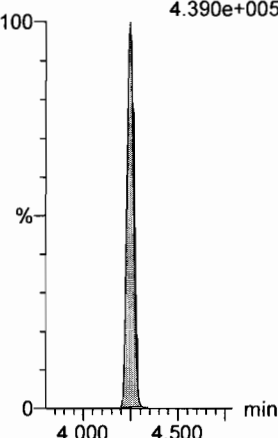
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.093e+004



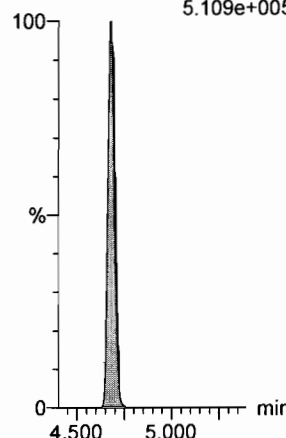
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.390e+005



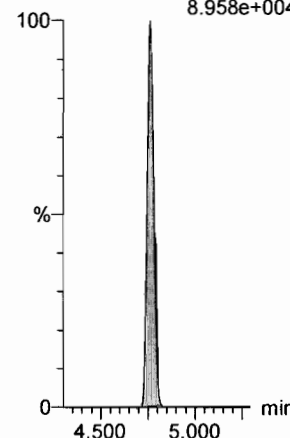
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.109e+005



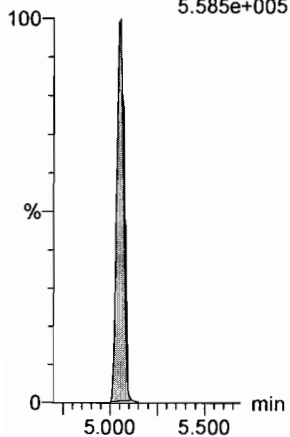
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.958e+004



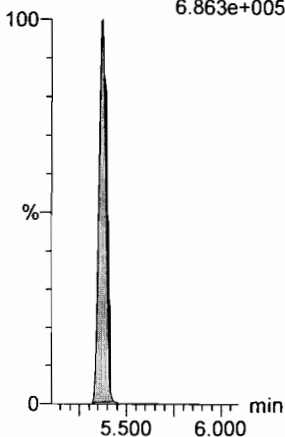
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.585e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.863e+005



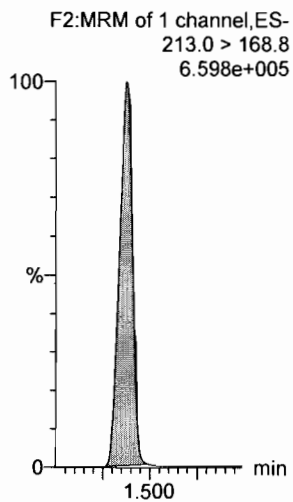
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

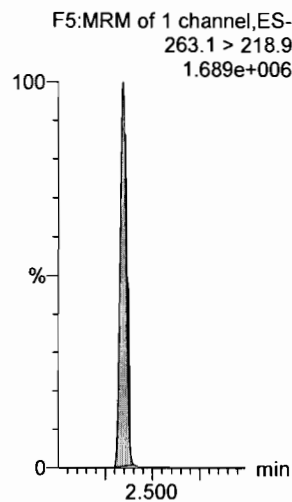
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Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

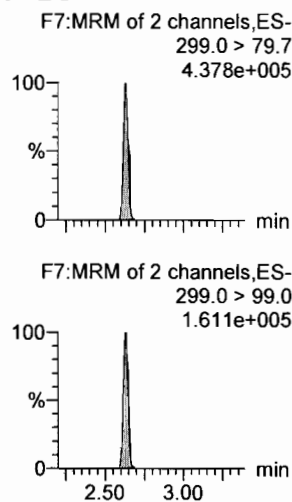
PFBA



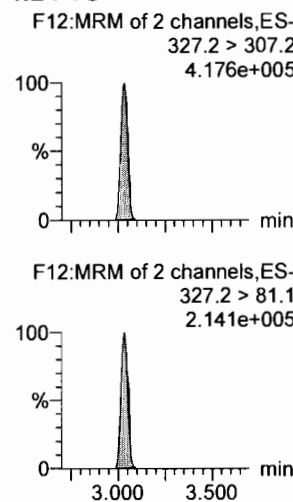
PFPeA



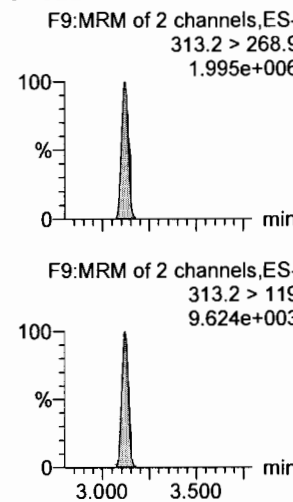
PFBS



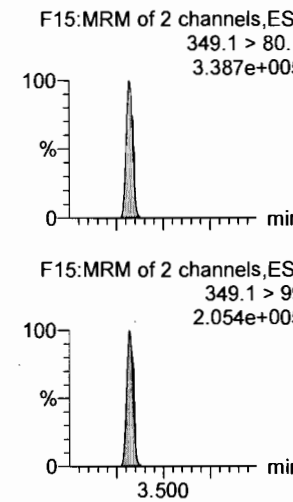
4:2 FTS



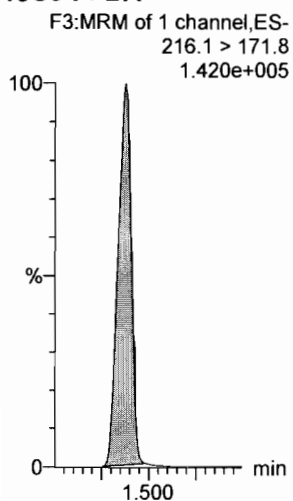
PFHxA



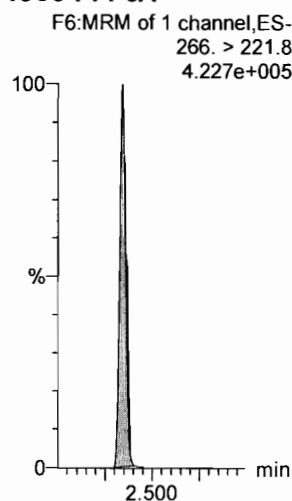
PFPeS



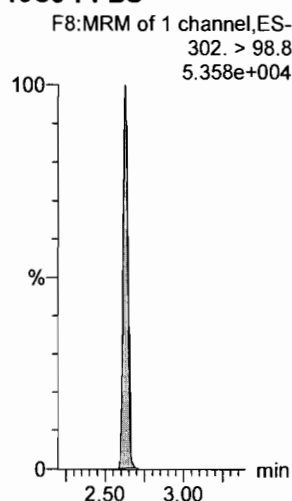
13C3-PFBA



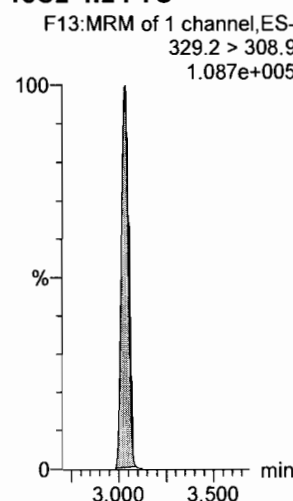
13C3-PFPeA



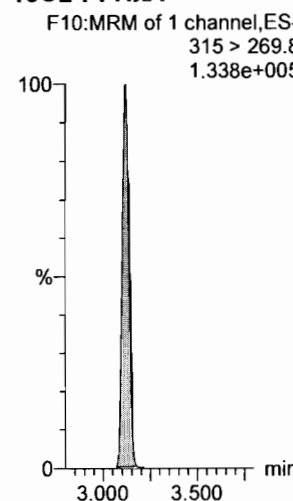
13C3-PFBS



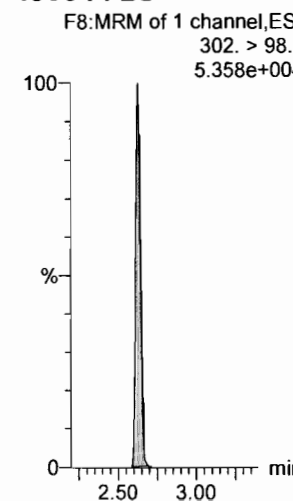
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



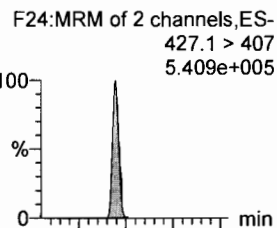
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

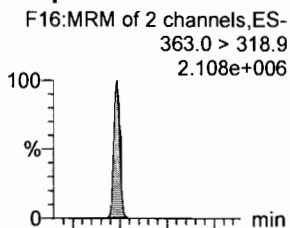
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Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

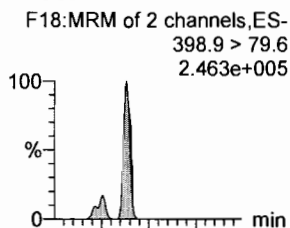
6:2 FTS



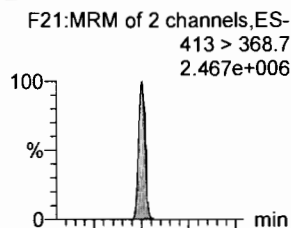
PFHpA



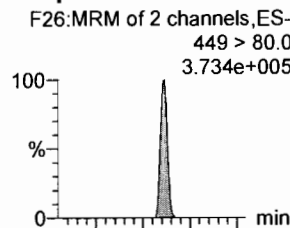
L-PFHxS



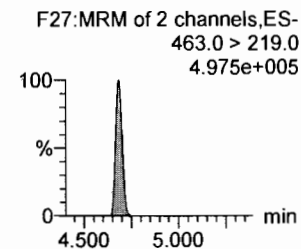
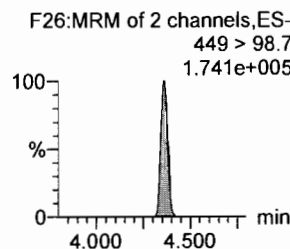
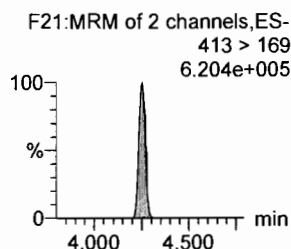
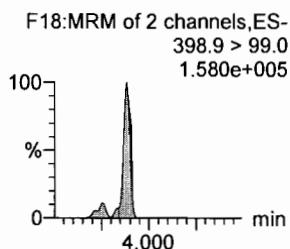
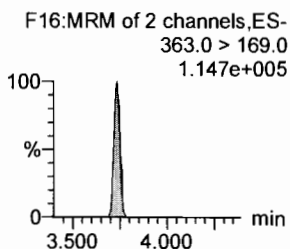
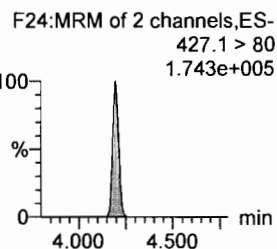
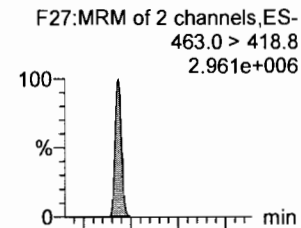
L-PFOA



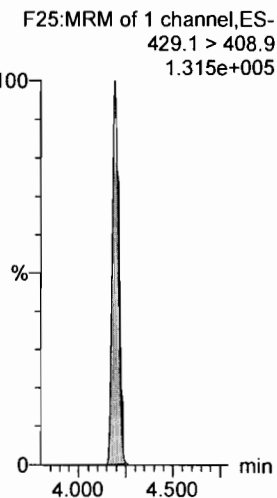
PFHpS



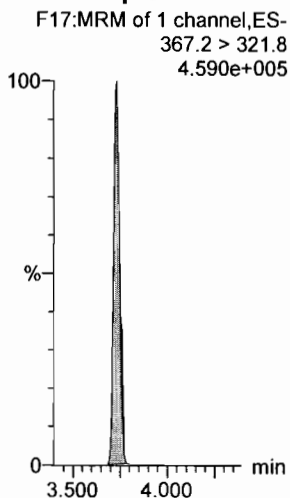
PFNA



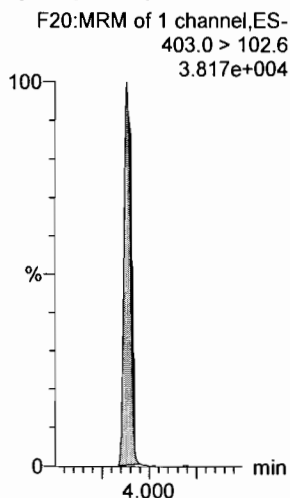
13C2-6:2 FTS



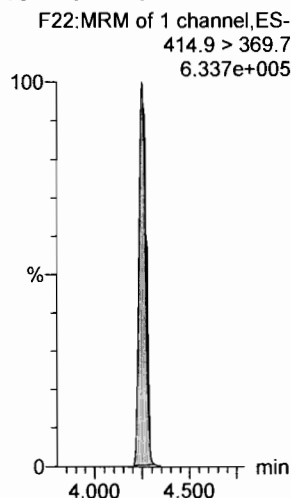
13C4-PFHpA



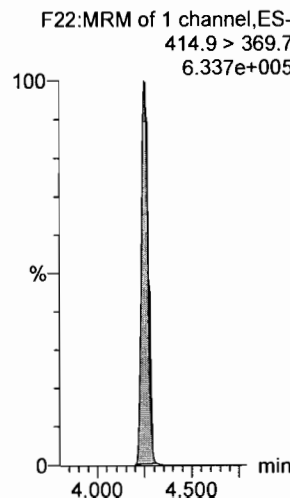
18O2-PFHxS



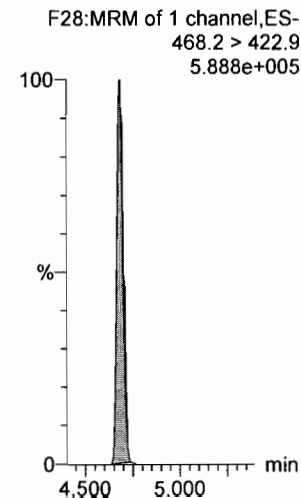
13C2-PFOA



13C2-PFOA



13C5-PFNA



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

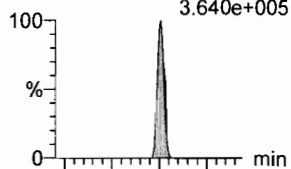
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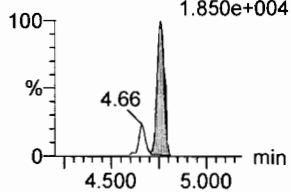
Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

PFOSA

F30:MRM of 2 channels,ES-
498.2 > 77.9
3.640e+005

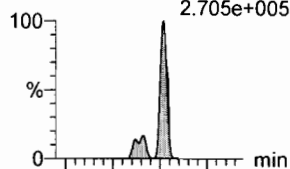


F30:MRM of 2 channels,ES-
498.2 > 169.1
1.850e+004

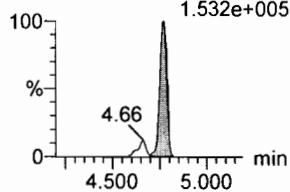


L-PFOS

F32:MRM of 2 channels,ES-
499.1 > 79.9
2.705e+005

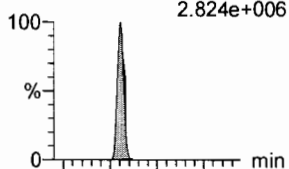


F32:MRM of 2 channels,ES-
499.1 > 98.9
1.532e+005

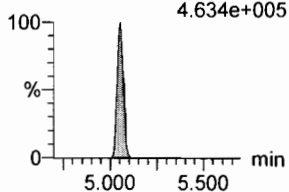


PFDA

F37:MRM of 2 channels,ES-
513 > 468.8
2.824e+006

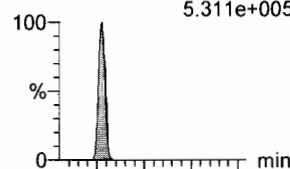


F37:MRM of 2 channels,ES-
513 > 219
4.634e+005

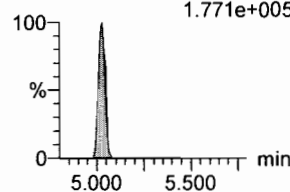


8:2 FTS

F42:MRM of 2 channels,ES-
527 > 506.9
5.311e+005

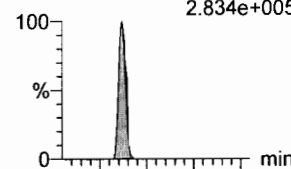


F42:MRM of 2 channels,ES-
527 > 80
1.771e+005

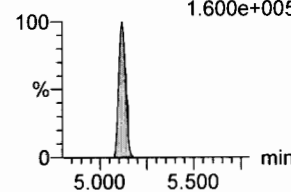


PFNS

F45:MRM of 2 channels,ES-
549.1 > 80.1
2.834e+005

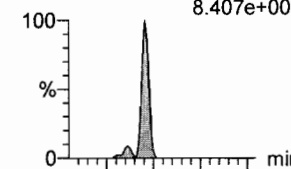


F45:MRM of 2 channels,ES-
549.1 > 99.1
1.600e+005

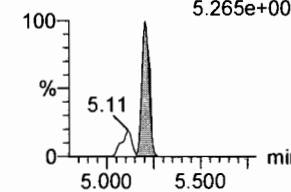


L-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
8.407e+005

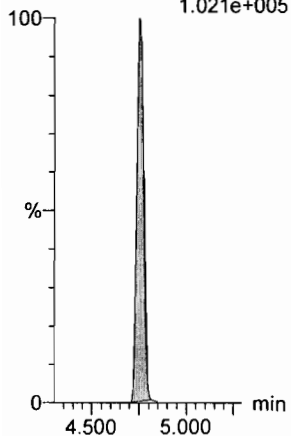


F48:MRM of 2 channels,ES-
570.1 > 483.0
5.265e+004



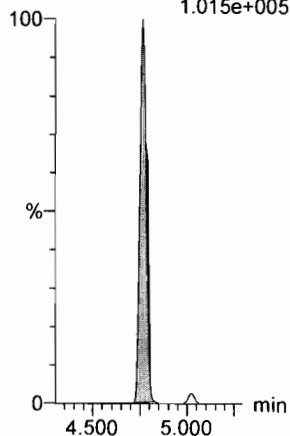
13C8-PFOA

F34:MRM of 1 channel,ES-
506.1 > 77.7
1.021e+005



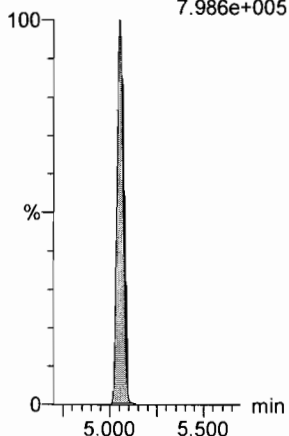
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
1.015e+005



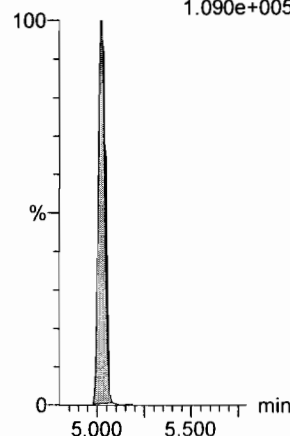
13C2-PFDA

F38:MRM of 1 channel,ES-
515.1 > 469.9
7.986e+005



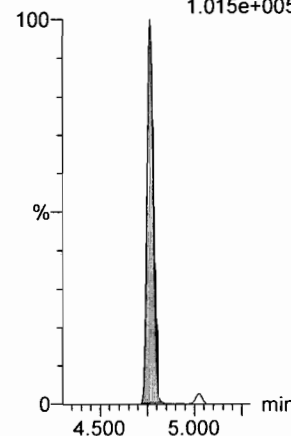
13C2-8:2 FTS

F43:MRM of 1 channel,ES-
529.1 > 508.7
1.090e+005



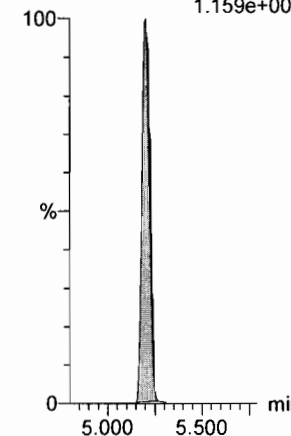
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
1.015e+005



d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
1.159e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

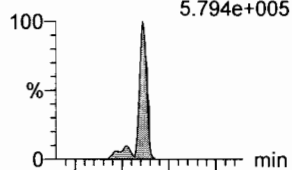
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Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

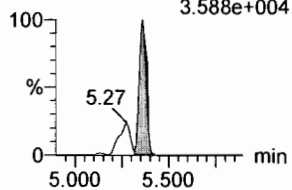
Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

L-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
5.794e+005

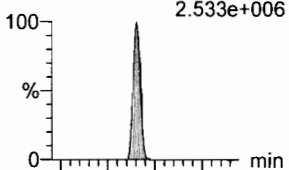


F51:MRM of 2 channels,ES-
584.2 > 483.0
3.588e+004

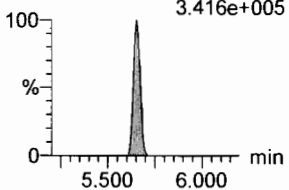


PFDoA

F54:MRM of 4 channels,ES-
612.9 > 569.0
2.533e+006

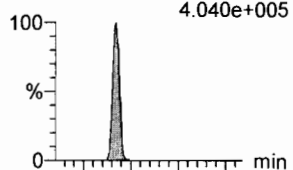


F54:MRM of 4 channels,ES-
612.9 > 318.8
3.416e+005

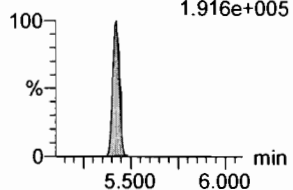


PFDS

F53:MRM of 2 channels,ES-
598.8 > 80
4.040e+005

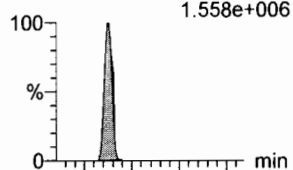


F53:MRM of 2 channels,ES-
598.8 > 98.7
1.916e+005

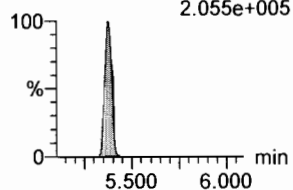


PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
1.558e+006

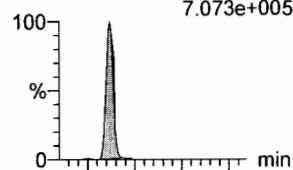


F46:MRM of 2 channels,ES-
563.0 > 269
2.055e+005

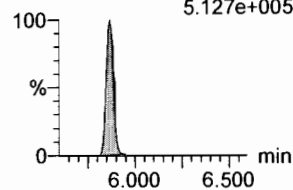


N-MeFOSA

F36:MRM of 2 channels,ES-
512.1 > 168.9
7.073e+005

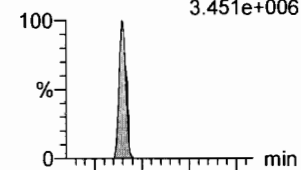


F36:MRM of 2 channels,ES-
512.1 > 219
5.127e+005

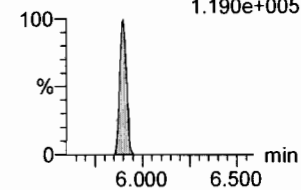


PFTrDA

F60:MRM of 2 channels,ES-
662.9 > 618.9
3.451e+006

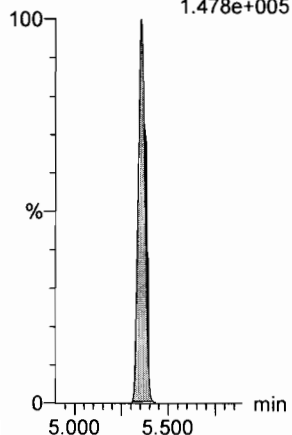


F60:MRM of 2 channels,ES-
662.9 > 319
1.190e+005



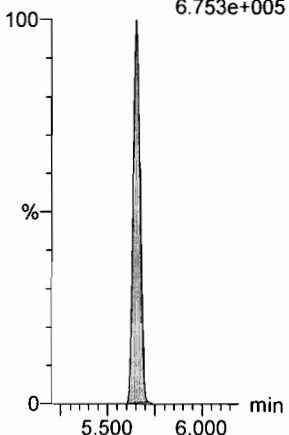
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
1.478e+005



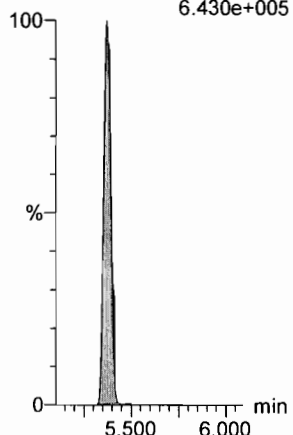
13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.753e+005



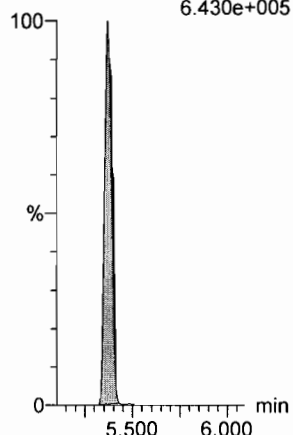
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
6.430e+005



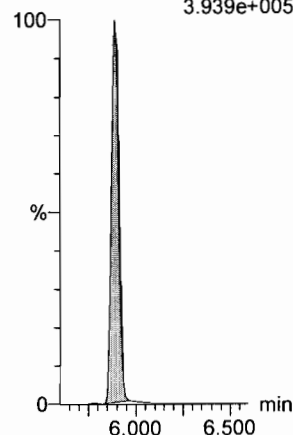
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
6.430e+005



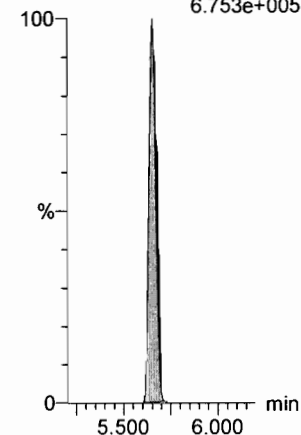
d3-N-MeFOSA

F39:MRM of 1 channel,ES-
515.2 > 168.9
3.939e+005



13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.753e+005



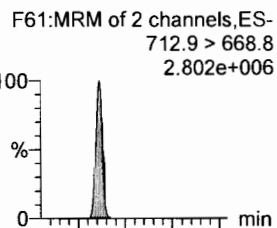
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

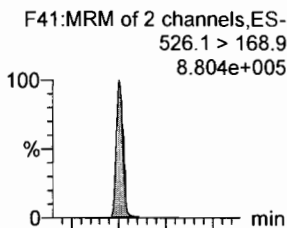
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Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

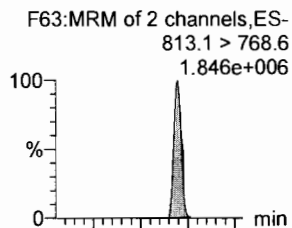
PFTeDA



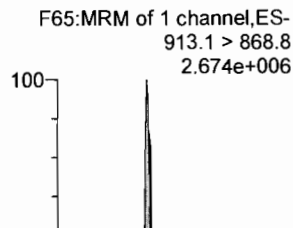
N-EtFOSA



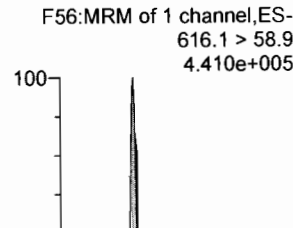
PFHxDA



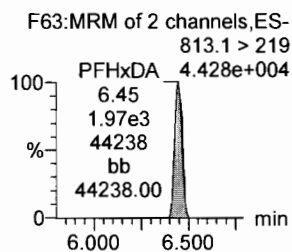
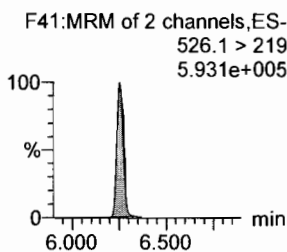
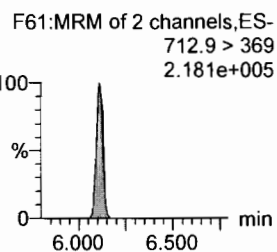
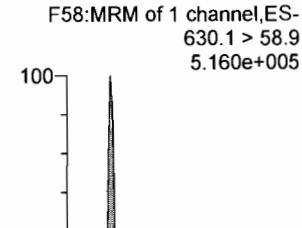
PFODA



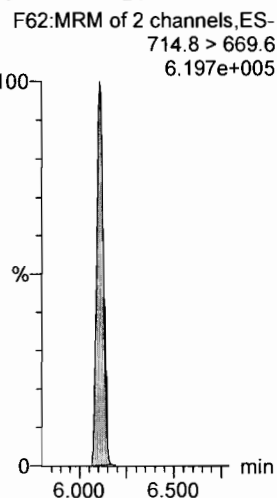
N-MeFOSE



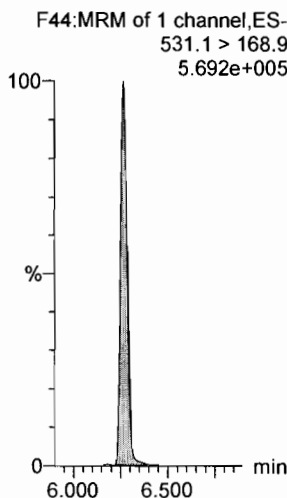
N-EtFOSE



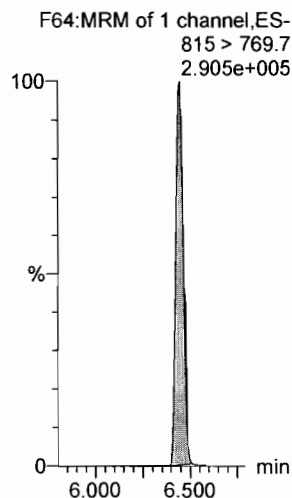
13C2-PFTeDA



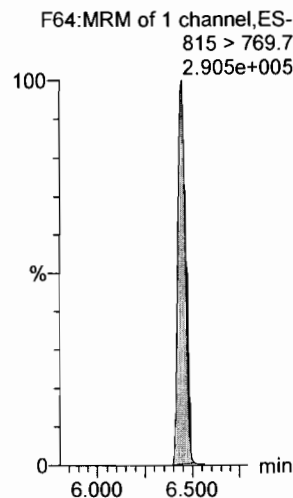
d5-N-ETFOSA



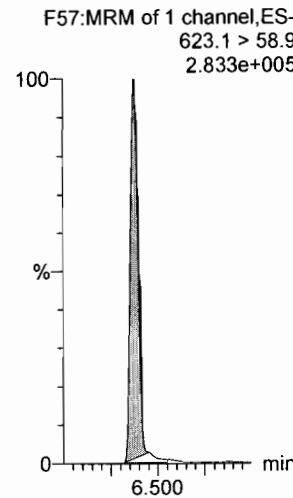
13C2-PFHxDA



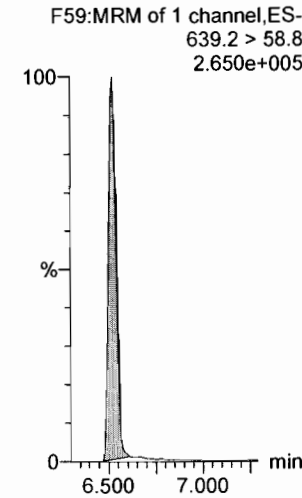
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



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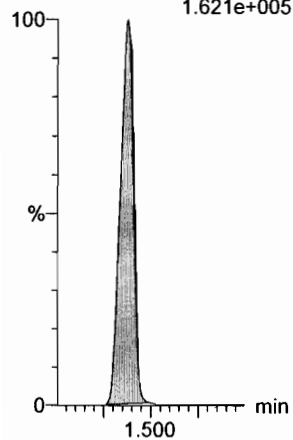
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Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_8, Date: 03-Jun-2018, Time: 19:10:37, ID: ST180603M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

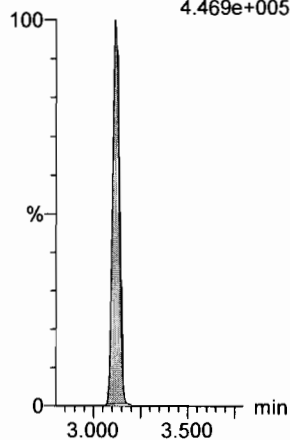
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.621e+005



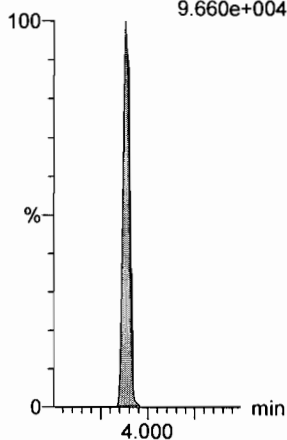
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.469e+005



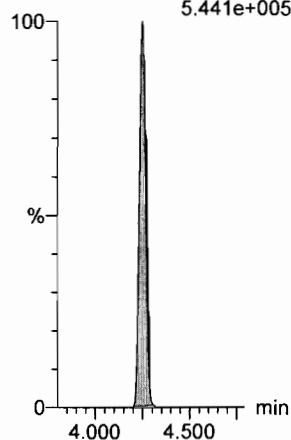
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
9.660e+004



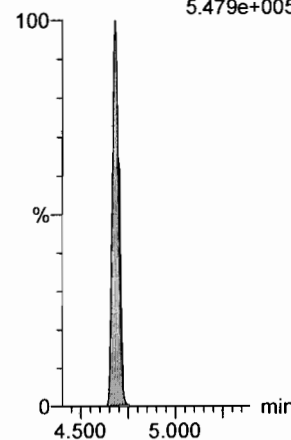
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
5.441e+005



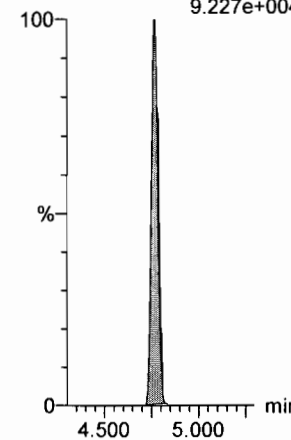
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.479e+005



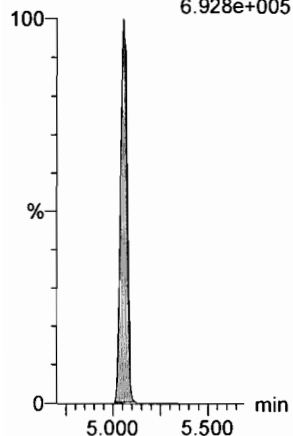
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
9.227e+004



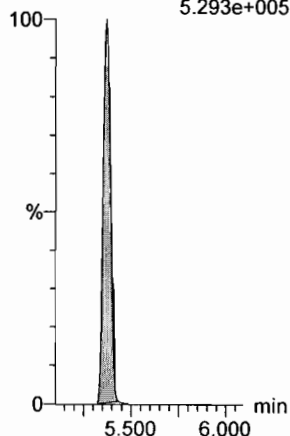
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
6.928e+005



13C7-PFUdA

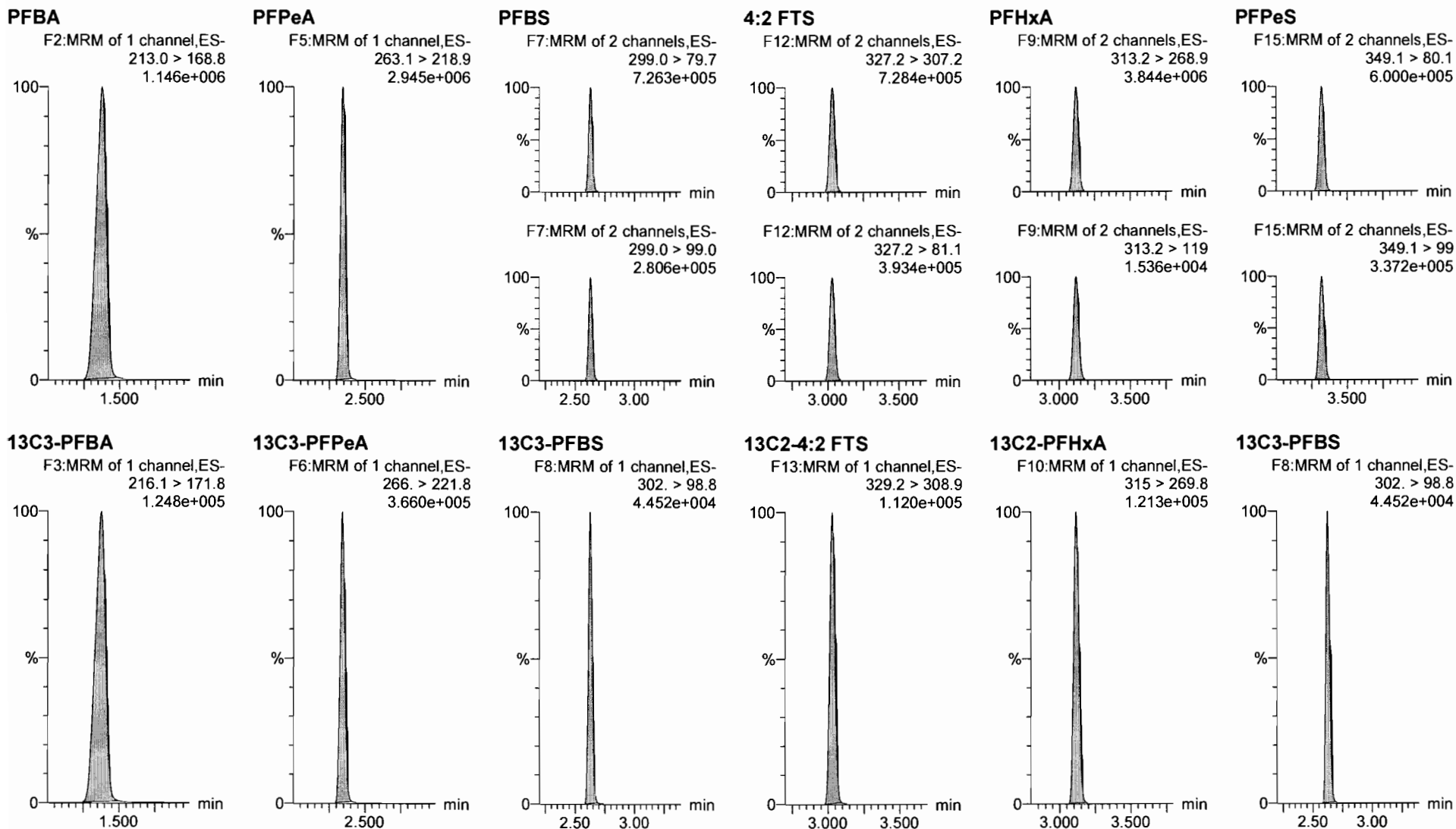
F49:MRM of 1 channel,ES-
570.1 > 524.8
5.293e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

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Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

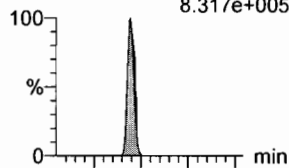
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

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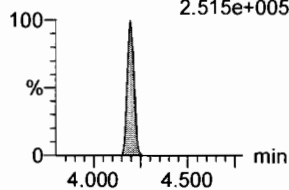
Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
8.317e+005

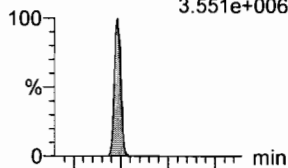


F24:MRM of 2 channels,ES-
427.1 > 80
2.515e+005

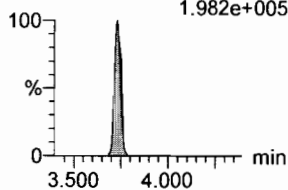


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
3.551e+006

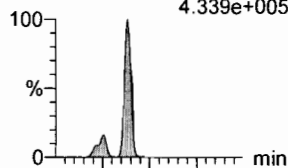


F16:MRM of 2 channels,ES-
363.0 > 169.0
1.982e+005

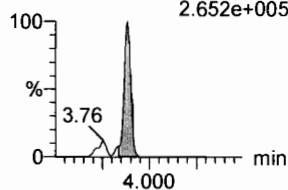


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
4.339e+005

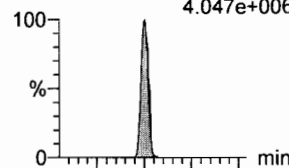


F18:MRM of 2 channels,ES-
398.9 > 99.0
2.652e+005

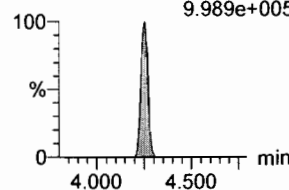


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
4.047e+006

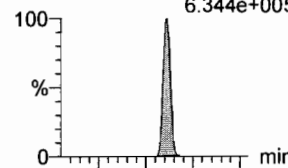


F21:MRM of 2 channels,ES-
413 > 169
9.989e+005

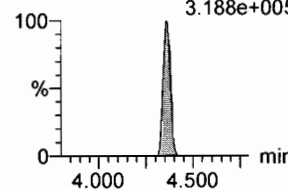


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
6.344e+005

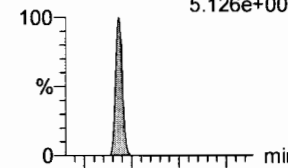


F26:MRM of 2 channels,ES-
449 > 98.7
3.188e+005

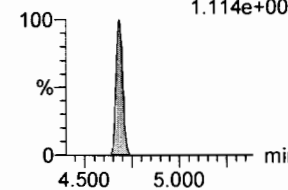


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
5.126e+006

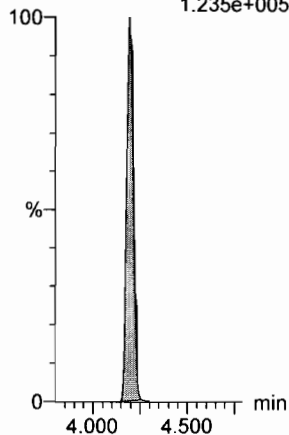


F27:MRM of 2 channels,ES-
463.0 > 219.0
1.114e+006



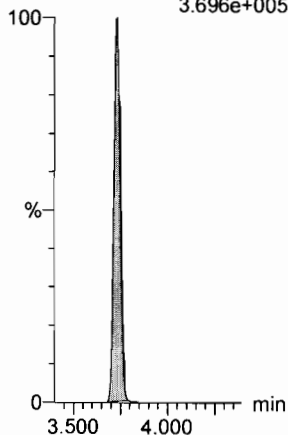
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
1.235e+005



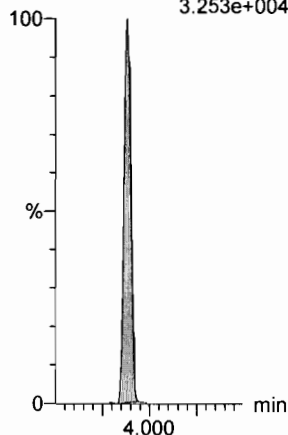
13C4-PFHpA

F17:MRM of 1 channel,ES-
367.2 > 321.8
3.696e+005



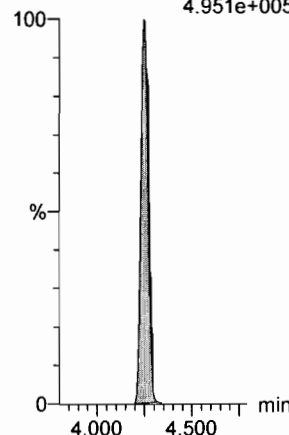
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
3.253e+004



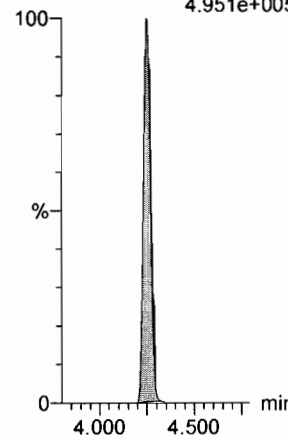
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.951e+005



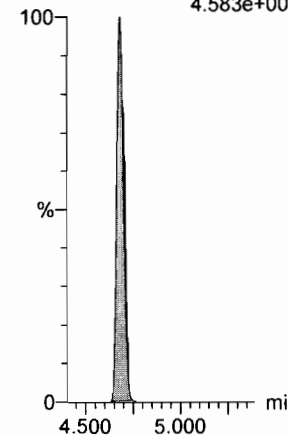
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.951e+005



13C5-PFNA

F28:MRM of 1 channel,ES-
468.2 > 422.9
4.583e+005



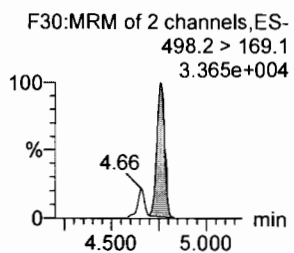
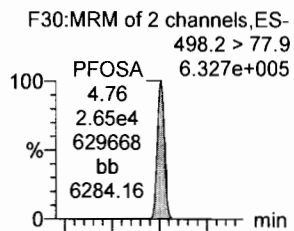
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Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

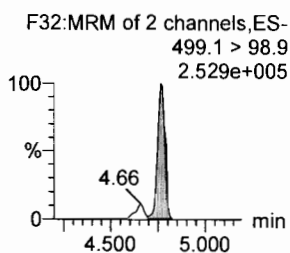
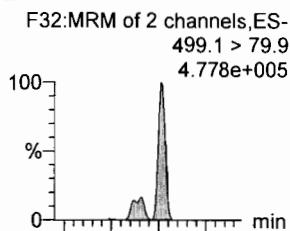
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Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

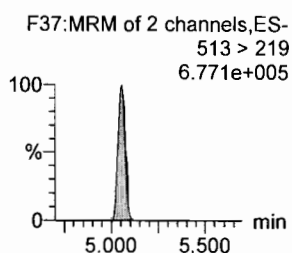
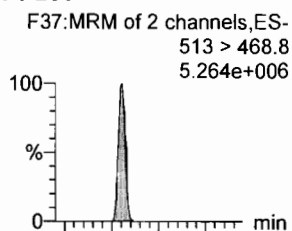
PFOSA



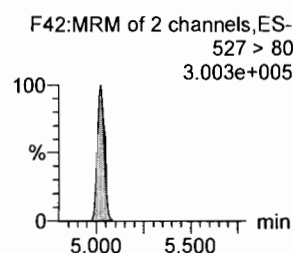
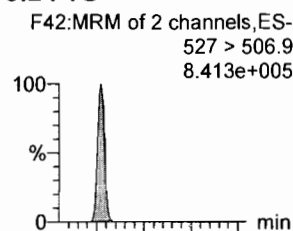
L-PFOS



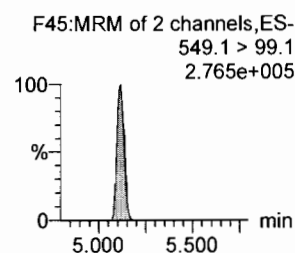
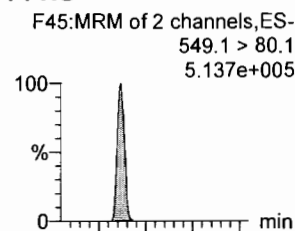
PFDA



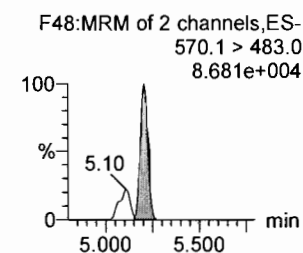
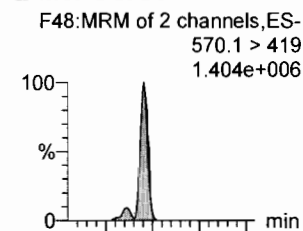
8:2 FTS



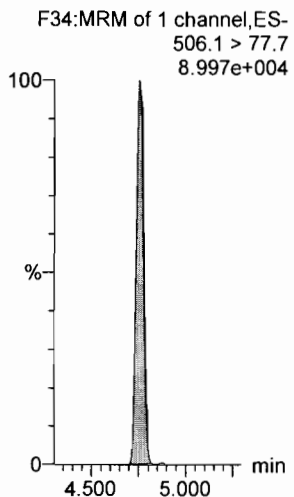
PFNS



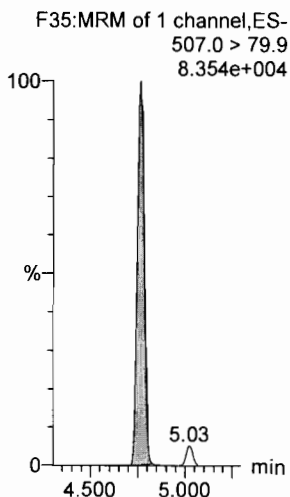
L-MeFOSAA



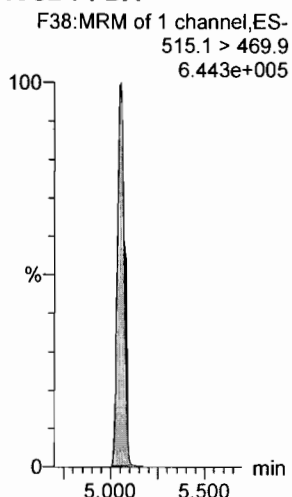
13C8-PFOA



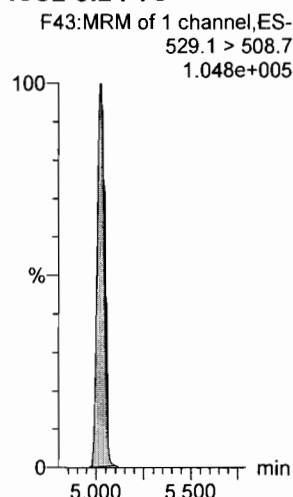
13C8-PFOS



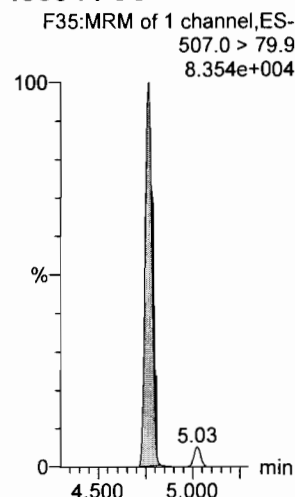
13C2-PFDA



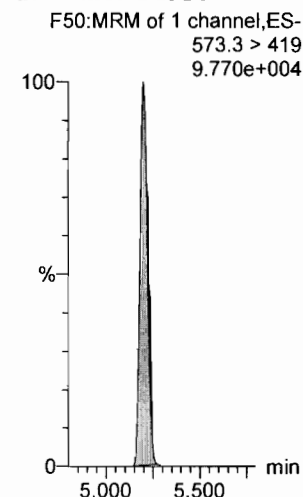
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

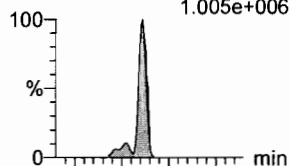
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

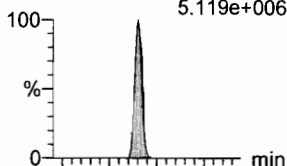
L-EtFOSAA

F51:MRM of 2 channels,ES-
584.2 > 419
1.005e+006



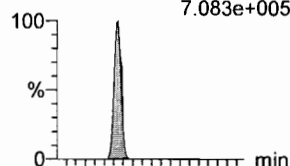
PFDoA

F54:MRM of 4 channels,ES-
612.9 > 569.0
5.119e+006



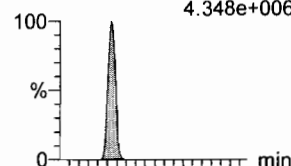
PFDS

F53:MRM of 2 channels,ES-
598.8 > 80
7.083e+005



PFUdA

F46:MRM of 2 channels,ES-
563.0 > 518.9
4.348e+006



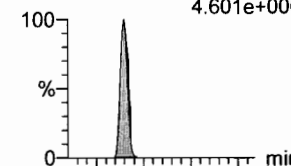
N-MeFOSA

F36:MRM of 2 channels,ES-
512.1 > 168.9
1.219e+006

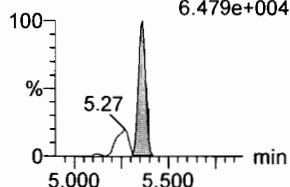


PFTrDA

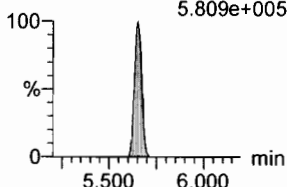
F60:MRM of 2 channels,ES-
662.9 > 618.9
4.601e+006



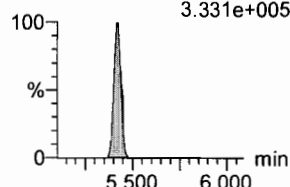
F51:MRM of 2 channels,ES-
584.2 > 483.0
6.479e+004



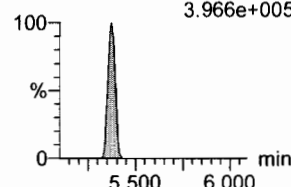
F54:MRM of 4 channels,ES-
612.9 > 318.8
5.809e+005



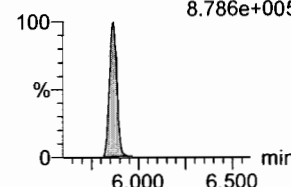
F53:MRM of 2 channels,ES-
598.8 > 98.7
3.331e+005



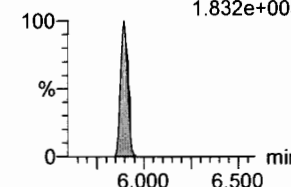
F46:MRM of 2 channels,ES-
563.0 > 269
3.966e+005



F36:MRM of 2 channels,ES-
512.1 > 219
8.786e+005

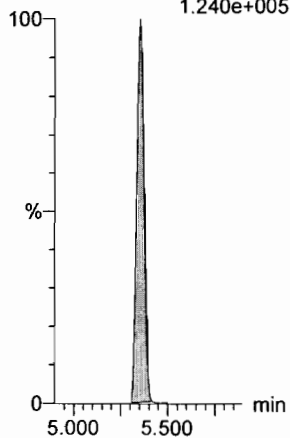


F60:MRM of 2 channels,ES-
662.9 > 319
1.832e+005



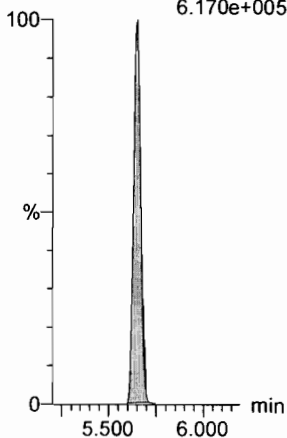
d5-N-EtFOSAA

F52:MRM of 1 channel,ES-
589.3 > 419
1.240e+005



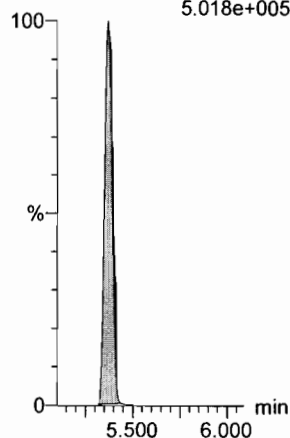
13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.170e+005



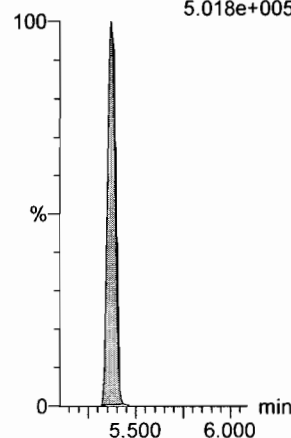
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
5.018e+005



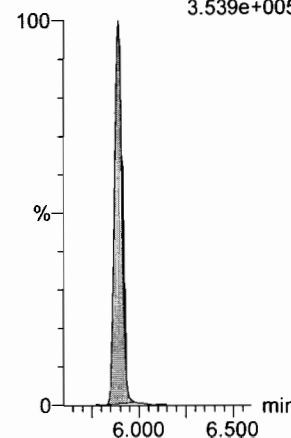
13C2-PFUdA

F47:MRM of 1 channel,ES-
565 > 519.8
5.018e+005



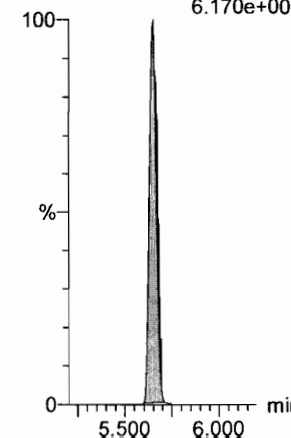
d3-N-MeFOSA

F39:MRM of 1 channel,ES-
515.2 > 168.9
3.539e+005



13C2-PFDoA

F55:MRM of 2 channels,ES-
615.0 > 569.7
6.170e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

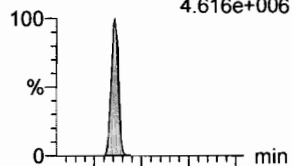
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

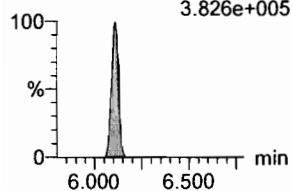
Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
4.616e+006

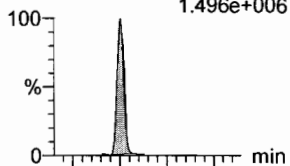


F61:MRM of 2 channels,ES-
712.9 > 369
3.826e+005

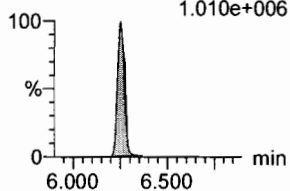


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
1.496e+006

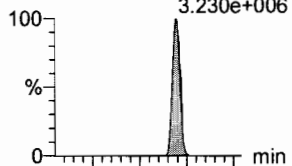


F41:MRM of 2 channels,ES-
526.1 > 219
1.010e+006



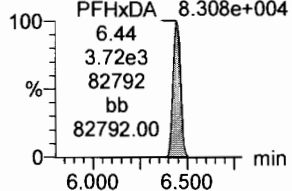
PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
3.230e+006



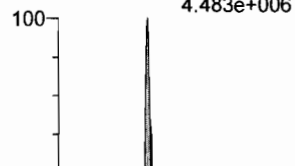
F63:MRM of 2 channels,ES-
813.1 > 219
8.308e+004

PFHxDA
6.44
3.72e3
82792
bb
82792.00



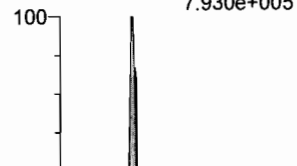
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
4.483e+006



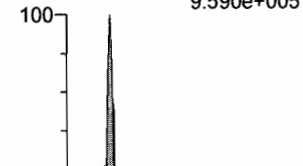
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
7.930e+005



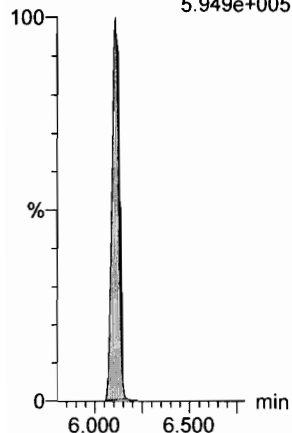
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
9.590e+005



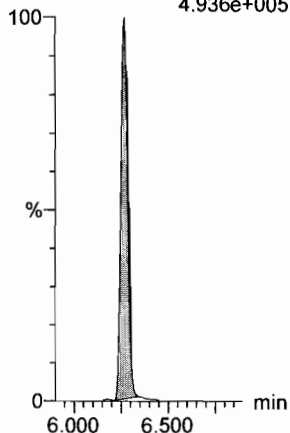
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
5.949e+005



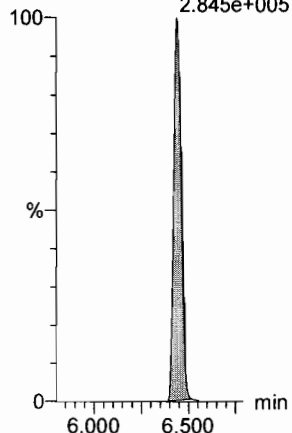
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.936e+005



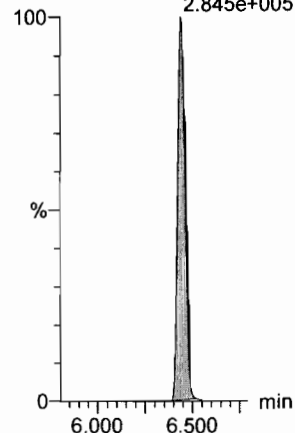
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.845e+005



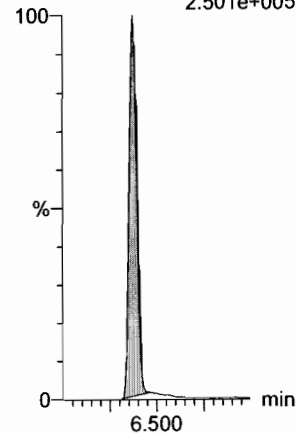
13C2-PFODA

F64:MRM of 1 channel,ES-
815 > 769.7
2.845e+005



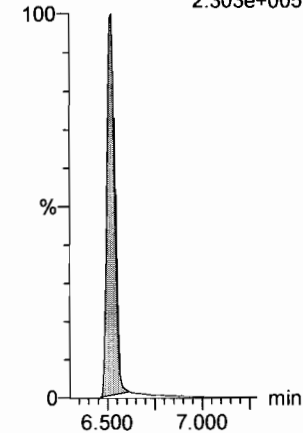
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.501e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.303e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

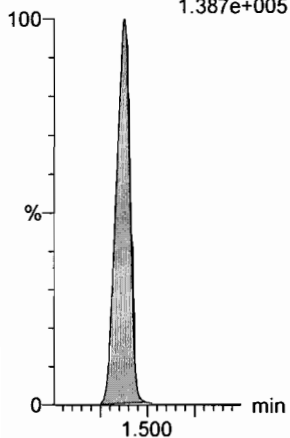
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_9, Date: 03-Jun-2018, Time: 19:21:07, ID: ST180603M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

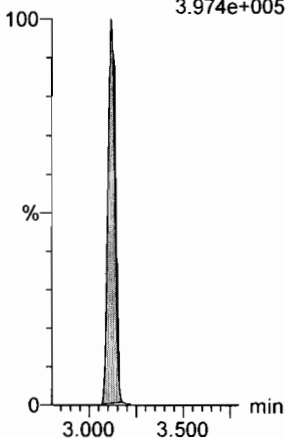
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.387e+005



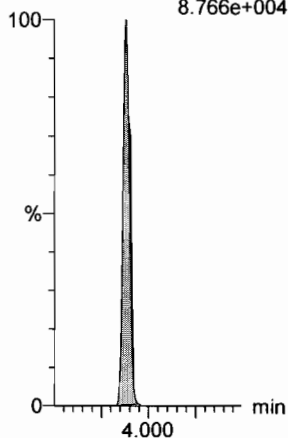
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
3.974e+005



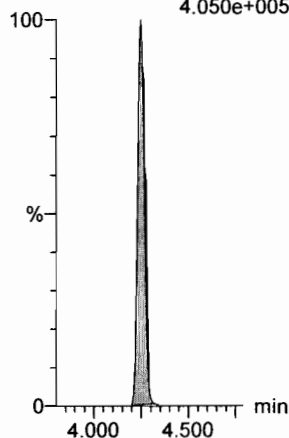
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.766e+004



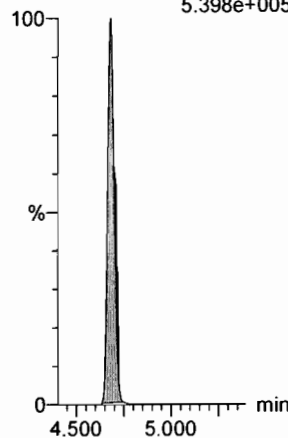
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.050e+005



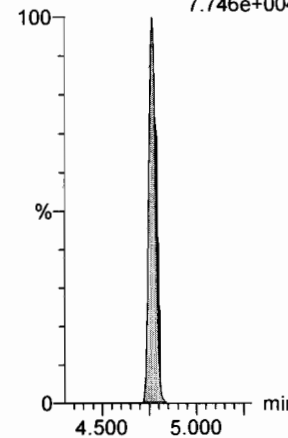
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.398e+005



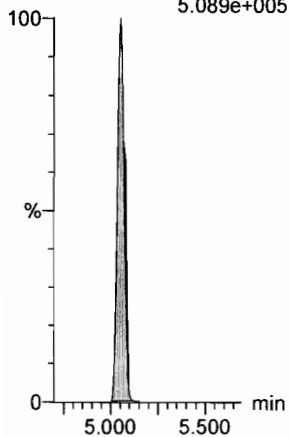
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
7.746e+004



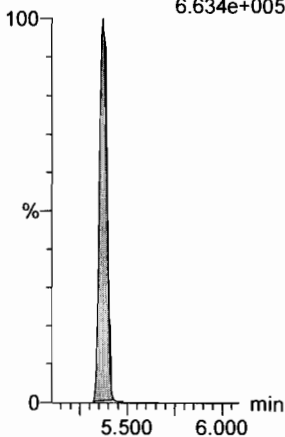
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.089e+005



13C7-PFUDa

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.634e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

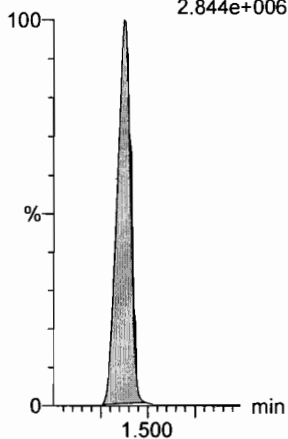
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

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Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

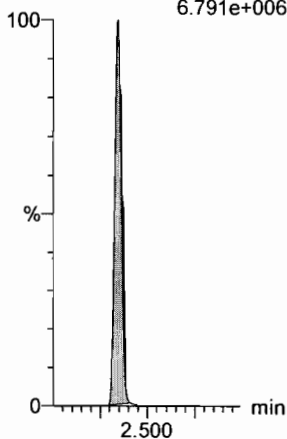
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
2.844e+006



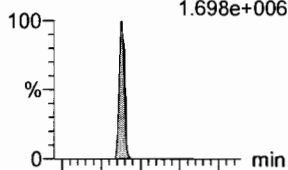
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
6.791e+006

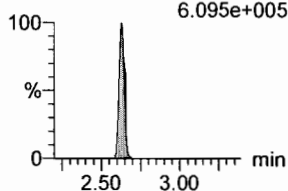


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
1.698e+006

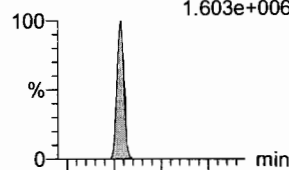


F7:MRM of 2 channels,ES-
299.0 > 99.0
6.095e+005

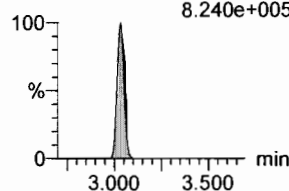


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
1.603e+006

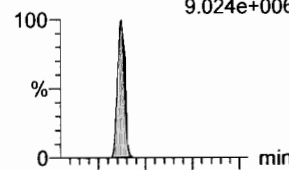


F12:MRM of 2 channels,ES-
327.2 > 81.1
8.240e+005

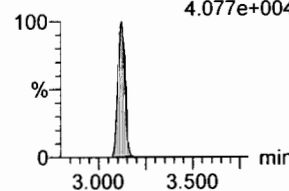


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
9.024e+006

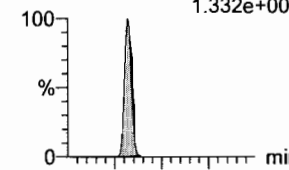


F9:MRM of 2 channels,ES-
313.2 > 119
4.077e+004

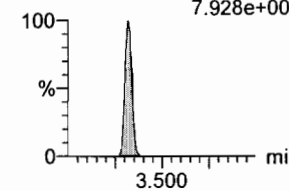


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
1.332e+006

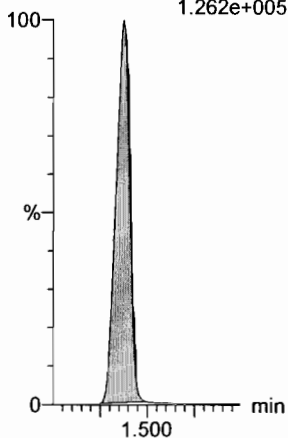


F15:MRM of 2 channels,ES-
349.1 > 99
7.928e+005



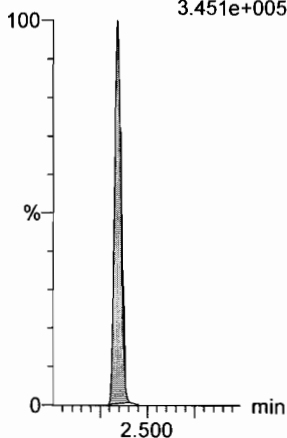
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.262e+005



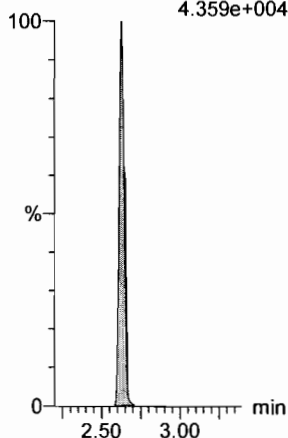
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.451e+005



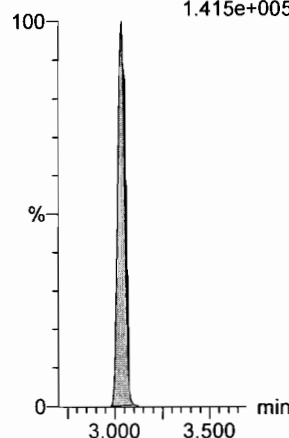
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.359e+004



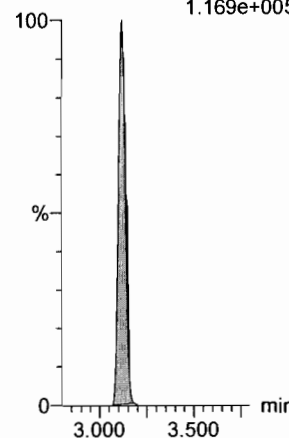
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
1.415e+005



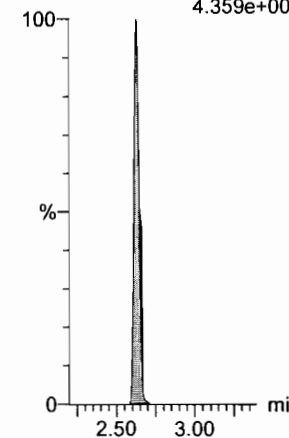
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.169e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.359e+004



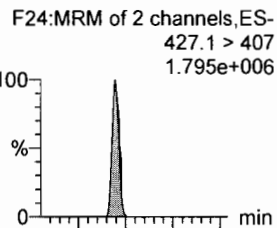
Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

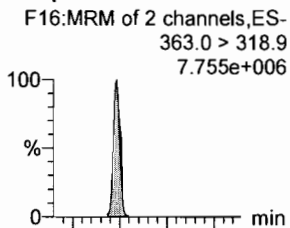
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

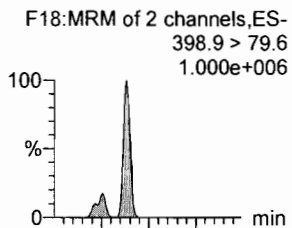
6:2 FTS



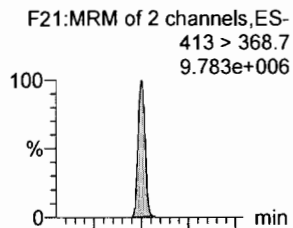
PFHpA



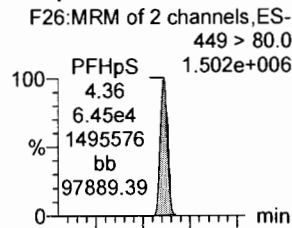
L-PFHxS



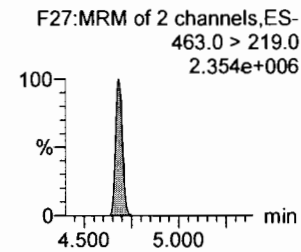
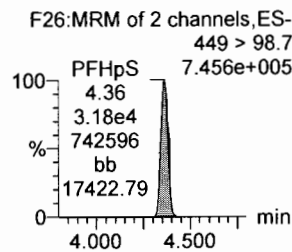
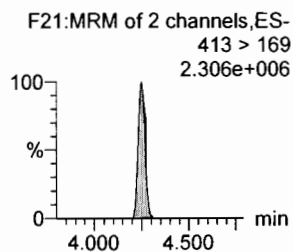
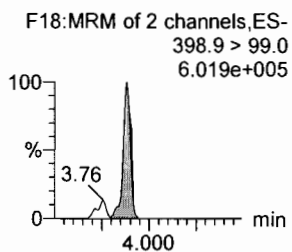
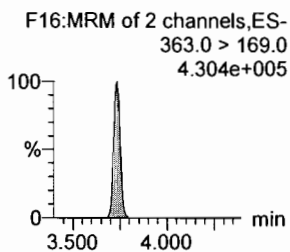
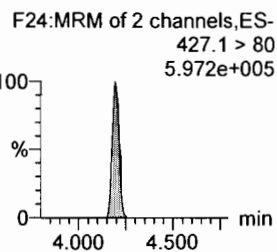
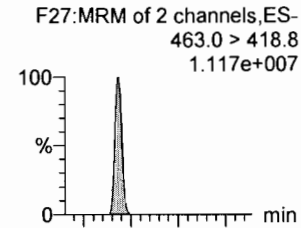
L-PFOA



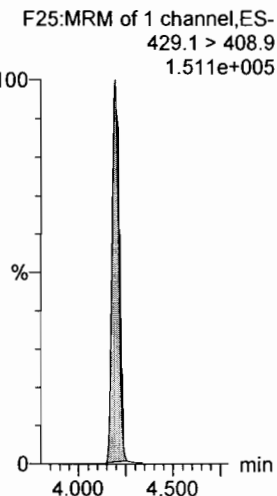
PFHpS



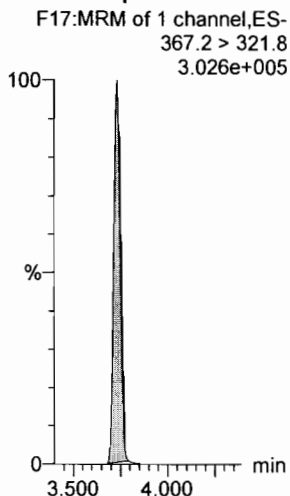
PFNA



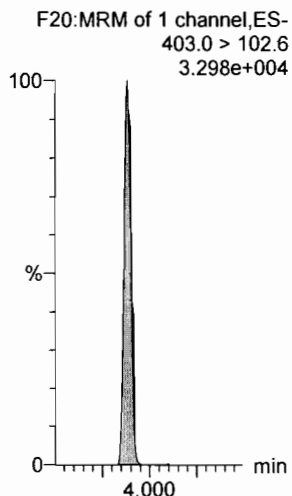
13C2-6:2 FTS



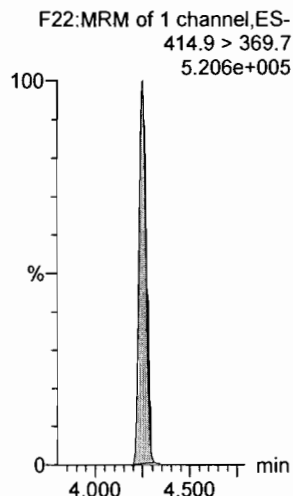
13C4-PFHpA



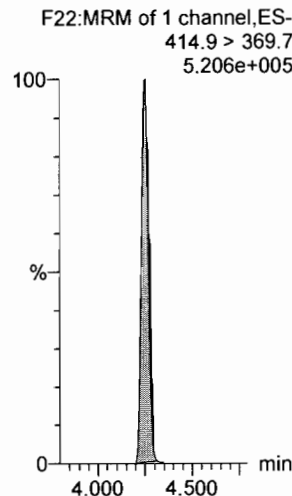
18O2-PFHxS



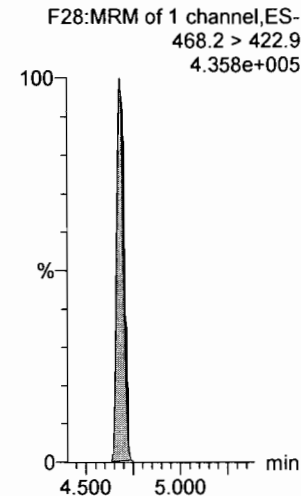
13C2-PFOA



13C2-PFOA



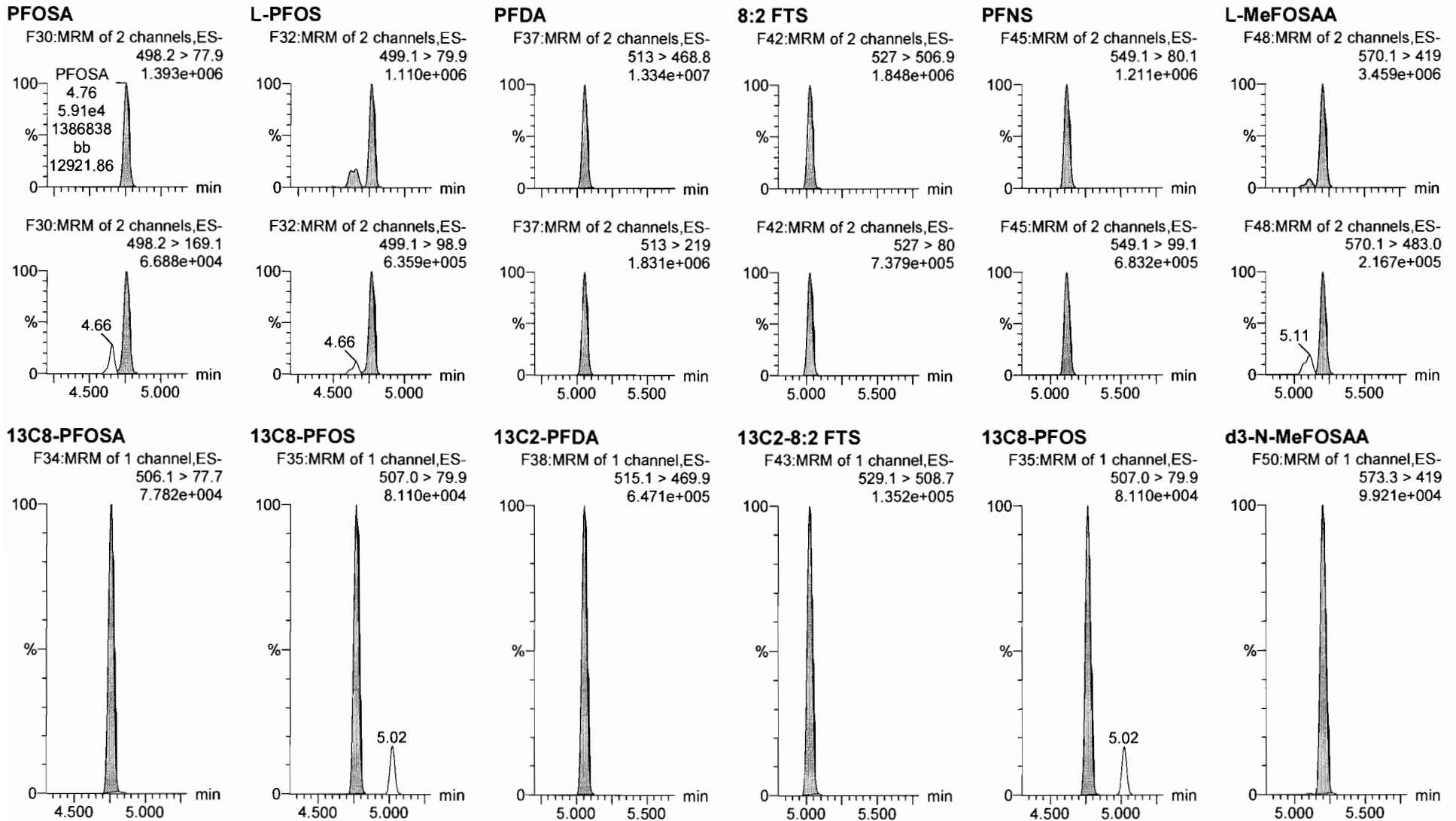
13C5-PFNA



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

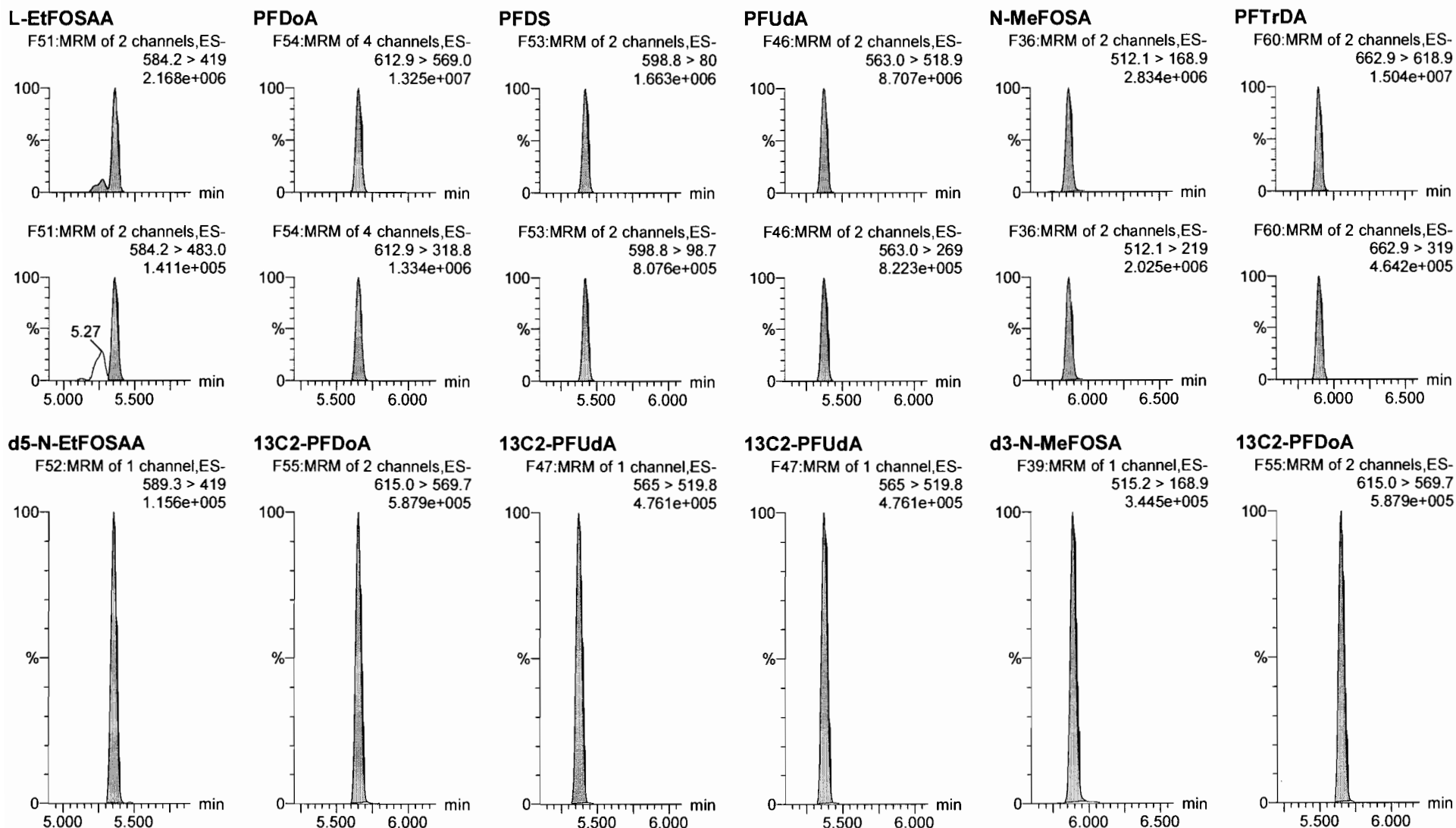


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

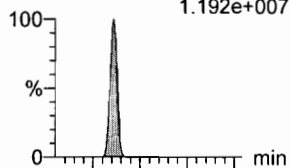
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

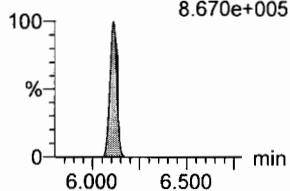
Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
1.192e+007

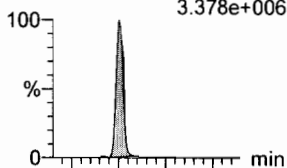


F61:MRM of 2 channels,ES-
712.9 > 369
8.670e+005

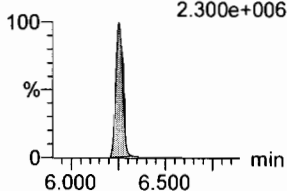


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
3.378e+006

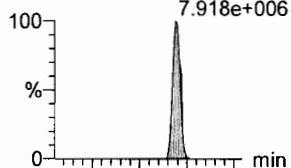


F41:MRM of 2 channels,ES-
526.1 > 219
2.300e+006

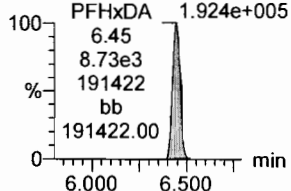


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
7.918e+006

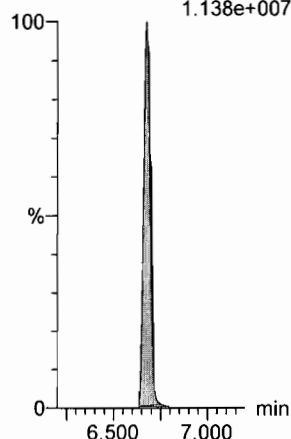


F63:MRM of 2 channels,ES-
813.1 > 219
1.924e+005



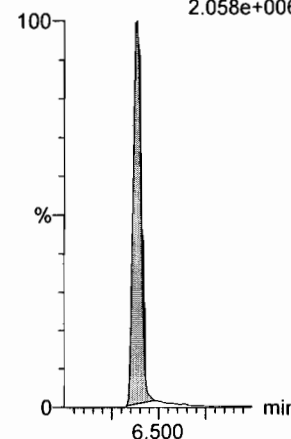
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
1.138e+007



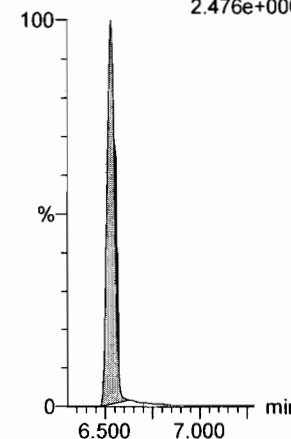
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
2.058e+006



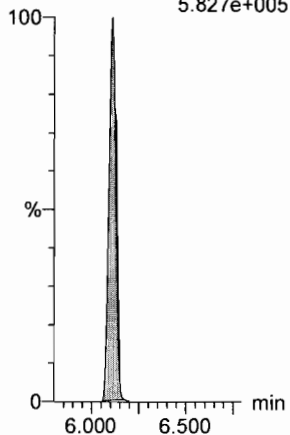
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
2.476e+006



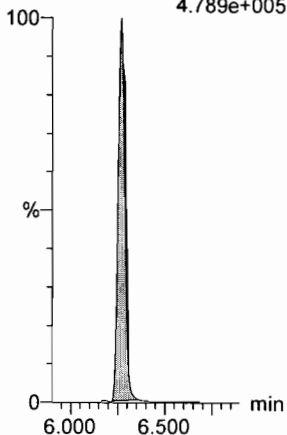
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
5.827e+005



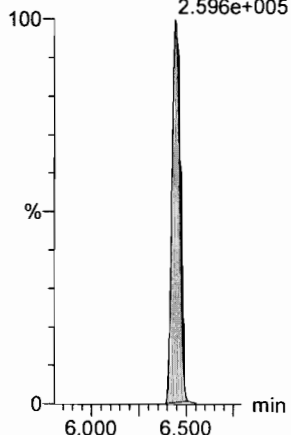
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.789e+005



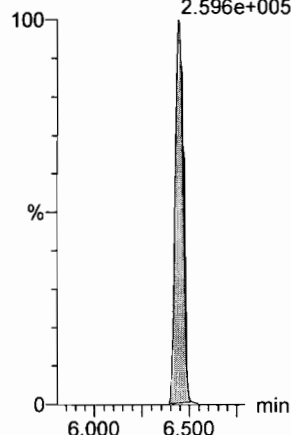
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.596e+005



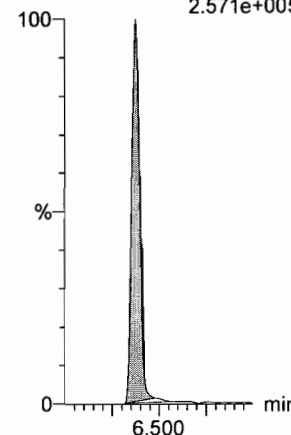
13C2-PFODA

F64:MRM of 1 channel,ES-
815 > 769.7
2.596e+005



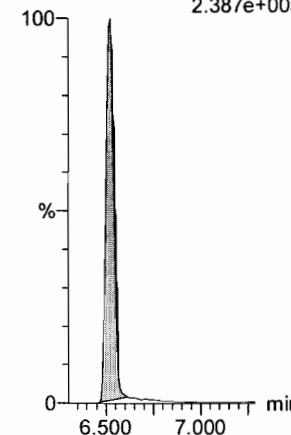
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.571e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.387e+005

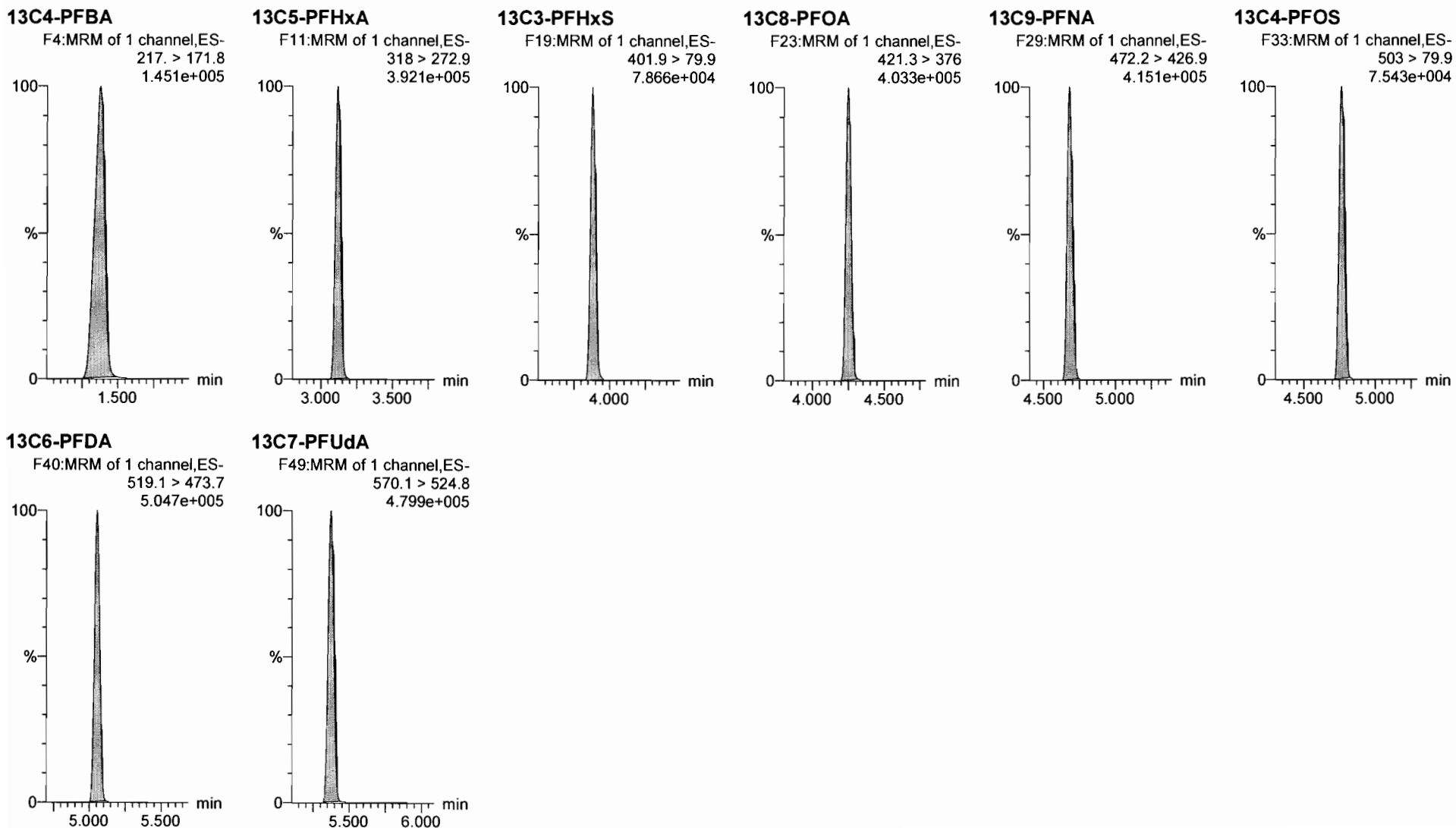


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_10, Date: 03-Jun-2018, Time: 19:31:33, ID: ST180603M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

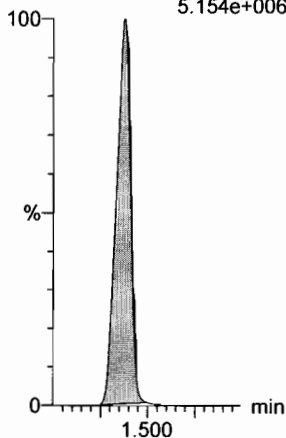
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

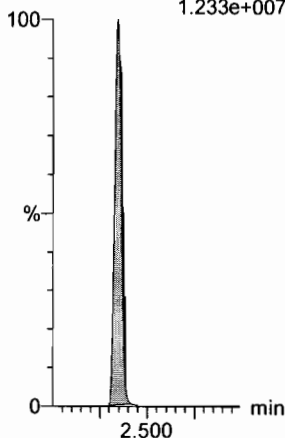
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
5.154e+006



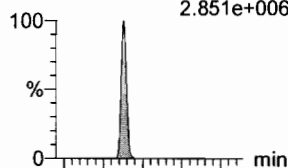
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
1.233e+007

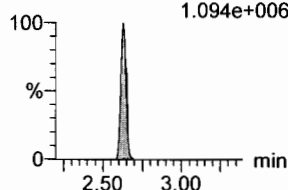


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
2.851e+006

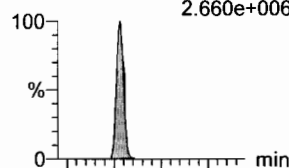


F7:MRM of 2 channels,ES-
299.0 > 99.0
1.094e+006

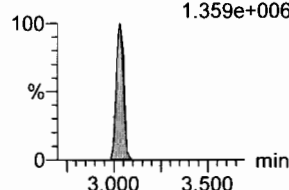


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
2.660e+006

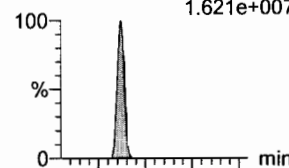


F12:MRM of 2 channels,ES-
327.2 > 81.1
1.359e+006

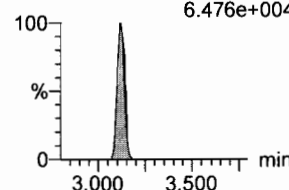


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
1.621e+007

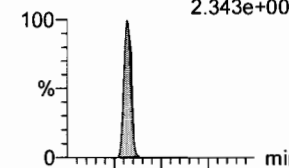


F9:MRM of 2 channels,ES-
313.2 > 119
6.476e+004

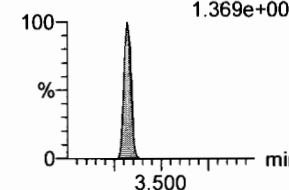


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
2.343e+006

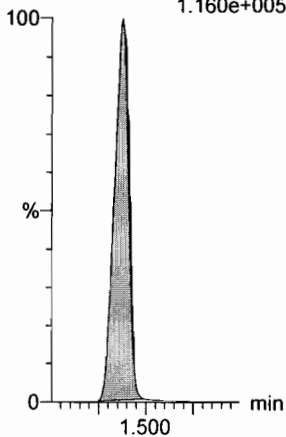


F15:MRM of 2 channels,ES-
349.1 > 99
1.369e+006



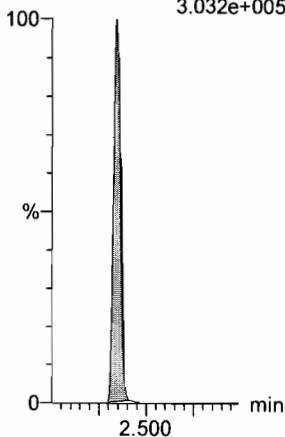
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.160e+005



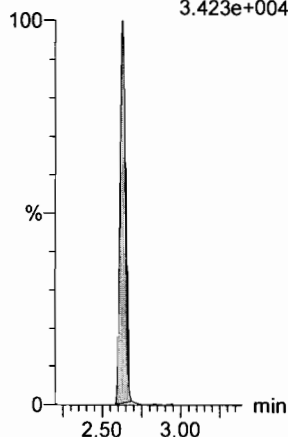
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.032e+005



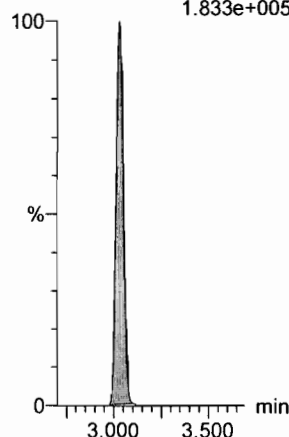
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
3.423e+004



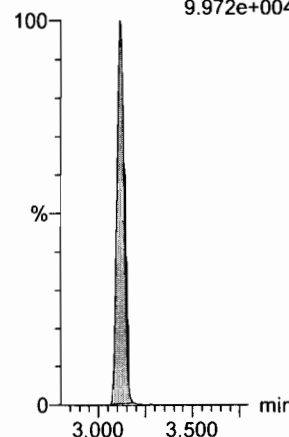
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
1.833e+005



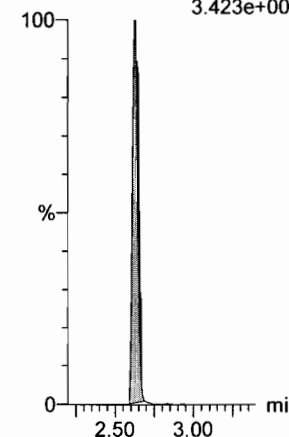
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
9.972e+004



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
3.423e+004



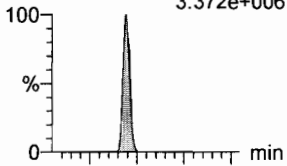
Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

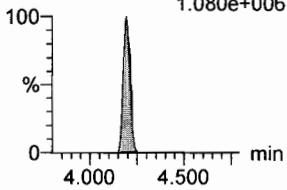
Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
3.372e+006

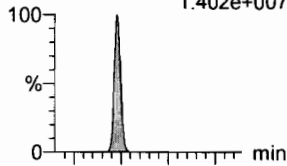


F24:MRM of 2 channels,ES-
427.1 > 80
1.080e+006

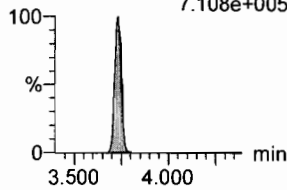


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
1.402e+007

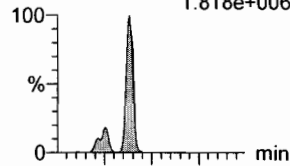


F16:MRM of 2 channels,ES-
363.0 > 169.0
7.108e+005

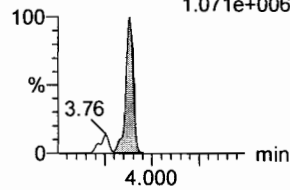


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
1.818e+006

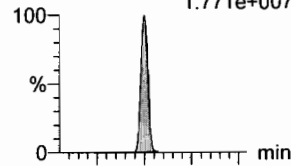


F18:MRM of 2 channels,ES-
398.9 > 99.0
1.071e+006

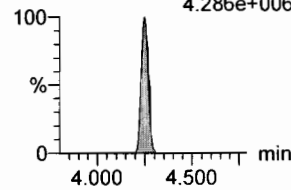


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
1.771e+007

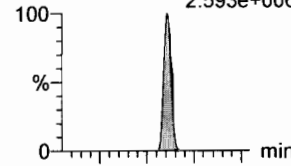


F21:MRM of 2 channels,ES-
413 > 169
4.286e+006

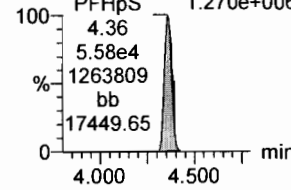


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
2.593e+006

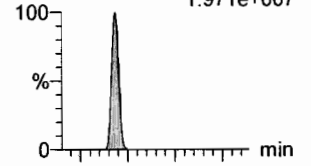


F26:MRM of 2 channels,ES-
449 > 98.7
1.270e+006

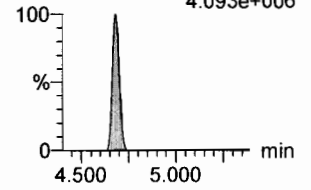


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
1.971e+007

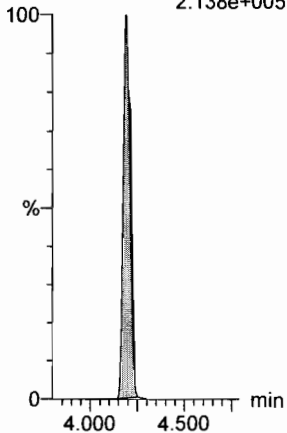


F27:MRM of 2 channels,ES-
463.0 > 219.0
4.093e+006



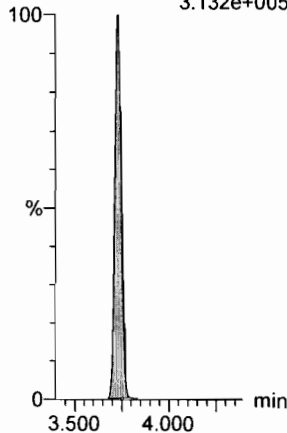
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
2.138e+005



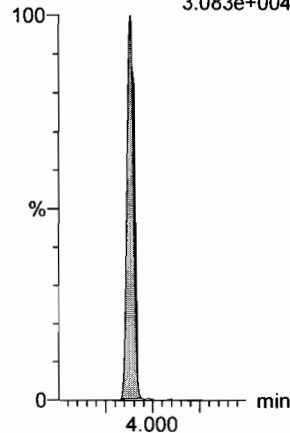
13C4-PFHpA

F17:MRM of 1 channel,ES-
367.2 > 321.8
3.132e+005



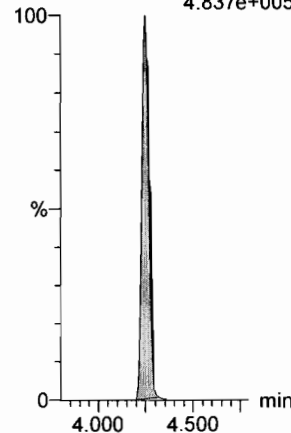
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
3.083e+004



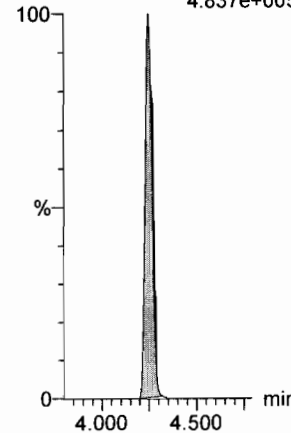
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.837e+005



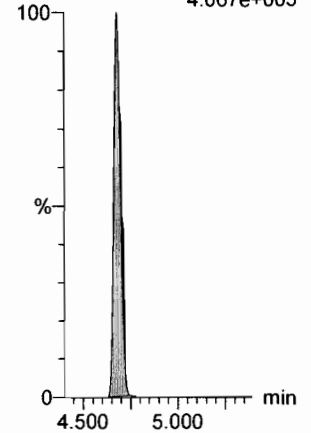
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.837e+005



13C5-PFNA

F28:MRM of 1 channel,ES-
468.2 > 422.9
4.067e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

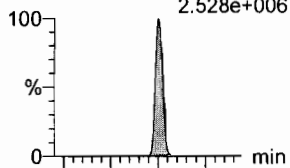
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

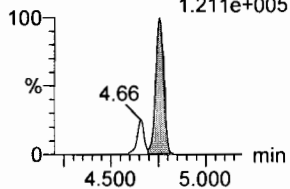
Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

PFOSA

F30:MRM of 2 channels,ES-
498.2 > 77.9
2.528e+006

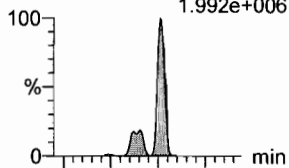


F30:MRM of 2 channels,ES-
498.2 > 169.1
1.211e+005

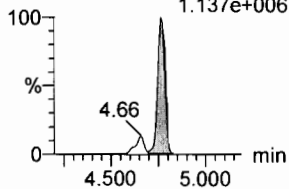


L-PFOS

F32:MRM of 2 channels,ES-
499.1 > 79.9
1.992e+006

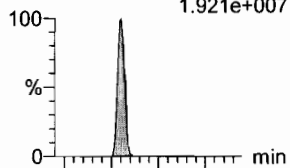


F32:MRM of 2 channels,ES-
499.1 > 98.9
1.137e+006

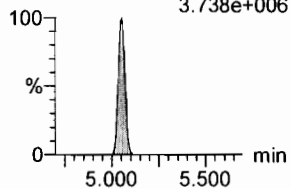


PFDA

F37:MRM of 2 channels,ES-
513 > 468.8
1.921e+007

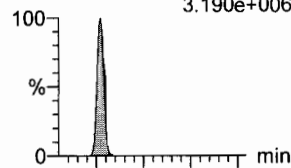


F37:MRM of 2 channels,ES-
513 > 219
3.738e+006

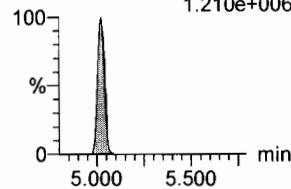


8:2 FTS

F42:MRM of 2 channels,ES-
527 > 506.9
3.190e+006

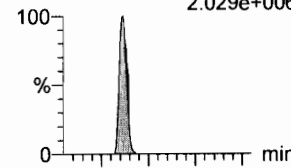


F42:MRM of 2 channels,ES-
527 > 80
1.210e+006

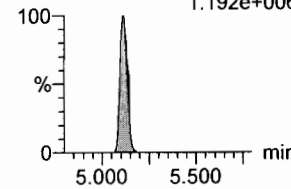


PFNS

F45:MRM of 2 channels,ES-
549.1 > 80.1
2.029e+006

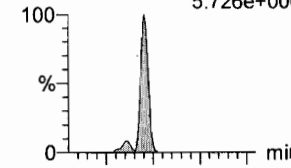


F45:MRM of 2 channels,ES-
549.1 > 99.1
1.192e+006

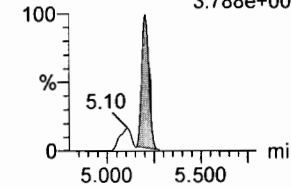


L-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
5.726e+006

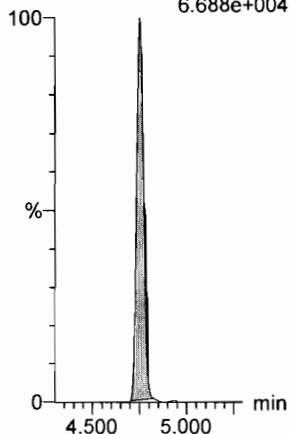


F48:MRM of 2 channels,ES-
570.1 > 483.0
3.788e+005



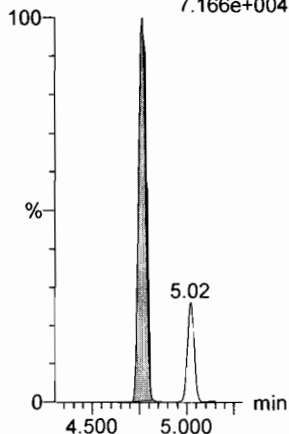
13C8-PFOSA

F34:MRM of 1 channel,ES-
506.1 > 77.7
6.688e+004



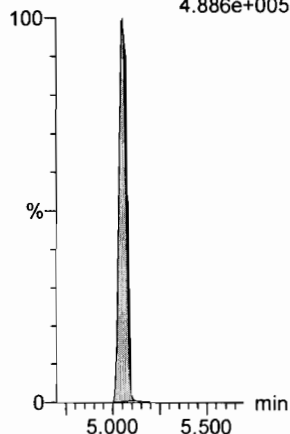
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
7.166e+004



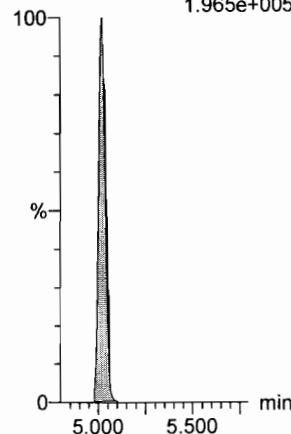
13C2-PFDA

F38:MRM of 1 channel,ES-
515.1 > 469.9
4.886e+005



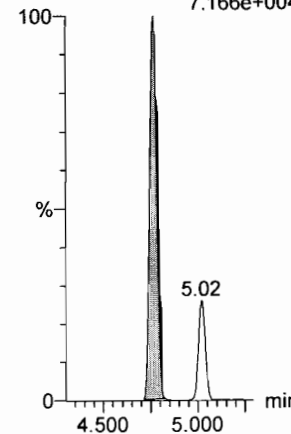
13C2-8:2 FTS

F43:MRM of 1 channel,ES-
529.1 > 508.7
1.965e+005



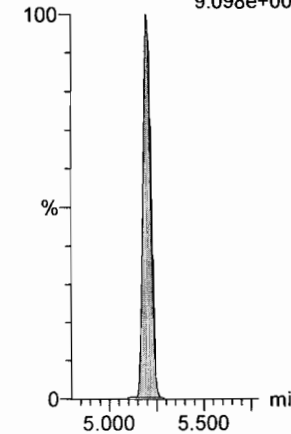
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
7.166e+004



d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
9.098e+004

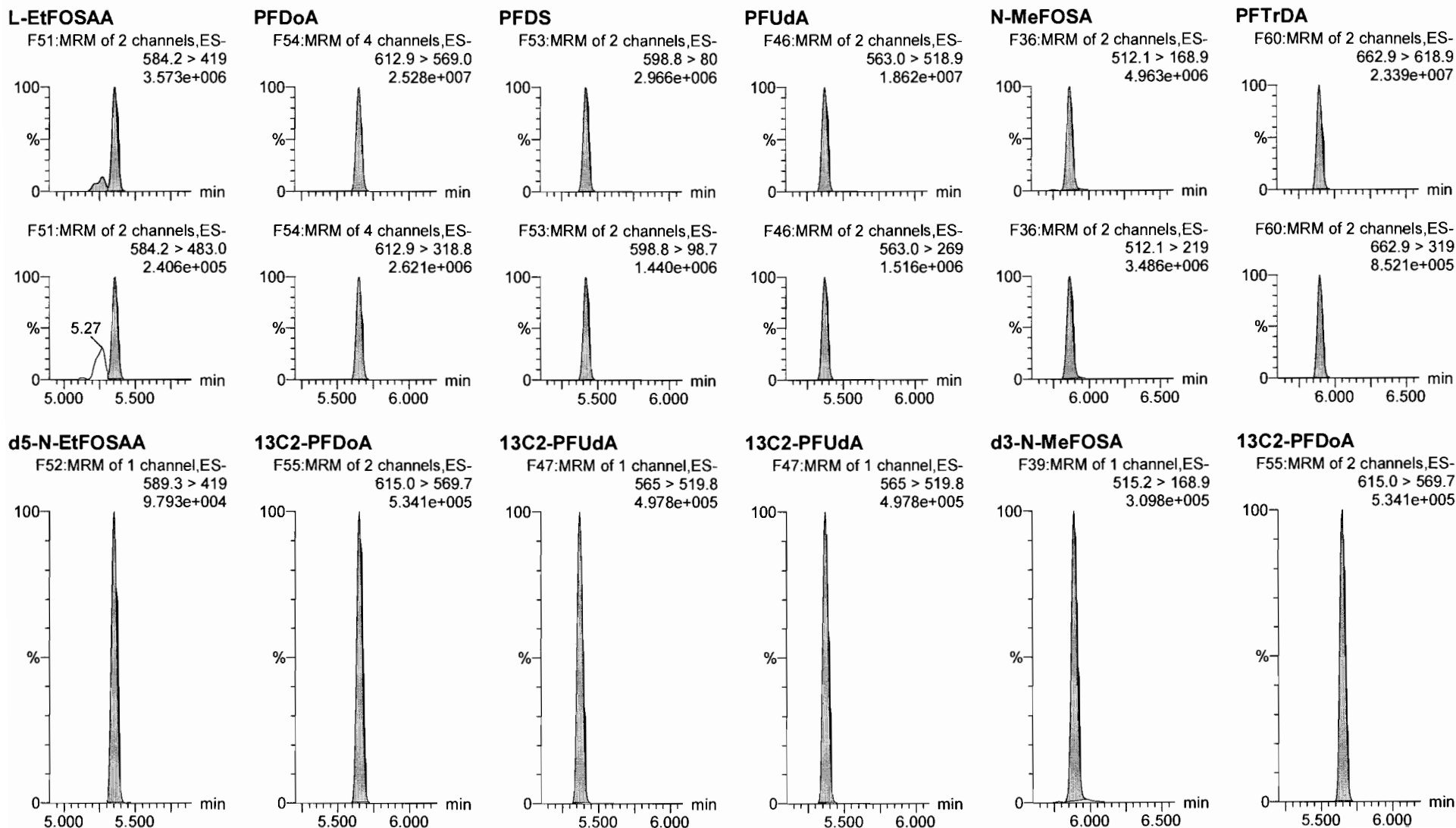


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

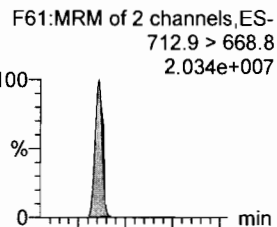


Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

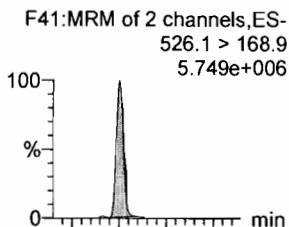
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time
Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

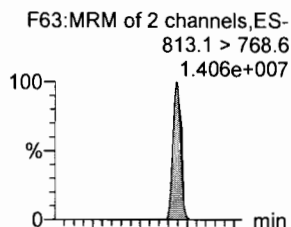
PFTeDA



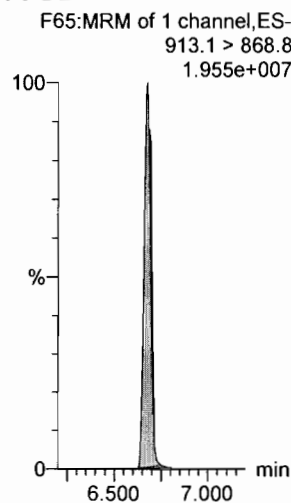
N-EtFOSEA



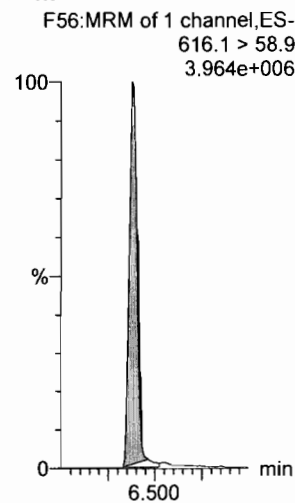
PFHxDA



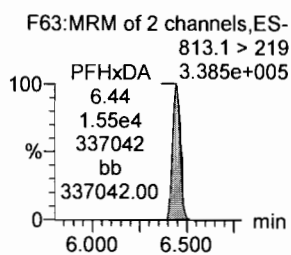
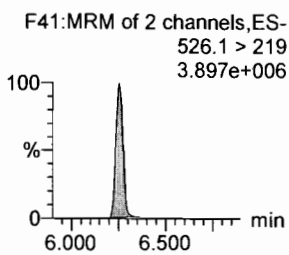
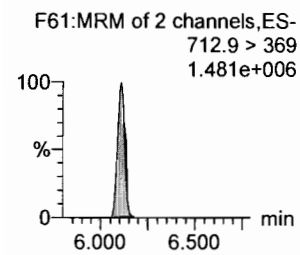
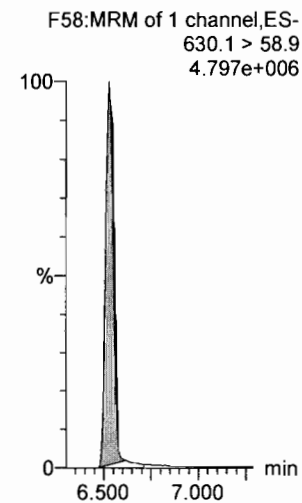
PFODA



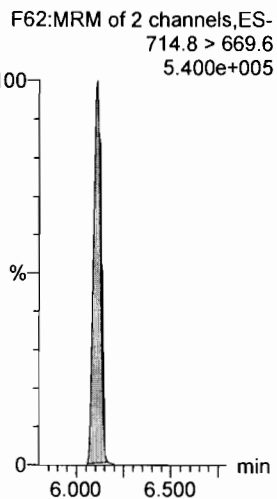
N-MeFOSE



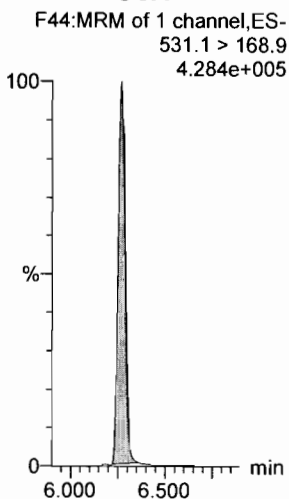
N-EtFOSE



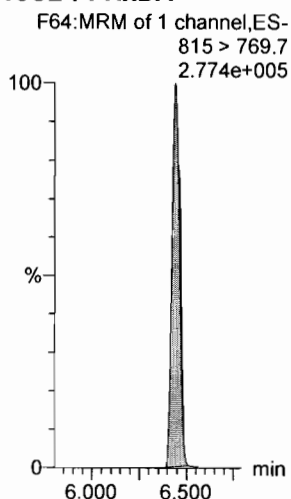
13C2-PFTeDA



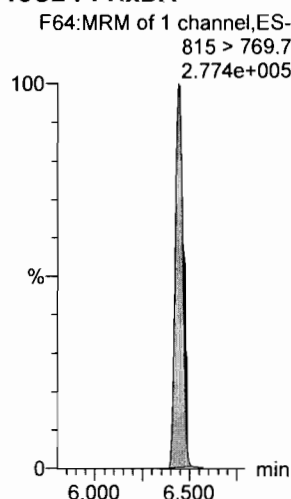
d5-N-ETFOSEA



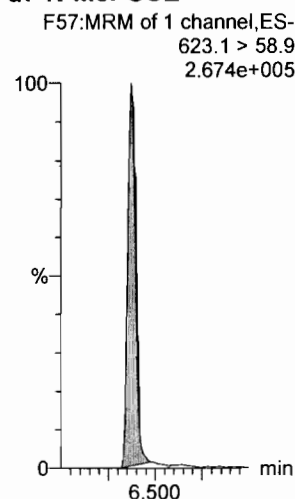
13C2-PFHxDA



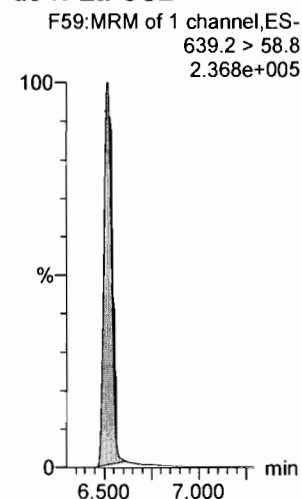
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-CRV.qld

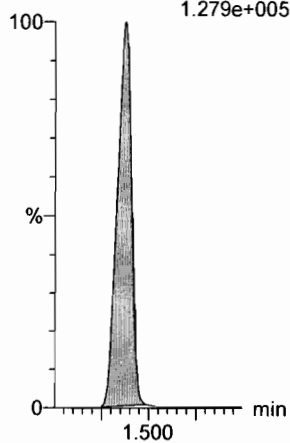
Last Altered: Monday, June 04, 2018 08:44:22 Pacific Daylight Time

Printed: Monday, June 04, 2018 08:45:41 Pacific Daylight Time

Name: 180603M2_11, Date: 03-Jun-2018, Time: 19:42:03, ID: ST180603M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

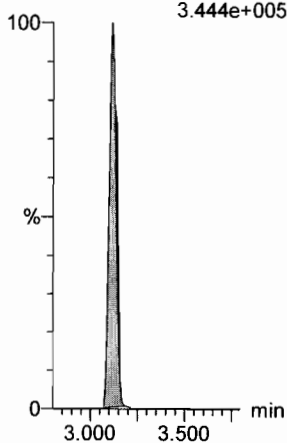
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.279e+005



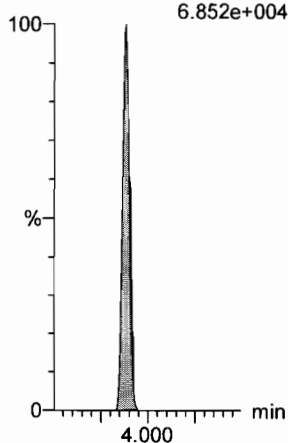
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
3.444e+005



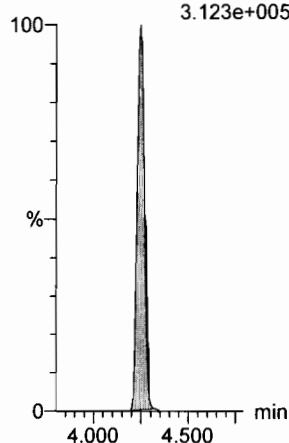
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
6.852e+004



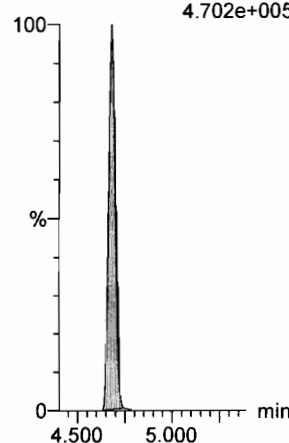
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
3.123e+005



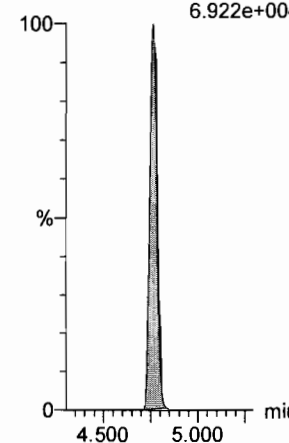
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
4.702e+005



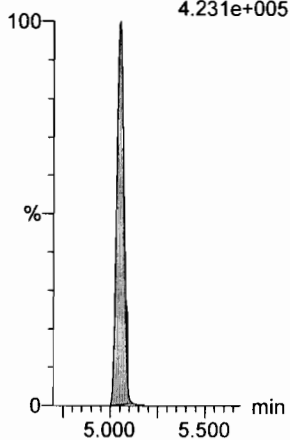
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
6.922e+004



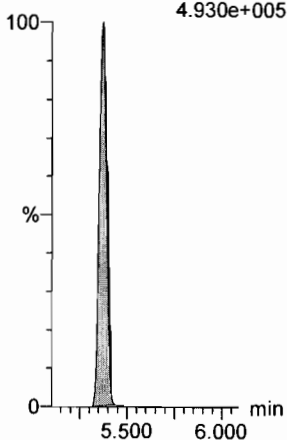
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
4.231e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
4.930e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

Last Altered: Monday, June 04, 2018 09:09:21 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:09:44 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	8.78e3	1.02e4		1.38	1.38	10.7	9.57	95.7	NO		
2	2 PFPeA	263.1 > 21...	1.10e4	1.48e4		2.35	2.35	9.31	9.20	92.0	NO		
3	3 PFBS	299.0 > 79.7	2.21e3	1.67e3		2.63	2.63	16.5	8.46	84.6	NO	2.570	NO
4	4 4:2 FTS	327.2>307.2	3.07e3	3.70e3		3.03	3.03	10.4	9.14	91.4	NO	2.069	NO
5	5 PFHxA	313.2 > 26...	1.51e4	4.94e3		3.12	3.12	15.2	9.94	99.4	NO	309.838	YES
6	6 PFPeS	349.1>80.1	2.27e3	1.67e3		3.33	3.32	17.0	9.25	92.5	NO	1.774	NO
7	7 PFHpA	363.0 > 31...	1.24e4	1.42e4		3.73	3.73	10.9	9.47	94.7	NO	19.128	NO
8	8 L-PFHxS	398.9 > 79.6	1.73e3	1.42e3		3.88	3.88	15.2	7.93	79.3	NO	1.552	NO
9	10 6:2 FTS	427.1 > 407	3.62e3	3.95e3		4.19	4.19	11.4	9.76	97.6	NO	3.037	NO
10	11 L-PFOA	413 > 368.7	1.73e4	2.24e4		4.25	4.25	9.68	9.78	97.8	NO	4.742	NO
11	13 PFHpS	449 > 80.0	2.43e3	2.24e4		4.36	4.36	1.36	8.43	84.3	NO	1.959	NO
12	14 PFNA	463.0 > 41...	2.03e4	2.14e4		4.68	4.68	11.8	8.79	87.9	NO	4.942	NO
13	15 PFOSA	498.2 > 77.9	2.61e3	3.67e3		4.75	4.76	8.91	10.5	105.1	NO	18.450	NO
14	16 L-PFOS	499.1 > 79.9	2.39e3	3.45e3		4.77	4.76	8.65	9.43	94.3	NO	2.074	NO
15	18 PFDA	513 > 468.8	2.01e4	2.69e4		5.06	5.05	9.37	9.21	92.1	NO	7.441	NO
16	19 8:2 FTS	527 > 506.9	3.56e3	3.54e3		5.03	5.02	12.6	8.83	88.3	NO	2.681	NO
17	20 PFNS	549.1>80.1	2.03e3	3.45e3		5.13	5.12	7.34	9.13	91.3	NO	1.522	NO
18	21 L-MeFOSAA	570.1 > 419	7.96e3	4.39e3		5.22	5.20	22.6	11.2	112.3	NO	14.998	NO
19	23 L-EtFOSAA	584.2 > 419	6.19e3	5.50e3		5.37	5.36	14.1	11.8	118.2	NO	17.602	NO

[Handwritten Signature]
6/4/18

GM 6/4/2018

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

Last Altered: Monday, June 04, 2018 09:09:21 Pacific Daylight Time
Printed: Monday, June 04, 2018 09:09:52 Pacific Daylight Time

Ⓐ Compounds not present in ICV

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	25 PFUdA	563.0 > 51...	1.75e4	2.54e4		5.39	5.37	8.60	9.37	93.7	NO	11.328	NO
2	26 PFDS	598.8 > 80	2.81e3	2.54e4		5.44	5.42	1.38	9.11	91.1	NO	2.274	NO
3	27 PFDaA	612.9 > 56...	2.36e4	2.57e4		5.67	5.65	11.5	8.07	80.7	NO	10.975	NO
4	28 N-MeFOSA	512.1 > 16...		1.57e4		5.83				Ⓐ	NO		
5	29 PFTrDA	662.9 > 61...	2.44e4	2.57e4		5.92	5.89	11.8	8.20	82.0	NO	28.584	NO
6	30 PFTeDA	712.9 > 66...	2.06e4	2.62e4		6.14	6.11	9.85	8.96	89.6	NO	15.271	NO
7	31 N-EtFOSA	526.1 > 16...		2.10e4		6.24				Ⓐ	NO		
8	32 PFHxDA	813.1 > 76...		1.28e4		6.48					NO		
9	33 PFODA	913.1 > 86...		1.28e4		6.71					NO		
10	34 N-MeFOSE	616.1 > 58.9		1.11e4		6.41					NO		
11	35 N-EtFOSE	630.1 > 58.9		1.04e4		6.56					NO		
12	36 13C3-PFBA	216.1 > 17...	1.02e4	1.14e4	0.892	1.33	1.38	11.2	12.5	100.2	NO		
13	37 13C3-PFPeA	266. > 221.8	1.48e4	1.66e4	0.848	2.32	2.35	11.1	13.1	105.0	NO		
14	38 13C3-PFBS	302. > 98.8	1.67e3	1.66e4	0.102	2.61	2.63	1.26	12.3	98.4	NO		
15	39 13C2-4:2 FTS	329.2>308.9	3.70e3	1.66e4	0.231	3.02	3.03	2.78	12.0	96.2	NO		
16	40 13C2-PFHxA	315 > 269.8	4.94e3	1.66e4	0.744	3.10	3.12	3.71	4.99	99.7	NO		
17	41 13C4-PFHpA	367.2 > 32...	1.42e4	1.66e4	0.841	3.72	3.73	10.7	12.7	101.3	NO		
18	42 18O2-PFHxS	403.0 > 10...	1.42e3	3.55e3	0.415	3.87	3.88	5.00	12.1	96.5	NO		
19	43 13C2-6:2 FTS	429.1 > 40...	3.95e3	1.87e4	0.232	4.19	4.19	2.64	11.4	91.3	NO		
20	44 13C2-PFOA	414.9 > 36...	2.24e4	1.87e4	1.256	4.25	4.25	15.0	11.9	95.3	NO		
21	45 13C5-PFNA	468.2 > 42...	2.14e4	2.10e4	0.960	4.69	4.69	12.7	13.3	106.3	NO		
22	46 13C8-PFOSA	506.1 > 77.7	3.67e3	2.83e4	0.145	4.75	4.76	1.62	11.2	89.2	NO		
23	47 13C8-PFOS	507.0 > 79.9	3.45e3	3.48e3	1.047	4.77	4.76	12.4	11.9	94.8	NO		
24	48 13C2-PFDA	515.1 > 46...	2.69e4	2.33e4	1.118	5.06	5.05	14.4	12.9	103.1	NO		
25	49 13C2-8:2 FTS	529.1 > 50...	3.54e3	1.66e4	0.211	5.03	5.02	2.66	12.6	100.8	NO		
26	50 d3-N-MeFOSAA	573.3 > 419	4.39e3	2.83e4	0.182	5.21	5.20	1.94	10.6	85.0	NO		
27	51 d5-N-EtFOSAA	589.3 > 419	5.50e3	2.83e4	0.223	5.37	5.35	2.43	10.9	87.2	NO		
28	52 13C2-PFUdA	565 > 519.8	2.54e4	2.83e4	0.958	5.39	5.37	11.2	11.7	93.7	NO		
29	53 13C2-PFDaA	615.0 > 56...	2.57e4	2.33e4	1.138	5.67	5.65	13.8	12.1	96.9	NO		
30	54 d3-N-MeFOSA	515.2 > 16...	1.57e4	2.83e4	0.051	5.85	5.89	6.91	136	90.7	NO		
31	55 13C2-PFTeDA	714.8 > 66...	2.62e4	2.83e4	0.862	6.14	6.11	11.6	13.4	107.3	NO		
32	56 d5-N-ETFOSA	531.1 > 16...	2.10e4	2.83e4	0.066	6.26	6.27	9.26	140	93.2	NO		

GM 6/4/2018

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

Last Altered: Monday, June 04, 2018 09:09:21 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:09:52 Pacific Daylight Time

Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	57 13C2-PFHxDA	815 > 769.7	1.28e4	2.83e4	1.173	6.48	6.44	5.63	4.80	96.0	NO		
34	58 d7-N-MeFOSE	623.1 > 58.9	1.11e4	2.83e4	0.038	6.40	6.37	4.89	130	86.7	NO		
35	59 d9-N-EtFOSE	639.2 > 58.8	1.04e4	2.83e4	0.035	6.54	6.52	4.60	130	86.7	NO		
36	60 13C4-PFBA	217. > 171.8	1.14e4	1.14e4	1.000	1.33	1.38	12.5	12.5	100.0	NO		
37	61 13C5-PFHxA	318 > 272.9	1.66e4	1.66e4	1.000	3.10	3.12	12.5	12.5	100.0	NO		
38	62 13C3-PFHxS	401.9 > 79.9	3.55e3	3.55e3	1.000	3.87	3.88	12.5	12.5	100.0	NO		
39	63 13C8-PFOA	421.3 > 376	1.87e4	1.87e4	1.000	4.25	4.25	12.5	12.5	100.0	NO		
40	64 13C9-PFNA	472.2 > 42...	2.10e4	2.10e4	1.000	4.69	4.68	12.5	12.5	100.0	NO		
41	65 13C4-PFOS	503 > 79.9	3.48e3	3.48e3	1.000	4.77	4.76	12.5	12.5	100.0	NO		
42	66 13C6-PFDA	519.1 > 47...	2.33e4	2.33e4	1.000	5.06	5.05	12.5	12.5	100.0	NO		
43	67 13C7-PFUdA	570.1 > 52...	2.83e4	2.83e4	1.000	5.39	5.37	12.5	12.5	100.0	NO		

Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

Last Altered: Monday, June 04, 2018 09:09:21 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:09:52 Pacific Daylight Time

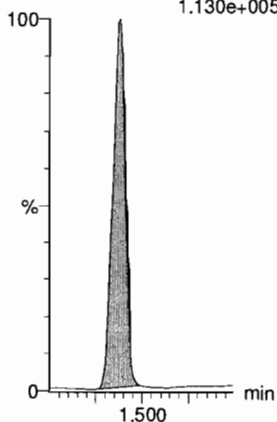
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060318.mdb 04 Jun 2018 08:21:34

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

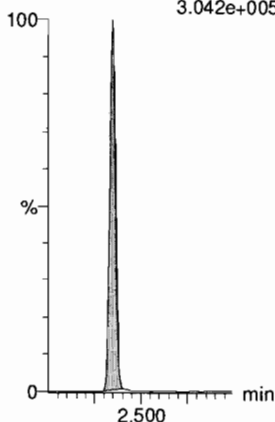
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
1.130e+005



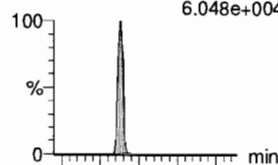
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
3.042e+005

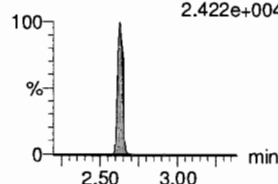


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
6.048e+004

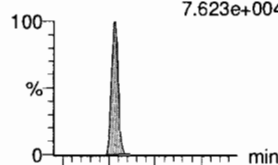


F7:MRM of 2 channels,ES-
299.0 > 99.0
2.422e+004

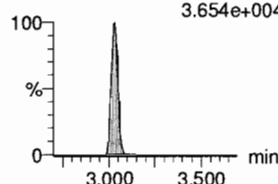


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
7.623e+004

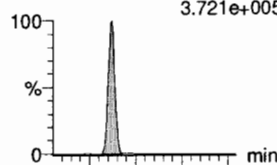


F12:MRM of 2 channels,ES-
327.2 > 81.1
3.654e+004

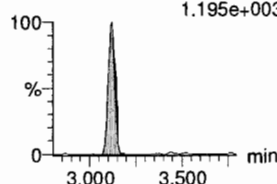


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
3.721e+005

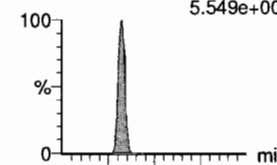


F9:MRM of 2 channels,ES-
313.2 > 119
1.195e+003

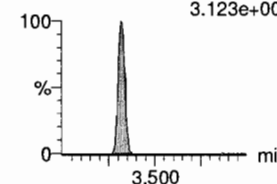


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
5.549e+004

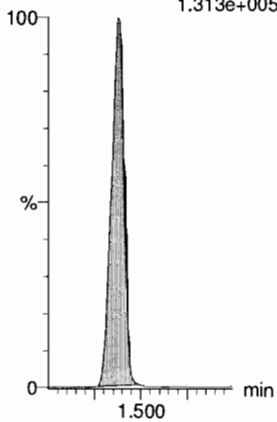


F15:MRM of 2 channels,ES-
349.1 > 99
3.123e+004



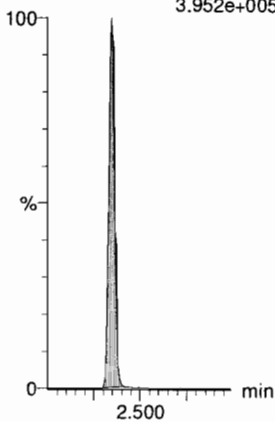
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
1.313e+005



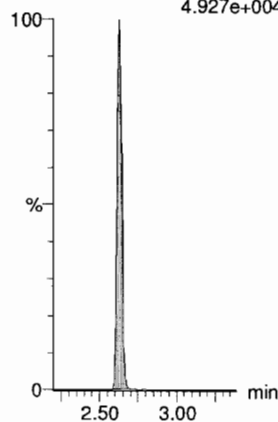
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.952e+005



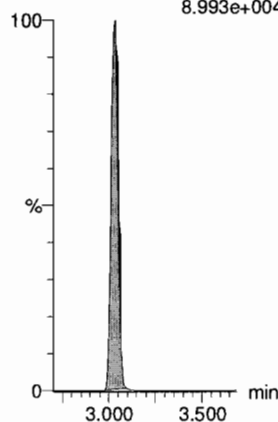
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.927e+004



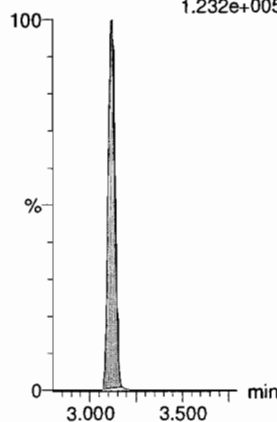
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
8.993e+004



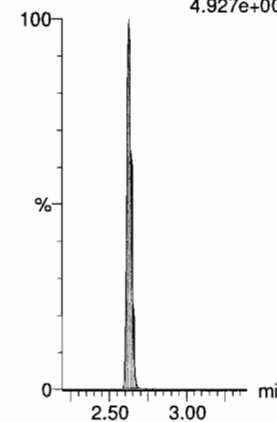
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.232e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.927e+004



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

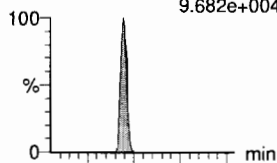
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Printed: Monday, June 04, 2018 09:09:52 Pacific Daylight Time

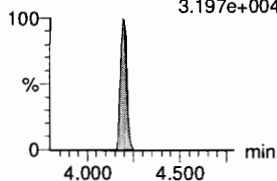
Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
9.682e+004

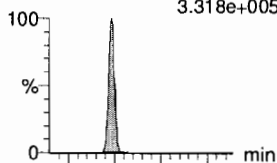


F24:MRM of 2 channels,ES-
427.1 > 80
3.197e+004

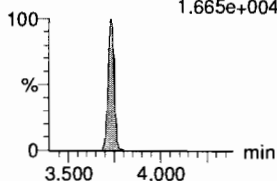


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
3.318e+005

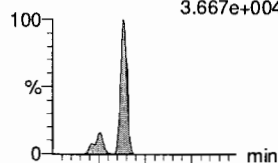


F16:MRM of 2 channels,ES-
363.0 > 169.0
1.665e+004

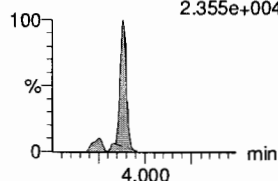


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
3.667e+004

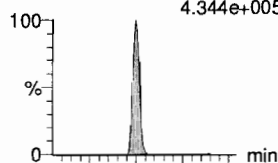


F18:MRM of 2 channels,ES-
398.9 > 99.0
2.355e+004

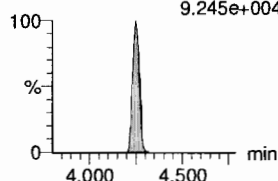


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
4.344e+005

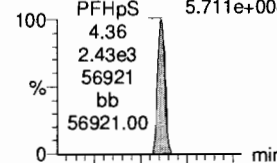


F21:MRM of 2 channels,ES-
413 > 169
9.245e+004

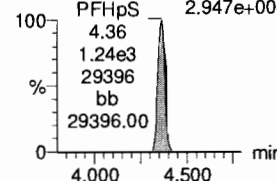


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
5.711e+004

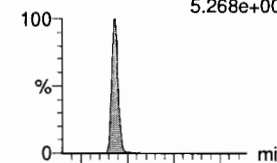


F26:MRM of 2 channels,ES-
449 > 98.7
2.947e+004

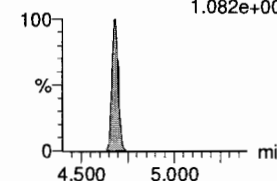


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
5.268e+005

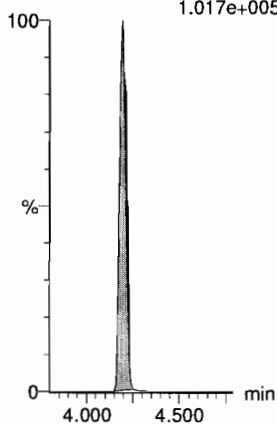


F27:MRM of 2 channels,ES-
463.0 > 219.0
1.082e+005



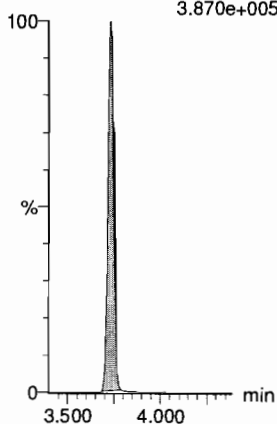
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
1.017e+005



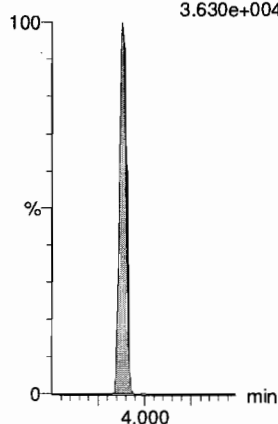
13C4-PFHpA

F17:MRM of 1 channel,ES-
367.2 > 321.8
3.870e+005



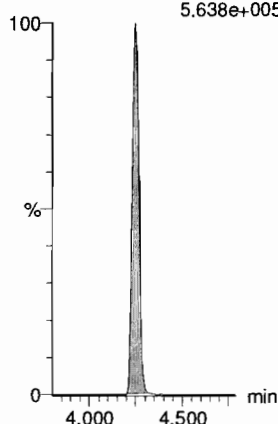
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
3.630e+004



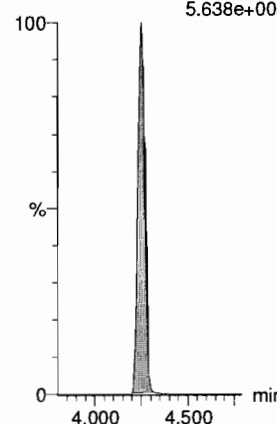
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
5.638e+005



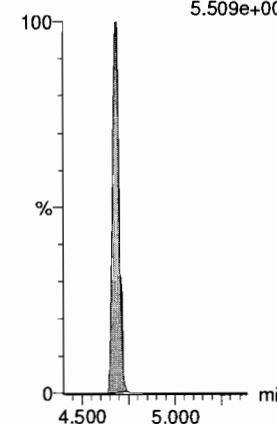
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
5.638e+005



13C5-PFNA

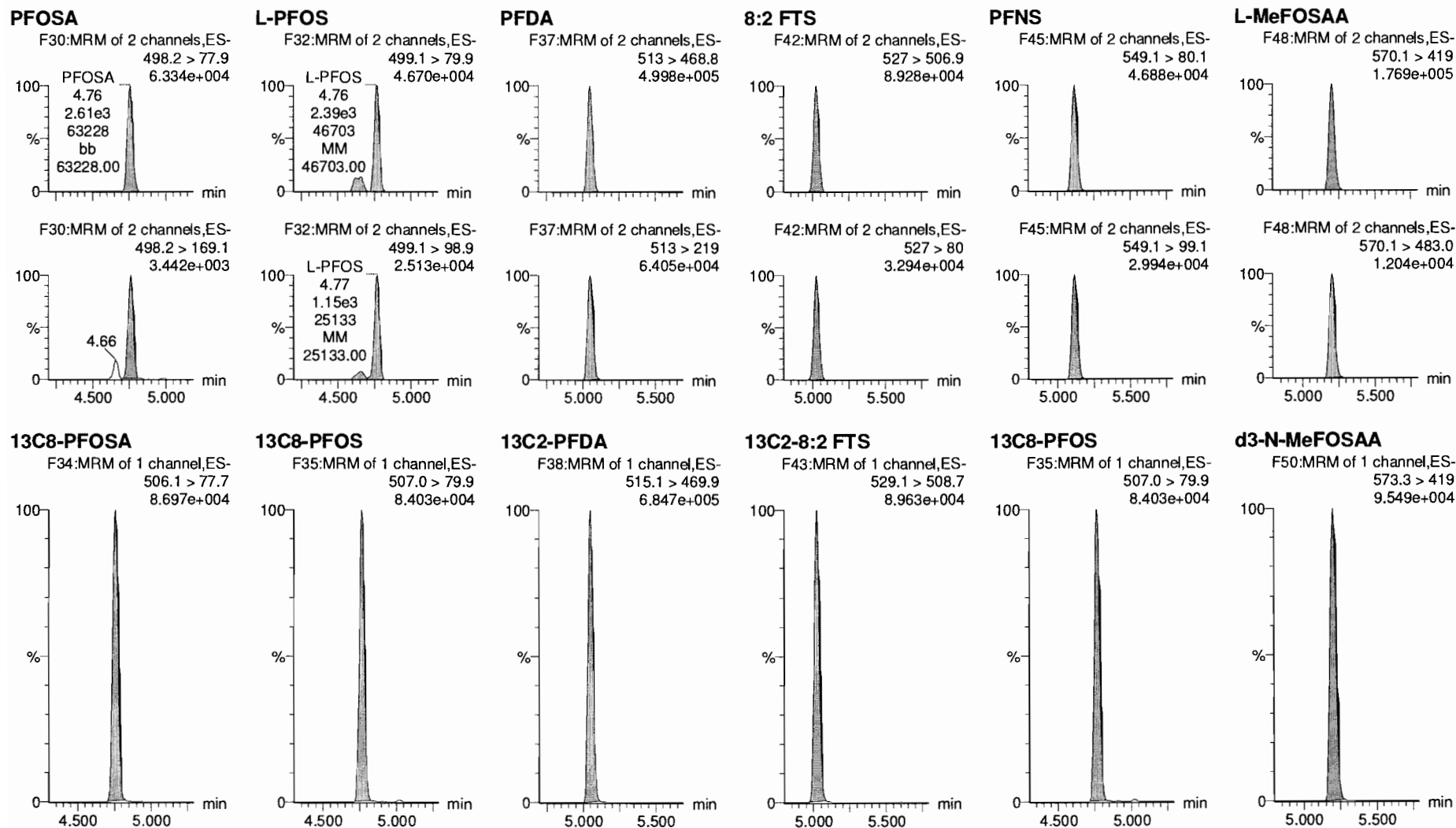
F28:MRM of 1 channel,ES-
468.2 > 422.9
5.509e+005



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

Last Altered: Monday, June 04, 2018 09:09:21 Pacific Daylight Time
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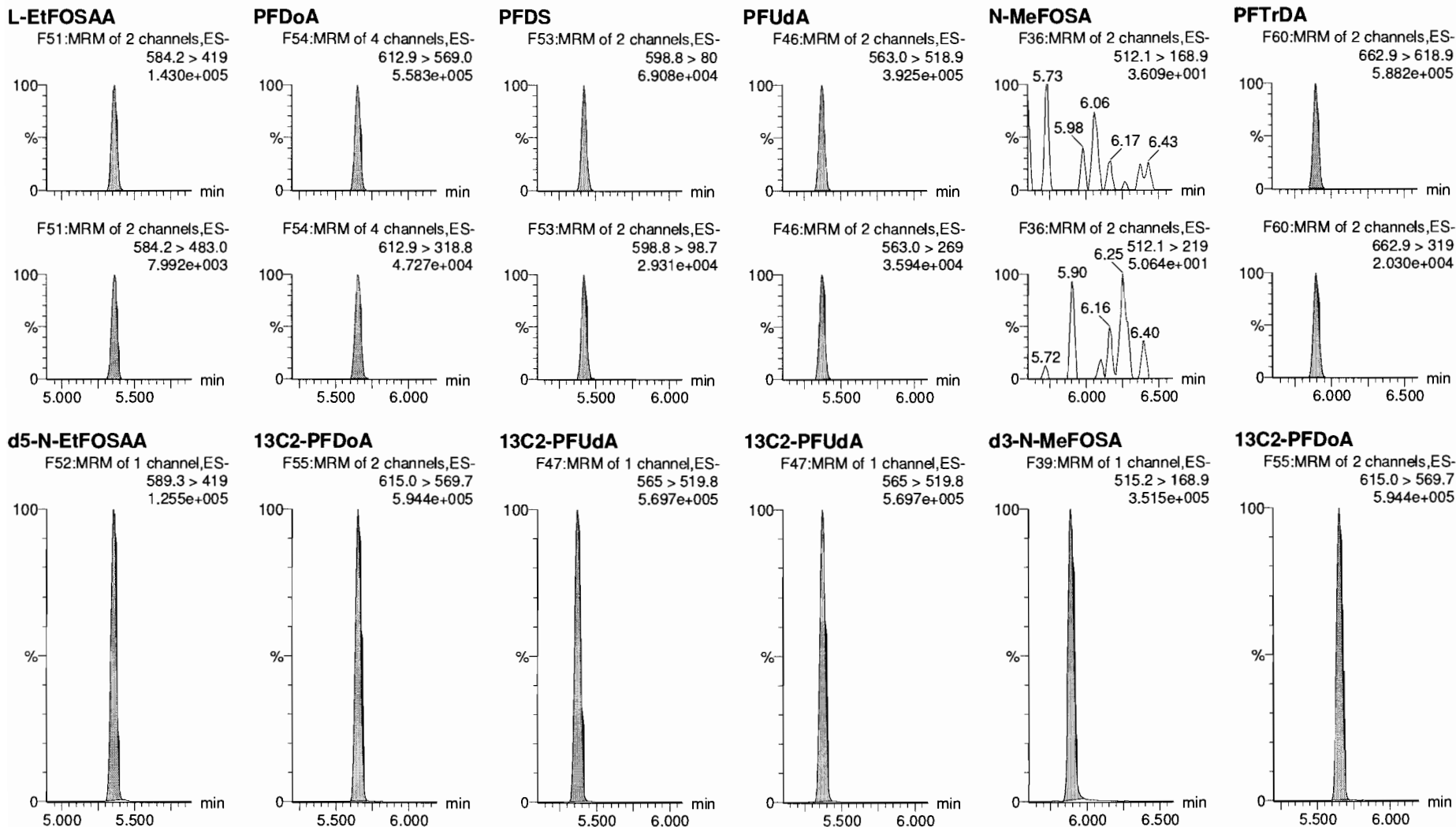
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Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

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Printed: Monday, June 04, 2018 09:09:52 Pacific Daylight Time

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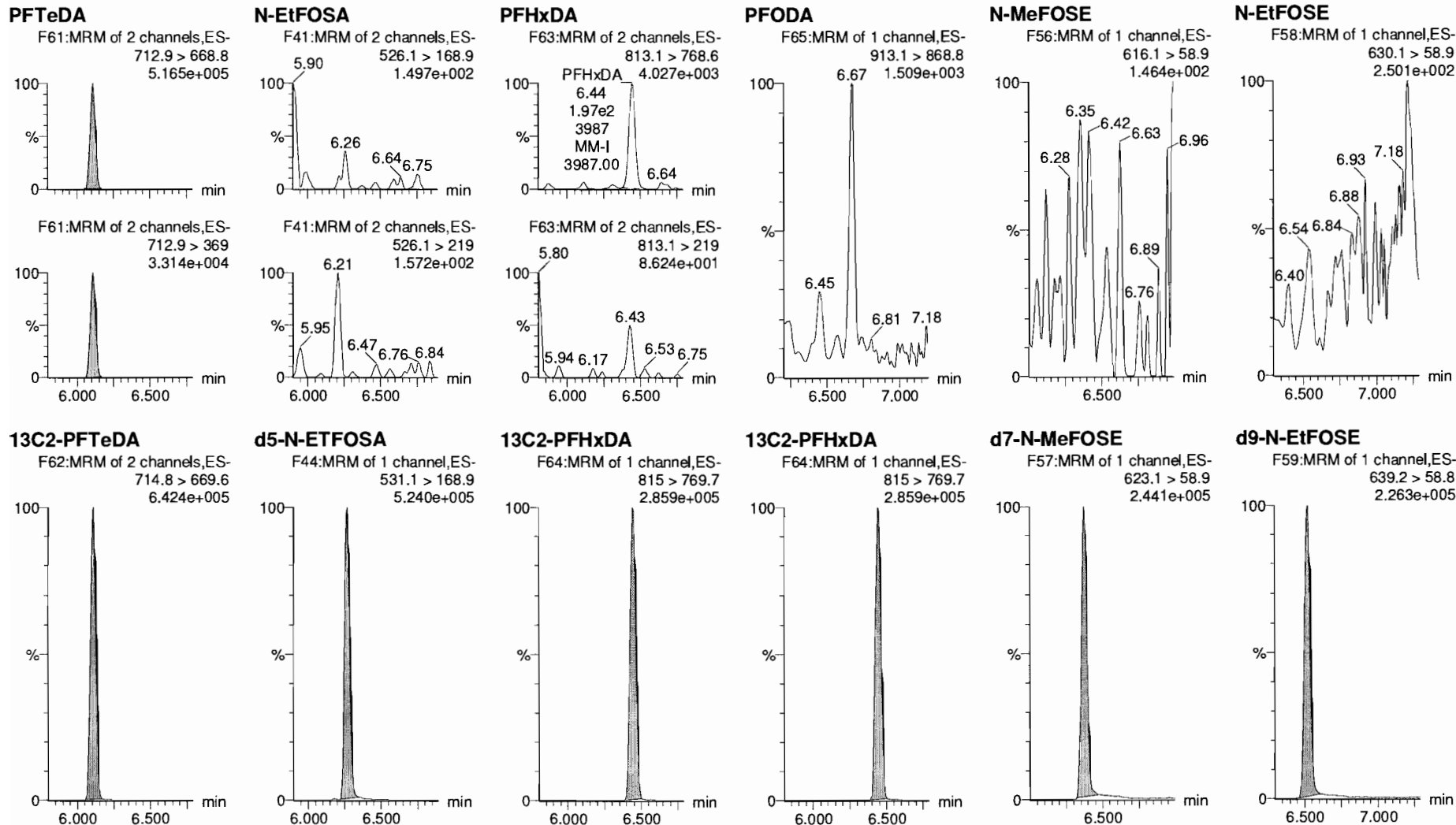


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Printed: Monday, June 04, 2018 09:09:52 Pacific Daylight Time

Name: 180603M2_13, Date: 03-Jun-2018, Time: 20:02:58, ID: ICV180603M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901



Dataset: F:\Projects\PFAS.PRO\Results\180603M2\180603M2-ICV.qld

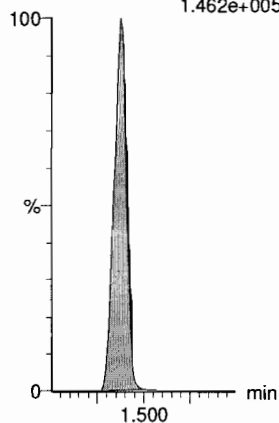
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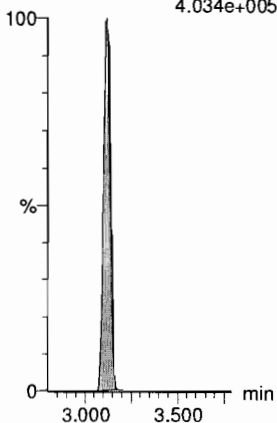
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.462e+005



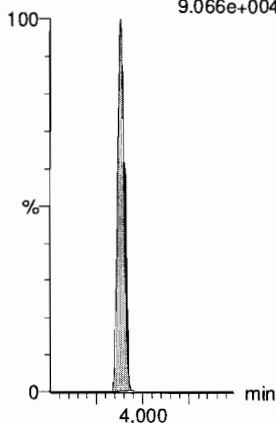
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.034e+005



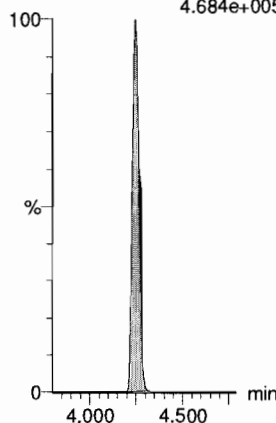
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
9.066e+004



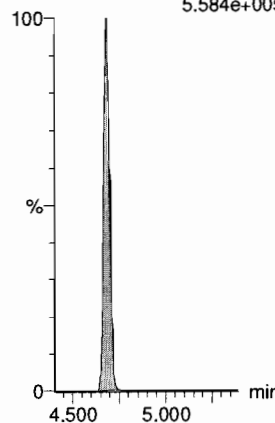
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
4.684e+005



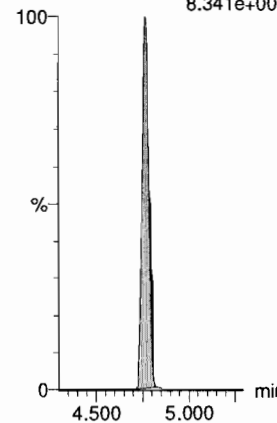
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.584e+005



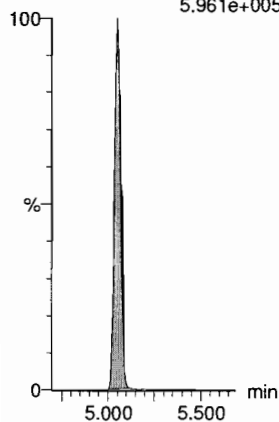
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.341e+004



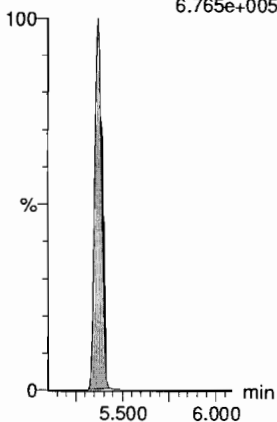
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.961e+005



13C7-PFudA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.765e+005



Dataset: Untitled

Last Altered: Monday, June 04, 2018 09:11:19 Pacific Daylight Time

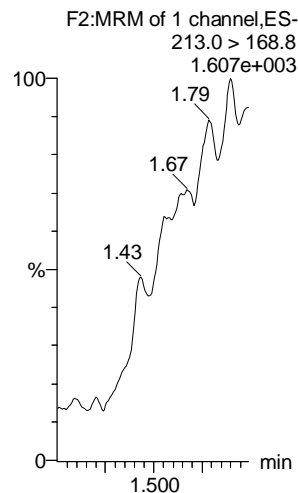
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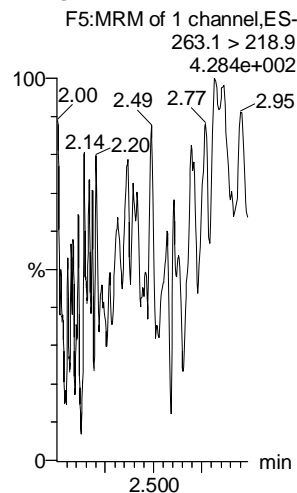
Calibration: F:\Projects\PFAS.PRO\CurveDBC18_VAL-PFAS_Q4_06-03-18.cdb 04 Jun 2018 08:44:22

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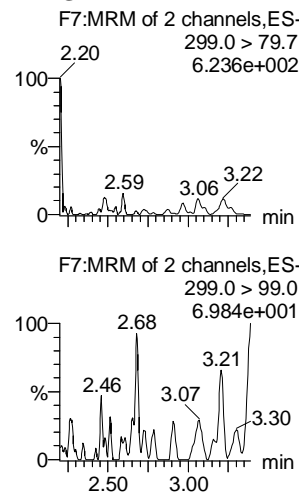
PFBA



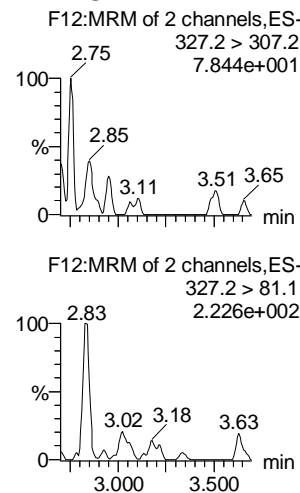
PFPeA



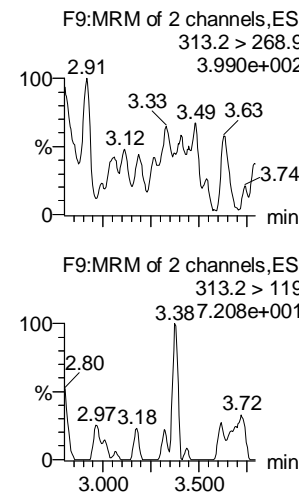
PFBS



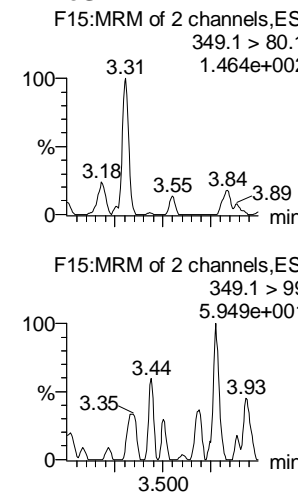
4:2 FTS



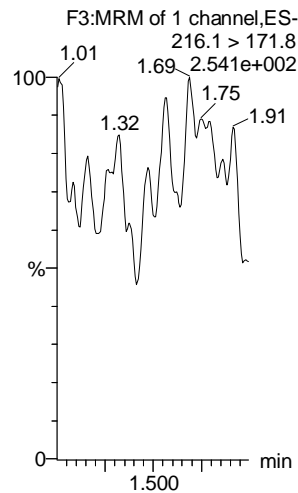
PFHxA



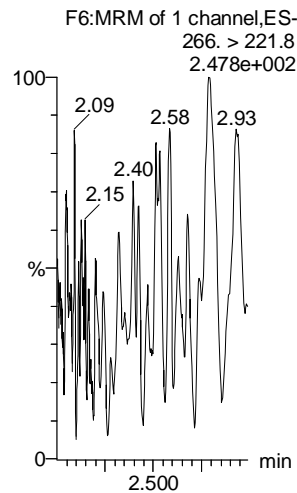
PFPeS



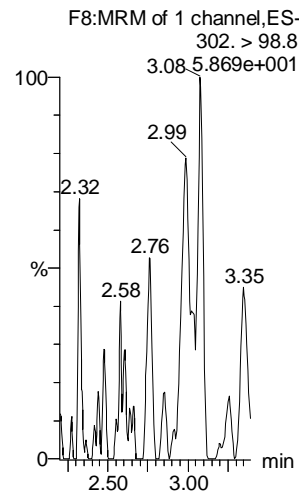
13C3-PFBA



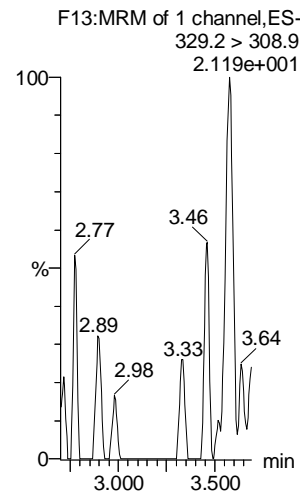
13C3-PFPeA



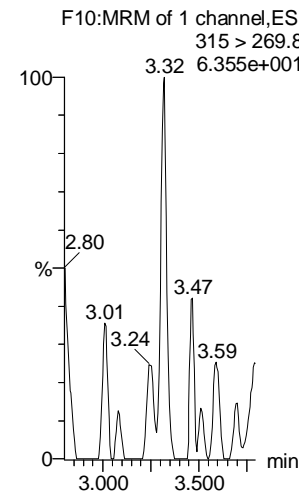
13C3-PFBS



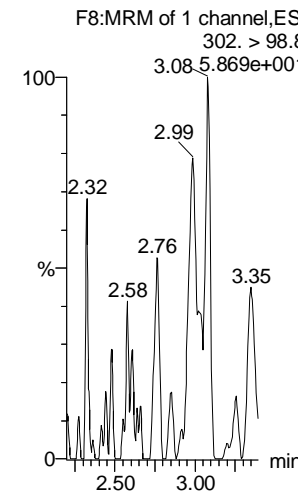
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



Dataset: Untitled

Last Altered: Monday, June 04, 2018 09:11:19 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:11:28 Pacific Daylight Time

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

6:2 FTS

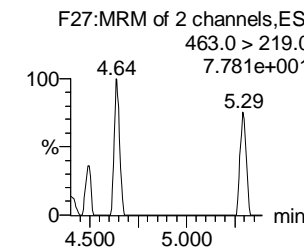
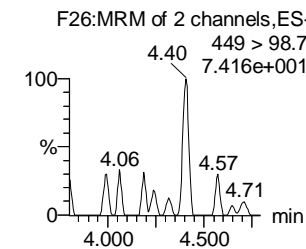
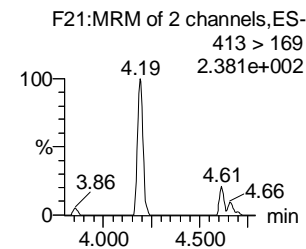
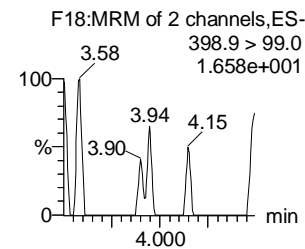
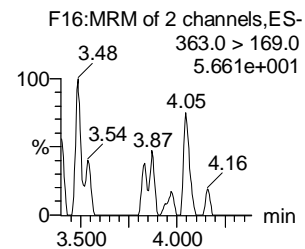
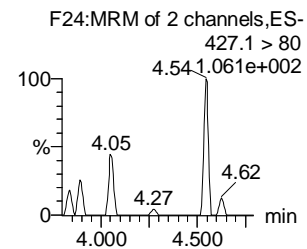
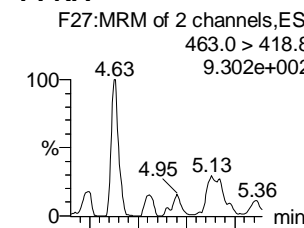
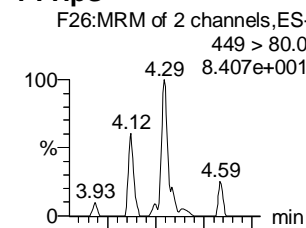
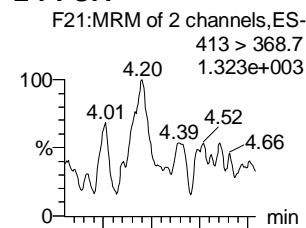
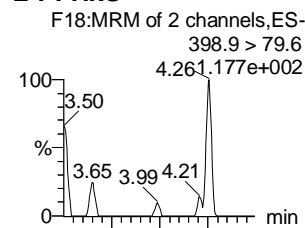
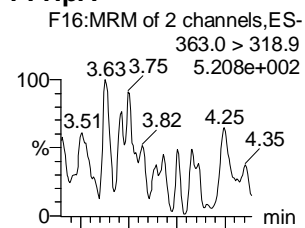
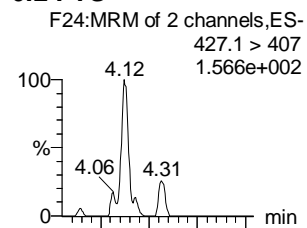
PFHpA

L-PFHxS

L-PFOA

PFHpS

PFNA



13C2-6:2 FTS

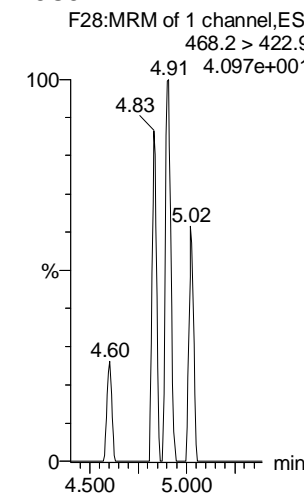
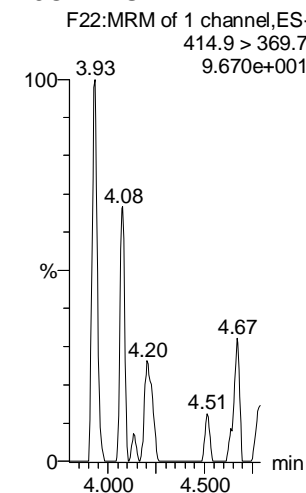
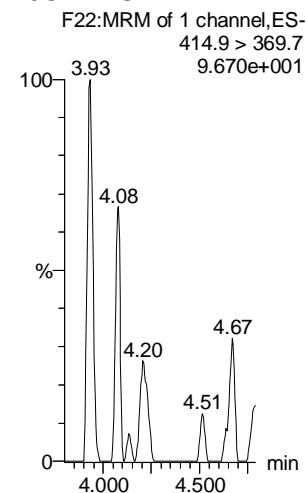
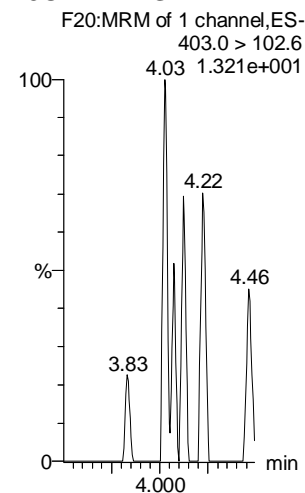
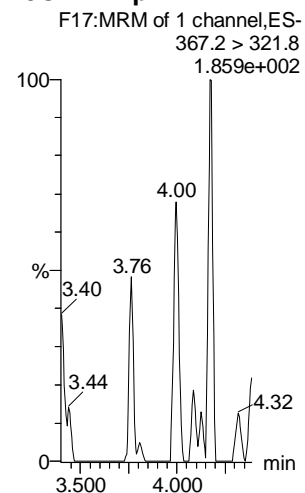
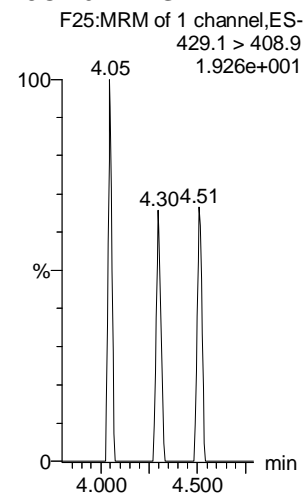
13C4-PFHpA

18O2-PFHxS

13C2-PFOA

13C2-PFOA

13C5-PFNA



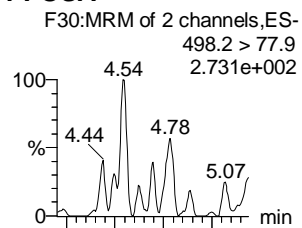
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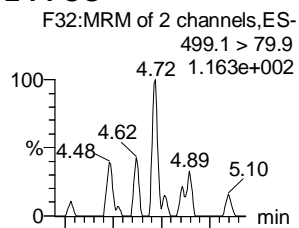
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Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

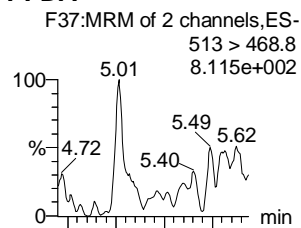
PFOSA



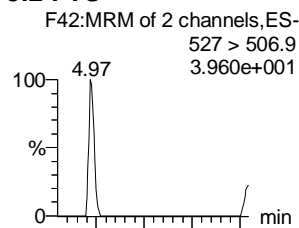
L-PFOS



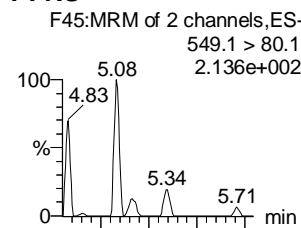
PFDA



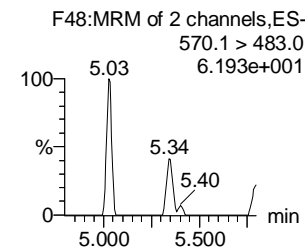
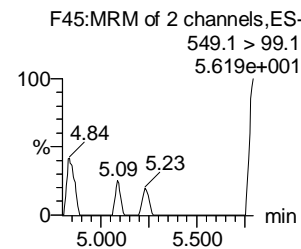
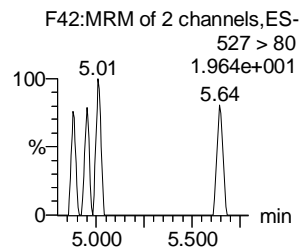
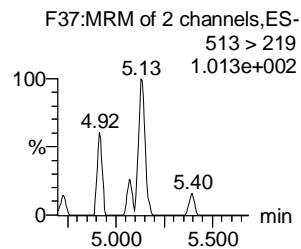
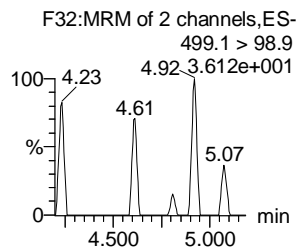
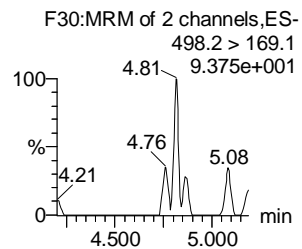
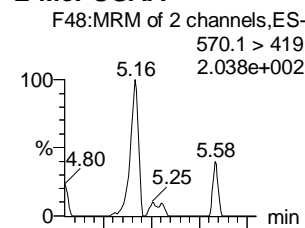
8:2 FTS



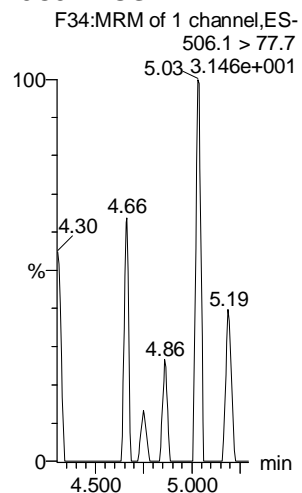
PFNS



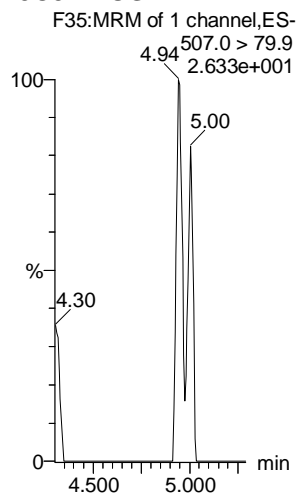
L-MeFOSAA



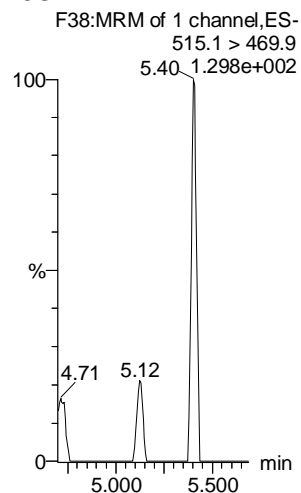
13C8-PFOSA



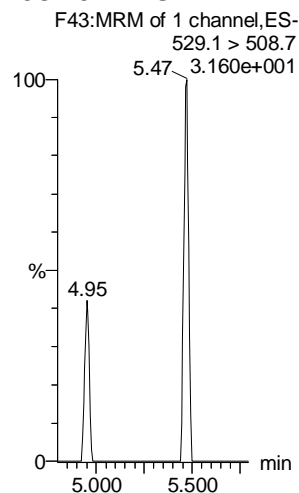
13C8-PFOS



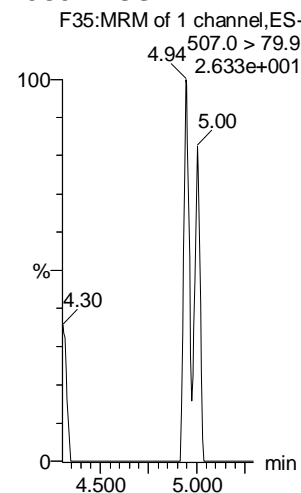
13C2-PFDA



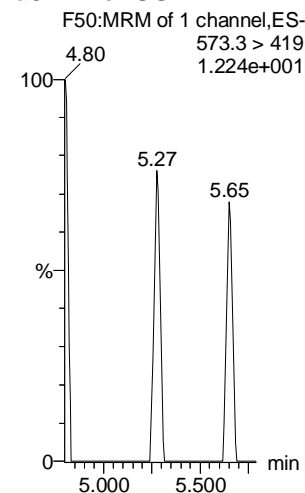
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



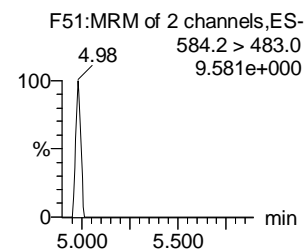
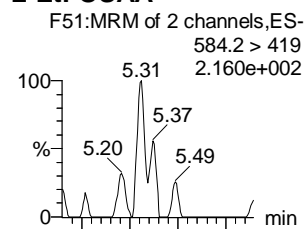
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Last Altered: Monday, June 04, 2018 09:11:19 Pacific Daylight Time

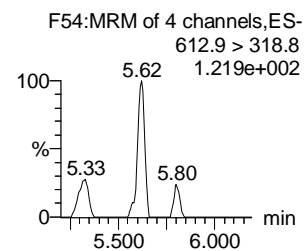
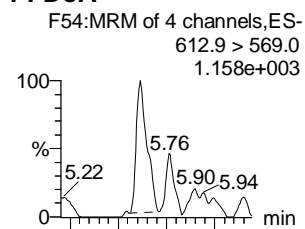
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Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

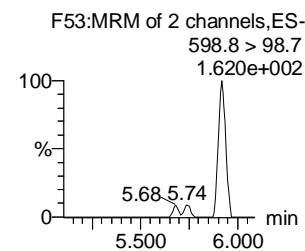
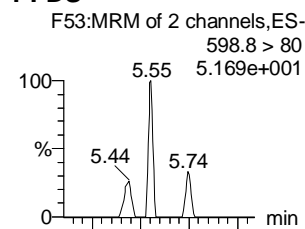
L-EtFOSAA



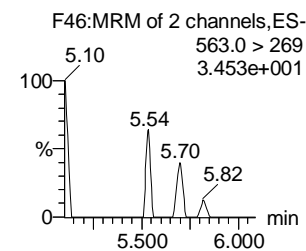
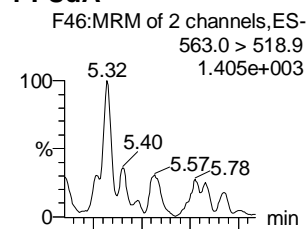
PFDoA



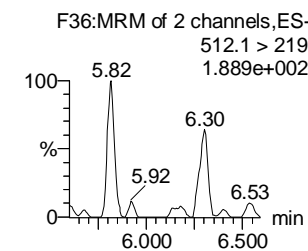
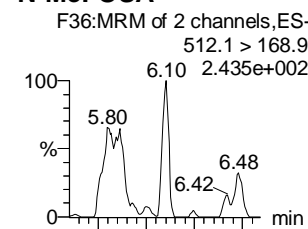
PFDS



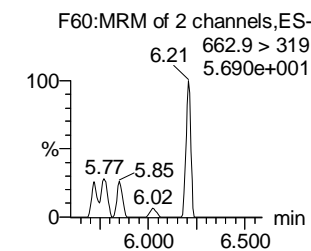
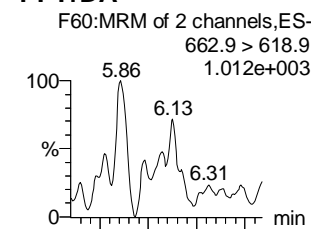
PFUdA



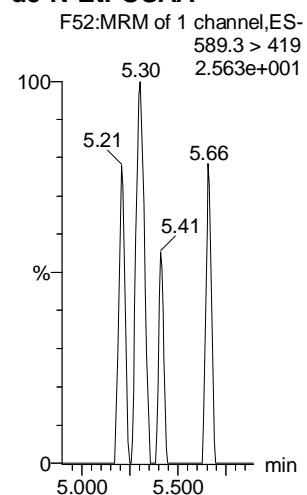
N-MeFOSA



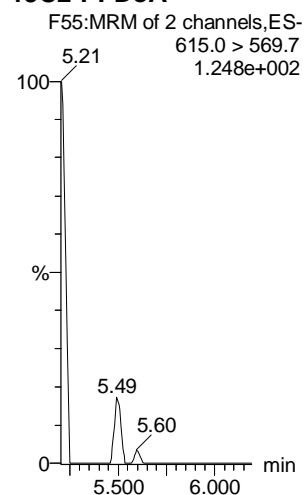
PFTrDA



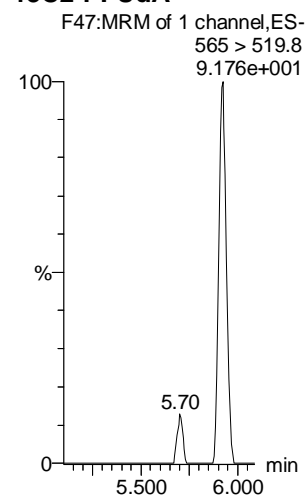
d5-N-EtFOSAA



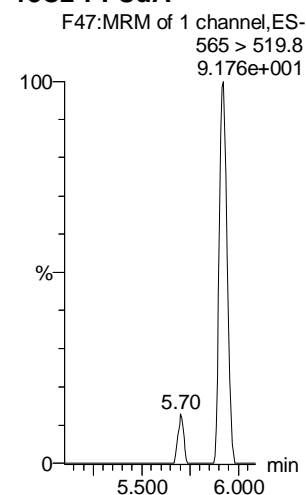
13C2-PFDoA



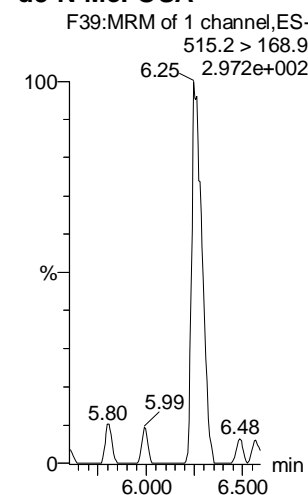
13C2-PFUdA



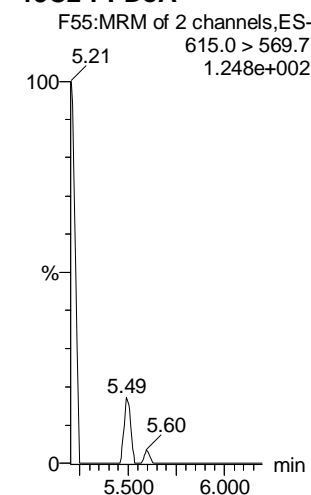
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



Dataset: Untitled

Last Altered: Monday, June 04, 2018 09:11:19 Pacific Daylight Time

Printed: Monday, June 04, 2018 09:11:28 Pacific Daylight Time

Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

PFTeDA

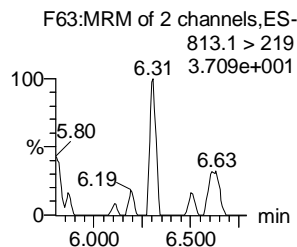
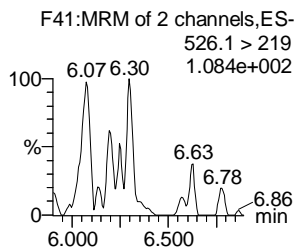
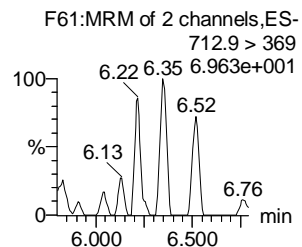
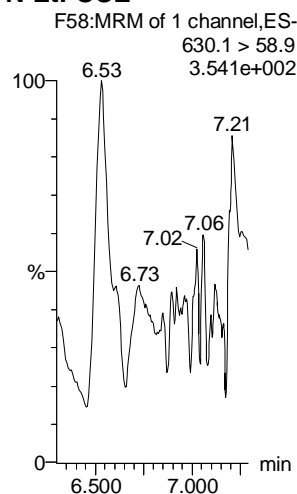
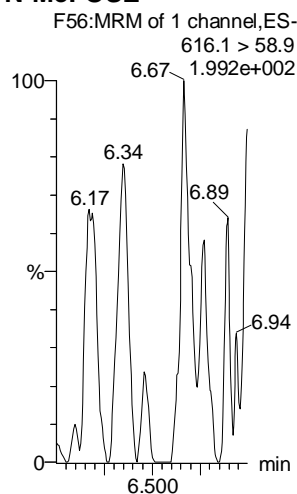
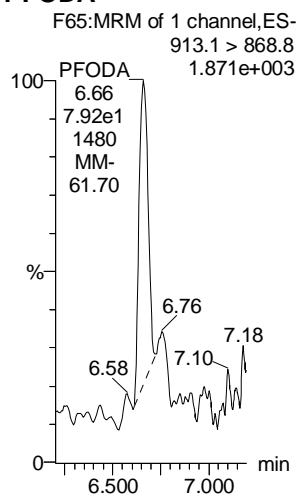
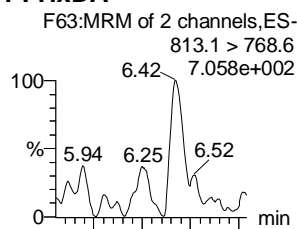
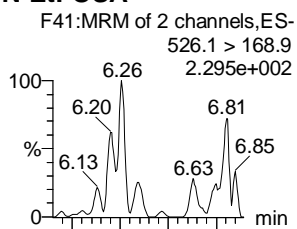
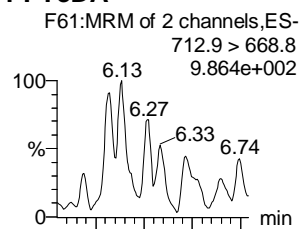
N-EtFOSA

PFHxDA

PFODA

N-MeFOSE

N-EtFOSE



13C2-PFTeDA

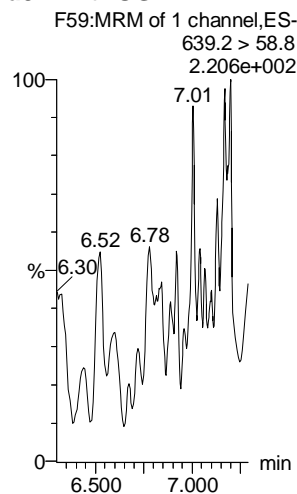
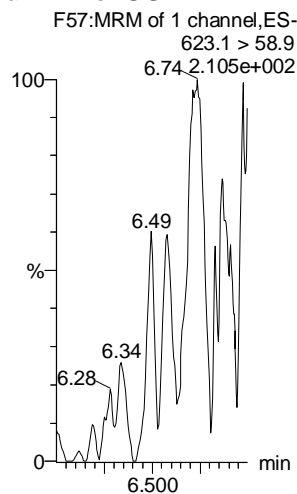
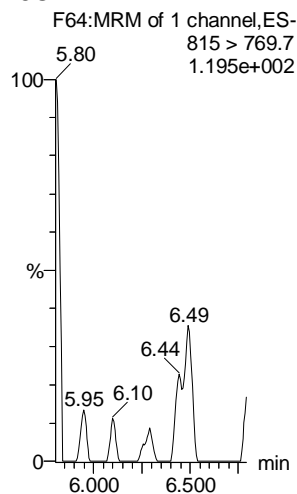
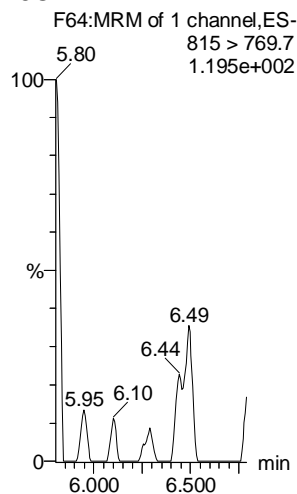
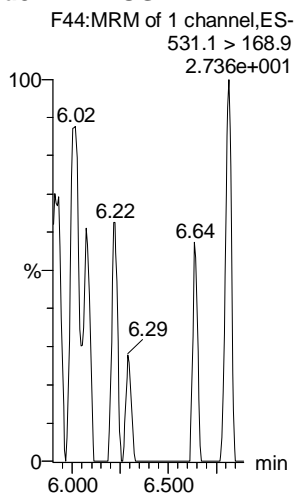
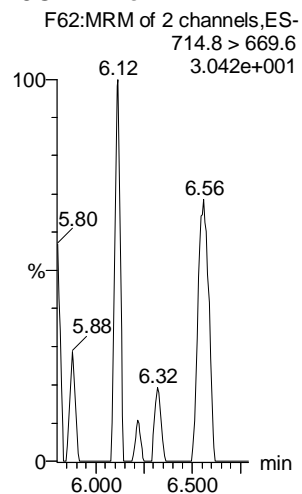
d5-N-ETFOSA

13C2-PFHxDA

13C2-PFHxDA

d7-N-MeFOSE

d9-N-EtFOSE



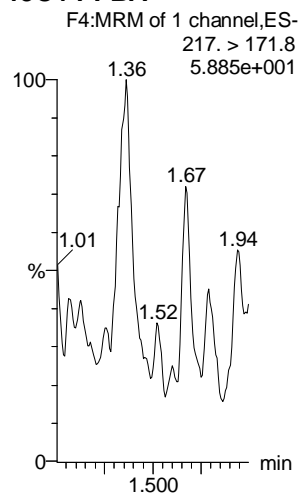
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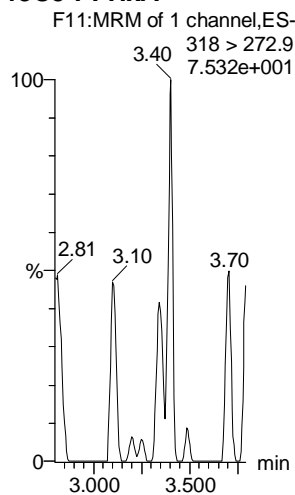
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Name: 180603M2_12, Date: 03-Jun-2018, Time: 19:52:27, ID: IPA, Description: IPA

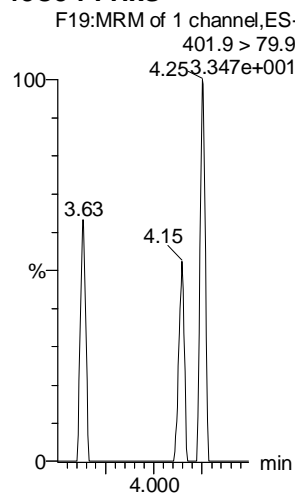
13C4-PFBA



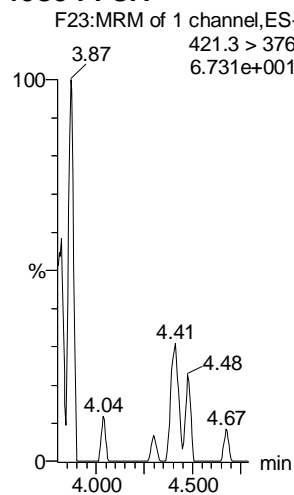
13C5-PFHxA



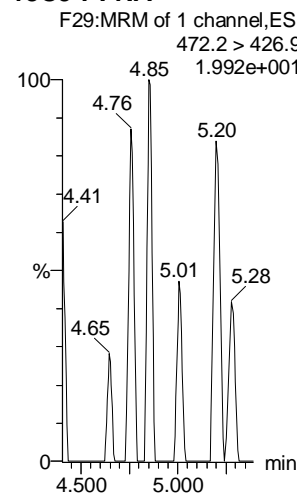
13C3-PFHxS



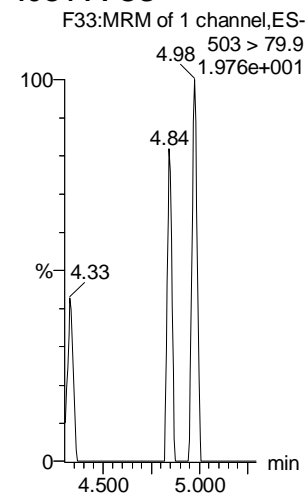
13C8-PFOA



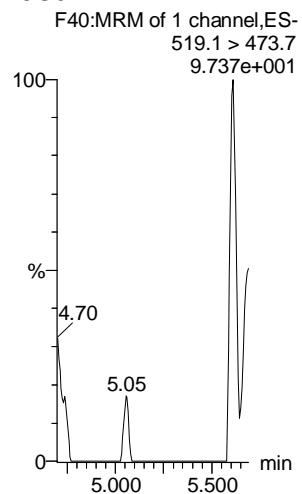
13C9-PFNA



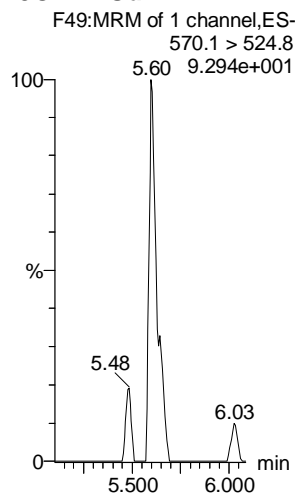
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time
 Printed: Tuesday, June 05, 2018 10:56:32 Pacific Daylight Time

High PTs
 4:2 100
 6:2 ↓
 8:2

Low PTs
 - NO Low pts
 dropped
 AD 6/5/18

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45
 Calibration: 05 Jun 2018 10:50:38

C18-VAL-PFAS-Q4-06-04-18

Compound name: PFBA

Correlation coefficient: $r = 0.999948$, $r^2 = 0.999896$
 Calibration curve: $1.11083 * x + 0.00822384$
 Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
 Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None

Jan 6/5/18

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 180604M2_2	Standard	0.250	1.35	200.218	9005.189	0.278	0.2	-2.9	NO	1.000	NO	MM
2	2 180604M2_3	Standard	0.500	1.34	397.783	9082.563	0.547	0.5	-2.9	NO	1.000	NO	MM
3	3 180604M2_4	Standard	1.000	1.35	904.446	9855.626	1.147	1.0	2.5	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	1.34	1563.720	8997.036	2.173	1.9	-2.6	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	1.35	4286.670	9430.916	5.682	5.1	2.1	NO	1.000	NO	bb
6	6 180604M2_7	Standard	10.000	1.34	9968.157	10868.822	11.464	10.3	3.1	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	1.35	43785.090	9593.588	57.050	51.4	2.7	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	1.34	86013.398	9523.508	112.896	101.6	1.6	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	1.35	205135.797	9255.525	277.045	249.4	-0.2	NO	1.000	NO	bb
10	10 180604M2_11	Standard	500.000	1.34	387010.906	8757.902	552.374	497.3	-0.5	NO	1.000	NO	bb

Compound name: PFPeA

Correlation coefficient: $r = 0.999955$, $r^2 = 0.999909$
 Calibration curve: $1.02545 * x + 0.0205051$
 Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)
 Curve type: Linear, Origin: Exclude, 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 180604M2_2	Standard	0.250	2.31	281.378	12347.332	0.285	0.3	3.1	NO	1.000	NO	bb
2	2 180604M2_3	Standard	0.500	2.31	541.365	12476.627	0.542	0.5	1.8	NO	1.000	NO	bb
3	3 180604M2_4	Standard	1.000	2.31	1146.746	13544.467	1.058	1.0	1.2	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	2.31	2236.822	14007.501	1.996	1.9	-3.7	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	2.31	5521.838	13406.085	5.149	5.0	0.0	NO	1.000	NO	bb
6	6 180604M2_7	Standard	10.000	2.31	12246.265	15122.394	10.123	9.9	-1.5	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	2.31	54015.914	13022.961	51.847	50.5	1.1	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	2.31	100253.805	12487.914	100.351	97.8	-2.2	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	2.31	241271.422	11821.135	255.127	248.8	-0.5	NO	1.000	NO	bb
10	10 180604M2_11	Standard	500.000	2.31	436875.281	10586.028	515.863	503.0	0.6	NO	1.000	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFBS

Coefficient of Determination: R² = 0.999853

Calibration curve: 0.000168277 * x² + 1.98828 * x + -0.00386959

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	2.60	54.703	1498.706	0.456	0.2	-7.4	NO	1.000	NO	MM
2	2 180604M2_3	Standard	0.500	2.60	122.335	1529.458	1.000	0.5	1.0	NO	1.000	NO	MM
3	3 180604M2_4	Standard	1.000	2.60	270.237	1663.006	2.031	1.0	2.3	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	2.60	541.800	1756.558	3.856	1.9	-3.0	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	2.60	1353.673	1672.393	10.118	5.1	1.8	NO	1.000	NO	MM
6	6 180604M2_7	Standard	10.000	2.60	3063.067	1855.024	20.640	10.4	3.7	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	2.60	13257.850	1634.481	101.392	50.8	1.6	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	2.60	24840.961	1526.828	203.371	101.4	1.4	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	2.60	57154.797	1432.947	498.577	245.7	-1.7	NO	1.000	NO	bb
10	10 180604M2_11	Standard	500.000	2.60	100354.070	1206.225	1039.960	501.7	0.3	NO	1.000	NO	bb

Compound name: 4:2 FTS

Coefficient of Determination: R² = 0.998838

Calibration curve: -0.00374524 * x² + 1.11582 * x + -0.011422

Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	3.01	71.012	3169.168	0.280	0.3	4.6	NO	0.999	NO	bb
2	2 180604M2_3	Standard	0.500	3.01	132.382	3422.257	0.484	0.4	-11.2	NO	0.999	NO	bb
3	3 180604M2_4	Standard	1.000	3.01	404.889	3927.586	1.289	1.2	17.0	NO	0.999	NO	bb
4	4 180604M2_5	Standard	2.000	3.01	660.839	4054.097	2.038	1.8	-7.6	NO	0.999	NO	bb
5	5 180604M2_6	Standard	5.000	3.01	1446.402	3586.589	5.041	4.6	-8.0	NO	0.999	NO	bb
6	6 180604M2_7	Standard	10.000	3.01	3845.656	4233.463	11.355	10.6	5.6	NO	0.999	NO	bb
7	7 180604M2_8	Standard	50.000	3.00	15015.386	4058.697	46.244	49.8	-0.5	NO	0.999	NO	bb
8	8 180604M2_9	Standard	100.000	3.01	26308.025	4433.810	74.169	100.1	0.1	NO	0.999	NO	bb
9	9 180604M2_10	Standard	250.000	3.01	64149.801	5370.476	149.311			NO	0.999	NO	bbXI
10	10 180604M2_11	Standard	500.000	3.01	103178.016	6656.033	193.768			NO	0.999	NO	bbXI

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFHxA

Coefficient of Determination: $R^2 = 0.999553$

Calibration curve: $-0.000313716 * x^2 + 1.59614 * x + 0.0424276$

Response type: Internal Std (Ref 40), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	0.250	3.09	320.340	4246.335	0.377	0.2	-16.1	NO	1.000	NO	bb
2	2 180604M2_3	Standard	0.500	3.09	760.906	4142.994	0.918	0.5	9.8	NO	1.000	NO	bb
3	3 180604M2_4	Standard	1.000	3.09	1574.964	4630.566	1.701	1.0	3.9	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	3.09	3214.021	4710.073	3.412	2.1	5.6	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	3.09	7264.569	4612.718	7.874	4.9	-1.8	NO	1.000	NO	bb
6	6 180604M2_7	Standard	10.000	3.09	16854.840	4951.568	17.020	10.7	6.6	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	3.09	73282.320	4486.201	81.675	51.7	3.3	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	3.09	130754.266	4110.789	159.038	101.6	1.6	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	3.09	312826.594	4245.043	368.461	242.4	-3.1	NO	1.000	NO	bb
10	10 180604M2_11	Standard	500.000	3.09	577387.438	3985.266	724.403	503.7	0.7	NO	1.000	NO	bb

Compound name: PFPeS

Correlation coefficient: $r = 0.999819$, $r^2 = 0.999638$

Calibration curve: $1.79807 * x + 0.0789454$

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, 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 180604M2_2	Standard	0.250	3.29	73.657	1498.706	0.614	0.3	19.1	NO	1.000	NO	bb
2	2 180604M2_3	Standard	0.500	3.29	98.936	1529.458	0.809	0.4	-18.8	NO	1.000	NO	bb
3	3 180604M2_4	Standard	1.000	3.29	267.720	1663.006	2.012	1.1	7.5	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	3.29	473.774	1756.558	3.371	1.8	-8.4	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	3.29	1210.386	1672.393	9.047	5.0	-0.3	NO	1.000	NO	bb
6	6 180604M2_7	Standard	10.000	3.29	2736.896	1855.024	18.442	10.2	2.1	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	3.29	11685.241	1634.481	89.365	49.7	-0.7	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	3.29	22186.217	1526.828	181.637	101.0	1.0	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	3.30	50125.336	1432.947	437.257	243.1	-2.7	NO	1.000	NO	bb
10	10 180604M2_11	Standard	500.000	3.29	87833.469	1206.225	910.210	506.2	1.2	NO	1.000	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFHpA

Correlation coefficient: $r = 0.999421$, $r^2 = 0.998843$

Calibration curve: $1.16069 * x + 0.0713148$

Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, 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 180604M2_2	Standard	0.250	3.71	332.437	12501.413	0.332	0.2	-10.0	NO	0.999	NO	bb
2	2 180604M2_3	Standard	0.500	3.71	647.045	11729.507	0.690	0.5	6.5	NO	0.999	NO	bb
3	3 180604M2_4	Standard	1.000	3.70	1322.232	13016.023	1.270	1.0	3.3	NO	0.999	NO	bb
4	4 180604M2_5	Standard	2.000	3.71	2560.595	13914.408	2.300	1.9	-4.0	NO	0.999	NO	bb
5	5 180604M2_6	Standard	5.000	3.70	6473.215	13247.432	6.108	5.2	4.0	NO	0.999	NO	bb
6	6 180604M2_7	Standard	10.000	3.70	13712.969	14486.901	11.832	10.1	1.3	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	3.70	60131.785	12638.182	59.474	51.2	2.4	NO	0.999	NO	bb
8	8 180604M2_9	Standard	100.000	3.70	116906.781	12671.674	115.323	99.3	-0.7	NO	0.999	NO	bb
9	9 180604M2_10	Standard	250.000	3.71	273748.719	12444.102	274.978	236.8	-5.3	NO	0.999	NO	bb
10	10 180604M2_11	Standard	500.000	3.70	481857.938	10126.721	594.785	512.4	2.5	NO	0.999	NO	bb

Compound name: L-PFHxS

Correlation coefficient: $r = 0.999443$, $r^2 = 0.998887$

Calibration curve: $1.9216 * x + -0.00896228$

Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, 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 180604M2_2	Standard	0.250	3.86	51.876	1333.795	0.486	0.3	3.1	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	3.86	98.207	1335.589	0.919	0.5	-3.4	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	3.86	233.406	1500.467	1.944	1.0	1.7	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	3.86	421.065	1457.849	3.610	1.9	-5.8	NO	0.999	NO	MM
5	5 180604M2_6	Standard	5.000	3.85	1040.155	1355.524	9.592	5.0	-0.1	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	3.86	2483.240	1524.630	20.359	10.6	6.0	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	3.85	10770.157	1363.064	98.768	51.4	2.8	NO	0.999	NO	MM
8	8 180604M2_9	Standard	100.000	3.86	20282.564	1342.743	188.817	98.3	-1.7	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	3.86	46991.344	1285.869	456.805	237.7	-4.9	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	3.85	85220.055	1082.486	984.078	512.1	2.4	NO	0.999	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: 6:2 FTS

Coefficient of Determination: R² = 0.999839
 Calibration curve: $-0.00346555 * x^2 + 1.27447 * x + -0.0336081$
 Response type: Internal Std (Ref 43), Area * (IS Conc. / IS Area)
 Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	4.17	77.617	3136.696	0.309	0.3	7.7	NO	1.000	NO	MM
2	2 180604M2_3	Standard	0.500	4.17	157.005	3478.213	0.564	0.5	-6.1	NO	1.000	NO	bb
3	3 180604M2_4	Standard	1.000	4.17	364.671	3819.201	1.194	1.0	-3.5	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	4.17	803.633	3828.594	2.624	2.1	4.9	NO	1.000	NO	MM
5	5 180604M2_6	Standard	5.000	4.17	1834.352	3805.419	6.025	4.8	-3.7	NO	1.000	NO	MM
6	6 180604M2_7	Standard	10.000	4.17	3972.782	4005.856	12.397	10.0	0.3	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	4.17	17959.236	4061.438	55.274	50.3	0.5	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	4.17	33775.742	4557.357	92.641	99.8	-0.2	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	4.17	70401.641	5639.339	156.050			NO	1.000	NO	bbXI
10	10 180604M2_11	Standard	500.000	4.17	120391.594	7863.491	191.377			NO	1.000	NO	bbXI

Compound name: L-PFOA

Coefficient of Determination: R² = 0.999247
 Calibration curve: $-5.24867e-005 * x^2 + 0.895395 * x + 0.0852547$
 Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
 Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	4.23	399.295	20205.967	0.247	0.2	-27.7	NO	0.999	NO	bb
2	2 180604M2_3	Standard	0.500	4.23	827.505	19150.432	0.540	0.5	1.6	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	4.23	1635.800	18664.631	1.096	1.1	12.8	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	4.23	3433.985	21305.520	2.015	2.2	7.8	NO	0.999	NO	bb
5	5 180604M2_6	Standard	5.000	4.22	7674.669	20989.240	4.571	5.0	0.2	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	4.23	17909.258	23488.016	9.531	10.6	5.6	NO	0.999	NO	bb
7	7 180604M2_8	Standard	50.000	4.22	71871.891	19220.492	46.742	52.3	4.5	NO	0.999	NO	bb
8	8 180604M2_9	Standard	100.000	4.22	132108.922	19779.754	83.487	93.7	-6.3	NO	0.999	NO	bb
9	9 180604M2_10	Standard	250.000	4.23	332175.688	18486.152	224.611	254.6	1.8	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	4.22	597850.250	17235.395	433.592	498.7	-0.3	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFHpS

Coefficient of Determination: R² = 0.999609

Calibration curve: $-2.99805e-005 * x^2 + 0.157724 * x + 0.00259156$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	4.34	60.445	20205.967	0.037	0.2	-11.7	NO	1.000	NO	bb
2	2 180604M2_3	Standard	0.500	4.33	123.093	19150.432	0.080	0.5	-1.4	NO	1.000	NO	MM
3	3 180604M2_4	Standard	1.000	4.33	266.700	18664.631	0.179	1.1	11.6	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	4.33	523.876	21305.520	0.307	1.9	-3.4	NO	1.000	NO	MM
5	5 180604M2_6	Standard	5.000	4.33	1398.650	20989.240	0.833	5.3	5.4	NO	1.000	NO	bb
6	6 180604M2_7	Standard	10.000	4.33	2866.486	23488.016	1.526	9.7	-3.3	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	4.33	12718.886	19220.492	8.272	53.0	5.9	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	4.33	23718.021	19779.754	14.989	96.8	-3.2	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	4.33	55497.215	18486.152	37.526	249.8	-0.1	NO	1.000	NO	bb
10	10 180604M2_11	Standard	500.000	4.33	98501.461	17235.395	71.438	500.5	0.1	NO	1.000	NO	bb

Compound name: PFNA

Coefficient of Determination: R² = 0.997864

Calibration curve: $0.000147582 * x^2 + 1.2693 * x + 0.0983793$

Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	4.66	441.622	16427.822	0.336	0.2	-25.1	NO	0.998	NO	MM
2	2 180604M2_3	Standard	0.500	4.66	956.573	17421.307	0.686	0.5	-7.4	NO	0.998	NO	MM
3	3 180604M2_4	Standard	1.000	4.66	1975.412	19878.240	1.242	0.9	-9.9	NO	0.998	NO	MM
4	4 180604M2_5	Standard	2.000	4.66	4082.241	18188.109	2.806	2.1	6.6	NO	0.998	NO	MM
5	5 180604M2_6	Standard	5.000	4.66	9768.227	15834.358	7.711	6.0	19.9	NO	0.998	NO	MM
6	6 180604M2_7	Standard	10.000	4.66	17862.461	16231.207	13.756	10.7	7.5	NO	0.998	NO	MM
7	7 180604M2_8	Standard	50.000	4.66	92683.320	15917.798	72.783	56.9	13.8	NO	0.998	NO	MM
8	8 180604M2_9	Standard	100.000	4.66	165536.297	16328.868	126.721	98.6	-1.4	NO	0.998	NO	MM
9	9 180604M2_10	Standard	250.000	4.66	415747.969	16797.787	309.377	237.1	-5.2	NO	0.998	NO	MM
10	10 180604M2_11	Standard	500.000	4.66	759963.063	13975.681	679.719	505.7	1.1	NO	0.998	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFOSA

Coefficient of Determination: R² = 0.999493
 Calibration curve: $-0.000225332 * x^2 + 0.955318 * x + -0.036378$
 Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)
 Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	0.250	4.73	46.728	3431.462	0.170	0.2	-13.5	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	4.72	123.414	3179.648	0.485	0.5	9.2	NO	0.999	NO	bb
3	3 180604M2_4	Standard	1.000	4.73	261.758	3595.649	0.910	1.0	-0.9	NO	0.999	NO	bb
4	4 180604M2_5	Standard	2.000	4.73	488.988	3834.985	1.594	1.7	-14.6	NO	0.999	NO	bb
5	5 180604M2_6	Standard	5.000	4.73	1424.439	3390.498	5.252	5.5	10.9	NO	0.999	NO	bb
6	6 180604M2_7	Standard	10.000	4.73	2880.019	3889.938	9.255	9.7	-2.5	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	4.72	12077.262	3418.532	44.161	46.8	-6.4	NO	0.999	NO	bb
8	8 180604M2_9	Standard	100.000	4.73	23619.221	3112.179	94.866	101.8	1.8	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	4.73	54122.398	2973.532	227.517	253.3	1.3	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	4.72	92360.813	2749.737	419.862	498.0	-0.4	NO	0.999	NO	MM

Compound name: L-PFOS

Coefficient of Determination: R² = 0.999458
 Calibration curve: $1.42803e-007 * x^2 + 0.934629 * x + -0.0613722$
 Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
 Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	4.75	42.566	3315.648	0.160	0.2	-5.1	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	4.74	112.495	2954.499	0.476	0.6	15.0	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	4.74	238.462	3630.876	0.821	0.9	-5.6	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	4.74	505.739	3704.720	1.706	1.9	-5.4	NO	0.999	NO	MM
5	5 180604M2_6	Standard	5.000	4.74	1278.387	3298.775	4.844	5.2	5.0	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	4.74	2927.725	3897.956	9.389	10.1	1.1	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	4.74	12183.854	3440.435	44.267	47.4	-5.1	NO	0.999	NO	MM
8	8 180604M2_9	Standard	100.000	4.74	23893.512	3274.599	91.208	97.7	-2.3	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	4.74	55947.535	2902.207	240.970	257.9	3.2	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	4.74	100952.094	2717.965	464.282	496.8	-0.6	NO	0.999	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFDA

Coefficient of Determination: $R^2 = 0.999743$

Calibration curve: $0.00037847 * x^2 + 1.01718 * x + 0.0671158$

Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	0.250	5.04	508.313	21761.287	0.292	0.2	-11.6	NO	1.000	NO	MM
2	2 180604M2_3	Standard	0.500	5.03	1152.791	20533.658	0.702	0.6	24.8	NO	1.000	NO	MM
3	3 180604M2_4	Standard	1.000	5.03	1838.713	20788.254	1.106	1.0	2.1	NO	1.000	NO	MM
4	4 180604M2_5	Standard	2.000	5.03	4669.937	26067.412	2.239	2.1	6.7	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	5.03	9633.189	23295.496	5.169	5.0	0.1	NO	1.000	NO	MM
6	6 180604M2_7	Standard	10.000	5.03	23717.045	26637.291	11.130	10.8	8.3	NO	1.000	NO	MM
7	7 180604M2_8	Standard	50.000	5.03	92221.961	23496.604	49.061	47.3	-5.3	NO	1.000	NO	MM
8	8 180604M2_9	Standard	100.000	5.03	139928.125	16383.868	106.758	101.1	1.1	NO	1.000	NO	MM
9	9 180604M2_10	Standard	250.000	5.03	429837.344	19258.957	278.985	250.8	0.3	NO	1.000	NO	MM
10	10 180604M2_11	Standard	500.000	5.03	817929.813	16960.596	602.816	499.7	-0.1	NO	1.000	NO	MM

Compound name: 8:2 FTS

Coefficient of Determination: $R^2 = 0.999723$

Calibration curve: $-0.0051377 * x^2 + 1.48665 * x + 0.00181394$

Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	5.00	91.591	2934.979	0.390	0.3	4.6	NO	1.000	NO	bb
2	2 180604M2_3	Standard	0.500	5.00	173.944	3009.166	0.723	0.5	-2.9	NO	1.000	NO	bb
3	3 180604M2_4	Standard	1.000	5.00	391.783	3267.680	1.499	1.0	1.0	NO	1.000	NO	bb
4	4 180604M2_5	Standard	2.000	5.00	779.362	3210.507	3.034	2.1	2.7	NO	1.000	NO	bb
5	5 180604M2_6	Standard	5.000	5.00	1832.006	3308.789	6.921	4.7	-5.4	NO	1.000	NO	bb
6	6 180604M2_7	Standard	10.000	5.00	4234.394	3729.984	14.190	9.9	-1.2	NO	1.000	NO	bb
7	7 180604M2_8	Standard	50.000	5.00	18019.498	3613.179	62.339	50.9	1.8	NO	1.000	NO	bb
8	8 180604M2_9	Standard	100.000	5.00	31084.084	4009.876	96.899	99.2	-0.8	NO	1.000	NO	bb
9	9 180604M2_10	Standard	250.000	5.00	68676.156	5046.779	170.099			NO	1.000	NO	bbXI
10	10 180604M2_11	Standard	500.000	4.99	114753.305	6978.822	205.538			NO	1.000	NO	bbXI

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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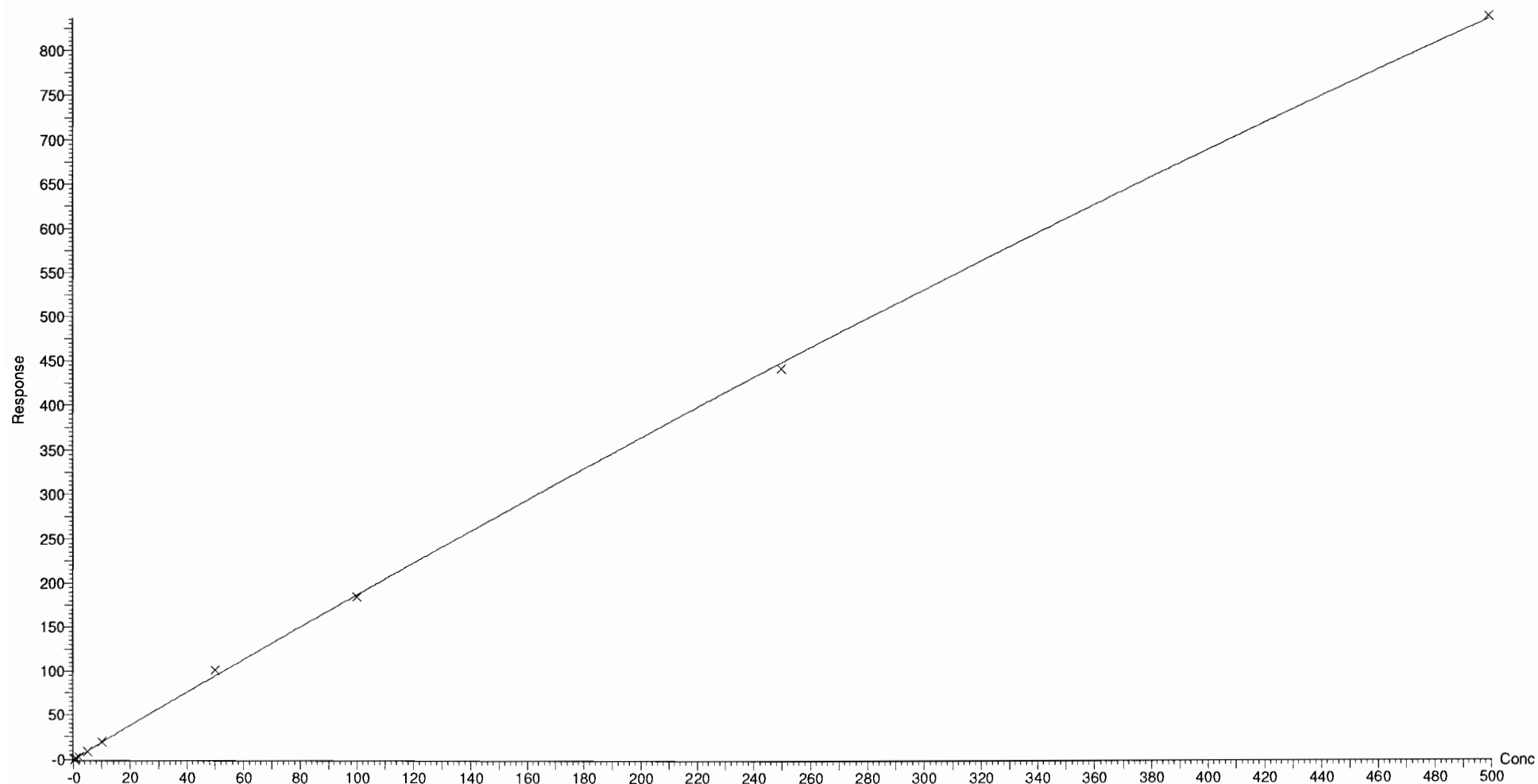
Compound name: L-MeFOSAA

Coefficient of Determination: $R^2 = 0.999432$

Calibration curve: $-0.000502031 * x^2 + 1.91815 * x + -0.195978$

Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFNS

Coefficient of Determination: R² = 0.999403

Calibration curve: -0.000141031 * x² + 0.84601 * x + -0.0910263

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	5.10	35.733	3315.648	0.135	0.3	6.7	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	5.09	94.093	2954.499	0.398	0.6	15.6	NO	0.999	NO	bb
3	3 180604M2_4	Standard	1.000	5.09	209.017	3630.876	0.720	1.0	-4.2	NO	0.999	NO	bb
4	4 180604M2_5	Standard	2.000	5.09	416.509	3704.720	1.405	1.8	-11.5	NO	0.999	NO	bb
5	5 180604M2_6	Standard	5.000	5.09	1073.949	3298.775	4.069	4.9	-1.6	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	5.09	2582.372	3897.956	8.281	9.9	-0.9	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	5.09	10938.496	3440.435	39.742	47.5	-5.1	NO	0.999	NO	bb
8	8 180604M2_9	Standard	100.000	5.09	21378.234	3274.599	81.606	98.2	-1.8	NO	0.999	NO	bb
9	9 180604M2_10	Standard	250.000	5.09	48609.973	2902.207	209.366	258.7	3.5	NO	0.999	NO	bb
10	10 180604M2_11	Standard	500.000	5.09	83666.563	2717.965	384.785	495.9	-0.8	NO	0.999	NO	bb

Compound name: L-MeFOSAA

Coefficient of Determination: R² = 0.999432

Calibration curve: -0.000502031 * x² + 1.91815 * x + -0.195978

Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	5.19	128.578	4210.790	0.382	0.3	20.5	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	5.18	168.771	4114.854	0.513	0.4	-26.1	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	5.18	747.096	4411.583	2.117	1.2	20.6	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	5.18	1176.726	4785.307	3.074	1.7	-14.7	NO	0.999	NO	MM
5	5 180604M2_6	Standard	5.000	5.18	3169.990	4484.180	8.837	4.7	-5.7	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	5.18	7635.587	4988.149	19.134	10.1	1.0	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	5.18	35062.242	4352.490	100.696	53.3	6.7	NO	0.999	NO	MM
8	8 180604M2_9	Standard	100.000	5.18	63922.762	4328.779	184.587	98.9	-1.1	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	5.18	150590.078	4265.706	441.281	246.0	-1.6	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	5.18	261962.859	3914.602	836.493	502.2	0.4	NO	0.999	NO	MM

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38 *C10 - VAL PFAS - 04_06-04-18*

Compound name: L-EtFOSAA

Coefficient of Determination: R² = 0.999646

Calibration curve: -0.00010475 * x² + 1.14871 * x + -0.0588573

Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	0.250	5.35	117.195	5523.320	0.265	0.3	12.9	NO	1.000	NO	MM
2	2 180604M2_3	Standard	0.500	5.34	214.899	5238.067	0.513	0.5	-0.5	NO	1.000	NO	MM
3	3 180604M2_4	Standard	1.000	5.34	403.874	5567.794	0.907	0.8	-15.9	NO	1.000	NO	MM
4	4 180604M2_5	Standard	2.000	5.34	873.437	5895.005	1.852	1.7	-16.8	NO	1.000	NO	MM
5	5 180604M2_6	Standard	5.000	5.34	2547.371	5760.961	5.527	4.9	-2.7	NO	1.000	NO	MM
6	6 180604M2_7	Standard	10.000	5.34	5775.263	6157.235	11.725	10.3	2.7	NO	1.000	NO	MM
7	7 180604M2_8	Standard	50.000	5.34	25802.385	5813.378	55.481	48.6	-2.9	NO	1.000	NO	MM
8	8 180604M2_9	Standard	100.000	5.34	47811.383	5069.896	117.881	103.7	3.7	NO	1.000	NO	MM
9	9 180604M2_10	Standard	250.000	5.34	104052.688	4683.729	277.697	247.4	-1.0	NO	1.000	NO	MM
10	10 180604M2_11	Standard	500.000	5.34	182901.938	4165.334	548.881	500.7	0.1	NO	1.000	NO	MM

Compound name: PFUdA

Coefficient of Determination: R² = 0.997692

Calibration curve: -0.00013883 * x² + 0.96625 * x + 0.0663674

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	5.36	454.345	22871.002	0.248	0.2	-24.7	NO	0.998	NO	MM
2	2 180604M2_3	Standard	0.500	5.35	926.813	18741.598	0.618	0.6	14.2	NO	0.998	NO	MM
3	3 180604M2_4	Standard	1.000	5.35	2190.952	26986.771	1.015	1.0	-1.8	NO	0.998	NO	MM
4	4 180604M2_5	Standard	2.000	5.35	3484.744	18264.871	2.385	2.4	20.0	NO	0.998	NO	MM
5	5 180604M2_6	Standard	5.000	5.35	9520.334	25583.273	4.652	4.7	-5.0	NO	0.998	NO	MM
6	6 180604M2_7	Standard	10.000	5.35	21604.178	25767.896	10.480	10.8	7.9	NO	0.998	NO	MM
7	7 180604M2_8	Standard	50.000	5.35	83864.031	24683.182	42.470	44.2	-11.7	NO	0.998	NO	bb
8	8 180604M2_9	Standard	100.000	5.35	159380.531	21720.848	91.721	96.2	-3.8	NO	0.998	NO	MM
9	9 180604M2_10	Standard	250.000	5.35	408045.594	20656.635	246.922	265.6	6.2	NO	0.998	NO	MM
10	10 180604M2_11	Standard	500.000	5.35	688705.938	19443.674	442.757	493.1	-1.4	NO	0.998	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFDS

Coefficient of Determination: R² = 0.998713

Calibration curve: $-2.08709e-005 * x^2 + 0.145076 * x + -0.00507523$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	0.250	5.41	45.757	22871.002	0.025	0.2	-17.1	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	5.41	95.649	18741.598	0.064	0.5	-5.1	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	5.40	284.888	26986.771	0.132	0.9	-5.5	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	5.40	542.767	18264.871	0.371	2.6	29.8	NO	0.999	NO	MM
5	5 180604M2_6	Standard	5.000	5.40	1196.045	25583.273	0.584	4.1	-18.7	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	5.40	3208.356	25767.896	1.556	10.8	7.8	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	5.40	12832.533	24683.182	6.499	45.1	-9.8	NO	0.999	NO	MM
8	8 180604M2_9	Standard	100.000	5.40	25807.607	21720.848	14.852	104.0	4.0	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	5.40	58224.566	20656.635	35.234	252.0	0.8	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	5.39	104428.633	19443.674	67.135	498.6	-0.3	NO	0.999	NO	MM

Compound name: PFDaA

Coefficient of Determination: R² = 0.997401

Calibration curve: $0.000212677 * x^2 + 1.10562 * x + 0.0813564$

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	5.64	456.527	19397.404	0.294	0.2	-23.0	NO	0.997	NO	MM
2	2 180604M2_3	Standard	0.500	5.63	1134.501	17754.355	0.799	0.6	29.8	NO	0.997	NO	bb
3	3 180604M2_4	Standard	1.000	5.63	2182.828	25882.254	1.054	0.9	-12.0	NO	0.997	NO	MM
4	4 180604M2_5	Standard	2.000	5.63	4066.530	23953.689	2.122	1.8	-7.7	NO	0.997	NO	MM
5	5 180604M2_6	Standard	5.000	5.63	12163.052	24244.600	6.271	5.6	11.8	NO	0.997	NO	MM
6	6 180604M2_7	Standard	10.000	5.63	24404.803	27755.697	10.991	9.8	-1.5	NO	0.997	NO	MM
7	7 180604M2_8	Standard	50.000	5.63	112908.602	22544.379	62.604	55.9	11.9	NO	0.997	NO	MM
8	8 180604M2_9	Standard	100.000	5.63	181720.422	22912.549	99.138	88.1	-11.9	NO	0.997	NO	MM
9	9 180604M2_10	Standard	250.000	5.63	487289.656	20375.152	298.948	257.6	3.0	NO	0.997	NO	MM
10	10 180604M2_11	Standard	500.000	5.63	813939.313	16857.902	603.530	498.1	-0.4	NO	0.997	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: N-MeFOSA

Coefficient of Determination: R² = 0.999647

Calibration curve: -6.00765e-005 * x² + 1.05382 * x + 1.43912e-005

Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	1.250	5.84	99.834	14272.175	1.049	1.0	-20.3	NO	1.000	NO	bb
2	2 180604M2_3	Standard	2.500	5.82	262.255	13534.160	2.907	2.8	10.3	NO	1.000	NO	bb
3	3 180604M2_4	Standard	5.000	5.82	542.064	14890.748	5.460	5.2	3.7	NO	1.000	NO	bb
4	4 180604M2_5	Standard	10.000	5.82	1052.964	15456.740	10.218	9.7	-3.0	NO	1.000	NO	bb
5	5 180604M2_6	Standard	25.000	5.82	2661.011	14561.282	27.412	26.1	4.2	NO	1.000	NO	MM
6	6 180604M2_7	Standard	50.000	5.82	5989.729	16522.182	54.379	51.8	3.5	NO	1.000	NO	MM
7	7 180604M2_8	Standard	250.000	5.82	26163.229	14948.137	262.540	252.8	1.1	NO	1.000	NO	MM
8	8 180604M2_9	Standard	500.000	5.82	49787.059	14228.368	524.871	513.1	2.6	NO	1.000	NO	MM
9	9 180604M2_10	Standard	1250.000	5.82	114688.125	14432.672	1191.964	1215.3	-2.8	NO	1.000	NO	MM
10	10 180604M2_11	Standard	2500.000	5.82	206537.891	13636.706	2271.860	2517.0	0.7	NO	1.000	NO	MM

Compound name: PFTrDA

Coefficient of Determination: R² = 0.998885

Calibration curve: 0.000371643 * x² + 1.06917 * x + 0.144786

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	5.88	605.594	19397.404	0.390	0.2	-8.2	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	5.88	1162.894	17754.355	0.819	0.6	26.0	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	5.88	2058.899	25882.254	0.994	0.8	-20.6	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	5.88	4096.845	23953.689	2.138	1.9	-6.9	NO	0.999	NO	MM
5	5 180604M2_6	Standard	5.000	5.88	10095.215	24244.600	5.205	4.7	-5.5	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	5.88	27843.785	27755.697	12.540	11.5	15.5	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	5.88	103653.180	22544.379	57.472	52.7	5.3	NO	0.999	NO	MM
8	8 180604M2_9	Standard	100.000	5.88	187340.047	22912.549	102.204	92.5	-7.5	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	5.88	483962.938	20375.152	296.908	255.0	2.0	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	5.88	844121.625	16857.902	625.909	498.8	-0.2	NO	0.999	NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: PFTeDA

Coefficient of Determination: R² = 0.999161

Calibration curve: $-0.000334653 * x^2 + 1.29716 * x + 0.0524742$

Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	6.10	472.059	17876.412	0.330	0.2	-14.4	NO	0.999	NO	MM
2	2 180604M2_3	Standard	0.500	6.10	841.893	16472.129	0.639	0.5	-9.6	NO	0.999	NO	MM
3	3 180604M2_4	Standard	1.000	6.09	1922.840	16315.121	1.473	1.1	9.6	NO	0.999	NO	MM
4	4 180604M2_5	Standard	2.000	6.10	3725.166	17710.369	2.629	2.0	-0.6	NO	0.999	NO	MM
5	5 180604M2_6	Standard	5.000	6.09	9742.960	17267.689	7.053	5.4	8.1	NO	0.999	NO	MM
6	6 180604M2_7	Standard	10.000	6.09	21137.033	19111.336	13.825	10.6	6.5	NO	0.999	NO	MM
7	7 180604M2_8	Standard	50.000	6.09	83730.727	16598.182	63.057	49.2	-1.6	NO	0.999	NO	MM
8	8 180604M2_9	Standard	100.000	6.09	181719.109	17128.834	132.612	105.0	5.0	NO	0.999	NO	MM
9	9 180604M2_10	Standard	250.000	6.10	378320.563	16157.284	292.686	240.5	-3.8	NO	0.999	NO	MM
10	10 180604M2_11	Standard	500.000	6.09	655769.125	14401.537	569.183	504.4	0.9	NO	0.999	NO	MM

Compound name: N-EtFOSA

Coefficient of Determination: R² = 0.999998

Calibration curve: $-3.24276e-005 * x^2 + 0.927207 * x + 0.0223365$

Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	1.250	6.23	142.481	18564.291	1.151	1.2	-2.6	NO	1.000	NO	MM
2	2 180604M2_3	Standard	2.500	6.23	316.888	19925.244	2.386	2.5	2.0	NO	1.000	NO	MM
3	3 180604M2_4	Standard	5.000	6.22	681.625	21577.180	4.739	5.1	1.7	NO	1.000	NO	MM
4	4 180604M2_5	Standard	10.000	6.23	1385.069	22476.027	9.244	9.9	-0.5	NO	1.000	NO	MM
5	5 180604M2_6	Standard	25.000	6.22	3215.166	21033.535	22.929	24.7	-1.1	NO	1.000	NO	MM
6	6 180604M2_7	Standard	50.000	6.22	7577.270	24418.678	46.546	50.3	0.5	NO	1.000	NO	MM
7	7 180604M2_8	Standard	250.000	6.22	32583.484	21256.074	229.935	250.2	0.1	NO	1.000	NO	MM
8	8 180604M2_9	Standard	500.000	6.22	61194.531	20182.076	454.818	499.2	-0.2	NO	1.000	NO	MM
9	9 180604M2_10	Standard	1250.000	6.23	139089.672	18810.104	1109.162	1250.9	0.1	NO	1.000	NO	MM
10	10 180604M2_11	Standard	2500.000	6.22	241858.438	17152.324	2115.093	2499.6	-0.0	NO	1.000	NO	MM

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Compound name: PFHxDA

Coefficient of Determination: R² = 0.999511

Calibration curve: $-0.000267807 * x^2 + 0.605113 * x + 0.0392849$

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	0.250	6.43	330.938	9317.349	0.178	0.2	-8.6	NO	1.000	NO	MM
2	2 180604M2_3	Standard	0.500	6.43	716.259	9338.518	0.383	0.6	13.8	NO	1.000	NO	MM
3	3 180604M2_4	Standard	1.000	6.43	1338.395	11752.719	0.569	0.9	-12.4	NO	1.000	NO	MM
4	4 180604M2_5	Standard	2.000	6.43	2664.839	11152.150	1.195	1.9	-4.4	NO	1.000	NO	MM
5	5 180604M2_6	Standard	5.000	6.43	6709.463	10286.672	3.261	5.3	6.7	NO	1.000	NO	MM
6	6 180604M2_7	Standard	10.000	6.43	15079.014	11743.332	6.420	10.6	5.9	NO	1.000	NO	MM
7	7 180604M2_8	Standard	50.000	6.43	61798.699	10233.453	30.194	51.0	2.0	NO	1.000	NO	MM
8	8 180604M2_9	Standard	100.000	6.43	112417.227	10143.569	55.413	95.6	-4.4	NO	1.000	NO	MM
9	9 180604M2_10	Standard	250.000	6.43	258363.797	9457.769	136.588	254.3	1.7	NO	1.000	NO	MM
10	10 180604M2_11	Standard	500.000	6.43	451723.313	9608.434	235.066	498.3	-0.3	NO	1.000	NO	MM

Compound name: PFODA

Coefficient of Determination: R² = 0.999491

Calibration curve: $-0.000404358 * x^2 + 0.894092 * x + -0.0222858$

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Include, 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 180604M2_2	Standard	0.250	6.67	421.840	9317.349	0.226	0.3	11.3	NO	0.999	NO	bb
2	2 180604M2_3	Standard	0.500	6.67	880.754	9338.518	0.472	0.6	10.5	NO	0.999	NO	bb
3	3 180604M2_4	Standard	1.000	6.67	1757.530	11752.719	0.748	0.9	-13.8	NO	0.999	NO	bb
4	4 180604M2_5	Standard	2.000	6.67	3544.492	11152.150	1.589	1.8	-9.8	NO	0.999	NO	bb
5	5 180604M2_6	Standard	5.000	6.67	8985.215	10286.672	4.367	4.9	-1.6	NO	0.999	NO	bb
6	6 180604M2_7	Standard	10.000	6.67	19850.248	11743.332	8.452	9.5	-4.8	NO	0.999	NO	bb
7	7 180604M2_8	Standard	50.000	6.67	87936.969	10233.453	42.965	49.2	-1.7	NO	0.999	NO	bb
8	8 180604M2_9	Standard	100.000	6.67	169032.750	10143.569	83.320	97.5	-2.5	NO	0.999	NO	bb
9	9 180604M2_10	Standard	250.000	6.67	386187.063	9457.769	204.164	258.6	3.4	NO	0.999	NO	bb
10	10 180604M2_11	Standard	500.000	6.67	660007.313	9608.434	343.452	495.0	-1.0	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: N-MeFOSE

Correlation coefficient: $r = 0.997461$, $r^2 = 0.994929$

Calibration curve: $1.00285 * x + -0.37541$

Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, 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 180604M2_2	Standard	1.250	6.38	70.618	11044.131	0.959	1.3	6.5	NO	0.995	NO	MM
2	2 180604M2_3	Standard	2.500	6.37	146.761	10474.625	2.102	2.5	-1.2	NO	0.995	NO	MM
3	3 180604M2_4	Standard	5.000	6.37	418.207	12360.827	5.075	5.4	8.7	NO	0.995	NO	MM
4	4 180604M2_5	Standard	10.000	6.37	822.932	13301.675	9.280	9.6	-3.7	NO	0.995	NO	MM
5	5 180604M2_6	Standard	25.000	6.37	1900.876	11701.808	24.366	24.7	-1.3	NO	0.995	NO	MM
6	6 180604M2_7	Standard	50.000	6.37	4146.294	12515.271	49.695	49.9	-0.1	NO	0.995	NO	MM
7	7 180604M2_8	Standard	250.000	6.37	18776.223	11664.843	241.446	241.1	-3.5	NO	0.995	NO	MM
8	8 180604M2_9	Standard	500.000	6.37	38398.934	11530.785	499.518	498.5	-0.3	NO	0.995	NO	MM
9	9 180604M2_10	Standard	1250.000	6.37	88299.289	11837.472	1118.895	1116.1	-10.7	NO	0.995	NO	MM
10	10 180604M2_11	Standard	2500.000	6.37	198307.703	11217.550	2651.752	2644.6	5.8	NO	0.995	NO	MM

Compound name: N-EtFOSE

Coefficient of Determination: $R^2 = 0.999985$

Calibration curve: $1.74191e-005 * x^2 + 1.19563 * x + -0.124308$

Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, 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 180604M2_2	Standard	1.250	6.53	97.683	9984.098	1.468	1.3	6.5	NO	1.000	NO	MM
2	2 180604M2_3	Standard	2.500	6.51	190.657	10038.572	2.849	2.5	-0.5	NO	1.000	NO	MM
3	3 180604M2_4	Standard	5.000	6.52	426.287	11277.418	5.670	4.8	-3.1	NO	1.000	NO	MM
4	4 180604M2_5	Standard	10.000	6.52	883.671	11254.722	11.777	10.0	-0.5	NO	1.000	NO	MM
5	5 180604M2_6	Standard	25.000	6.52	2199.000	11039.759	29.878	25.1	0.3	NO	1.000	NO	MM
6	6 180604M2_7	Standard	50.000	6.52	4909.453	12745.162	57.780	48.4	-3.2	NO	1.000	NO	MM
7	7 180604M2_8	Standard	250.000	6.52	22161.285	11078.604	300.055	250.2	0.1	NO	1.000	NO	MM
8	8 180604M2_9	Standard	500.000	6.52	43466.652	10782.540	604.681	502.2	0.4	NO	1.000	NO	MM
9	9 180604M2_10	Standard	1250.000	6.51	108494.961	10699.962	1520.963	1249.5	-0.0	NO	1.000	NO	MM
10	10 180604M2_11	Standard	2500.000	6.51	218959.797	10602.889	3097.643	2499.9	-0.0	NO	1.000	NO	MM

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Compound name: 13C3-PFBA

Response Factor: 0.885048

RRF SD: 0.0114078, Relative SD: 1.28894

Response type: Internal Std (Ref 60), 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 180604M2_2	Standard	12.500	1.34	9005.189	10271.474	10.959	12.4	-0.9	NO		NO	MM
2	2 180604M2_3	Standard	12.500	1.34	9082.563	10065.069	11.280	12.7	2.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	1.34	9855.626	11352.728	10.852	12.3	-1.9	NO		NO	bb
4	4 180604M2_5	Standard	12.500	1.34	8997.036	10214.078	11.011	12.4	-0.5	NO		NO	bb
5	5 180604M2_6	Standard	12.500	1.34	9430.916	10765.735	10.950	12.4	-1.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	1.34	10868.822	12417.303	10.941	12.4	-1.1	NO		NO	bb
7	7 180604M2_8	Standard	12.500	1.34	9593.588	10796.833	11.107	12.5	0.4	NO		NO	bb
8	8 180604M2_9	Standard	12.500	1.34	9523.508	10598.734	11.232	12.7	1.5	NO		NO	bb
9	9 180604M2_10	Standard	12.500	1.34	9255.525	10421.132	11.102	12.5	0.4	NO		NO	bb
10	10 180604M2_11	Standard	12.500	1.34	8757.902	9776.241	11.198	12.7	1.2	NO		NO	bb

Compound name: 13C3-PFPeA

Response Factor: 0.84942

RRF SD: 0.0318525, Relative SD: 3.74991

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	12.500	2.31	12347.332	15007.401	10.284	12.1	-3.1	NO		NO	bb
2	2 180604M2_3	Standard	12.500	2.31	12476.627	13827.207	11.279	13.3	6.2	NO		NO	bb
3	3 180604M2_4	Standard	12.500	2.31	13544.467	16888.469	10.025	11.8	-5.6	NO		NO	MM
4	4 180604M2_5	Standard	12.500	2.31	14007.501	15740.042	11.124	13.1	4.8	NO		NO	bb
5	5 180604M2_6	Standard	12.500	2.31	13406.085	15291.013	10.959	12.9	3.2	NO		NO	bb
6	6 180604M2_7	Standard	12.500	2.31	15122.394	17659.707	10.704	12.6	0.8	NO		NO	bb
7	7 180604M2_8	Standard	12.500	2.31	13022.961	15758.688	10.330	12.2	-2.7	NO		NO	bb
8	8 180604M2_9	Standard	12.500	2.31	12487.914	14738.479	10.591	12.5	-0.2	NO		NO	bb
9	9 180604M2_10	Standard	12.500	2.31	11821.135	14148.502	10.444	12.3	-1.6	NO		NO	bb
10	10 180604M2_11	Standard	12.500	2.31	10586.028	12678.664	10.437	12.3	-1.7	NO		NO	bb

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Compound name: 13C3-PFBS

Response Factor: 0.103869

RRF SD: 0.00542707, Relative SD: 5.22492

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	12.500	2.60	1498.706	15007.401	1.248	12.0	-3.9	NO		NO	MM
2	2 180604M2_3	Standard	12.500	2.60	1529.458	13827.207	1.383	13.3	6.5	NO		NO	bb
3	3 180604M2_4	Standard	12.500	2.60	1663.006	16888.469	1.231	11.9	-5.2	NO		NO	bb
4	4 180604M2_5	Standard	12.500	2.60	1756.558	15740.042	1.395	13.4	7.4	NO		NO	bb
5	5 180604M2_6	Standard	12.500	2.60	1672.393	15291.013	1.367	13.2	5.3	NO		NO	MM
6	6 180604M2_7	Standard	12.500	2.60	1855.024	17659.707	1.313	12.6	1.1	NO		NO	bb
7	7 180604M2_8	Standard	12.500	2.60	1634.481	15758.688	1.296	12.5	-0.1	NO		NO	bb
8	8 180604M2_9	Standard	12.500	2.60	1526.828	14738.479	1.295	12.5	-0.3	NO		NO	bb
9	9 180604M2_10	Standard	12.500	2.60	1432.947	14148.502	1.266	12.2	-2.5	NO		NO	bb
10	10 180604M2_11	Standard	12.500	2.60	1206.225	12678.664	1.189	11.4	-8.4	NO		NO	bb

Compound name: 13C2-4:2 FTS

Response Factor: 0.247683

RRF SD: 0.0262332, Relative SD: 10.5914

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	12.500	3.01	3169.168	15007.401	2.640	10.7	-14.7	NO		NO	bb
2	2 180604M2_3	Standard	12.500	3.01	3422.257	13827.207	3.094	12.5	-0.1	NO		NO	bb
3	3 180604M2_4	Standard	12.500	3.01	3927.586	16888.469	2.907	11.7	-6.1	NO		NO	bb
4	4 180604M2_5	Standard	12.500	3.01	4054.097	15740.042	3.220	13.0	4.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	3.00	3586.589	15291.013	2.932	11.8	-5.3	NO		NO	bb
6	6 180604M2_7	Standard	12.500	3.01	4233.463	17659.707	2.997	12.1	-3.2	NO		NO	bb
7	7 180604M2_8	Standard	12.500	3.00	4058.697	15758.688	3.219	13.0	4.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	3.01	4433.810	14738.479	3.760	15.2	21.5	NO		NO	bb
9	9 180604M2_10	Standard	12.500	3.01	5370.476	14148.502	4.745	19.2	53.3	NO		NO	bbX
10	10 180604M2_11	Standard	12.500	3.01	6656.033	12678.664	6.562	26.5	112.0	NO		NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

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Compound name: 13C2-PFHxA

Response Factor: 0.729003

RRF SD: 0.0325361, Relative SD: 4.4631

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	5.000	3.09	4246.335	15007.401	3.537	4.9	-3.0	NO		NO	bb
2	2 180604M2_3	Standard	5.000	3.09	4142.994	13827.207	3.745	5.1	2.8	NO		NO	bb
3	3 180604M2_4	Standard	5.000	3.09	4630.566	16888.469	3.427	4.7	-6.0	NO		NO	bb
4	4 180604M2_5	Standard	5.000	3.09	4710.073	15740.042	3.741	5.1	2.6	NO		NO	bb
5	5 180604M2_6	Standard	5.000	3.09	4612.718	15291.013	3.771	5.2	3.5	NO		NO	bb
6	6 180604M2_7	Standard	5.000	3.09	4951.568	17659.707	3.505	4.8	-3.8	NO		NO	bb
7	7 180604M2_8	Standard	5.000	3.09	4486.201	15758.688	3.559	4.9	-2.4	NO		NO	bb
8	8 180604M2_9	Standard	5.000	3.09	4110.789	14738.479	3.486	4.8	-4.4	NO		NO	bb
9	9 180604M2_10	Standard	5.000	3.09	4245.043	14148.502	3.750	5.1	2.9	NO		NO	bb
10	10 180604M2_11	Standard	5.000	3.09	3985.266	12678.664	3.929	5.4	7.8	NO		NO	bb

Compound name: 13C4-PFHpA

Response Factor: 0.836272

RRF SD: 0.0378621, Relative SD: 4.52749

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	12.500	3.71	12501.413	15007.401	10.413	12.5	-0.4	NO		NO	bb
2	2 180604M2_3	Standard	12.500	3.70	11729.507	13827.207	10.604	12.7	1.4	NO		NO	bb
3	3 180604M2_4	Standard	12.500	3.70	13016.023	16888.469	9.634	11.5	-7.8	NO		NO	bb
4	4 180604M2_5	Standard	12.500	3.71	13914.408	15740.042	11.050	13.2	5.7	NO		NO	bb
5	5 180604M2_6	Standard	12.500	3.70	13247.432	15291.013	10.829	12.9	3.6	NO		NO	bb
6	6 180604M2_7	Standard	12.500	3.70	14486.901	17659.707	10.254	12.3	-1.9	NO		NO	bb
7	7 180604M2_8	Standard	12.500	3.70	12638.182	15758.688	10.025	12.0	-4.1	NO		NO	bb
8	8 180604M2_9	Standard	12.500	3.70	12671.674	14738.479	10.747	12.9	2.8	NO		NO	bb
9	9 180604M2_10	Standard	12.500	3.71	12444.102	14148.502	10.994	13.1	5.2	NO		NO	bb
10	10 180604M2_11	Standard	12.500	3.70	10126.721	12678.664	9.984	11.9	-4.5	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

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Compound name: 18O2-PFHxS

Response Factor: 0.442568

RRF SD: 0.0142283, Relative SD: 3.21493

Response type: Internal Std (Ref 62), 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 180604M2_2	Standard	12.500	3.86	1333.795	3044.086	5.477	12.4	-1.0	NO		NO	MM
2	2 180604M2_3	Standard	12.500	3.86	1335.589	2855.621	5.846	13.2	5.7	NO		NO	MM
3	3 180604M2_4	Standard	12.500	3.85	1500.467	3323.627	5.643	12.8	2.0	NO		NO	MM
4	4 180604M2_5	Standard	12.500	3.86	1457.849	3243.628	5.618	12.7	1.6	NO		NO	MM
5	5 180604M2_6	Standard	12.500	3.85	1355.524	3131.864	5.410	12.2	-2.2	NO		NO	MM
6	6 180604M2_7	Standard	12.500	3.85	1524.630	3617.574	5.268	11.9	-4.8	NO		NO	MM
7	7 180604M2_8	Standard	12.500	3.85	1363.064	3005.609	5.669	12.8	2.5	NO		NO	MM
8	8 180604M2_9	Standard	12.500	3.85	1342.743	3121.421	5.377	12.1	-2.8	NO		NO	MM
9	9 180604M2_10	Standard	12.500	3.86	1285.869	2851.130	5.638	12.7	1.9	NO		NO	MM
10	10 180604M2_11	Standard	12.500	3.85	1082.486	2517.609	5.375	12.1	-2.8	NO		NO	MM

Compound name: 13C2-6:2 FTS

Response Factor: 0.249011

RRF SD: 0.0286251, Relative SD: 11.4955

Response type: Internal Std (Ref 63), 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 180604M2_2	Standard	12.500	4.17	3136.696	15167.363	2.585	10.4	-16.9	NO		NO	MM
2	2 180604M2_3	Standard	12.500	4.17	3478.213	14724.747	2.953	11.9	-5.1	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.17	3819.201	15358.042	3.108	12.5	-0.1	NO		NO	MM
4	4 180604M2_5	Standard	12.500	4.17	3828.594	16216.819	2.951	11.9	-5.2	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.17	3805.419	16212.924	2.934	11.8	-5.7	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.17	4005.856	15974.759	3.135	12.6	0.7	NO		NO	bb
7	7 180604M2_8	Standard	12.500	4.17	4061.438	14468.508	3.509	14.1	12.7	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.17	4557.357	15287.114	3.726	15.0	19.7	NO		NO	bb
9	9 180604M2_10	Standard	12.500	4.17	5639.339	12818.621	5.499	22.1	76.7	NO		NO	bbX
10	10 180604M2_11	Standard	12.500	4.17	7863.491	12943.563	7.594	30.5	144.0	NO		NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: 13C2-PFOA

Response Factor: 1.33228

RRF SD: 0.0738349, Relative SD: 5.54199

Response type: Internal Std (Ref 63), 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 180604M2_2	Standard	12.500	4.23	20205.967	15167.363	16.653	12.5	-0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	4.23	19150.432	14724.747	16.257	12.2	-2.4	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.23	18664.631	15358.042	15.191	11.4	-8.8	NO		NO	bb
4	4 180604M2_5	Standard	12.500	4.23	21305.520	16216.819	16.422	12.3	-1.4	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.22	20989.240	16212.924	16.182	12.1	-2.8	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.23	23488.016	15974.759	18.379	13.8	10.4	NO		NO	bb
7	7 180604M2_8	Standard	12.500	4.22	19220.492	14468.508	16.605	12.5	-0.3	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.22	19779.754	15287.114	16.174	12.1	-2.9	NO		NO	bb
9	9 180604M2_10	Standard	12.500	4.23	18486.152	12818.621	18.027	13.5	8.2	NO		NO	MM
10	10 180604M2_11	Standard	12.500	4.22	17235.395	12943.563	16.645	12.5	-0.1	NO		NO	bb

Compound name: 13C5-PFNA

Response Factor: 0.95074

RRF SD: 0.0610405, Relative SD: 6.42031

Response type: Internal Std (Ref 64), 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 180604M2_2	Standard	12.500	4.66	16427.822	16881.150	12.164	12.8	2.4	NO		NO	MM
2	2 180604M2_3	Standard	12.500	4.66	17421.307	18334.830	11.877	12.5	-0.1	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.66	19878.240	20973.391	11.847	12.5	-0.3	NO		NO	bb
4	4 180604M2_5	Standard	12.500	4.66	18188.109	20413.705	11.137	11.7	-6.3	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.66	15834.358	15700.341	12.607	13.3	6.1	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.66	16231.207	18020.547	11.259	11.8	-5.3	NO		NO	bb
7	7 180604M2_8	Standard	12.500	4.66	15917.798	18653.123	10.667	11.2	-10.2	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.66	16328.868	17510.518	11.656	12.3	-1.9	NO		NO	MM
9	9 180604M2_10	Standard	12.500	4.66	16797.787	15816.211	13.276	14.0	11.7	NO		NO	MM
10	10 180604M2_11	Standard	12.500	4.66	13975.681	14143.361	12.352	13.0	3.9	NO		NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: 13C8-PFOSA

Response Factor: 0.139501

RRF SD: 0.0131475, Relative SD: 9.42465

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	12.500	4.73	3431.462	25518.572	1.681	12.0	-3.6	NO		NO	bb
2	2 180604M2_3	Standard	12.500	4.72	3179.648	24694.490	1.609	11.5	-7.7	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.72	3595.649	25475.063	1.764	12.6	1.2	NO		NO	bb
4	4 180604M2_5	Standard	12.500	4.73	3834.985	25878.838	1.852	13.3	6.2	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.72	3390.498	27276.764	1.554	11.1	-10.9	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.72	3889.938	29220.201	1.664	11.9	-4.6	NO		NO	MM
7	7 180604M2_8	Standard	12.500	4.72	3418.532	26358.738	1.621	11.6	-7.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.72	3112.179	22964.137	1.694	12.1	-2.9	NO		NO	MM
9	9 180604M2_10	Standard	12.500	4.72	2973.532	19544.465	1.902	13.6	9.1	NO		NO	MM
10	10 180604M2_11	Standard	12.500	4.72	2749.737	16400.094	2.096	15.0	20.2	NO		NO	MM

Compound name: 13C8-PFOS

Response Factor: 1.06017

RRF SD: 0.0418424, Relative SD: 3.94676

Response type: Internal Std (Ref 65), 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 180604M2_2	Standard	12.500	4.75	3315.648	3009.181	13.773	13.0	3.9	NO		NO	MM
2	2 180604M2_3	Standard	12.500	4.74	2954.499	2803.353	13.174	12.4	-0.6	NO		NO	MM
3	3 180604M2_4	Standard	12.500	4.74	3630.876	3163.443	14.347	13.5	8.3	NO		NO	MM
4	4 180604M2_5	Standard	12.500	4.74	3704.720	3406.201	13.595	12.8	2.6	NO		NO	MM
5	5 180604M2_6	Standard	12.500	4.74	3298.775	3250.212	12.687	12.0	-4.3	NO		NO	MM
6	6 180604M2_7	Standard	12.500	4.74	3897.956	3730.943	13.060	12.3	-1.5	NO		NO	MM
7	7 180604M2_8	Standard	12.500	4.74	3440.435	3324.223	12.937	12.2	-2.4	NO		NO	MM
8	8 180604M2_9	Standard	12.500	4.74	3274.599	3196.282	12.806	12.1	-3.4	NO		NO	MM
9	9 180604M2_10	Standard	12.500	4.74	2902.207	2834.296	12.800	12.1	-3.4	NO		NO	MM
10	10 180604M2_11	Standard	12.500	4.74	2717.965	2546.279	13.343	12.6	0.7	NO		NO	MM

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Compound name: 13C2-PFDA

Response Factor: 1.13012

RRF SD: 0.0968721, Relative SD: 8.57185

Response type: Internal Std (Ref 66), 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 180604M2_2	Standard	12.500	5.04	21761.287	16320.667	16.667	14.7	18.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	5.03	20533.658	18545.604	13.840	12.2	-2.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	5.03	20788.254	20377.879	12.752	11.3	-9.7	NO		NO	MM
4	4 180604M2_5	Standard	12.500	5.03	26067.412	22186.215	14.687	13.0	4.0	NO		NO	MM
5	5 180604M2_6	Standard	12.500	5.03	23295.496	22014.791	13.227	11.7	-6.4	NO		NO	MM
6	6 180604M2_7	Standard	12.500	5.03	26637.291	23696.297	14.051	12.4	-0.5	NO		NO	MM
7	7 180604M2_8	Standard	12.500	5.03	23496.604	18802.346	15.621	13.8	10.6	NO		NO	MM
8	8 180604M2_9	Standard	12.500	5.03	16383.868	15408.911	13.291	11.8	-5.9	NO		NO	MM
9	9 180604M2_10	Standard	12.500	5.03	19258.957	17490.107	13.764	12.2	-2.6	NO		NO	MM
10	10 180604M2_11	Standard	12.500	5.03	16960.596	15862.810	13.365	11.8	-5.4	NO		NO	MM

Compound name: 13C2-8:2 FTS

Response Factor: 0.217451

RRF SD: 0.0250656, Relative SD: 11.527

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	12.500	5.00	2934.979	15007.401	2.445	11.2	-10.1	NO		NO	bb
2	2 180604M2_3	Standard	12.500	5.00	3009.166	13827.207	2.720	12.5	0.1	NO		NO	bb
3	3 180604M2_4	Standard	12.500	5.00	3267.680	16888.469	2.419	11.1	-11.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	5.00	3210.507	15740.042	2.550	11.7	-6.2	NO		NO	bb
5	5 180604M2_6	Standard	12.500	5.00	3308.789	15291.013	2.705	12.4	-0.5	NO		NO	bb
6	6 180604M2_7	Standard	12.500	5.00	3729.984	17659.707	2.640	12.1	-2.9	NO		NO	bb
7	7 180604M2_8	Standard	12.500	5.00	3613.179	15758.688	2.866	13.2	5.4	NO		NO	bb
8	8 180604M2_9	Standard	12.500	5.00	4009.876	14738.479	3.401	15.6	25.1	NO		NO	bb
9	9 180604M2_10	Standard	12.500	5.00	5046.779	14148.502	4.459	20.5	64.0	NO		NO	bbX
10	10 180604M2_11	Standard	12.500	4.99	6978.822	12678.664	6.880	31.6	153.1	NO		NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: d3-N-MeFOSAA

Response Factor: 0.183541

RRF SD: 0.025562, Relative SD: 13.9272

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	12.500	5.18	4210.790	25518.572	2.063	11.2	-10.1	NO		NO	MM
2	2 180604M2_3	Standard	12.500	5.18	4114.854	24694.490	2.083	11.3	-9.2	NO		NO	MM
3	3 180604M2_4	Standard	12.500	5.18	4411.583	25475.063	2.165	11.8	-5.6	NO		NO	MM
4	4 180604M2_5	Standard	12.500	5.18	4785.307	25878.838	2.311	12.6	0.7	NO		NO	MM
5	5 180604M2_6	Standard	12.500	5.18	4484.180	27276.764	2.055	11.2	-10.4	NO		NO	MM
6	6 180604M2_7	Standard	12.500	5.18	4988.149	29220.201	2.134	11.6	-7.0	NO		NO	MM
7	7 180604M2_8	Standard	12.500	5.18	4352.490	26358.738	2.064	11.2	-10.0	NO		NO	MM
8	8 180604M2_9	Standard	12.500	5.18	4328.779	22964.137	2.356	12.8	2.7	NO		NO	MM
9	9 180604M2_10	Standard	12.500	5.18	4265.706	19544.465	2.728	14.9	18.9	NO		NO	MM
10	10 180604M2_11	Standard	12.500	5.18	3914.602	16400.094	2.984	16.3	30.0	NO		NO	MM

Compound name: d5-N-EtFOSAA

Response Factor: 0.223178

RRF SD: 0.0139114, Relative SD: 6.23334

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	12.500	5.34	5523.320	25518.572	2.706	12.1	-3.0	NO		NO	MM
2	2 180604M2_3	Standard	12.500	5.34	5238.067	24694.490	2.651	11.9	-5.0	NO		NO	MM
3	3 180604M2_4	Standard	12.500	5.34	5567.794	25475.063	2.732	12.2	-2.1	NO		NO	MM
4	4 180604M2_5	Standard	12.500	5.34	5895.005	25878.838	2.847	12.8	2.1	NO		NO	MM
5	5 180604M2_6	Standard	12.500	5.34	5760.961	27276.764	2.640	11.8	-5.4	NO		NO	MM
6	6 180604M2_7	Standard	12.500	5.34	6157.235	29220.201	2.634	11.8	-5.6	NO		NO	MM
7	7 180604M2_8	Standard	12.500	5.34	5813.378	26358.738	2.757	12.4	-1.2	NO		NO	MM
8	8 180604M2_9	Standard	12.500	5.34	5069.896	22964.137	2.760	12.4	-1.1	NO		NO	MM
9	9 180604M2_10	Standard	12.500	5.34	4683.729	19544.465	2.996	13.4	7.4	NO		NO	MM
10	10 180604M2_11	Standard	12.500	5.33	4165.334	16400.094	3.175	14.2	13.8	NO		NO	MM

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: 13C2-PFUdA

Response Factor: 0.936486

RRF SD: 0.141846, Relative SD: 15.1467

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	12.500	5.35	22871.002	25518.572	11.203	12.0	-4.3	NO		NO	bb
2	2 180604M2_3	Standard	12.500	5.35	18741.598	24694.490	9.487	10.1	-19.0	NO		NO	MM
3	3 180604M2_4	Standard	12.500	5.35	26986.771	25475.063	13.242	14.1	13.1	NO		NO	MM
4	4 180604M2_5	Standard	12.500	5.35	18264.871	25878.838	8.822	9.4	-24.6	NO		NO	MM
5	5 180604M2_6	Standard	12.500	5.35	25583.273	27276.764	11.724	12.5	0.2	NO		NO	MM
6	6 180604M2_7	Standard	12.500	5.35	25767.896	29220.201	11.023	11.8	-5.8	NO		NO	MM
7	7 180604M2_8	Standard	12.500	5.35	24683.182	26358.738	11.705	12.5	-0.0	NO		NO	MM
8	8 180604M2_9	Standard	12.500	5.35	21720.848	22964.137	11.823	12.6	1.0	NO		NO	MM
9	9 180604M2_10	Standard	12.500	5.35	20656.635	19544.465	13.211	14.1	12.9	NO		NO	MM
10	10 180604M2_11	Standard	12.500	5.35	19443.674	16400.094	14.820	15.8	26.6	NO		NO	MM

Compound name: 13C2-PFDoA

Response Factor: 1.16819

RRF SD: 0.141926, Relative SD: 12.1492

Response type: Internal Std (Ref 66), 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 180604M2_2	Standard	12.500	5.64	19397.404	16320.667	14.856	12.7	1.7	NO		NO	bb
2	2 180604M2_3	Standard	12.500	5.63	17754.355	18545.604	11.967	10.2	-18.0	NO		NO	MM
3	3 180604M2_4	Standard	12.500	5.63	25882.254	20377.879	15.876	13.6	8.7	NO		NO	MM
4	4 180604M2_5	Standard	12.500	5.63	23953.689	22186.215	13.496	11.6	-7.6	NO		NO	MM
5	5 180604M2_6	Standard	12.500	5.63	24244.600	22014.791	13.766	11.8	-5.7	NO		NO	MM
6	6 180604M2_7	Standard	12.500	5.63	27755.697	23696.297	14.641	12.5	0.3	NO		NO	MM
7	7 180604M2_8	Standard	12.500	5.63	22544.379	18802.346	14.988	12.8	2.6	NO		NO	MM
8	8 180604M2_9	Standard	12.500	5.63	22912.549	15408.911	18.587	15.9	27.3	NO		NO	MM
9	9 180604M2_10	Standard	12.500	5.63	20375.152	17490.107	14.562	12.5	-0.3	NO		NO	MM
10	10 180604M2_11	Standard	12.500	5.63	16857.902	15862.810	13.284	11.4	-9.0	NO		NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: d3-N-MeFOSA

Response Factor: 0.0512089

RRF SD: 0.0079688, Relative SD: 15.5614

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	150.000	5.86	14272.175	25518.572	6.991	136.5	-9.0	NO		NO	bb
2	2 180604M2_3	Standard	150.000	5.85	13534.160	24694.490	6.851	133.8	-10.8	NO		NO	bb
3	3 180604M2_4	Standard	150.000	5.85	14890.748	25475.063	7.307	142.7	-4.9	NO		NO	bb
4	4 180604M2_5	Standard	150.000	5.85	15456.740	25878.838	7.466	145.8	-2.8	NO		NO	bb
5	5 180604M2_6	Standard	150.000	5.85	14561.282	27276.764	6.673	130.3	-13.1	NO		NO	MM
6	6 180604M2_7	Standard	150.000	5.85	16522.182	29220.201	7.068	138.0	-8.0	NO		NO	MM
7	7 180604M2_8	Standard	150.000	5.85	14948.137	26358.738	7.089	138.4	-7.7	NO		NO	MM
8	8 180604M2_9	Standard	150.000	5.85	14228.368	22964.137	7.745	151.2	0.8	NO		NO	MM
9	9 180604M2_10	Standard	150.000	5.85	14432.672	19544.465	9.231	180.3	20.2	NO		NO	MM
10	10 180604M2_11	Standard	150.000	5.85	13636.706	16400.094	10.394	203.0	35.3	NO		NO	MM

Compound name: 13C2-PFTeDA

Response Factor: 0.705988

RRF SD: 0.0856003, Relative SD: 12.1249

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	12.500	6.10	17876.412	25518.572	8.757	12.4	-0.8	NO		NO	MM
2	2 180604M2_3	Standard	12.500	6.09	16472.129	24694.490	8.338	11.8	-5.5	NO		NO	MM
3	3 180604M2_4	Standard	12.500	6.09	16315.121	25475.063	8.005	11.3	-9.3	NO		NO	MM
4	4 180604M2_5	Standard	12.500	6.09	17710.369	25878.838	8.554	12.1	-3.1	NO		NO	MM
5	5 180604M2_6	Standard	12.500	6.09	17267.689	27276.764	7.913	11.2	-10.3	NO		NO	MM
6	6 180604M2_7	Standard	12.500	6.09	19111.336	29220.201	8.176	11.6	-7.4	NO		NO	MM
7	7 180604M2_8	Standard	12.500	6.09	16598.182	26358.738	7.871	11.1	-10.8	NO		NO	MM
8	8 180604M2_9	Standard	12.500	6.09	17128.834	22964.137	9.324	13.2	5.7	NO		NO	MM
9	9 180604M2_10	Standard	12.500	6.09	16157.284	19544.465	10.334	14.6	17.1	NO		NO	MM
10	10 180604M2_11	Standard	12.500	6.09	14401.537	16400.094	10.977	15.5	24.4	NO		NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: d5-N-ETFOSA

Response Factor: 0.0712517

RRF SD: 0.00771474, Relative SD: 10.8274

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	150.000	6.25	18564.291	25518.572	9.094	127.6	-14.9	NO		NO	MM
2	2 180604M2_3	Standard	150.000	6.24	19925.244	24694.490	10.086	141.6	-5.6	NO		NO	MM
3	3 180604M2_4	Standard	150.000	6.24	21577.180	25475.063	10.587	148.6	-0.9	NO		NO	MM
4	4 180604M2_5	Standard	150.000	6.24	22476.027	25878.838	10.856	152.4	1.6	NO		NO	MM
5	5 180604M2_6	Standard	150.000	6.24	21033.535	27276.764	9.639	135.3	-9.8	NO		NO	bb
6	6 180604M2_7	Standard	150.000	6.24	24418.678	29220.201	10.446	146.6	-2.3	NO		NO	MM
7	7 180604M2_8	Standard	150.000	6.24	21256.074	26358.738	10.080	141.5	-5.7	NO		NO	MM
8	8 180604M2_9	Standard	150.000	6.24	20182.076	22964.137	10.986	154.2	2.8	NO		NO	MM
9	9 180604M2_10	Standard	150.000	6.24	18810.104	19544.465	12.030	168.8	12.6	NO		NO	MM
10	10 180604M2_11	Standard	150.000	6.24	17152.324	16400.094	13.073	183.5	22.3	NO		NO	MM

Compound name: 13C2-PFHxDA

Response Factor: 1.07858

RRF SD: 0.167769, Relative SD: 15.5546

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	5.000	6.43	9317.349	25518.572	4.564	4.2	-15.4	NO		NO	MM
2	2 180604M2_3	Standard	5.000	6.43	9338.518	24694.490	4.727	4.4	-12.3	NO		NO	MM
3	3 180604M2_4	Standard	5.000	6.43	11752.719	25475.063	5.767	5.3	6.9	NO		NO	MM
4	4 180604M2_5	Standard	5.000	6.43	11152.150	25878.838	5.387	5.0	-0.1	NO		NO	MM
5	5 180604M2_6	Standard	5.000	6.43	10286.672	27276.764	4.714	4.4	-12.6	NO		NO	MM
6	6 180604M2_7	Standard	5.000	6.43	11743.332	29220.201	5.024	4.7	-6.8	NO		NO	MM
7	7 180604M2_8	Standard	5.000	6.43	10233.453	26358.738	4.853	4.5	-10.0	NO		NO	MM
8	8 180604M2_9	Standard	5.000	6.43	10143.569	22964.137	5.521	5.1	2.4	NO		NO	MM
9	9 180604M2_10	Standard	5.000	6.43	9457.769	19544.465	6.049	5.6	12.2	NO		NO	MM
10	10 180604M2_11	Standard	5.000	6.43	9608.434	16400.094	7.323	6.8	35.8	NO		NO	MM

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: d7-N-MeFOSE

Response Factor: 0.0412317

RRF SD: 0.00729216, Relative SD: 17.6858

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	150.000	6.37	11044.131	25518.572	5.410	131.2	-12.5	NO		NO	MM
2	2 180604M2_3	Standard	150.000	6.36	10474.625	24694.490	5.302	128.6	-14.3	NO		NO	MM
3	3 180604M2_4	Standard	150.000	6.36	12360.827	25475.063	6.065	147.1	-1.9	NO		NO	MM
4	4 180604M2_5	Standard	150.000	6.37	13301.675	25878.838	6.425	155.8	3.9	NO		NO	MM
5	5 180604M2_6	Standard	150.000	6.36	11701.808	27276.764	5.363	130.1	-13.3	NO		NO	MM
6	6 180604M2_7	Standard	150.000	6.36	12515.271	29220.201	5.354	129.8	-13.4	NO		NO	MM
7	7 180604M2_8	Standard	150.000	6.36	11664.843	26358.738	5.532	134.2	-10.6	NO		NO	MM
8	8 180604M2_9	Standard	150.000	6.36	11530.785	22964.137	6.277	152.2	1.5	NO		NO	MM
9	9 180604M2_10	Standard	150.000	6.36	11837.472	19544.465	7.571	183.6	22.4	NO		NO	MM
10	10 180604M2_11	Standard	150.000	6.36	11217.550	16400.094	8.550	207.4	38.2	NO		NO	MM

Compound name: d9-N-EtFOSE

Response Factor: 0.0383339

RRF SD: 0.00658778, Relative SD: 17.1852

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	150.000	6.52	9984.098	25518.572	4.891	127.6	-14.9	NO		NO	MM
2	2 180604M2_3	Standard	150.000	6.51	10038.572	24694.490	5.081	132.6	-11.6	NO		NO	MM
3	3 180604M2_4	Standard	150.000	6.51	11277.418	25475.063	5.534	144.4	-3.8	NO		NO	MM
4	4 180604M2_5	Standard	150.000	6.51	11254.722	25878.838	5.436	141.8	-5.5	NO		NO	MM
5	5 180604M2_6	Standard	150.000	6.51	11039.759	27276.764	5.059	132.0	-12.0	NO		NO	MM
6	6 180604M2_7	Standard	150.000	6.51	12745.162	29220.201	5.452	142.2	-5.2	NO		NO	MM
7	7 180604M2_8	Standard	150.000	6.50	11078.604	26358.738	5.254	137.1	-8.6	NO		NO	MM
8	8 180604M2_9	Standard	150.000	6.51	10782.540	22964.137	5.869	153.1	2.1	NO		NO	MM
9	9 180604M2_10	Standard	150.000	6.51	10699.962	19544.465	6.843	178.5	19.0	NO		NO	MM
10	10 180604M2_11	Standard	150.000	6.50	10602.889	16400.094	8.081	210.8	40.5	NO		NO	MM

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Compound name: 13C4-PFBA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 60), 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 180604M2_2	Standard	12.500	1.35	10271.474	10271.474	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	1.34	10065.069	10065.069	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	1.35	11352.728	11352.728	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	1.35	10214.078	10214.078	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	1.35	10765.735	10765.735	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	1.34	12417.303	12417.303	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	1.35	10796.833	10796.833	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	1.34	10598.734	10598.734	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	1.35	10421.132	10421.132	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	1.35	9776.241	9776.241	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C5-PFHxA

Response Factor: 1

RRF SD: 1.33432e-016, Relative SD: 1.33432e-014

Response type: Internal Std (Ref 61), 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 180604M2_2	Standard	12.500	3.09	15007.401	15007.401	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	3.09	13827.207	13827.207	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	3.09	16888.469	16888.469	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	3.09	15740.042	15740.042	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	3.09	15291.013	15291.013	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	3.09	17659.707	17659.707	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	3.09	15758.688	15758.688	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	3.09	14738.479	14738.479	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	3.09	14148.502	14148.502	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	3.09	12678.664	12678.664	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C3-PFHxS

Response Factor: 1

RRF SD: 7.40149e-017, Relative SD: 7.40149e-015

Response type: Internal Std (Ref 62), 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 180604M2_2	Standard	12.500	3.86	3044.086	3044.086	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	3.86	2855.621	2855.621	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	3.85	3323.627	3323.627	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	3.86	3243.628	3243.628	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	3.85	3131.864	3131.864	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	3.85	3617.574	3617.574	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	3.85	3005.609	3005.609	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	3.85	3121.421	3121.421	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	3.86	2851.130	2851.130	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	3.85	2517.609	2517.609	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C8-PFOA

Response Factor: 1

RRF SD: 7.40149e-017, Relative SD: 7.40149e-015

Response type: Internal Std (Ref 63), 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 180604M2_2	Standard	12.500	4.23	15167.363	15167.363	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	4.22	14724.747	14724.747	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.22	15358.042	15358.042	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	4.23	16216.819	16216.819	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.22	16212.924	16212.924	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.22	15974.759	15974.759	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	4.22	14468.508	14468.508	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.22	15287.114	15287.114	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	4.23	12818.621	12818.621	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	4.22	12943.563	12943.563	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: 13C9-PFNA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 64), 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 180604M2_2	Standard	12.500	4.66	16881.150	16881.150	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	4.66	18334.830	18334.830	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.66	20973.391	20973.391	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	4.66	20413.705	20413.705	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.66	15700.341	15700.341	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.66	18020.547	18020.547	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	4.66	18653.123	18653.123	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.66	17510.518	17510.518	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	4.66	15816.211	15816.211	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	4.66	14143.361	14143.361	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 7.40149e-017, Relative SD: 7.40149e-015

Response type: Internal Std (Ref 65), 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 180604M2_2	Standard	12.500	4.75	3009.181	3009.181	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	4.74	2803.353	2803.353	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	4.74	3163.443	3163.443	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	4.74	3406.201	3406.201	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	4.74	3250.212	3250.212	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	4.74	3730.943	3730.943	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	4.74	3324.223	3324.223	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	4.74	3196.282	3196.282	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	4.74	2834.296	2834.296	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	4.74	2546.279	2546.279	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Compound name: 13C6-PFDA

Response Factor: 1

RRF SD: 7.40149e-017, Relative SD: 7.40149e-015

Response type: Internal Std (Ref 66), 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 180604M2_2	Standard	12.500	5.04	16320.667	16320.667	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	5.03	18545.604	18545.604	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	5.03	20377.879	20377.879	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	5.03	22186.215	22186.215	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	5.03	22014.791	22014.791	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	5.03	23696.297	23696.297	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	5.03	18802.346	18802.346	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	5.03	15408.911	15408.911	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	5.03	17490.107	17490.107	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	5.03	15862.810	15862.810	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C7-PFUdA

Response Factor: 1

RRF SD: 8.27511e-017, Relative SD: 8.27511e-015

Response type: Internal Std (Ref 67), 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 180604M2_2	Standard	12.500	5.35	25518.572	25518.572	12.500	12.5	0.0	NO		NO	bb
2	2 180604M2_3	Standard	12.500	5.35	24694.490	24694.490	12.500	12.5	0.0	NO		NO	bb
3	3 180604M2_4	Standard	12.500	5.35	25475.063	25475.063	12.500	12.5	0.0	NO		NO	bb
4	4 180604M2_5	Standard	12.500	5.35	25878.838	25878.838	12.500	12.5	0.0	NO		NO	bb
5	5 180604M2_6	Standard	12.500	5.35	27276.764	27276.764	12.500	12.5	0.0	NO		NO	bb
6	6 180604M2_7	Standard	12.500	5.35	29220.201	29220.201	12.500	12.5	0.0	NO		NO	bb
7	7 180604M2_8	Standard	12.500	5.35	26358.738	26358.738	12.500	12.5	0.0	NO		NO	bb
8	8 180604M2_9	Standard	12.500	5.35	22964.137	22964.137	12.500	12.5	0.0	NO		NO	bb
9	9 180604M2_10	Standard	12.500	5.35	19544.465	19544.465	12.500	12.5	0.0	NO		NO	bb
10	10 180604M2_11	Standard	12.500	5.35	16400.094	16400.094	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:56:32 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38

Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

	# Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBA	36	0.9999	NO	
2	2 PFPeA	37	0.9999	NO	
3	3 PFBS	38	0.9999	NO	
4	4 4:2 FTS	39	0.9988	NO	
5	5 PFHxA	40	0.9996	NO	
6	6 PFPeS	38	0.9996	NO	
7	7 PFHpA	41	0.9988	NO	
8	8 L-PFHxS	42	0.9989	NO	
9	10 6:2 FTS	43	0.9998	NO	
10	11 L-PFOA	44	0.9992	NO	
11	13 PFHpS	44	0.9996	NO	
12	14 PFNA	45	0.9979	NO	
13	15 PFOSA	46	0.9995	NO	
14	16 L-PFOS	47	0.9995	NO	
15	18 PFDA	48	0.9997	NO	
16	19 8:2 FTS	49	0.9997	NO	
17	20 PFNS	47	0.9994	NO	
18	21 L-MeFOSAA	50	0.9994	NO	

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:57:00 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38

Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

#	Name	IS#	CoD	CoD Flag	%RSD
1	23 L-EtFOSAA	51	0.9996	NO	
2	25 PFUdA	52	0.9977	NO	
3	26 PFDS	52	0.9987	NO	
4	27 PFDoA	53	0.9974	NO	
5	28 N-MeFOSA	54	0.9996	NO	
6	29 PFTrDA	53	0.9989	NO	
7	30 PFTeDA	55	0.9992	NO	
8	31 N-EtFOSA	56	1.0000	NO	
9	32 PFHxDA	57	0.9995	NO	
10	33 PFODA	57	0.9995	NO	
11	34 N-MeFOSE	58	0.9949	NO	
12	35 N-EtFOSE	59	1.0000	NO	
13	36 13C3-PFBA	60		NO	1.289
14	37 13C3-PFPeA	61		NO	3.750
15	38 13C3-PFBS	61		NO	5.225
16	39 13C2-4:2 FTS	61		NO	10.591
17	40 13C2-PFHxA	61		NO	4.463
18	41 13C4-PFHpA	61		NO	4.527
19	42 18O2-PFHxS	62		NO	3.215
20	43 13C2-6:2 FTS	63		NO	11.496
21	44 13C2-PFOA	63		NO	5.542
22	45 13C5-PFNA	64		NO	6.420
23	46 13C8-PFOA	67		NO	9.425
24	47 13C8-PFOS	65		NO	3.947
25	48 13C2-PFDA	66		NO	8.572
26	49 13C2-8:2 FTS	61		NO	11.527
27	50 d3-N-MeFOSAA	67		NO	13.927
28	51 d5-N-EtFOSAA	67		NO	6.233
29	52 13C2-PFUdA	67		NO	15.147
30	53 13C2-PFDoA	66		NO	12.149
31	54 d3-N-MeFOSA	67		NO	15.561
32	55 13C2-PFTeDA	67		NO	12.125

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:57:00 Pacific Daylight Time

Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

	# Name	IS#	CoD	CoD Flag	%RSD
33	56 d5-N-ETFOSA	67		NO	10.827
34	57 13C2-PFHxDA	67		NO	15.555
35	58 d7-N-MeFOSE	67		NO	17.686
36	59 d9-N-EtFOSE	67		NO	17.185
37	60 13C4-PFBA	60		NO	0.000
38	61 13C5-PFHxA	61		NO	0.000
39	62 13C3-PFHxS	62		NO	0.000
40	63 13C8-PFOA	63		NO	0.000
41	64 13C9-PFNA	64		NO	0.000
42	65 13C4-PFOS	65		NO	0.000
43	66 13C6-PFDA	66		NO	0.000
44	67 13C7-PFUdA	67		NO	0.000

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:01:56 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38

Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

	Name	Ion Ratio	Ratio out?
1	PFBA		
2	PFPeA		
3	PFBS	2.849	NO
4	4:2 FTS	2.064	NO
5	PFHxA	314.526	NO
6	PFPeS	1.664	NO
7	PFHpA	18.241	NO
8	L-PFHxS	1.800	NO
9	6:2 FTS	2.945	NO
10	L-PFOA	4.244	NO
11	PFHpS	1.815	NO
12	PFNA	4.476	NO
13	PFOSA	17.870	NO
14	L-PFOS	1.988	NO
15	PFDA	6.803	NO
16	8:2 FTS	2.528	NO
17	PFNS	1.892	NO
18	L-MeFOSAA	13.965	NO

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:02:25 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38

Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

	Name	Ion Ratio	Ratio out?
1	L-EtFOSAA	13.776	NO
2	PFUdA	11.018	NO
3	PFDS	2.115	NO
4	PFDoA	8.300	NO
5	N-MeFOSA	1.431	NO
6	PFTrDA	32.402	NO
7	PFTeDA	13.373	NO
8	N-EtFOSA	1.479	NO
9	PFHxDA	35.333	NO
10	PFODA		
11	N-MeFOSE		
12	N-EtFOSE		

Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 11:05:15 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:05:32 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Compound name: PFBA

#	Name	ID	Acq.Date	Acq.Time
1	1 180604M2_1	IPA	04-Jun-18	19:01:22
2	2 180604M2_2	ST180604M2-2 PFC CS-2 18E2902	04-Jun-18	19:11:49
3	3 180604M2_3	ST180604M2-2 PFC CS-1 18E2903	04-Jun-18	19:22:13
4	4 180604M2_4	ST180604M2-3 PFC CS0 18E2904	04-Jun-18	19:32:43
5	5 180604M2_5	ST180604M2-4 PFC CS1 18E2905	04-Jun-18	19:43:08
6	6 180604M2_6	ST180604M2-5 PFC CS2 18E2906	04-Jun-18	19:53:38
7	7 180604M2_7	ST180604M2-6 PFC CS3 18E2907	04-Jun-18	20:04:03
8	8 180604M2_8	ST180604M2-7 PFC CS4 18E2908	04-Jun-18	20:14:33
9	9 180604M2_9	ST180604M2-8 PFC CS5 18E2909	04-Jun-18	20:24:59
10	10 180604M2_10	ST180604M2-9 PFC CS6 18E2910	04-Jun-18	20:35:29
11	11 180604M2_11	ST180604M2-10 PFC CS7 18E2911	04-Jun-18	20:45:54
12	12 180604M2_12	IPA	04-Jun-18	20:56:24
13	13 180604M2_13	ICV180604M2-1 PFC 537 ICV 18E2901	04-Jun-18	21:06:49
14	14 180604M2_14	IPA	04-Jun-18	21:17:19

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38 C19_VAL-PFAS-Q4-06-04-18

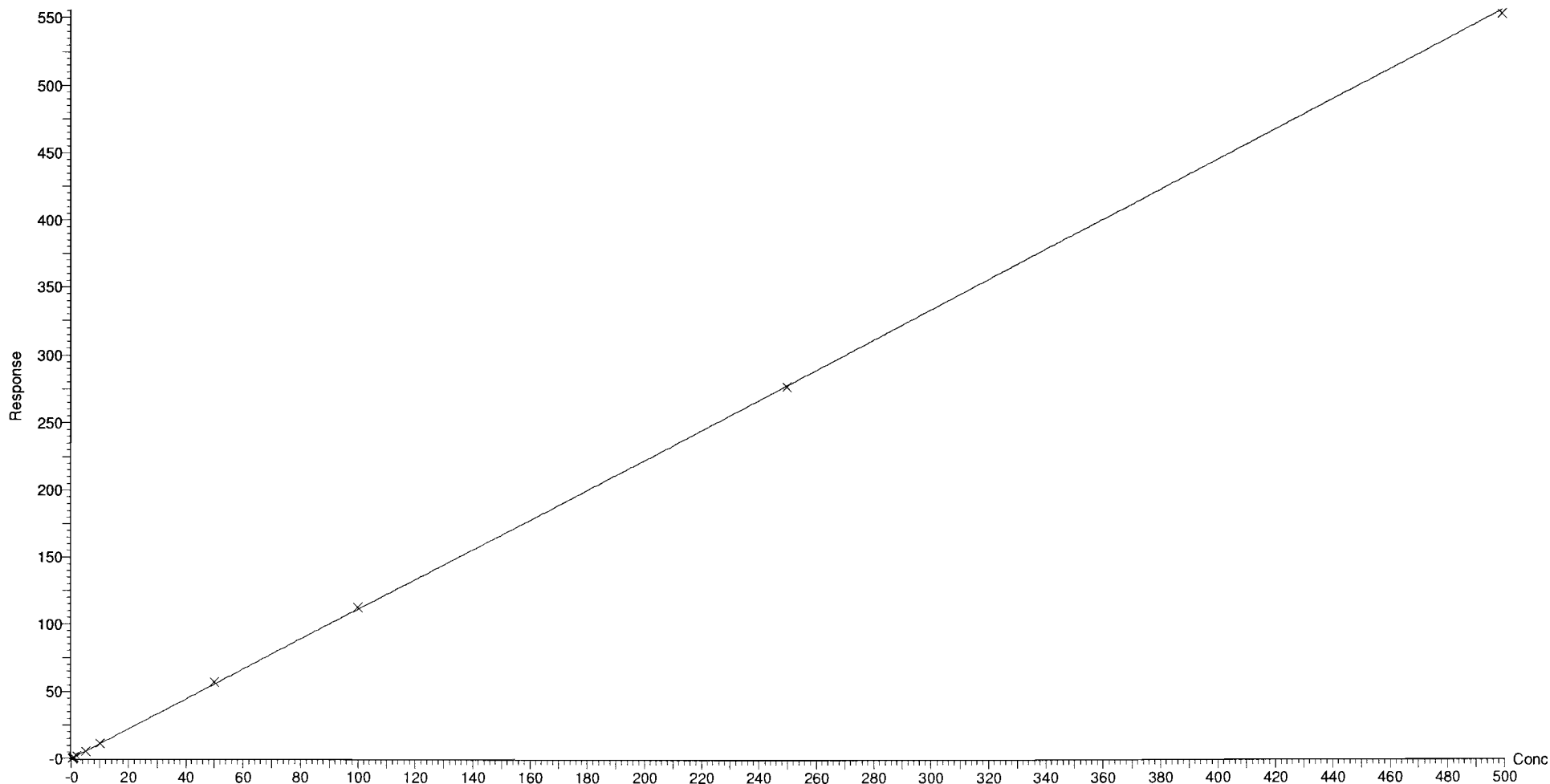
Compound name: PFBA

Correlation coefficient: $r = 0.999948$, $r^2 = 0.999896$

Calibration curve: $1.11083 * x + 0.00822384$

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

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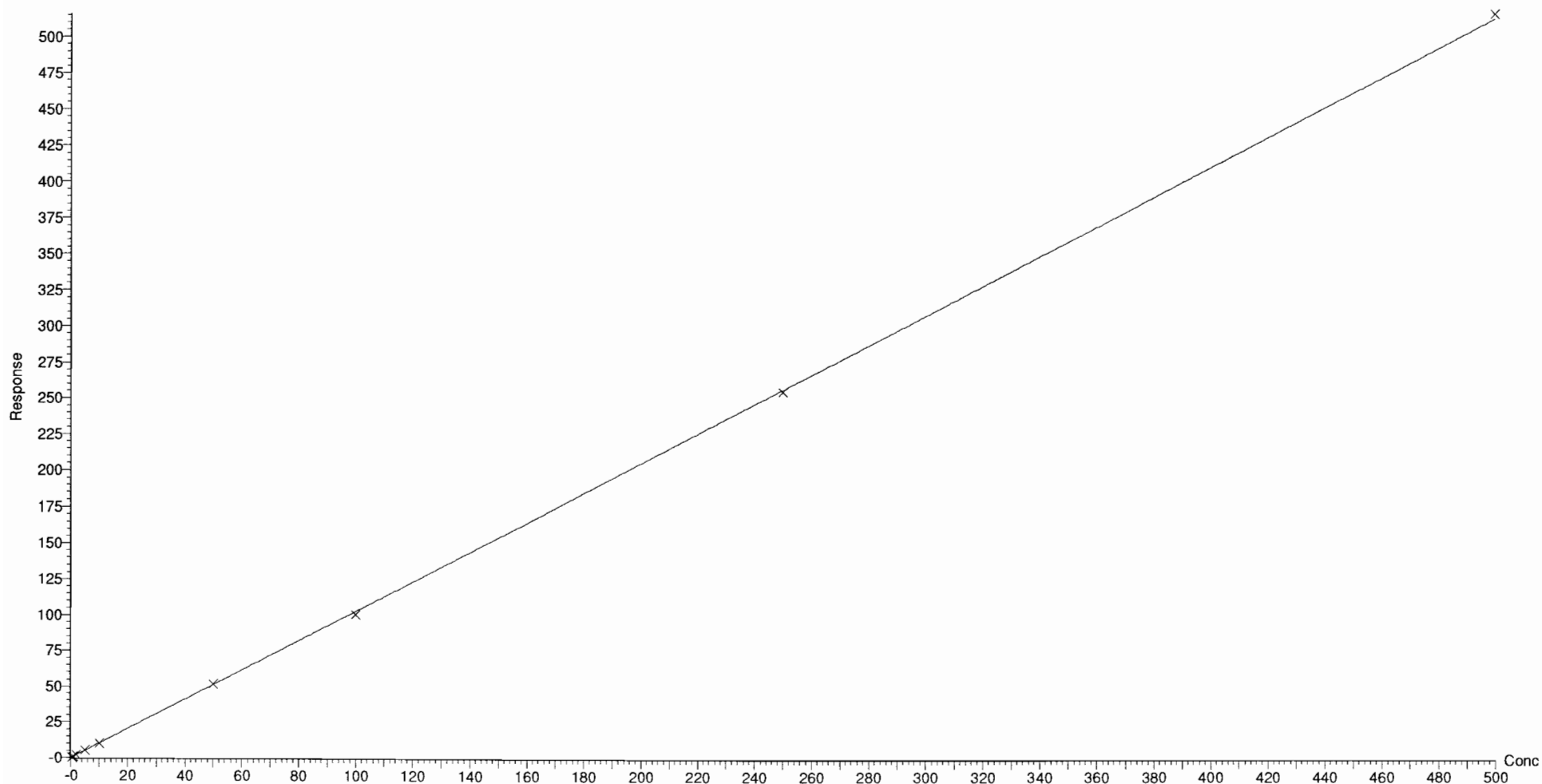
Compound name: PFPeA

Correlation coefficient: $r = 0.999955$, $r^2 = 0.999909$

Calibration curve: $1.02545 * x + 0.0205051$

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

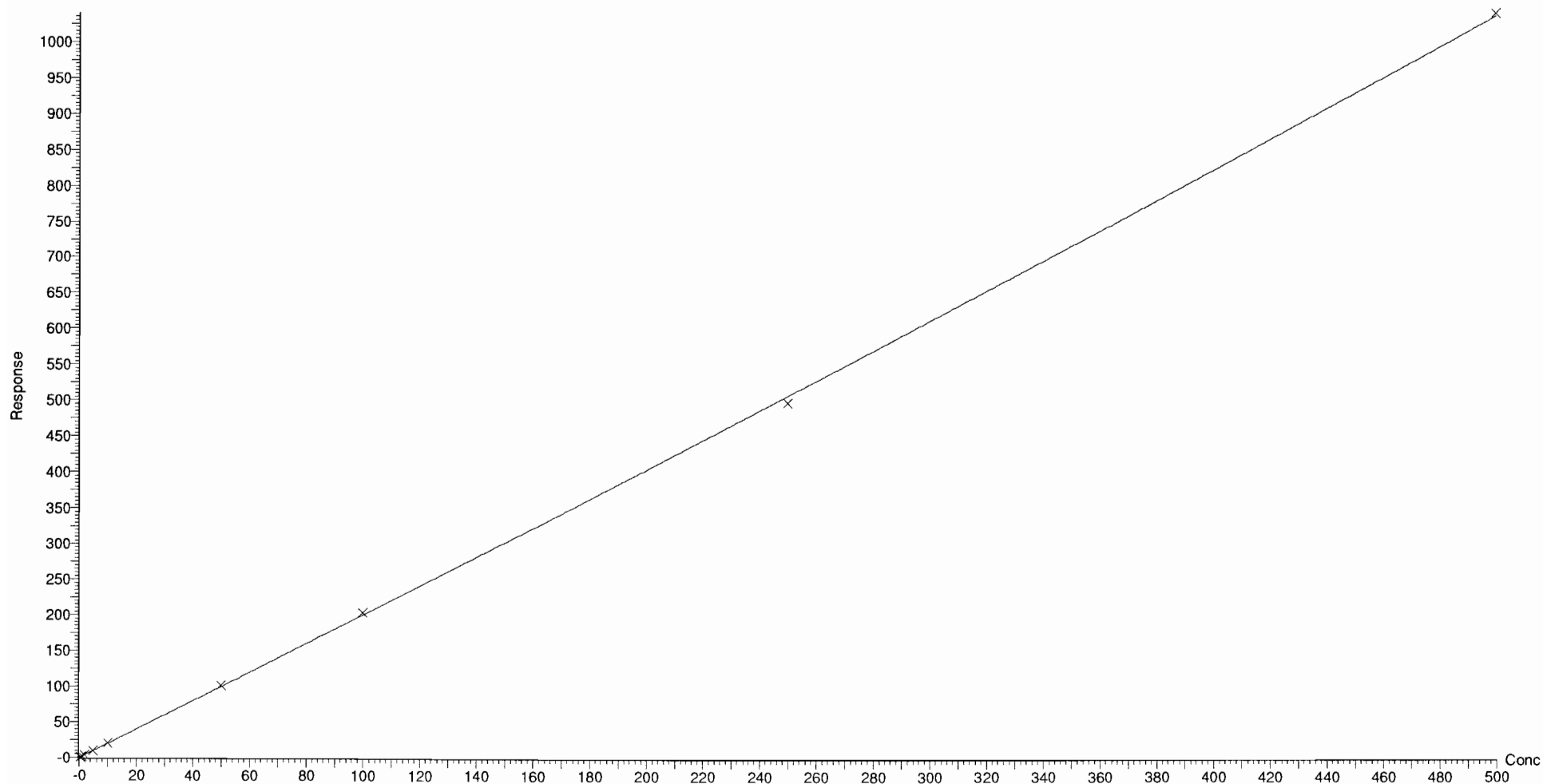
Compound name: PFBS

Coefficient of Determination: $R^2 = 0.999853$

Calibration curve: $0.000168277 * x^2 + 1.98828 * x + -0.00386959$

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

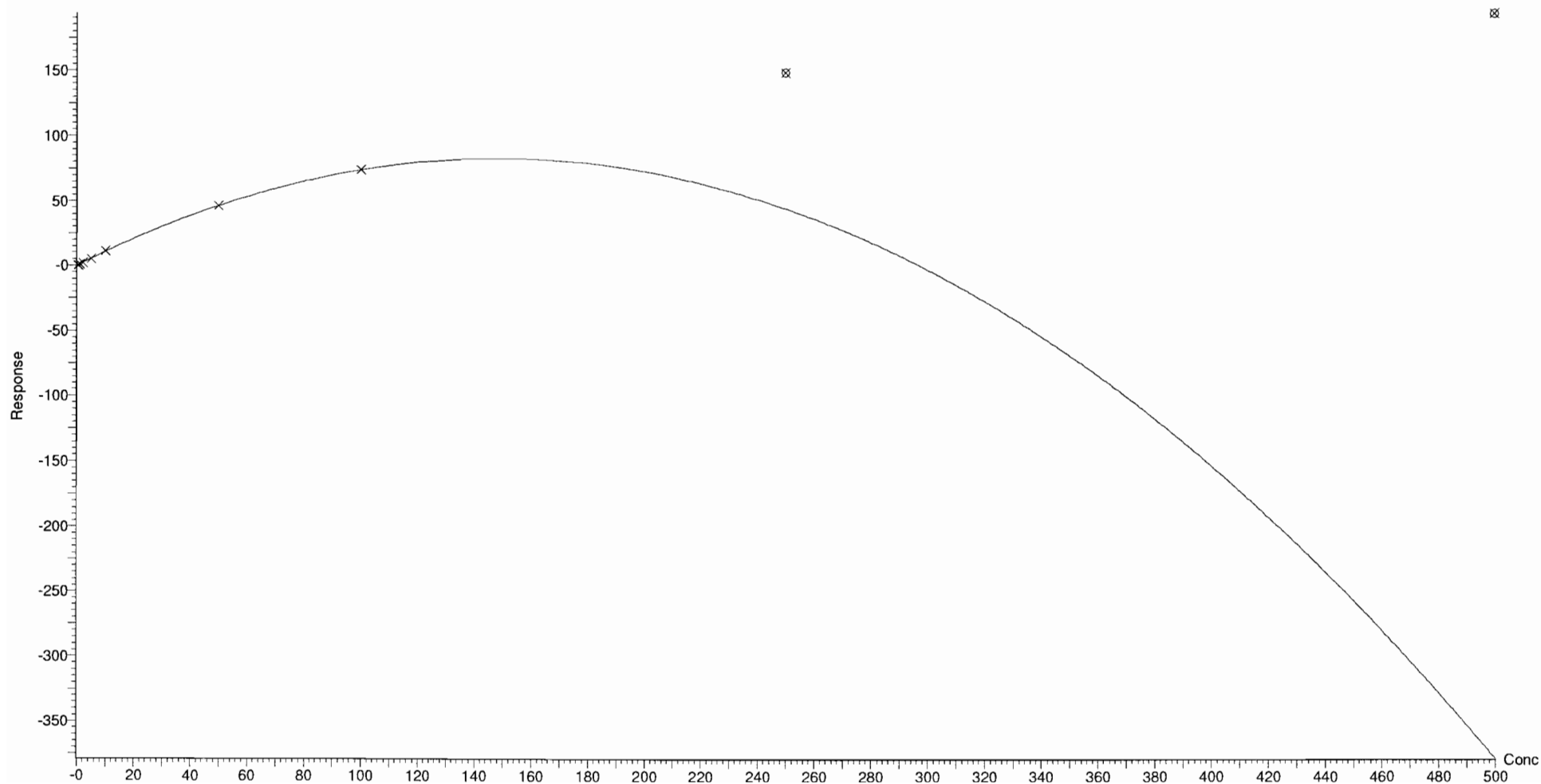
Compound name: 4:2 FTS

Coefficient of Determination: $R^2 = 0.998838$

Calibration curve: $-0.00374524 * x^2 + 1.11582 * x + -0.011422$

Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

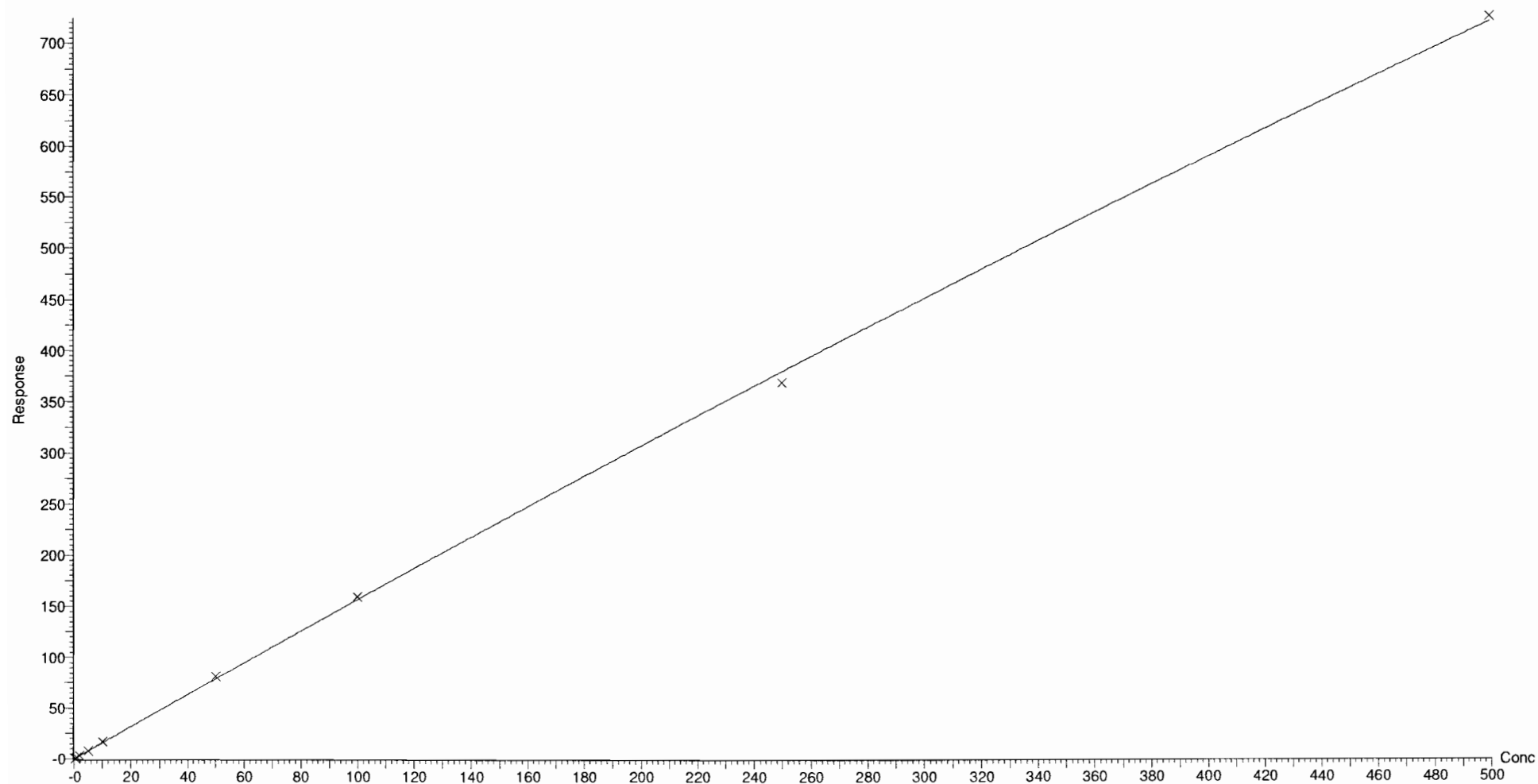
Compound name: PFHxA

Coefficient of Determination: $R^2 = 0.999553$

Calibration curve: $-0.000313716 * x^2 + 1.59614 * x + 0.0424276$

Response type: Internal Std (Ref 40), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

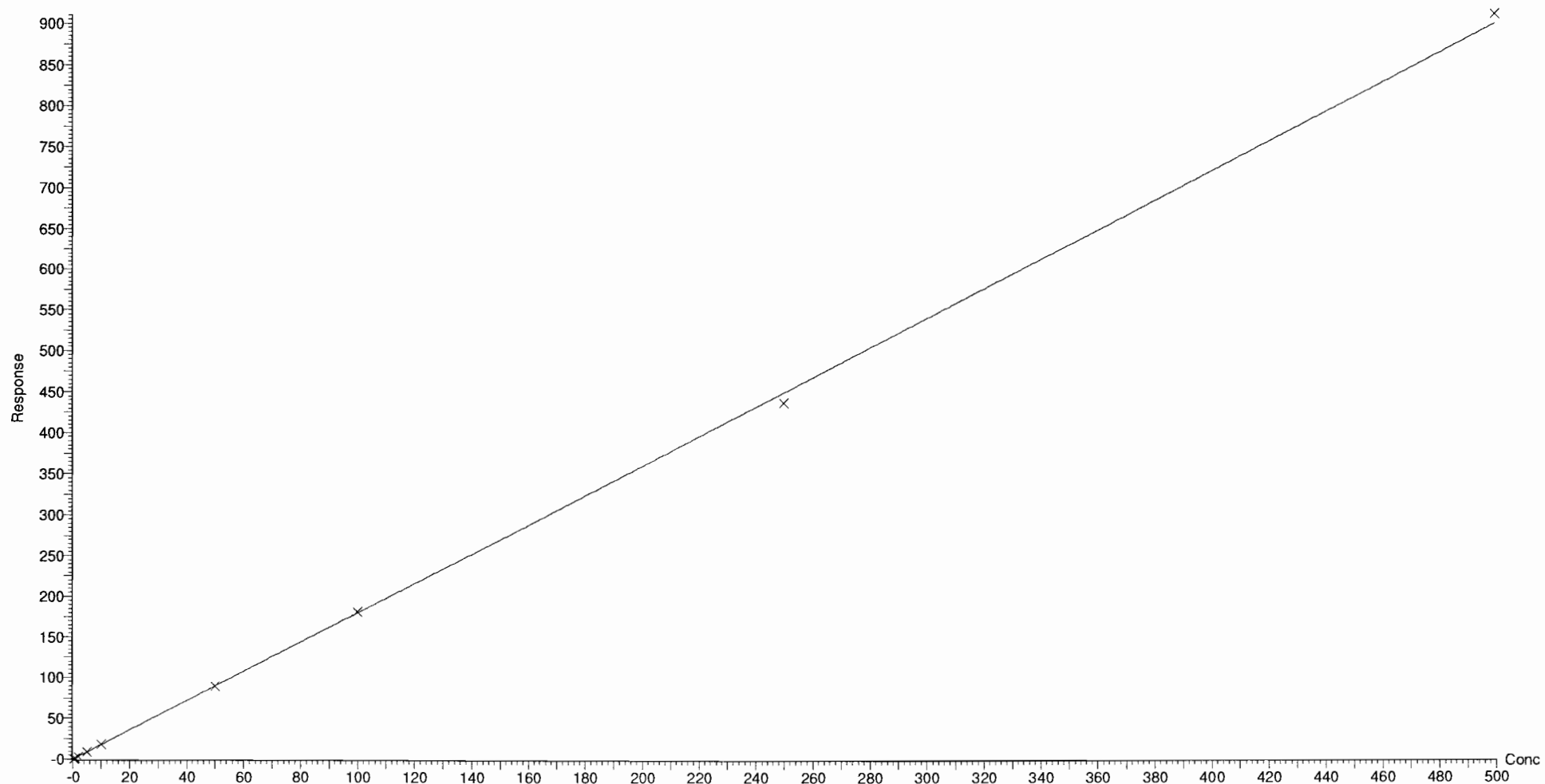
Compound name: PFPeS

Correlation coefficient: $r = 0.999819$, $r^2 = 0.999638$

Calibration curve: $1.79807 * x + 0.0789454$

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

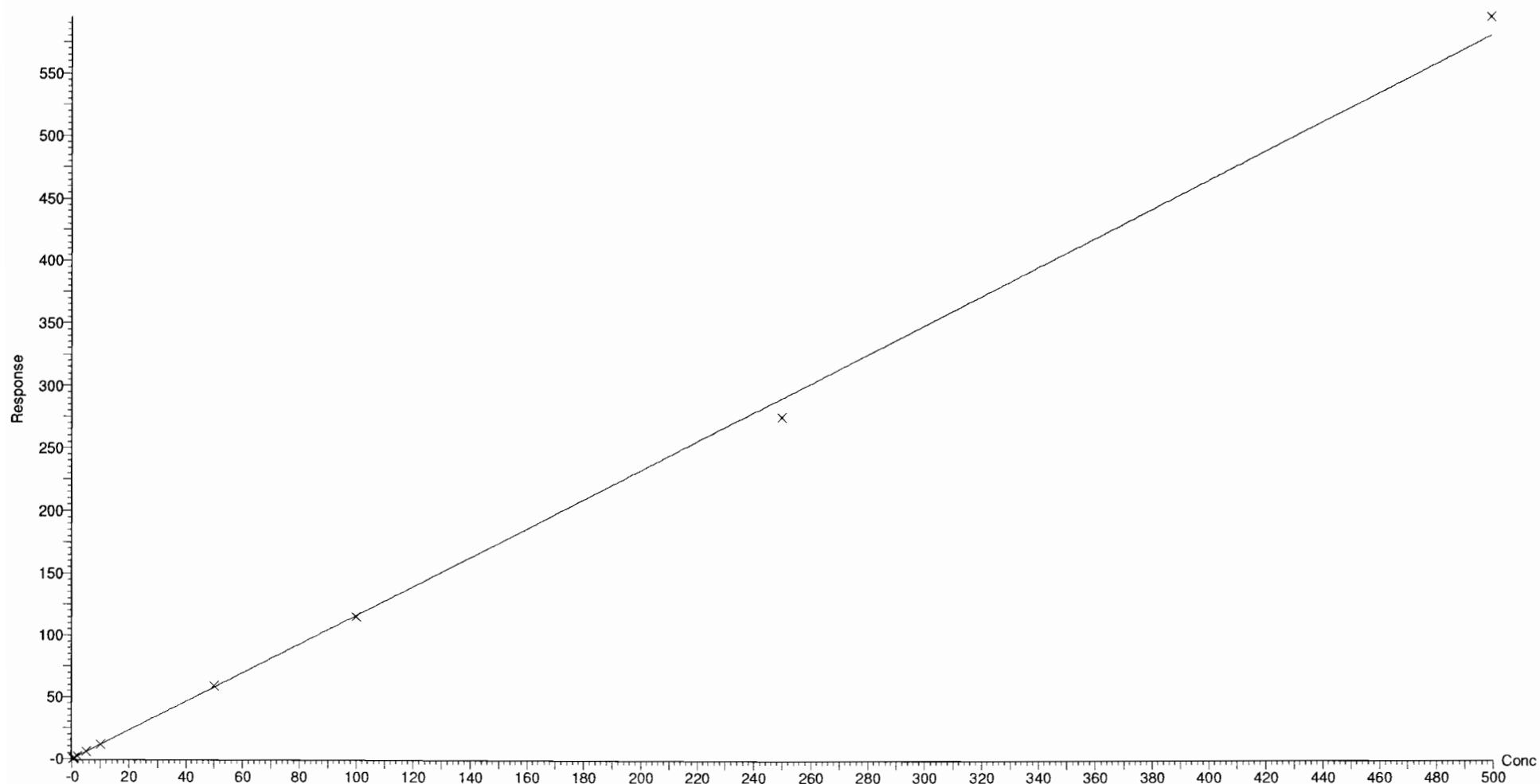
Compound name: PFHpA

Correlation coefficient: $r = 0.999421$, $r^2 = 0.998843$

Calibration curve: $1.16069 * x + 0.0713148$

Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

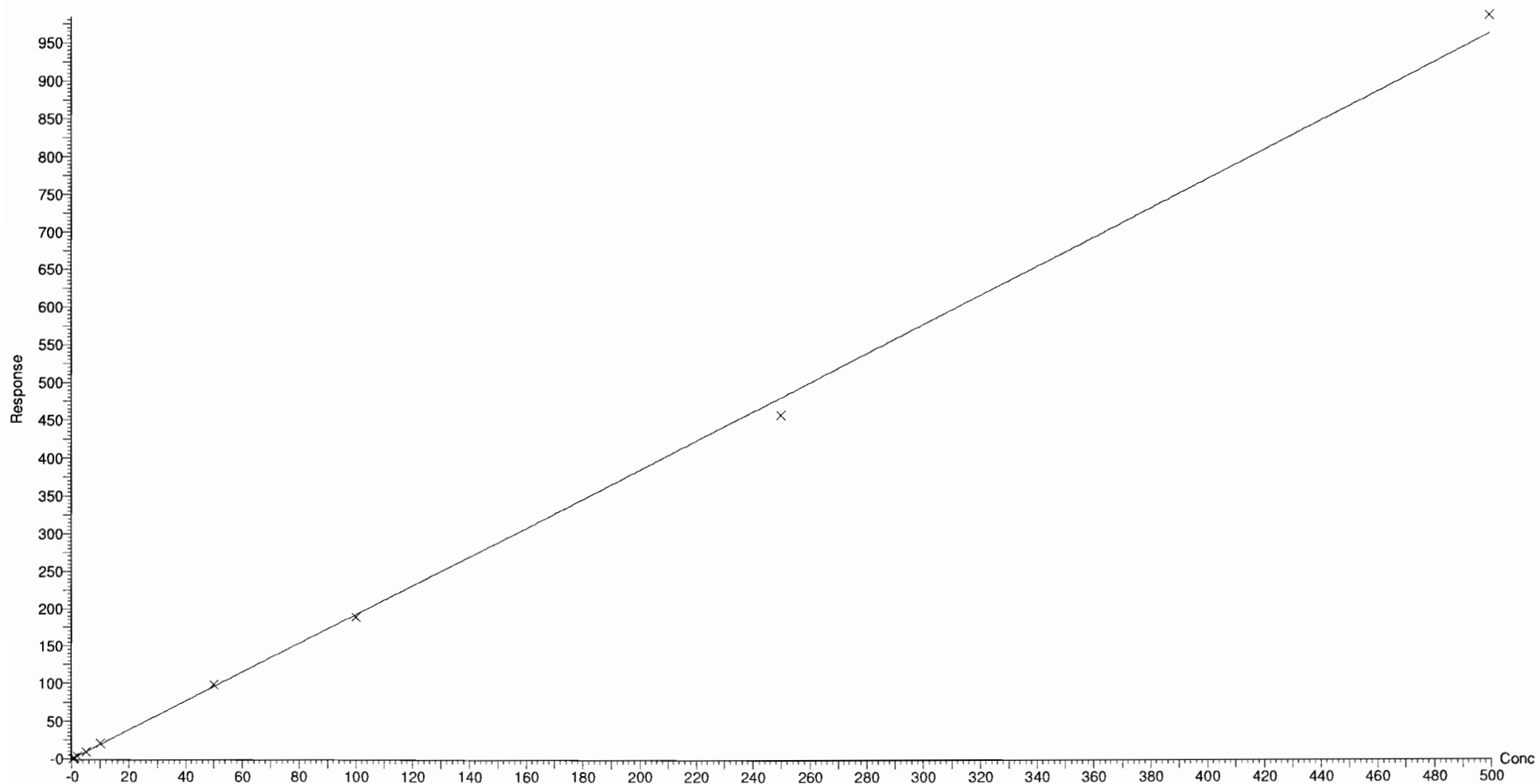
Compound name: L-PFHxS

Correlation coefficient: $r = 0.999443$, $r^2 = 0.998887$

Calibration curve: $1.9216 * x + -0.00896228$

Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

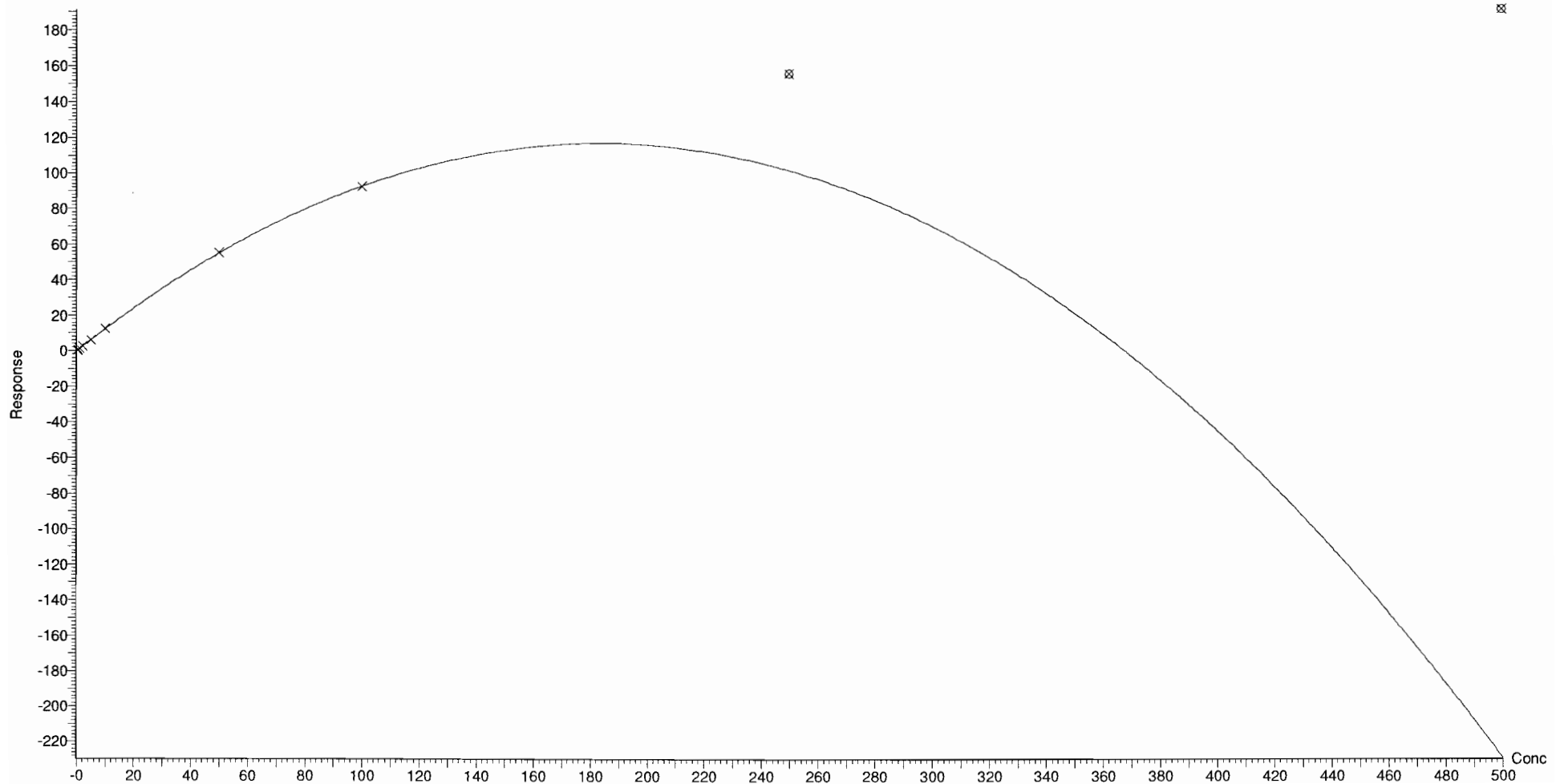
Compound name: 6:2 FTS

Coefficient of Determination: $R^2 = 0.999839$

Calibration curve: $-0.00346555 * x^2 + 1.27447 * x + -0.0336081$

Response type: Internal Std (Ref 43), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

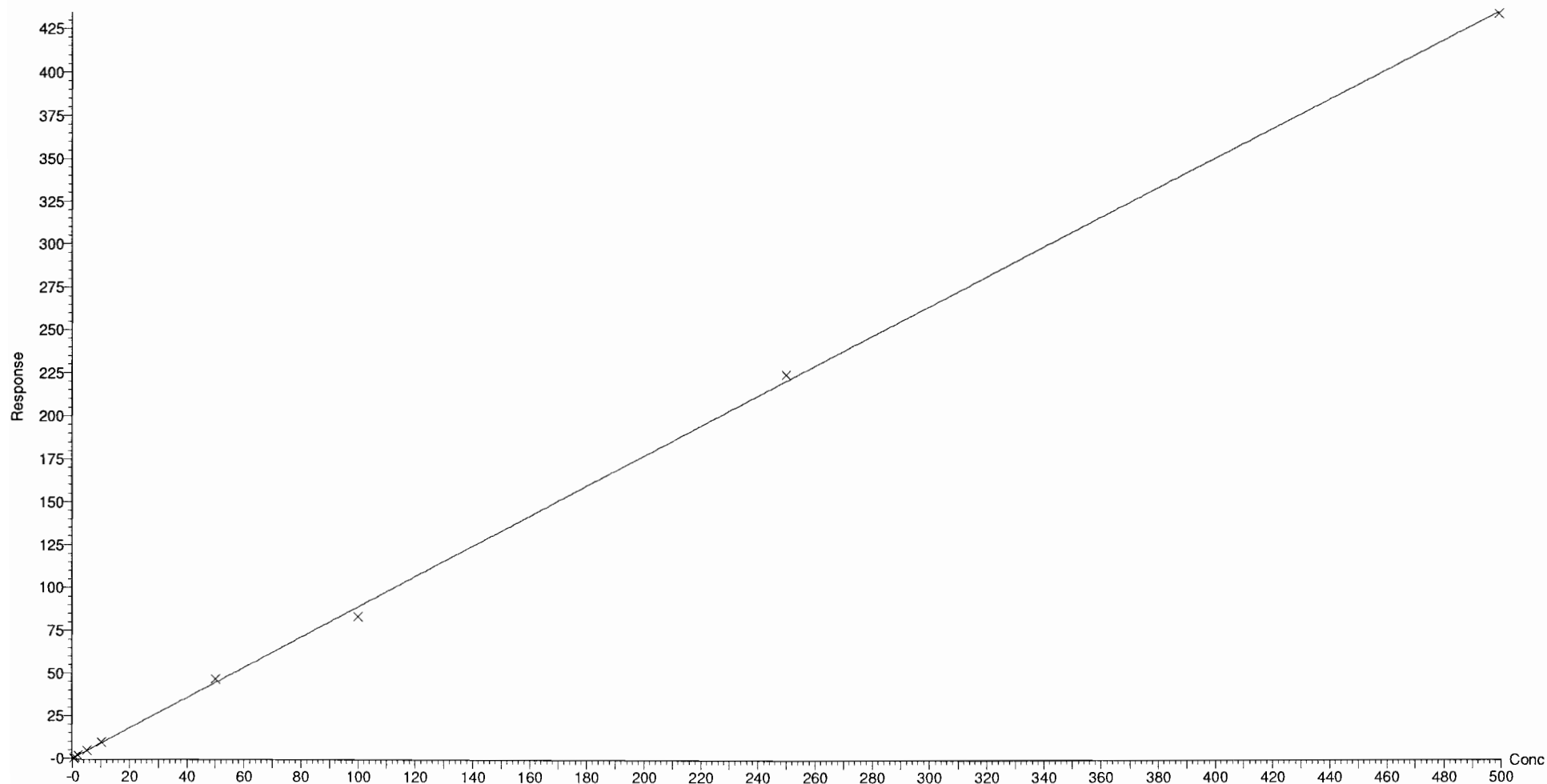
Compound name: L-PFOA

Coefficient of Determination: $R^2 = 0.999247$

Calibration curve: $-5.24867e-005 * x^2 + 0.895395 * x + 0.0852547$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

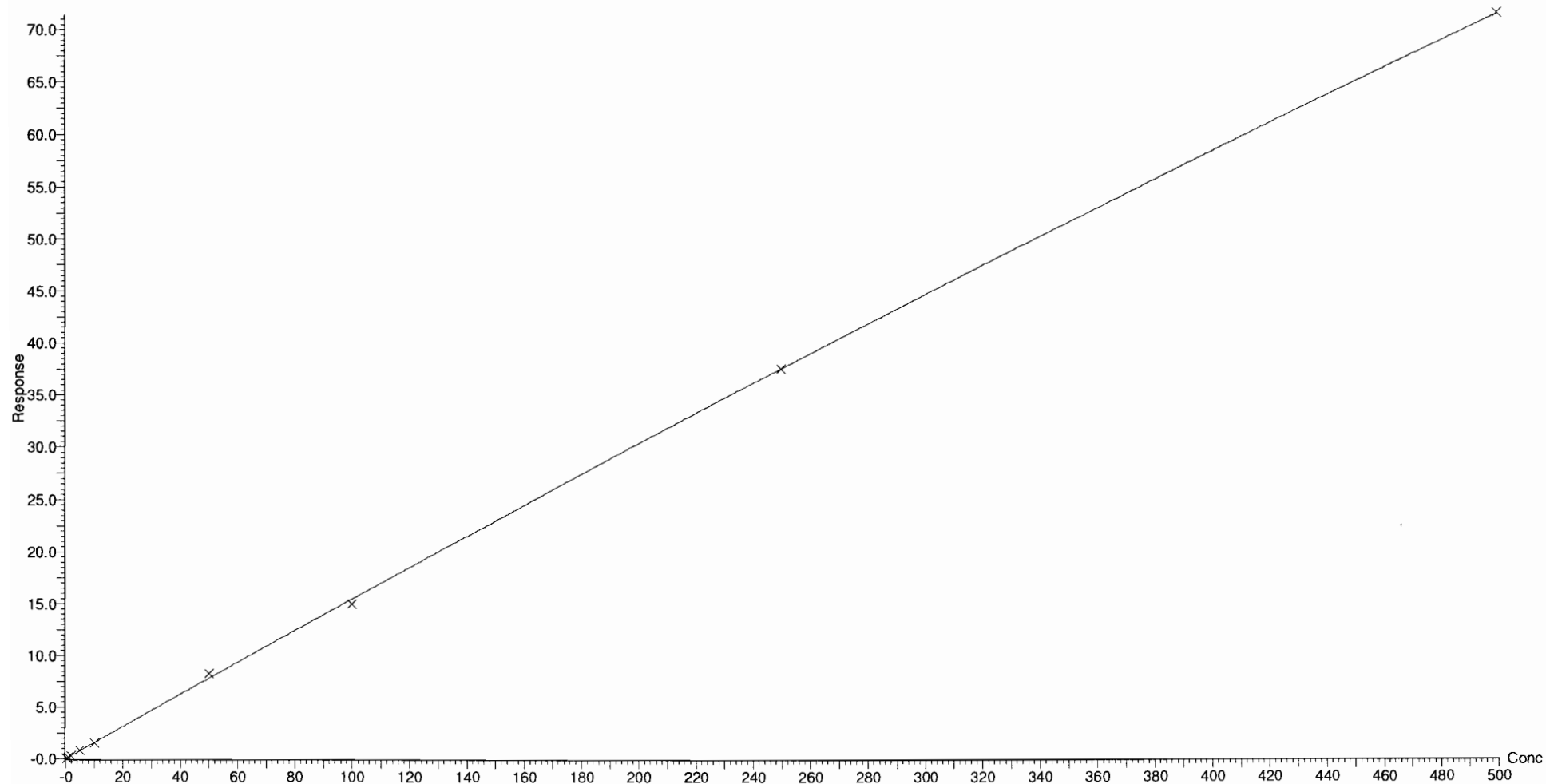
Compound name: PFHpS

Coefficient of Determination: $R^2 = 0.999609$

Calibration curve: $-2.99805e-005 * x^2 + 0.157724 * x + 0.00259156$

Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

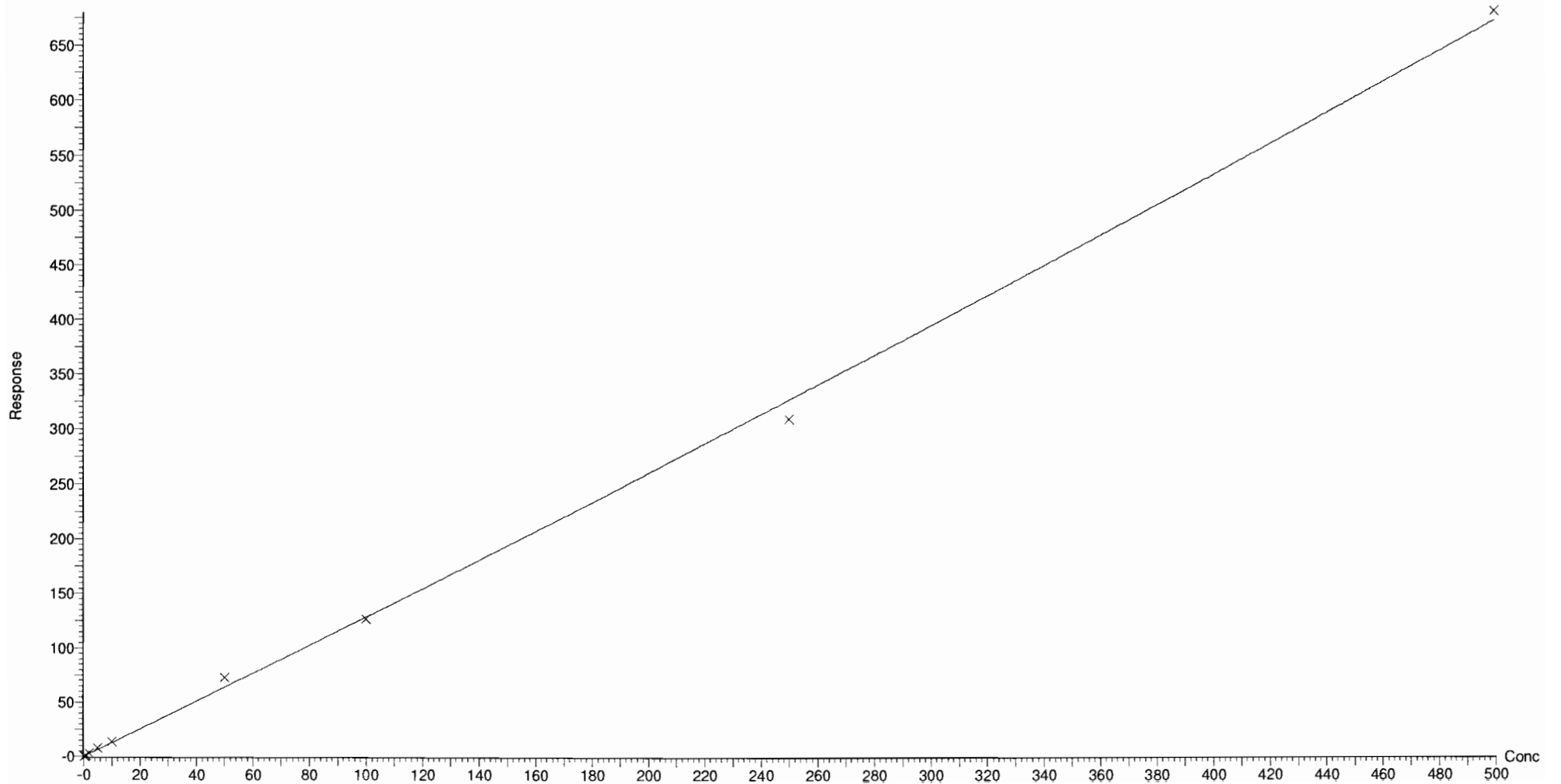
Compound name: PFNA

Coefficient of Determination: $R^2 = 0.997864$

Calibration curve: $0.000147582 * x^2 + 1.2693 * x + 0.0983793$

Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

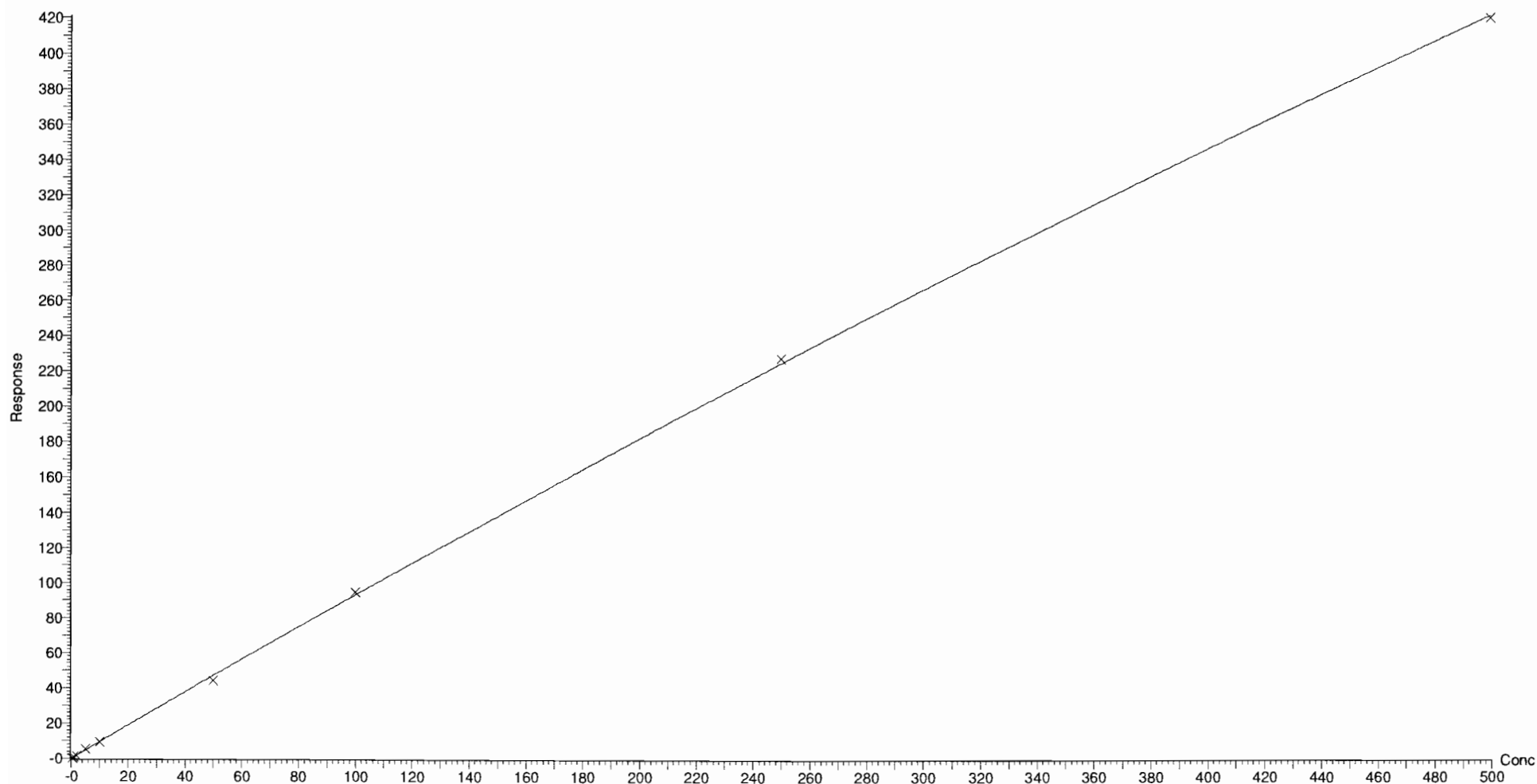
Compound name: PFOSA

Coefficient of Determination: $R^2 = 0.999493$

Calibration curve: $-0.000225332 * x^2 + 0.955318 * x + -0.036378$

Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

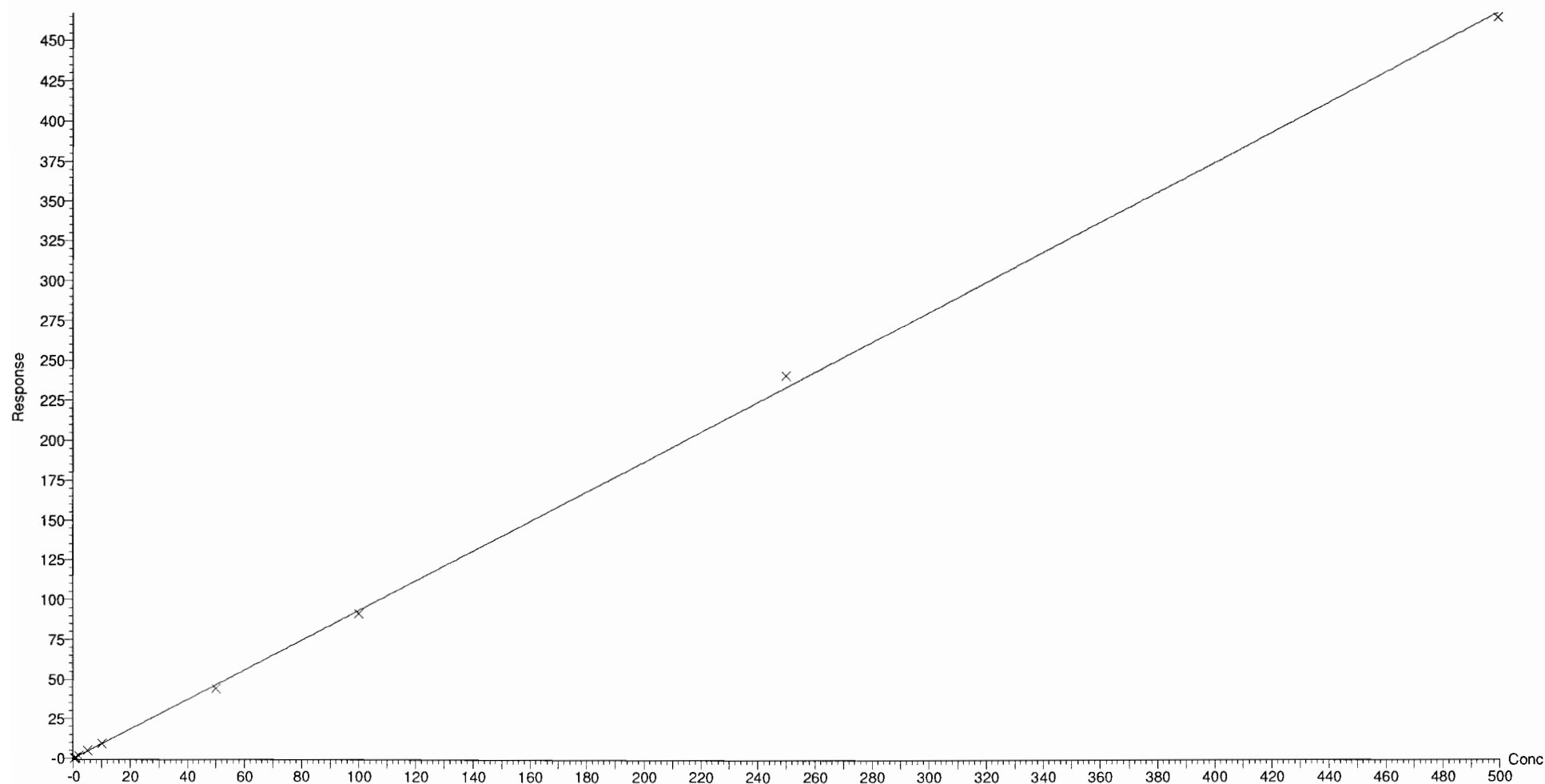
Compound name: L-PFOS

Coefficient of Determination: $R^2 = 0.999458$

Calibration curve: $1.42803e-007 * x^2 + 0.934629 * x + -0.0613722$

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

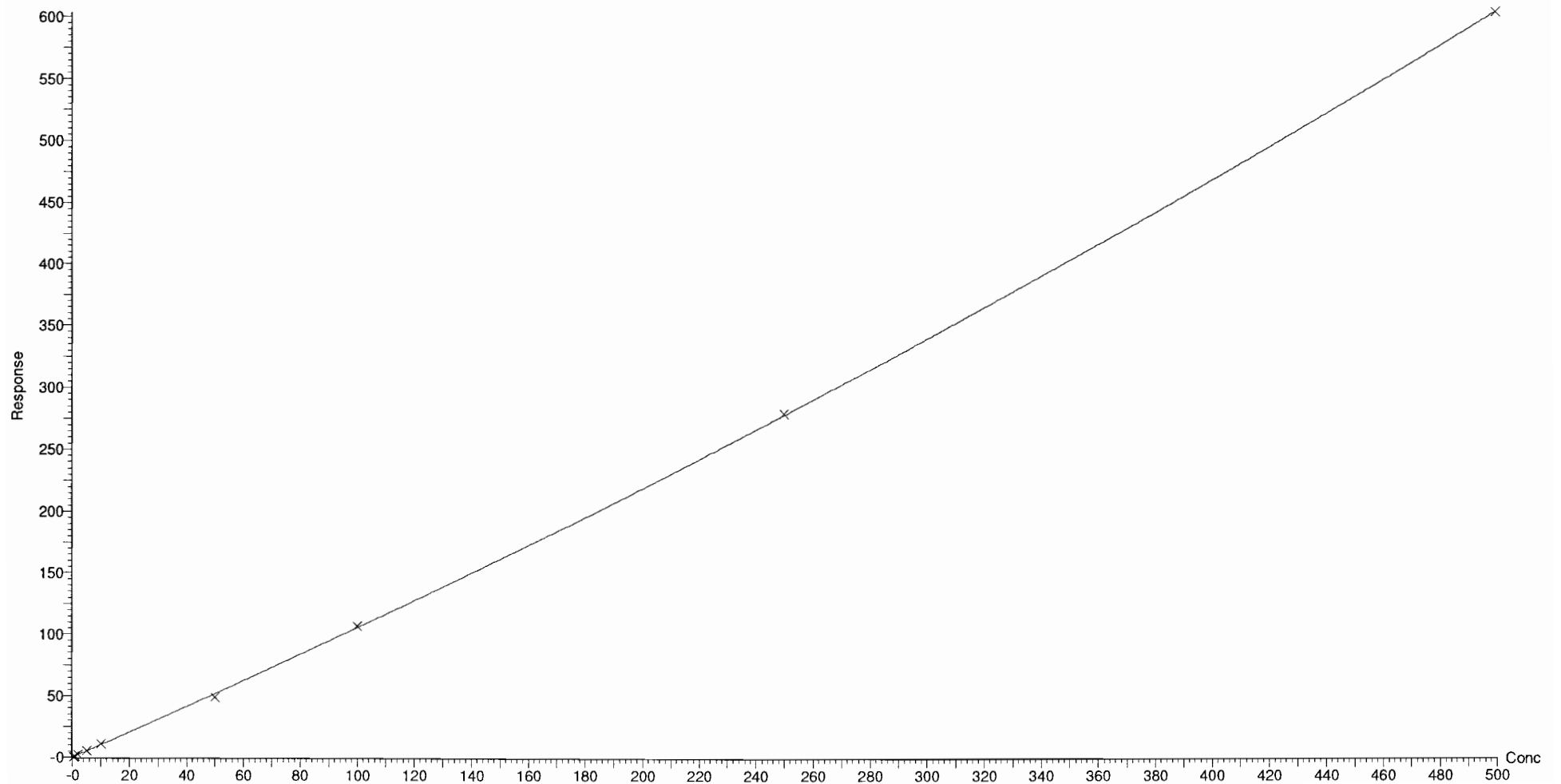
Compound name: PFDA

Coefficient of Determination: $R^2 = 0.999743$

Calibration curve: $0.00037847 * x^2 + 1.01718 * x + 0.0671158$

Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

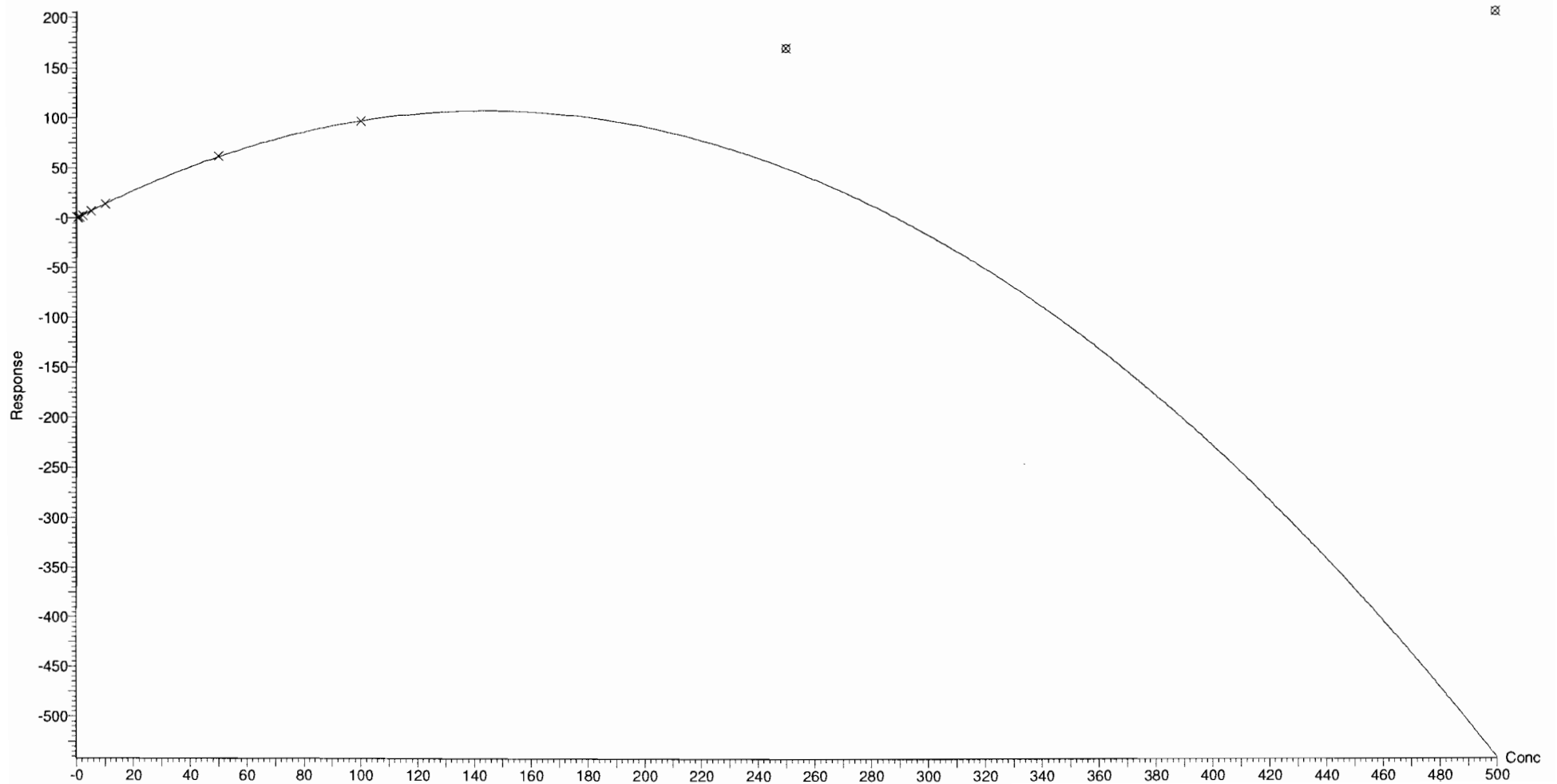
Compound name: 8:2 FTS

Coefficient of Determination: $R^2 = 0.999723$

Calibration curve: $-0.0051377 * x^2 + 1.48665 * x + 0.00181394$

Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:34 Pacific Daylight Time

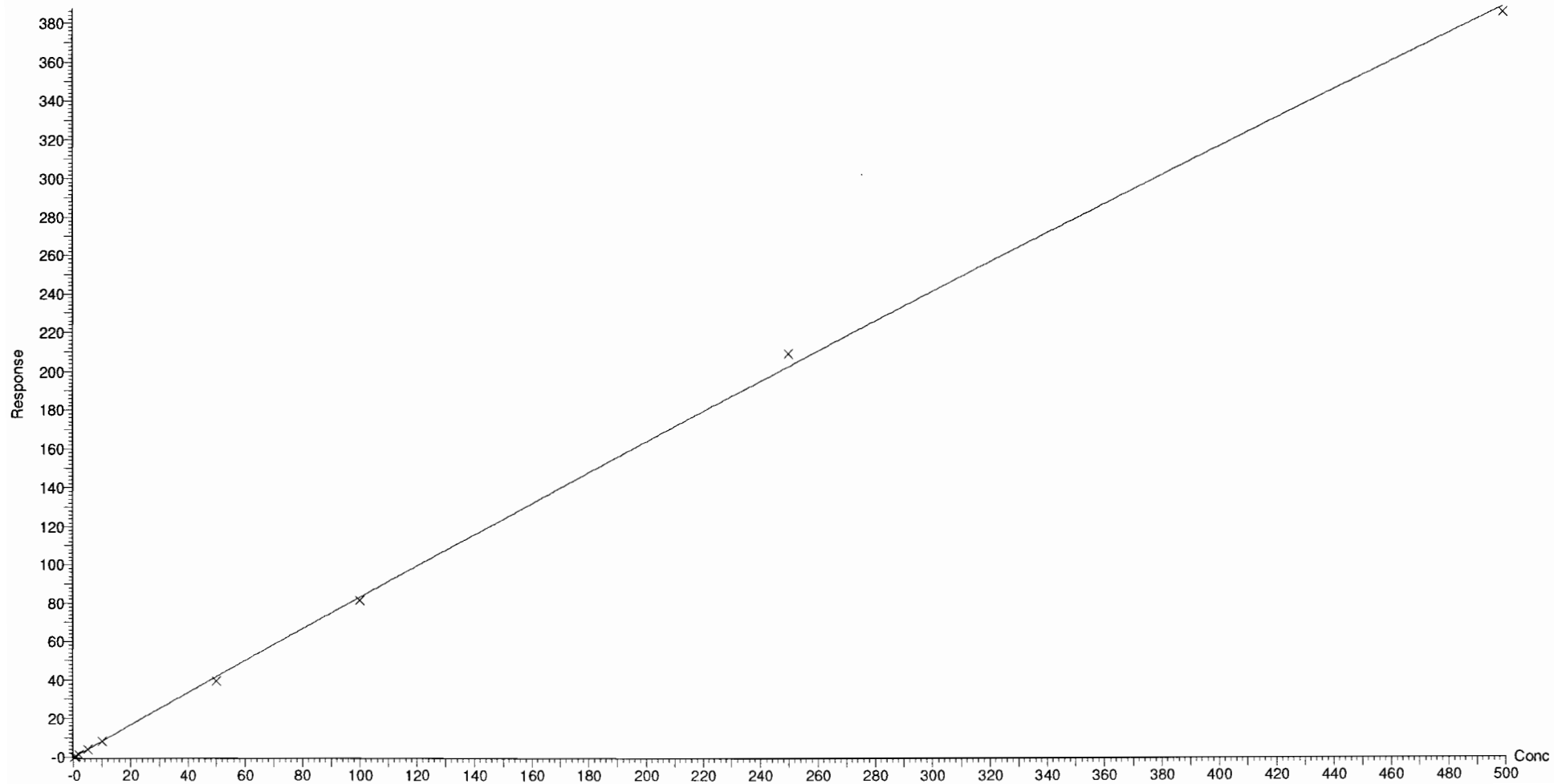
Compound name: PFNS

Coefficient of Determination: $R^2 = 0.999403$

Calibration curve: $-0.000141031 * x^2 + 0.84601 * x + -0.0910263$

Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: 05 Jun 2018 10:50:38 *VAL-PFAS-04-06-18*

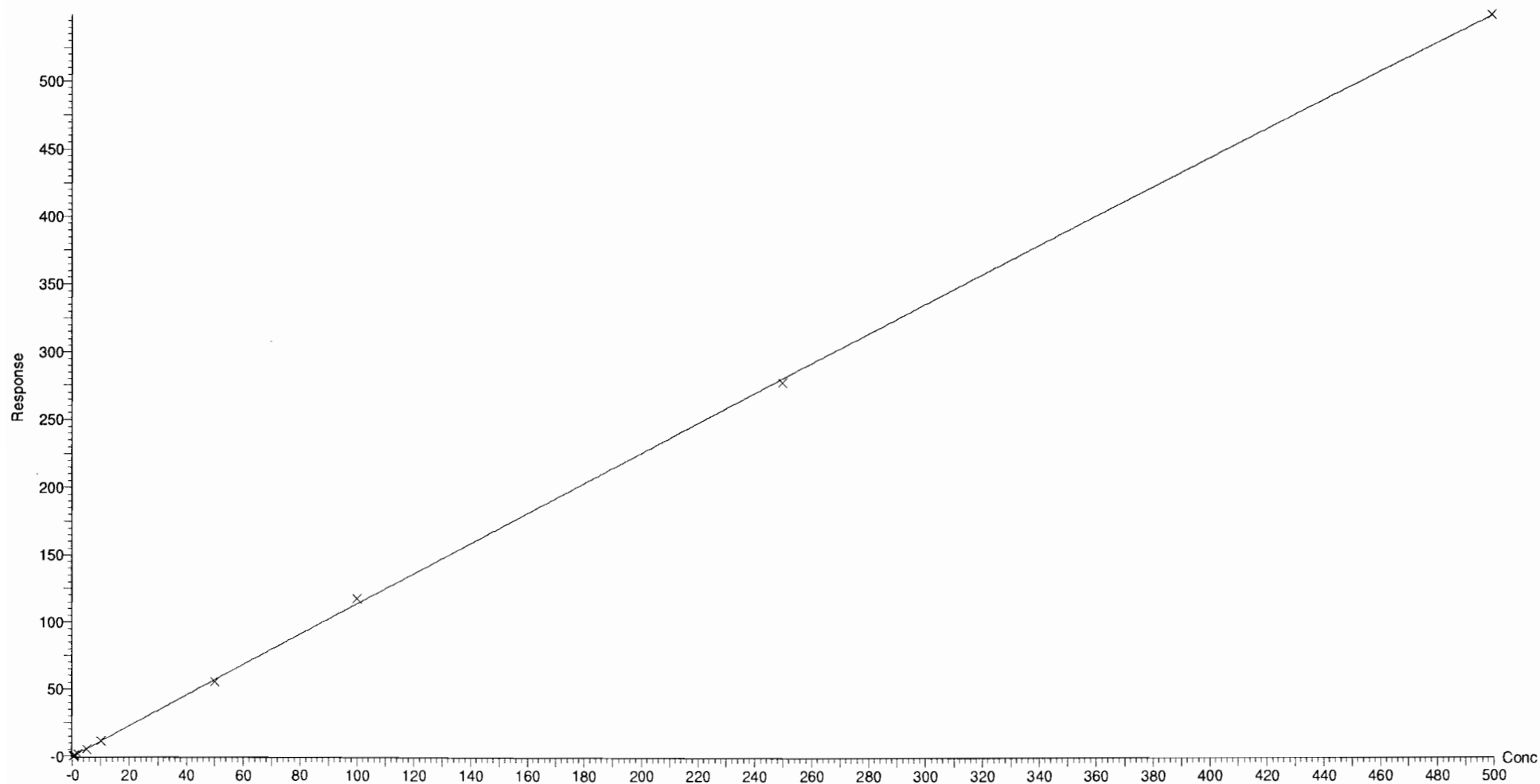
Compound name: L-EtFOSAA

Coefficient of Determination: $R^2 = 0.999646$

Calibration curve: $-0.00010475 * x^2 + 1.14871 * x + -0.0588573$

Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

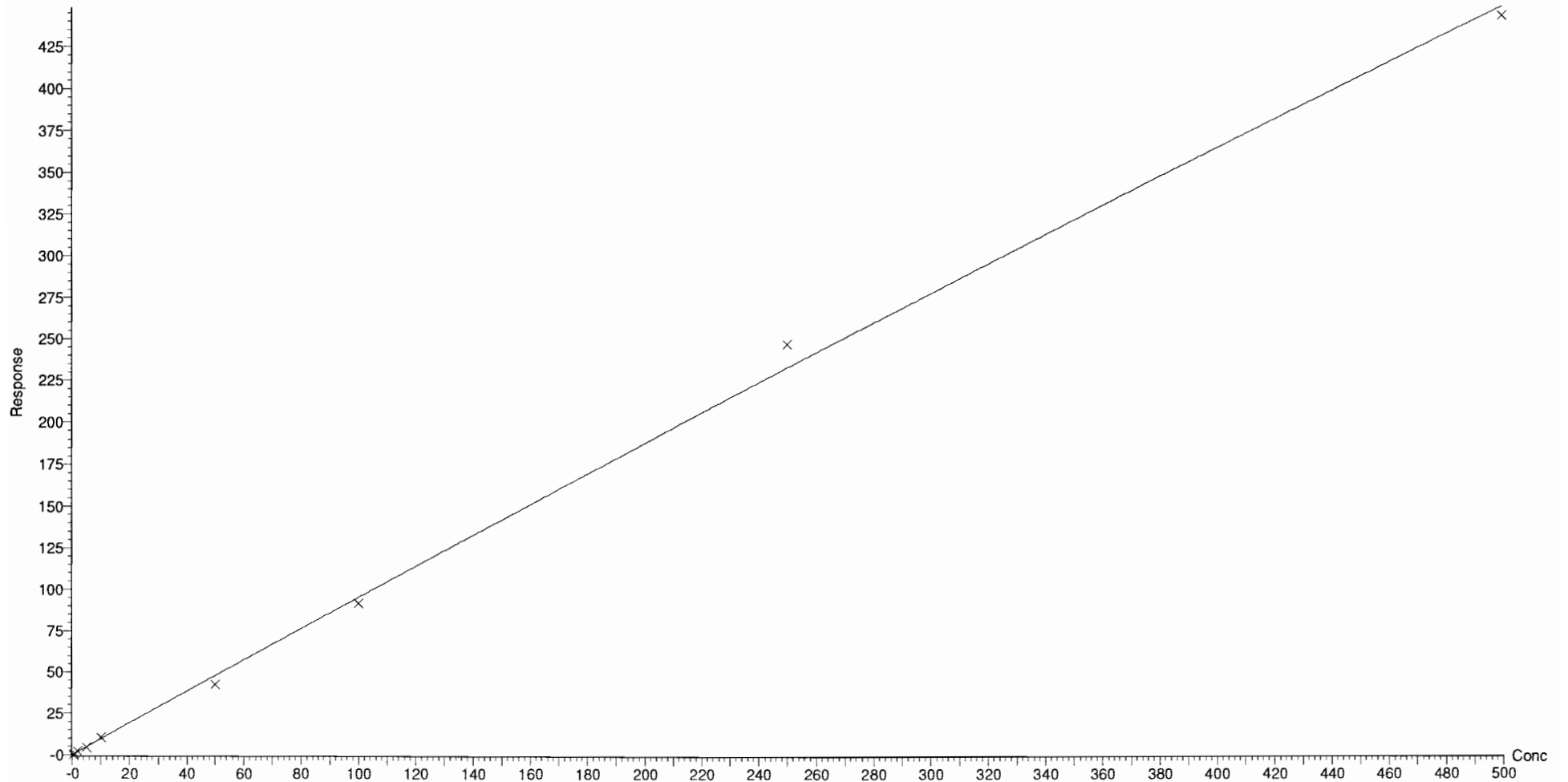
Compound name: PFUdA

Coefficient of Determination: $R^2 = 0.997692$

Calibration curve: $-0.00013883 * x^2 + 0.96625 * x + 0.0663674$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

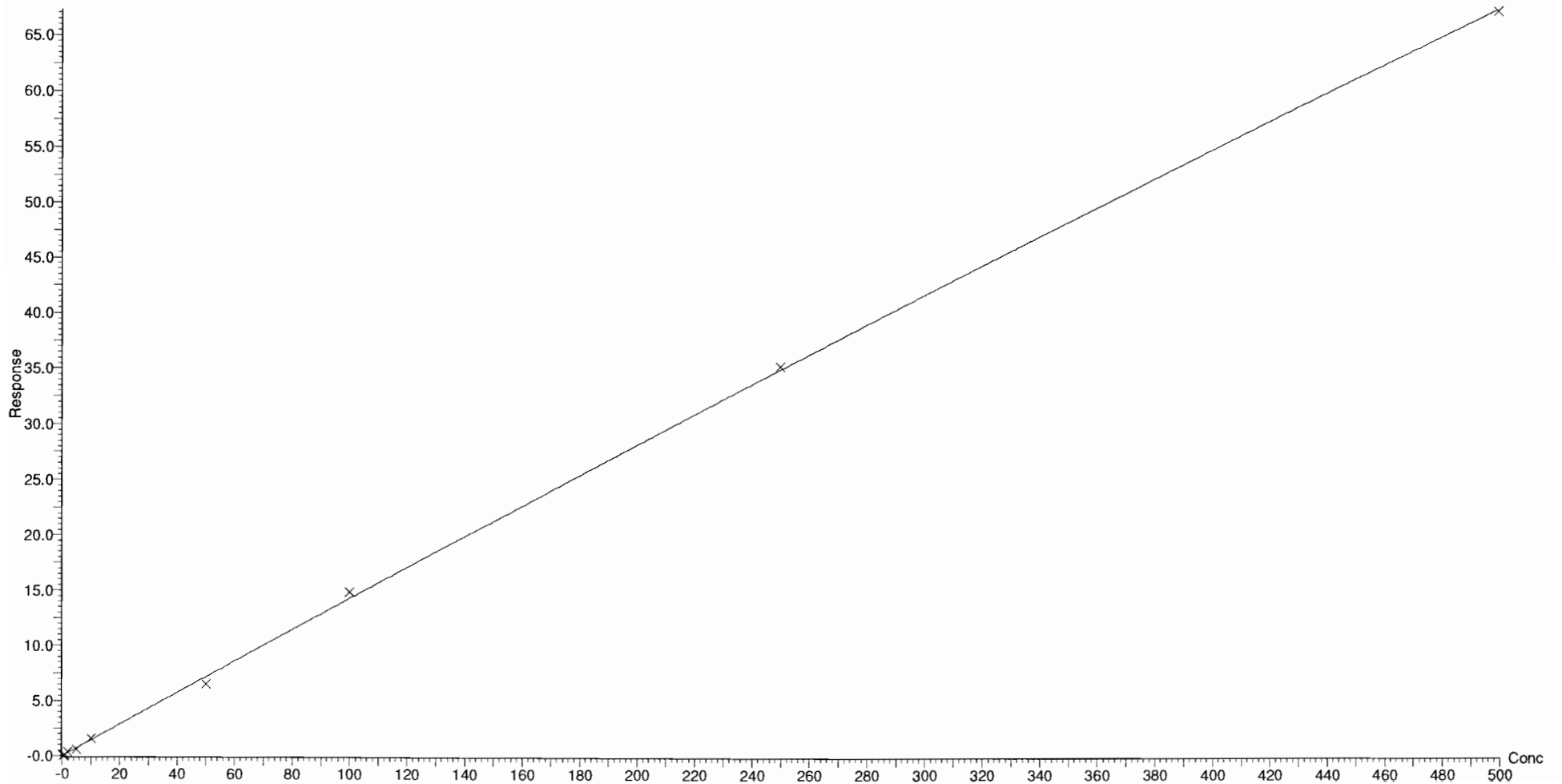
Compound name: PFDS

Coefficient of Determination: $R^2 = 0.998713$

Calibration curve: $-2.08709e-005 * x^2 + 0.145076 * x + -0.00507523$

Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

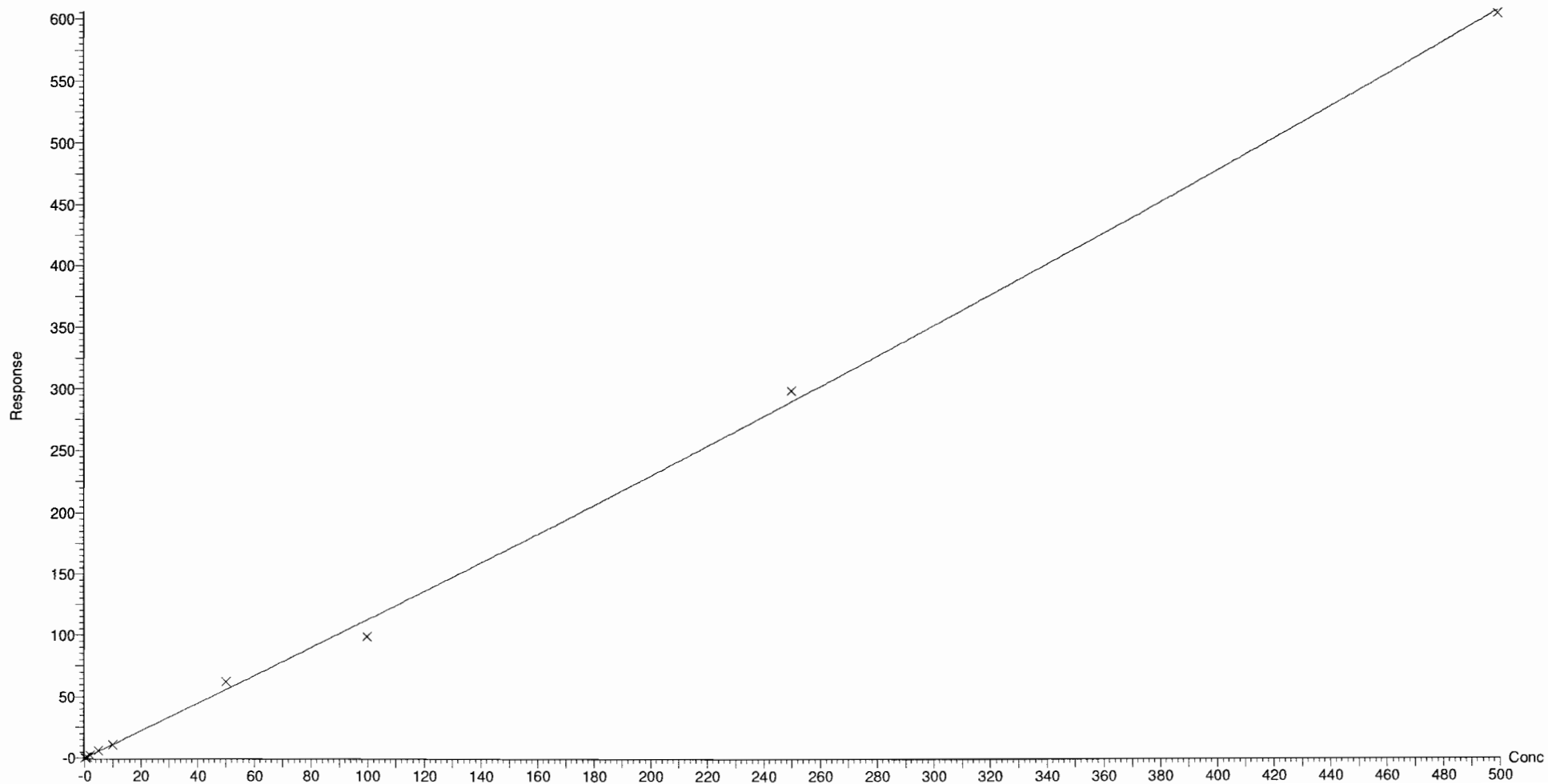
Compound name: PFD_oA

Coefficient of Determination: R² = 0.997401

Calibration curve: $0.000212677 * x^2 + 1.10562 * x + 0.0813564$

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

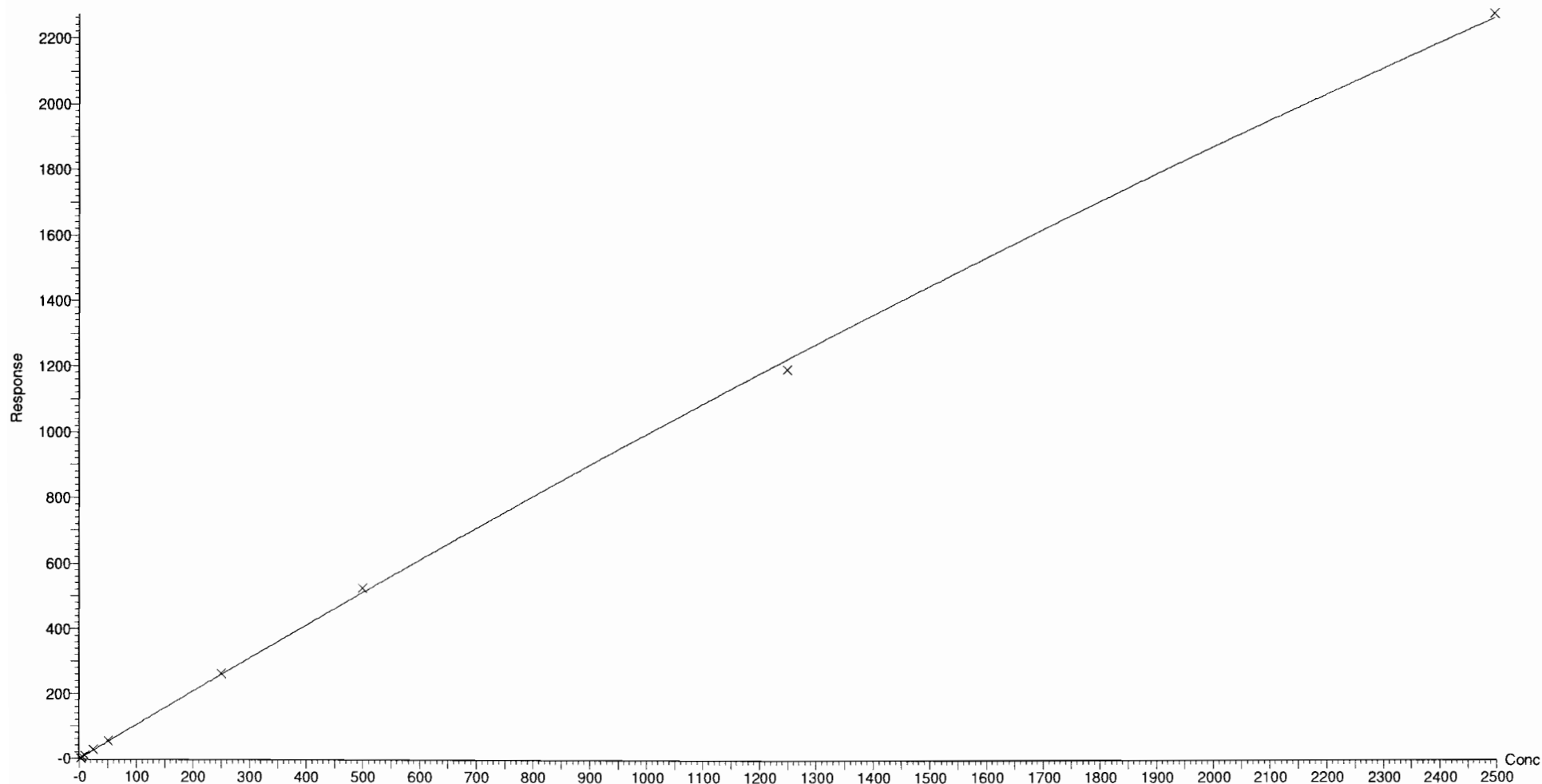
Compound name: N-MeFOSA

Coefficient of Determination: $R^2 = 0.999647$

Calibration curve: $-6.00765e-005 * x^2 + 1.05382 * x + 1.43912e-005$

Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

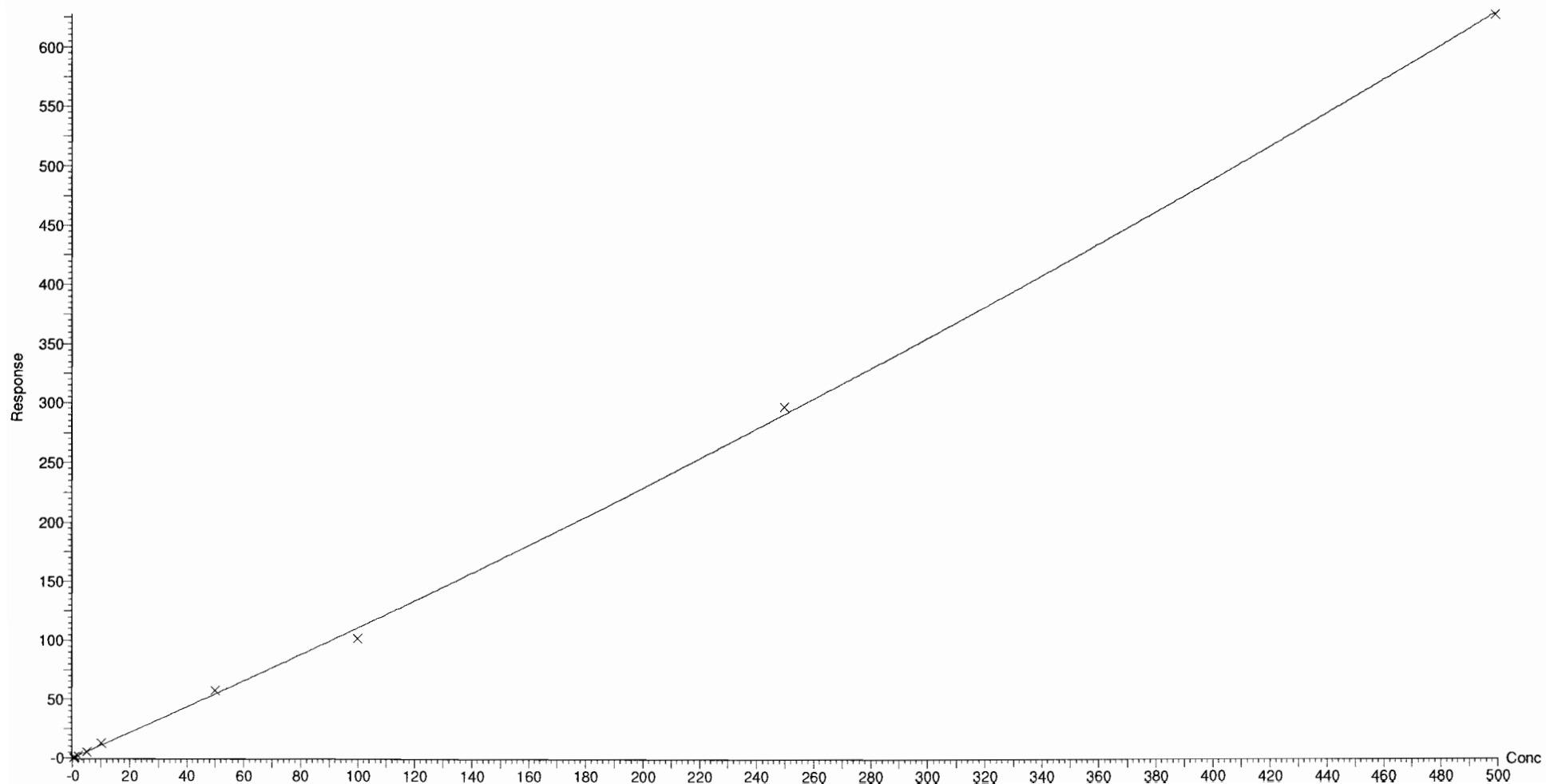
Compound name: PFTrDA

Coefficient of Determination: $R^2 = 0.998885$

Calibration curve: $0.000371643 * x^2 + 1.06917 * x + 0.144786$

Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

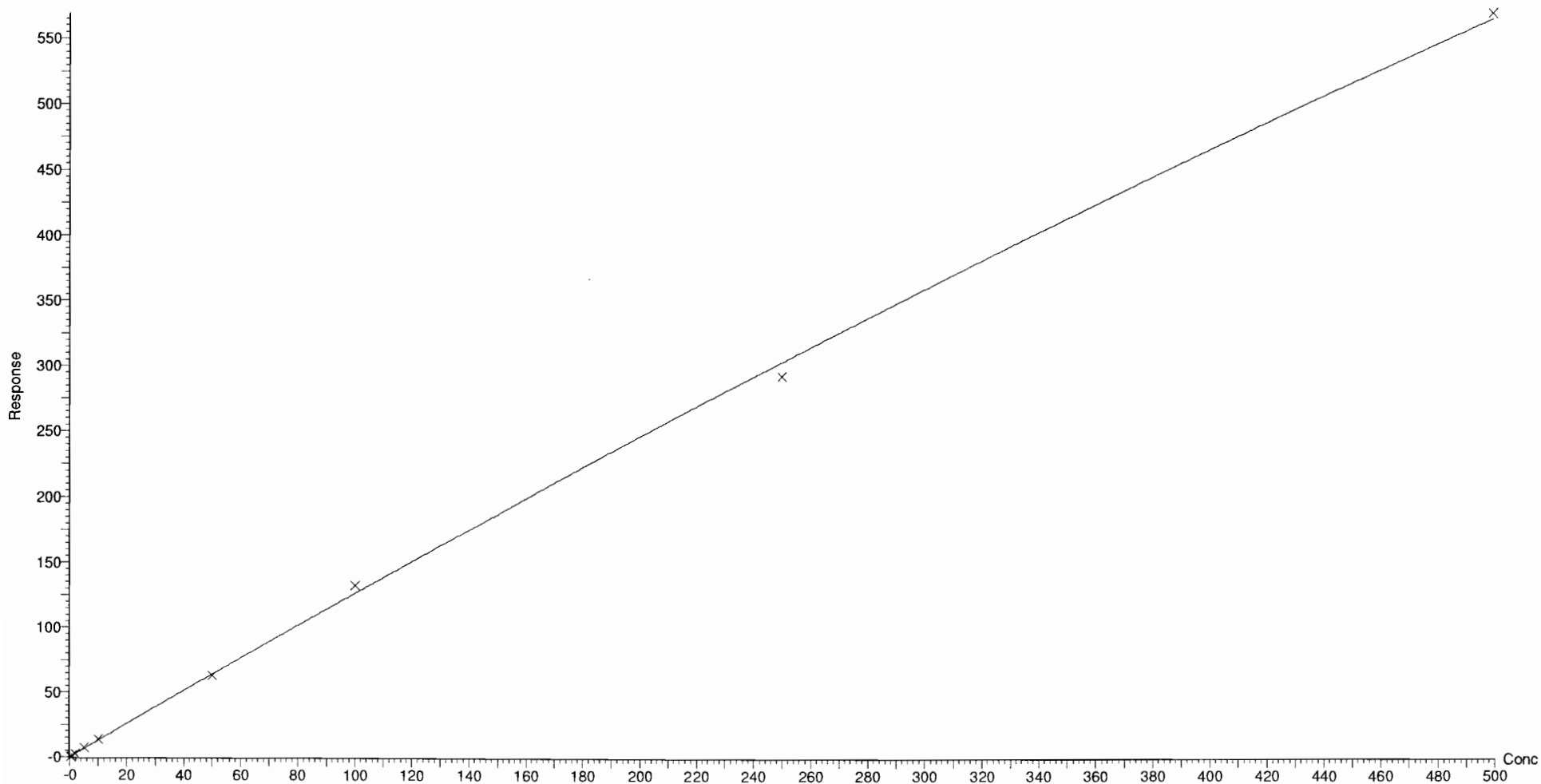
Compound name: PFTeDA

Coefficient of Determination: $R^2 = 0.999161$

Calibration curve: $-0.000334653 * x^2 + 1.29716 * x + 0.0524742$

Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

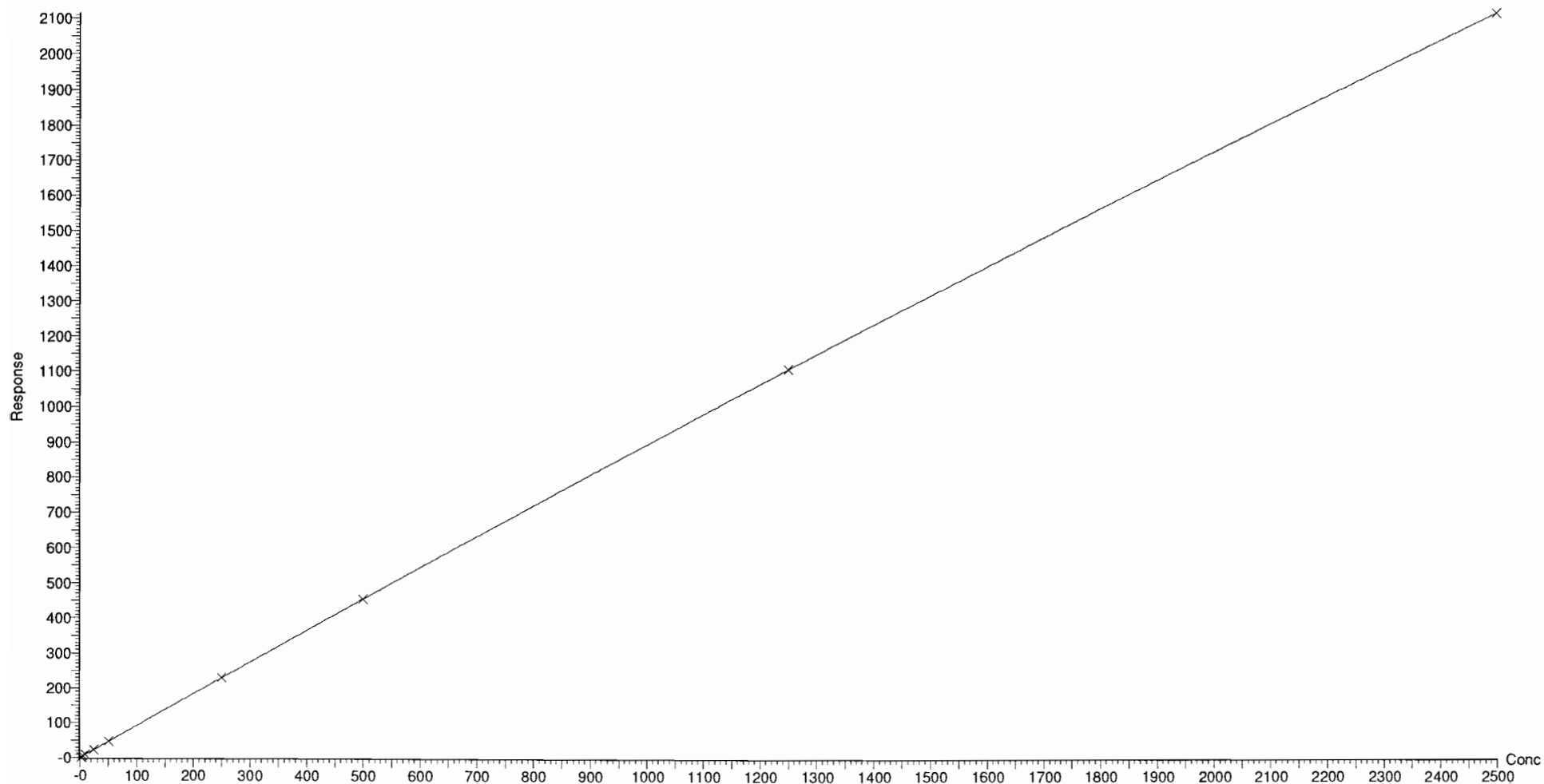
Compound name: N-EtFOSA

Coefficient of Determination: $R^2 = 0.999998$

Calibration curve: $-3.24276e-005 * x^2 + 0.927207 * x + 0.0223365$

Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

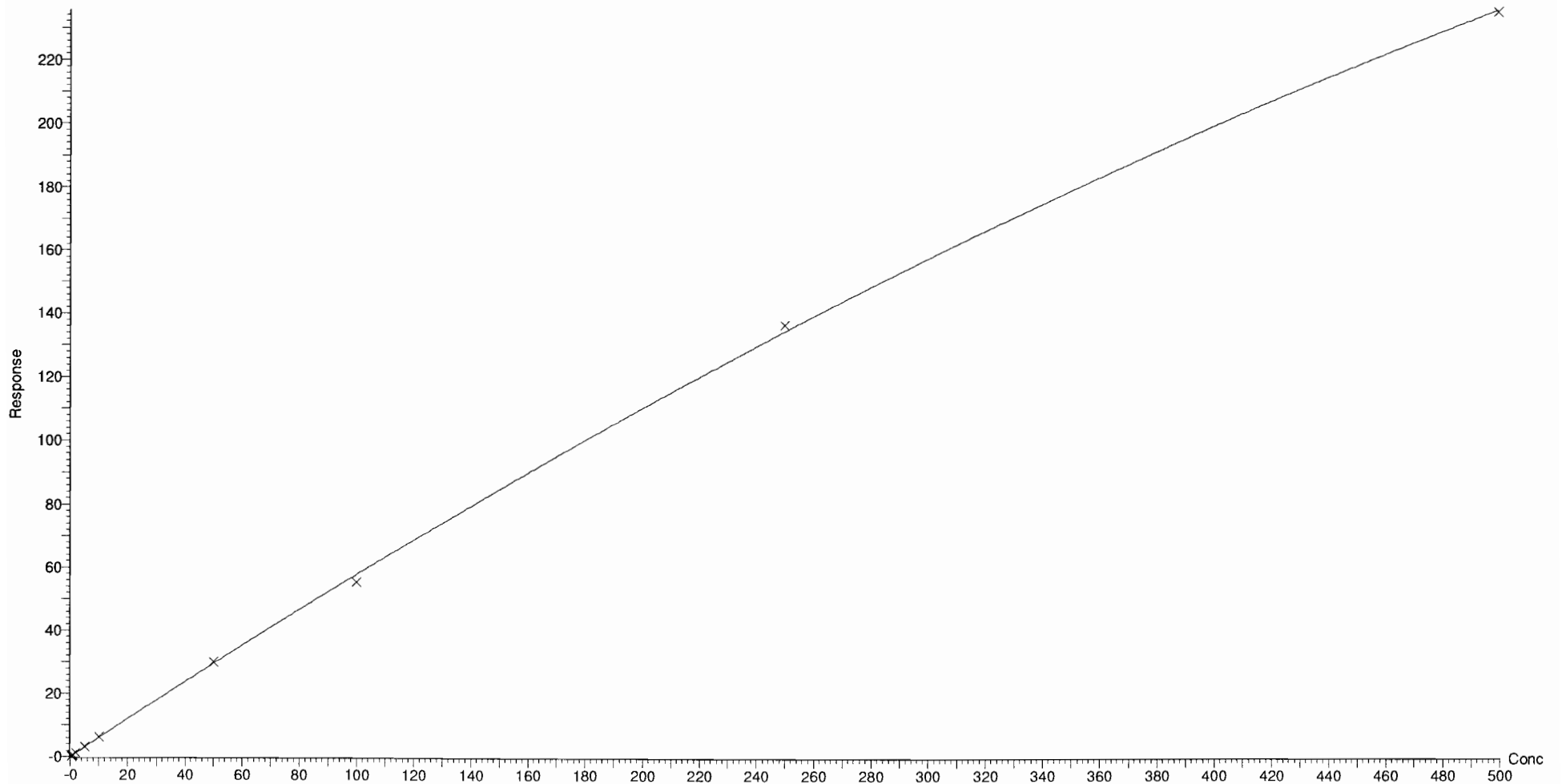
Compound name: PFHxDA

Coefficient of Determination: $R^2 = 0.999511$

Calibration curve: $-0.000267807 * x^2 + 0.605113 * x + 0.0392849$

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

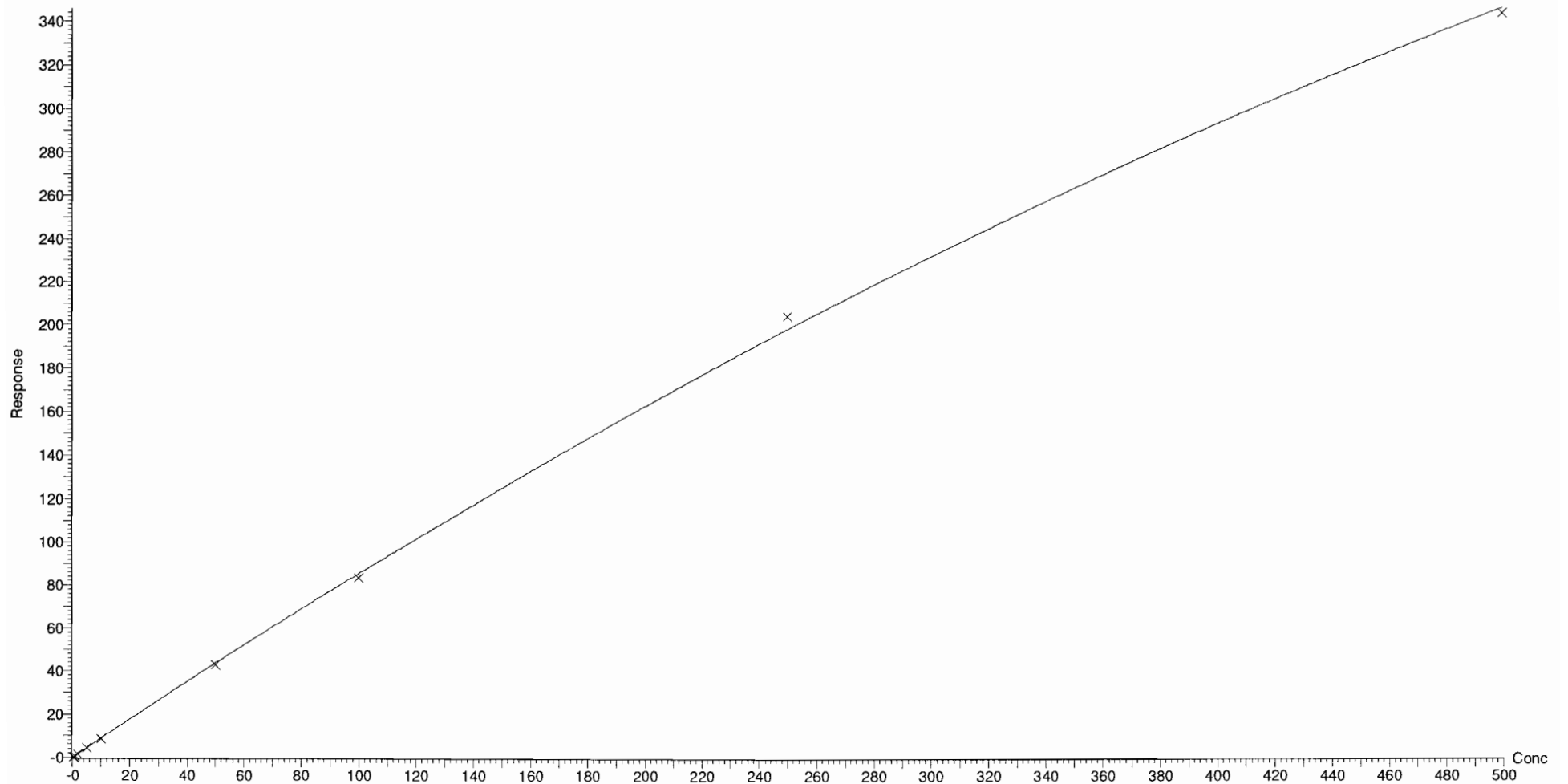
Compound name: PFODA

Coefficient of Determination: $R^2 = 0.999491$

Calibration curve: $-0.000404358 * x^2 + 0.894092 * x + -0.0222858$

Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

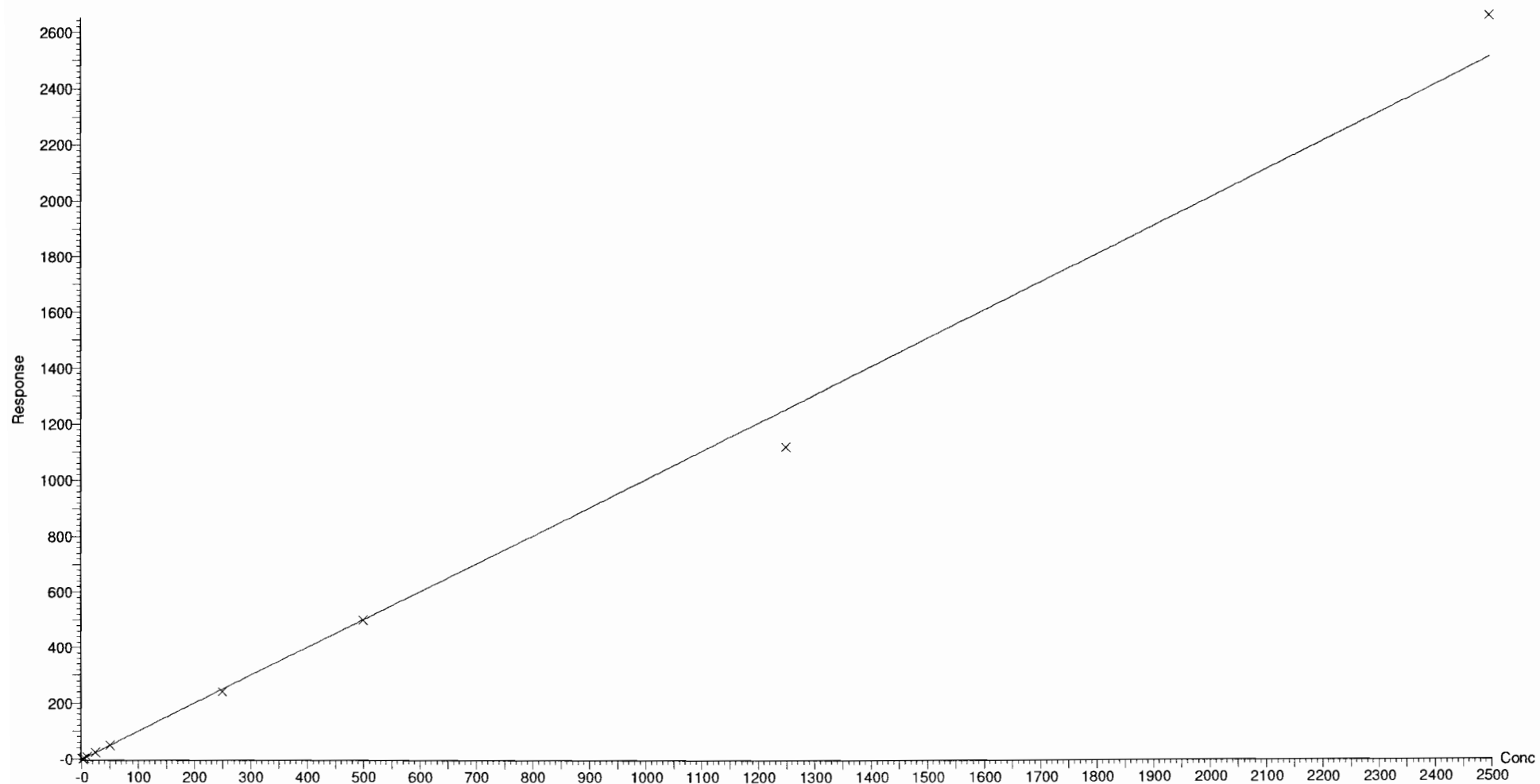
Compound name: N-MeFOSE

Correlation coefficient: $r = 0.997461$, $r^2 = 0.994929$

Calibration curve: $1.00285 * x + -0.37541$

Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:53:48 Pacific Daylight Time

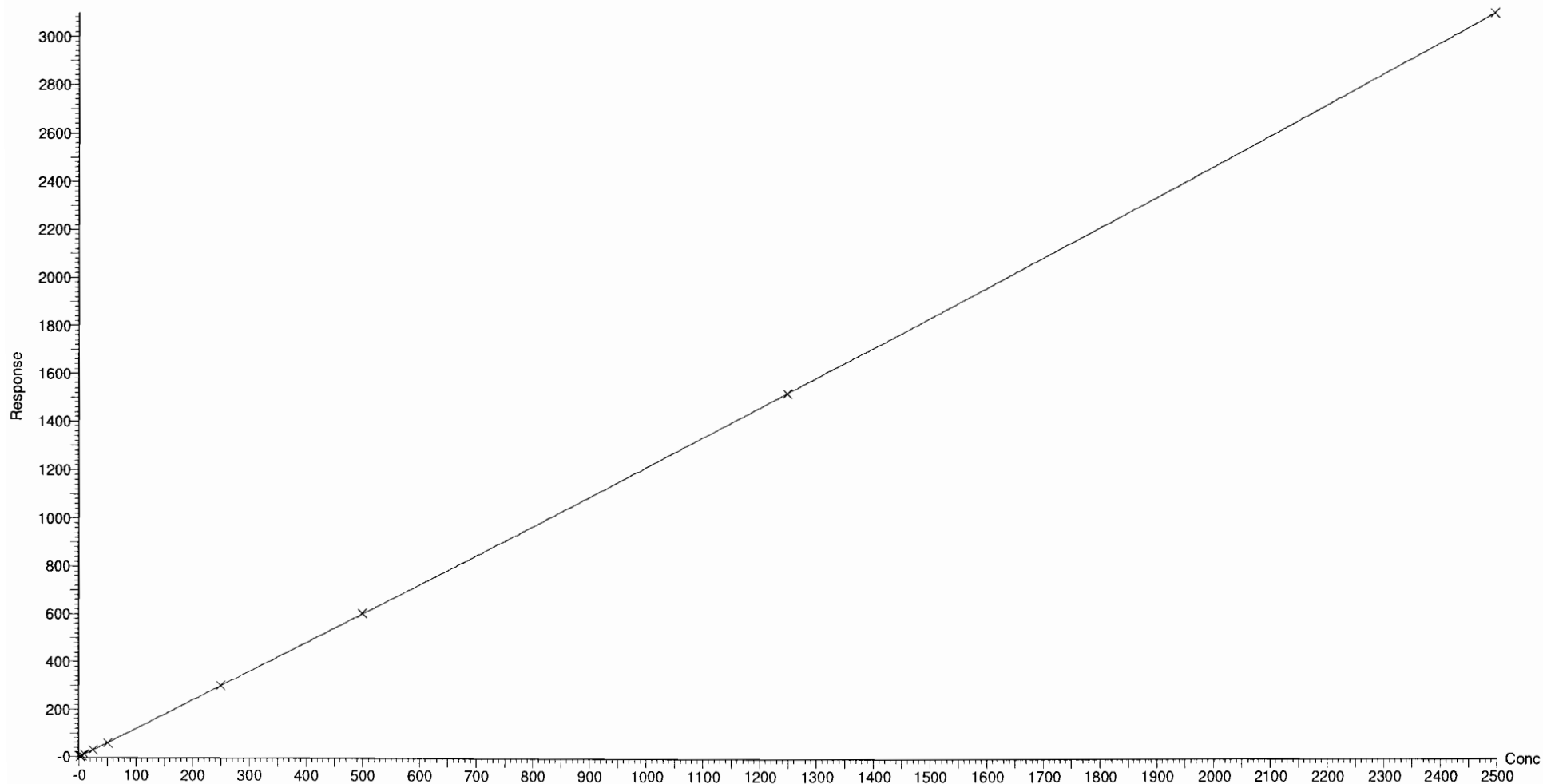
Compound name: N-EtFOSE

Coefficient of Determination: $R^2 = 0.999985$

Calibration curve: $1.74191e-005 * x^2 + 1.19563 * x + -0.124308$

Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)

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



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

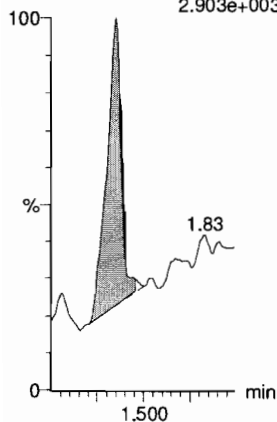
Calibration: 05 Jun 2018 10:50:38

1 dm 6/5/18

Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2/PFC CS-2 18E2902, Description: PFC CS-2 18E2902

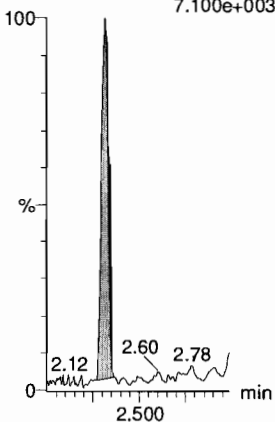
PFBA

F2:MRM of 1 channel,ES-
213.0 > 168.8
2.903e+003



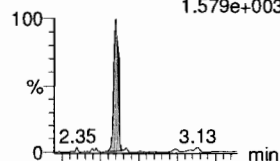
PFPeA

F5:MRM of 1 channel,ES-
263.1 > 218.9
7.100e+003

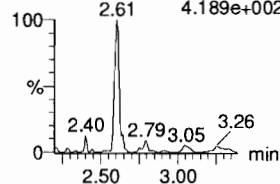


PFBS

F7:MRM of 2 channels,ES-
299.0 > 79.7
1.579e+003

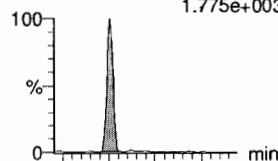


F7:MRM of 2 channels,ES-
299.0 > 99.0
4.189e+002

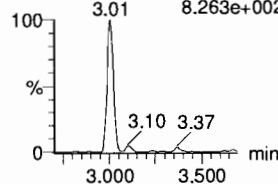


4:2 FTS

F12:MRM of 2 channels,ES-
327.2 > 307.2
1.775e+003

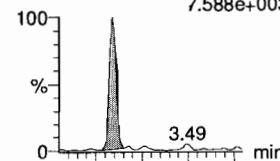


F12:MRM of 2 channels,ES-
327.2 > 81.1
8.263e+002

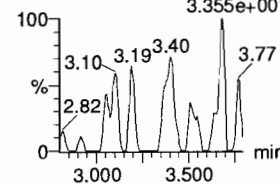


PFHxA

F9:MRM of 2 channels,ES-
313.2 > 268.9
7.588e+003

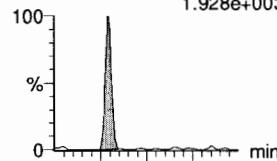


F9:MRM of 2 channels,ES-
313.2 > 119
3.355e+001

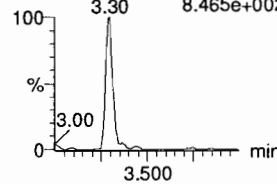


PFPeS

F15:MRM of 2 channels,ES-
349.1 > 80.1
1.928e+003

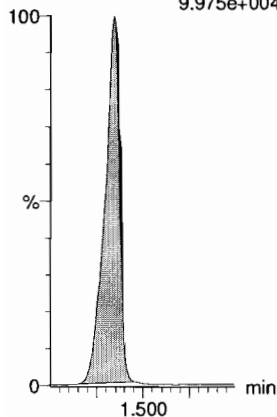


F15:MRM of 2 channels,ES-
349.1 > 99
8.465e+002



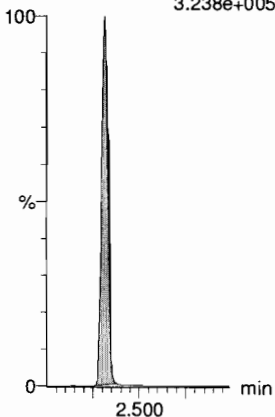
13C3-PFBA

F3:MRM of 1 channel,ES-
216.1 > 171.8
9.975e+004



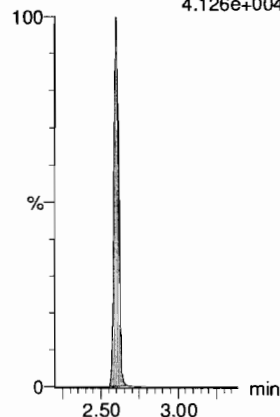
13C3-PFPeA

F6:MRM of 1 channel,ES-
266. > 221.8
3.238e+005



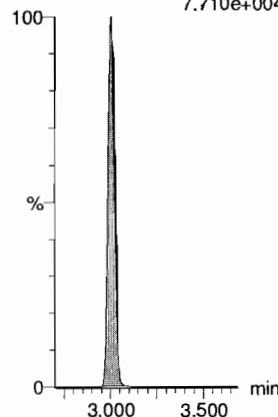
13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.126e+004



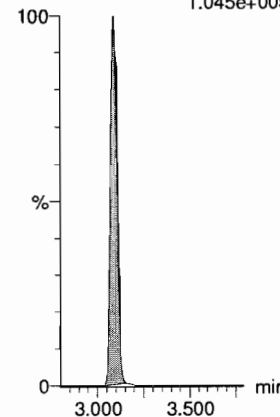
13C2-4:2 FTS

F13:MRM of 1 channel,ES-
329.2 > 308.9
7.710e+004



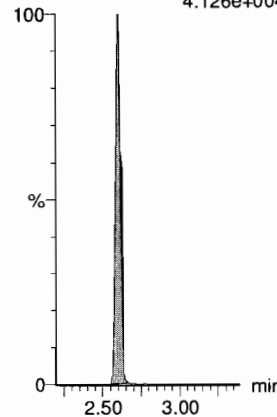
13C2-PFHxA

F10:MRM of 1 channel,ES-
315 > 269.8
1.045e+005



13C3-PFBS

F8:MRM of 1 channel,ES-
302. > 98.8
4.126e+004

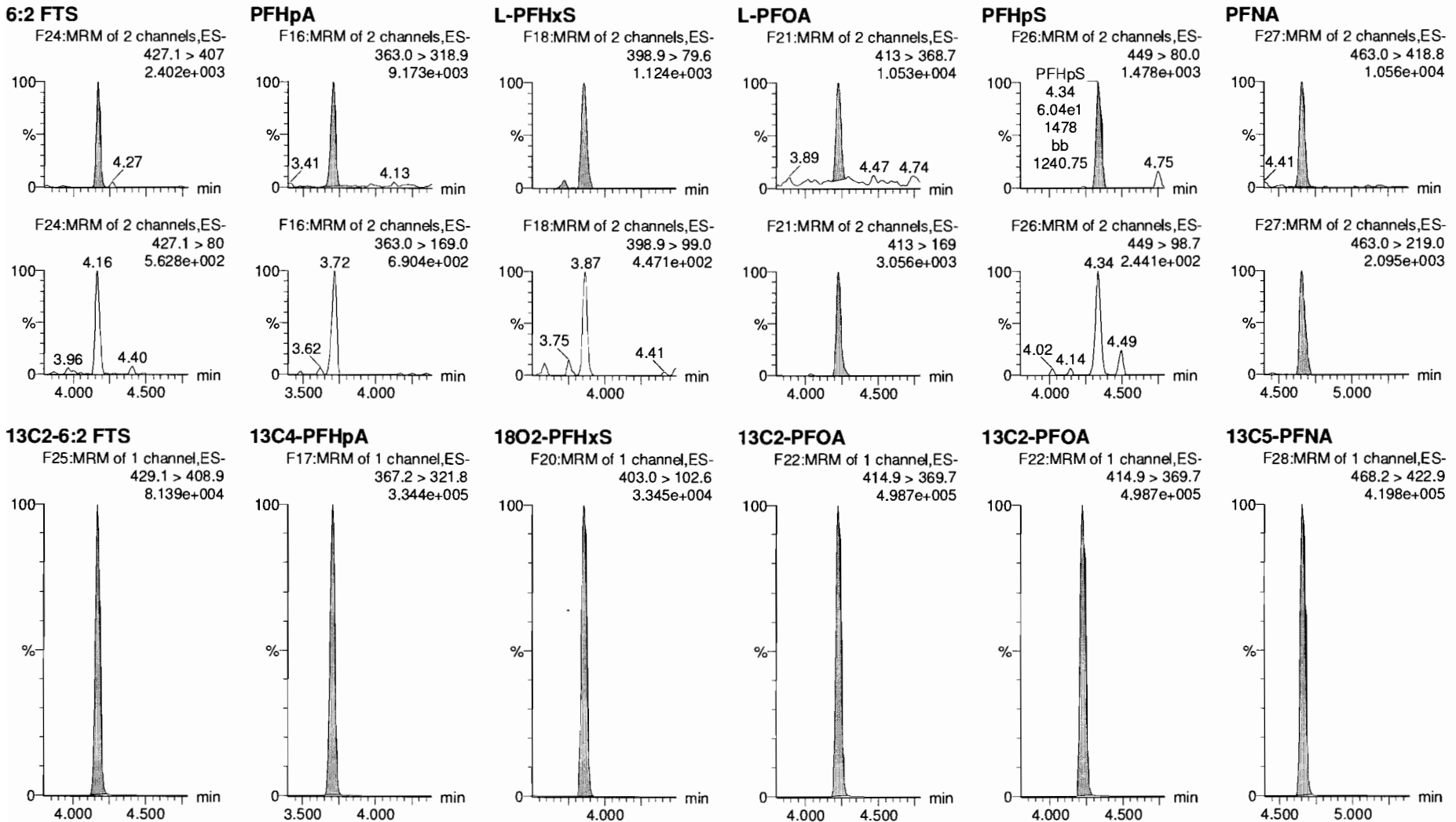


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902



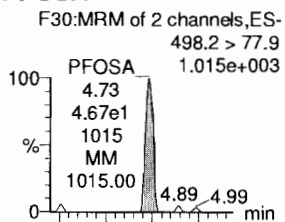
Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

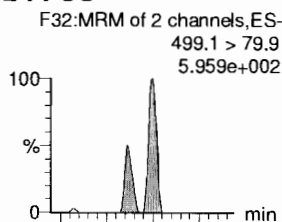
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

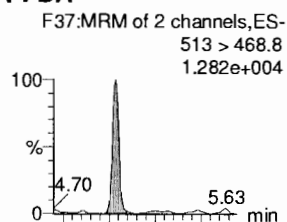
PFOSA



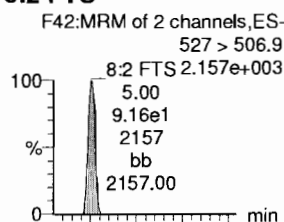
L-PFOS



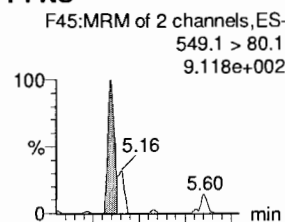
PFDA



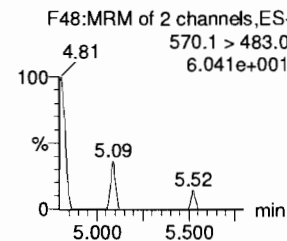
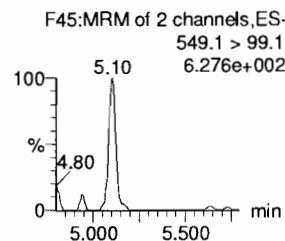
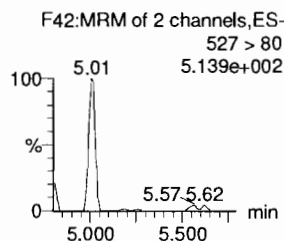
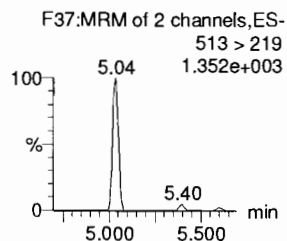
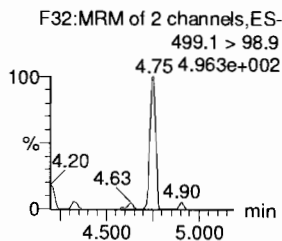
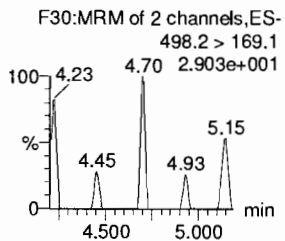
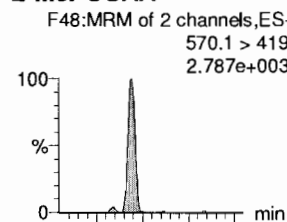
8:2 FTS



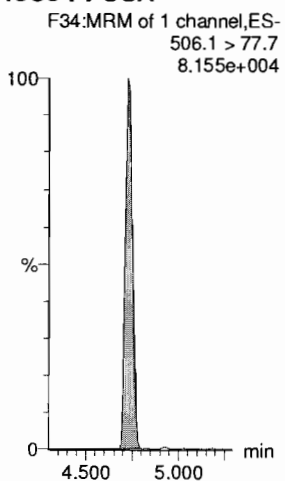
PFNS



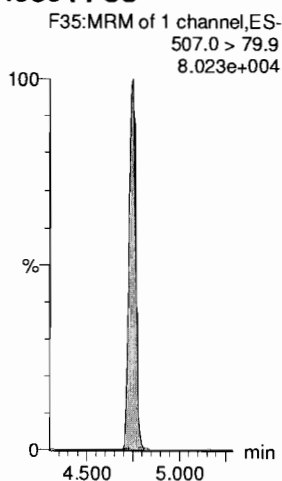
L-MeFOSAA



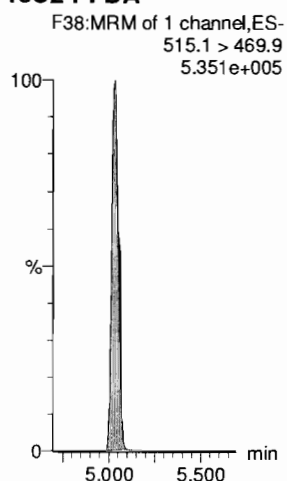
13C8-PFOSA



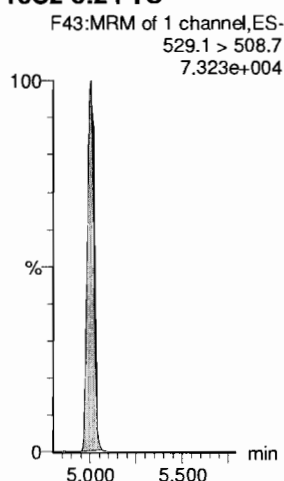
13C8-PFOS



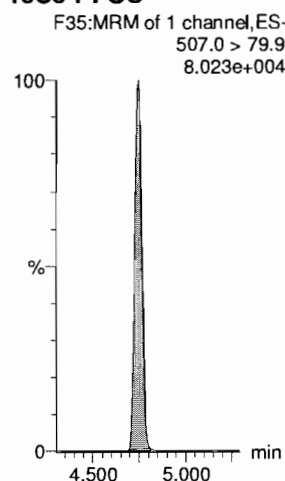
13C2-PFDA



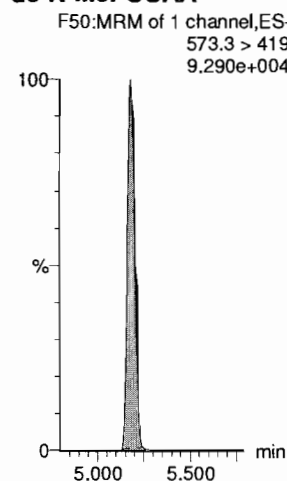
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



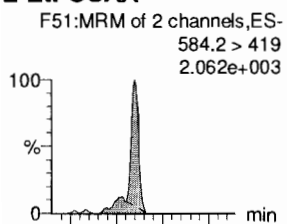
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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

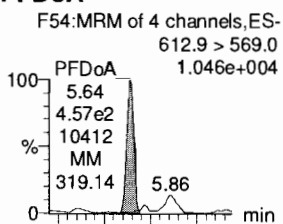
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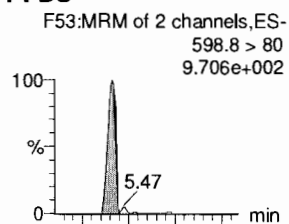
L-EtFOSAA



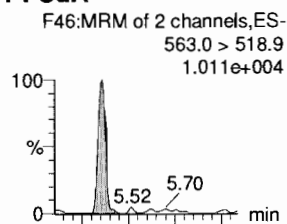
PFDoA



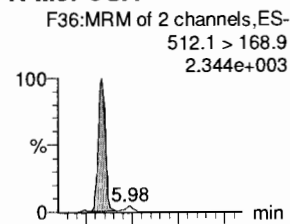
PFDS



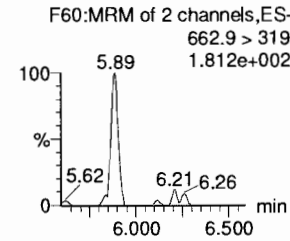
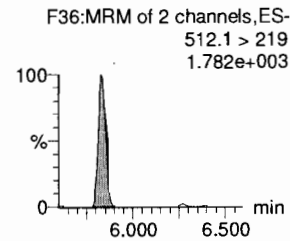
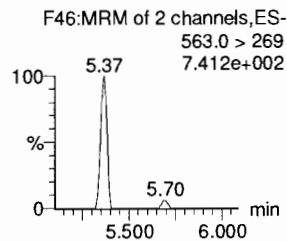
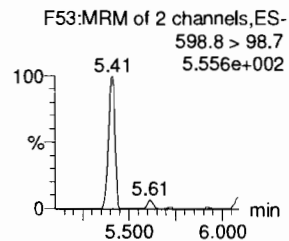
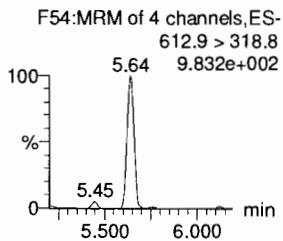
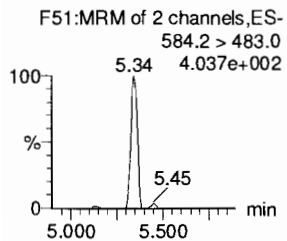
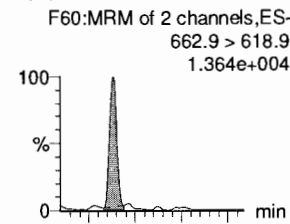
PFUdA



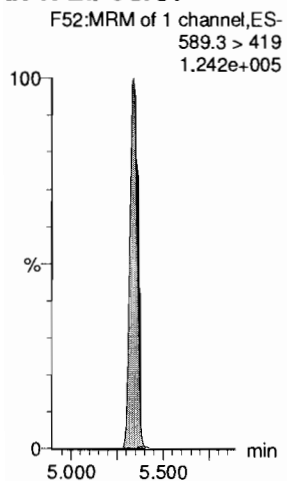
N-MeFOSA



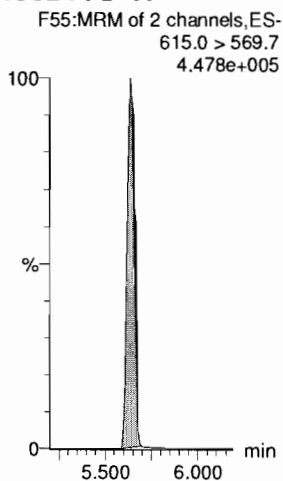
PFTTrDA



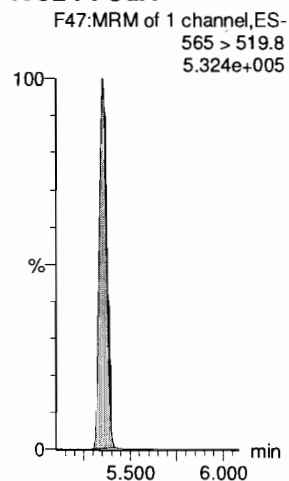
d5-N-EtFOSAA



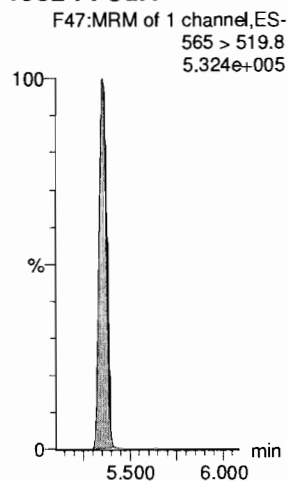
13C2-PFDoA



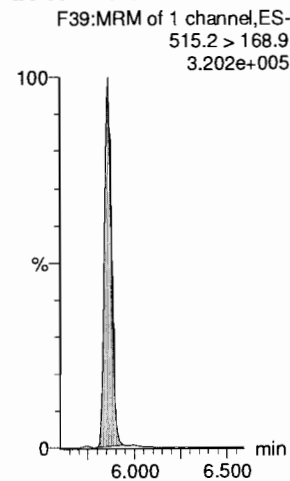
13C2-PFUdA



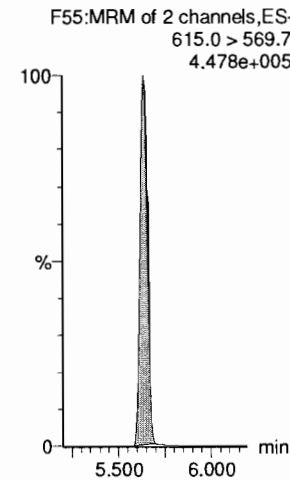
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

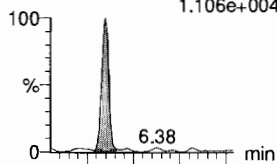
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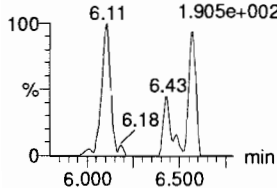
Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
1.106e+004

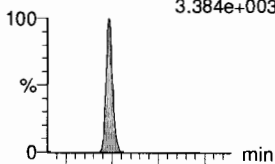


F61:MRM of 2 channels,ES-
712.9 > 369
1.905e+002

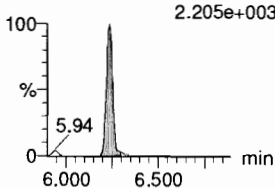


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
3.384e+003

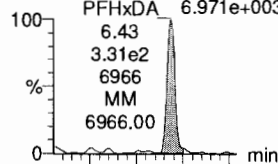


F41:MRM of 2 channels,ES-
526.1 > 219
2.205e+003

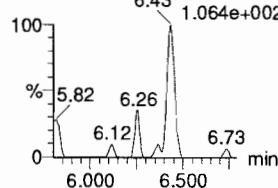


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
6.971e+003

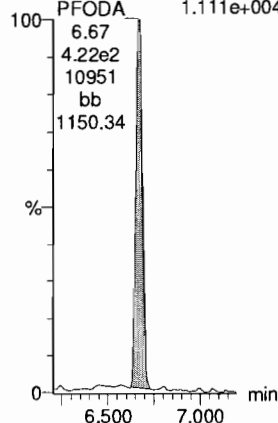


F63:MRM of 2 channels,ES-
813.1 > 219
1.064e+002



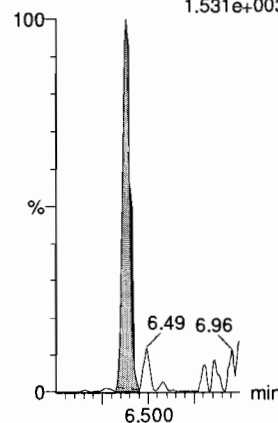
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
1.111e+004



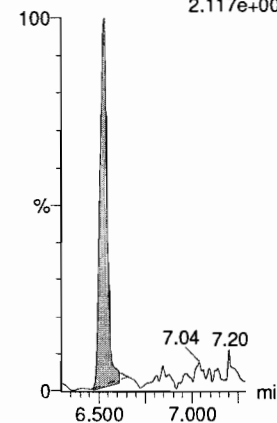
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
1.531e+003



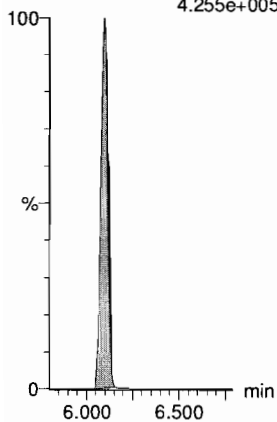
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
2.117e+003



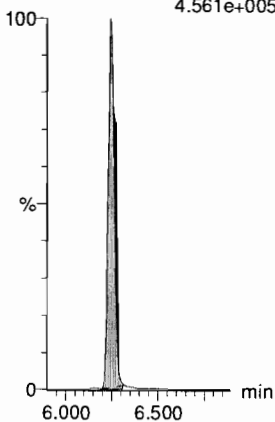
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
4.255e+005



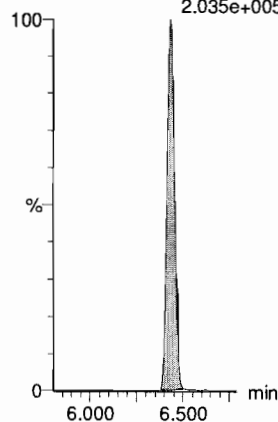
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.561e+005



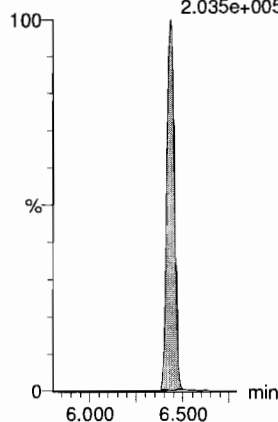
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.035e+005



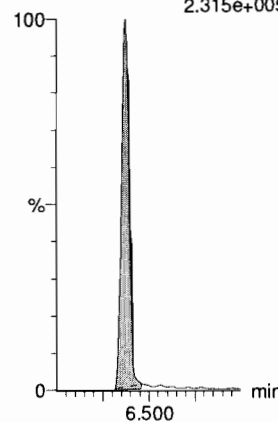
13C2-PFODA

F64:MRM of 1 channel,ES-
815 > 769.7
2.035e+005



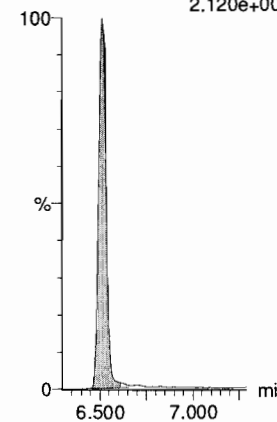
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.315e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.120e+005



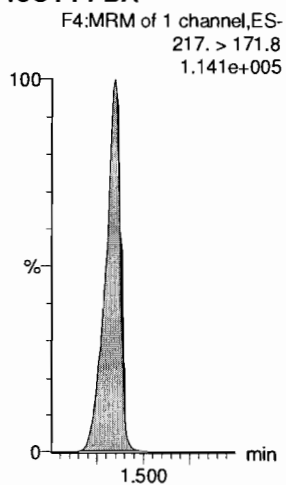
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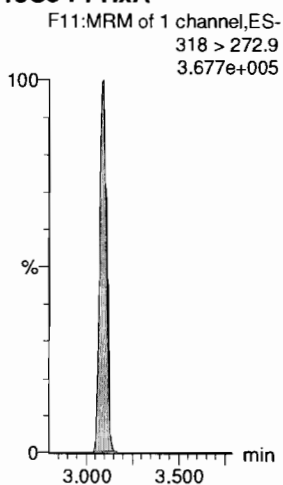
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Name: 180604M2_2, Date: 04-Jun-2018, Time: 19:11:49, ID: ST180604M2-2 PFC CS-2 18E2902, Description: PFC CS-2 18E2902

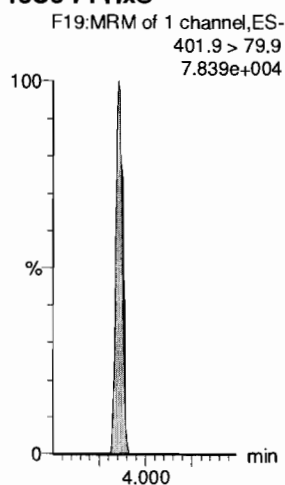
13C4-PFBA



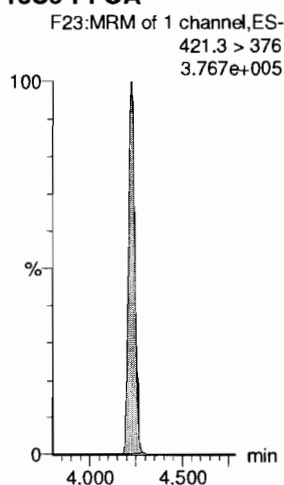
13C5-PFHxA



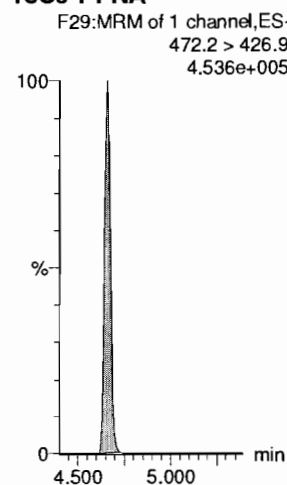
13C3-PFHxS



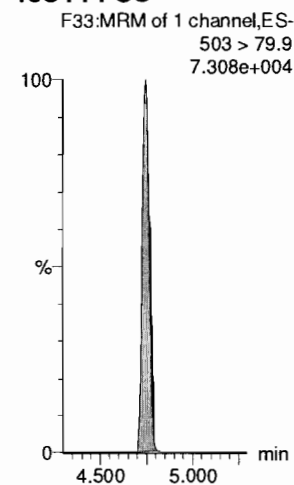
13C8-PFOA



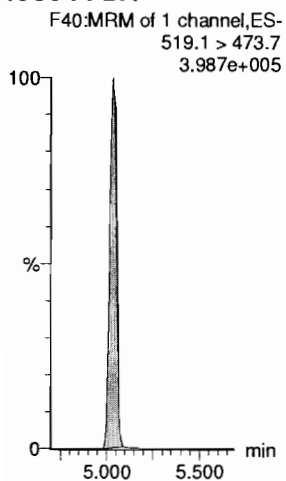
13C9-PFNA



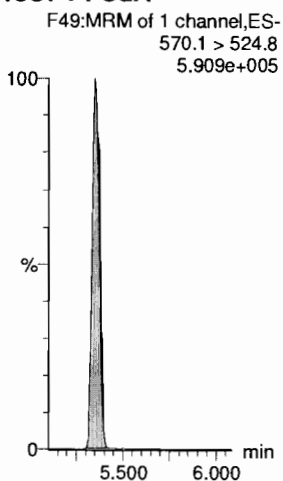
13C4-PFOS



13C6-PFDA



13C7-PFUdA

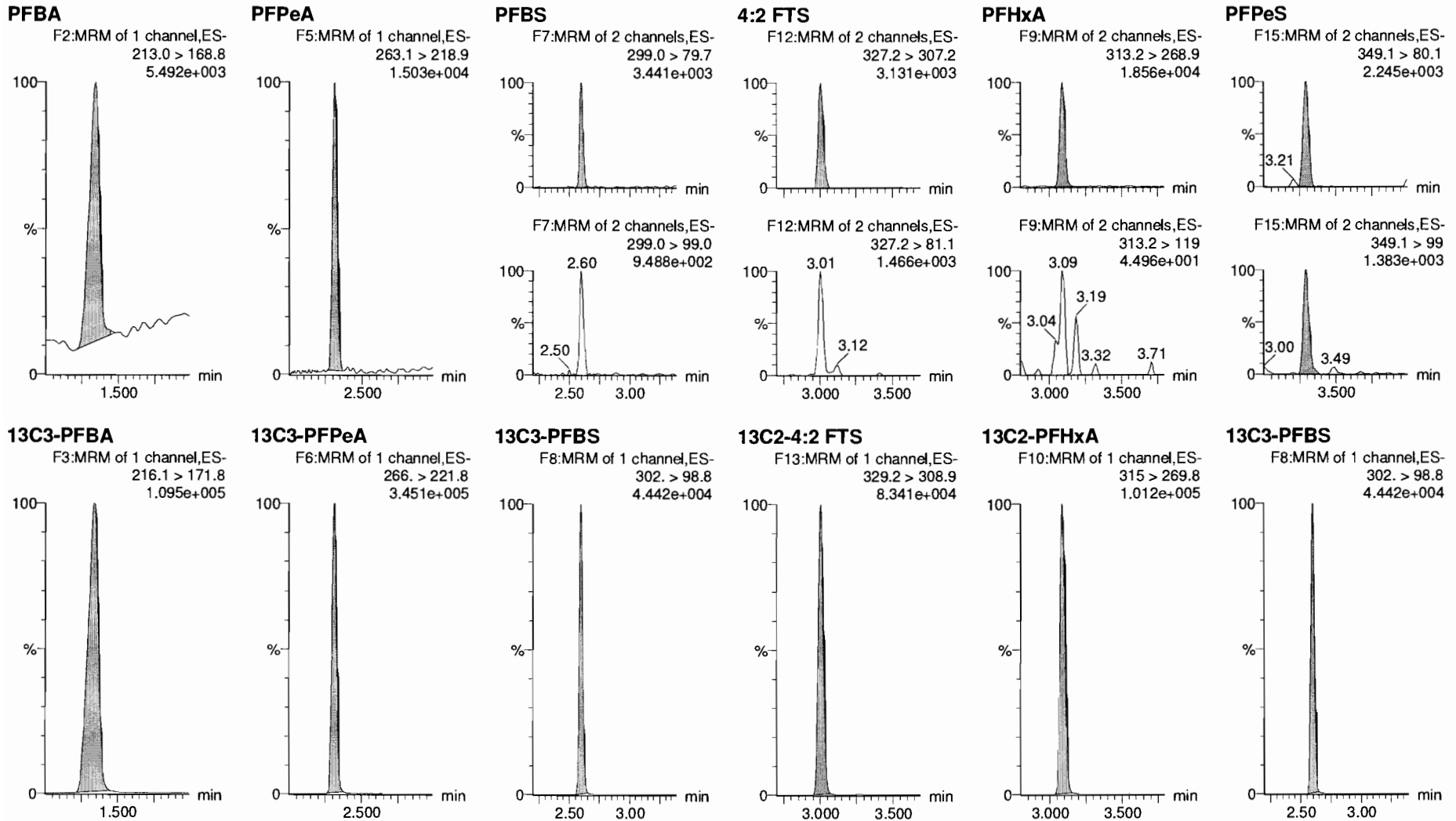


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_3, Date: 04-Jun-2018, Time: 19:22:13, ID: ST180604M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903

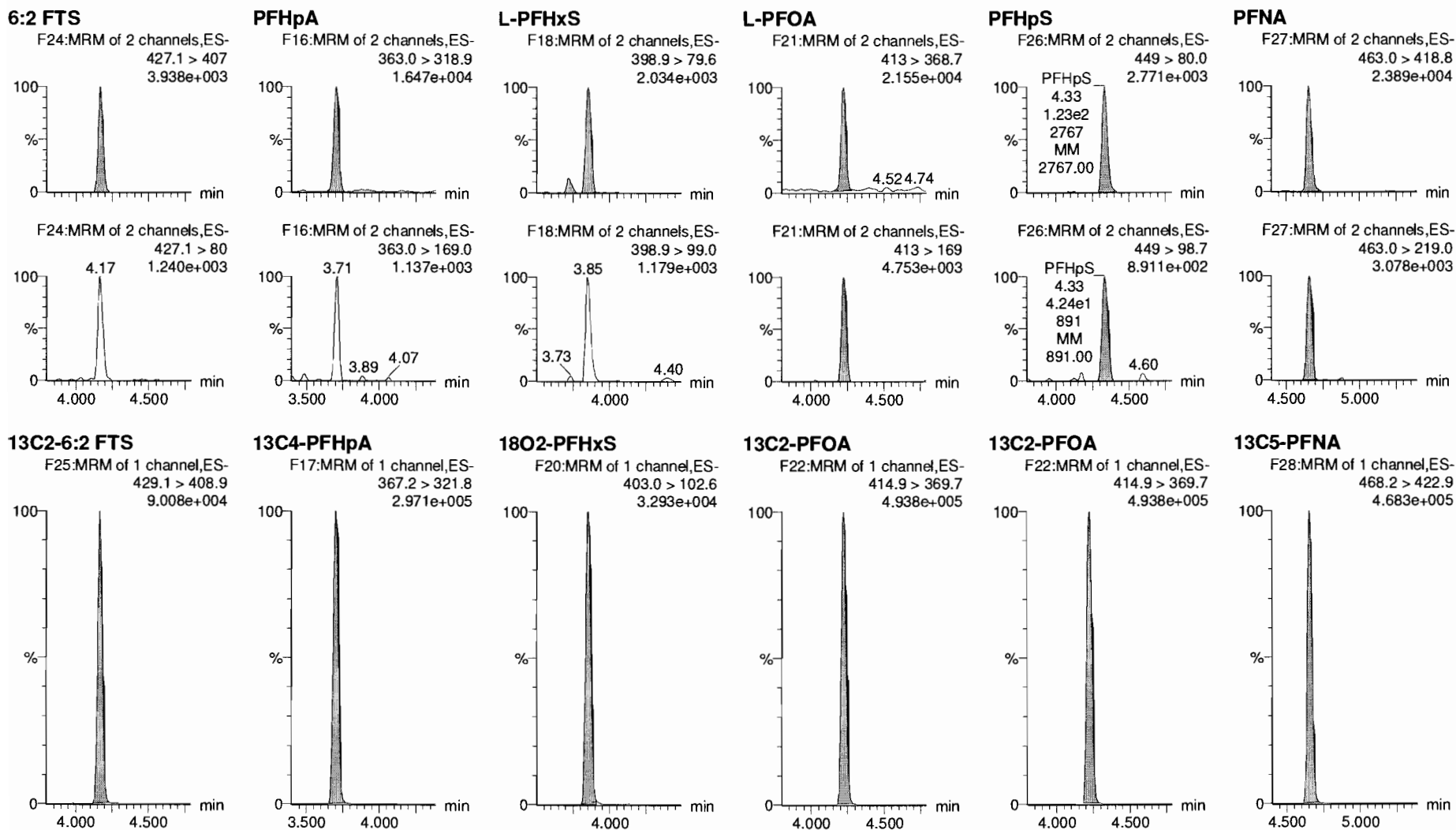


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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

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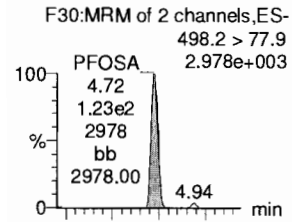
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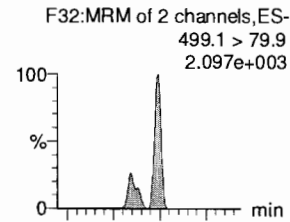
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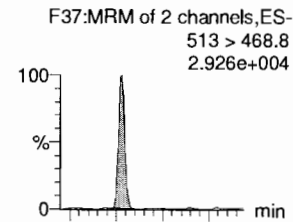
PFOSA



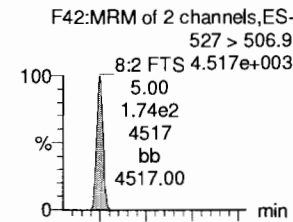
L-PFOS



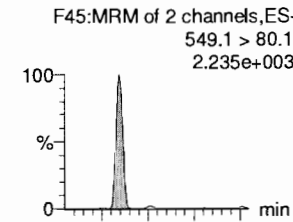
PFDA



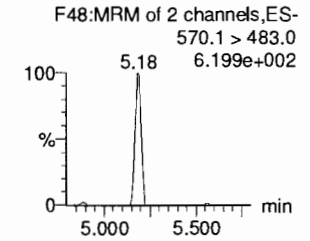
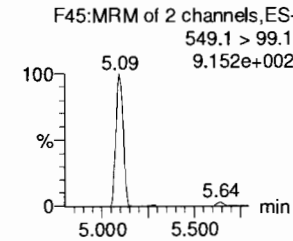
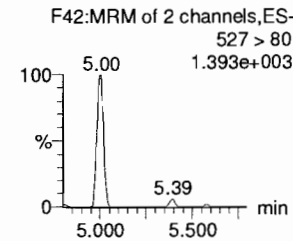
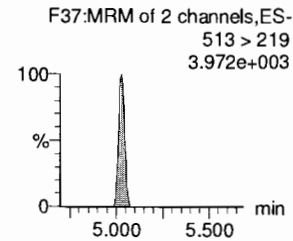
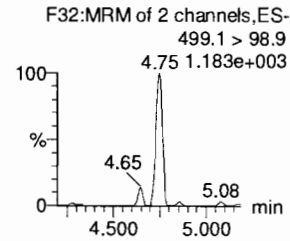
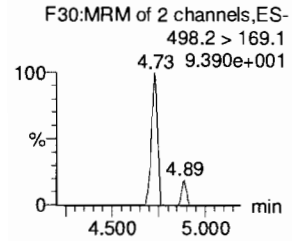
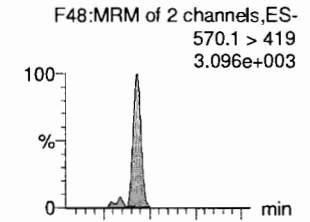
8:2 FTS



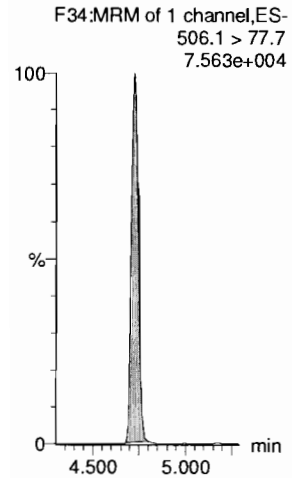
PFNS



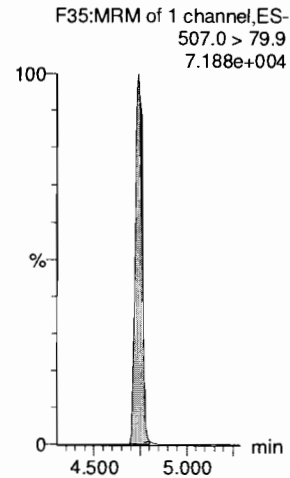
L-MeFOSAA



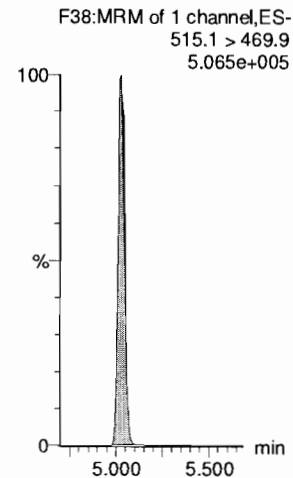
13C8-PFOSA



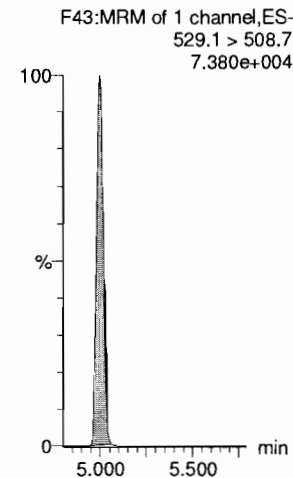
13C8-PFOS



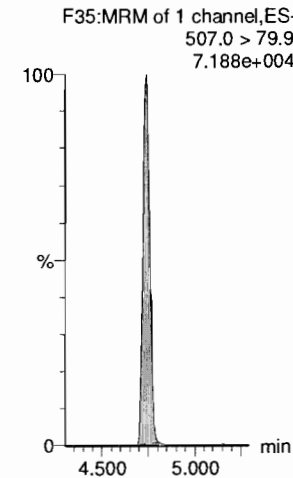
13C2-PFDA



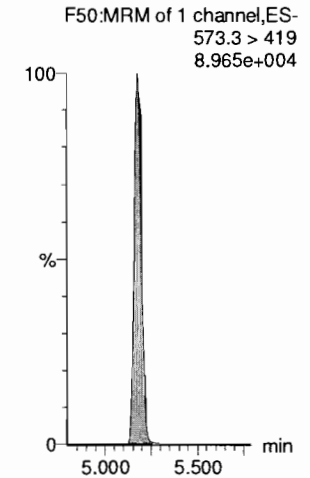
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

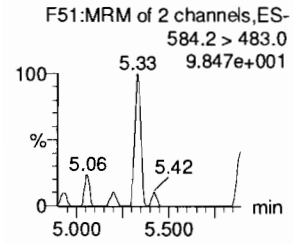
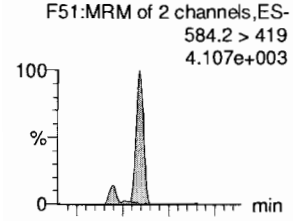


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

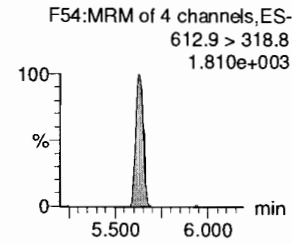
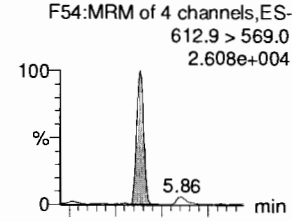
Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_3, Date: 04-Jun-2018, Time: 19:22:13, ID: ST180604M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903

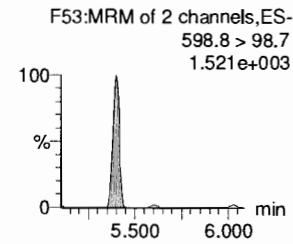
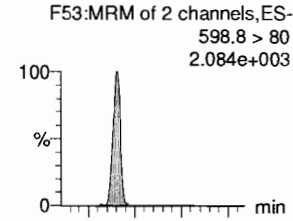
L-EtFOSAA



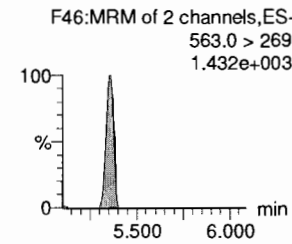
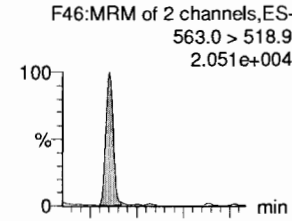
PFDoA



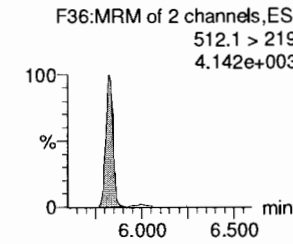
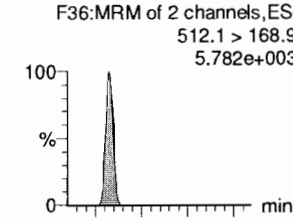
PFDS



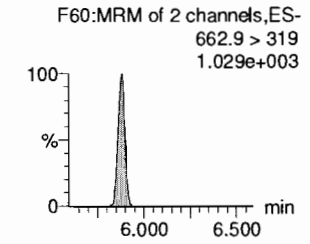
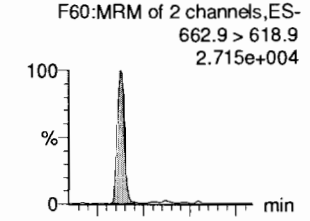
PFUdA



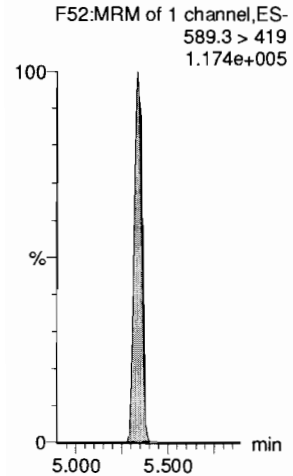
N-MeFOSA



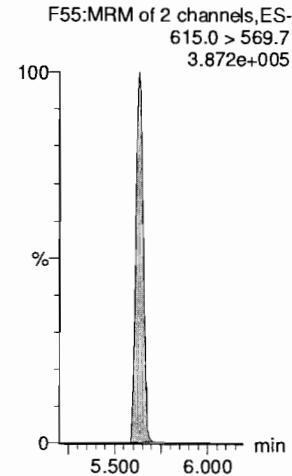
PFTrDA



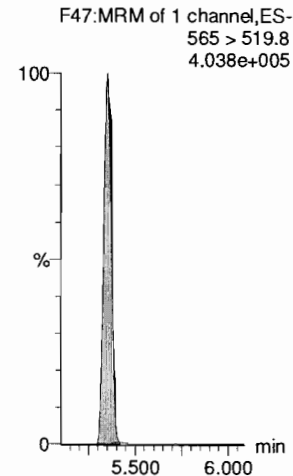
d5-N-EtFOSAA



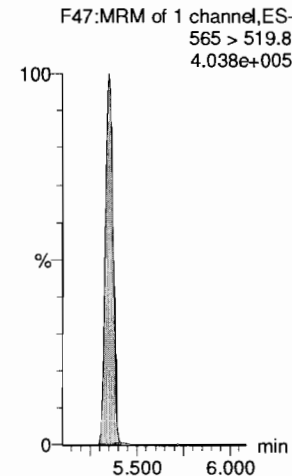
13C2-PFDoA



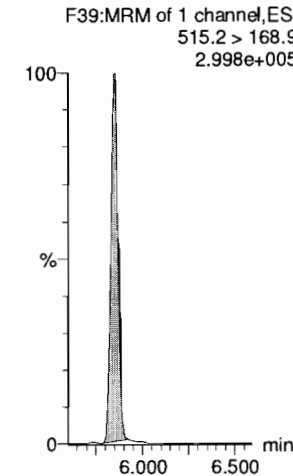
13C2-PFUdA



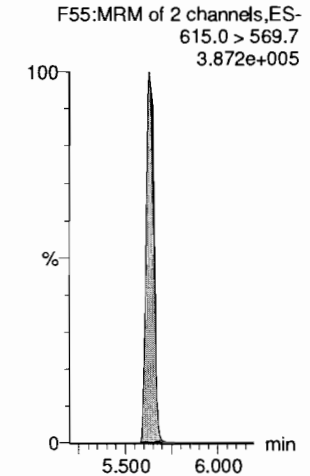
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA

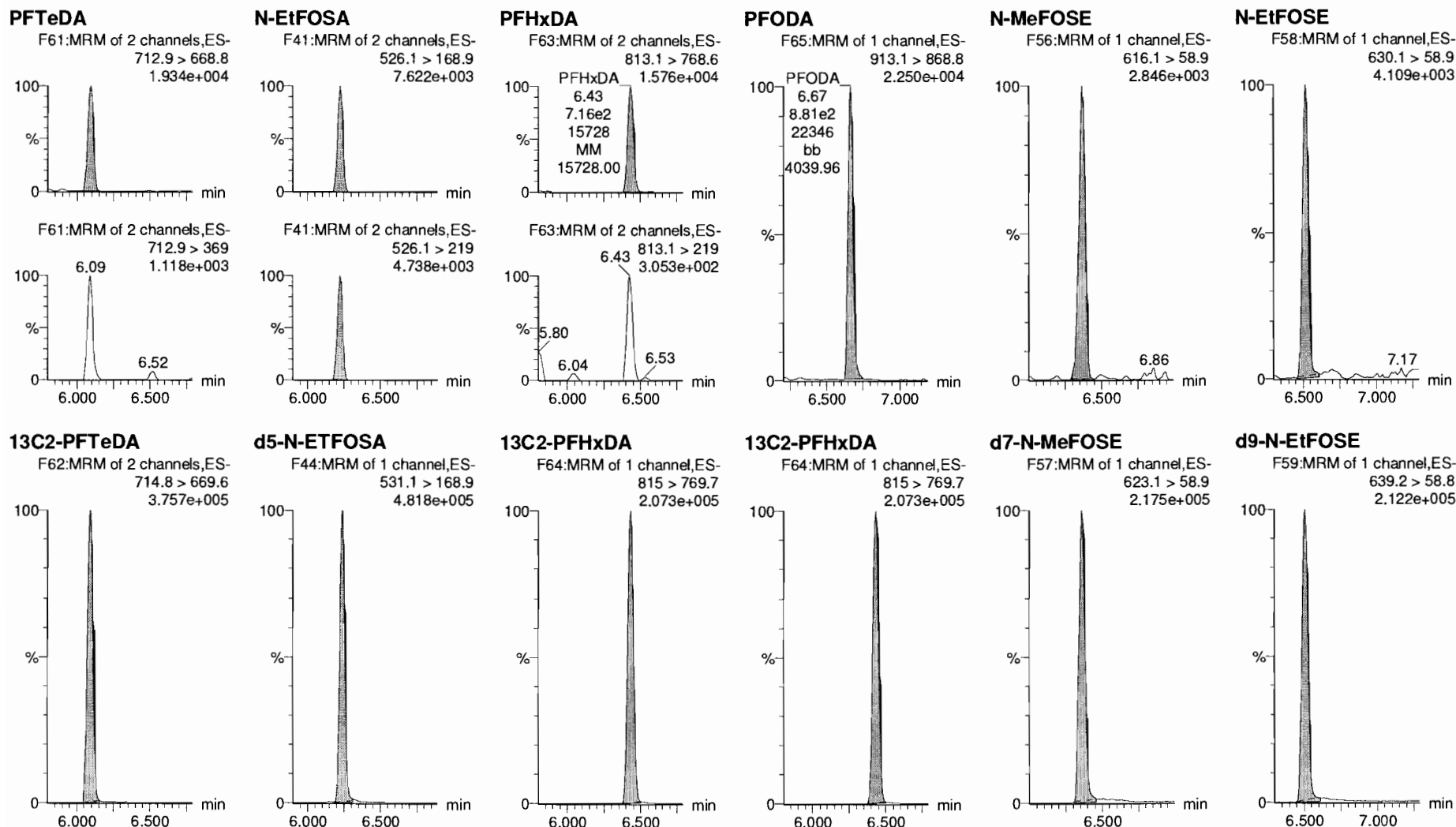


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_3, Date: 04-Jun-2018, Time: 19:22:13, ID: ST180604M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903



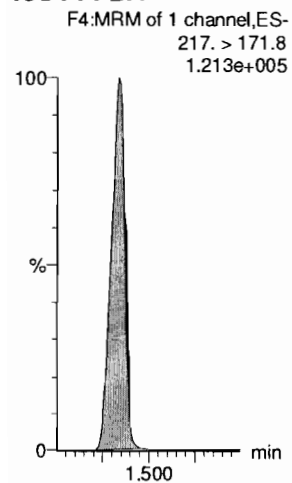
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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

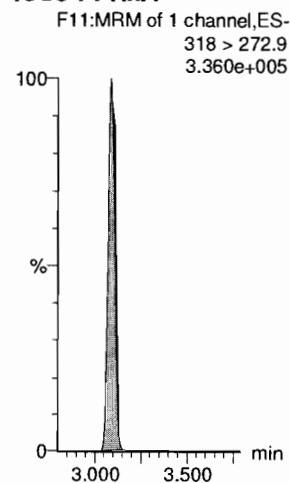
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_3, Date: 04-Jun-2018, Time: 19:22:13, ID: ST180604M2-2 PFC CS-1 18E2903, Description: PFC CS-1 18E2903

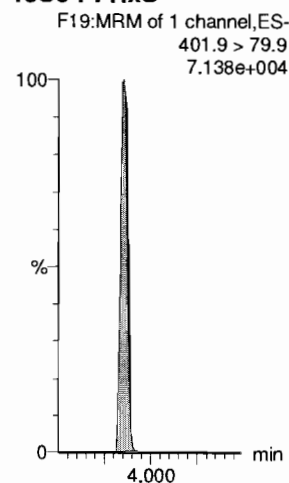
13C4-PFBA



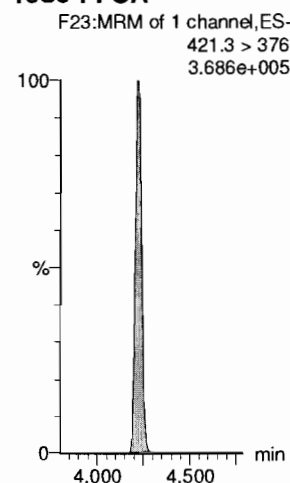
13C5-PFHxA



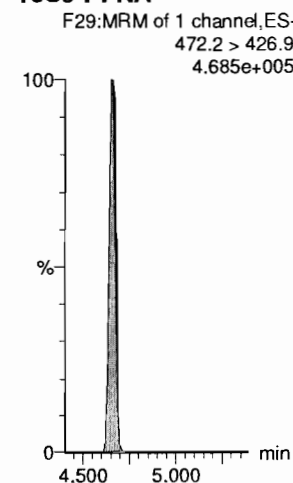
13C3-PFHxS



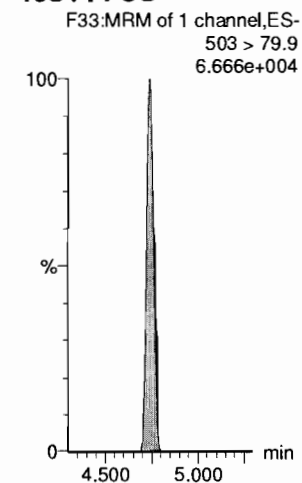
13C8-PFOA



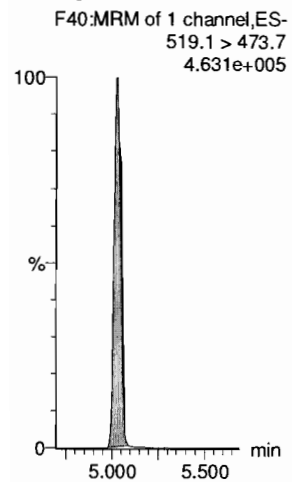
13C9-PFNA



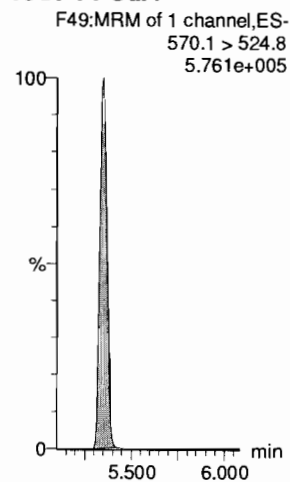
13C4-PFOS



13C6-PFDA



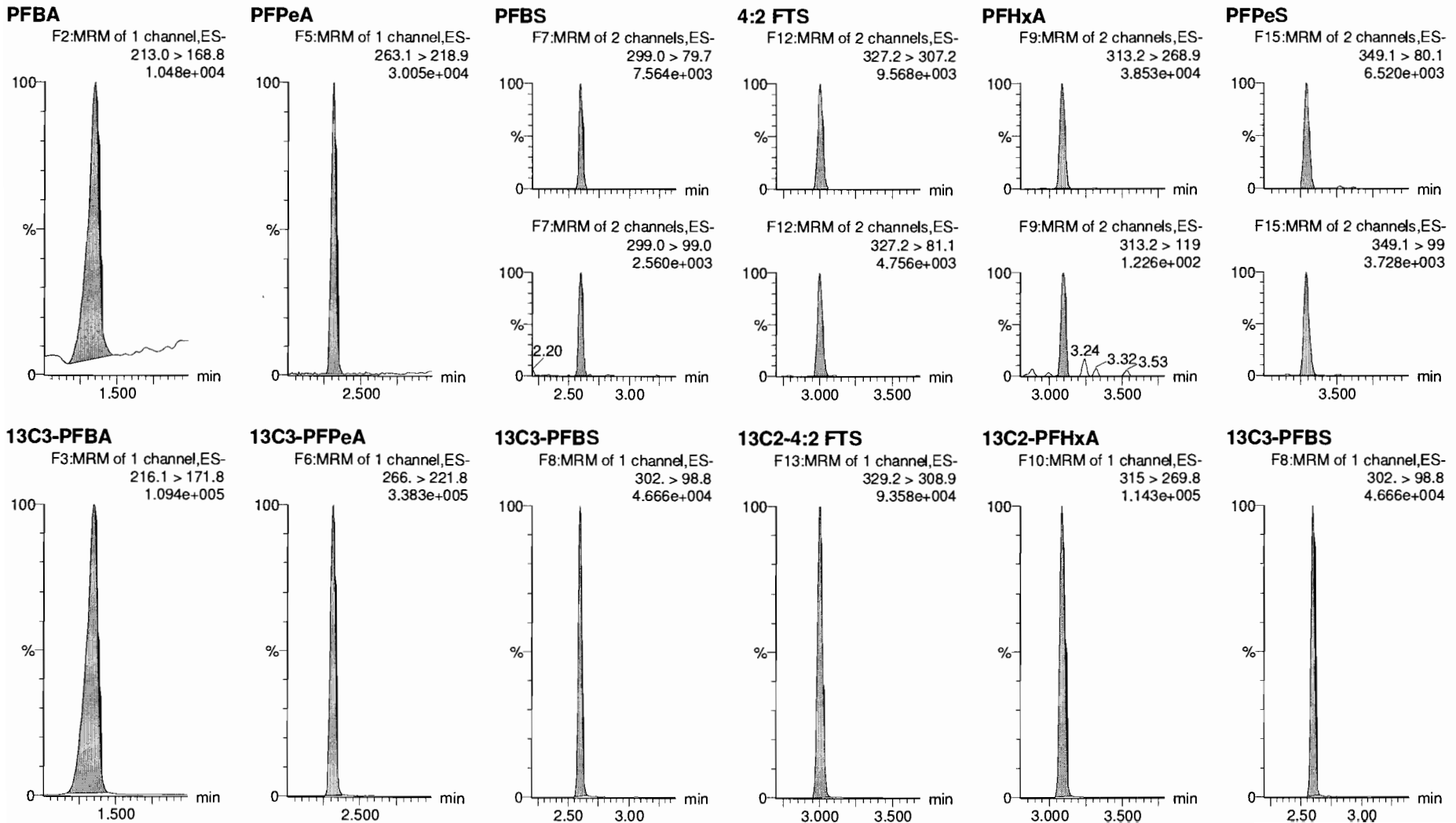
13C7-PFudA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_4, Date: 04-Jun-2018, Time: 19:32:43, ID: ST180604M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904



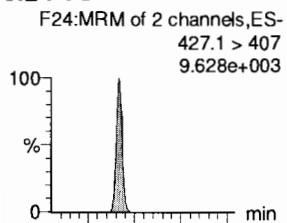
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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

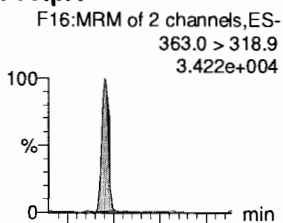
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Name: 180604M2_4, Date: 04-Jun-2018, Time: 19:32:43, ID: ST180604M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

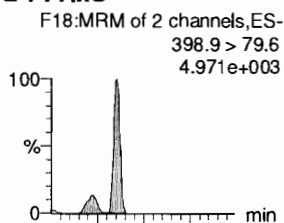
6:2 FTS



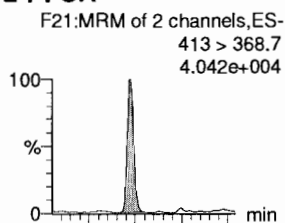
PFHpA



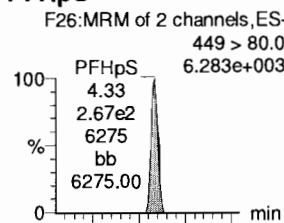
L-PFHxS



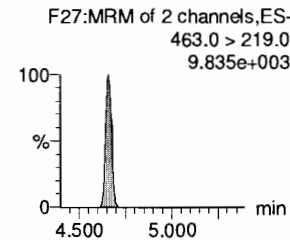
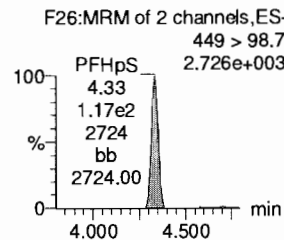
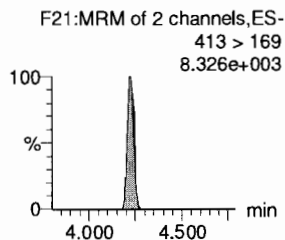
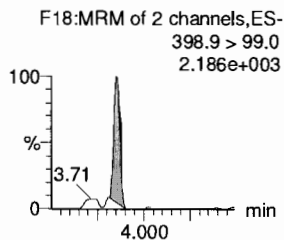
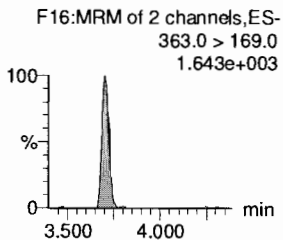
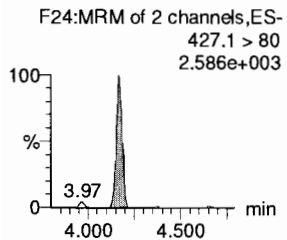
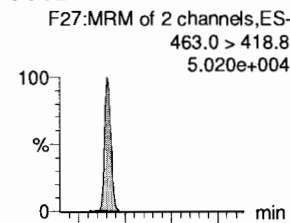
L-PFOA



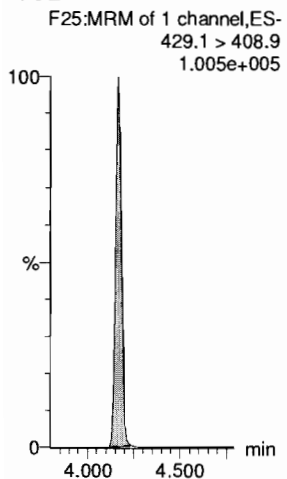
PFHpS



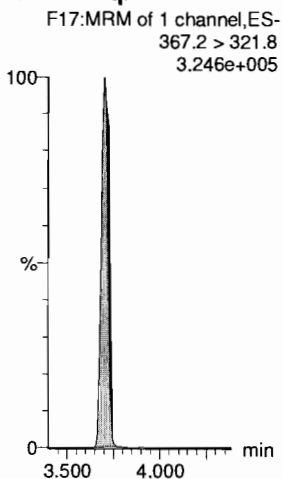
PFNA



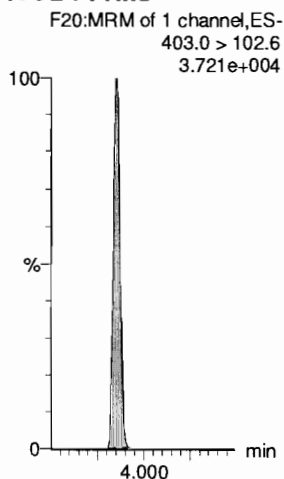
13C2-6:2 FTS



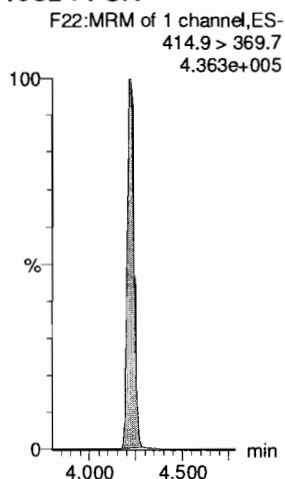
13C4-PFHpA



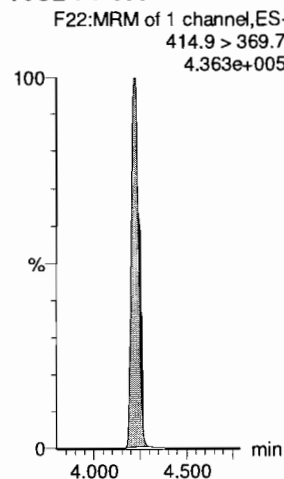
18O2-PFHxS



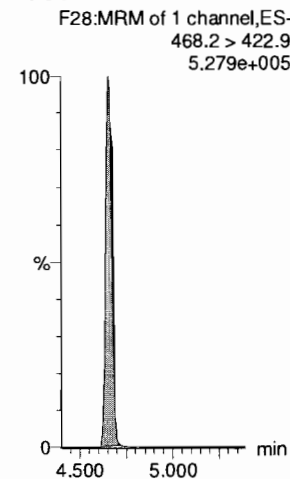
13C2-PFOA



13C2-PFOA



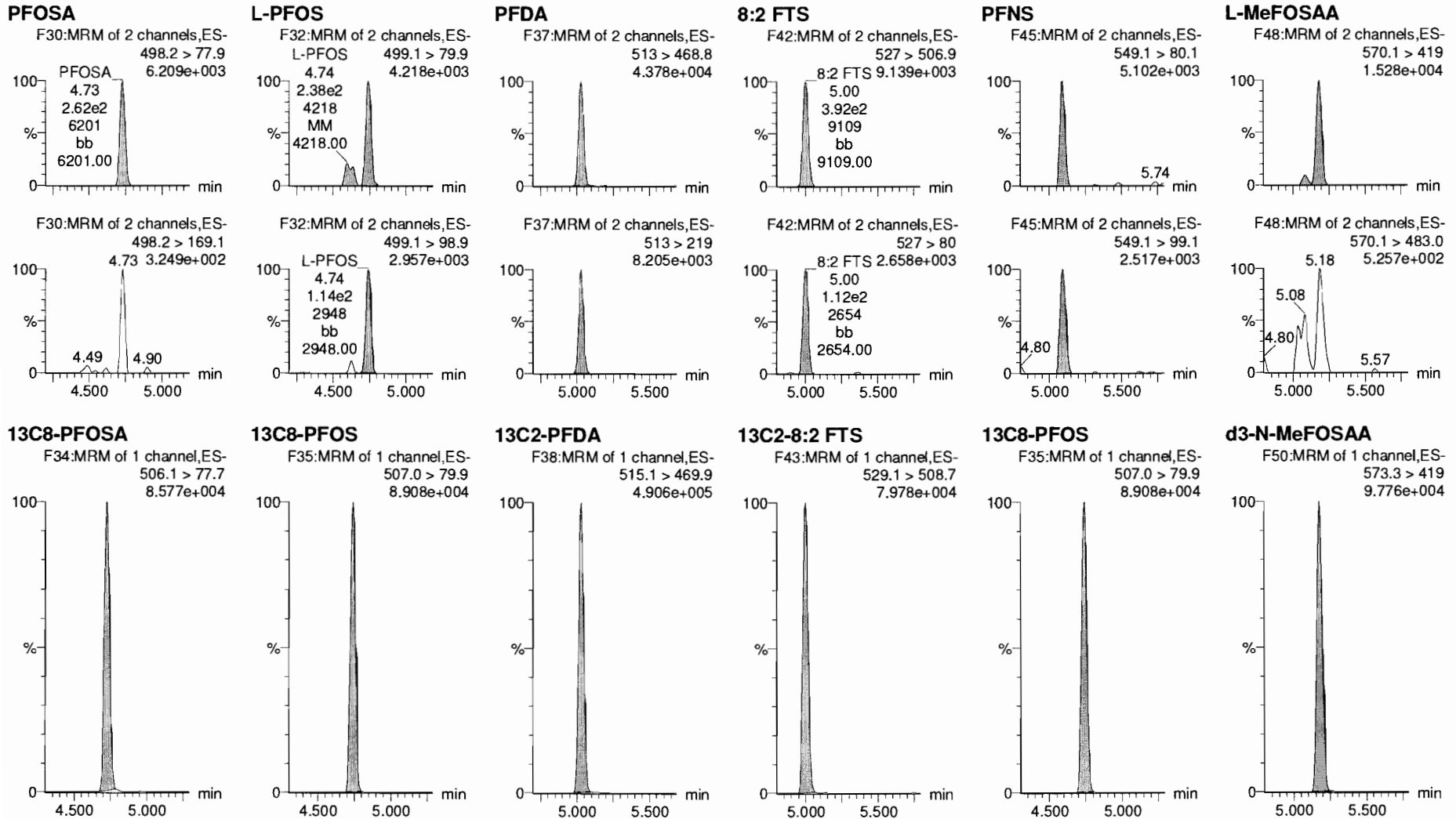
13C5-PFNA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_4, Date: 04-Jun-2018, Time: 19:32:43, ID: ST180604M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904



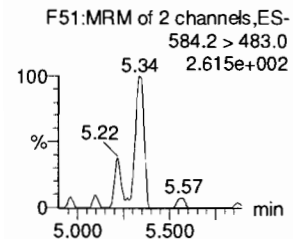
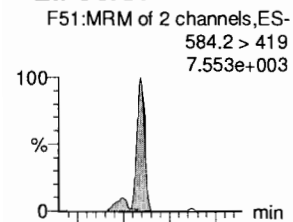
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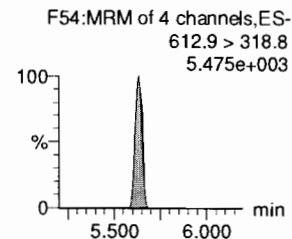
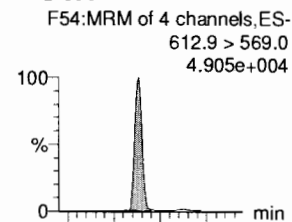
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_4, Date: 04-Jun-2018, Time: 19:32:43, ID: ST180604M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

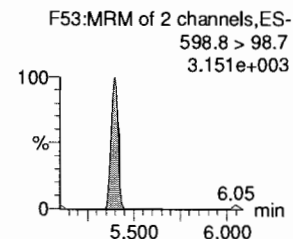
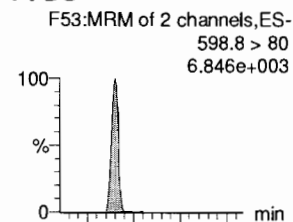
L-EtFOSAA



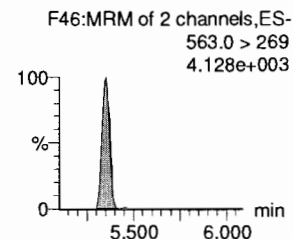
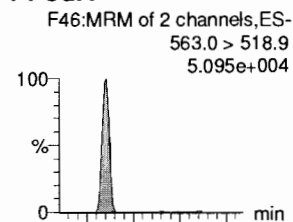
PFDoA



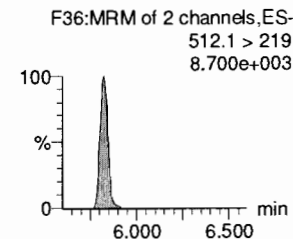
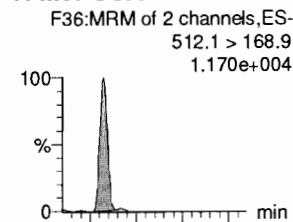
PFDS



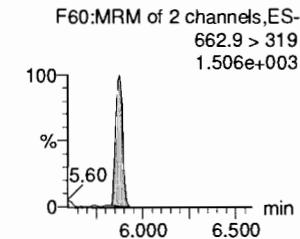
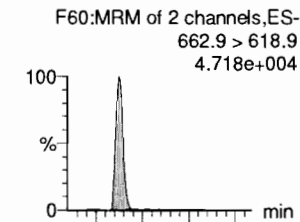
PFUdA



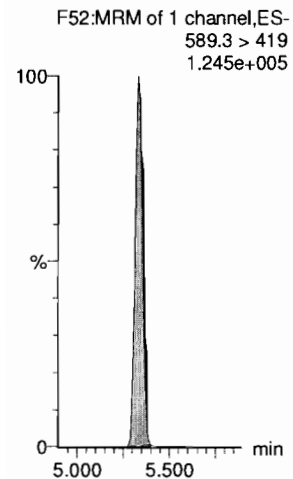
N-MeFOSA



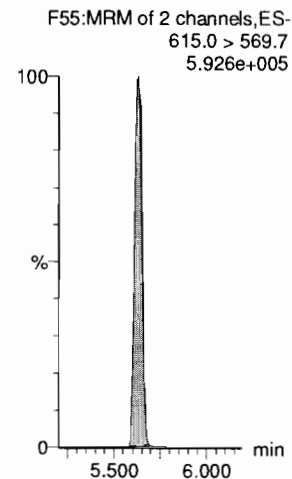
PFTrDA



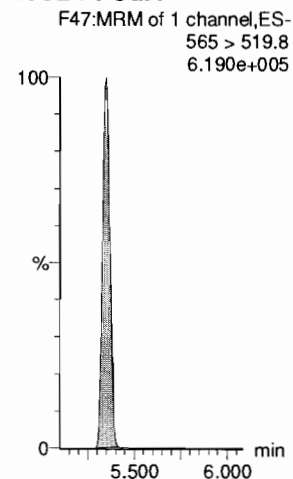
d5-N-EtFOSAA



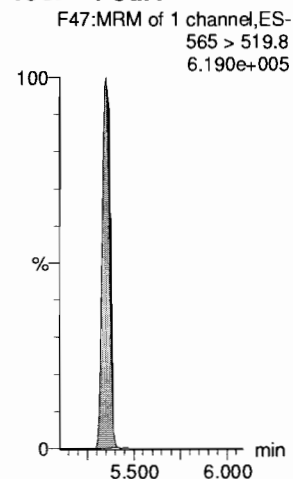
13C2-PFDoA



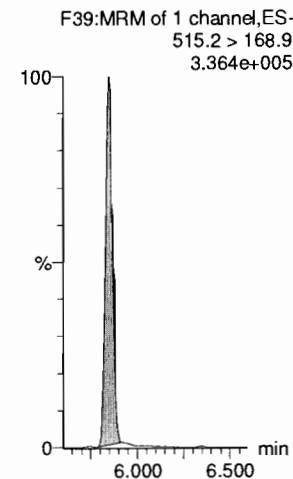
13C2-PFUdA



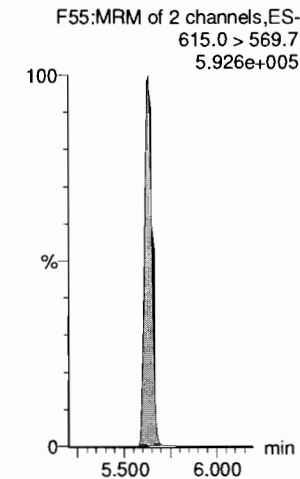
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

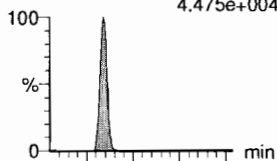
Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

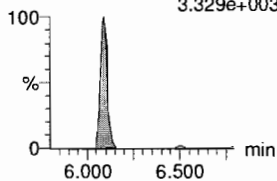
Name: 180604M2_4, Date: 04-Jun-2018, Time: 19:32:43, ID: ST180604M2-3 PFC CS0 18E2904, Description: PFC CS0 18E2904

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
4.475e+004

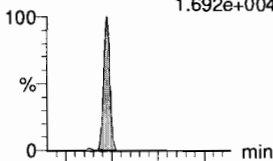


F61:MRM of 2 channels,ES-
712.9 > 369
3.329e+003

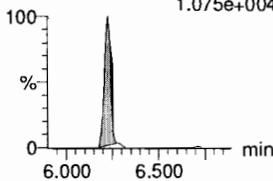


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
1.692e+004

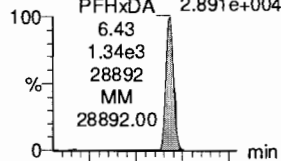


F41:MRM of 2 channels,ES-
526.1 > 219
1.075e+004

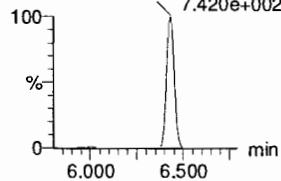


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
2.891e+004

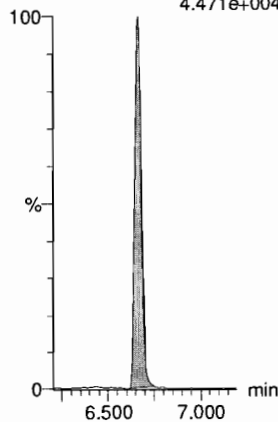


F63:MRM of 2 channels,ES-
813.1 > 219
7.420e+002



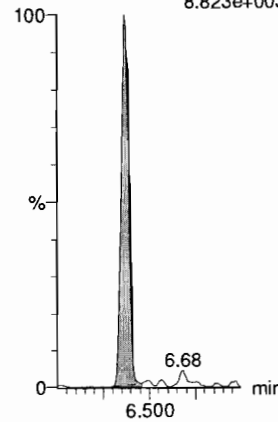
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
4.471e+004



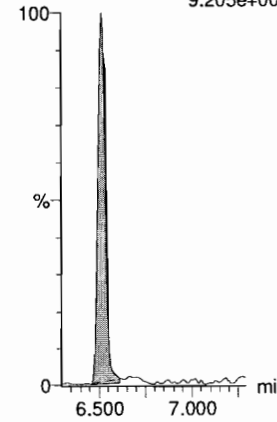
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
8.823e+003



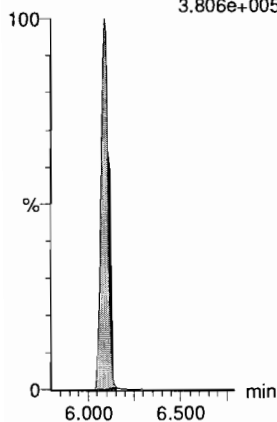
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
9.205e+003



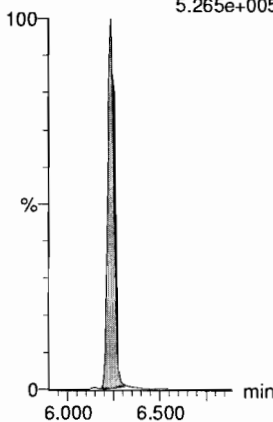
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
3.806e+005



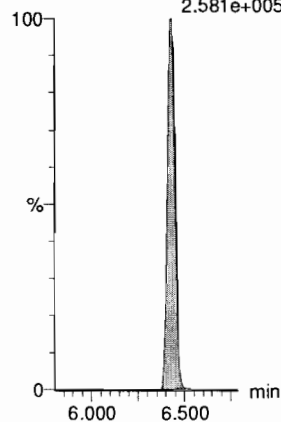
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
5.265e+005



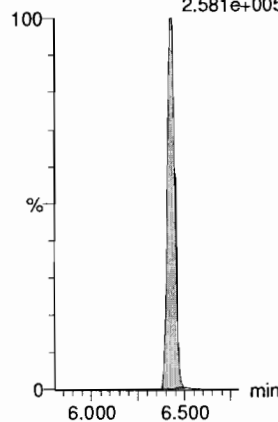
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.581e+005



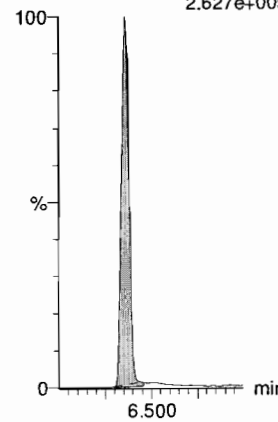
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.581e+005



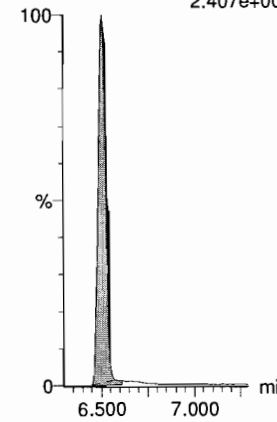
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.627e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.407e+005



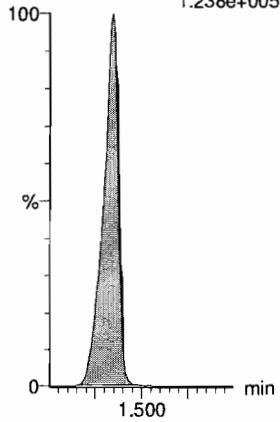
Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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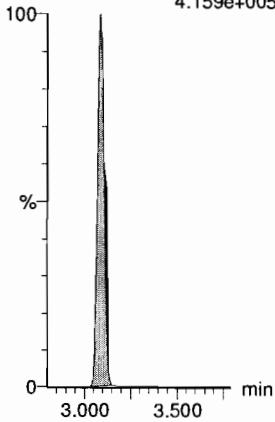
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.238e+005



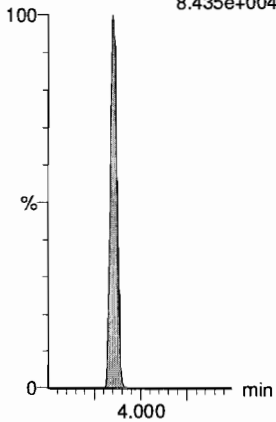
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
4.159e+005



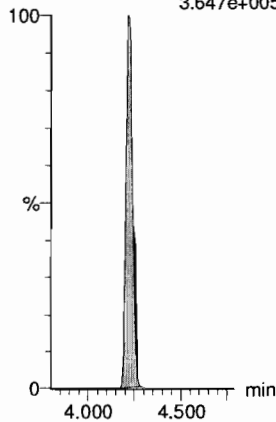
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
8.435e+004



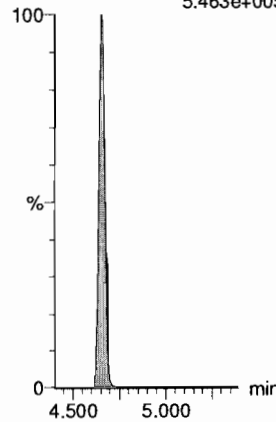
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
3.647e+005



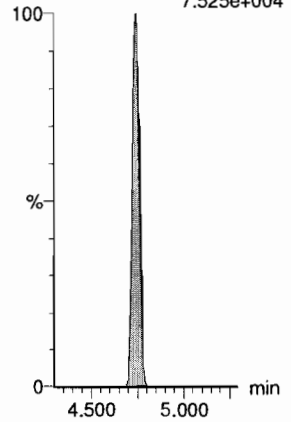
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
5.463e+005



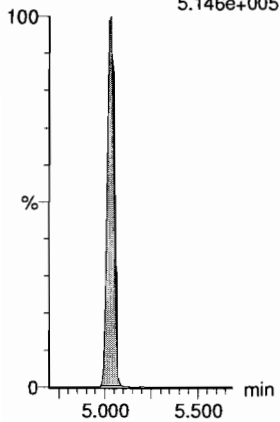
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
7.525e+004



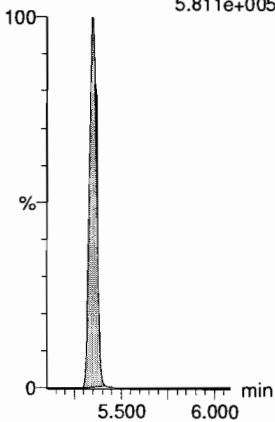
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
5.146e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
5.811e+005

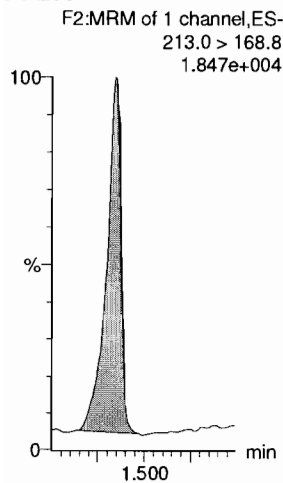


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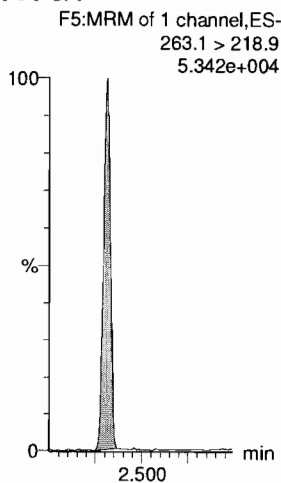
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Name: 180604M2_5, Date: 04-Jun-2018, Time: 19:43:08, ID: ST180604M2-4 PFC CS1 18E2905, Description: PFC CS1 18E2905

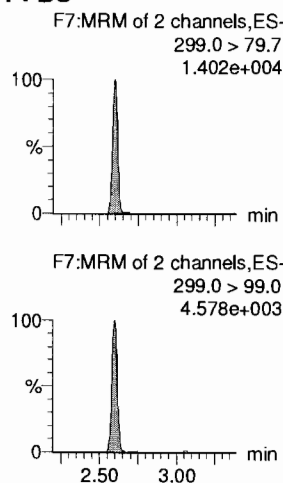
PFBA



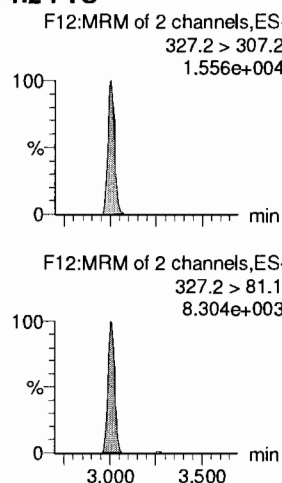
PFPeA



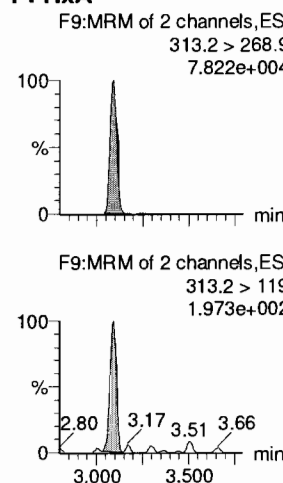
PFBS



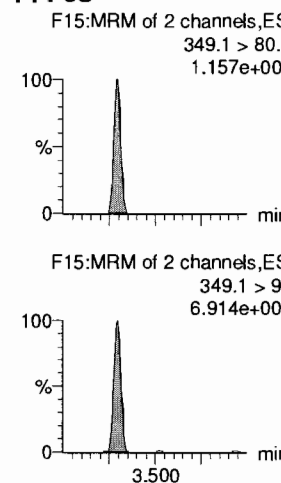
4:2 FTS



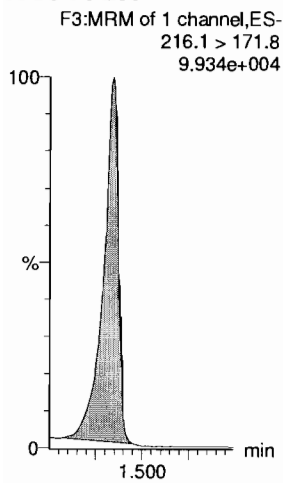
PFHxA



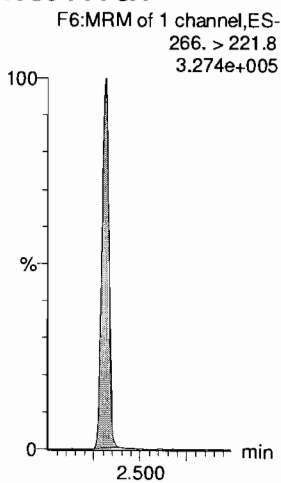
PFPeS



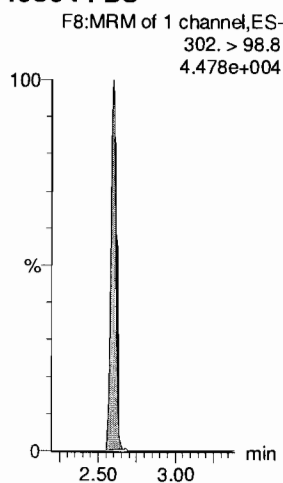
13C3-PFBA



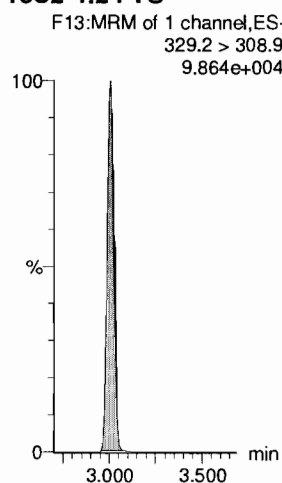
13C3-PFPeA



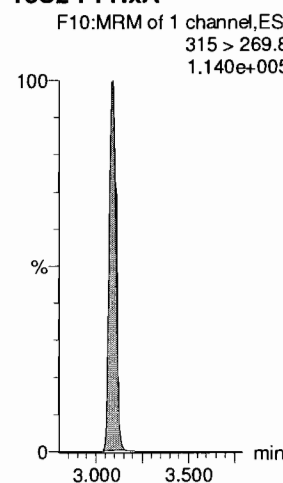
13C3-PFBS



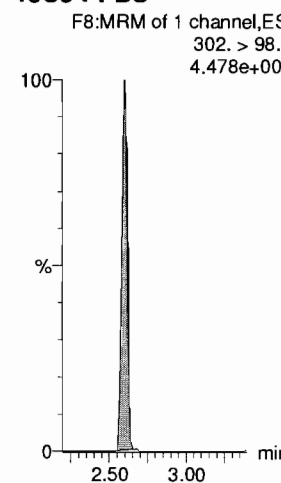
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS

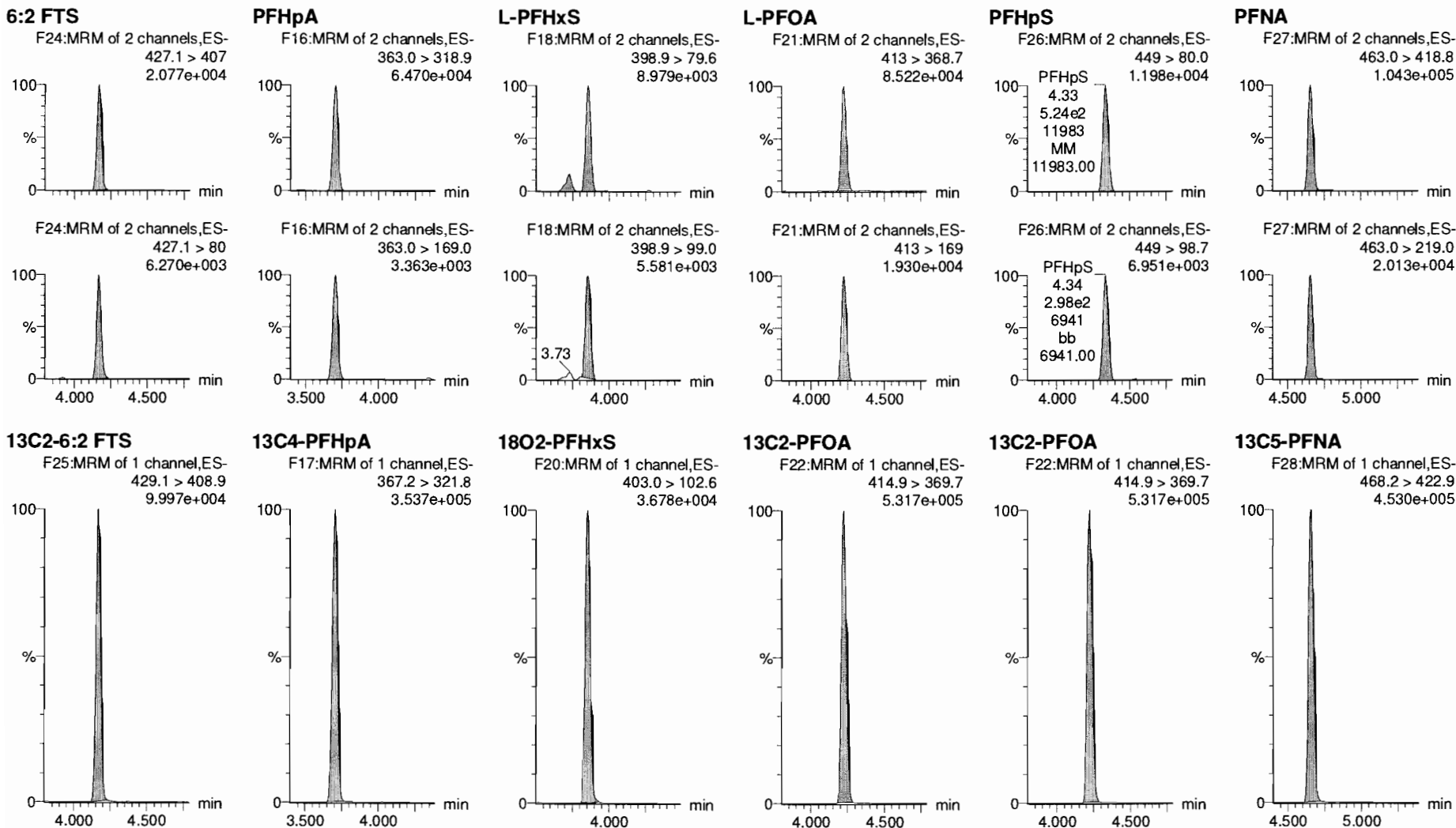


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

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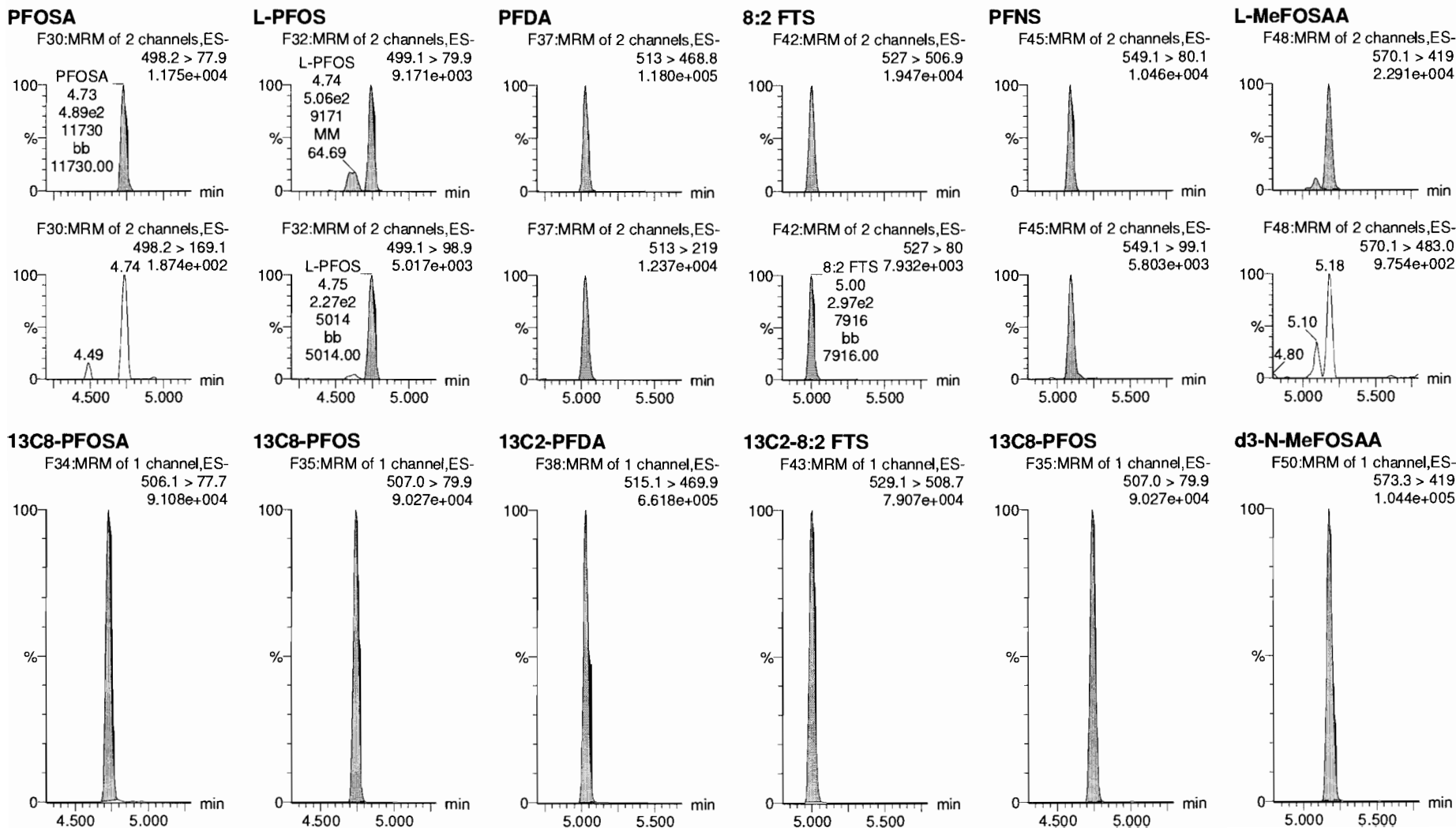
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Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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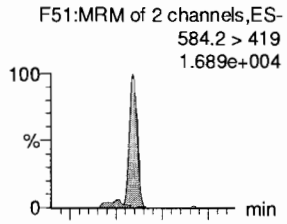


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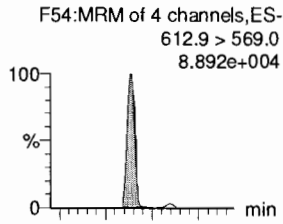
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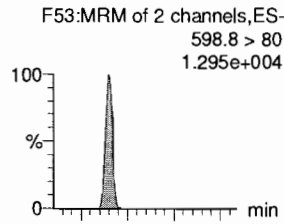
L-EtFOSAA



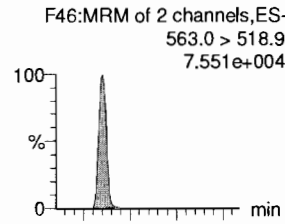
PFDoA



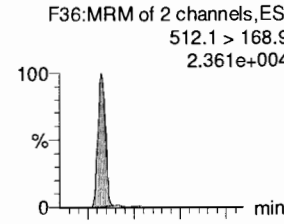
PFDS



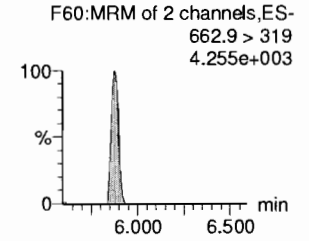
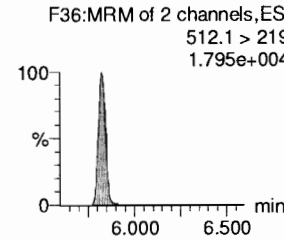
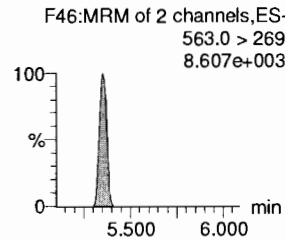
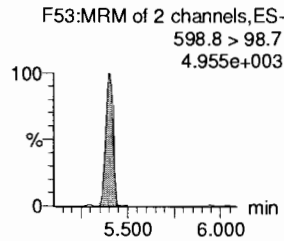
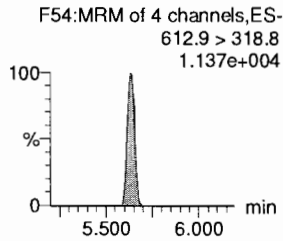
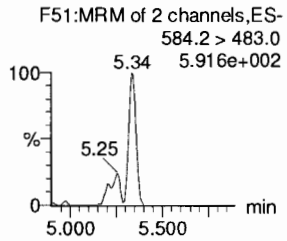
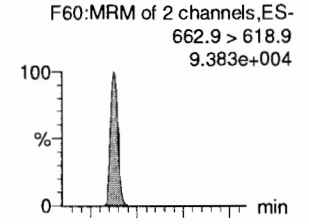
PFUdA



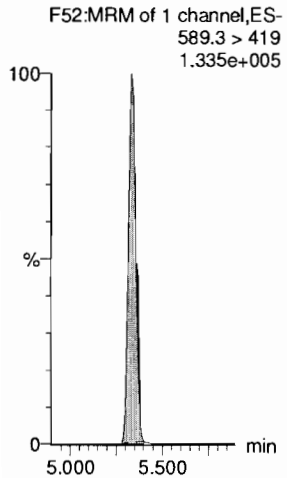
N-MeFOSA



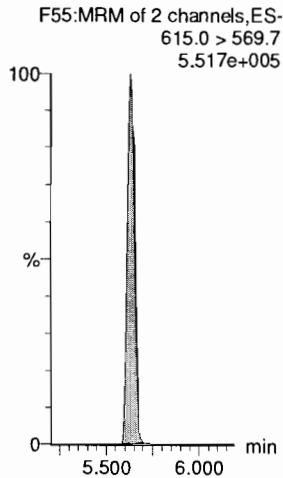
PFTrDA



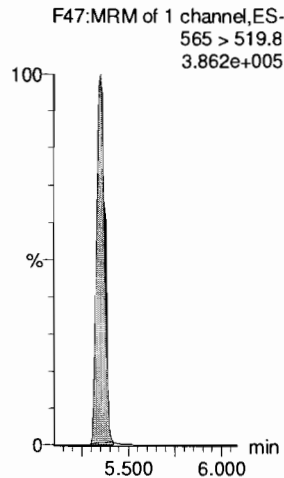
d5-N-EtFOSAA



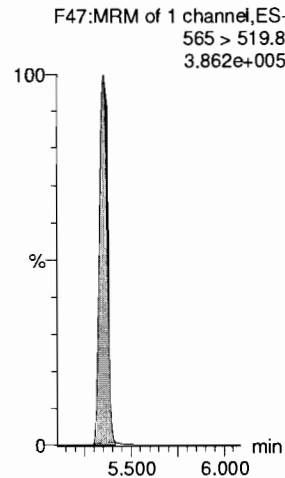
13C2-PFDoA



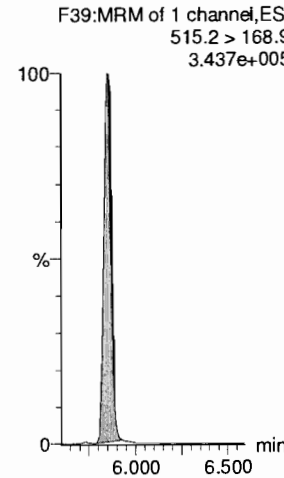
13C2-PFUdA



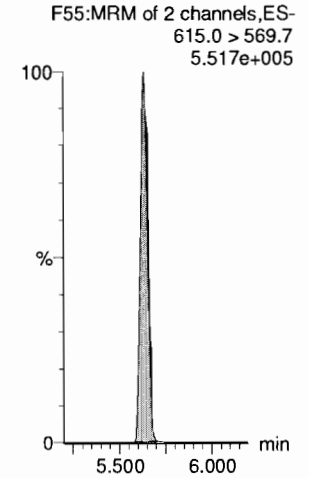
13C2-PFUdA



d3-N-MeFOSA



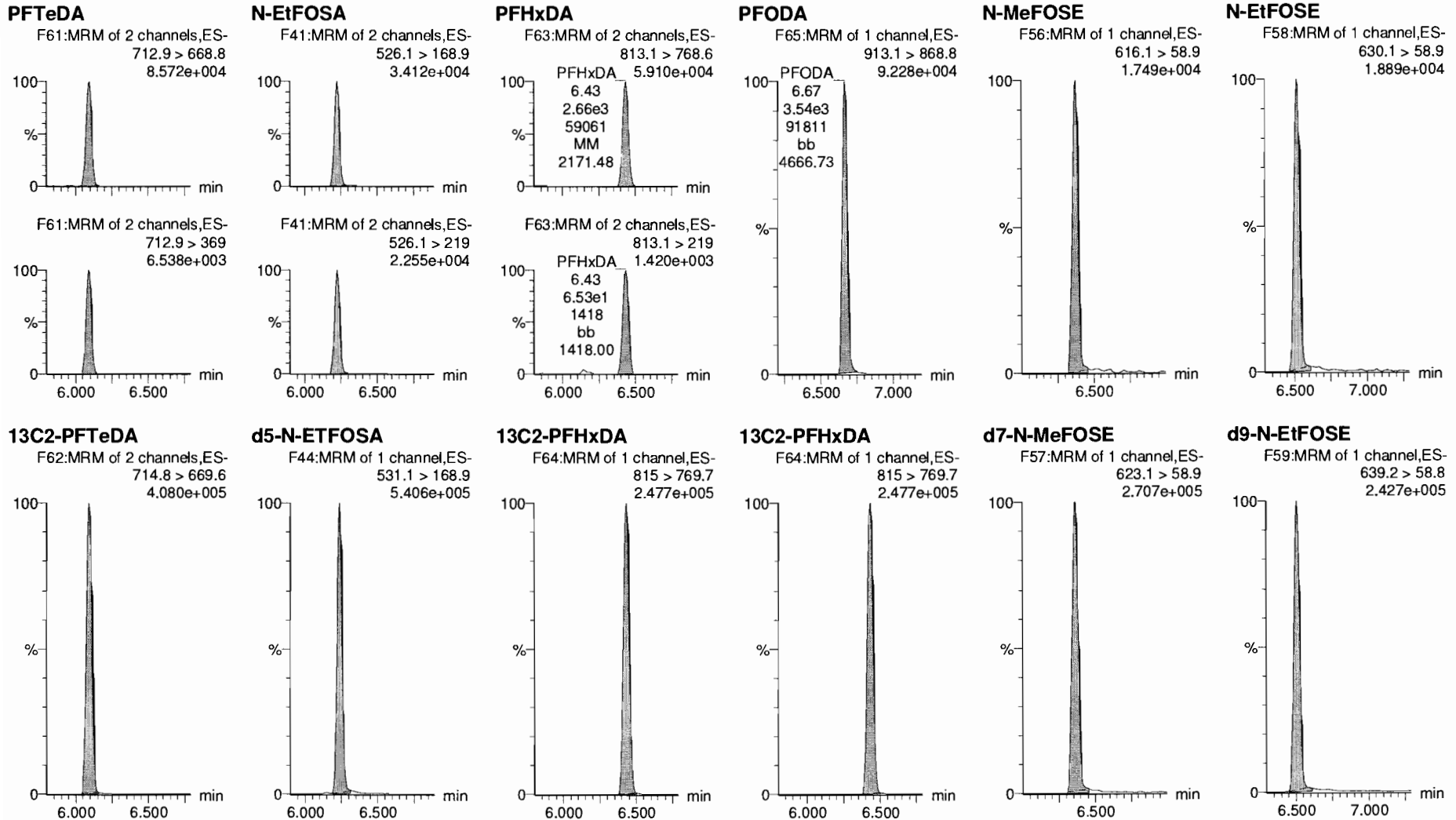
13C2-PFDoA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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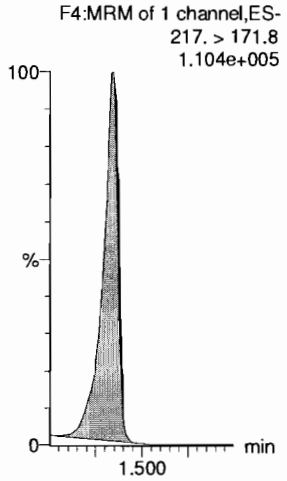
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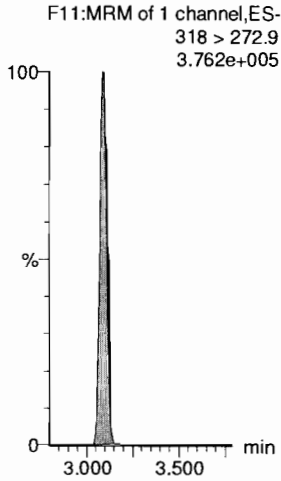
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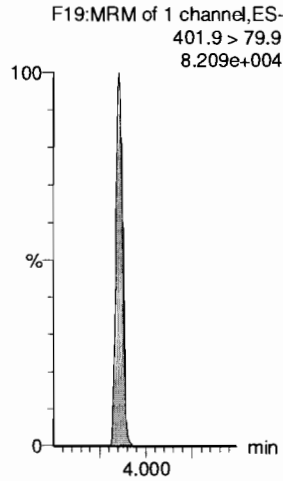
13C4-PFBA



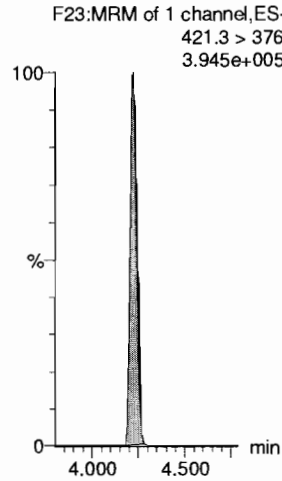
13C5-PFHxA



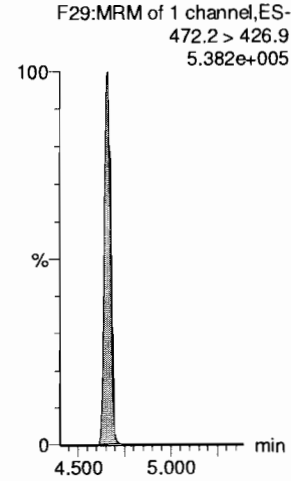
13C3-PFHxS



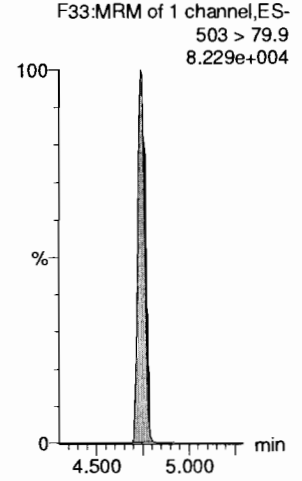
13C8-PFOA



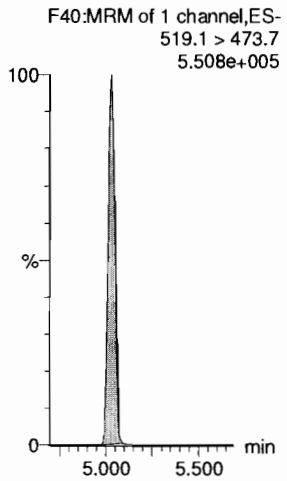
13C9-PFNA



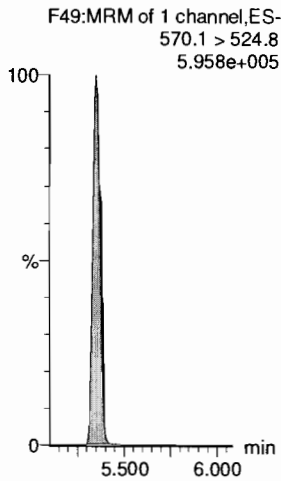
13C4-PFOS



13C6-PFDA



13C7-PFudA



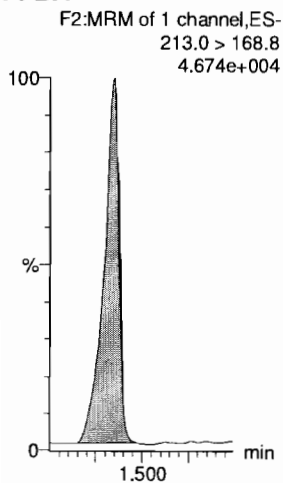
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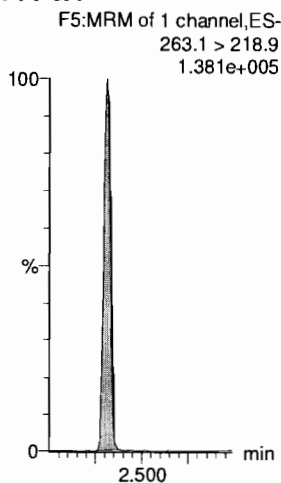
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Name: 180604M2_6, Date: 04-Jun-2018, Time: 19:53:38, ID: ST180604M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

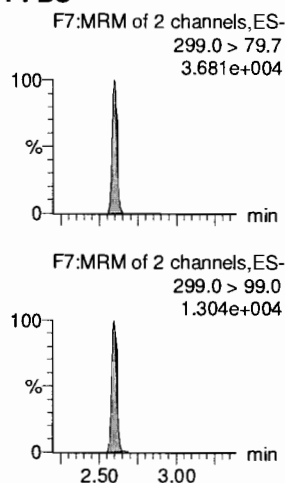
PFBA



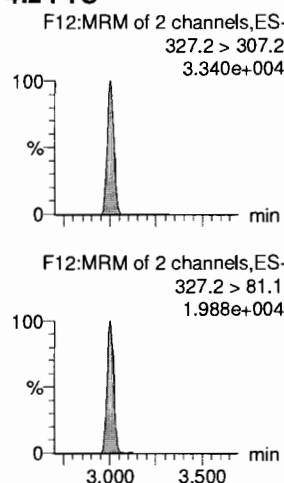
PFPeA



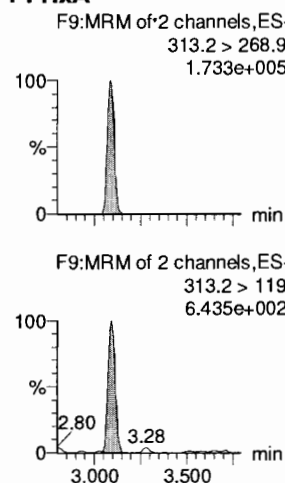
PFBS



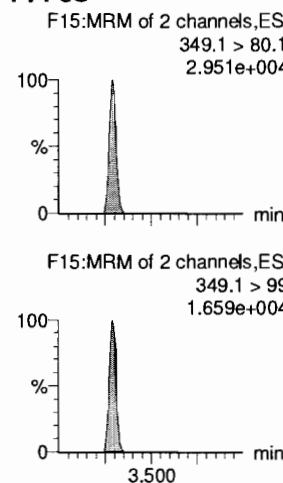
4:2 FTS



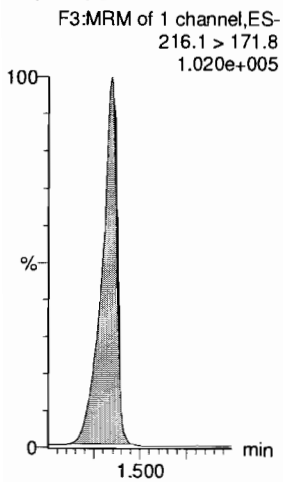
PFHxA



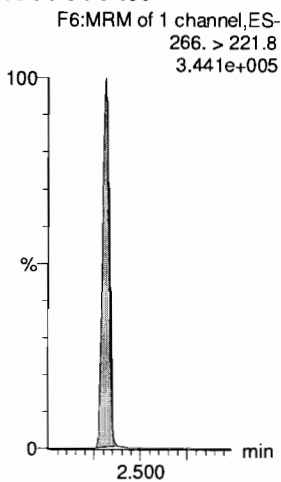
PFPeS



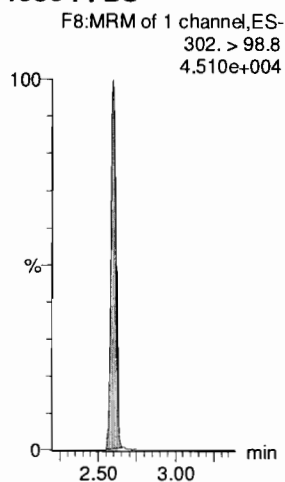
13C3-PFBA



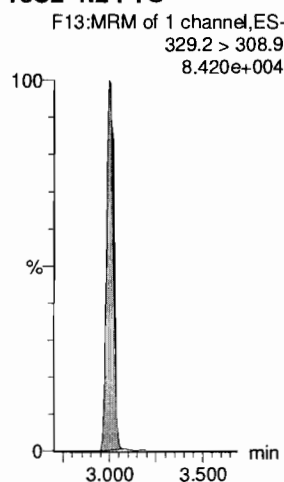
13C3-PFPeA



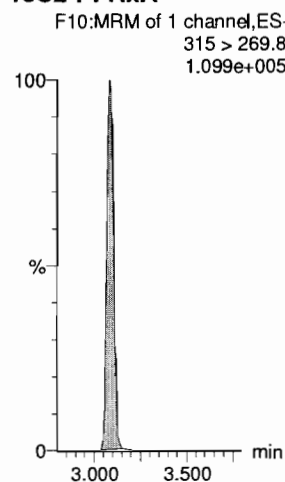
13C3-PFBS



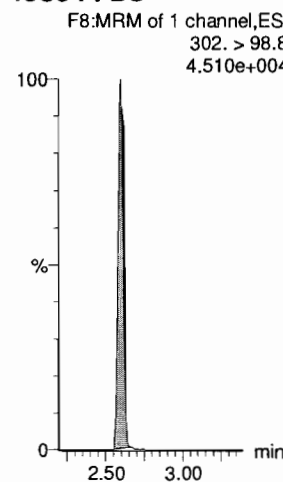
13C2-4:2 FTS



13C2-PFHxA



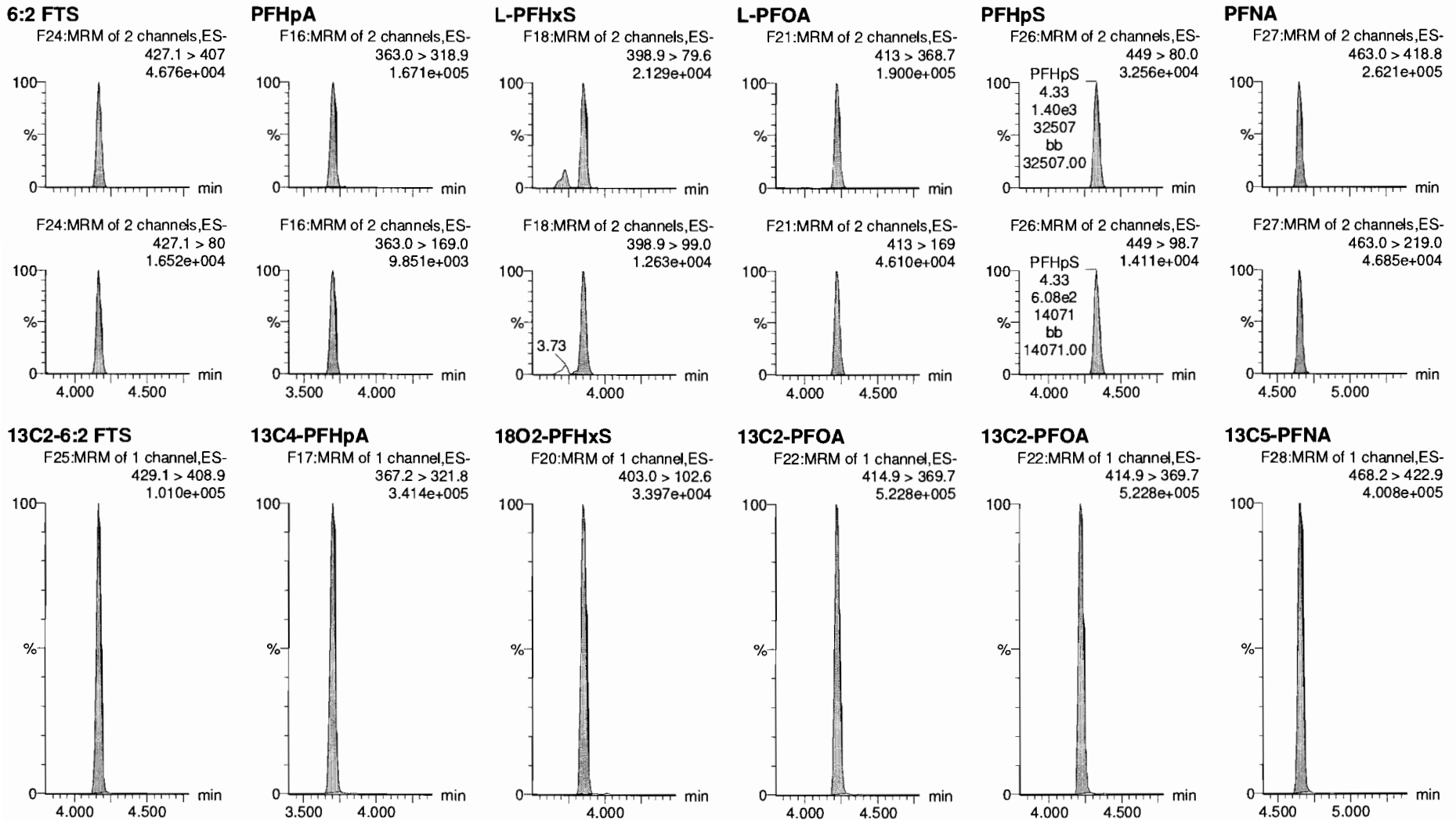
13C3-PFBS



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

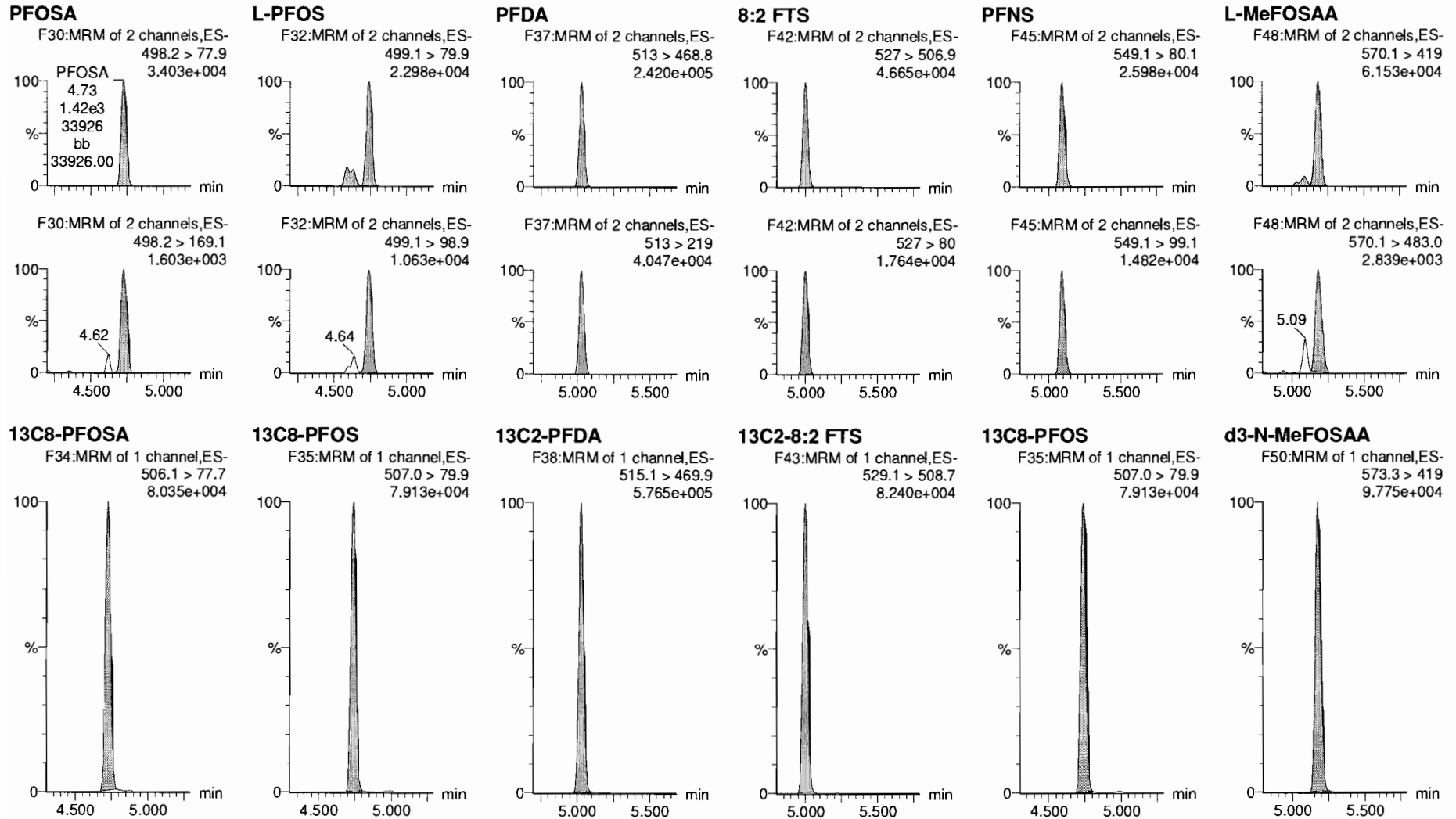
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Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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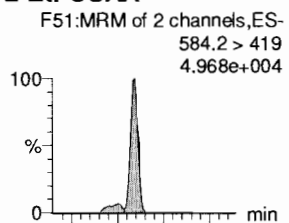
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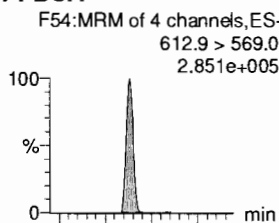
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Name: 180604M2_6, Date: 04-Jun-2018, Time: 19:53:38, ID: ST180604M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

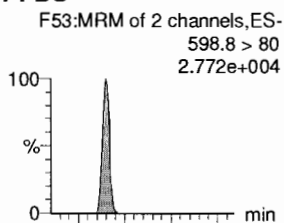
L-EtFOSAA



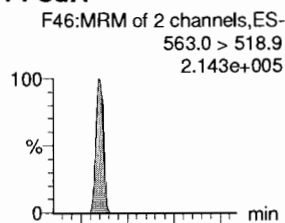
PFDoA



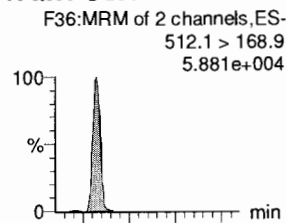
PFDS



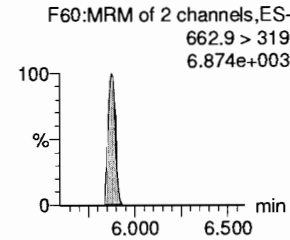
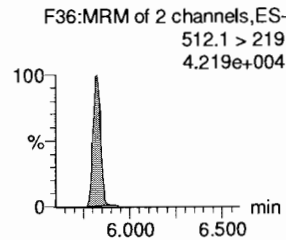
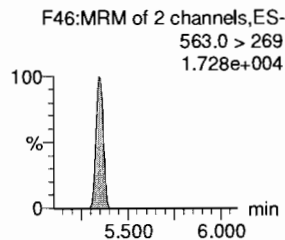
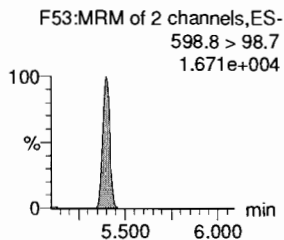
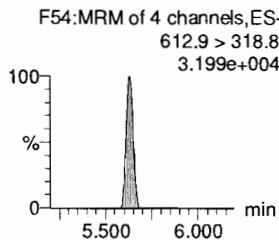
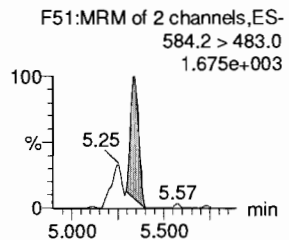
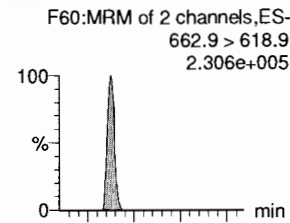
PFUdA



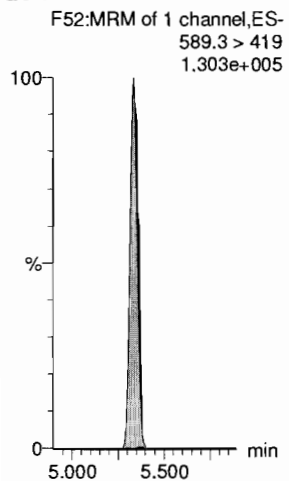
N-MeFOSA



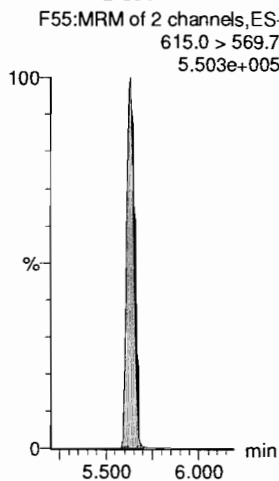
PFTrDA



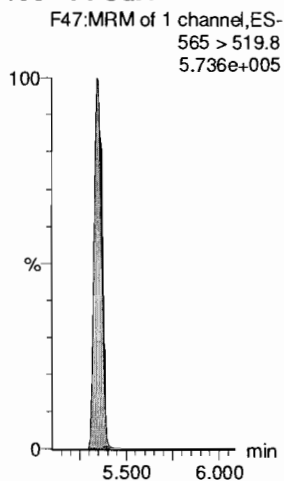
d5-N-EtFOSAA



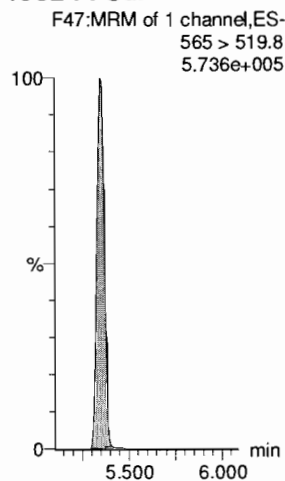
13C2-PFDoA



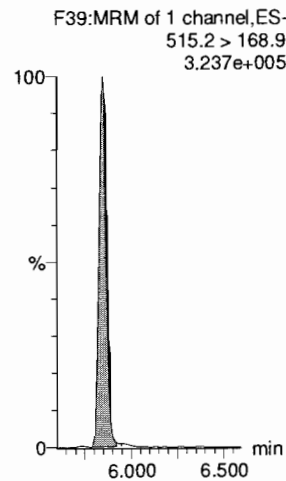
13C2-PFUdA



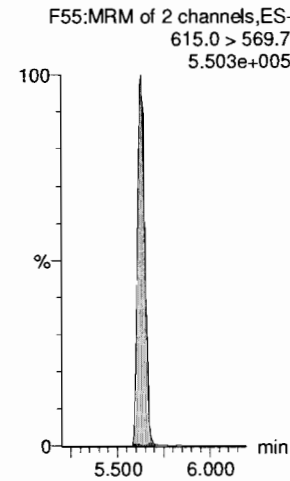
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



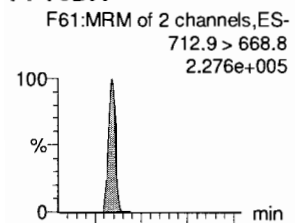
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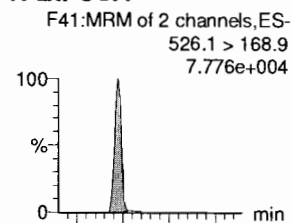
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Name: 180604M2_6, Date: 04-Jun-2018, Time: 19:53:38, ID: ST180604M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

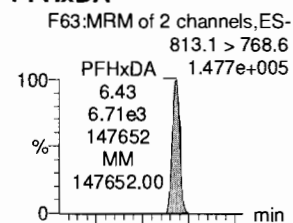
PFTeDA



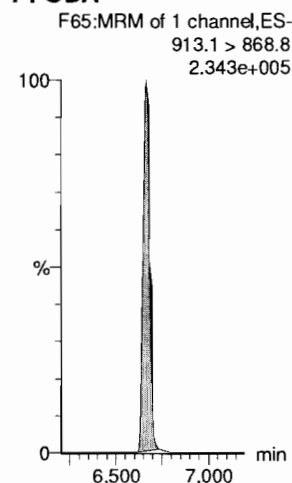
N-EtFOSA



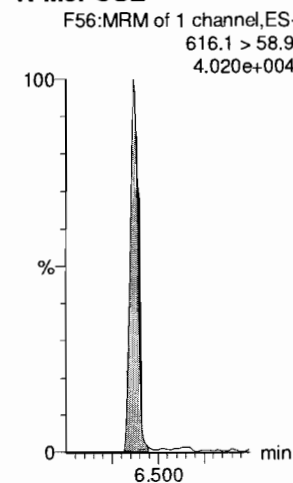
PFHxDA



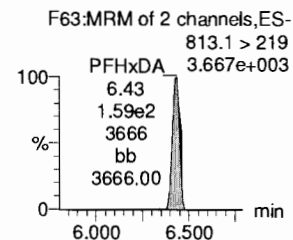
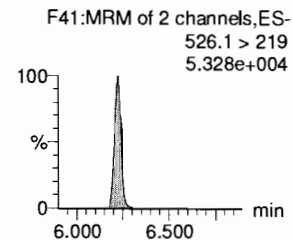
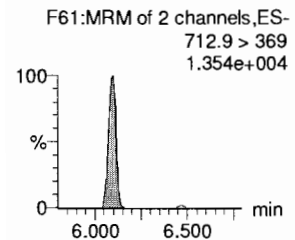
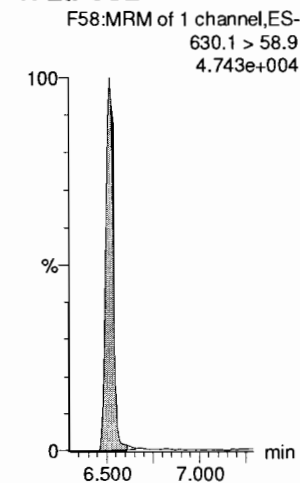
PFODA



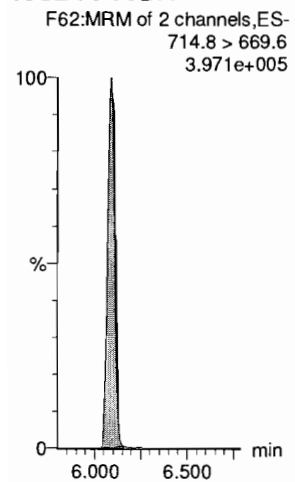
N-MeFOSE



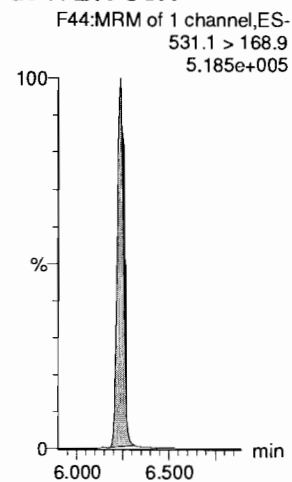
N-EtFOSE



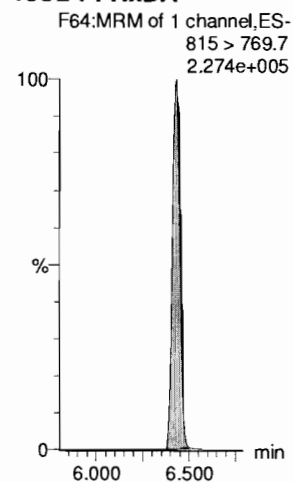
13C2-PFTeDA



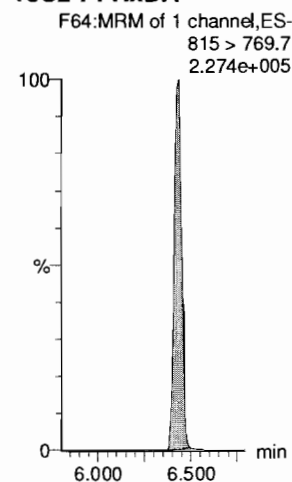
d5-N-ETFOSA



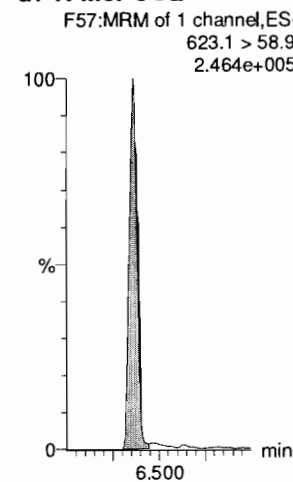
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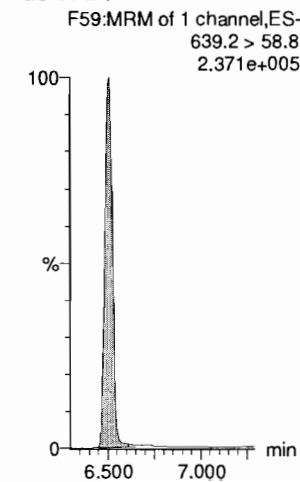
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



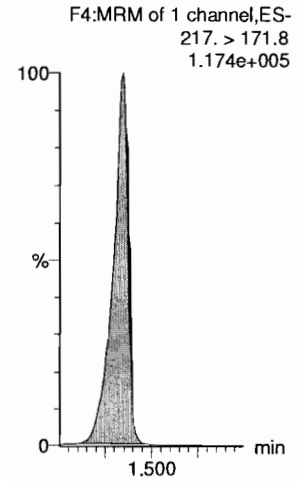
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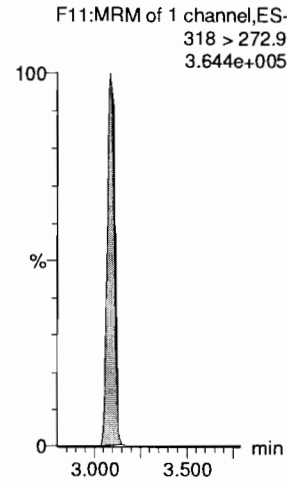
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Name: 180604M2_6, Date: 04-Jun-2018, Time: 19:53:38, ID: ST180604M2-5 PFC CS2 18E2906, Description: PFC CS2 18E2906

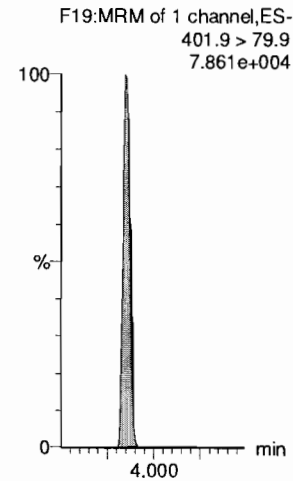
13C4-PFBA



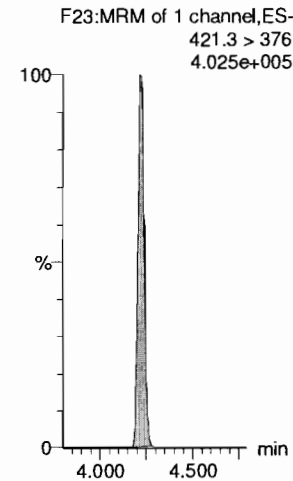
13C5-PFHxA



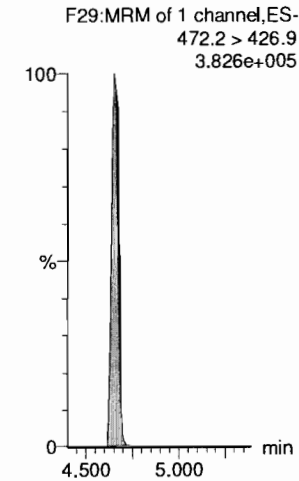
13C3-PFHxS



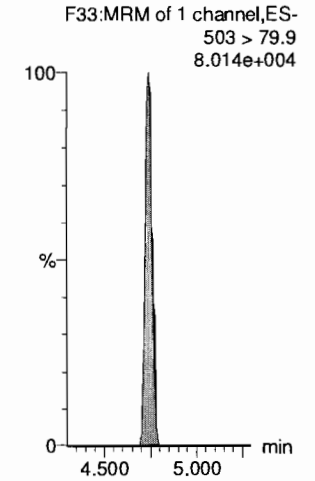
13C8-PFOA



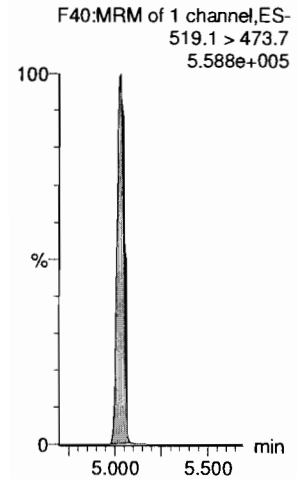
13C9-PFNA



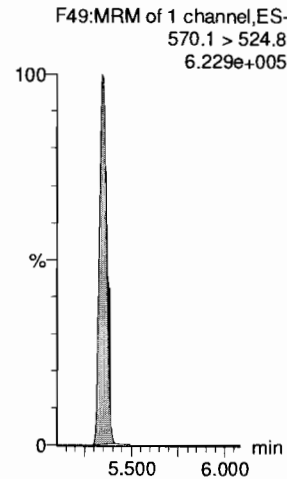
13C4-PFOS



13C6-PFDA



13C7-PFUdA

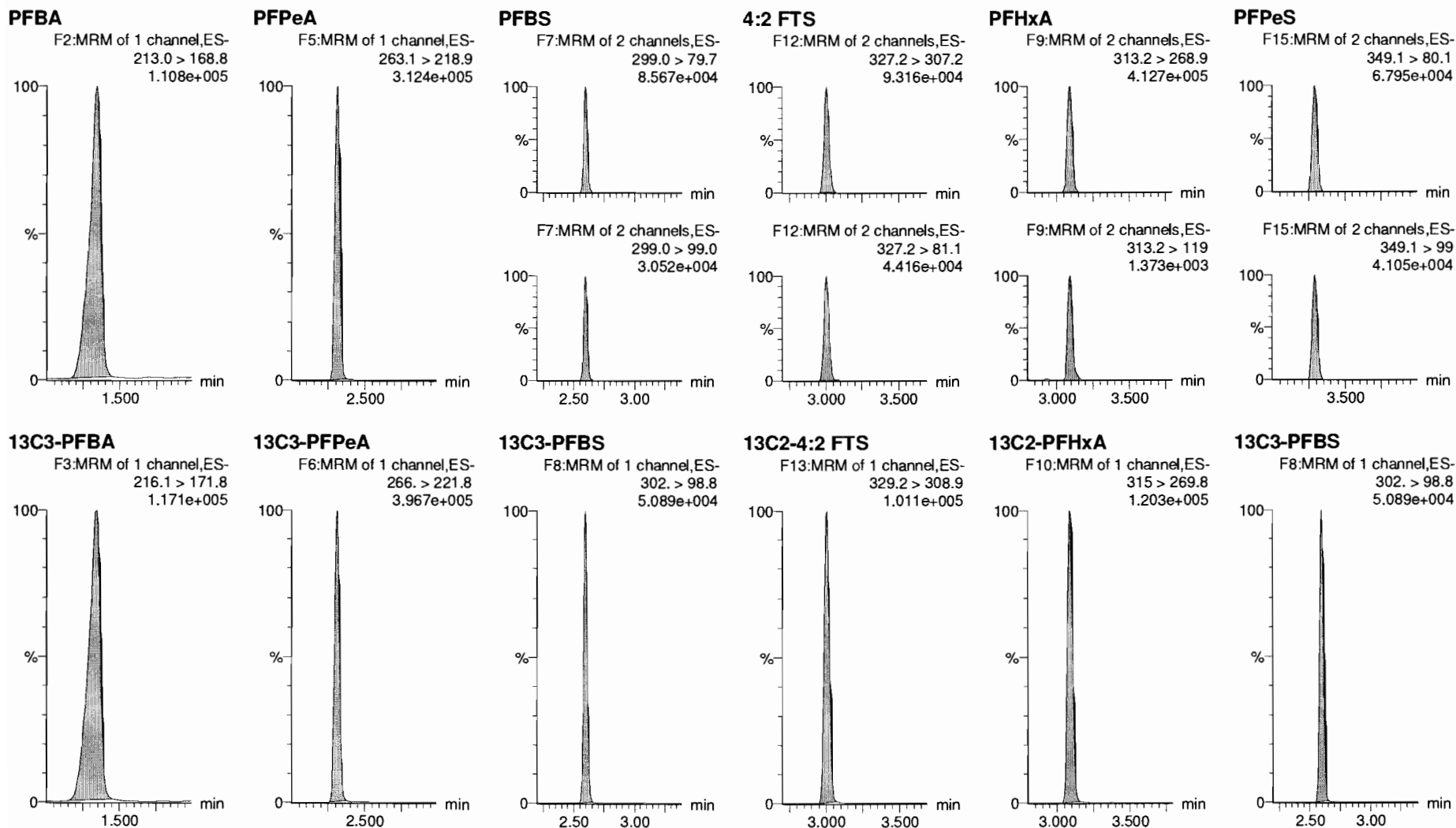


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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907



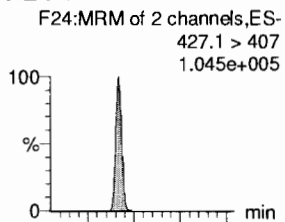
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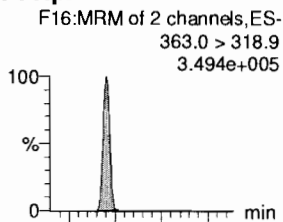
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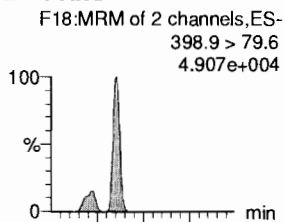
6:2 FTS



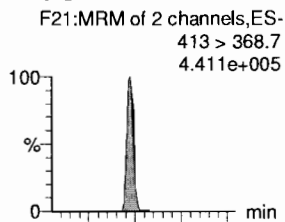
PFHpA



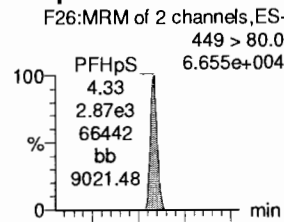
L-PFHxS



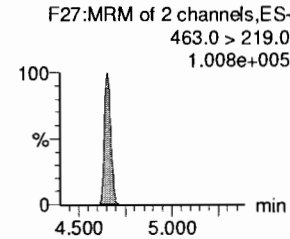
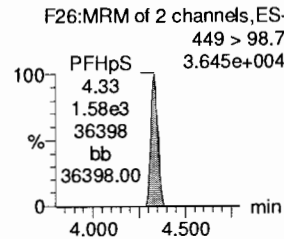
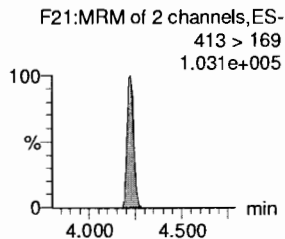
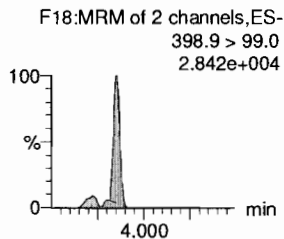
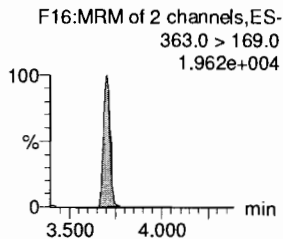
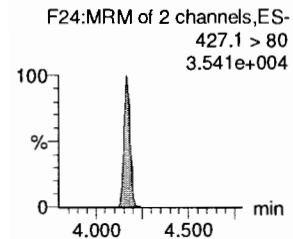
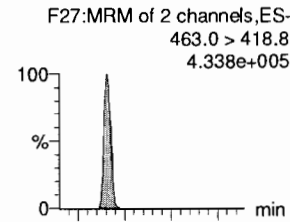
L-PFOA



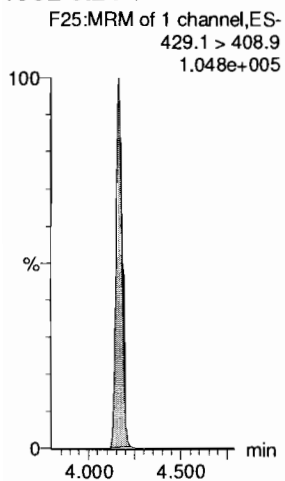
PFHpS



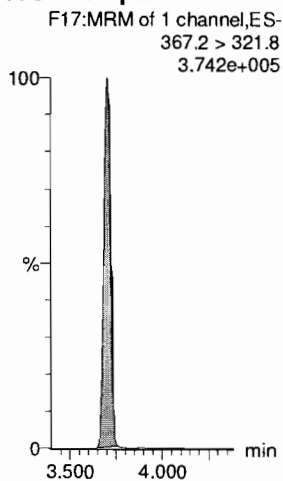
PFNA



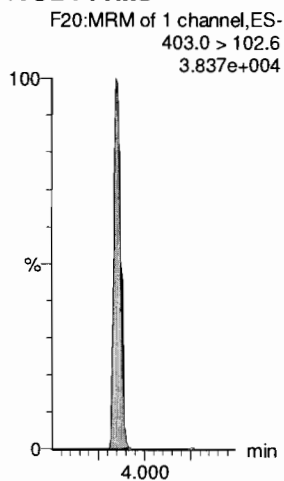
13C2-6:2 FTS



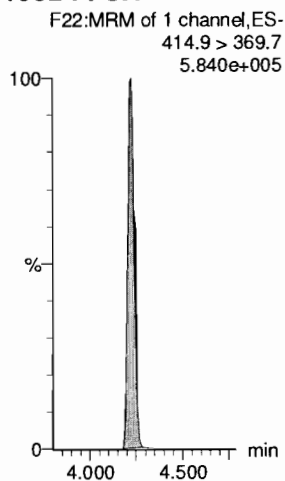
13C4-PFHpA



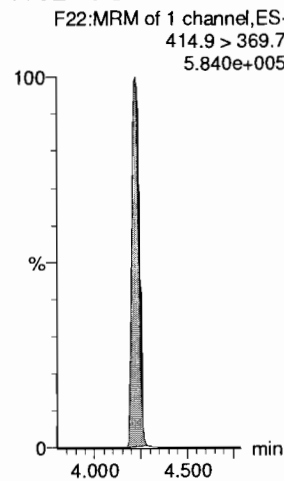
18O2-PFHxS



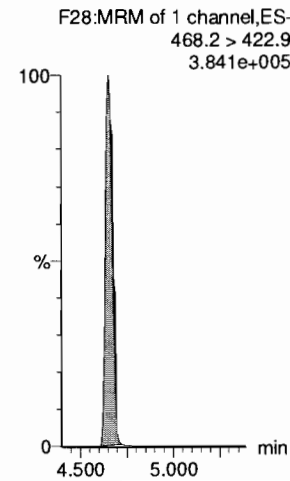
13C2-PFOA



13C2-PFOA



13C5-PFNA



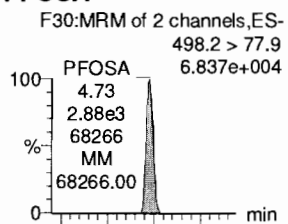
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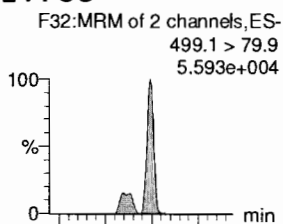
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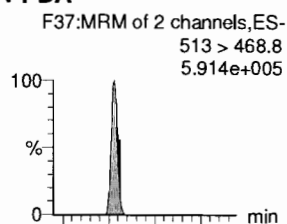
PFOSA



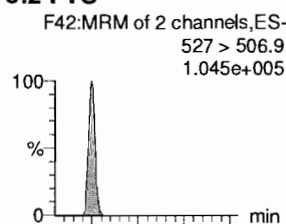
L-PFOS



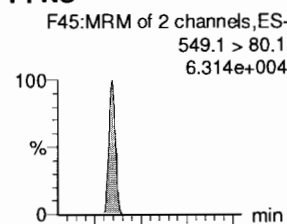
PFDA



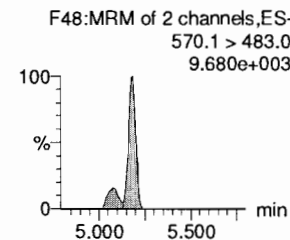
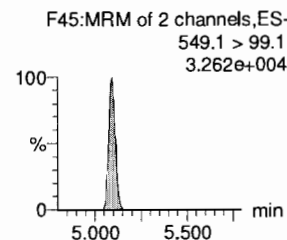
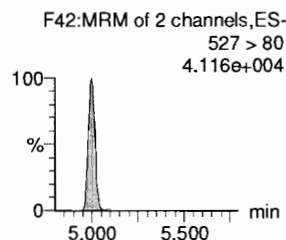
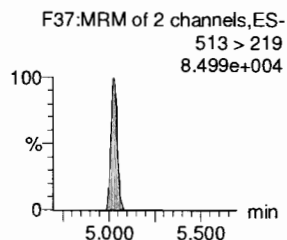
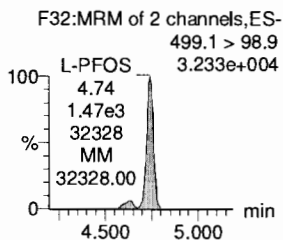
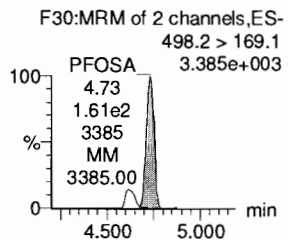
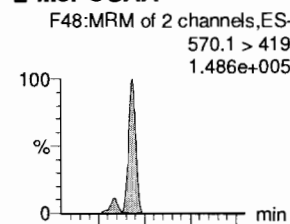
8:2 FTS



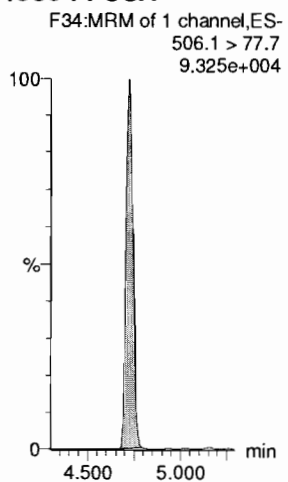
PFNS



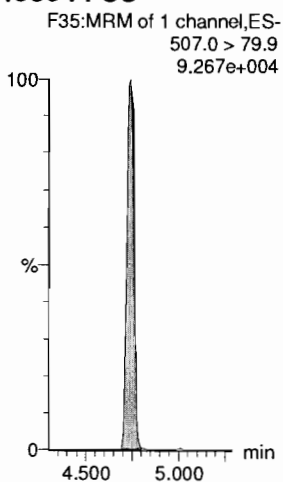
L-MeFOSAA



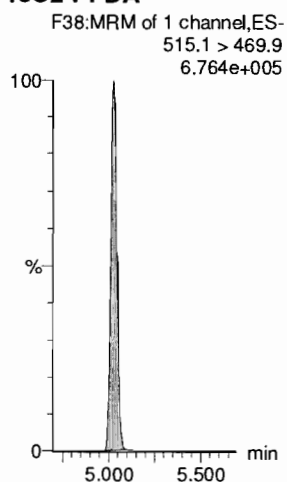
13C8-PFOA



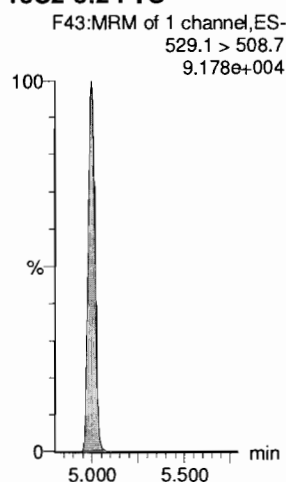
13C8-PFOS



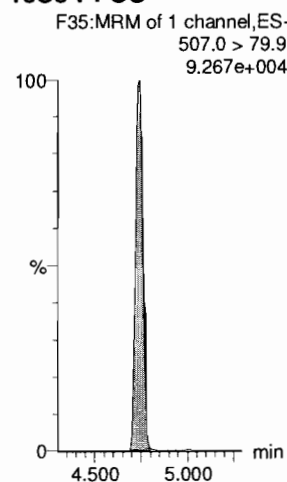
13C2-PFDA



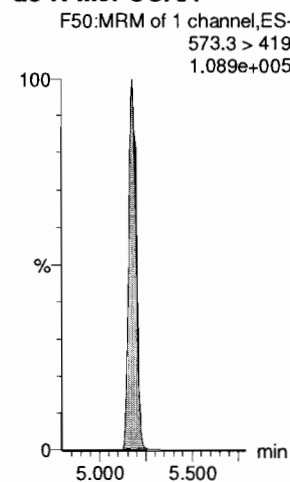
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



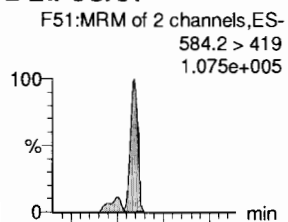
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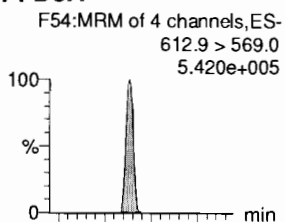
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Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

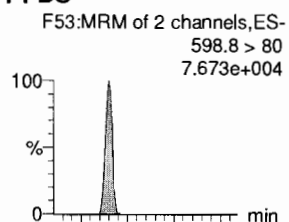
L-EtFOSAA



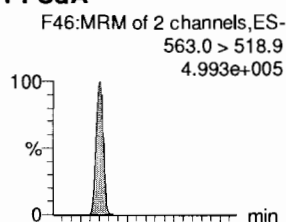
PFDoA



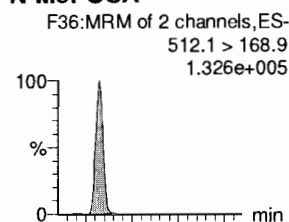
PFDS



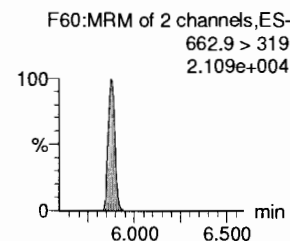
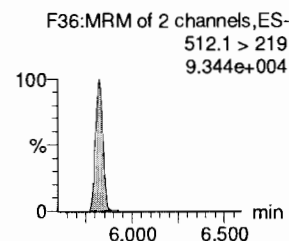
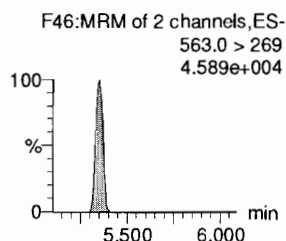
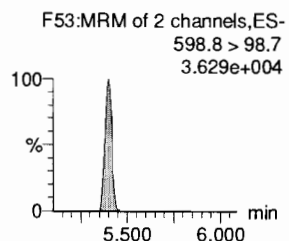
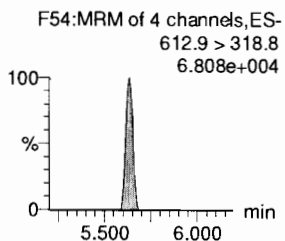
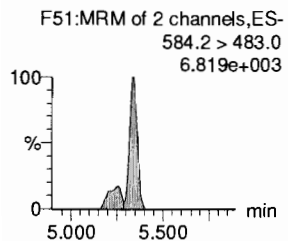
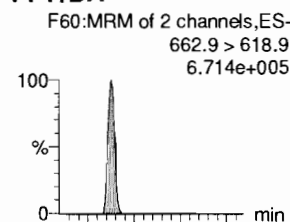
PFUdA



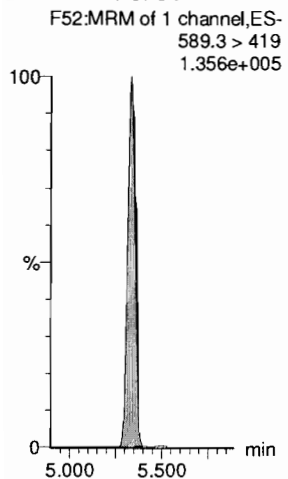
N-MeFOSA



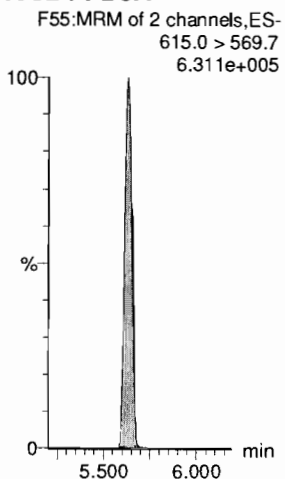
PFTTrDA



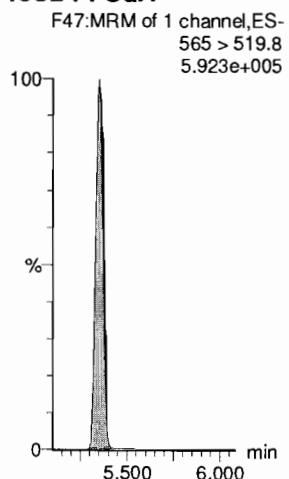
d5-N-EtFOSAA



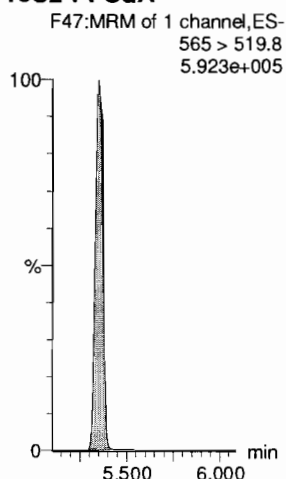
13C2-PFDoA



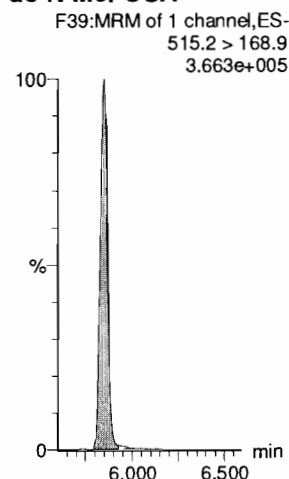
13C2-PFUdA



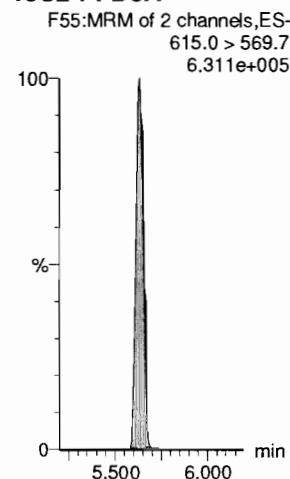
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

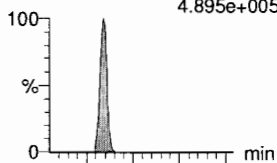
Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

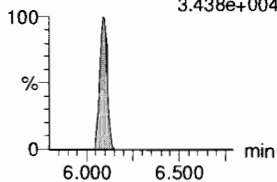
Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
4.895e+005

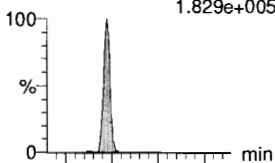


F61:MRM of 2 channels,ES-
712.9 > 369
3.438e+004

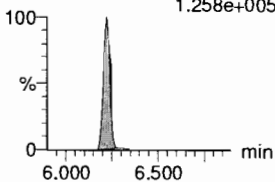


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
1.829e+005

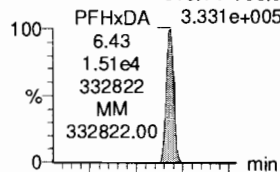


F41:MRM of 2 channels,ES-
526.1 > 219
1.258e+005

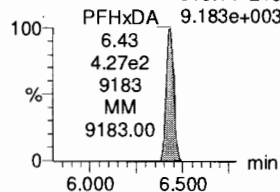


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
3.331e+005

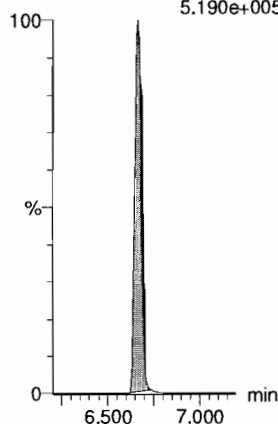


F63:MRM of 2 channels,ES-
813.1 > 219
9.183e+003



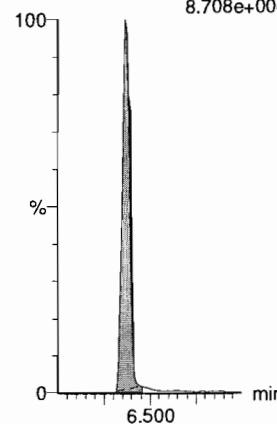
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
5.190e+005



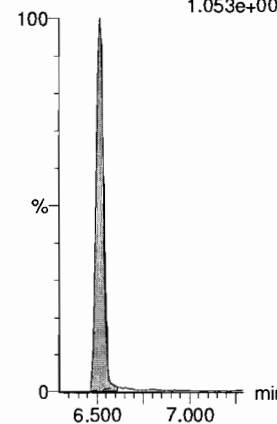
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
8.708e+004



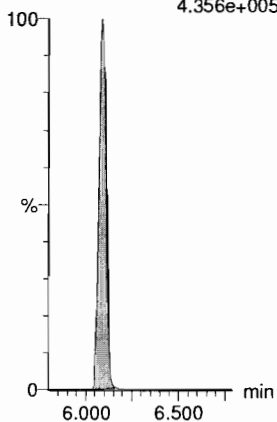
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
1.053e+005



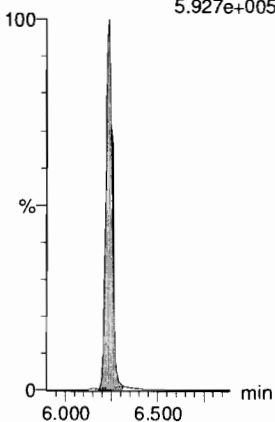
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
4.356e+005



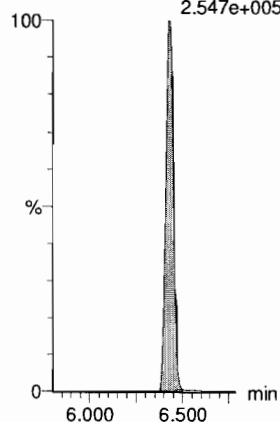
d5-N-ETFOSA

F44:MRM of 1 channel,ES-
531.1 > 168.9
5.927e+005



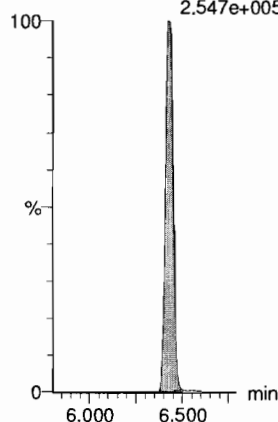
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.547e+005



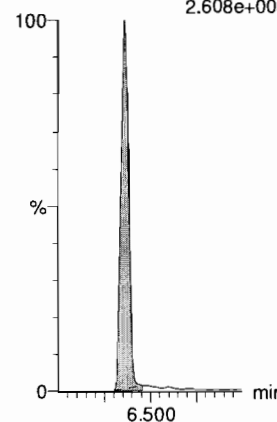
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.547e+005



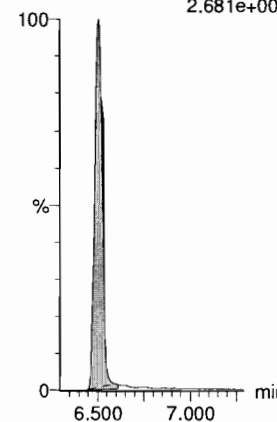
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.608e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.681e+005

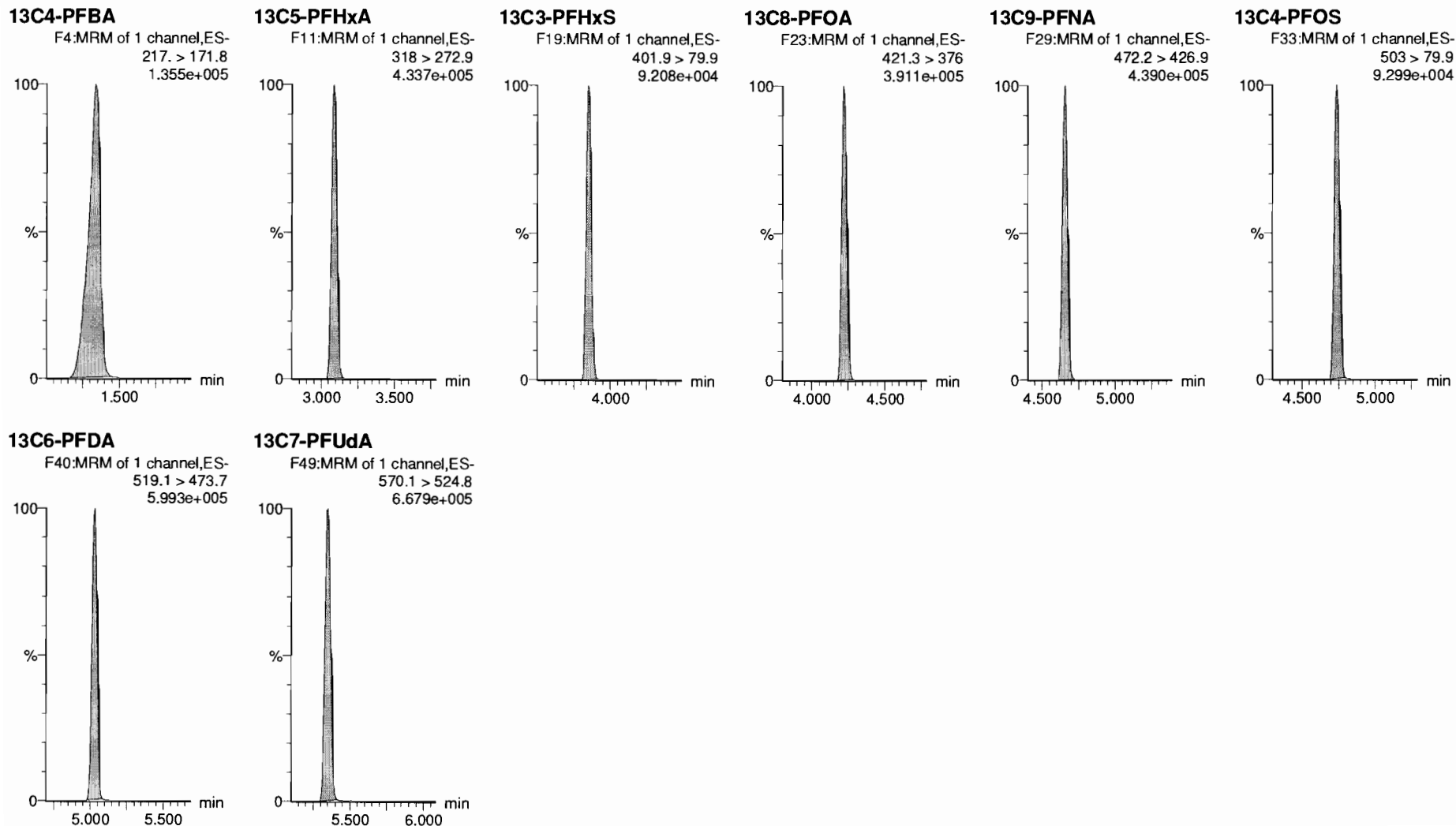


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

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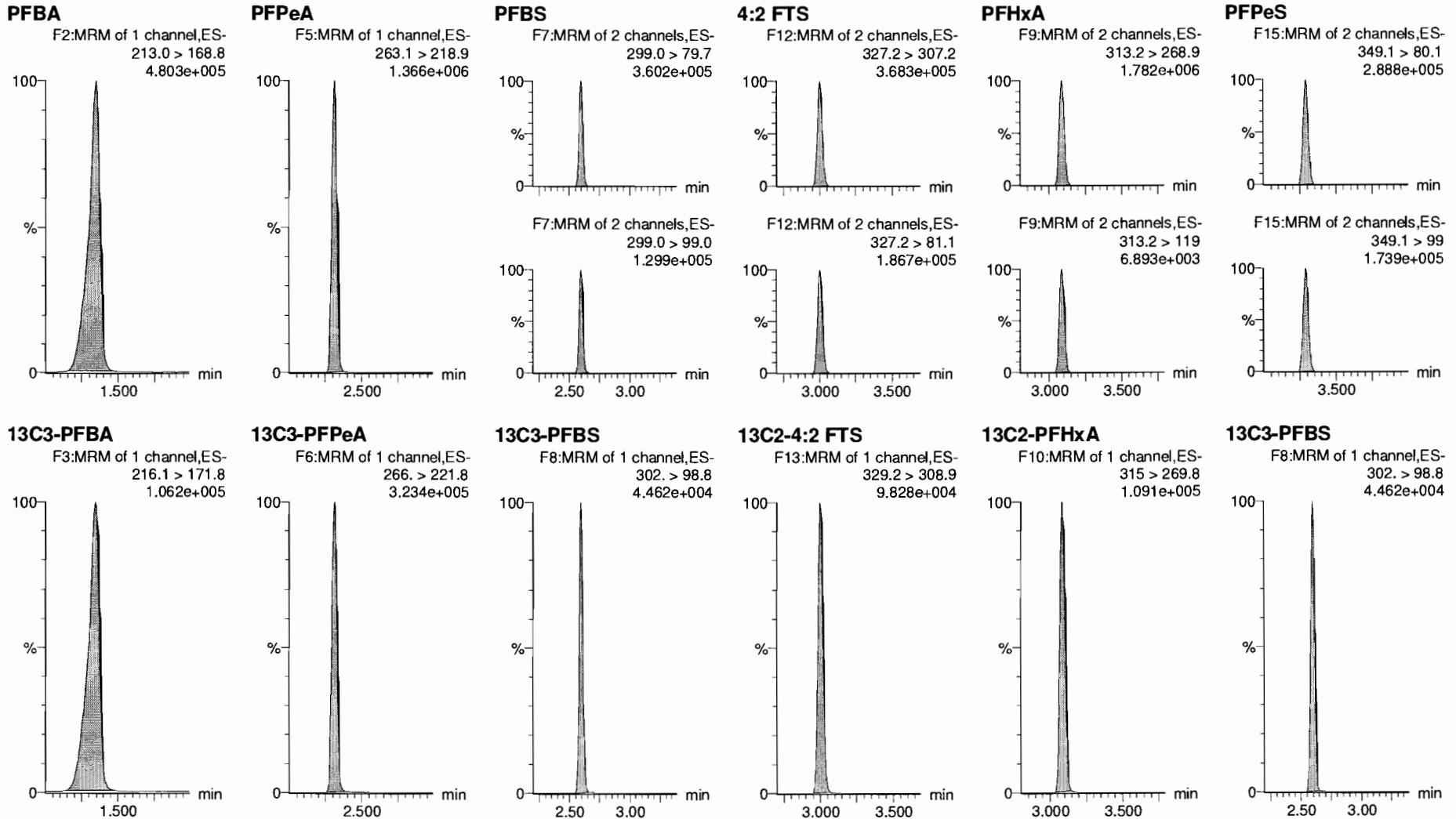
Name: 180604M2_7, Date: 04-Jun-2018, Time: 20:04:03, ID: ST180604M2-6 PFC CS3 18E2907, Description: PFC CS3 18E2907



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

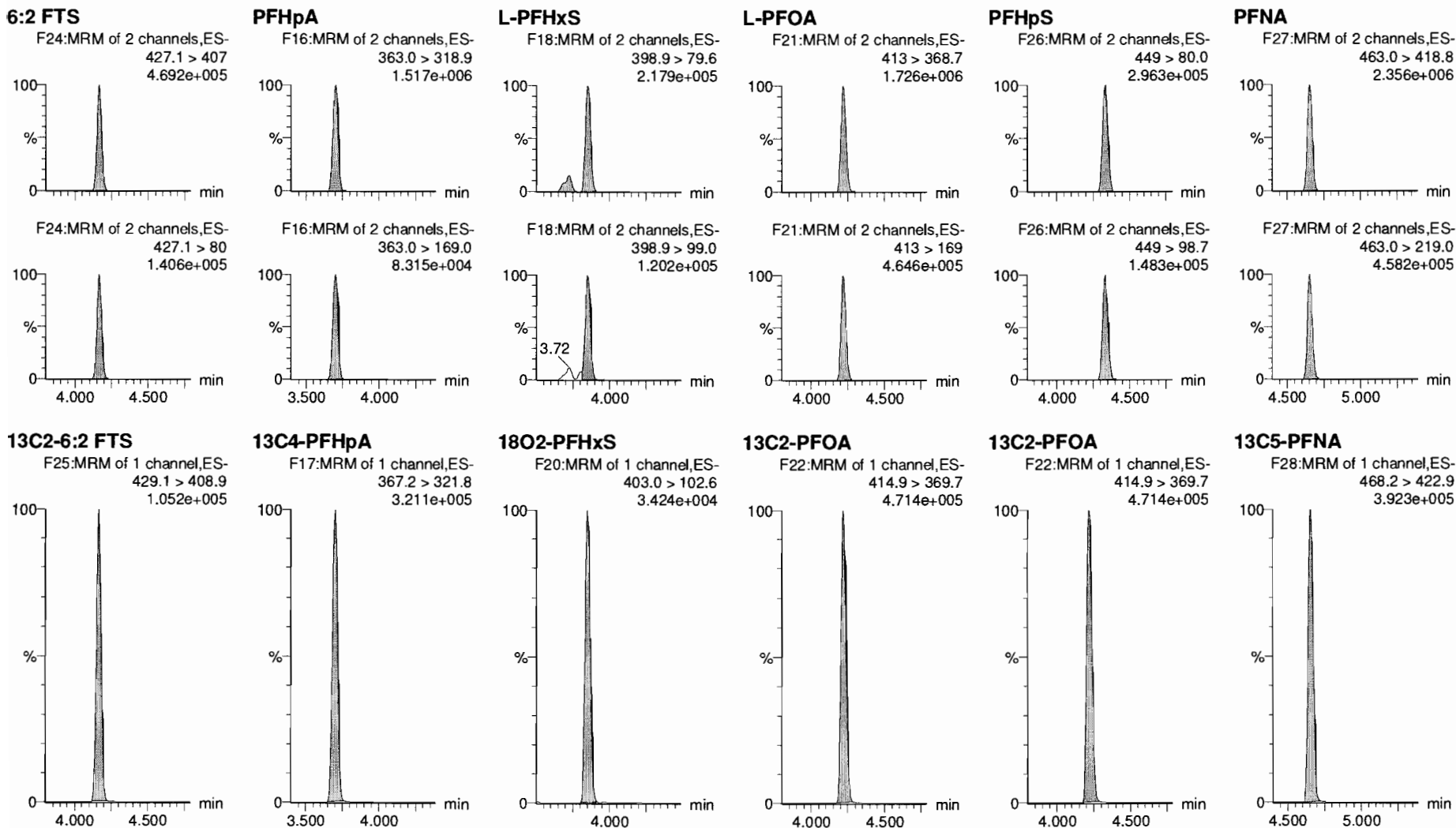


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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

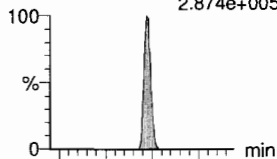
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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

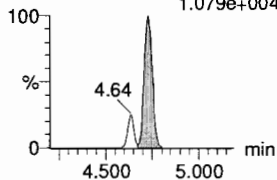
Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

PFOSA

F30:MRM of 2 channels,ES-
498.2 > 77.9
2.874e+005

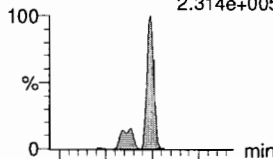


F30:MRM of 2 channels,ES-
498.2 > 169.1
1.079e+004

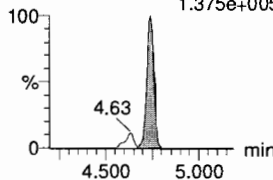


L-PFOS

F32:MRM of 2 channels,ES-
499.1 > 79.9
2.314e+005

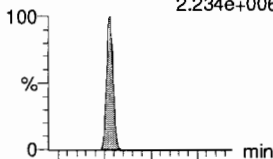


F32:MRM of 2 channels,ES-
499.1 > 98.9
1.375e+005

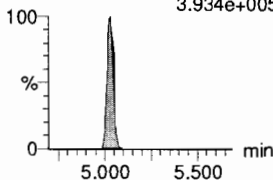


PFDA

F37:MRM of 2 channels,ES-
513 > 468.8
2.234e+006

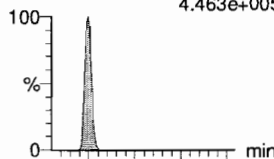


F37:MRM of 2 channels,ES-
513 > 219
3.934e+005

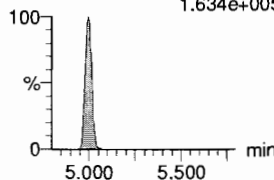


8:2 FTS

F42:MRM of 2 channels,ES-
527 > 506.9
4.463e+005

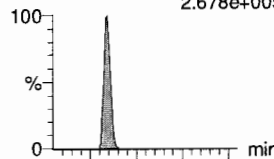


F42:MRM of 2 channels,ES-
527 > 80
1.634e+005

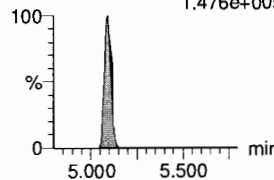


PFNS

F45:MRM of 2 channels,ES-
549.1 > 80.1
2.678e+005

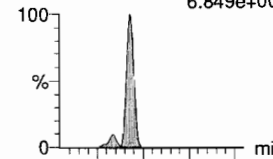


F45:MRM of 2 channels,ES-
549.1 > 99.1
1.476e+005

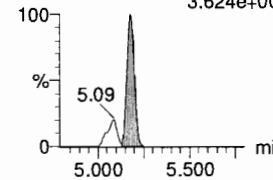


L-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
6.849e+005

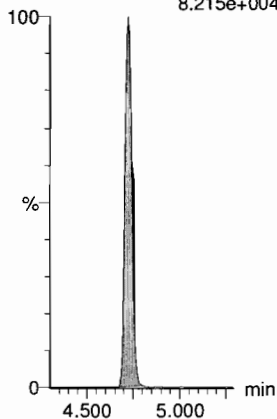


F48:MRM of 2 channels,ES-
570.1 > 483.0
3.624e+004



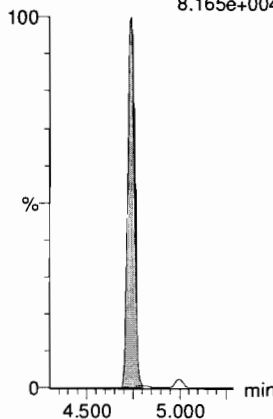
13C8-PFOA

F34:MRM of 1 channel,ES-
506.1 > 77.7
8.215e+004



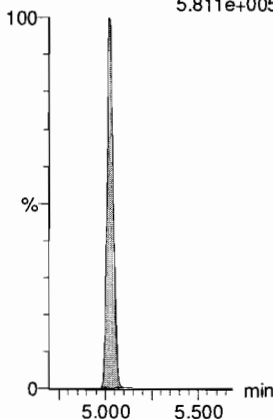
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
8.165e+004



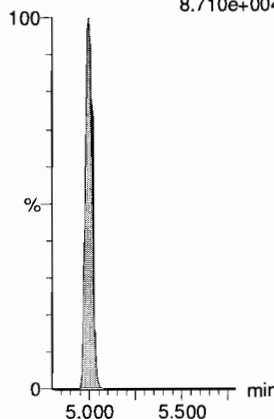
13C2-PFDA

F38:MRM of 1 channel,ES-
515.1 > 469.9
5.811e+005



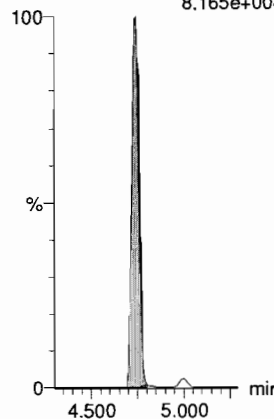
13C2-8:2 FTS

F43:MRM of 1 channel,ES-
529.1 > 508.7
8.710e+004



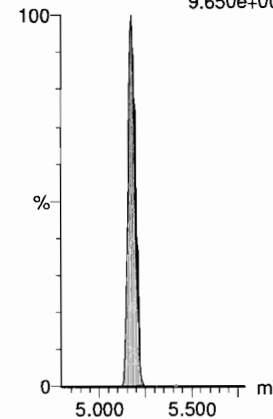
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
8.165e+004



d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
9.650e+004



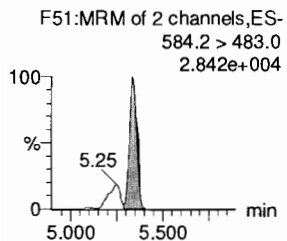
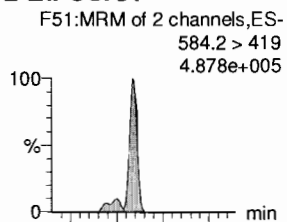
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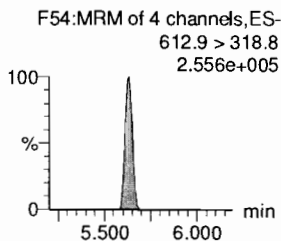
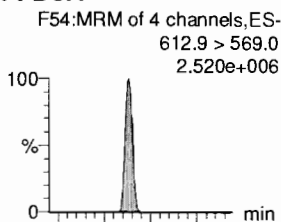
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Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

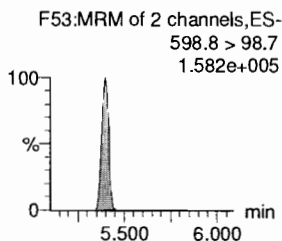
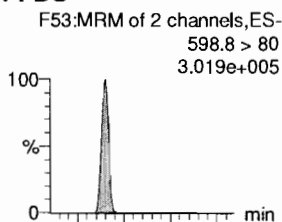
L-EtFOSAA



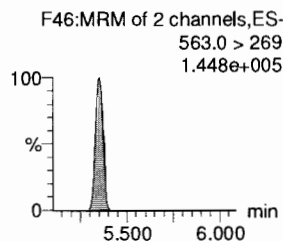
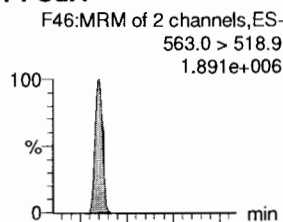
PFDoA



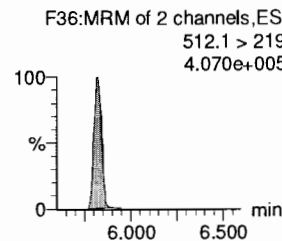
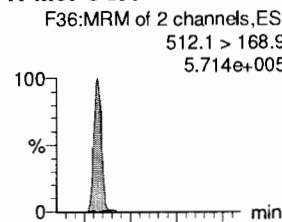
PFDS



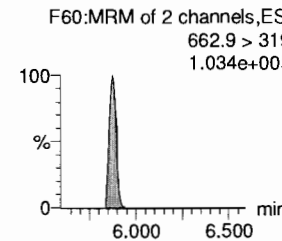
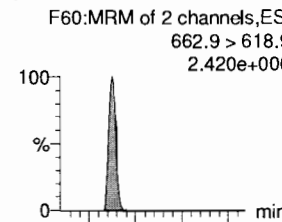
PFUdA



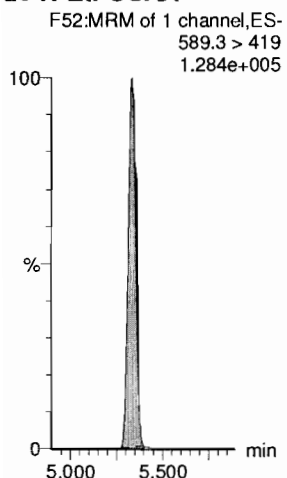
N-MeFOSA



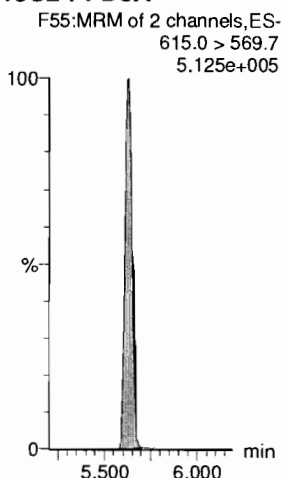
PFTrDA



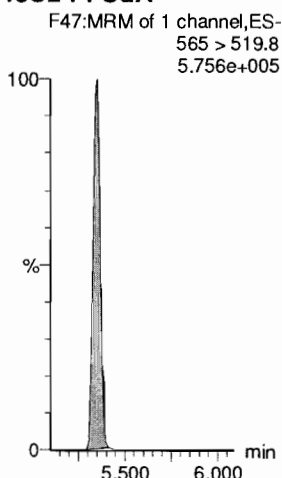
d5-N-EtFOSAA



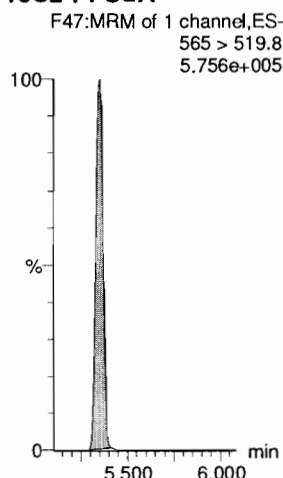
13C2-PFDoA



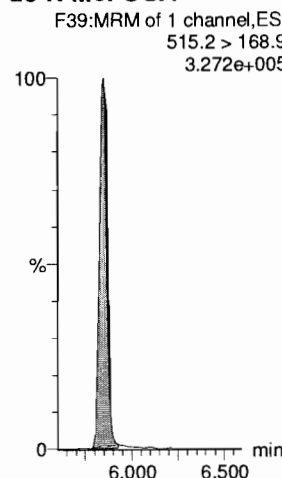
13C2-PFUdA



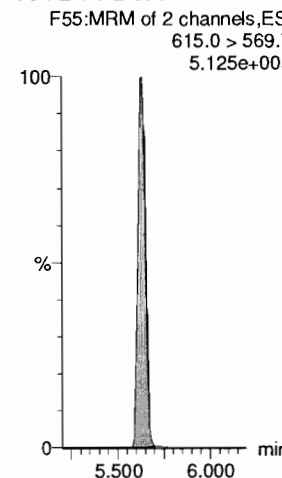
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



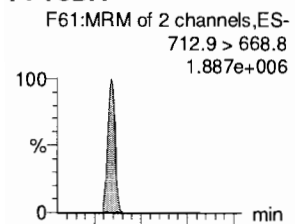
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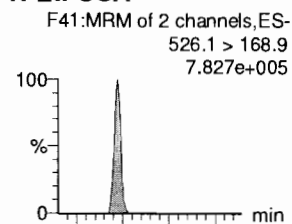
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

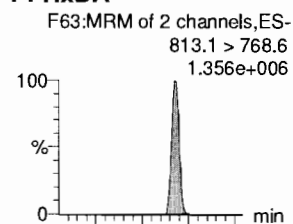
PFTeDA



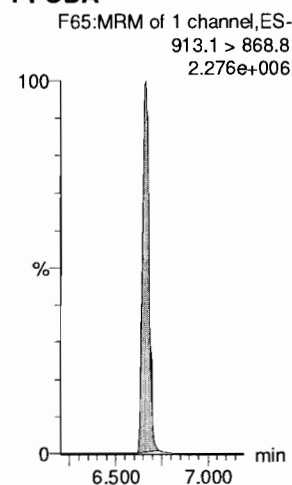
N-EtFOSA



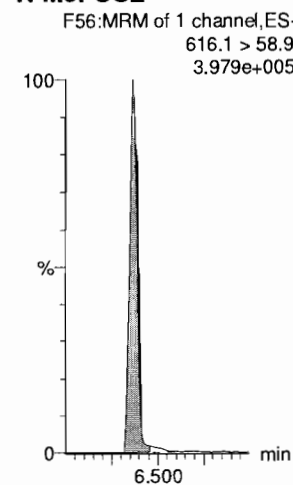
PFHxDA



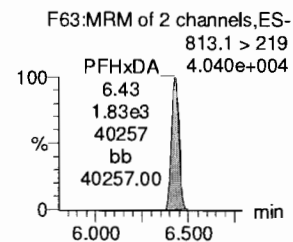
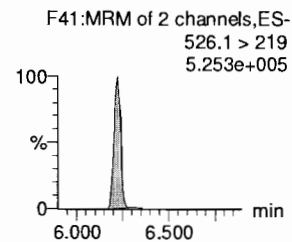
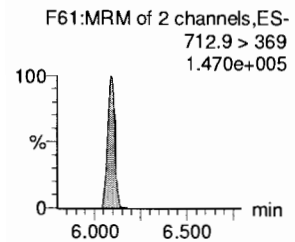
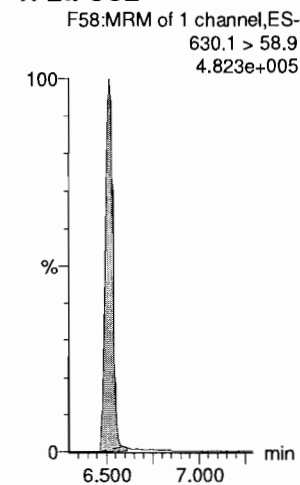
PFODA



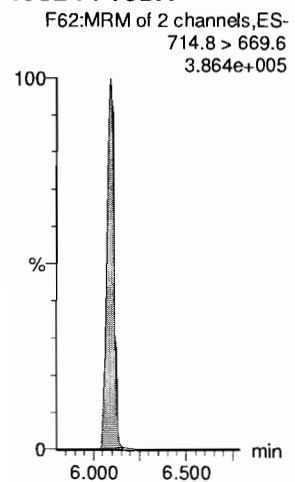
N-MeFOSE



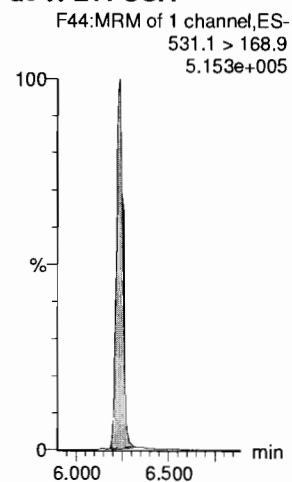
N-EtFOSE



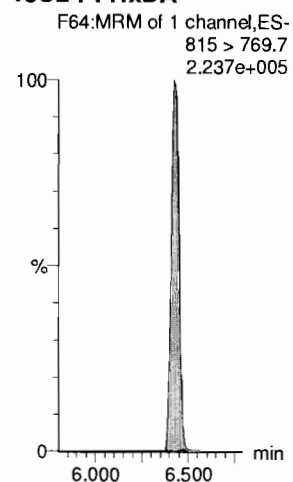
13C2-PFTeDA



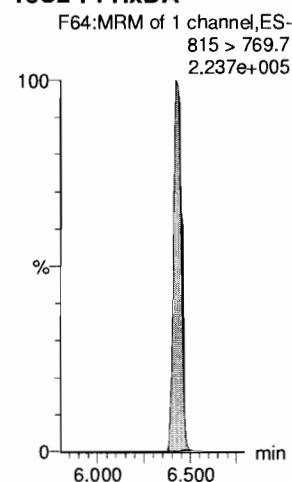
d5-N-ETFOSA



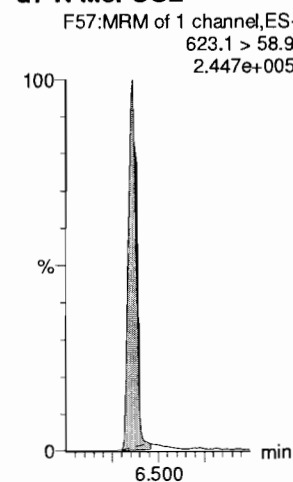
13C2-PFHxDA



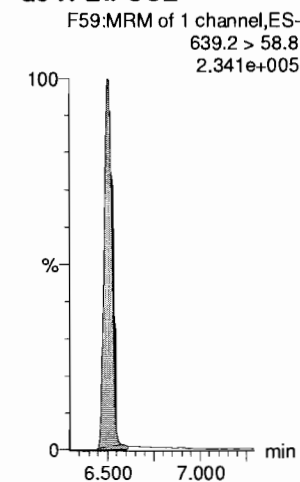
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

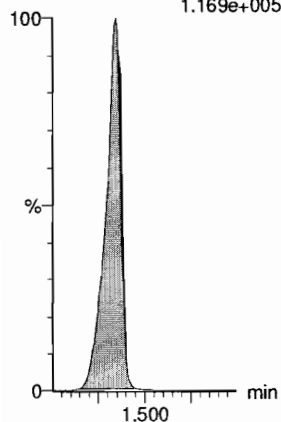
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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_8, Date: 04-Jun-2018, Time: 20:14:33, ID: ST180604M2-7 PFC CS4 18E2908, Description: PFC CS4 18E2908

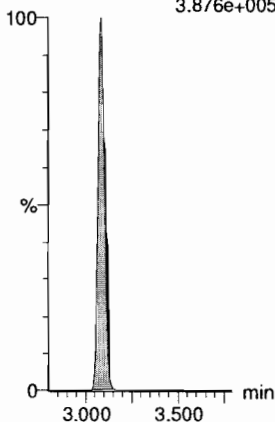
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.169e+005



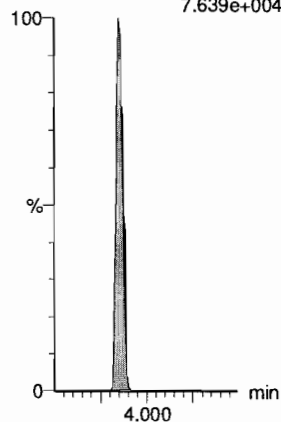
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
3.876e+005



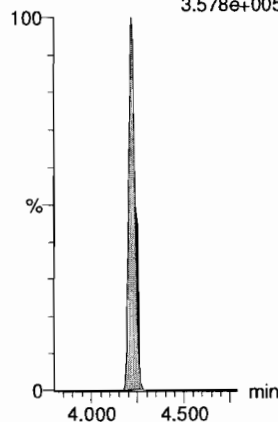
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
7.639e+004



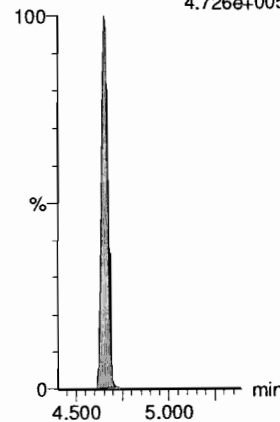
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
3.578e+005



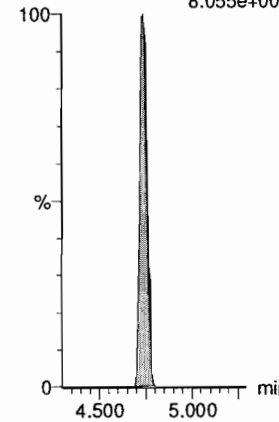
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
4.726e+005



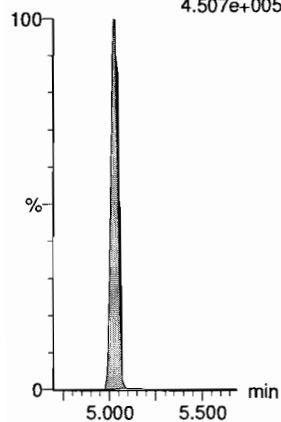
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
8.055e+004



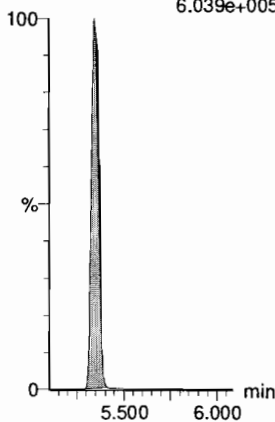
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
4.507e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
6.039e+005



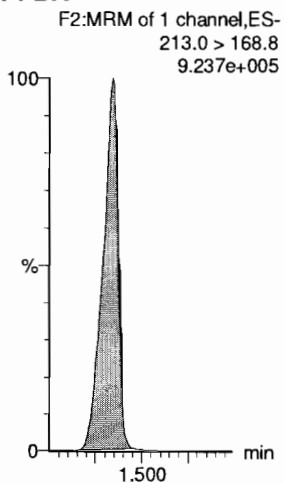
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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

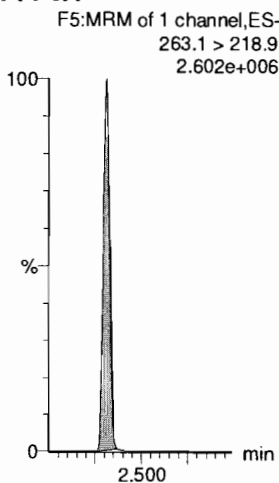
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Name: 180604M2_9, Date: 04-Jun-2018, Time: 20:24:59, ID: ST180604M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

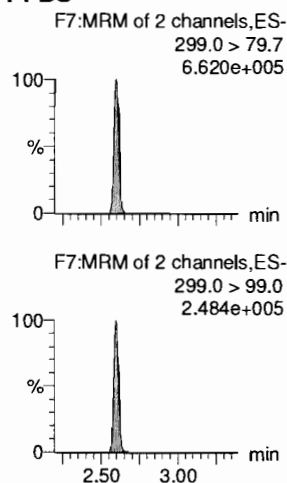
PFBA



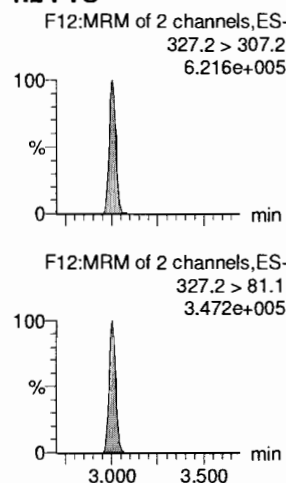
PFPeA



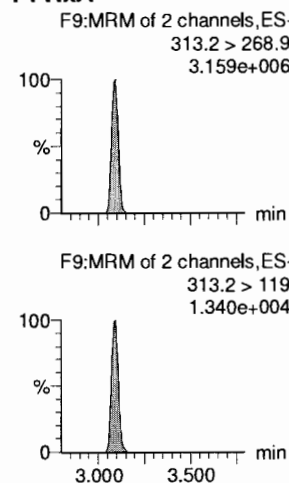
PFBS



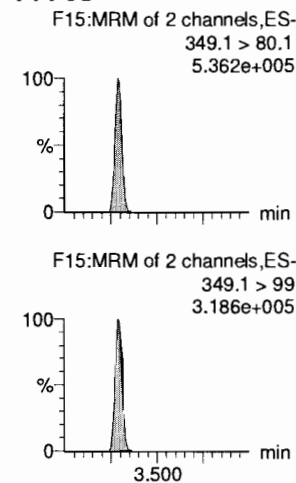
4:2 FTS



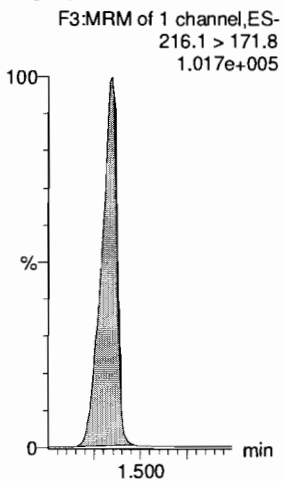
PFHxA



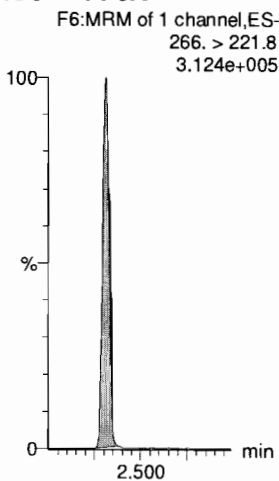
PFPeS



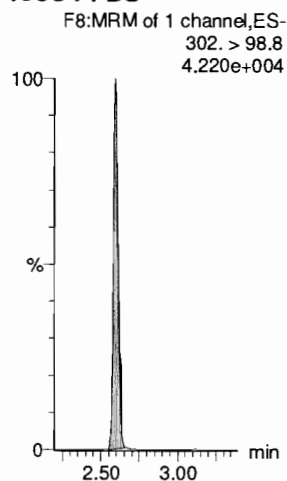
13C3-PFBA



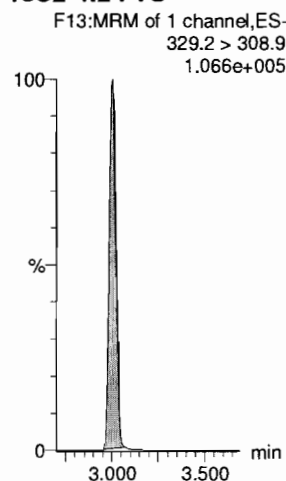
13C3-PFPeA



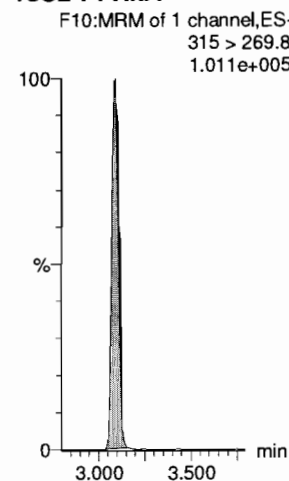
13C3-PFBS



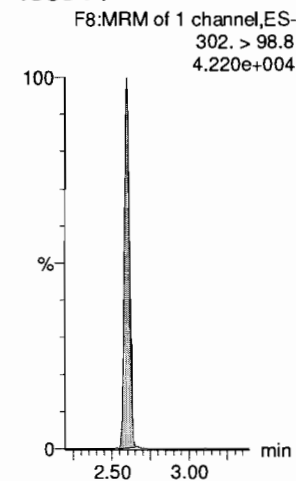
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



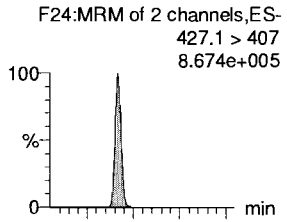
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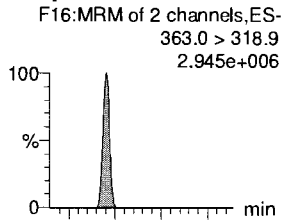
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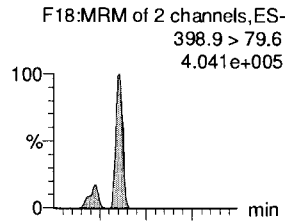
6:2 FTS



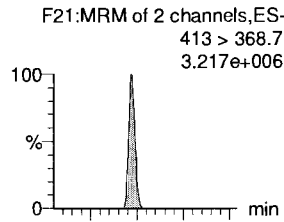
PFHpA



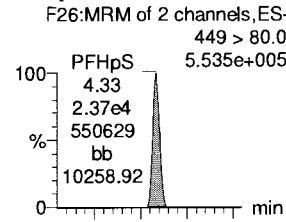
L-PFHxS



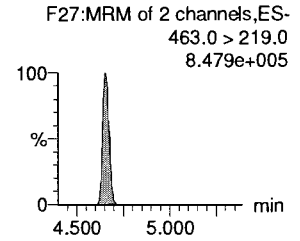
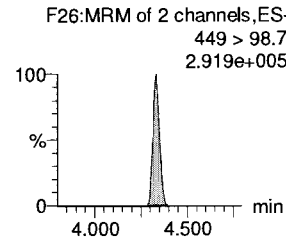
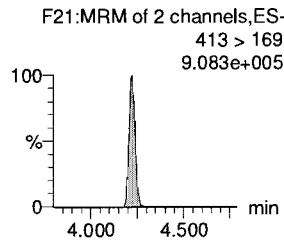
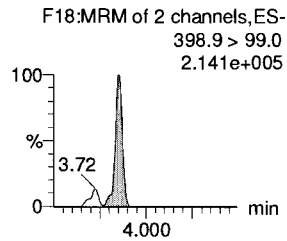
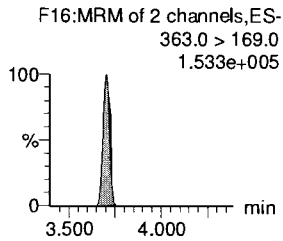
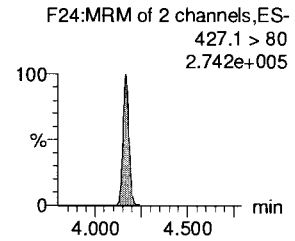
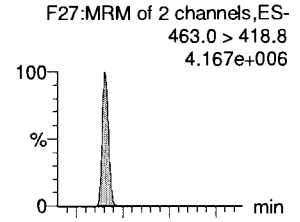
L-PFOA



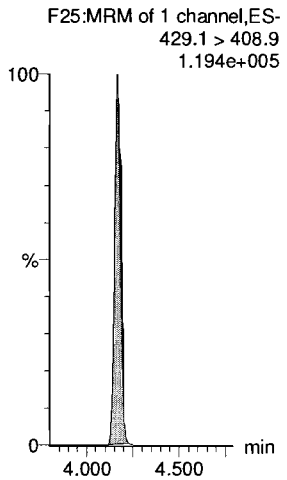
PFHpS



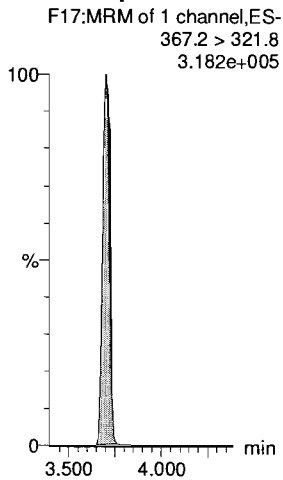
PFNA



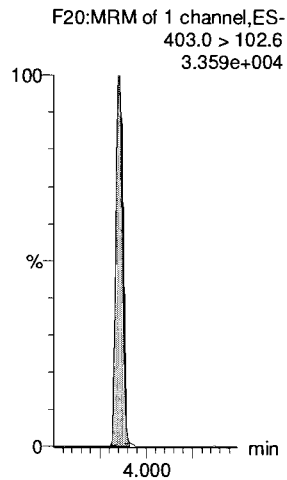
13C2-6:2 FTS



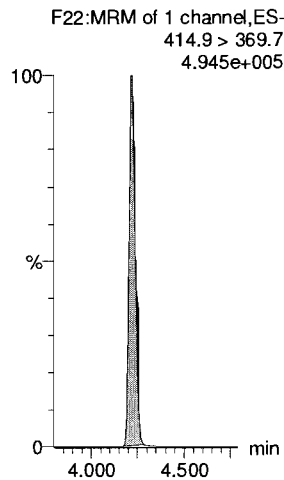
13C4-PFHpA



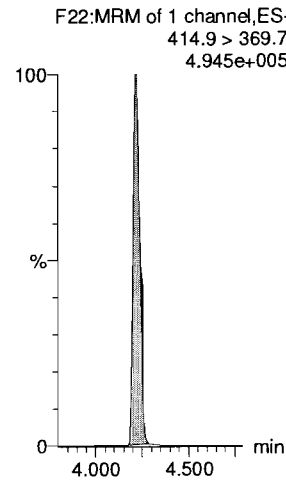
18O2-PFHxS



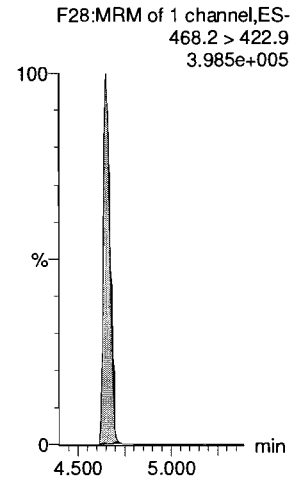
13C2-PFOA



13C2-PFOA



13C5-PFNA



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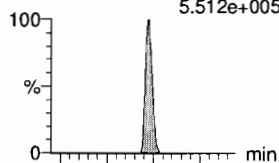
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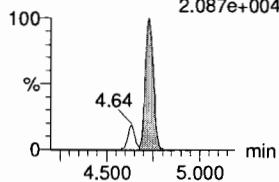
Name: 180604M2_9, Date: 04-Jun-2018, Time: 20:24:59, ID: ST180604M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

PFOSA

F30:MRM of 2 channels,ES-
498.2 > 77.9
5.512e+005

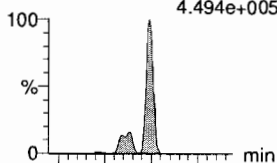


F30:MRM of 2 channels,ES-
498.2 > 169.1
2.087e+004

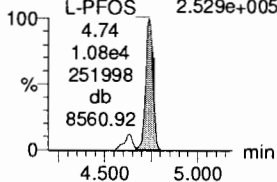


L-PFOS

F32:MRM of 2 channels,ES-
499.1 > 79.9
4.494e+005

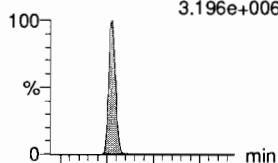


F32:MRM of 2 channels,ES-
499.1 > 98.9
2.529e+005

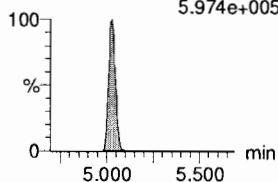


PFDA

F37:MRM of 2 channels,ES-
513 > 468.8
3.196e+006

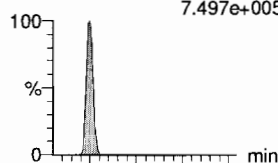


F37:MRM of 2 channels,ES-
513 > 219
5.974e+005

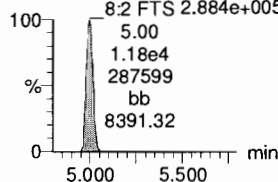


8:2 FTS

F42:MRM of 2 channels,ES-
527 > 506.9
7.497e+005

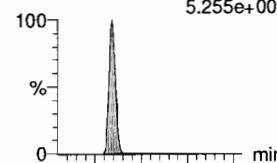


F42:MRM of 2 channels,ES-
527 > 80
2.884e+005

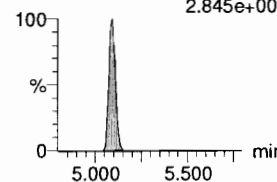


PFNS

F45:MRM of 2 channels,ES-
549.1 > 80.1
5.255e+005

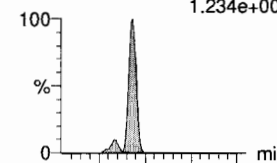


F45:MRM of 2 channels,ES-
549.1 > 99.1
2.845e+005

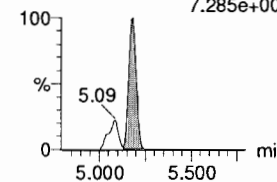


L-MeFOSAA

F48:MRM of 2 channels,ES-
570.1 > 419
1.234e+006

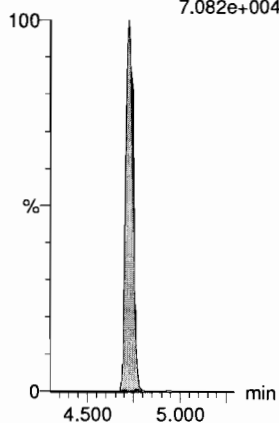


F48:MRM of 2 channels,ES-
570.1 > 483.0
7.285e+004



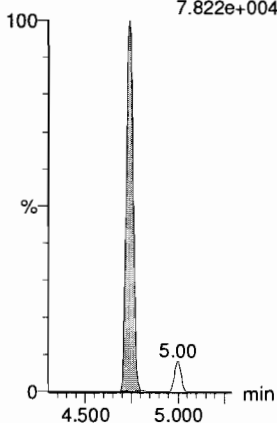
13C8-PFOA

F34:MRM of 1 channel,ES-
506.1 > 77.7
7.082e+004



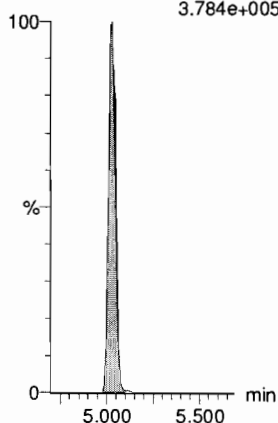
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
7.822e+004



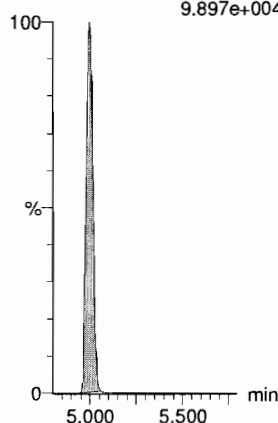
13C2-PFDA

F38:MRM of 1 channel,ES-
515.1 > 469.9
3.784e+005



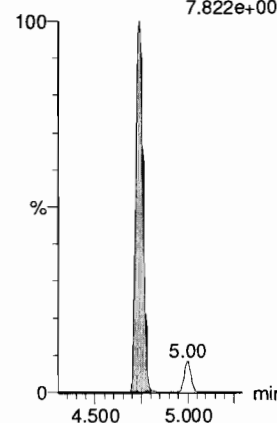
13C2-8:2 FTS

F43:MRM of 1 channel,ES-
529.1 > 508.7
9.897e+004



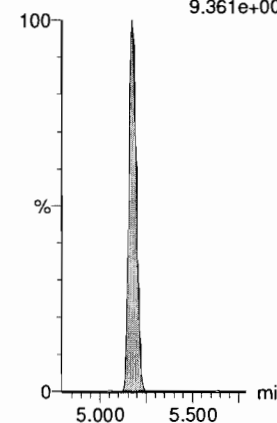
13C8-PFOS

F35:MRM of 1 channel,ES-
507.0 > 79.9
7.822e+004



d3-N-MeFOSAA

F50:MRM of 1 channel,ES-
573.3 > 419
9.361e+004

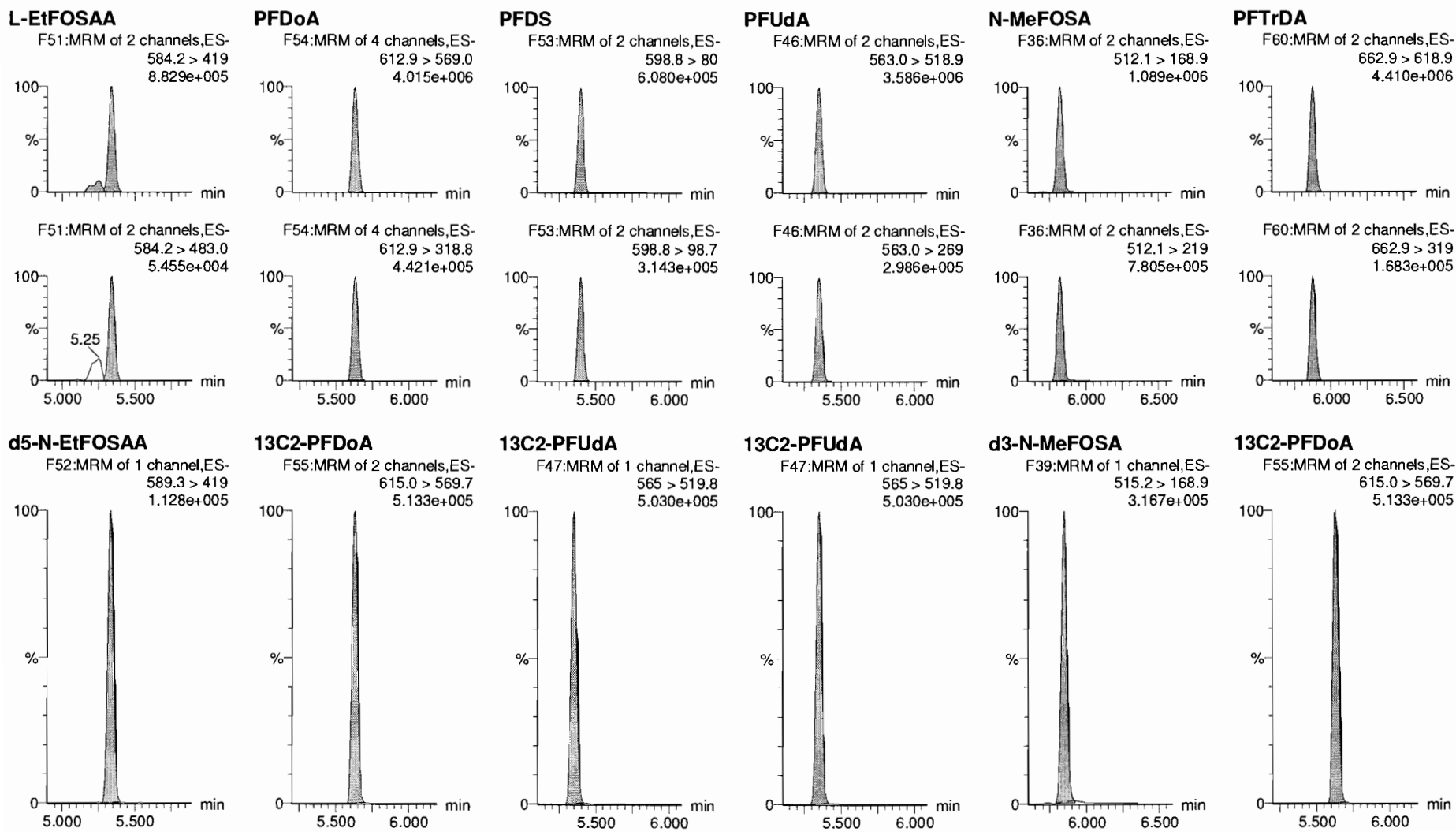


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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_9, Date: 04-Jun-2018, Time: 20:24:59, ID: ST180604M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

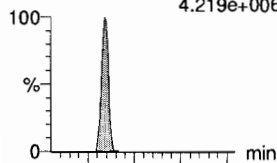
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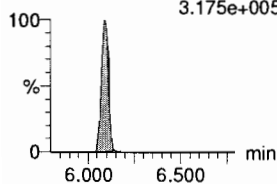
Name: 180604M2_9, Date: 04-Jun-2018, Time: 20:24:59, ID: ST180604M2-8 PFC CS5 18E2909, Description: PFC CS5 18E2909

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
4.219e+006

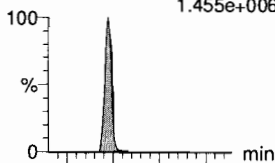


F61:MRM of 2 channels,ES-
712.9 > 369
3.175e+005

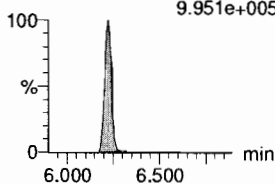


N-EtFOSEA

F41:MRM of 2 channels,ES-
526.1 > 168.9
1.455e+006

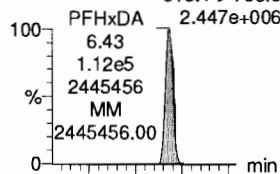


F41:MRM of 2 channels,ES-
526.1 > 219
9.951e+005

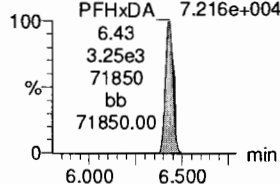


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
2.447e+006

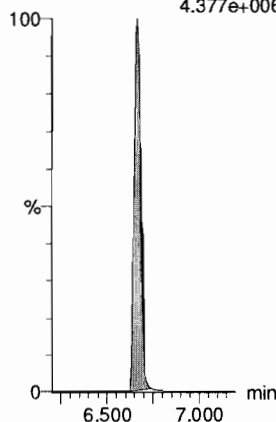


F63:MRM of 2 channels,ES-
813.1 > 219
7.216e+004



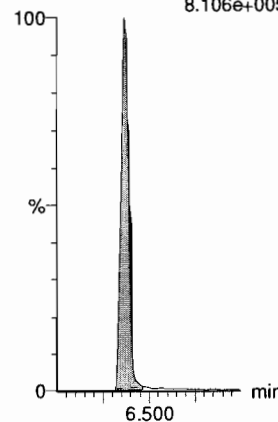
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
4.377e+006



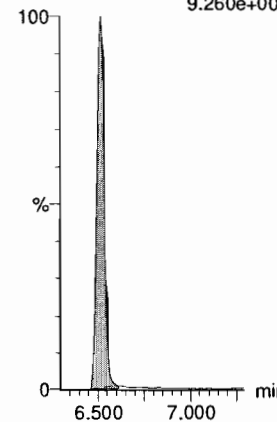
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
8.106e+005



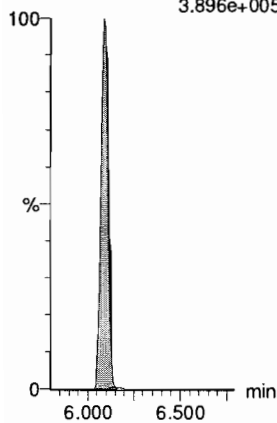
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
9.260e+005



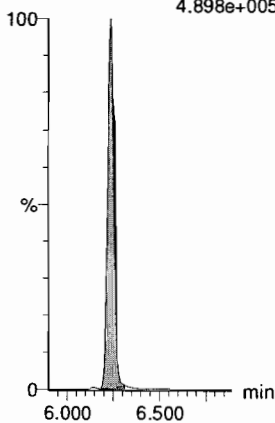
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
3.896e+005



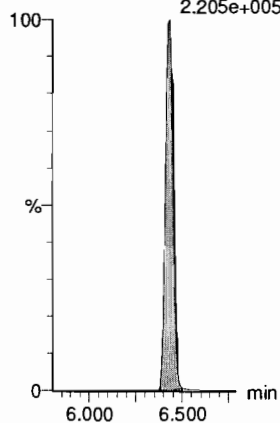
d5-N-ETFOSEA

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.898e+005



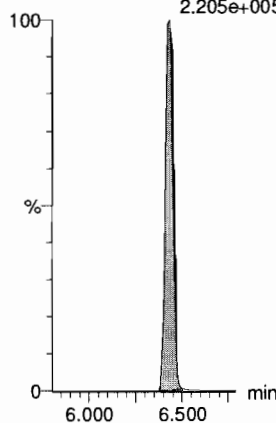
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.205e+005



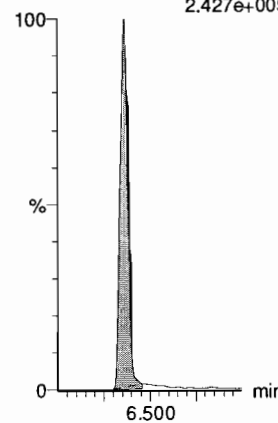
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.205e+005



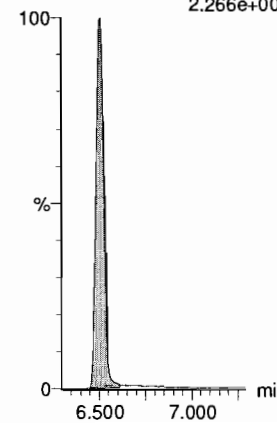
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.427e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.266e+005

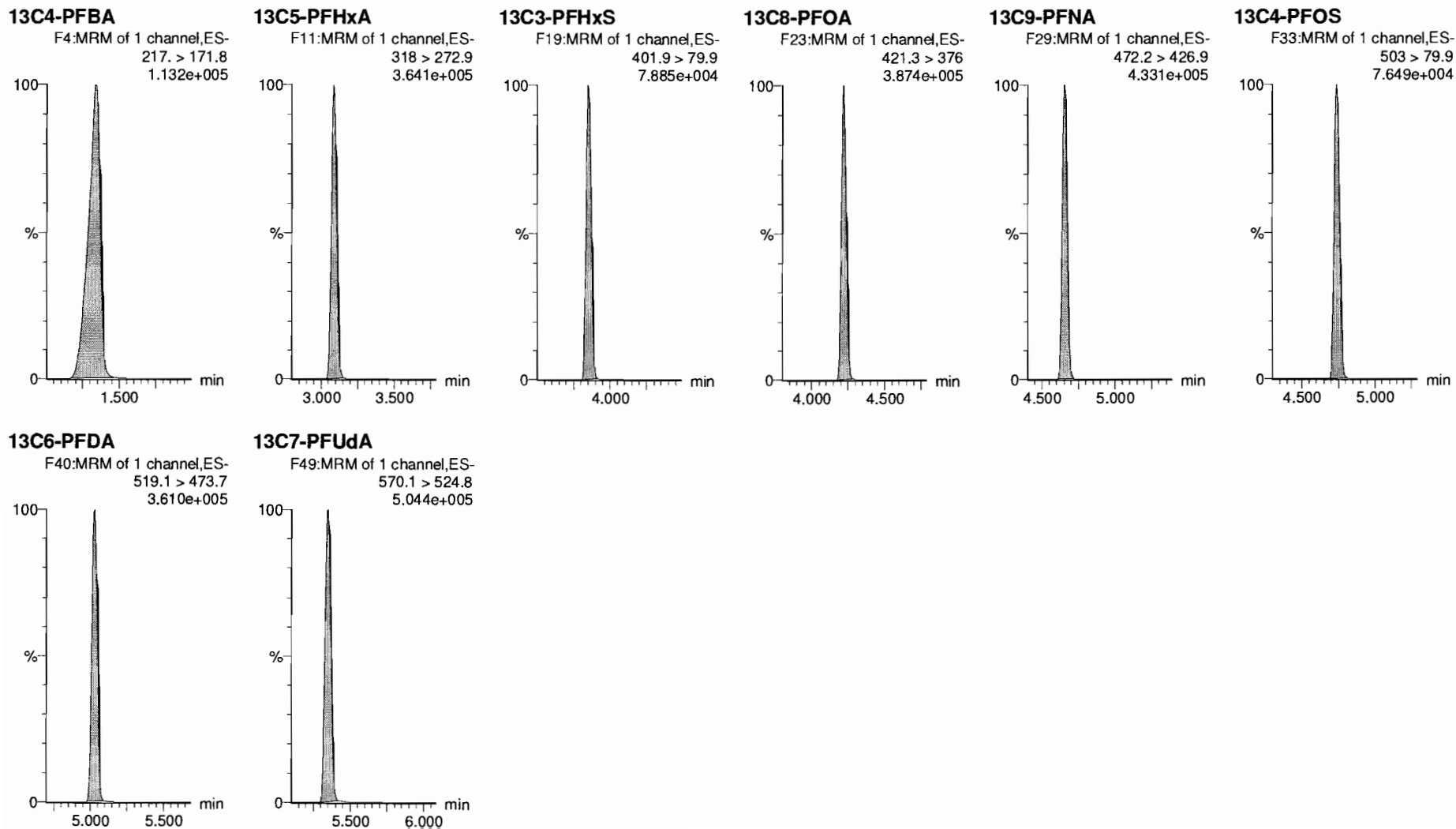


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

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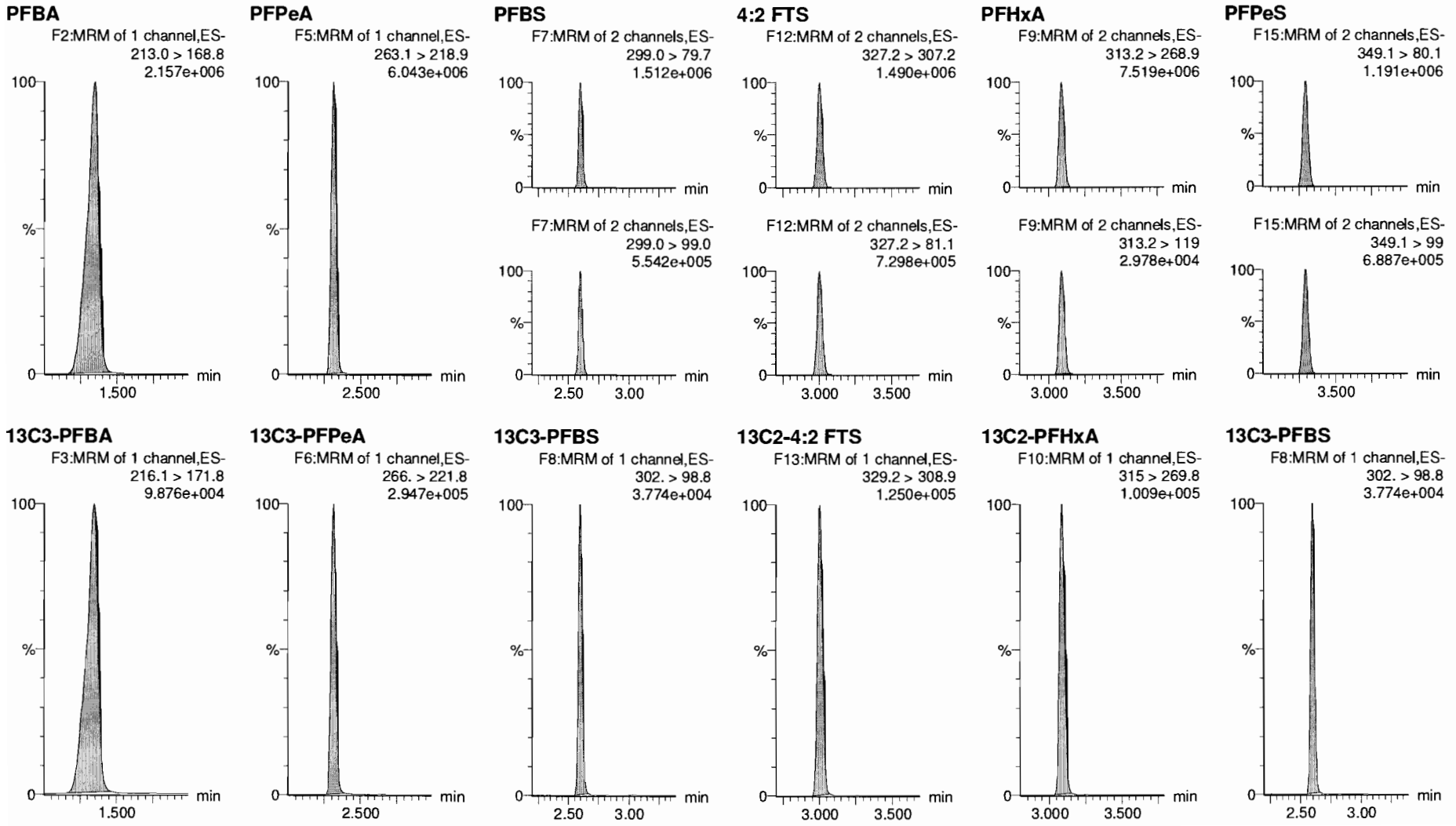


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Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

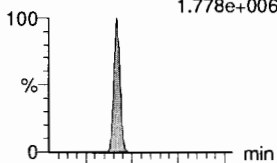
Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

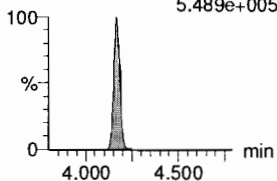
Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
1.778e+006

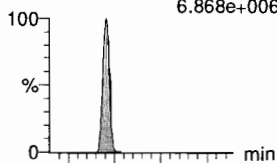


F24:MRM of 2 channels,ES-
427.1 > 80
5.489e+005

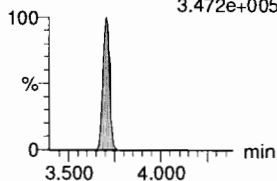


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
6.868e+006

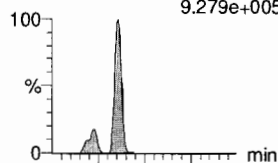


F16:MRM of 2 channels,ES-
363.0 > 169.0
3.472e+005

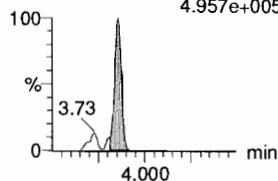


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
9.279e+005

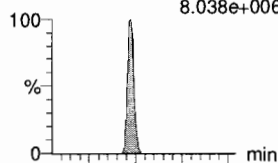


F18:MRM of 2 channels,ES-
398.9 > 99.0
4.957e+005

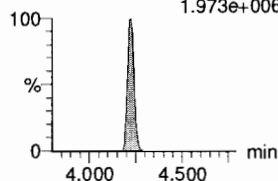


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
8.038e+006

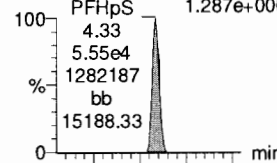


F21:MRM of 2 channels,ES-
413 > 169
1.973e+006

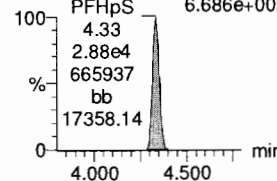


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
1.287e+006

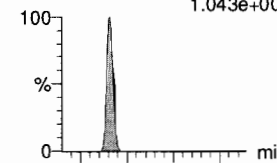


F26:MRM of 2 channels,ES-
449 > 98.7
6.686e+005

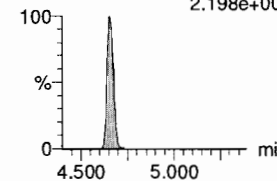


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
1.043e+007

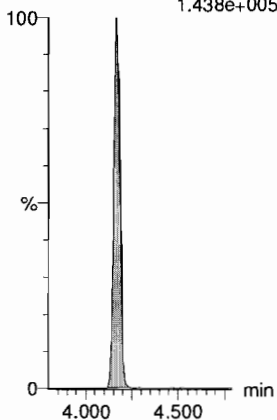


F27:MRM of 2 channels,ES-
463.0 > 219.0
2.198e+006



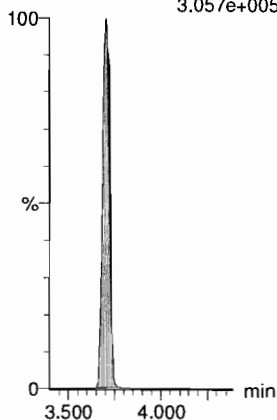
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
1.438e+005



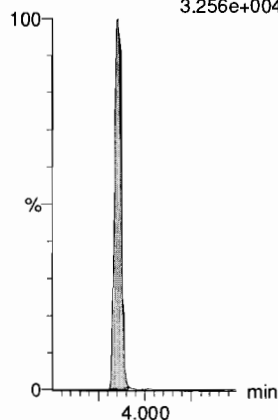
13C4-PFHpA

F17:MRM of 1 channel,ES-
367.2 > 321.8
3.057e+005



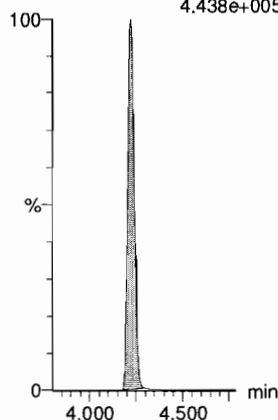
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
3.256e+004



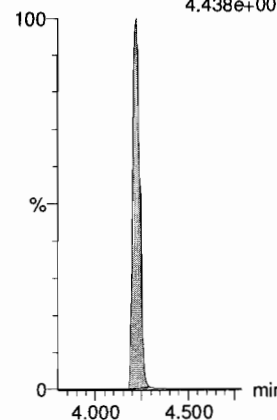
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.438e+005



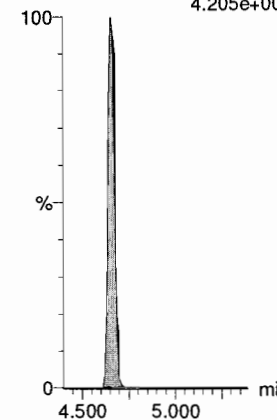
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.438e+005



13C5-PFNA

F28:MRM of 1 channel,ES-
468.2 > 422.9
4.205e+005



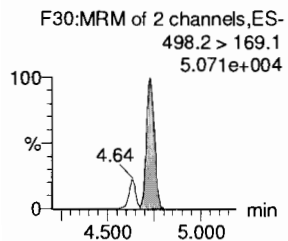
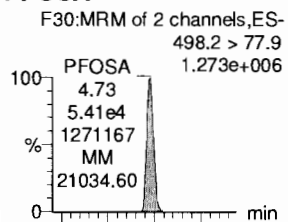
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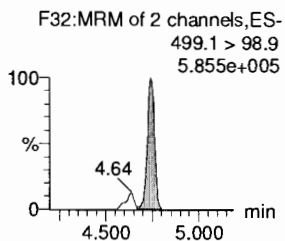
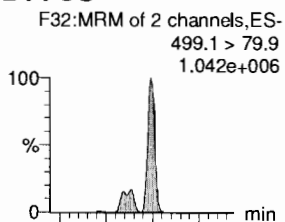
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Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

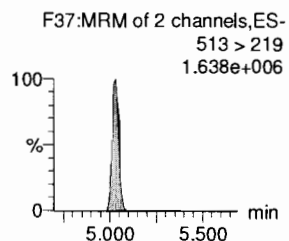
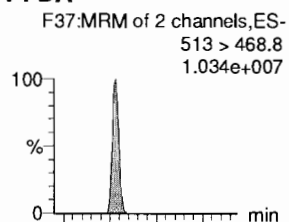
PFOSA



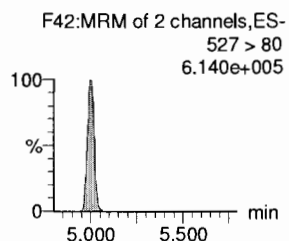
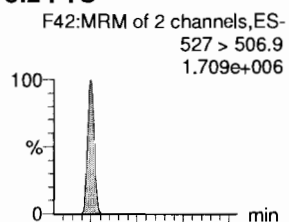
L-PFOS



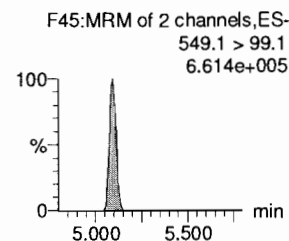
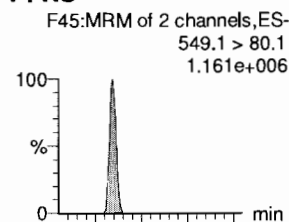
PFDA



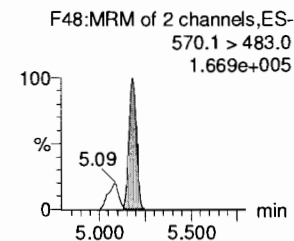
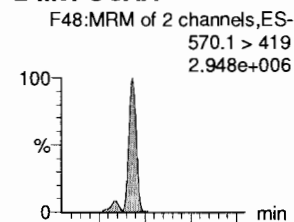
8:2 FTS



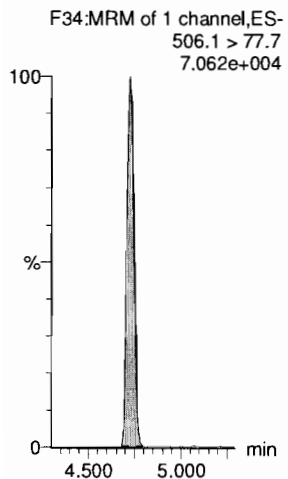
PFNS



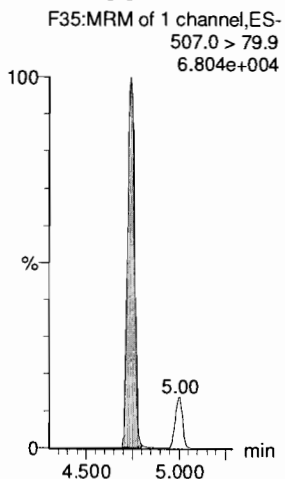
L-MeFOSAA



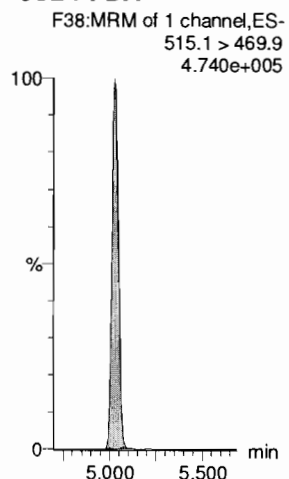
13C8-PFOSA



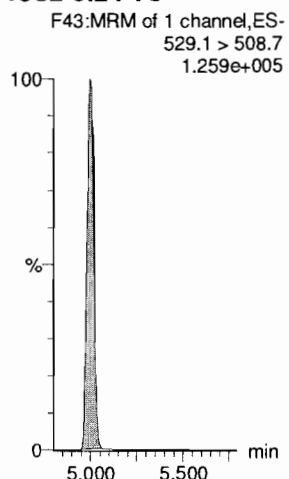
13C8-PFOS



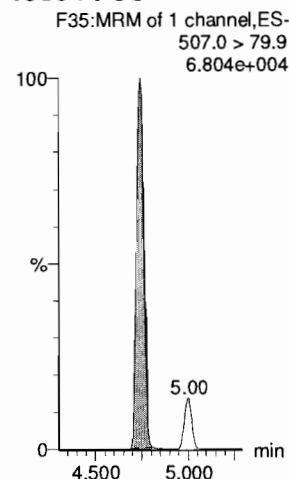
13C2-PFDA



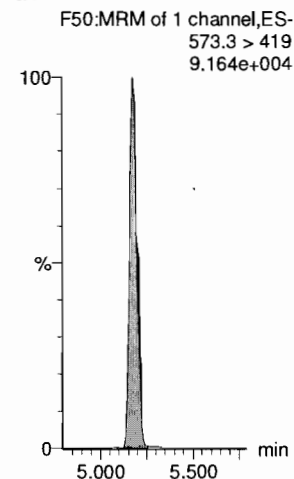
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



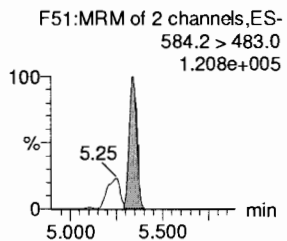
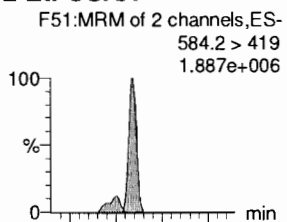
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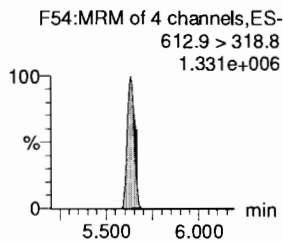
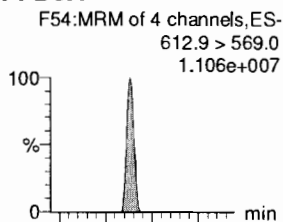
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Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

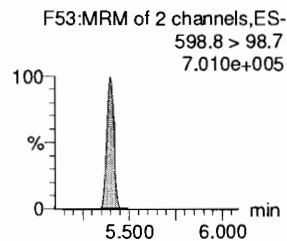
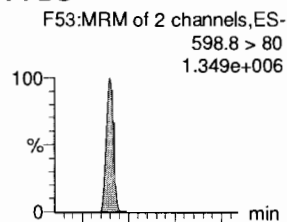
L-EtFOSAA



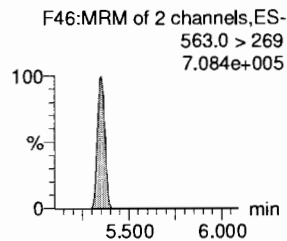
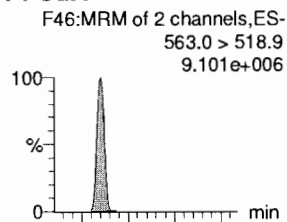
PFDoA



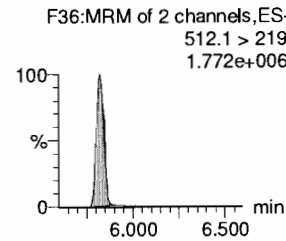
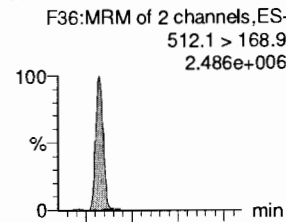
PFDS



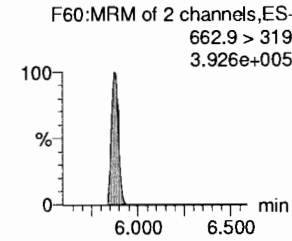
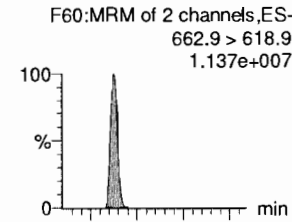
PFUdA



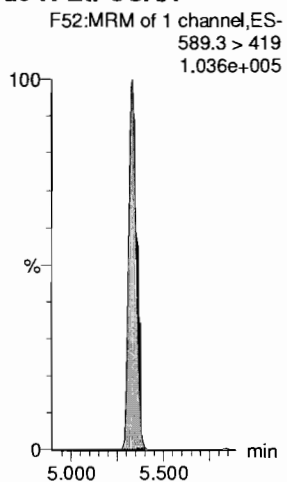
N-MeFOSA



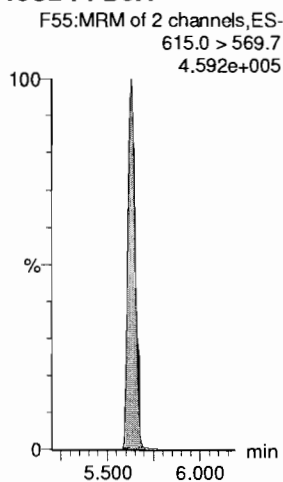
PFTrDA



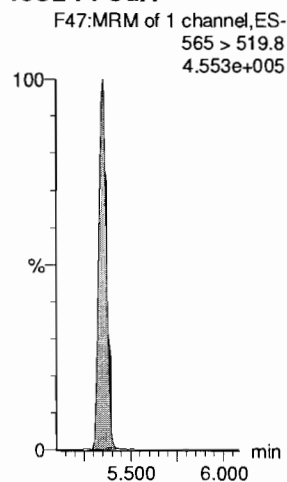
d5-N-EtFOSAA



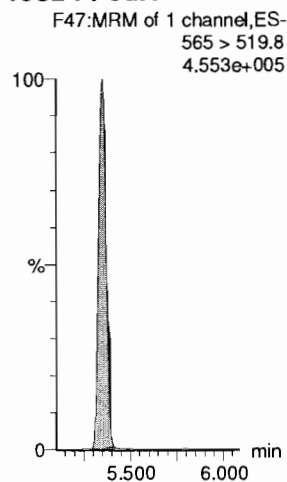
13C2-PFDoA



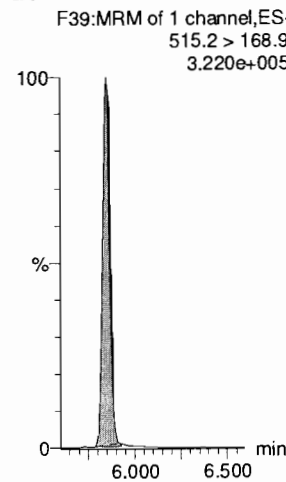
13C2-PFUdA



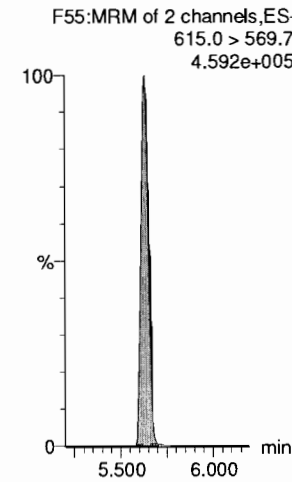
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA

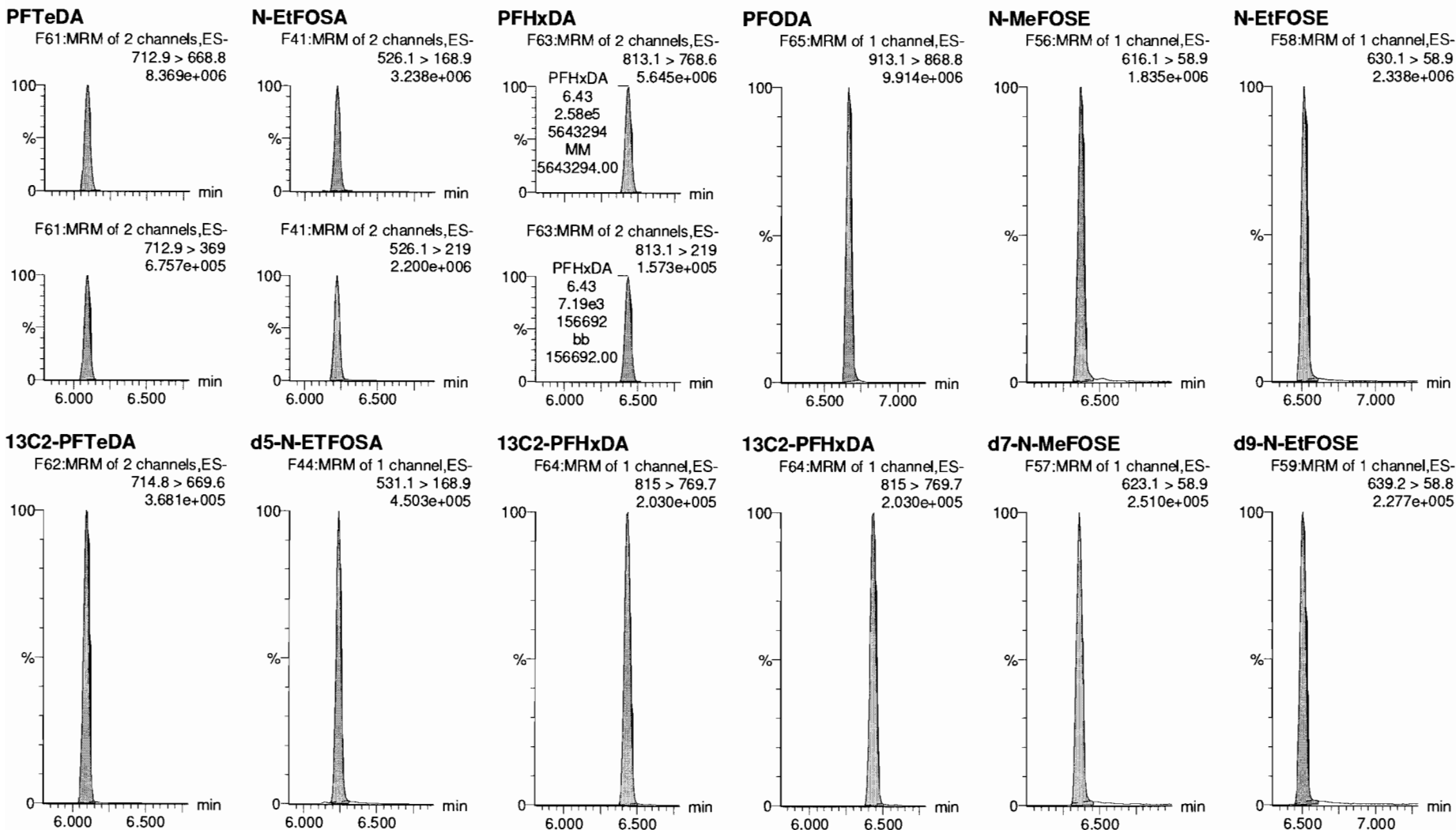


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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

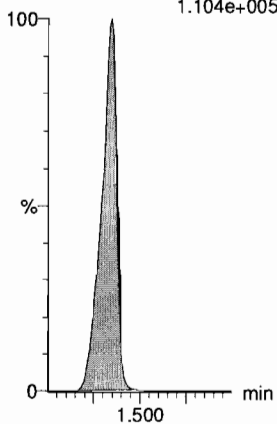
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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_10, Date: 04-Jun-2018, Time: 20:35:29, ID: ST180604M2-9 PFC CS6 18E2910, Description: PFC CS6 18E2910

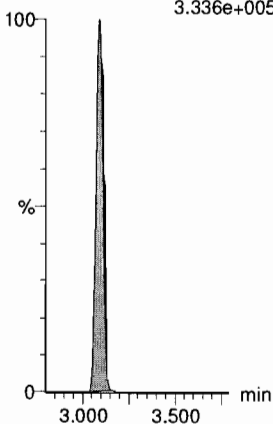
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.104e+005



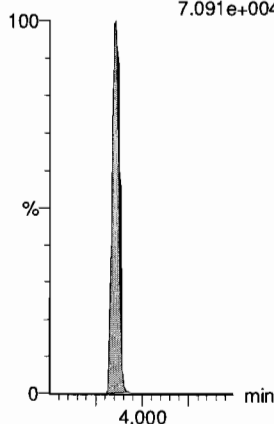
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
3.336e+005



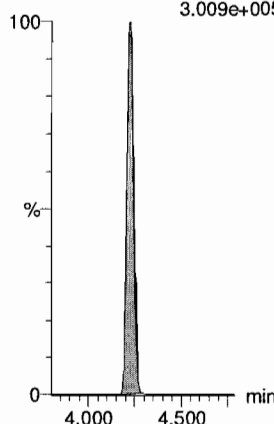
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
7.091e+004



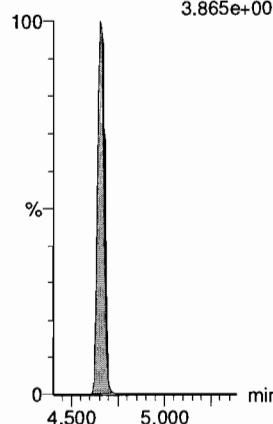
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
3.009e+005



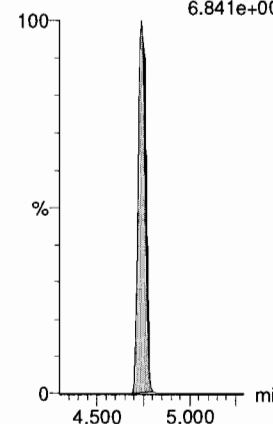
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
3.865e+005



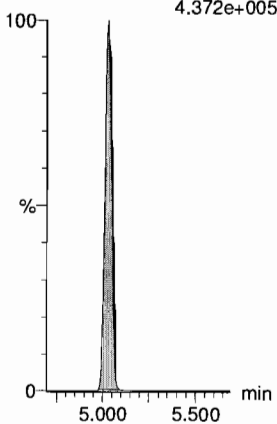
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
6.841e+004



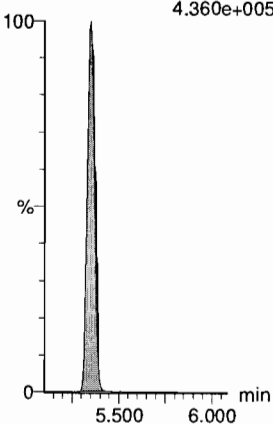
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
4.372e+005



13C7-PFuDA

F49:MRM of 1 channel,ES-
570.1 > 524.8
4.360e+005



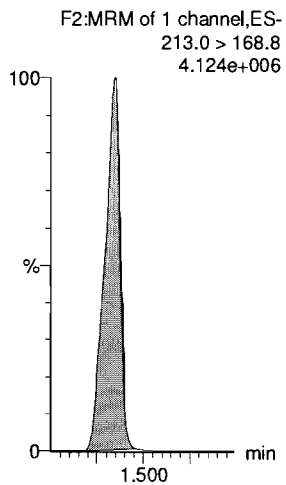
Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

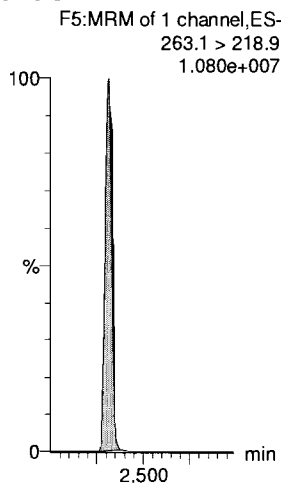
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Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

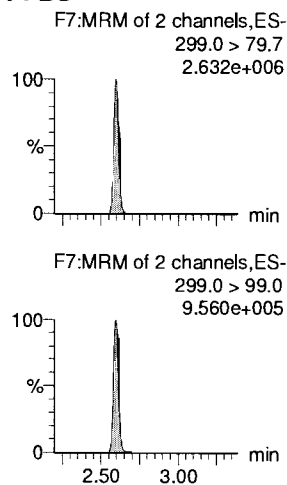
PFBA



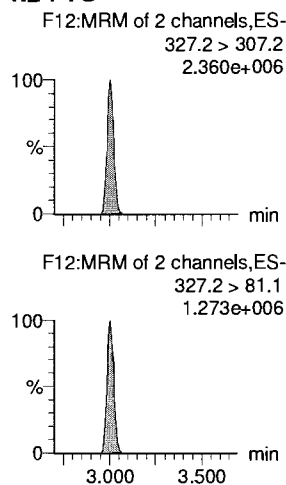
PFPeA



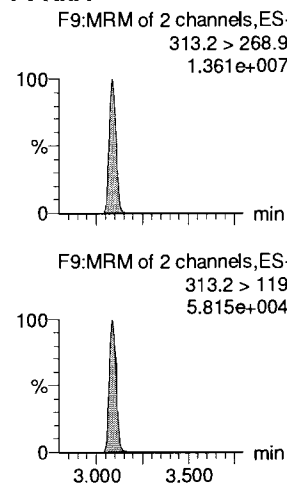
PFBS



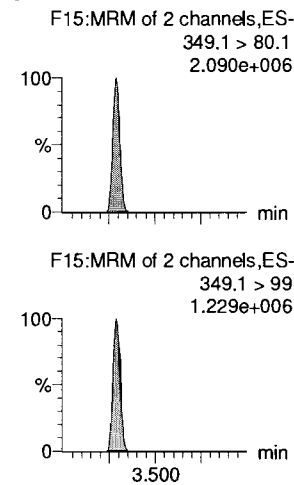
4:2 FTS



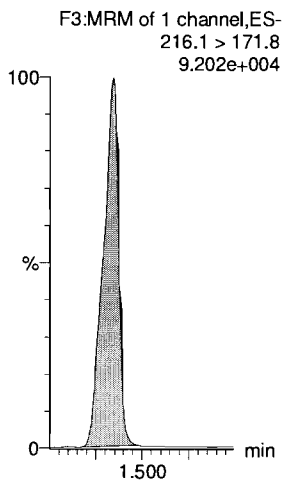
PFHxA



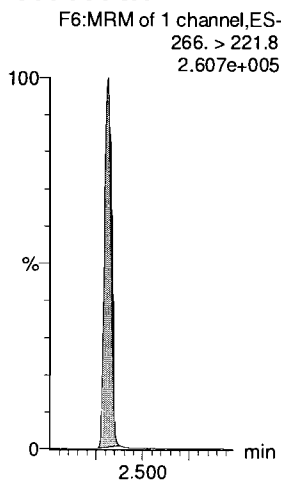
PFPeS



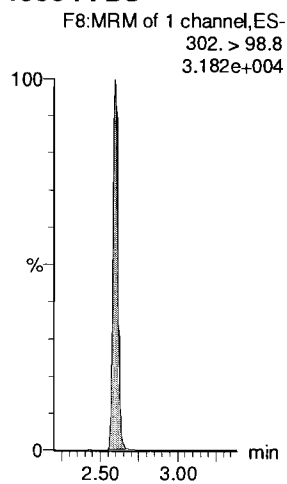
13C3-PFBA



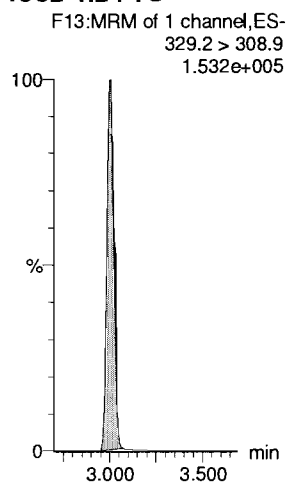
13C3-PFPeA



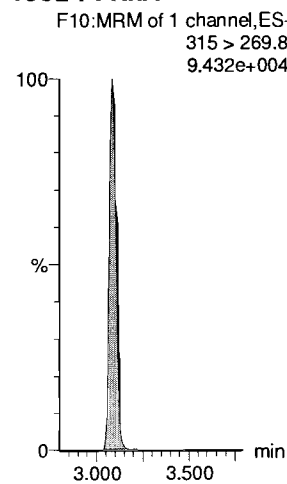
13C3-PFBS



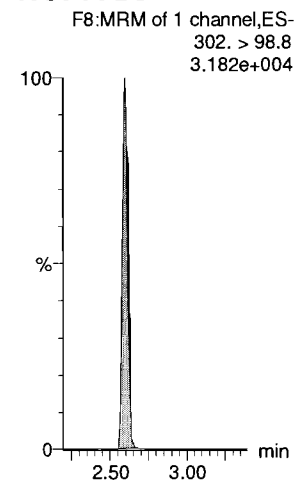
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

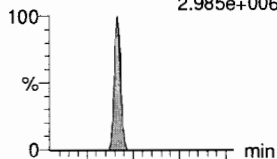
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Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

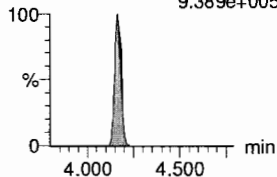
Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

6:2 FTS

F24:MRM of 2 channels,ES-
427.1 > 407
2.985e+006

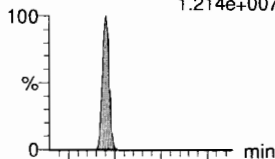


F24:MRM of 2 channels,ES-
427.1 > 80
9.389e+005

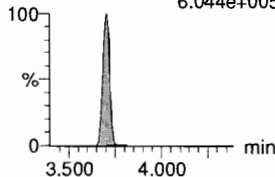


PFHpA

F16:MRM of 2 channels,ES-
363.0 > 318.9
1.214e+007

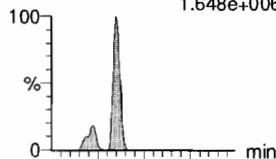


F16:MRM of 2 channels,ES-
363.0 > 169.0
6.044e+005

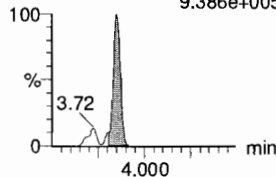


L-PFHxS

F18:MRM of 2 channels,ES-
398.9 > 79.6
1.648e+006

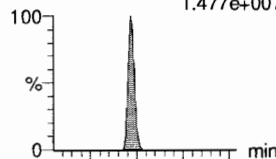


F18:MRM of 2 channels,ES-
398.9 > 99.0
9.386e+005

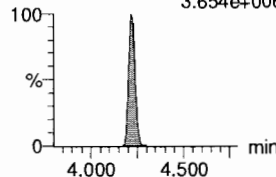


L-PFOA

F21:MRM of 2 channels,ES-
413 > 368.7
1.477e+007

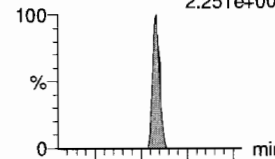


F21:MRM of 2 channels,ES-
413 > 169
3.654e+006

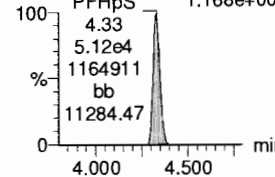


PFHpS

F26:MRM of 2 channels,ES-
449 > 80.0
2.251e+006

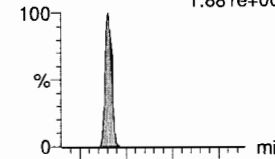


F26:MRM of 2 channels,ES-
449 > 98.7
1.168e+006

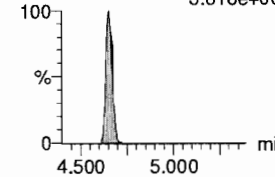


PFNA

F27:MRM of 2 channels,ES-
463.0 > 418.8
1.881e+007

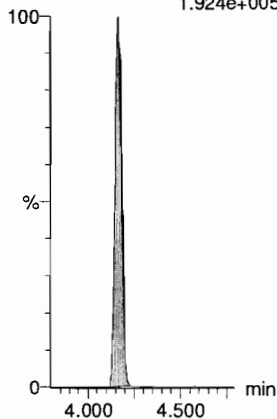


F27:MRM of 2 channels,ES-
463.0 > 219.0
3.618e+006



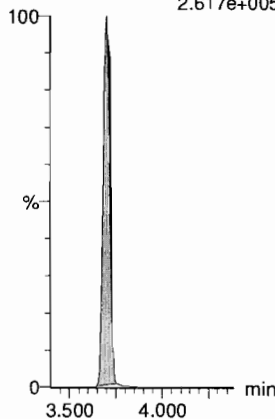
13C2-6:2 FTS

F25:MRM of 1 channel,ES-
429.1 > 408.9
1.924e+005



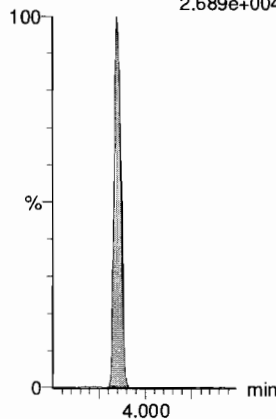
13C4-PFHpA

F17:MRM of 1 channel,ES-
367.2 > 321.8
2.617e+005



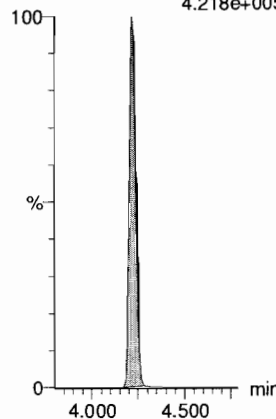
18O2-PFHxS

F20:MRM of 1 channel,ES-
403.0 > 102.6
2.689e+004



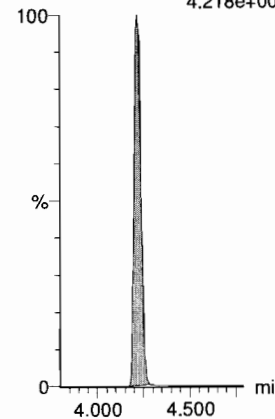
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.218e+005



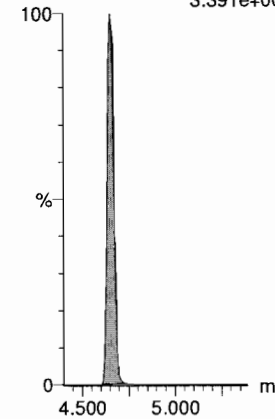
13C2-PFOA

F22:MRM of 1 channel,ES-
414.9 > 369.7
4.218e+005



13C5-PFNA

F28:MRM of 1 channel,ES-
468.2 > 422.9
3.391e+005



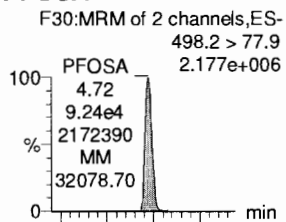
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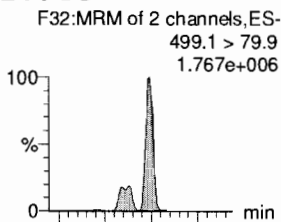
Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

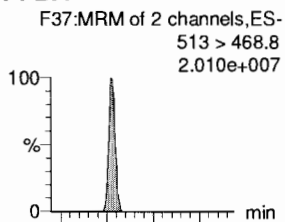
PFOSA



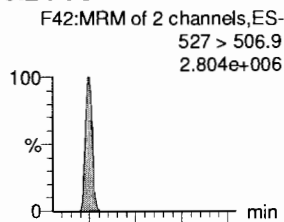
L-PFOS



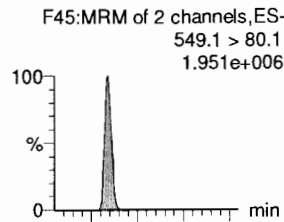
PFDA



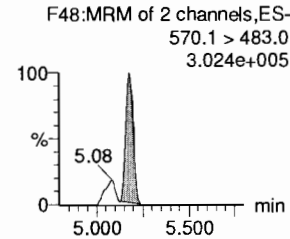
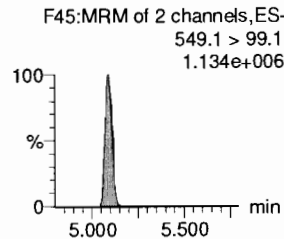
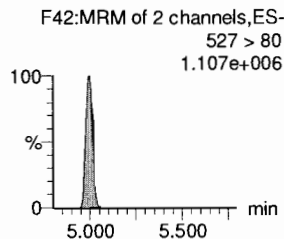
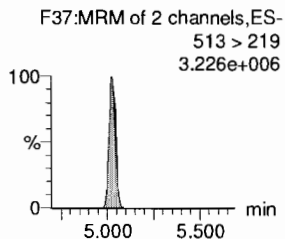
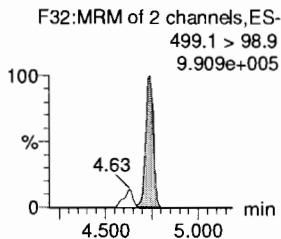
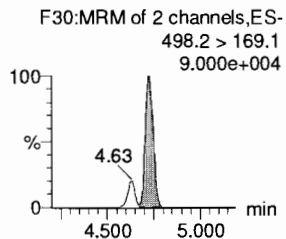
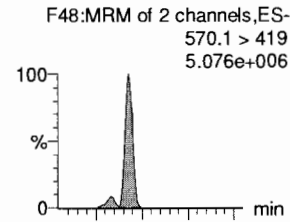
8:2 FTS



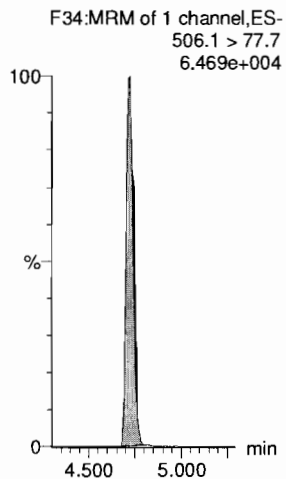
PFNS



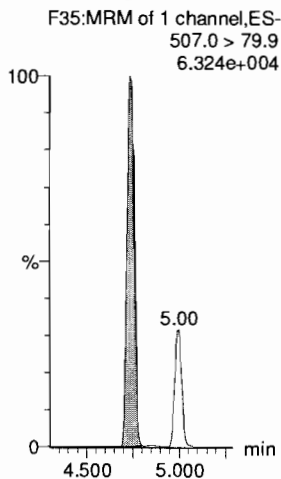
L-MeFOSAA



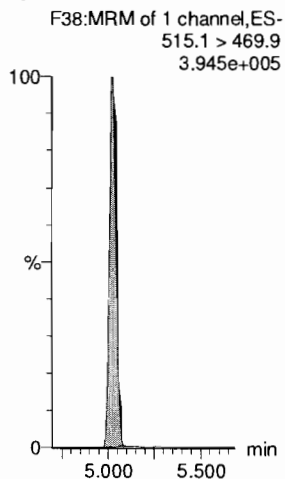
13C8-PFOSA



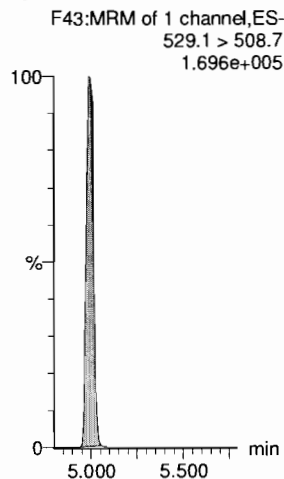
13C8-PFOS



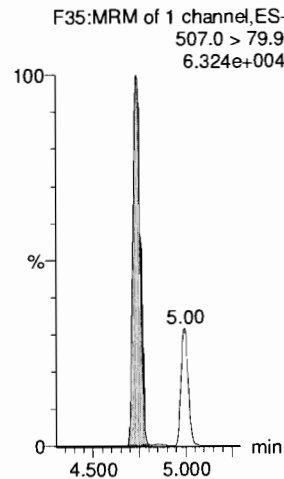
13C2-PFDA



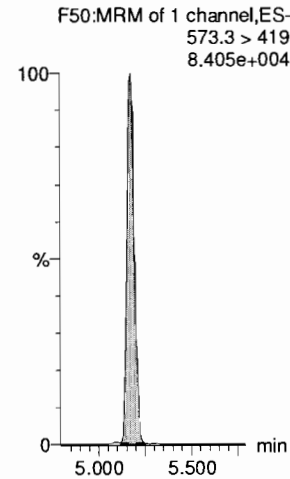
13C2-8:2 FTS



13C8-PFOS



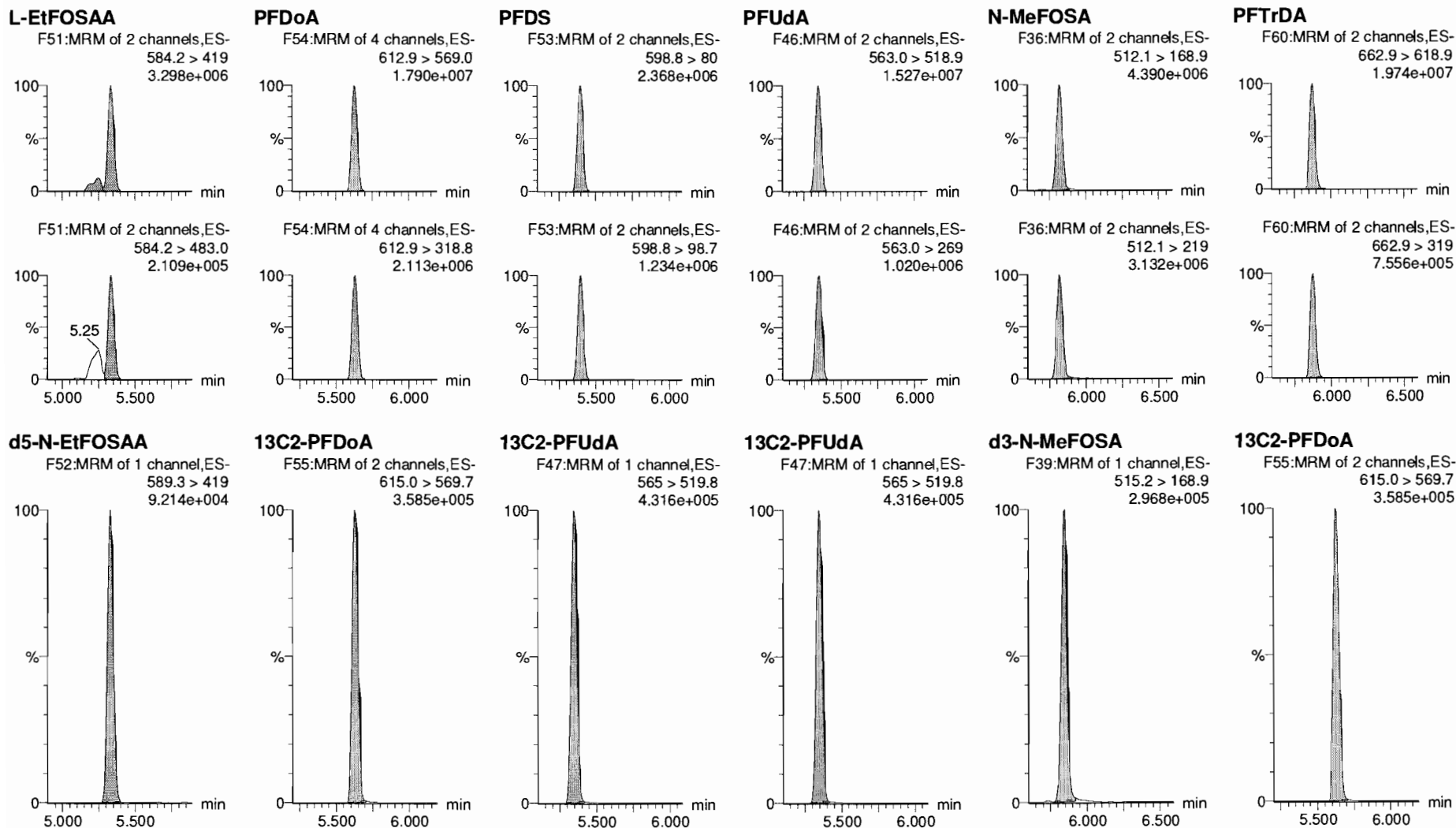
d3-N-MeFOSAA



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time
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Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

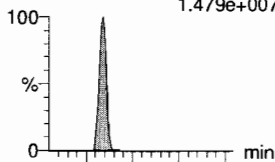
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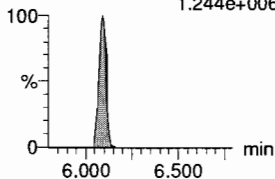
Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

PFTeDA

F61:MRM of 2 channels,ES-
712.9 > 668.8
1.479e+007

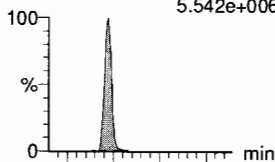


F61:MRM of 2 channels,ES-
712.9 > 369
1.244e+006

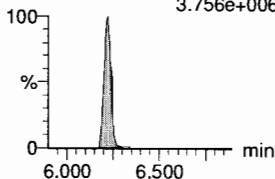


N-EtFOSA

F41:MRM of 2 channels,ES-
526.1 > 168.9
5.542e+006

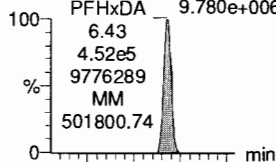


F41:MRM of 2 channels,ES-
526.1 > 219
3.756e+006

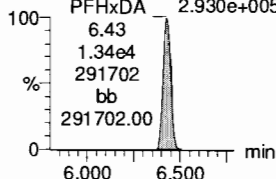


PFHxDA

F63:MRM of 2 channels,ES-
813.1 > 768.6
9.780e+006

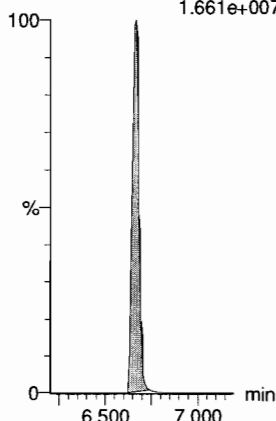


F63:MRM of 2 channels,ES-
813.1 > 219
2.930e+005



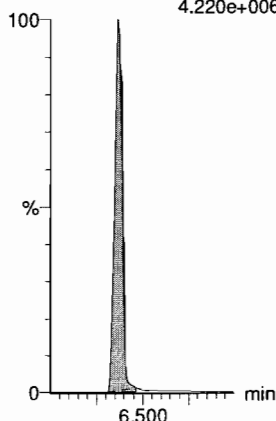
PFODA

F65:MRM of 1 channel,ES-
913.1 > 868.8
1.661e+007



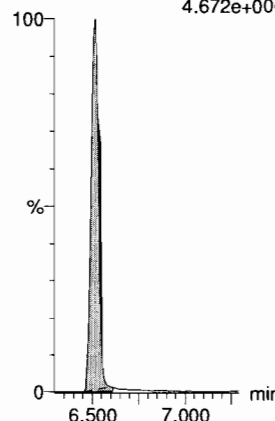
N-MeFOSE

F56:MRM of 1 channel,ES-
616.1 > 58.9
4.220e+006



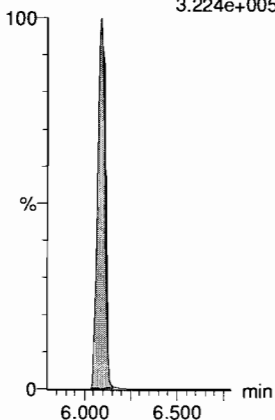
N-EtFOSE

F58:MRM of 1 channel,ES-
630.1 > 58.9
4.672e+006



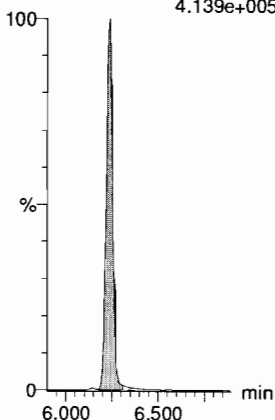
13C2-PFTeDA

F62:MRM of 2 channels,ES-
714.8 > 669.6
3.224e+005



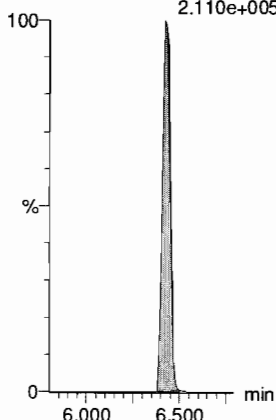
d5-N-ETFOSE

F44:MRM of 1 channel,ES-
531.1 > 168.9
4.139e+005



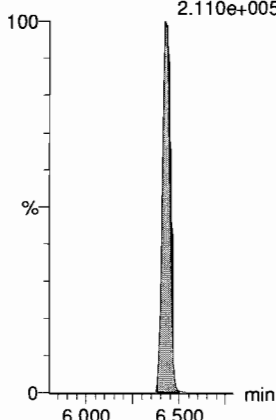
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.110e+005



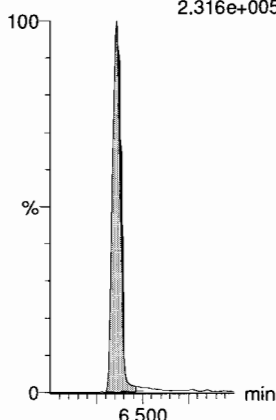
13C2-PFHxDA

F64:MRM of 1 channel,ES-
815 > 769.7
2.110e+005



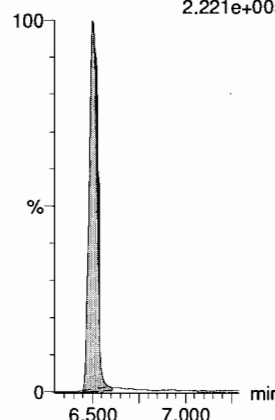
d7-N-MeFOSE

F57:MRM of 1 channel,ES-
623.1 > 58.9
2.316e+005



d9-N-EtFOSE

F59:MRM of 1 channel,ES-
639.2 > 58.8
2.221e+005



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-CRV.qld

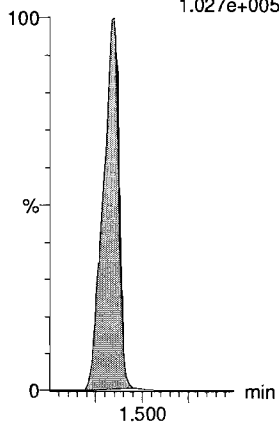
Last Altered: Tuesday, June 05, 2018 10:50:38 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 10:51:02 Pacific Daylight Time

Name: 180604M2_11, Date: 04-Jun-2018, Time: 20:45:54, ID: ST180604M2-10 PFC CS7 18E2911, Description: PFC CS7 18E2911

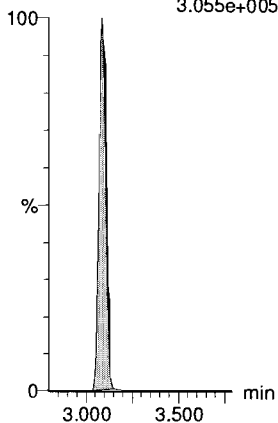
13C4-PFBA

F4:MRM of 1 channel,ES-
217. > 171.8
1.027e+005



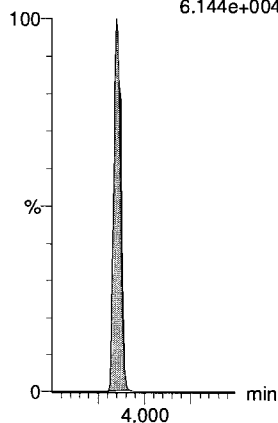
13C5-PFHxA

F11:MRM of 1 channel,ES-
318 > 272.9
3.055e+005



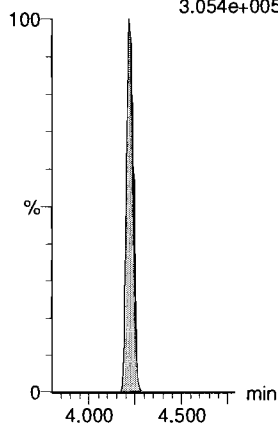
13C3-PFHxS

F19:MRM of 1 channel,ES-
401.9 > 79.9
6.144e+004



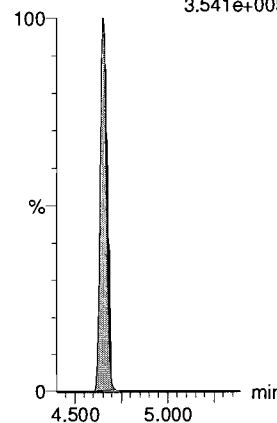
13C8-PFOA

F23:MRM of 1 channel,ES-
421.3 > 376
3.054e+005



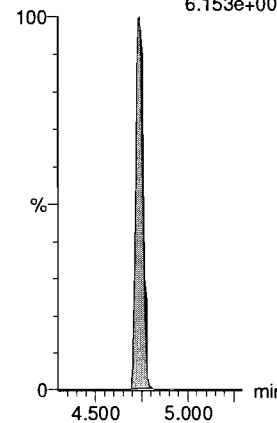
13C9-PFNA

F29:MRM of 1 channel,ES-
472.2 > 426.9
3.541e+005



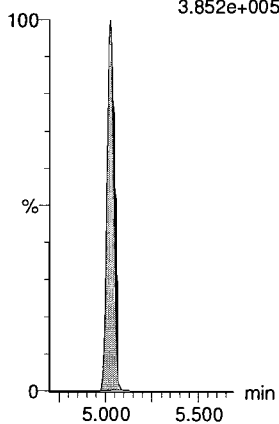
13C4-PFOS

F33:MRM of 1 channel,ES-
503 > 79.9
6.153e+004



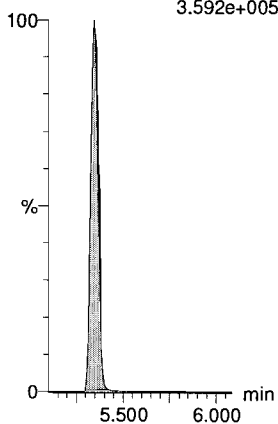
13C6-PFDA

F40:MRM of 1 channel,ES-
519.1 > 473.7
3.852e+005



13C7-PFUdA

F49:MRM of 1 channel,ES-
570.1 > 524.8
3.592e+005



Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:28:17 Pacific Daylight Time

Jan 6/5/18

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45

Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	1 PFBA	213.0 > 16...	7.94e3	9.15e3		1.33	1.34	10.9	9.77	97.7	NO		
2	2 PFPeA	263.1 > 21...	9.41e3	1.25e4		2.31	2.31	9.40	9.14	91.4	NO		
3	3 PFBS	299.0 > 79.7	2.13e3	1.56e3		2.59	2.60	17.1	8.59	85.9	NO	2.666	NO
4	4 4:2 FTS	327.2>307.2	2.67e3	3.36e3		3.00	3.00	9.94	9.20	92.0	NO	1.868	NO
5	5 PFHxA	313.2 > 26...	1.38e4	4.49e3		3.09	3.09	15.4	9.63	96.3	NO	304.989	NO
6	6 PFPeS	349.1>80.1	1.99e3	1.56e3		3.28	3.29	15.9	8.81	88.1	NO	1.664	NO
7	7 PFHpA	363.0 > 31...	1.10e4	1.23e4		3.70	3.71	11.3	9.64	96.4	NO	18.569	NO
8	8 L-PFHxS	398.9 > 79.6	1.74e3	1.39e3		3.85	3.86	15.7	8.17	81.7	NO	1.772	NO
9	10 6:2 FTS	427.1 > 407	3.20e3	3.80e3		4.17	4.17	10.5	8.48	84.8	NO	3.138	NO
10	11 L-PFOA	413 > 368.7	1.38e4	1.77e4		4.25	4.22	9.78	10.8	108.4	NO	4.032	NO
11	13 PFHpS	449 > 80.0	2.22e3	1.77e4		4.33	4.33	1.57	9.96	99.6	NO	1.861	NO
12	14 PFNA	463.0 > 41...	1.70e4	1.70e4		4.66	4.66	12.4	9.72	97.2	NO	4.808	NO
13	15 PFOSA	498.2 > 77.9	2.24e3	3.29e3		4.73	4.72	8.53	8.98	89.8	NO	21.032	NO
14	16 L-PFOS	499.1 > 79.9	2.12e3	3.16e3		4.74	4.74	8.39	9.04	90.4	NO	2.004	NO
15	18 PFDA	513 > 468.8	1.83e4	2.36e4		5.03	5.03	9.73	9.44	94.4	NO	6.697	NO
16	19 8:2 FTS	527 > 506.9	3.17e3	3.13e3		5.00	5.00	12.7	8.80	88.0	NO	2.405	NO
17	20 PFNS	549.1>80.1	1.96e3	3.16e3		5.09	5.09	7.77	9.31	93.1	NO	1.772	NO
18	21 L-MeFOSAA	570.1 > 419	7.33e3	4.38e3		5.18	5.18	20.9	11.0	110.2	NO	18.683	YES

AR 6/5/18

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 11:28:30 Pacific Daylight Time

Ⓐ NOT IN ICV

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

AN 6/5/18

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
1	23	L-EtFOSAA	584.2 > 419	5.58e3	5.43e3	5.37	5.34	12.8	11.2	112.5	NO	14.744	NO
2	25	PFUdA	563.0 > 51...	1.78e4	1.99e4	5.35	5.35	11.2	11.5	115.4	NO	12.555	NO
3	26	PFDS	598.8 > 80	2.49e3	1.99e4	5.40	5.40	1.56	10.8	108.1	NO	2.023	NO
4	27	PFDoA	612.9 > 56...	2.17e4	1.99e4	5.63	5.63	13.7	12.3	122.7	NO	9.431	NO
5	28	N-MeFOSA	512.1 > 16...		1.39e4	5.82					NO	Ⓐ	
6	29	PFTrDA	662.9 > 61...	2.24e4	1.99e4	5.88	5.88	14.1	13.0	129.9	NO	35.084	NO
7	30	PFTeDA	712.9 > 66...	1.73e4	1.75e4	6.10	6.09	12.3	9.49	94.9	NO	12.015	NO
8	31	N-EtFOSA	526.1 > 16...		2.06e4	6.23					NO	Ⓐ	
9	32	PFHxDA	813.1 > 76...		1.08e4	6.43					NO		
10	33	PFODA	913.1 > 86...		1.08e4	6.67					NO		
11	34	N-MeFOSE	616.1 > 58.9		1.11e4	6.37					NO		
12	35	N-EtFOSE	630.1 > 58.9		1.05e4	6.52					NO		
13	36	13C3-PFBA	216.1 > 17...	9.15e3	1.04e4	0.885	1.34	1.34	11.0	12.4	99.6	NO	
14	37	13C3-PFPeA	266. > 221.8	1.25e4	1.50e4	0.849	2.31	2.31	10.4	12.2	98.0	NO	
15	38	13C3-PFBS	302. > 98.8	1.56e3	1.50e4	0.104	2.60	2.60	1.30	12.5	99.8	NO	
16	39	13C2-4:2 FTS	329.2>308.9	3.36e3	1.50e4	0.248	3.01	3.00	2.79	11.3	90.2	NO	
17	40	13C2-PFHxA	315 > 269.8	4.49e3	1.50e4	0.729	3.09	3.09	3.73	5.11	102.3	NO	
18	41	13C4-PFHpA	367.2 > 32...	1.23e4	1.50e4	0.836	3.71	3.70	10.2	12.2	97.5	NO	
19	42	18O2-PFHxS	403.0 > 10...	1.39e3	3.08e3	0.443	3.86	3.85	5.62	12.7	101.6	NO	
20	43	13C2-6:2 FTS	429.1 > 40...	3.80e3	1.53e4	0.249	4.17	4.17	3.11	12.5	99.8	NO	
21	44	13C2-PFOA	414.9 > 36...	1.77e4	1.53e4	1.332	4.23	4.22	14.4	10.8	86.7	NO	
22	45	13C5-PFNA	468.2 > 42...	1.70e4	1.67e4	0.951	4.66	4.66	12.8	13.4	107.3	NO	
23	46	13C8-PFOSA	506.1 > 77.7	3.29e3	2.36e4	0.140	4.73	4.72	1.74	12.5	99.8	NO	
24	47	13C8-PFOS	507.0 > 79.9	3.16e3	3.23e3	1.060	4.74	4.74	12.2	11.5	92.2	NO	
25	48	13C2-PFDA	515.1 > 46...	2.36e4	1.90e4	1.130	5.03	5.03	15.5	13.7	110.0	NO	
26	49	13C2-8:2 FTS	529.1 > 50...	3.13e3	1.50e4	0.217	5.00	5.00	2.60	12.0	95.7	NO	
27	50	d3-N-MeFOSAA	573.3 > 419	4.38e3	2.36e4	0.184	5.18	5.18	2.32	12.6	101.1	NO	
28	51	d5-N-EtFOSAA	589.3 > 419	5.43e3	2.36e4	0.223	5.34	5.34	2.87	12.9	102.9	NO	
29	52	13C2-PFUdA	565 > 519.8	1.99e4	2.36e4	0.936	5.35	5.35	10.5	11.3	90.1	NO	
30	53	13C2-PFDoA	615.0 > 56...	1.99e4	1.90e4	1.168	5.63	5.63	13.1	11.2	89.6	NO	
31	54	d3-N-MeFOSA	515.2 > 16...	1.39e4	2.36e4	0.051	5.85	5.85	7.33	143	95.4	NO	
32	55	13C2-PFTeDA	714.8 > 66...	1.75e4	2.36e4	0.706	6.09	6.09	9.27	13.1	105.0	NO	

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Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:28:30 Pacific Daylight Time

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

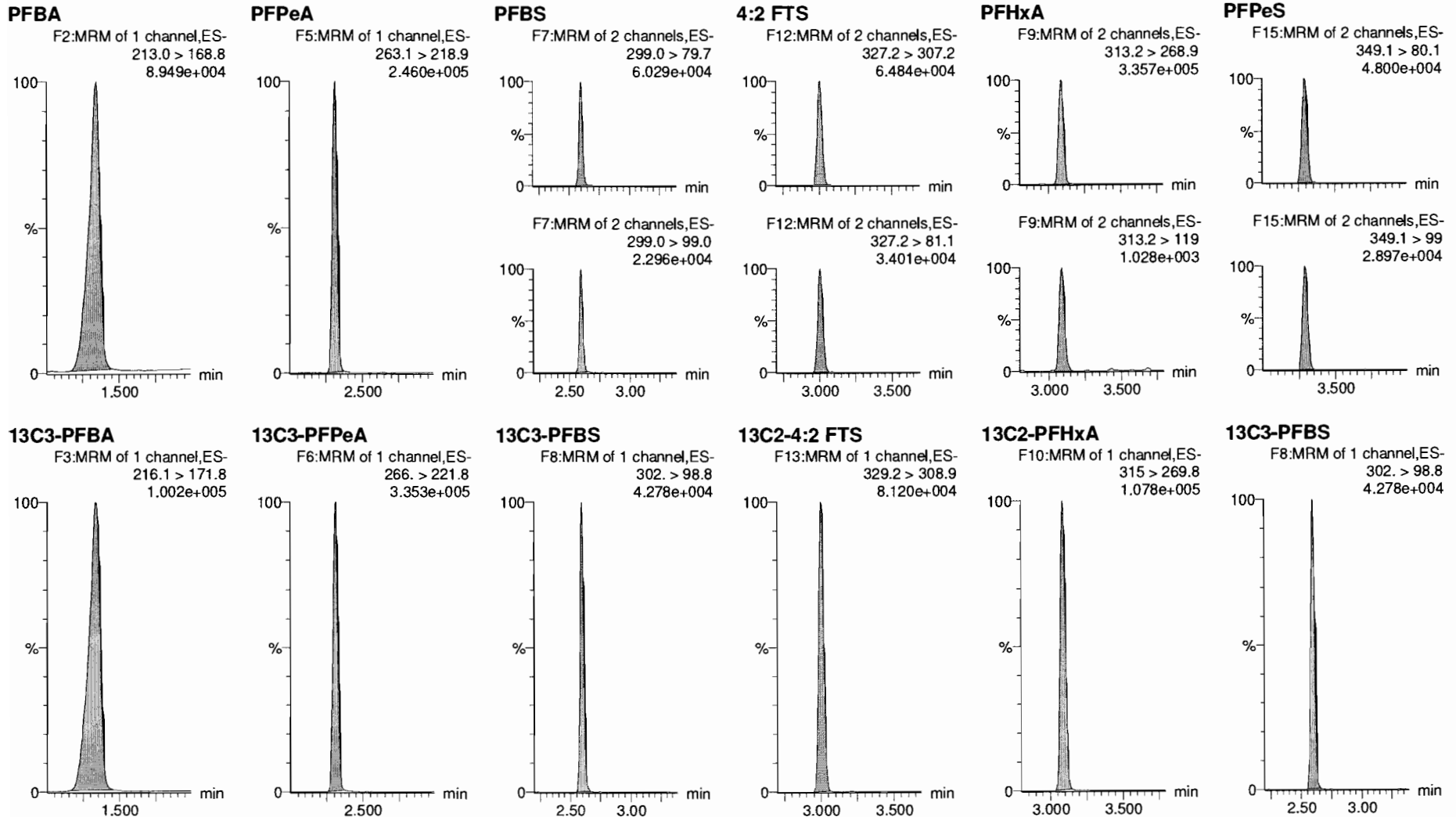
	# Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out	Ion Ratio	Ratio out?
33	56 d5-N-ETFOSA	531.1 > 16...	2.06e4	2.36e4	0.071	6.24	6.24	10.9	153	101.7	NO		
34	57 13C2-PFHxDA	815 > 769.7	1.08e4	2.36e4	1.079	6.43	6.43	5.71	5.29	105.9	NO		
35	58 d7-N-MeFOSE	623.1 > 58.9	1.11e4	2.36e4	0.041	6.37	6.36	5.87	142	95.0	NO		
36	59 d9-N-EiFOSE	639.2 > 58.8	1.05e4	2.36e4	0.038	6.51	6.51	5.55	145	96.5	NO		
37	60 13C4-PFBA	217. > 171.8	1.04e4	1.04e4	1.000	1.35	1.34	12.5	12.5	100.0	NO		
38	61 13C5-PFHxA	318 > 272.9	1.50e4	1.50e4	1.000	3.09	3.09	12.5	12.5	100.0	NO		
39	62 13C3-PFHxS	401.9 > 79.9	3.08e3	3.08e3	1.000	3.86	3.85	12.5	12.5	100.0	NO		
40	63 13C8-PFOA	421.3 > 376	1.53e4	1.53e4	1.000	4.23	4.22	12.5	12.5	100.0	NO		
41	64 13C9-PFNA	472.2 > 42...	1.67e4	1.67e4	1.000	4.66	4.66	12.5	12.5	100.0	NO		
42	65 13C4-PFOS	503 > 79.9	3.23e3	3.23e3	1.000	4.74	4.74	12.5	12.5	100.0	NO		
43	66 13C6-PFDA	519.1 > 47...	1.90e4	1.90e4	1.000	5.03	5.03	12.5	12.5	100.0	NO		
44	67 13C7-PFUdA	570.1 > 52...	2.36e4	2.36e4	1.000	5.35	5.35	12.5	12.5	100.0	NO		

Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time
Printed: Tuesday, June 05, 2018 11:28:30 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_060418.mdb 05 Jun 2018 10:44:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

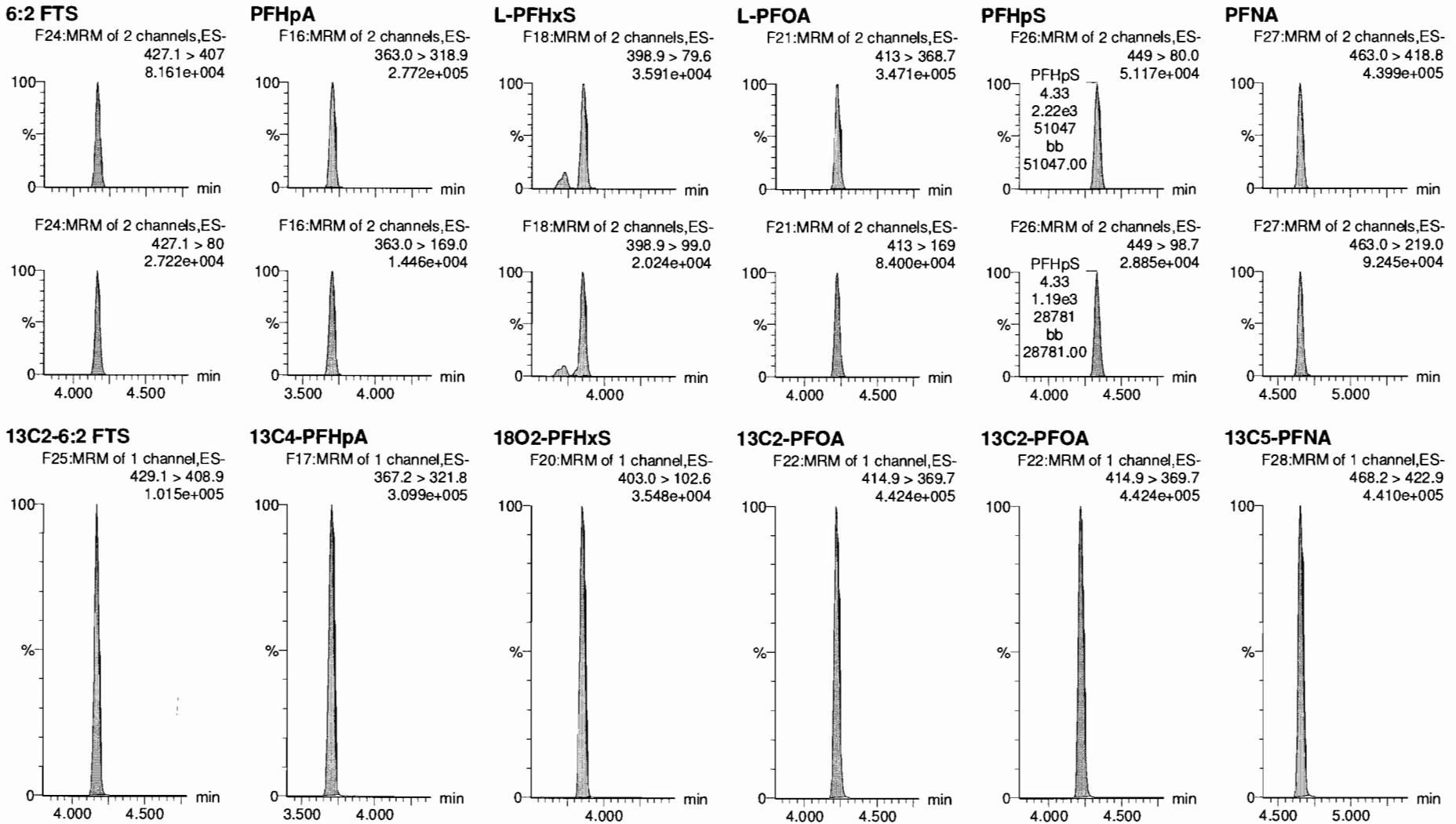


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:28:30 Pacific Daylight Time

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901



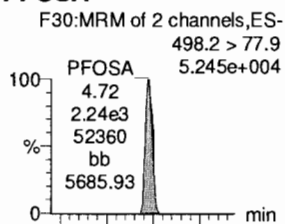
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Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time

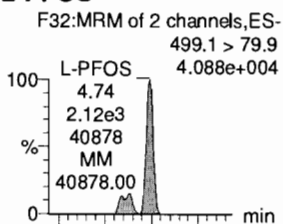
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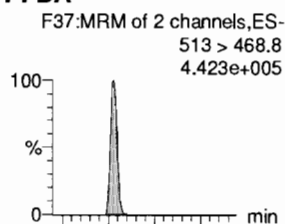
PFOSA



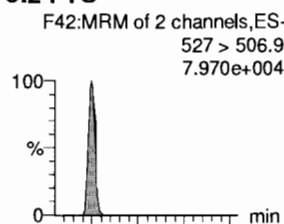
L-PFOS



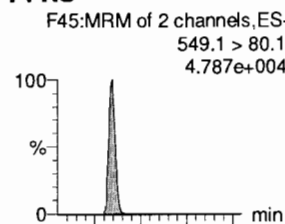
PFDA



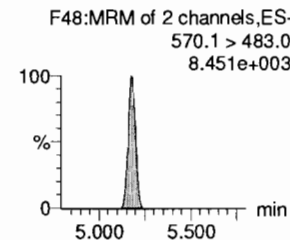
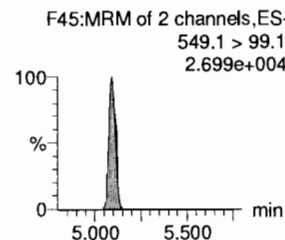
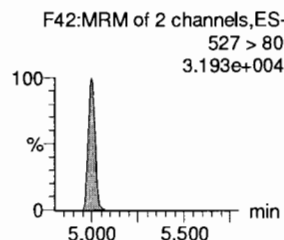
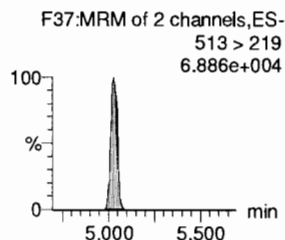
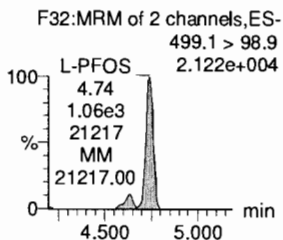
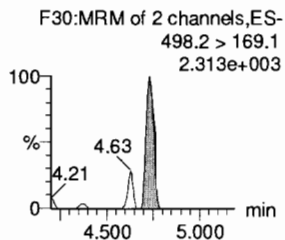
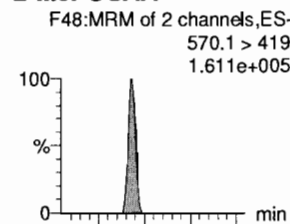
8:2 FTS



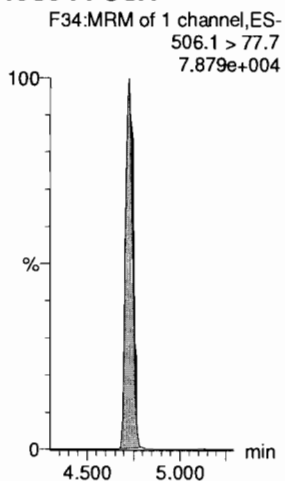
PFNS



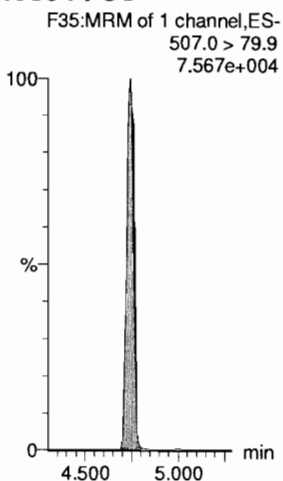
L-MeFOSAA



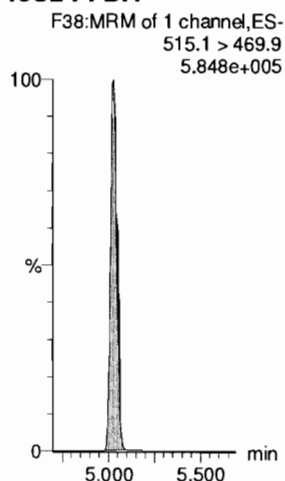
13C8-PFOSA



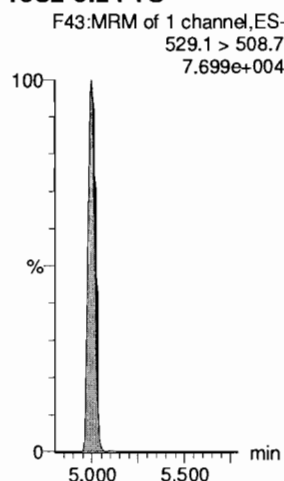
13C8-PFOS



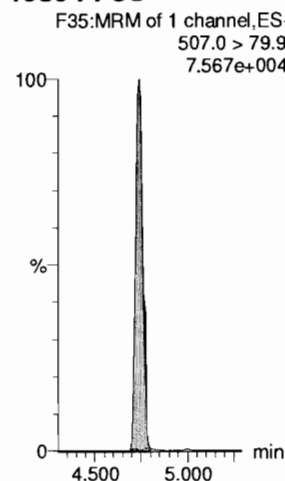
13C2-PFDA



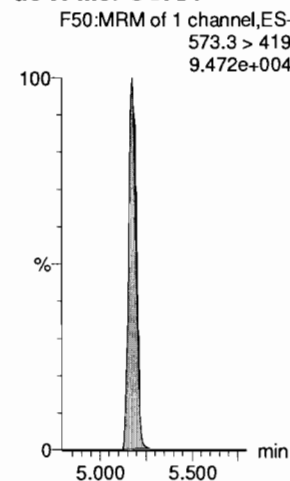
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA

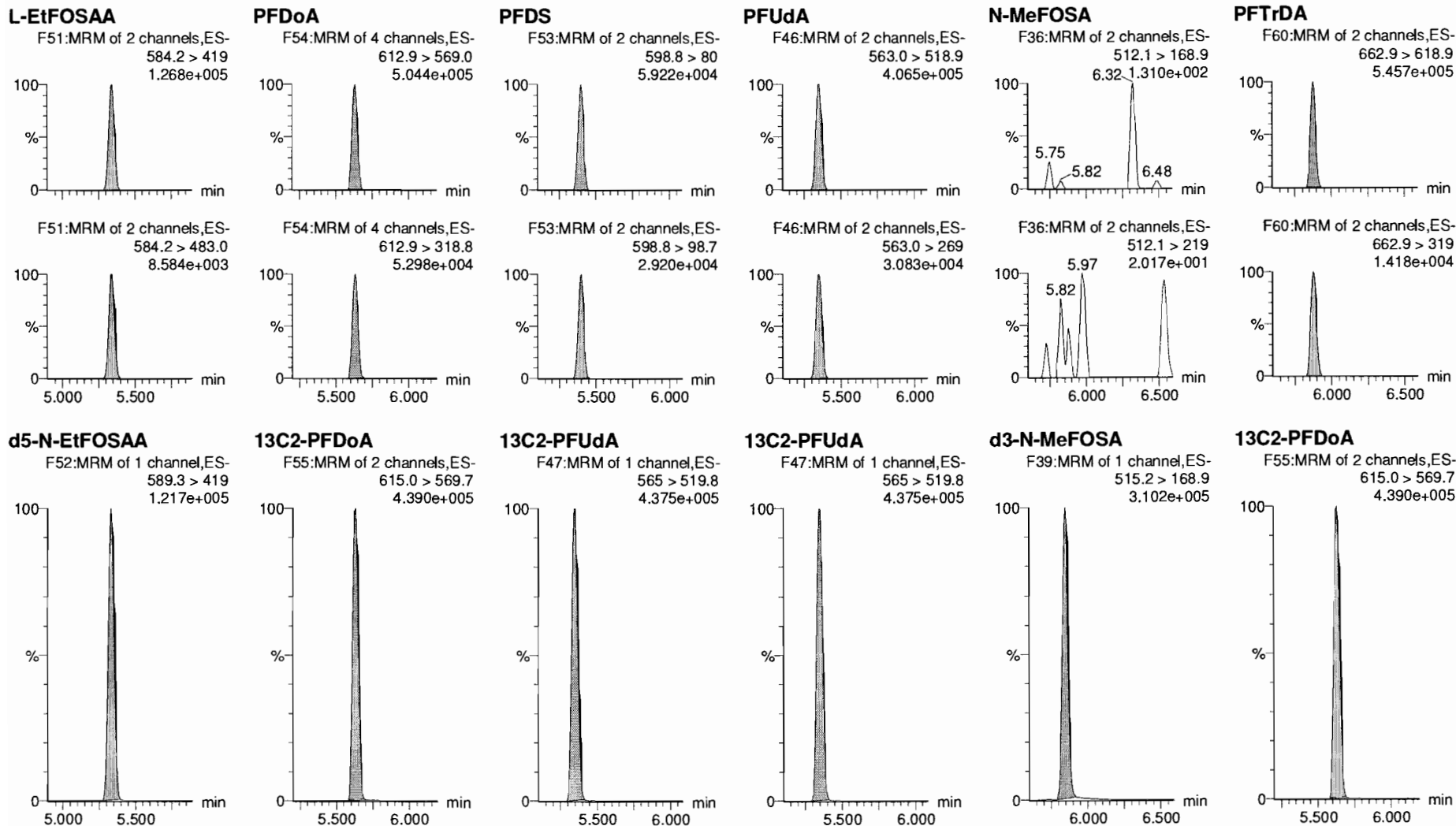


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time

Printed: Tuesday, June 05, 2018 11:28:30 Pacific Daylight Time

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901



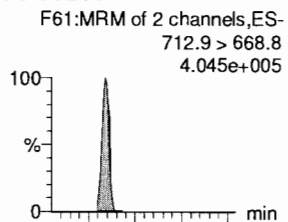
Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

Last Altered: Tuesday, June 05, 2018 11:27:26 Pacific Daylight Time

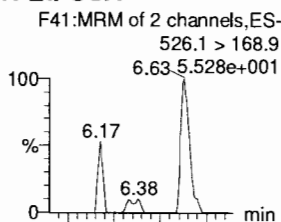
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Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901

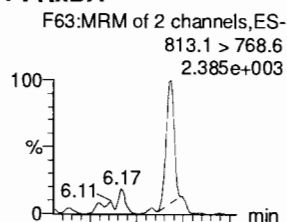
PFTeDA



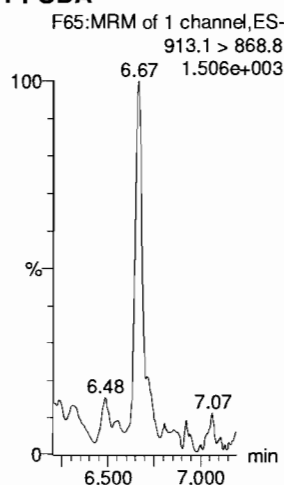
N-EtFOFA



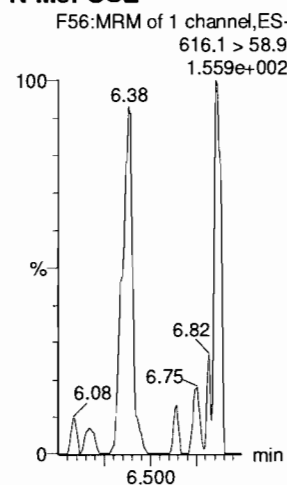
PFHxDA



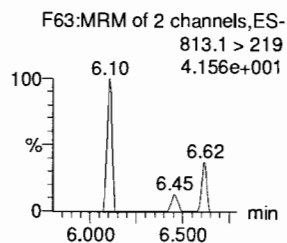
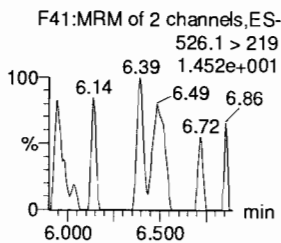
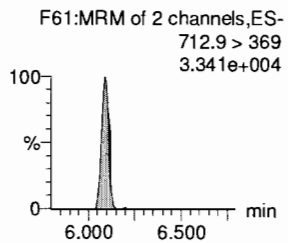
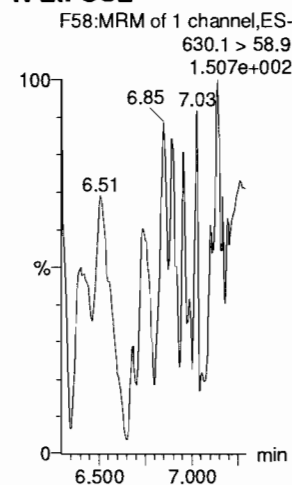
PFODA



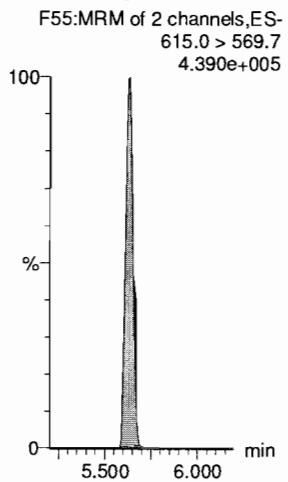
N-MeFOSE



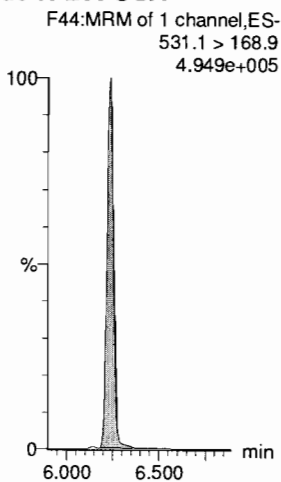
N-EtFOSE



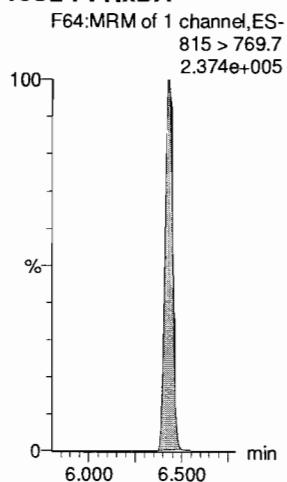
13C2-PFDoA



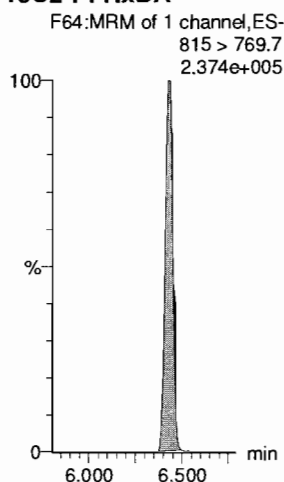
d5-N-ETFOSA



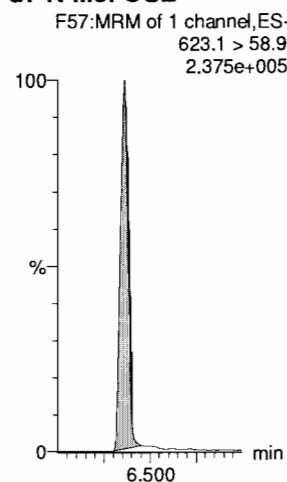
13C2-PFHxDA



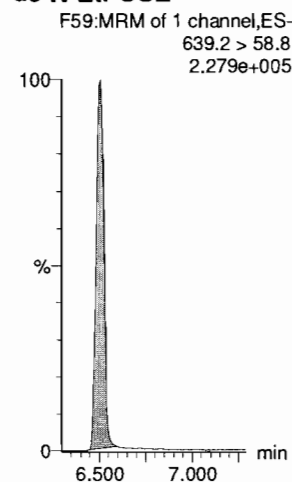
13C2-PFHxDA



d7-N-MeFOSE



d9-N-EtFOSE

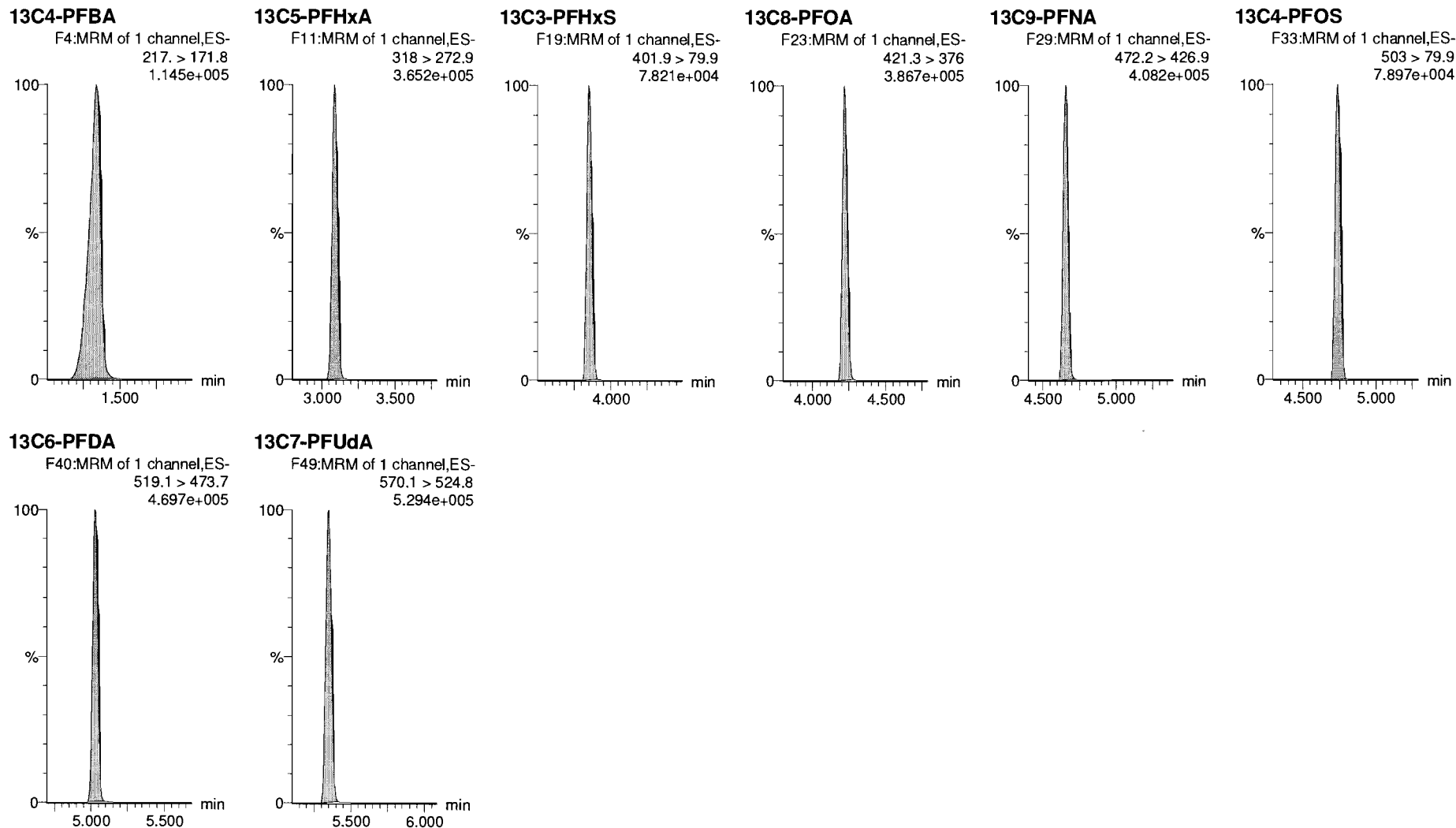


Dataset: F:\Projects\PFAS.PRO\Results\180604M2\180604M2-ICV.qld

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Printed: Tuesday, June 05, 2018 11:28:30 Pacific Daylight Time

Name: 180604M2_13, Date: 04-Jun-2018, Time: 21:06:49, ID: ICV180604M2-1 PFC 537 ICV 18E2901, Description: PFC ICV 18E2901



Dataset: Untitled

Last Altered: Tuesday, June 05, 2018 11:17:25 Pacific Daylight Time

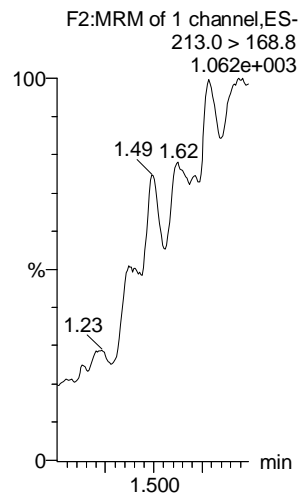
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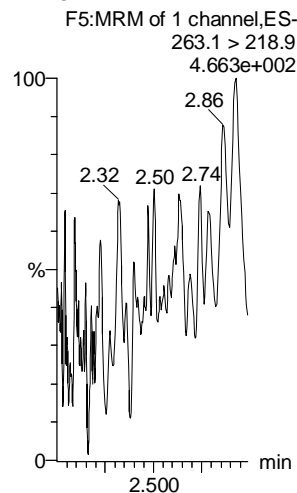
Calibration: F:\Projects\PFAS.PRO\CurveDBC18_VAL-PFAS_Q4_06-04-18.cdb 05 Jun 2018 10:43:30

Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

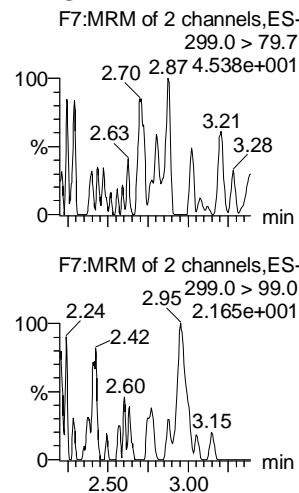
PFBA



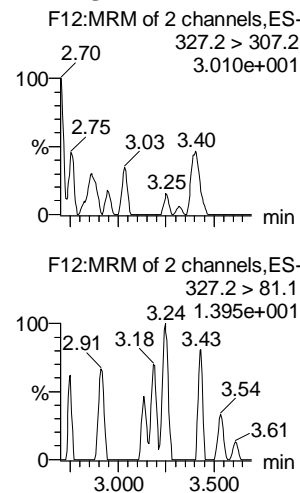
PFPeA



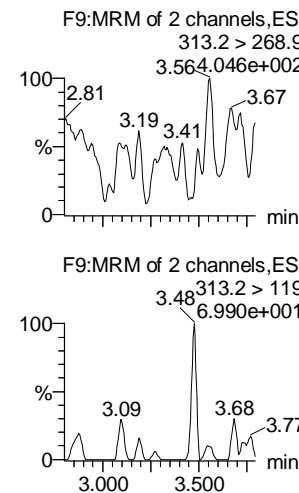
PFBS



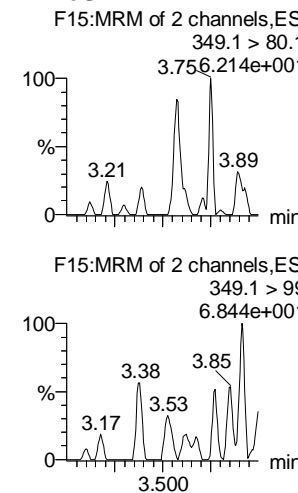
4:2 FTS



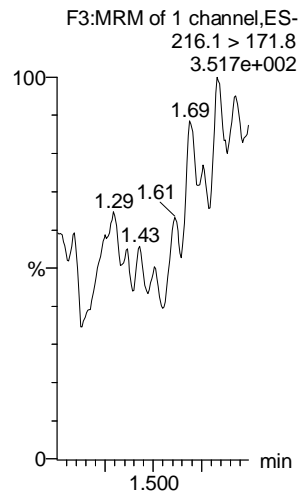
PFHxA



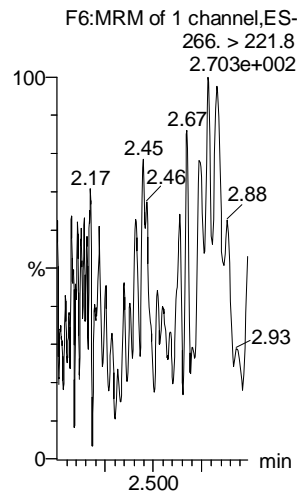
PFPeS



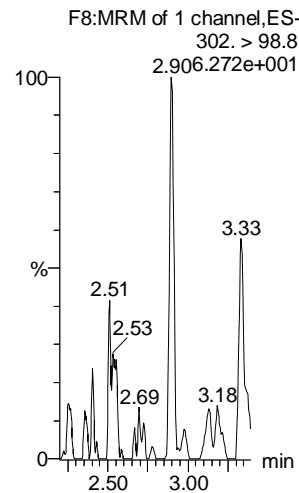
13C3-PFBA



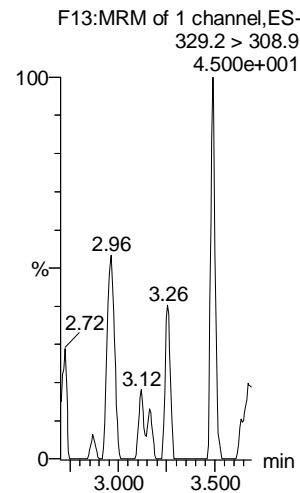
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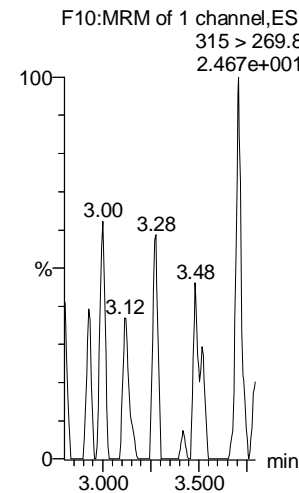
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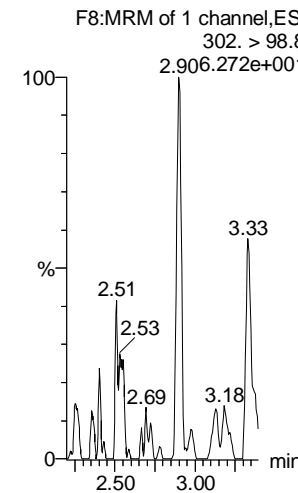
13C2-4:2 FTS



13C2-PFHxA



13C3-PFBS



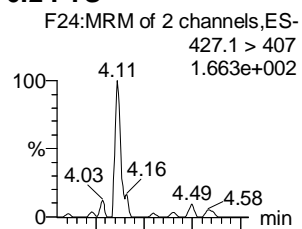
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Last Altered: Tuesday, June 05, 2018 11:17:25 Pacific Daylight Time

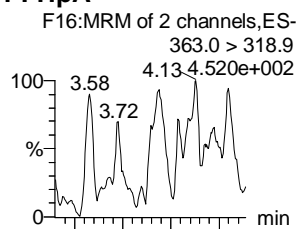
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Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

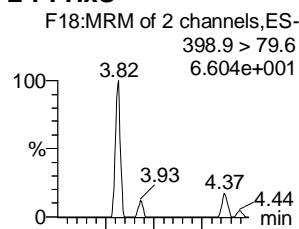
6:2 FTS



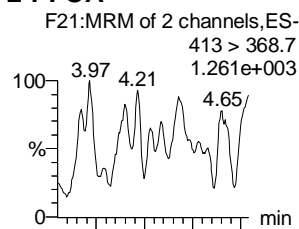
PFHpA



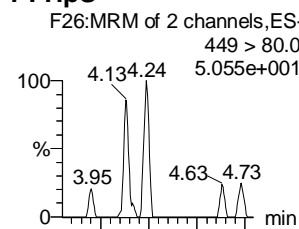
L-PFHxS



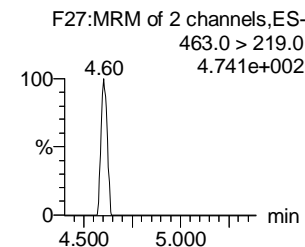
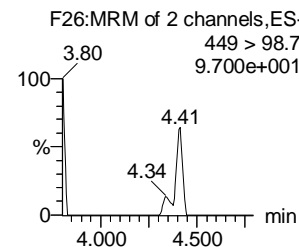
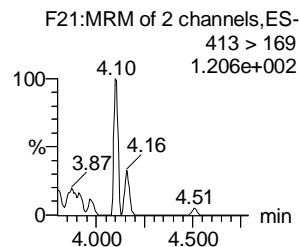
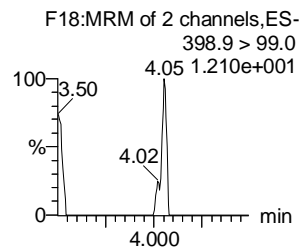
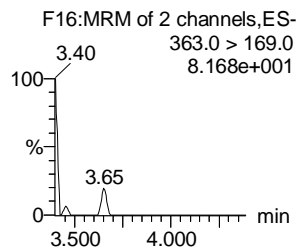
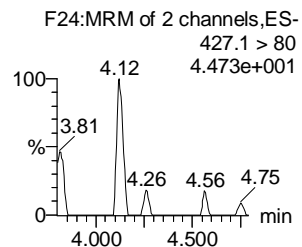
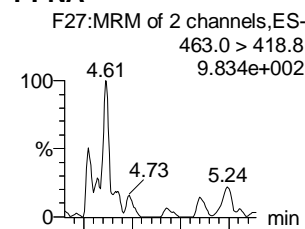
L-PFOA



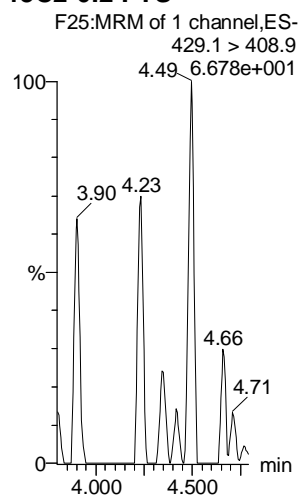
PFHpS



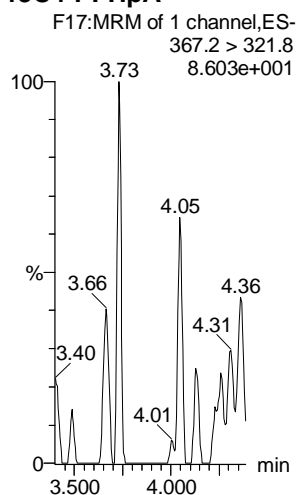
PFNA



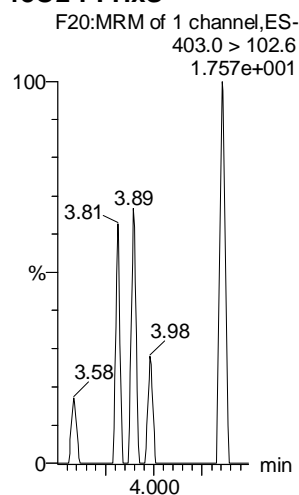
13C2-6:2 FTS



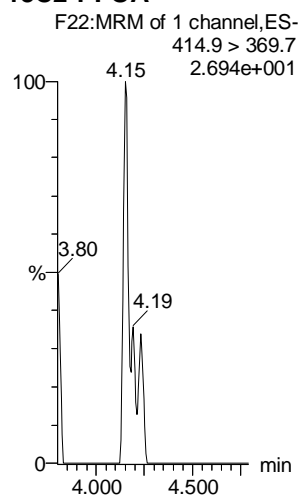
13C4-PFHpA



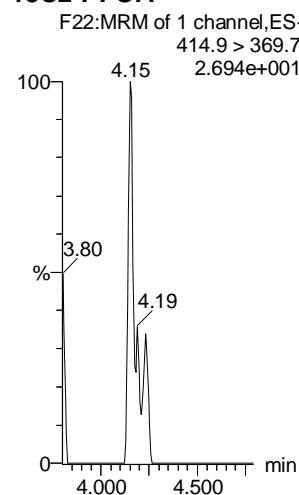
18O2-PFHxS



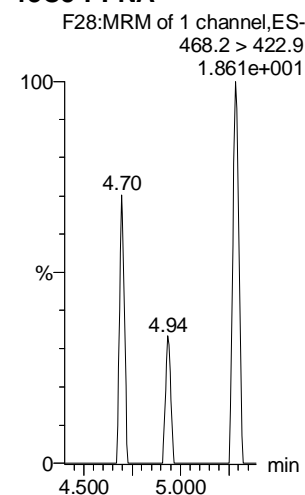
13C2-PFOA



13C2-PFOA



13C5-PFNA



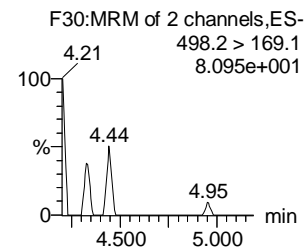
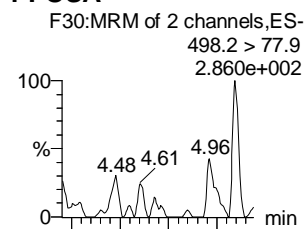
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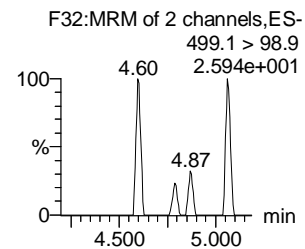
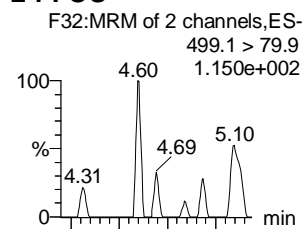
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Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

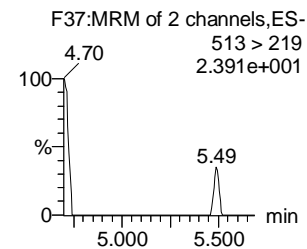
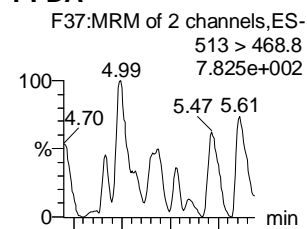
PFOSA



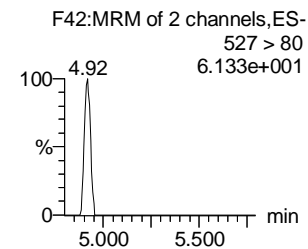
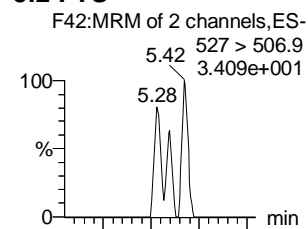
L-PFOS



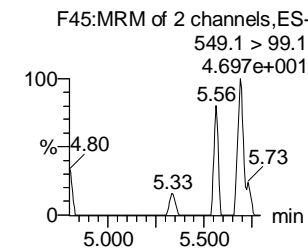
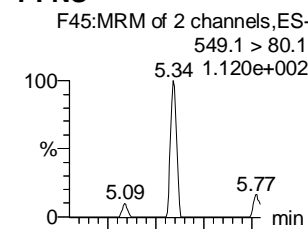
PFDA



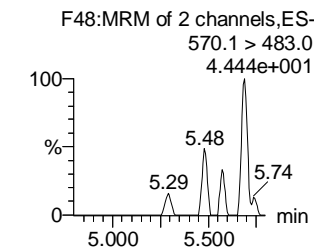
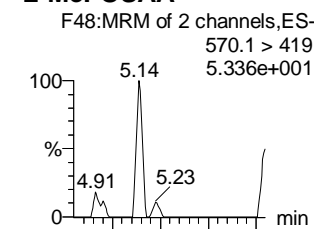
8:2 FTS



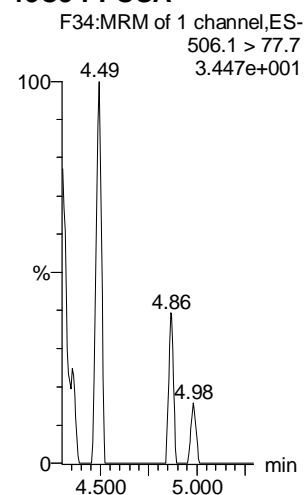
PFNS



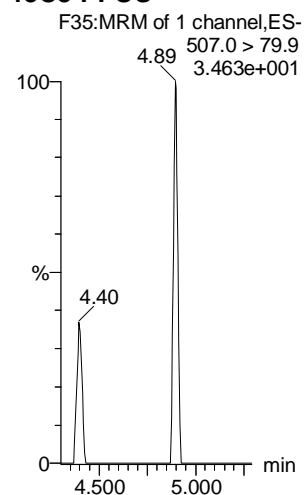
L-MeFOSAA



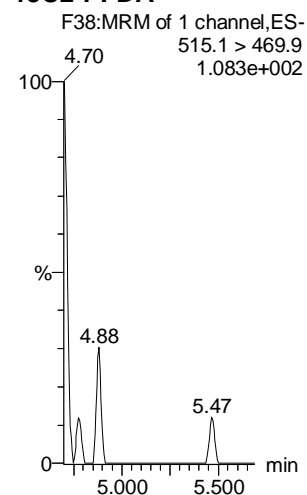
13C8-PFOSA



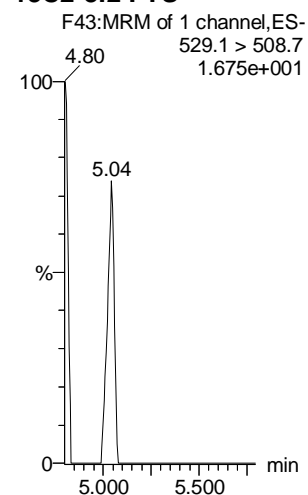
13C8-PFOS



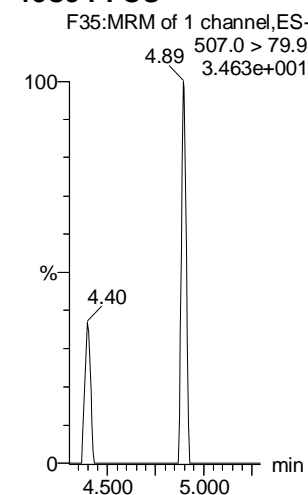
13C2-PFDA



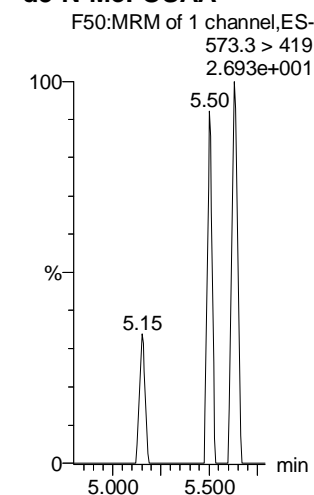
13C2-8:2 FTS



13C8-PFOS



d3-N-MeFOSAA



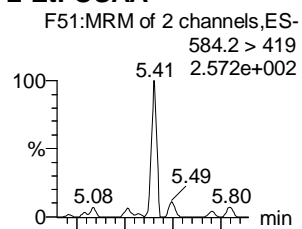
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Last Altered: Tuesday, June 05, 2018 11:17:25 Pacific Daylight Time

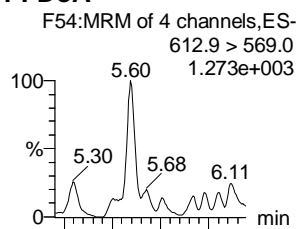
Printed: Tuesday, June 05, 2018 11:17:53 Pacific Daylight Time

Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

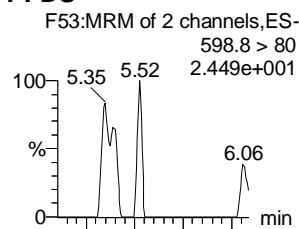
L-EtFOSAA



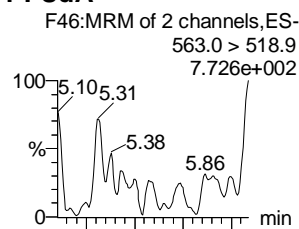
PFDoA



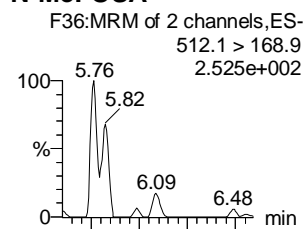
PFDS



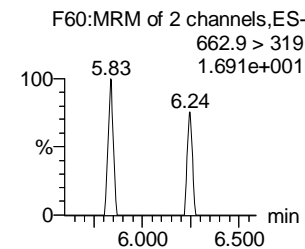
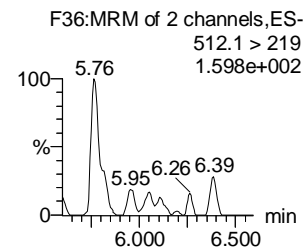
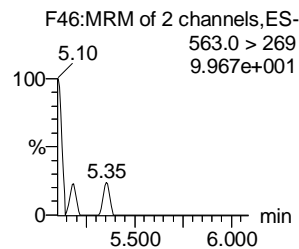
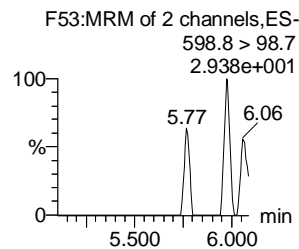
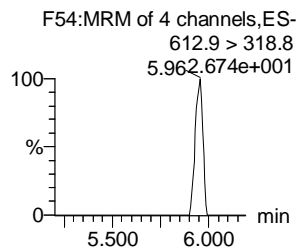
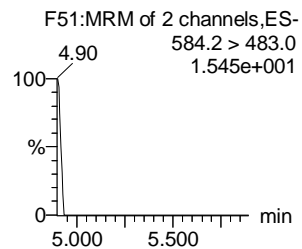
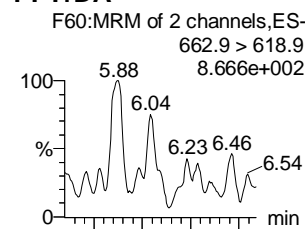
PFUdA



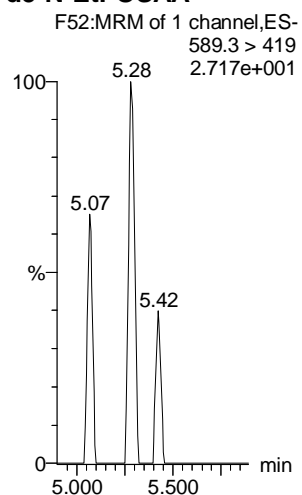
N-MeFOSA



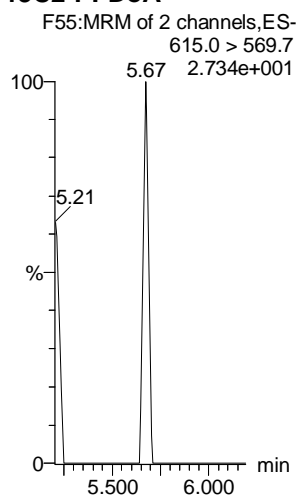
PFTrDA



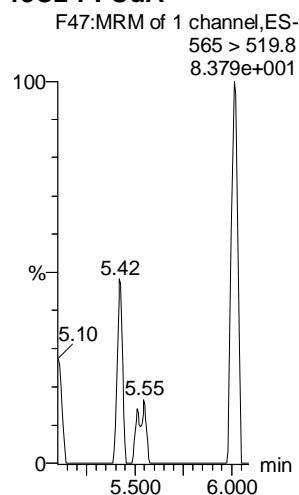
d5-N-EtFOSAA



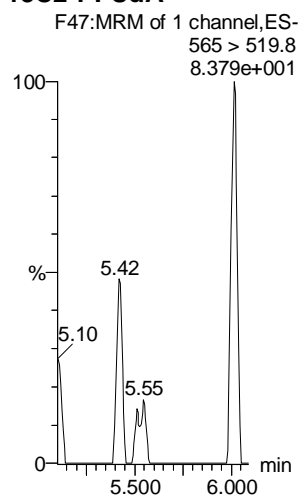
13C2-PFDoA



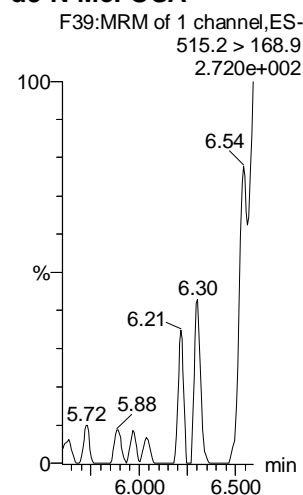
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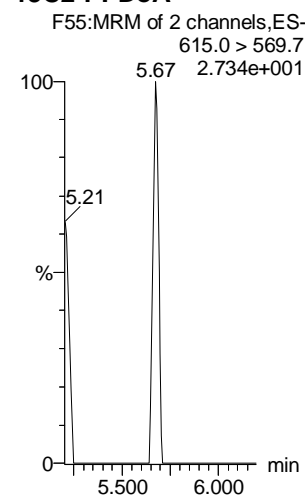
13C2-PFUdA



d3-N-MeFOSA



13C2-PFDoA



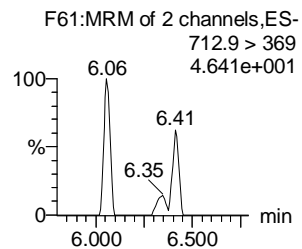
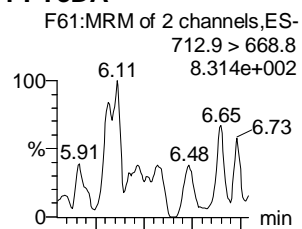
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Last Altered: Tuesday, June 05, 2018 11:17:25 Pacific Daylight Time

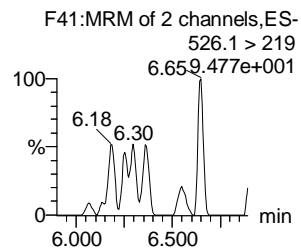
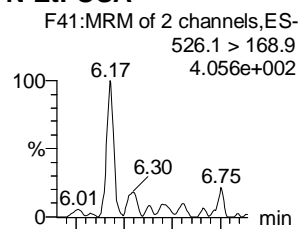
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Name: 180604M2_12, Date: 04-Jun-2018, Time: 20:56:24, ID: IPA, Description: IPA

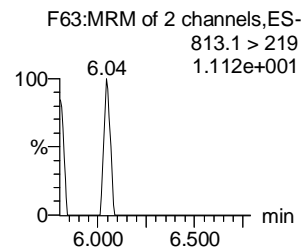
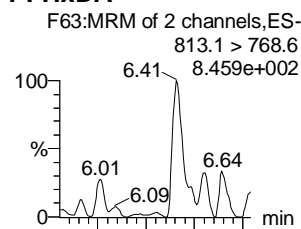
PFTeDA



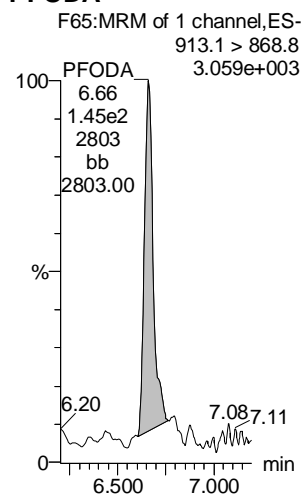
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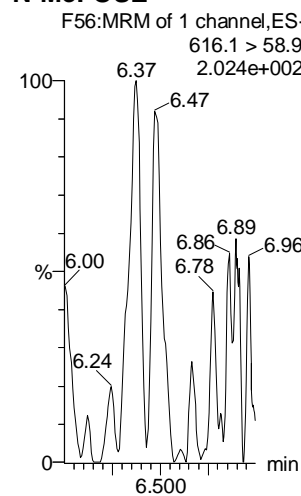
PFHxDA



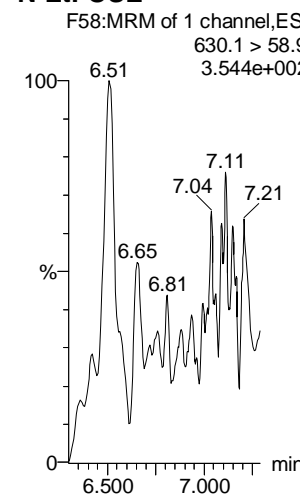
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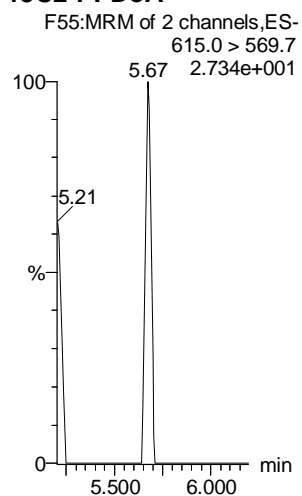
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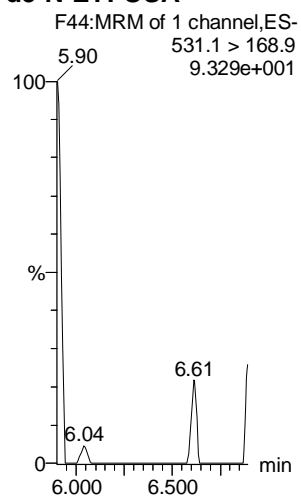
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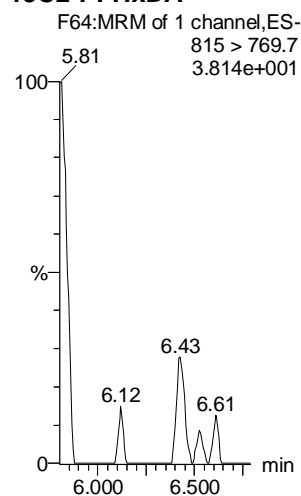
13C2-PFDa



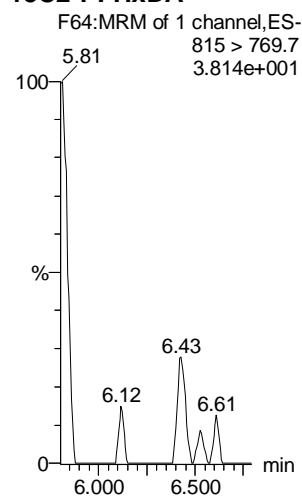
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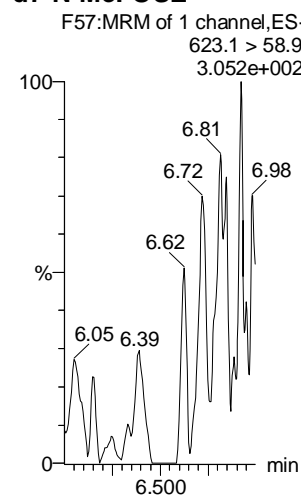
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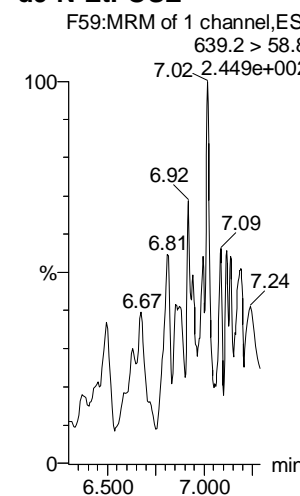
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d7-N-MeFOSE



d9-N-EtFOSE



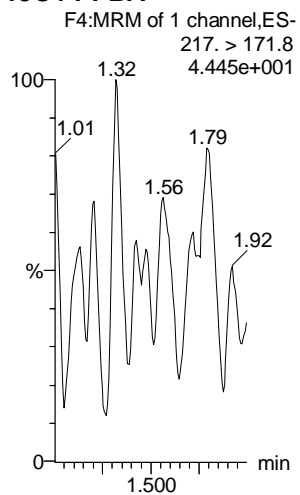
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Last Altered: Tuesday, June 05, 2018 11:17:25 Pacific Daylight Time

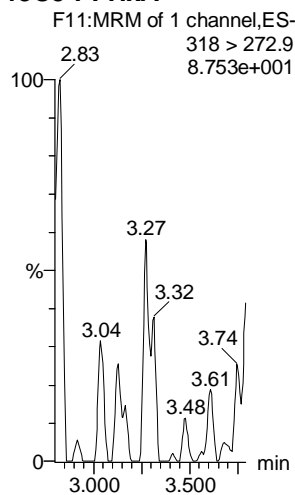
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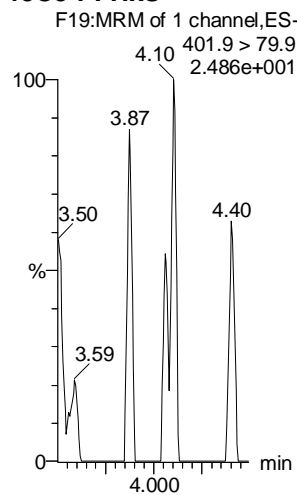
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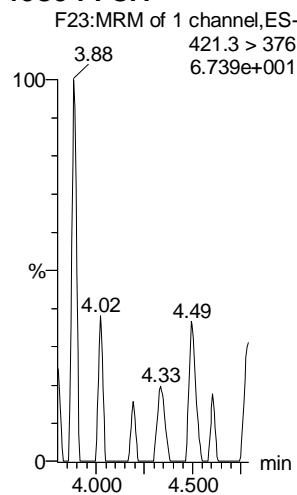
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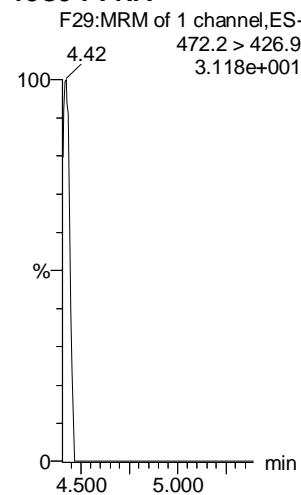
13C3-PFHxS



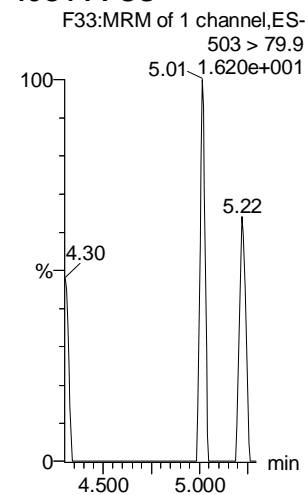
13C8-PFOA



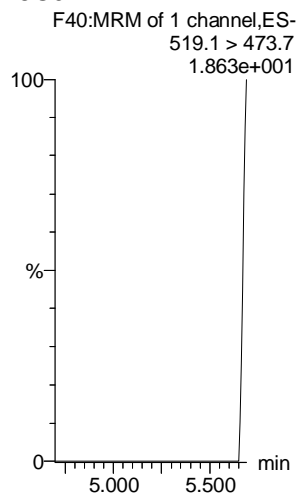
13C9-PFNA



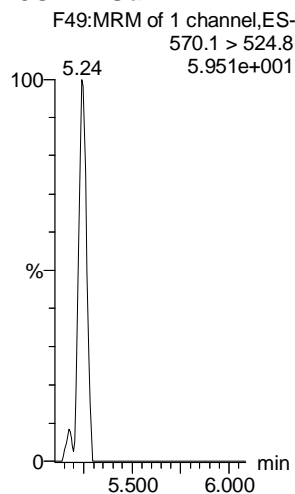
13C4-PFOS



13C6-PFDA



13C7-PFUdA

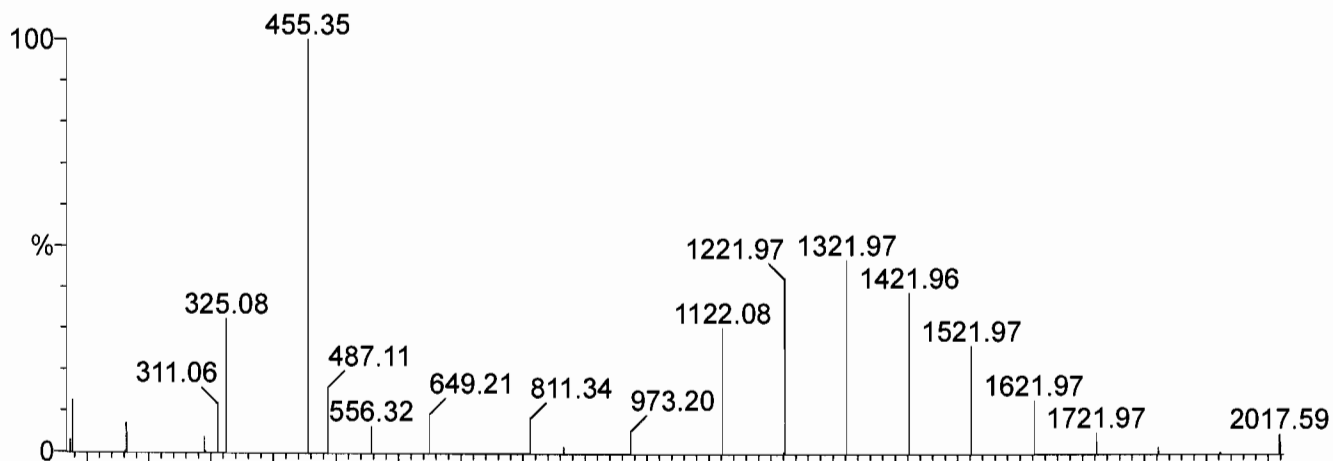


Tune Checks

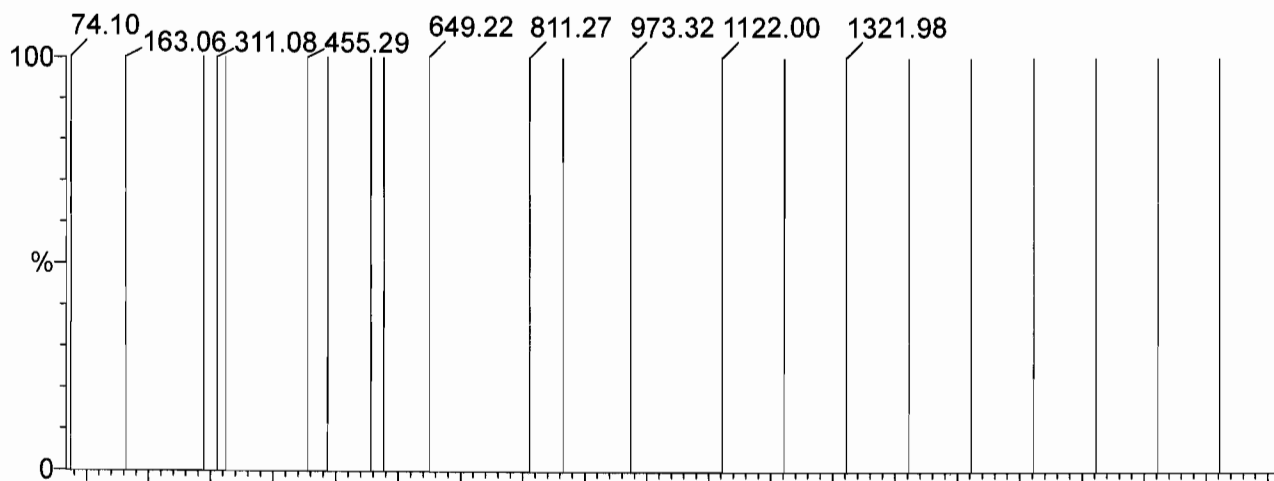
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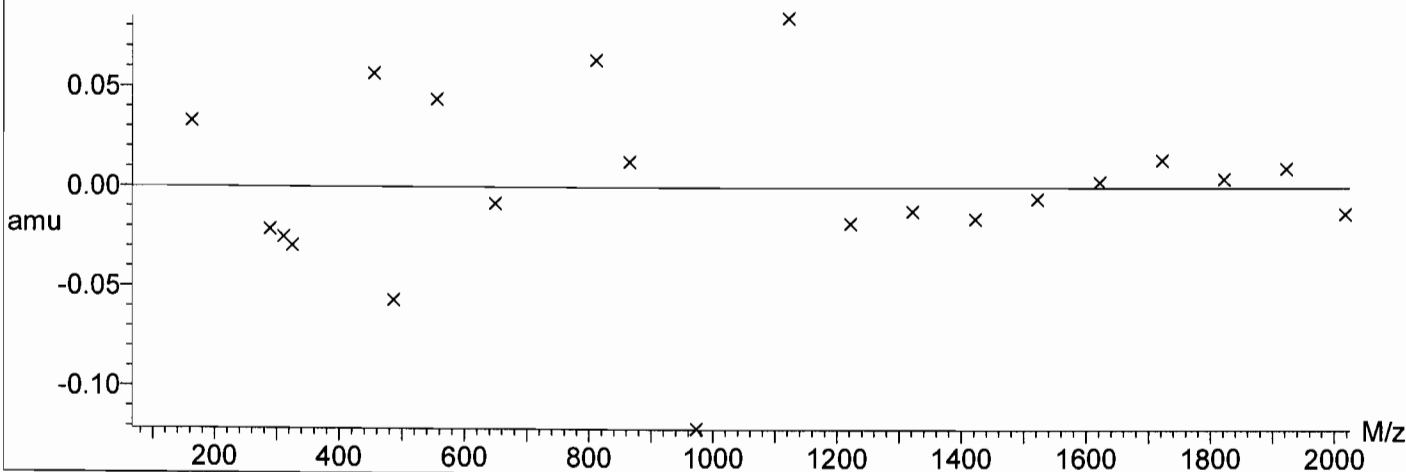
Data file: STATMS1 - Calibrated 21 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0309 amu



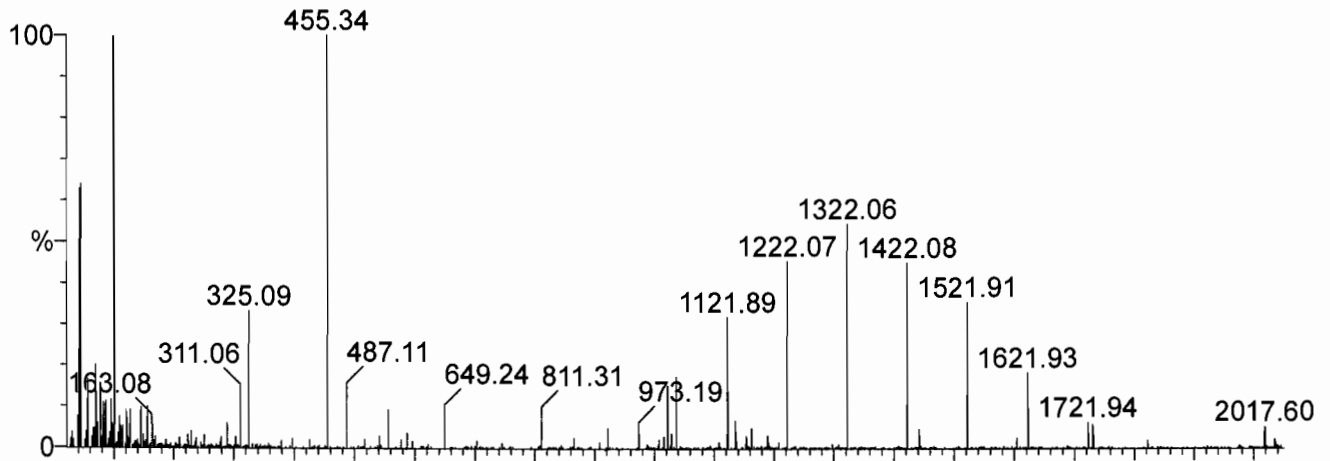
Residual Polynomial order = 4 RMS residual = 0.0428 amu



Printed: Wed May 30 17:01:35 2018

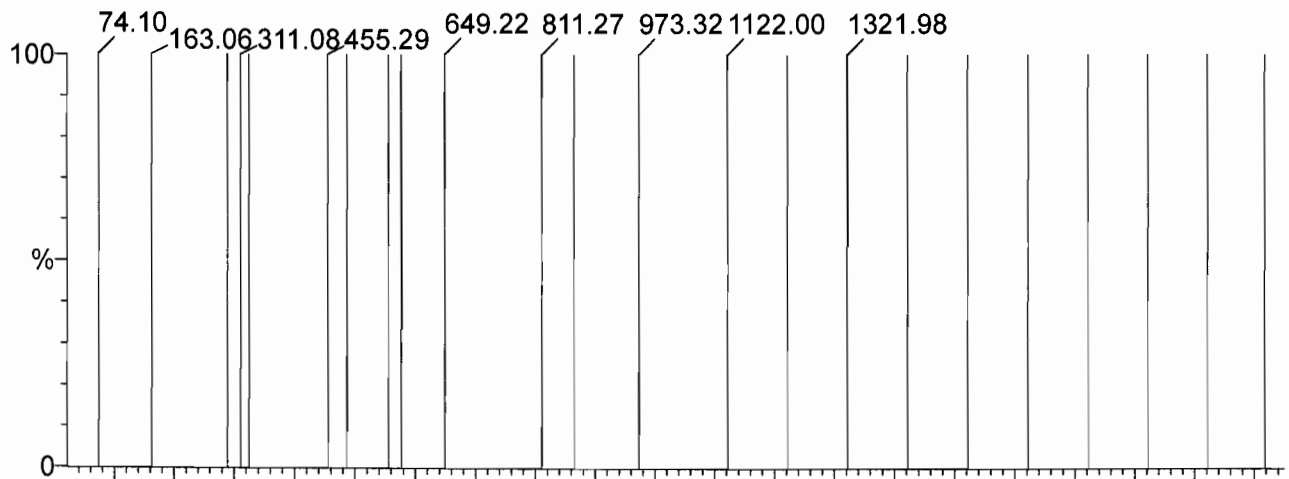
Data file: SCNMS1 - Calibrated

22 matches of 23 tested references



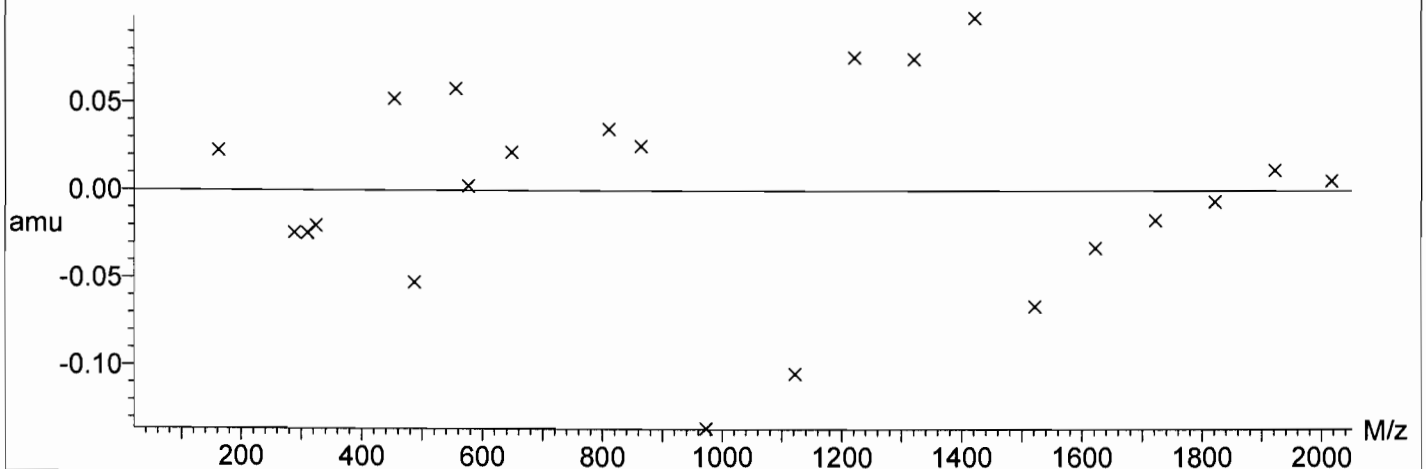
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

Mean residual = 0.044 amu

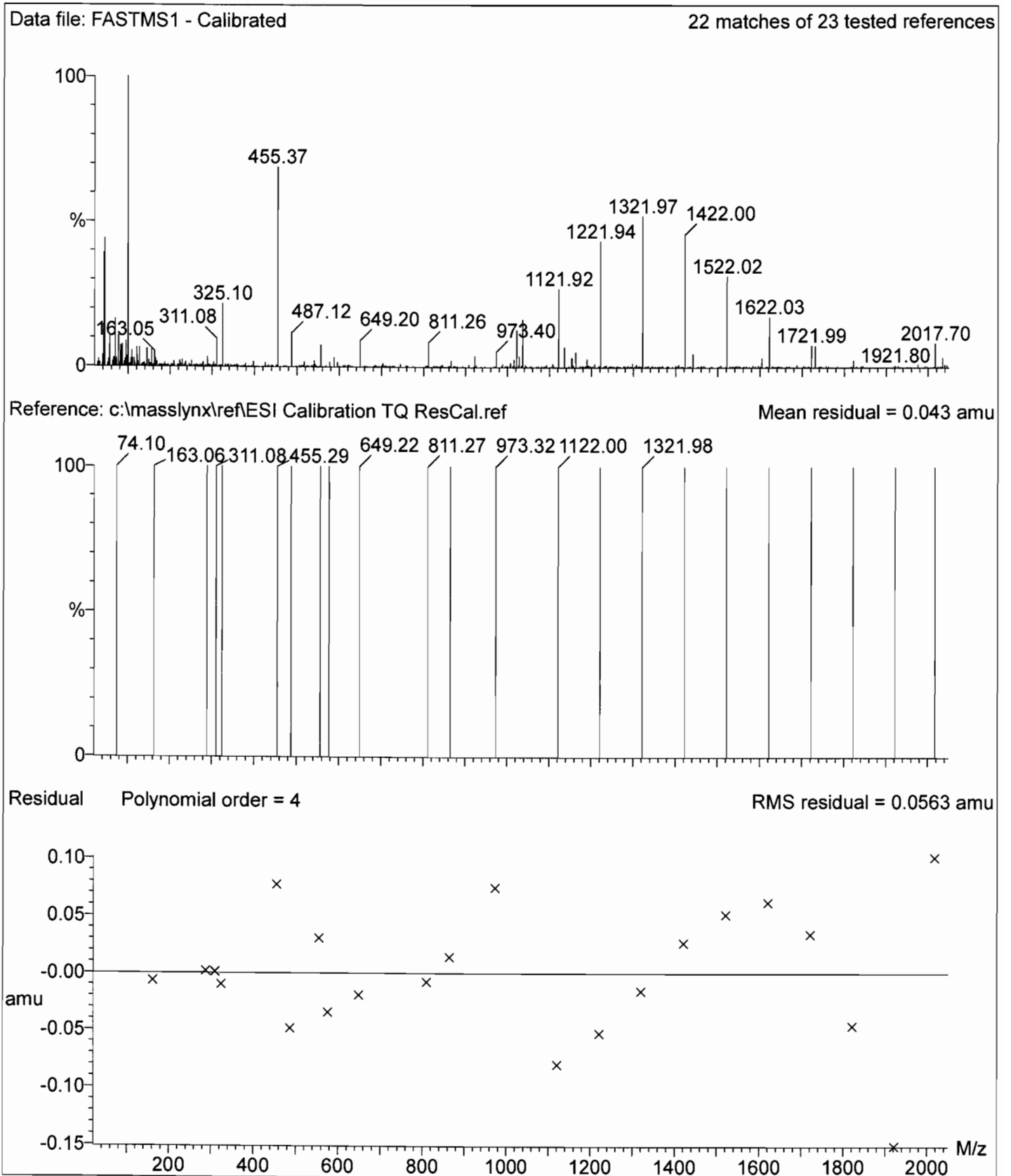


Residual Polynomial order = 4

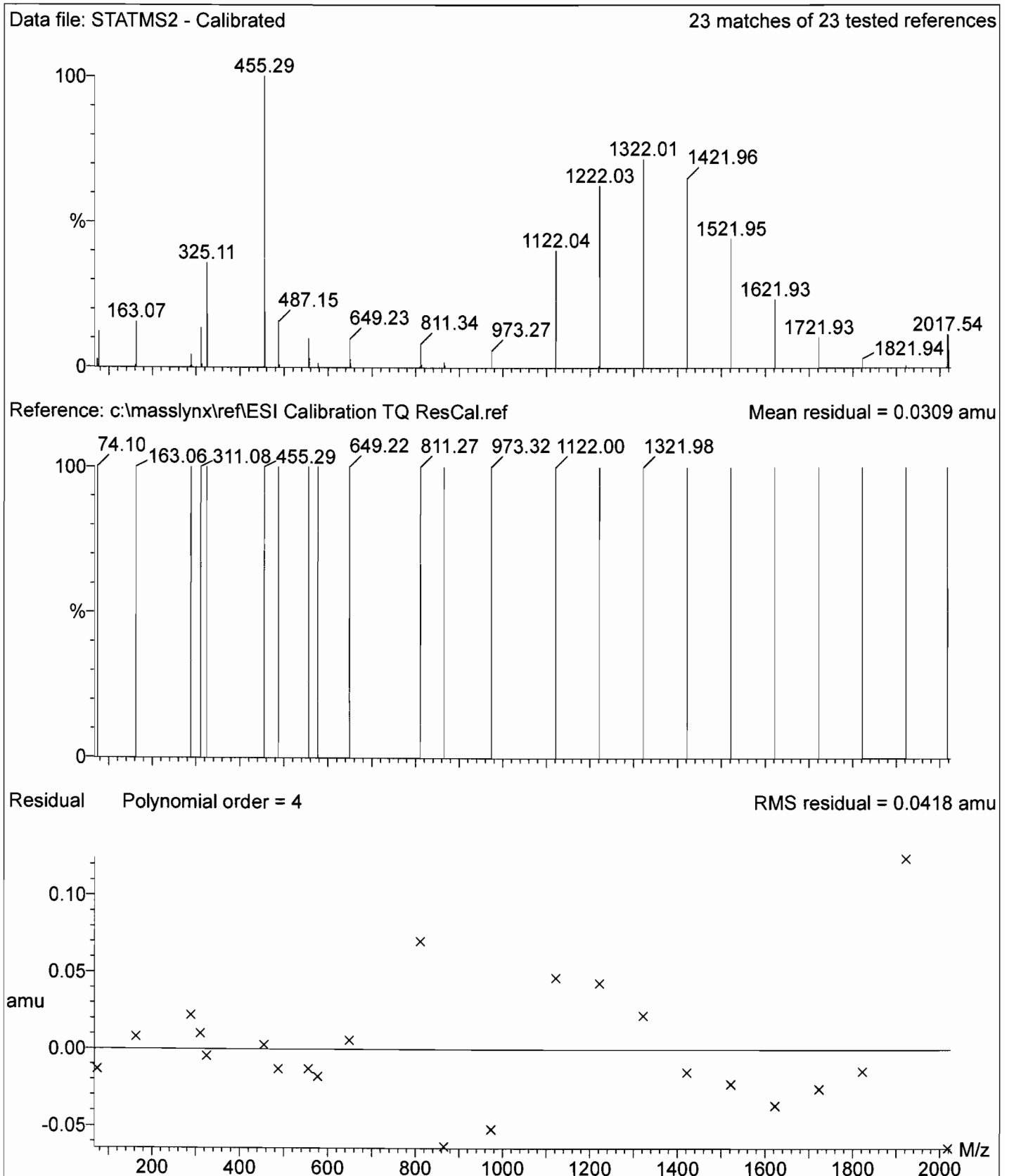
RMS residual = 0.0563 amu



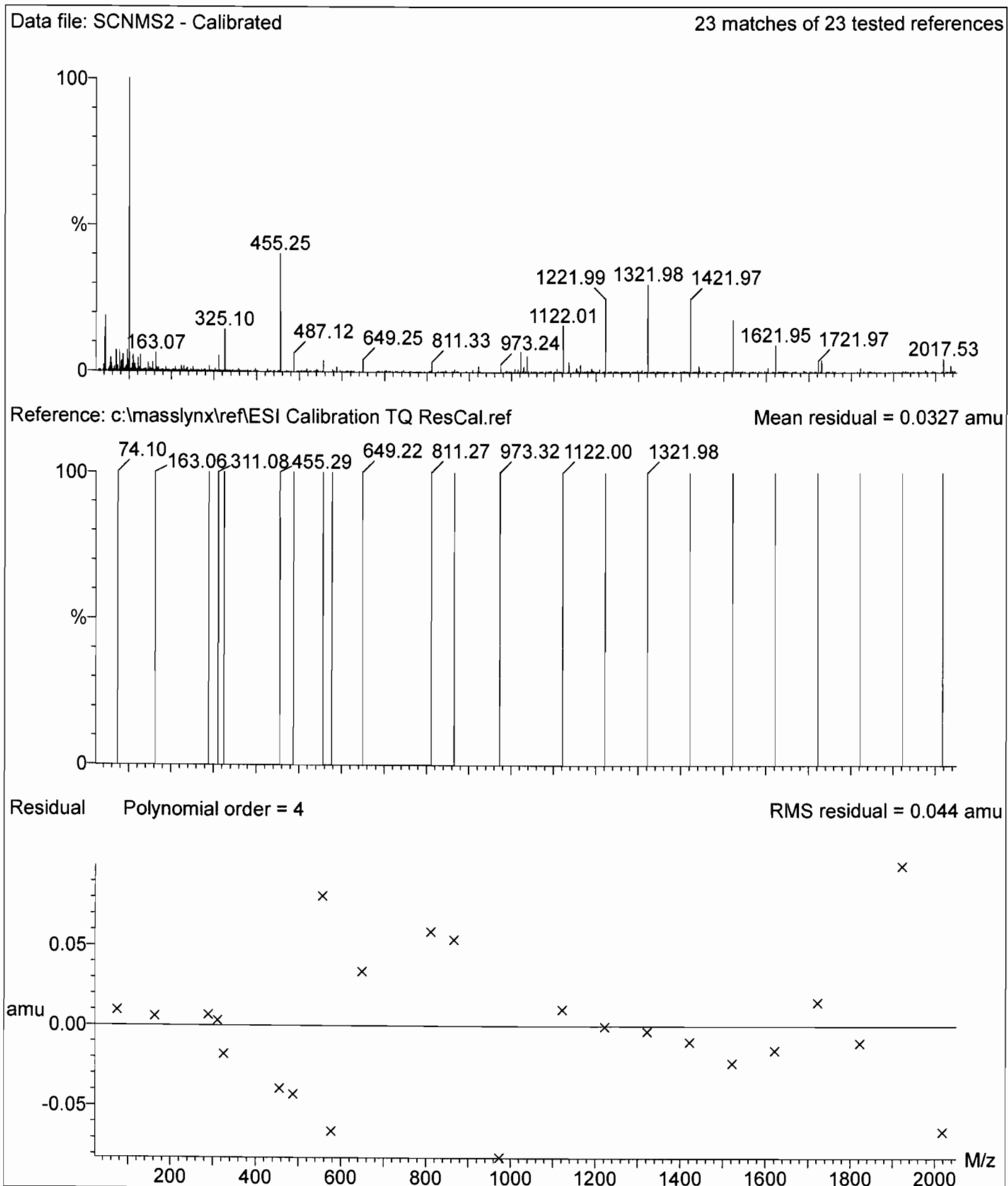
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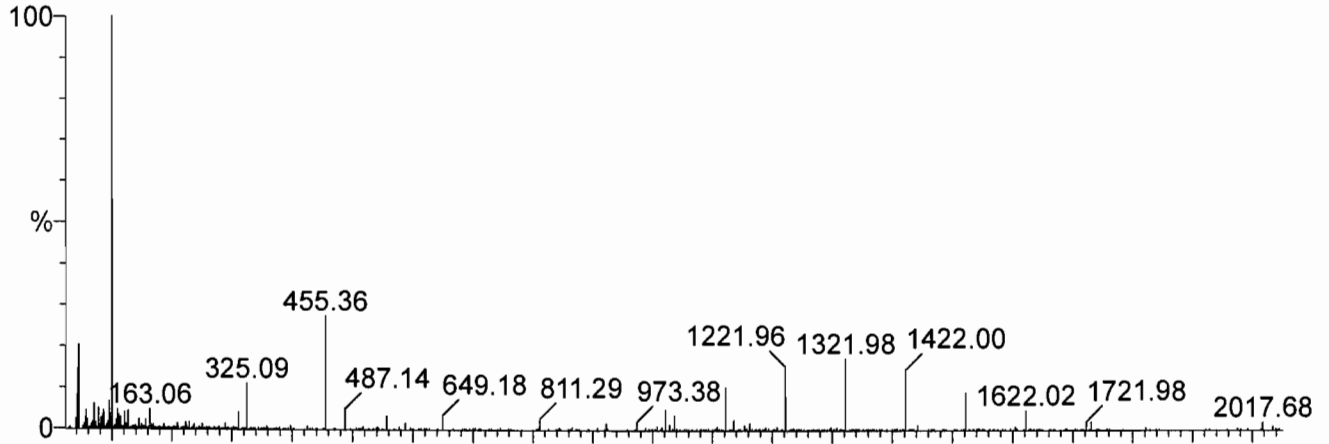
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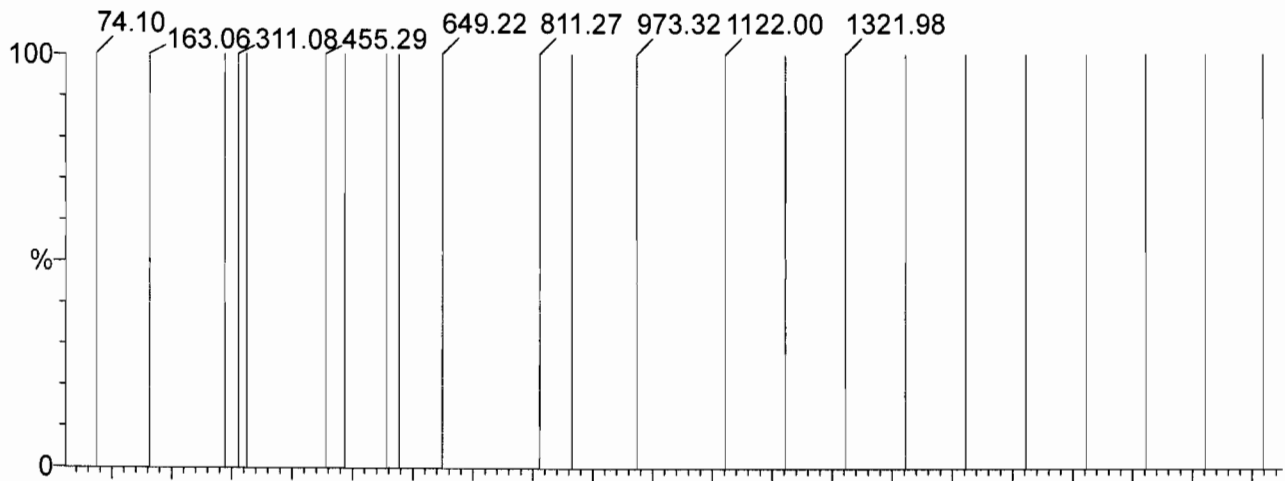
Data file: FASTMS2 - Calibrated

23 matches of 23 tested references



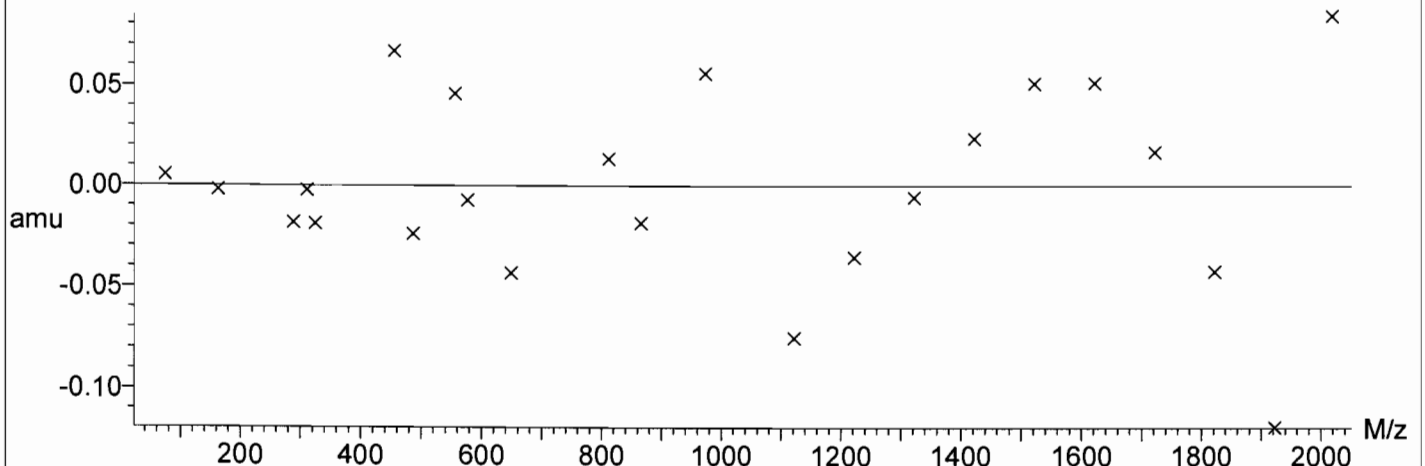
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

Mean residual = 0.036 amu



Residual Polynomial order = 4

RMS residual = 0.0464 amu



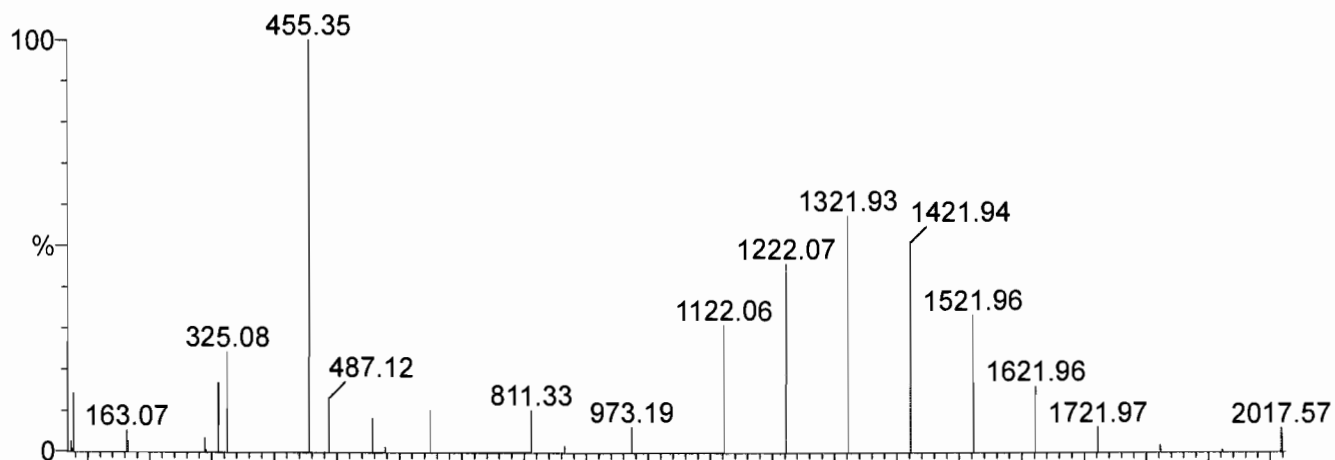
Calibration Report - MS1 Static

Printed: Tue Jun 05 16:01:19 2018

26190605-2

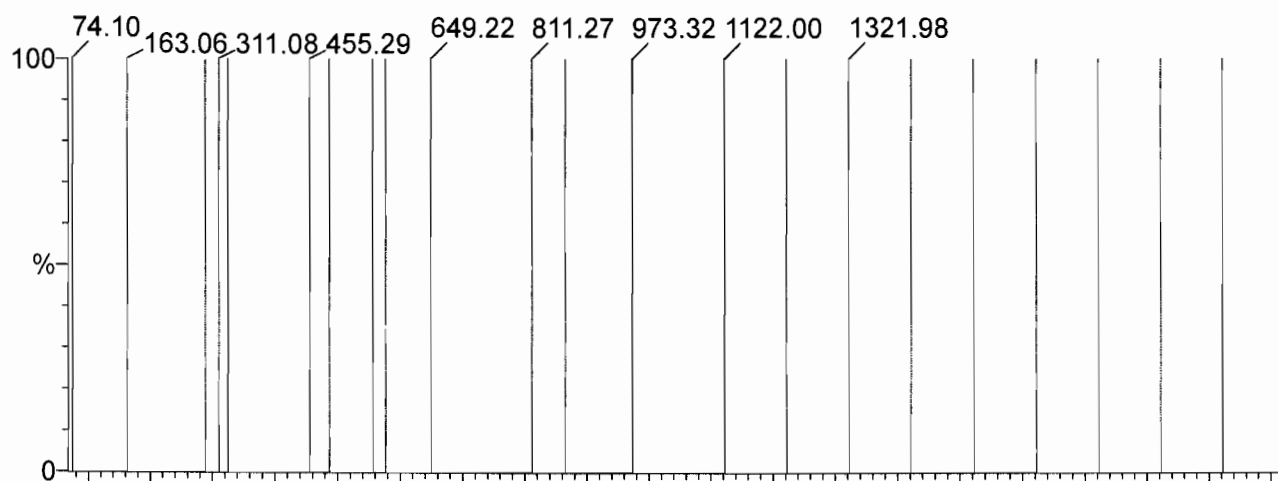
Data file: STATMS1 - Calibrated

23 matches of 23 tested references



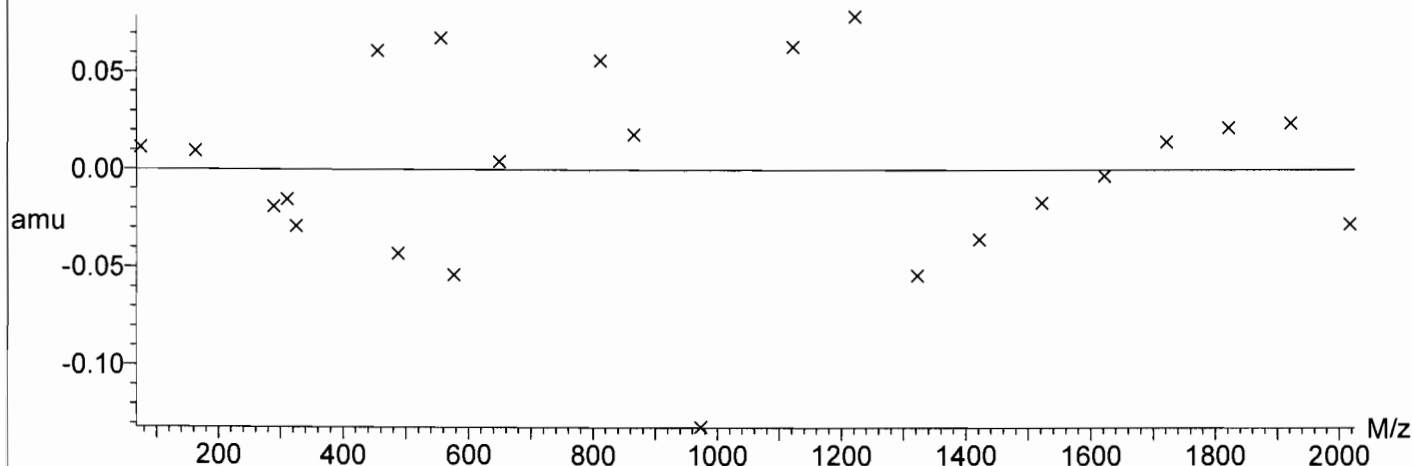
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Mean residual = 0.0373 amu



Residual Polynomial order = 4

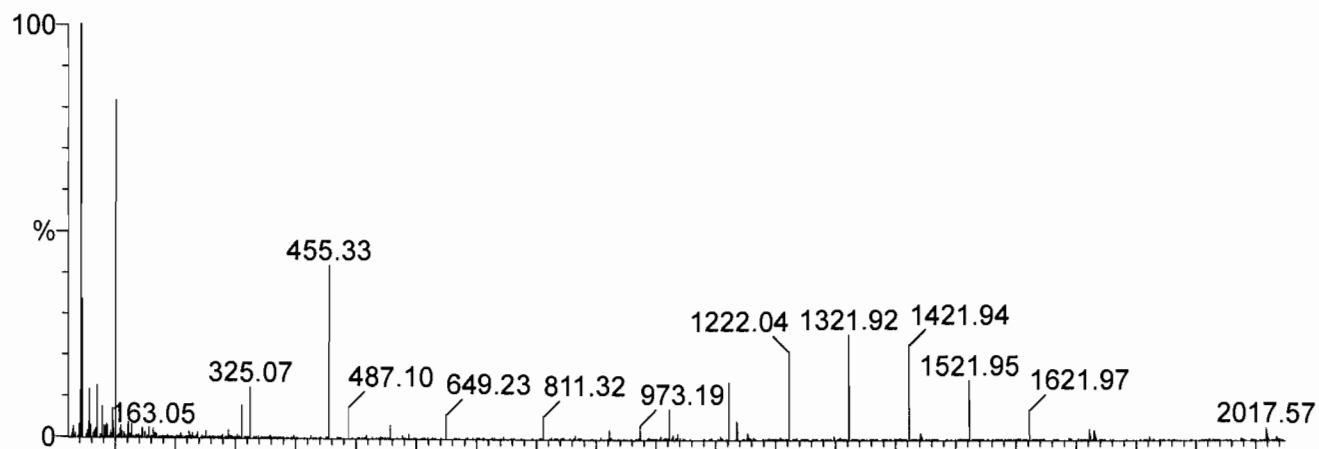
RMS residual = 0.0476 amu



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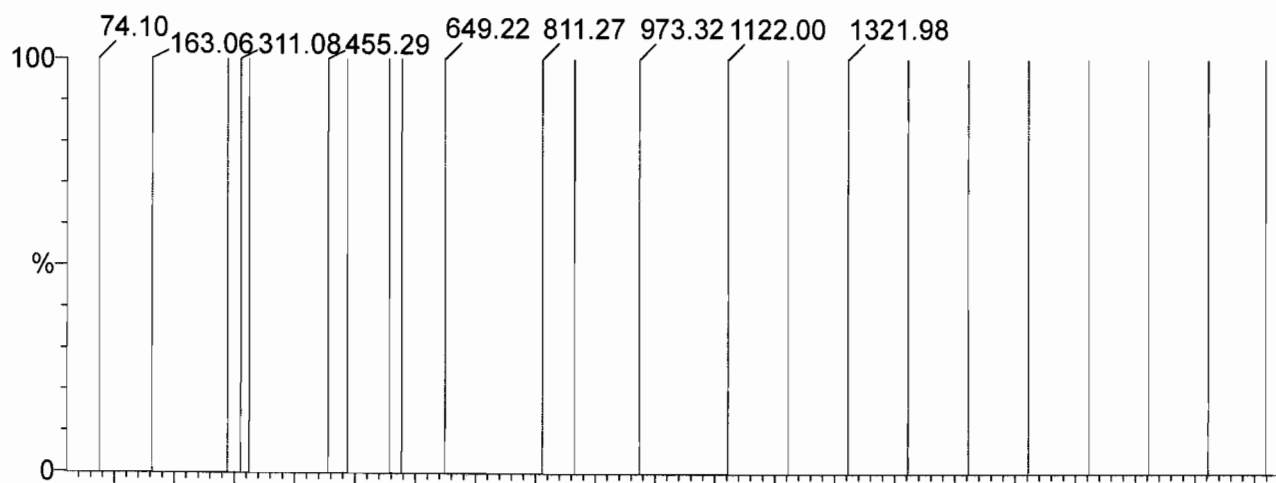
Data file: SCNMS1 - Calibrated

23 matches of 23 tested references



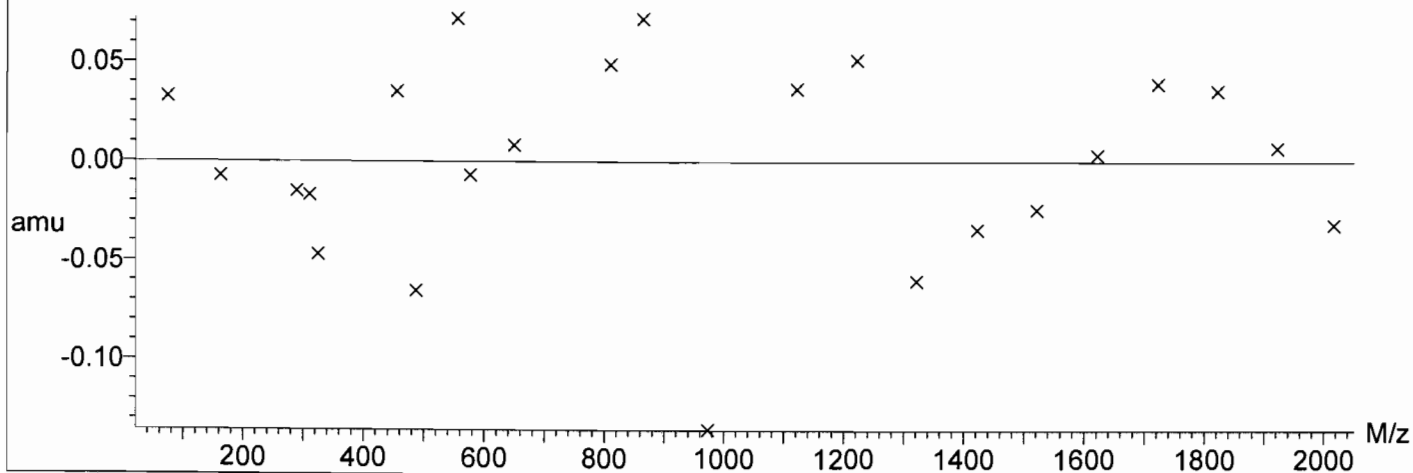
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Mean residual = 0.0385 amu



Residual Polynomial order = 4

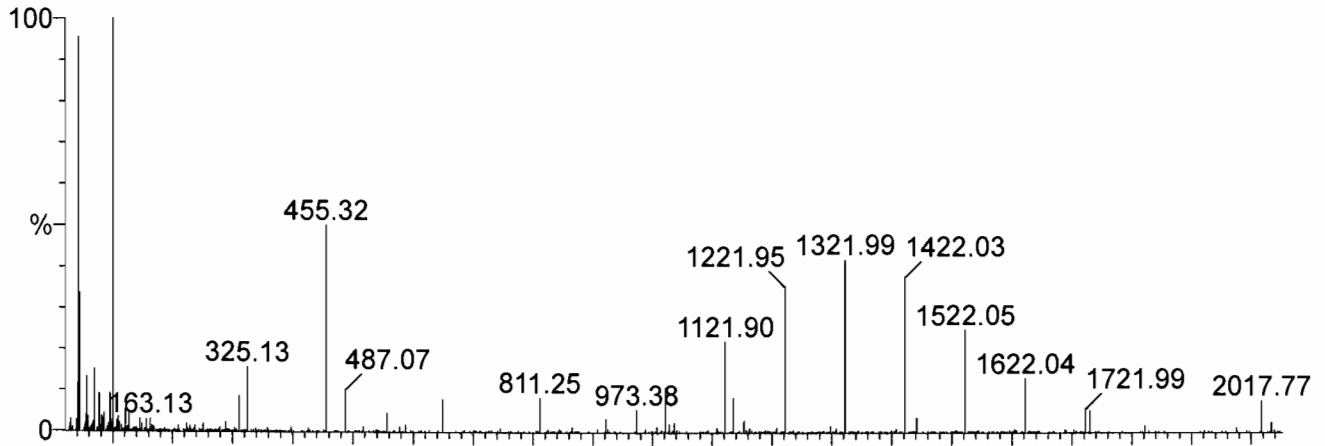
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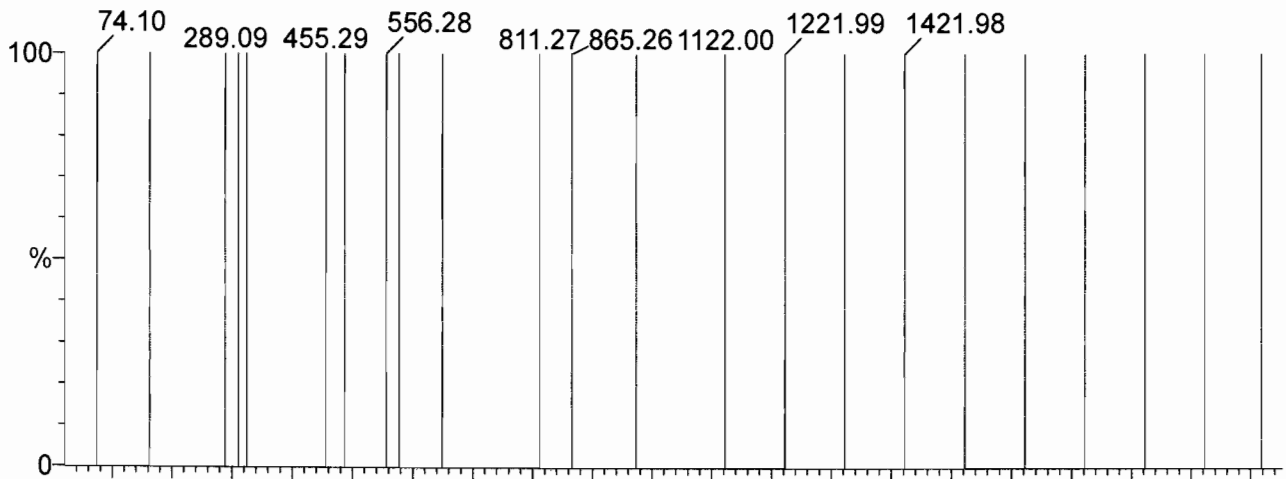
Data file: FASTMS1 - Calibrated

23 matches of 23 tested references



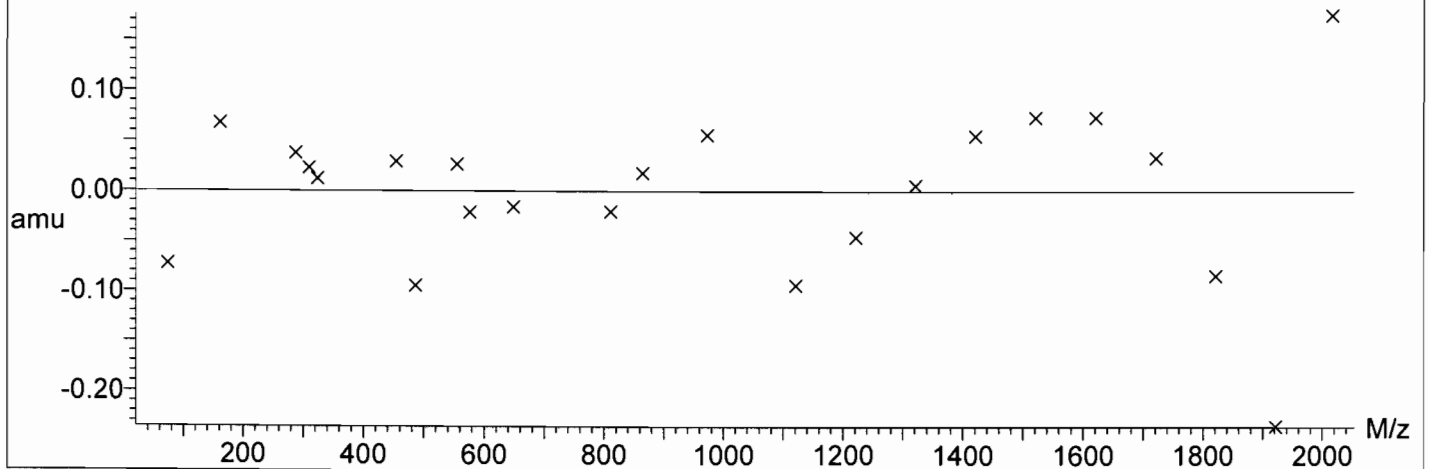
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Mean residual = 0.0595 amu

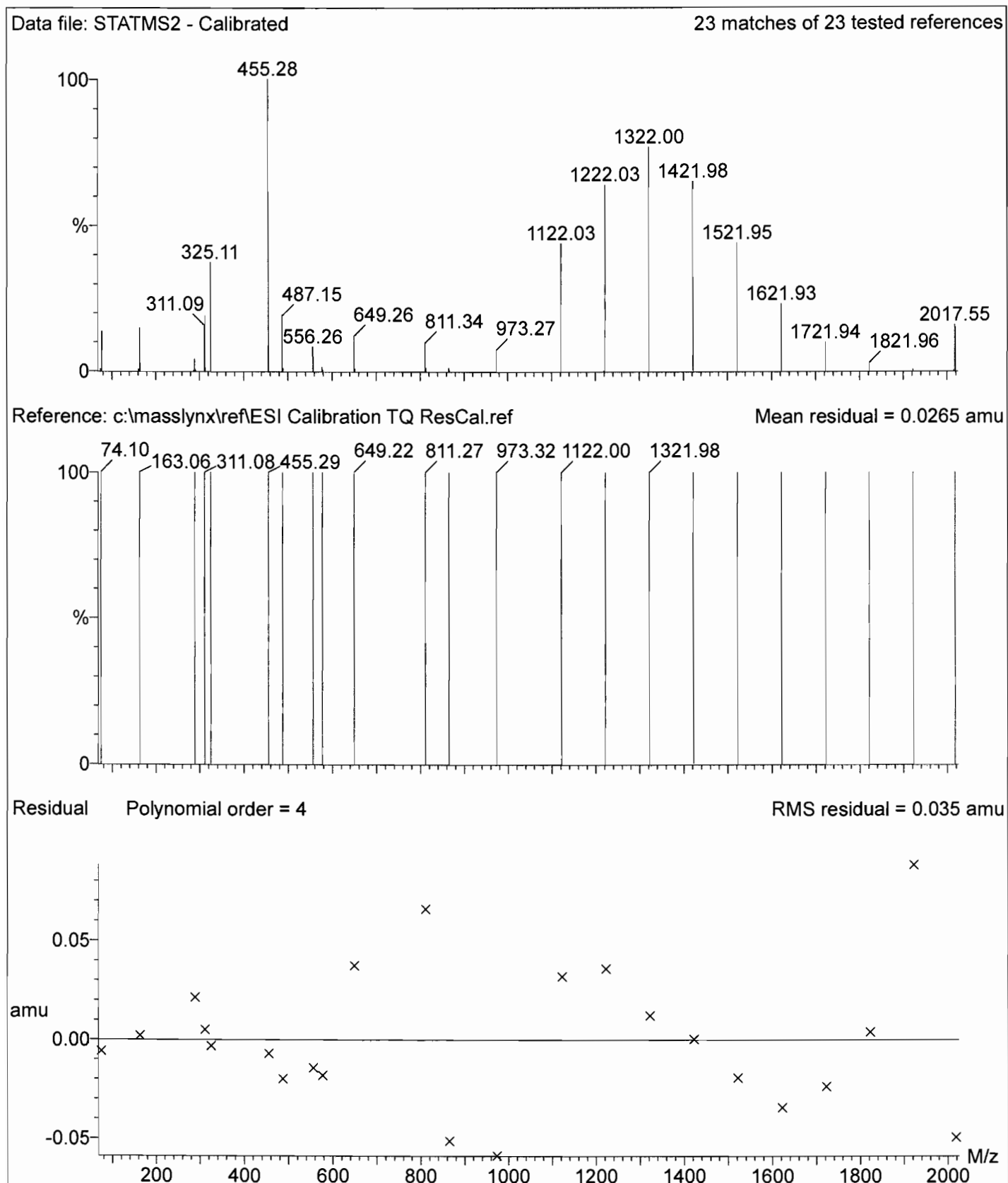


Residual Polynomial order = 4

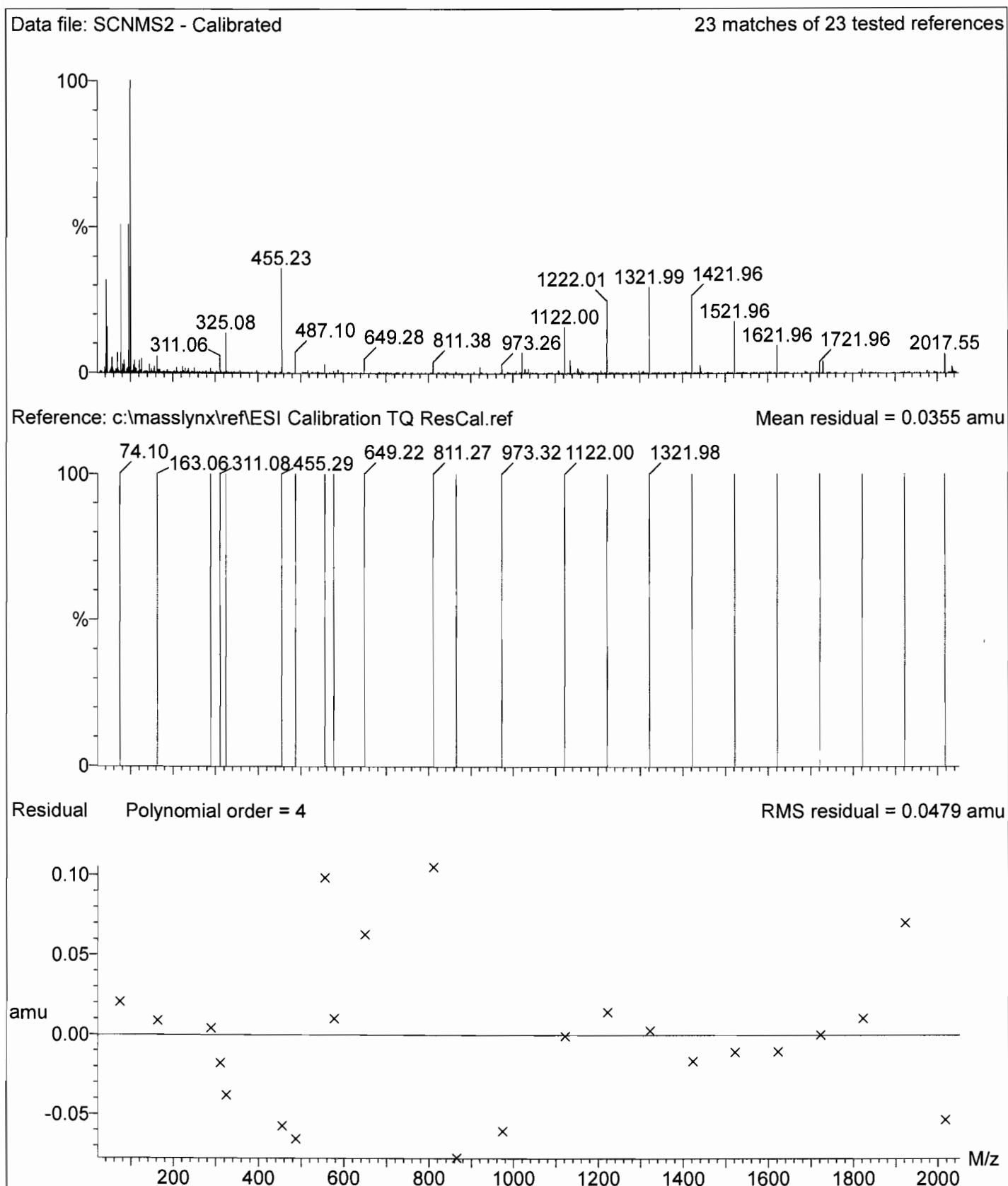
RMS residual = 0.0797 amu



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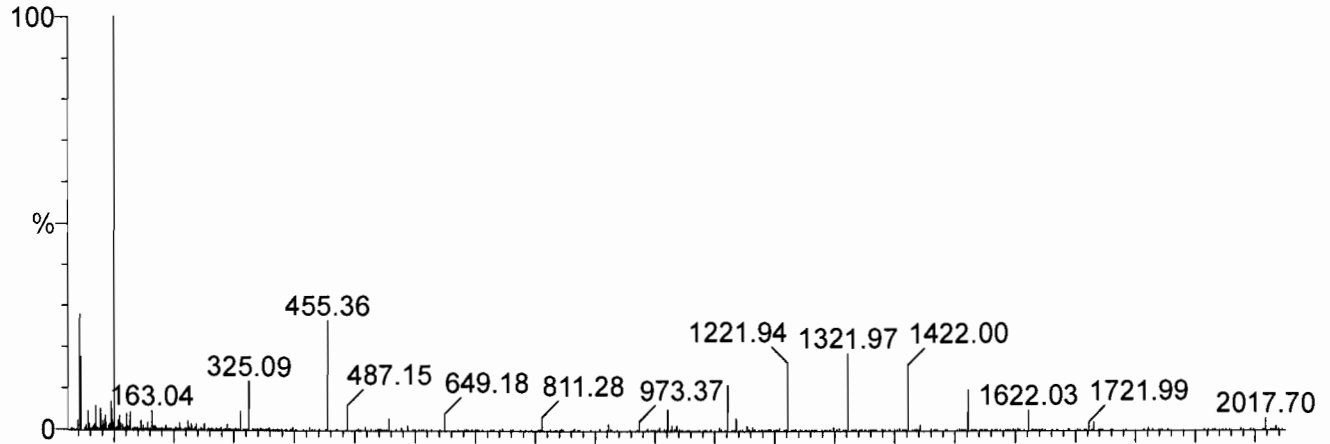
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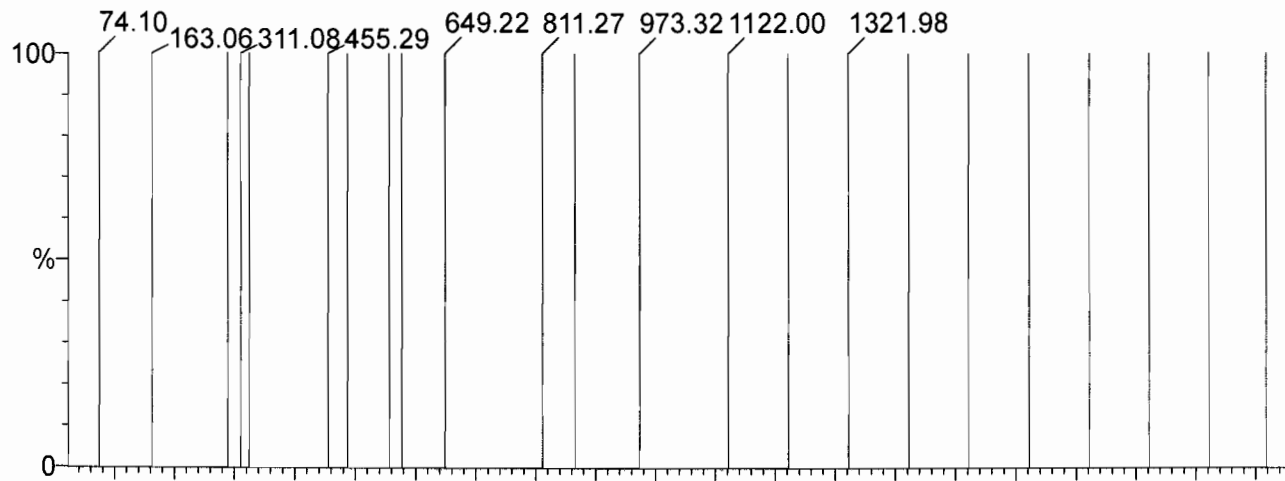
Data file: FASTMS2 - Calibrated

23 matches of 23 tested references



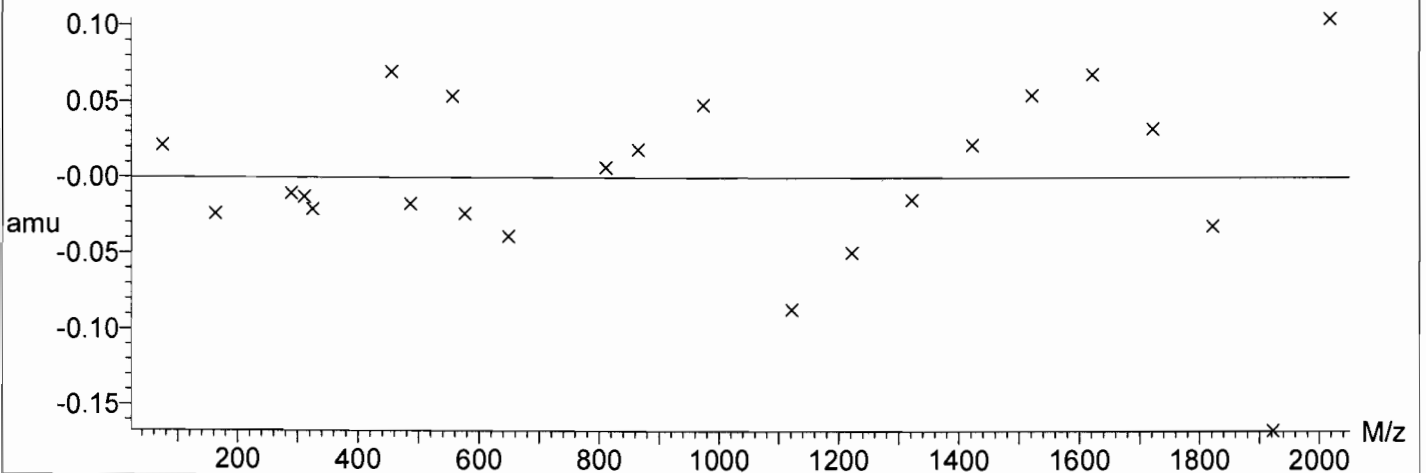
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

Mean residual = 0.0433 amu



Residual Polynomial order = 4

RMS residual = 0.0565 amu



Standards

Analytical Standard Record

Vista Analytical Laboratory

18D2004

Parent Standards used in this standard:					
Standard	Description	Prepared	Prepared By	Expires	(mls)
18A2908	13C2-PFHxA	29-Jan-18	** Vendor **	27-Sep-22	0.4
18B1503	13C2-6:2 FTS	15-Feb-18	** Vendor **	17-Feb-22	1.05
18B1504	13C2-8:2 FTS	15-Feb-18	** Vendor **	24-Jan-23	1.044
18B1505	13C3-PFBA	15-Feb-18	** Vendor **	27-May-21	1
18B1506	13C2-PFDA	15-Feb-18	** Vendor **	13-Jul-22	1
18B1507	13C2-PFUdA	15-Feb-18	** Vendor **	11-Nov-21	1
18B1508	13C2-PFTeDA	15-Feb-18	** Vendor **	30-Nov-22	1
18B1509	13C5-PFNA	15-Feb-18	** Vendor **	14-Dec-22	1
18B1510	13C2-PFDoA	15-Feb-18	** Vendor **	23-May-22	1
18B1511	13C4-PFHpA	15-Feb-18	** Vendor **	03-May-22	1
18B1512	13C2-PFOA	15-Feb-18	** Vendor **	26-Oct-22	1
18B1513	13C3-PFPeA	15-Feb-18	** Vendor **	20-Apr-22	1
18B1514	13C2-PFHxDA	15-Feb-18	** Vendor **	13-Jul-22	0.4
18B1515	d3-N-Me-FOSAA	15-Feb-18	** Vendor **	08-Nov-19	1
18B1516	d5-N-EtFOSAA	15-Feb-18	** Vendor **	08-Nov-22	1
18B1517	13C3-PFBS	15-Feb-18	** Vendor **	24-May-22	1.076
18B1518	18O2-PFHxS	15-Feb-18	** Vendor **	17-Feb-22	1.058
18B1520	13C8-PFOS	15-Feb-18	** Vendor **	08-Nov-22	1.05
18B1525	13C8-FOSA-I	15-Feb-18	** Vendor **	11-Oct-22	1
18C0910	13C2-4:2 FTS	09-Mar-18	** Vendor **	01-Sep-22	1.07

Description:	PFC - IS	Expires:	08-Nov-19
Standard Type:	Reagent	Prepared:	20-Apr-18
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	20-Apr-18 10:40 by GRB

Analyte	CAS Number	Concentration	Units
13C3-PFBA		1.25	ug/mL
13C2-6:2 FTS		1.25	ug/mL
13C2-8:2 FTS		1.25	ug/mL
13C2-PFDA		1.25	ug/mL
13C2-PFDoA		1.25	ug/mL
13C2-PFHxA		0.5	ug/mL
13C2-PFHxDA		0.5	ug/mL
13C2-PFOA		1.25	ug/mL
13C2-4:2 FTS		1.25	ug/mL
13C2-PFUnA		1.25	ug/mL
d5-EtFOSAA		1.25	ug/mL
13C3-PFBS		1.25	ug/mL
13C3-PFPeA		1.25	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

18D2004

Description:	PFC - IS	Expires:	08-Nov-19
Standard Type:	Reagent	Prepared:	20-Apr-18
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	20-Apr-18 10:40 by GRB

Analyte	CAS Number	Concentration	Units
13C4-PFHpA		1.25	ug/mL
13C5-PFNA		1.25	ug/mL
13C8-PFOS		1.25	ug/mL
13C8-PFOA		1.25	ug/mL
18O2-PFHxS		1.25	ug/mL
d3-MeFOSAA		1.25	ug/mL
13C2-PFTeDA		1.25	ug/mL

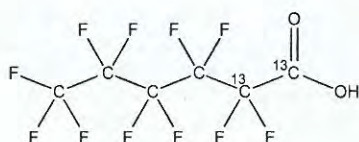
18A2908



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA **LOT NUMBER:** MPFHxA1017
COMPOUND: Perfluoro-n-[1,2-¹³C₂]hexanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₄HF₁₁O₂ **MOLECULAR WEIGHT:** 316.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 10/27/2017
EXPIRY DATE: (mm/dd/yyyy) 10/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and < 0.3% of perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 10/30/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18A2908

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

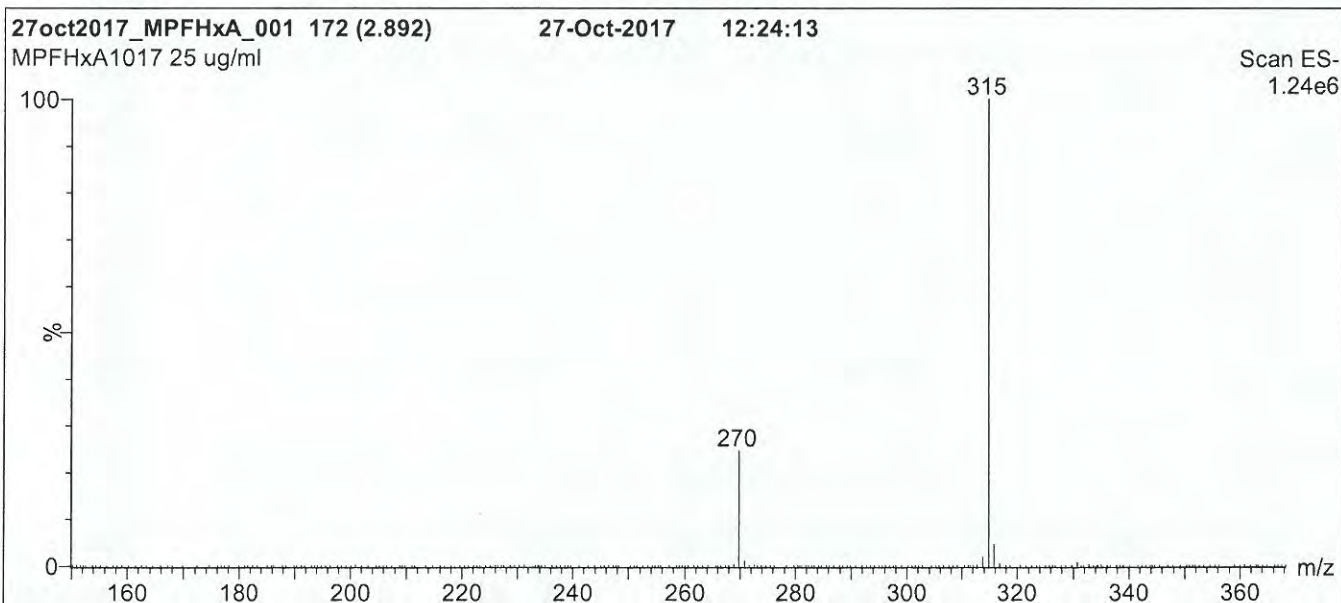
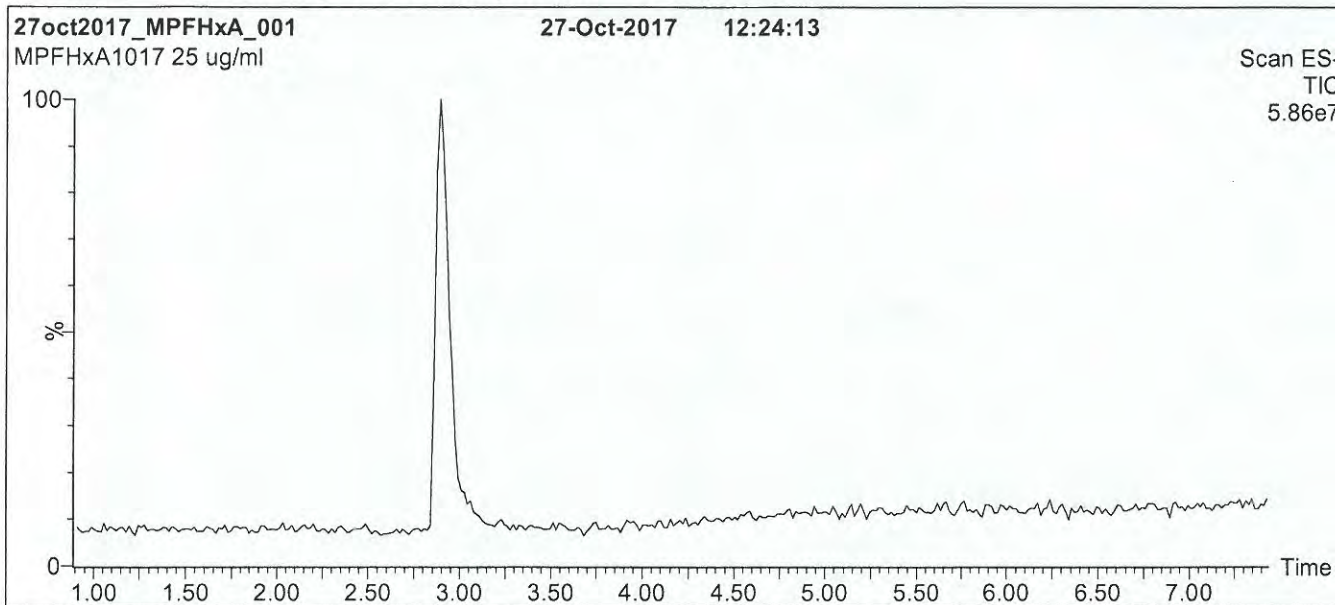
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18A2908

Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions over 0.5 min.
Time: 10 min

Flow: 300 μ l/min

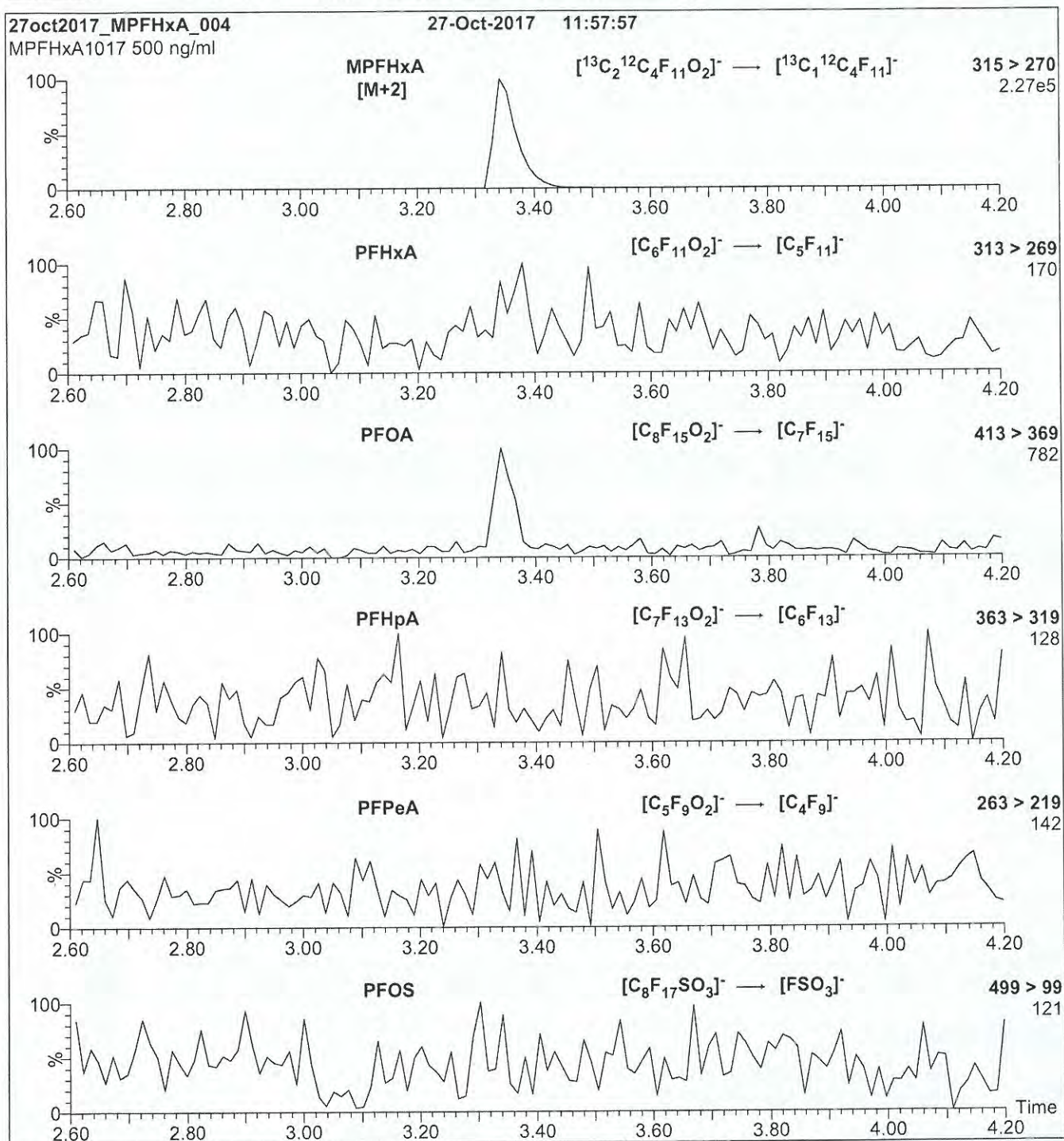
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18A2908

Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.58e-3
Collision Energy (eV) = 10

18B1503

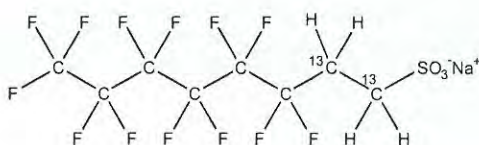


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS0217
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]octane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₆H₄F₁₃SO₃Na **MOLECULAR WEIGHT:** 452.13
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.5 ± 2.4 µg/ml (M2-6:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 02/17/2017 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 02/17/2022
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:


Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


B.G. Chittim

Date: 02/24/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1503

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

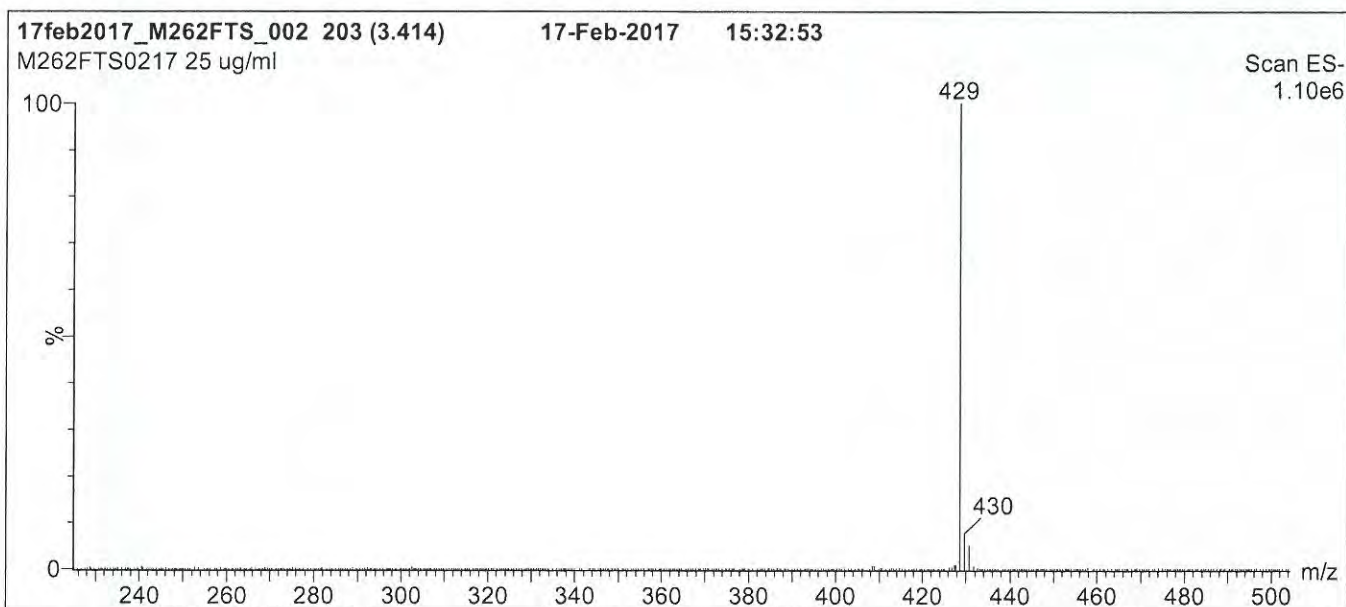
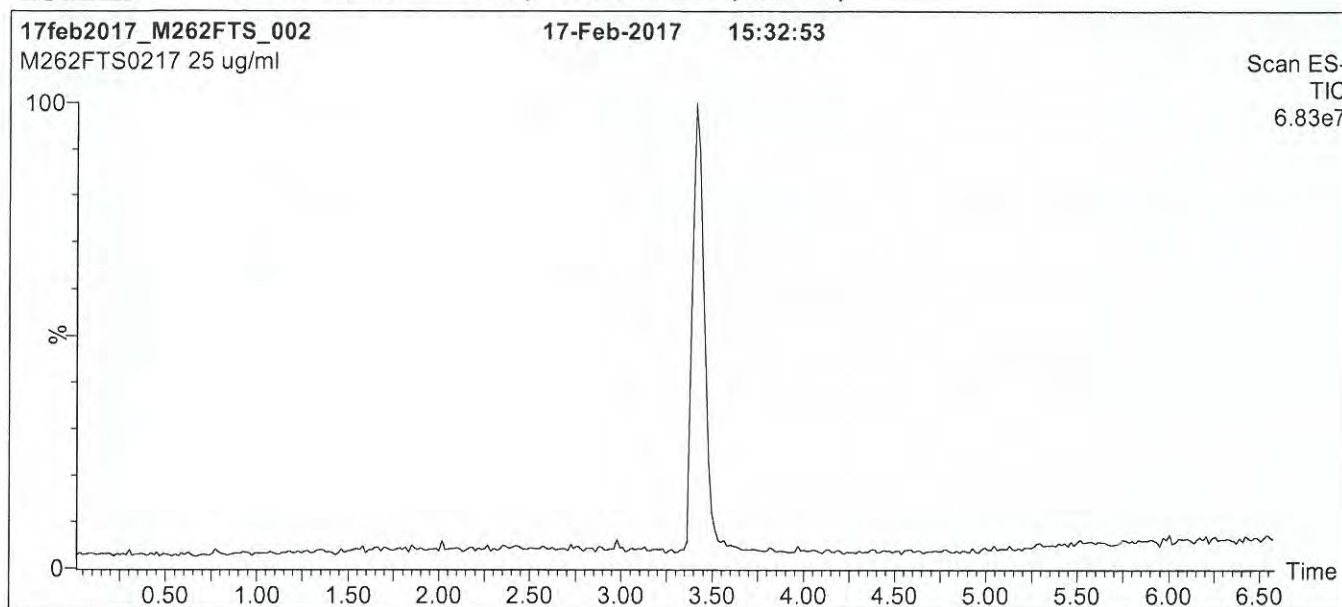
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1503

Figure 1: M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 10 min

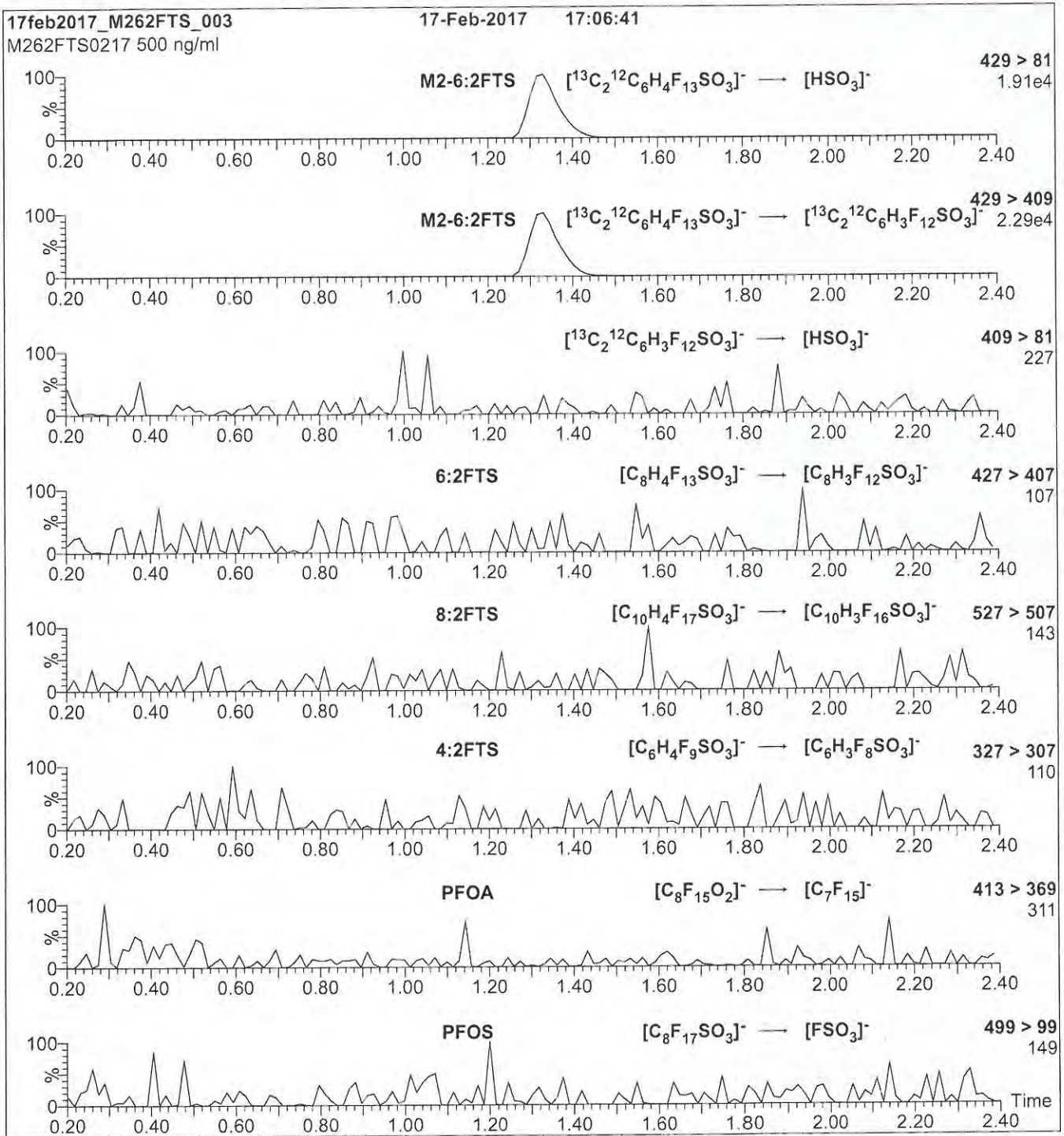
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1503

Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2-6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

18B1504

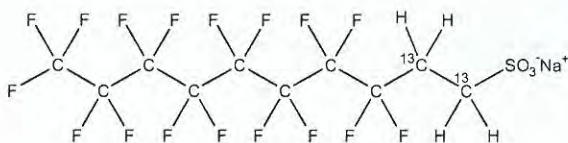


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS0118
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]decane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₈H₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 552.15
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.9 ± 2.4 µg/ml (M2-8:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 01/24/2018 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 01/24/2023
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

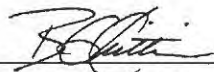
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


 B.G. Chittim, General Manager

Date: 01/26/2018

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1504

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

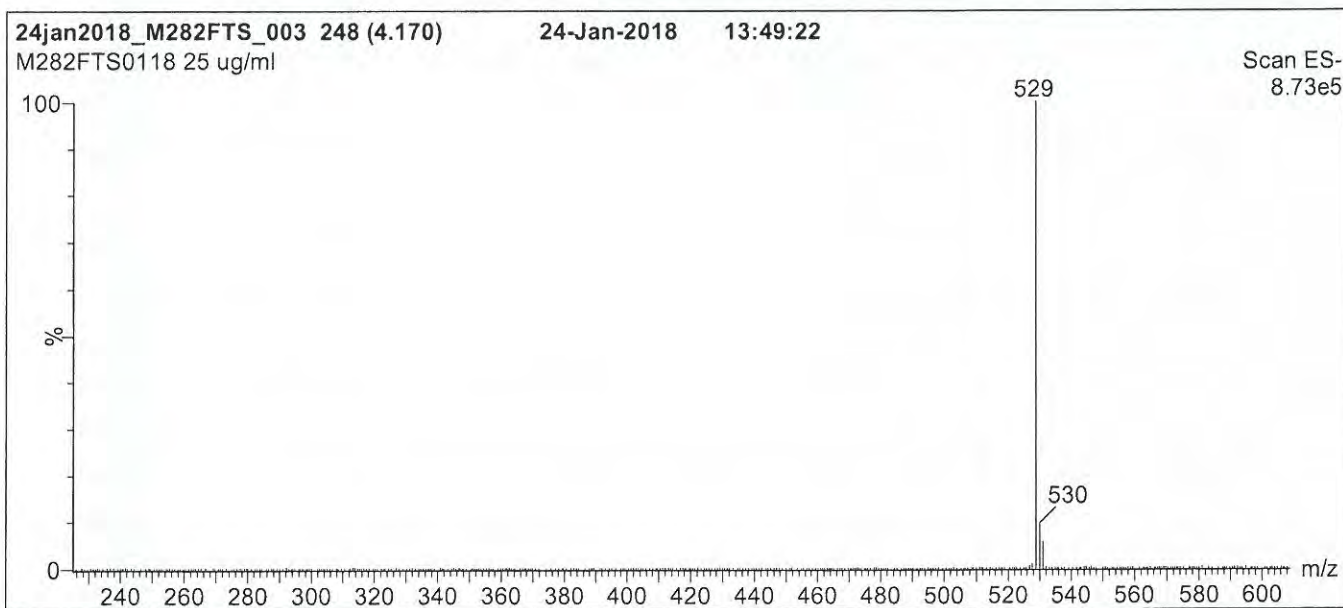
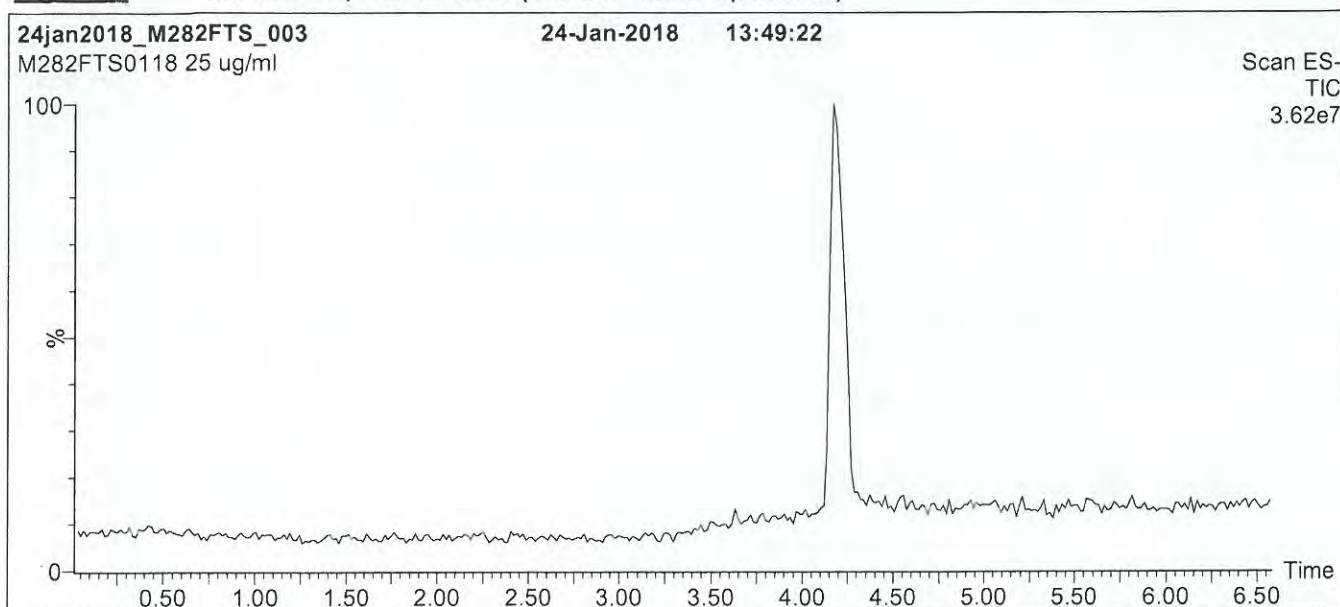
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1504

Figure 1: M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

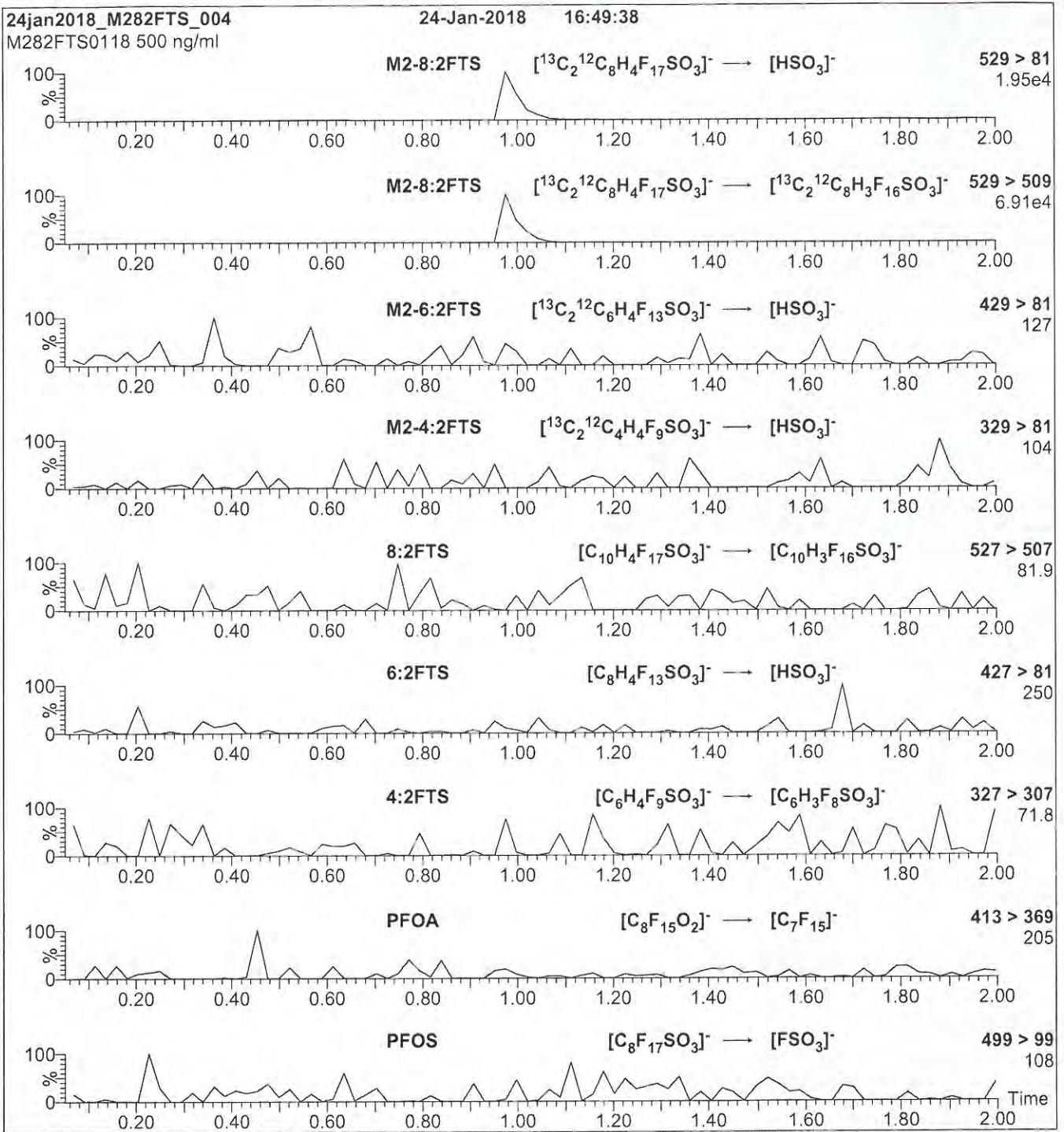
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1504

Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2-8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 25

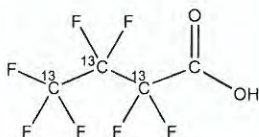
18B1505



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBA **LOT NUMBER:** M3PFBA0516
COMPOUND: Perfluoro-n-[2,3,4-¹³C₃]butanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CHF₇O₂ **MOLECULAR WEIGHT:** 217.02
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (2,3,4-¹³C₃)
LAST TESTED: (mm/dd/yyyy) 05/27/2016
EXPIRY DATE: (mm/dd/yyyy) 05/27/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-[¹³C₃]propanoic acid and also contains ~ 1.0% of perfluoro-n-[1,2,3,4-¹³C₄]butanoic acid due to the naturally occurring isotopic abundance of ¹³C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


B.G. Chittim

Date: 07/08/2016
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1505

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

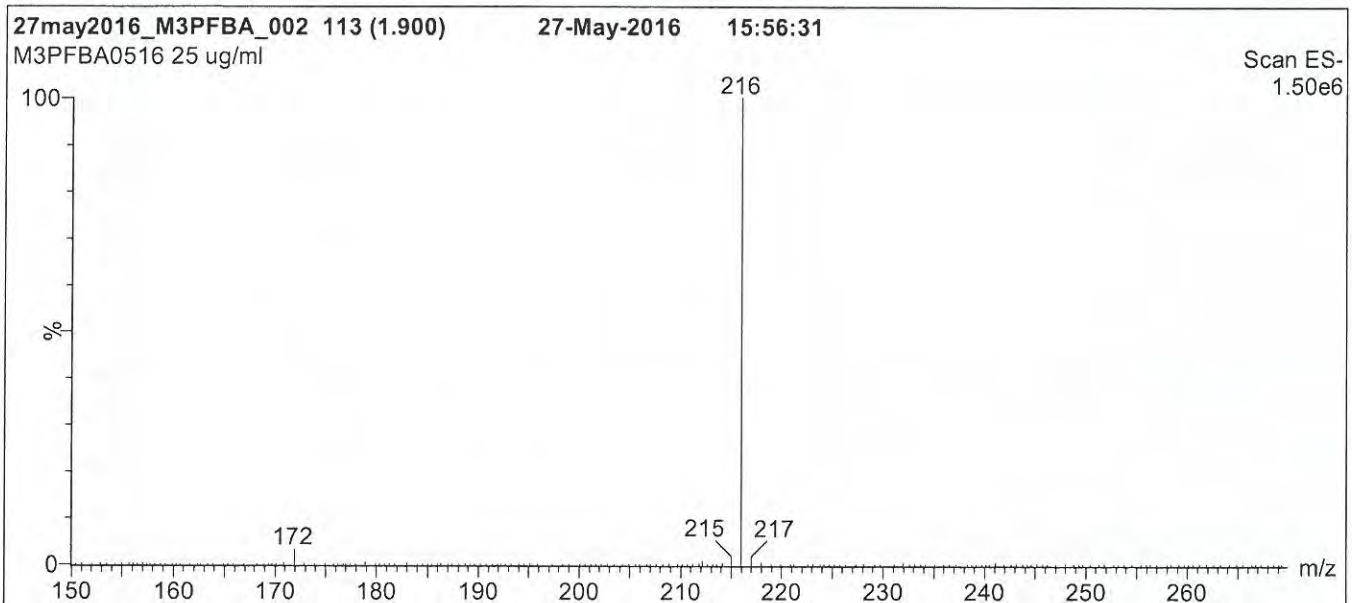
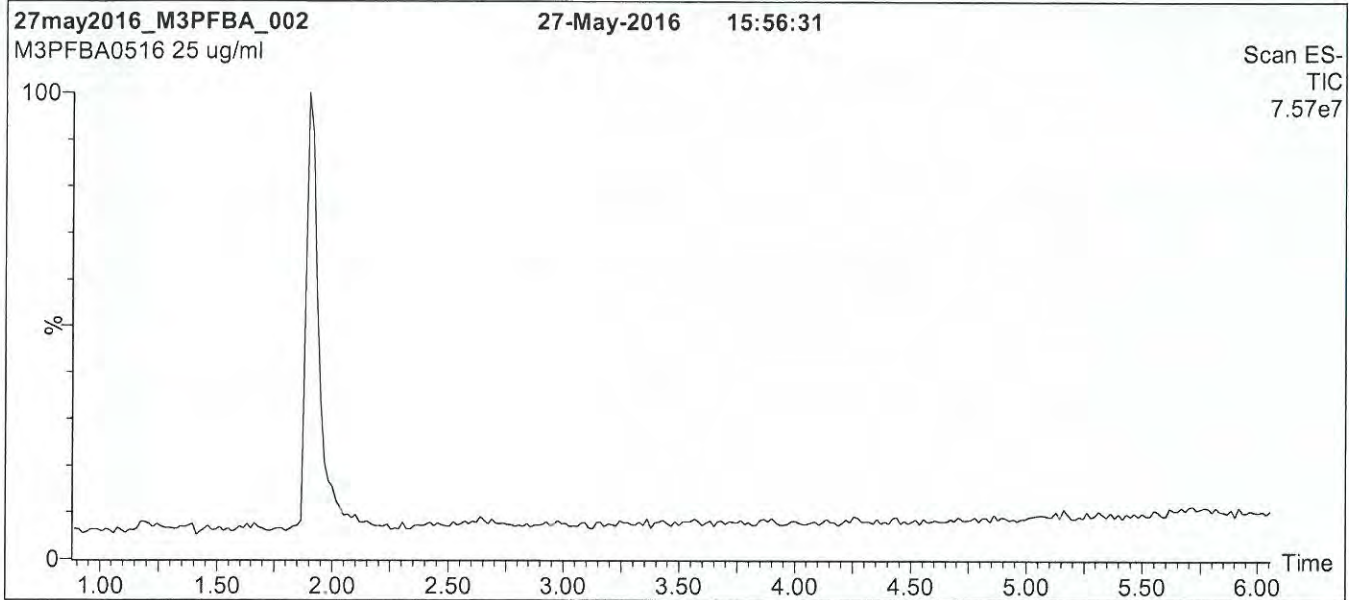
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1505

Figure 1: M3PFBA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

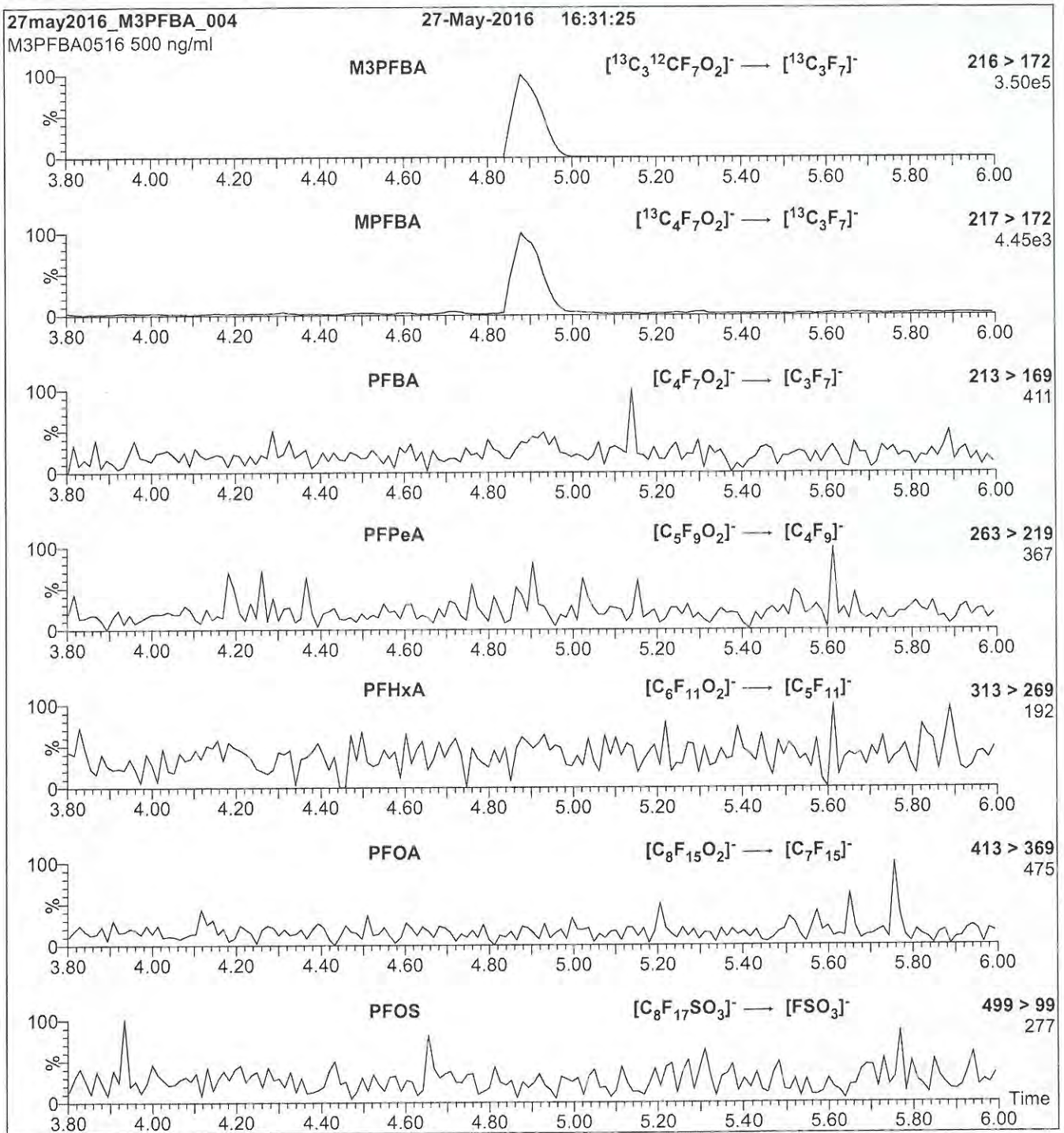
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1505

Figure 2: M3PFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M3PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

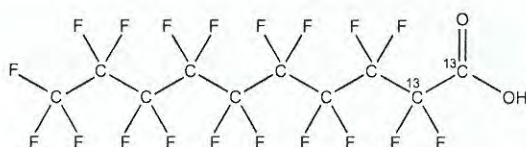
Collision Gas (mbar) = 3.62e-3
Collision Energy (eV) = 10

18B1506


WELLINGTON
 LABORATORIES

CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: MPFDA **LOT NUMBER:** MPFDA0717
COMPOUND: Perfluoro-n-[1,2-¹³C₂]decanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₈HF₁₉O₂ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 07/13/2017
EXPIRY DATE: (mm/dd/yyyy) 07/13/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of ¹³C₁-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 07/14/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1506

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

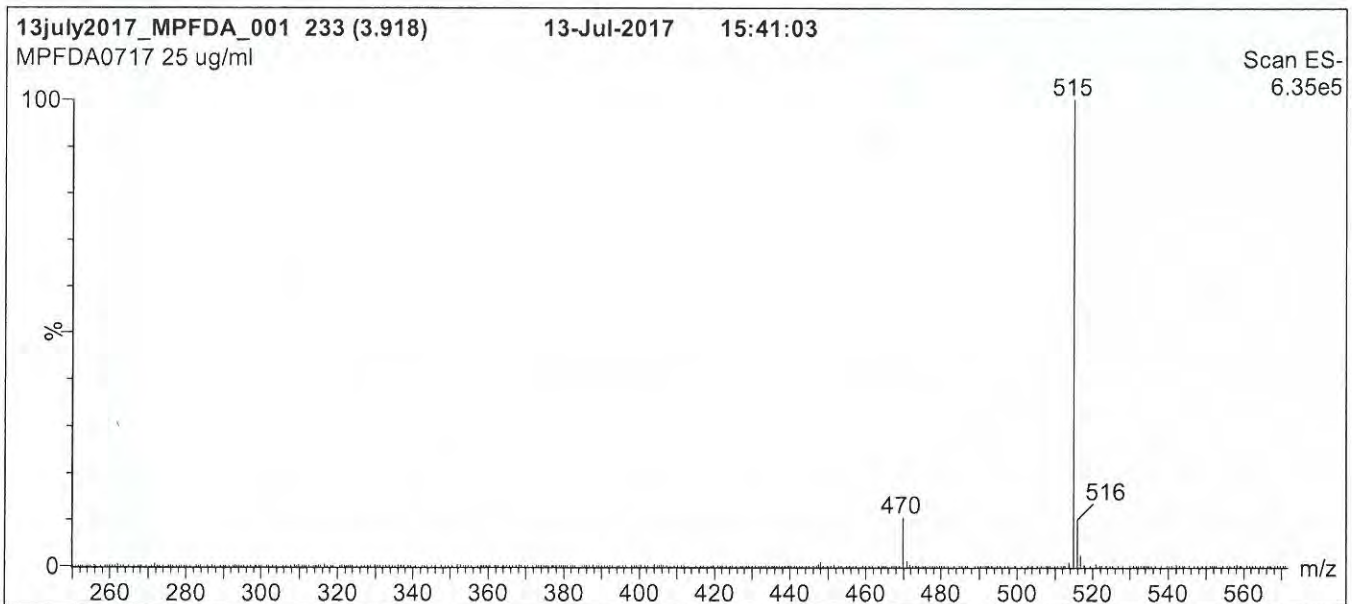
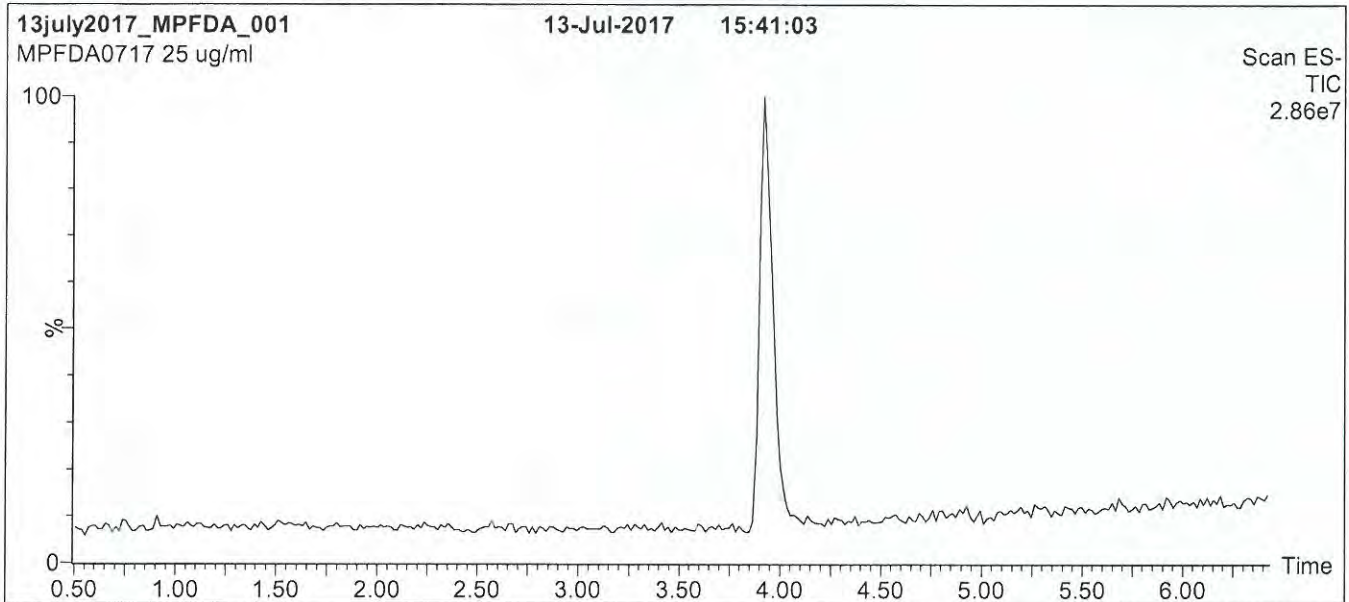
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1506

Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

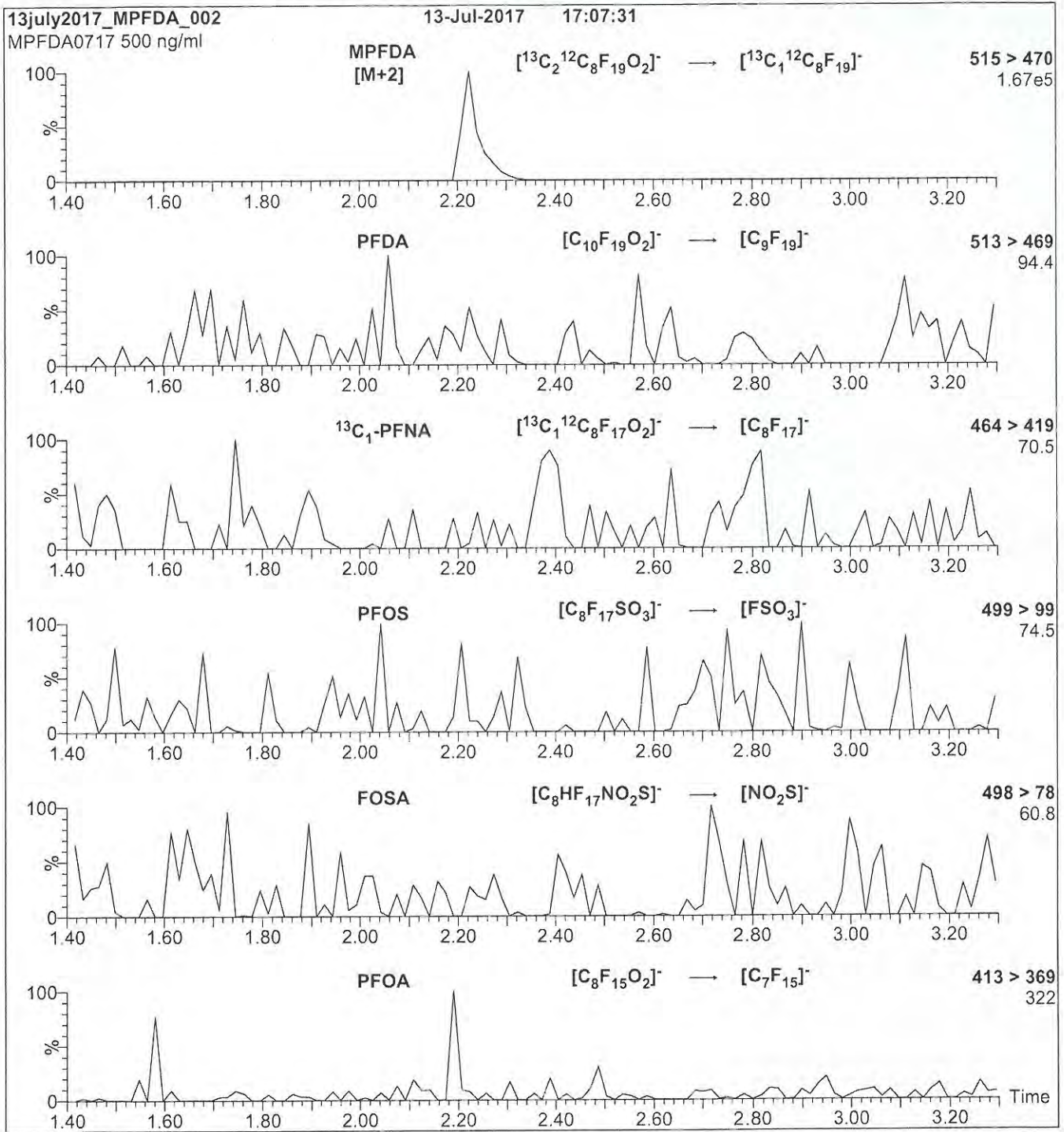
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1506

Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 13

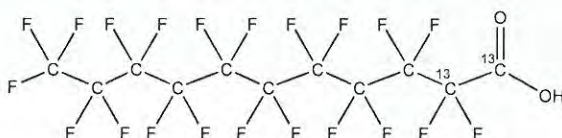
18B1507



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFUdA **LOT NUMBER:** MPFUdA1116
COMPOUND: Perfluoro-n-[1,2-¹³C₂]undecanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₉HF₂₁O₂ **MOLECULAR WEIGHT:** 566.08
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 11/22/2016
EXPIRY DATE: (mm/dd/yyyy) 11/22/2021
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-¹³C₁-PFUdA (~1%; see Figure 2), 2-¹³C₁-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ¹³C-precursor.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


B.G. Chittim

Date: 12/07/2016
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1507

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

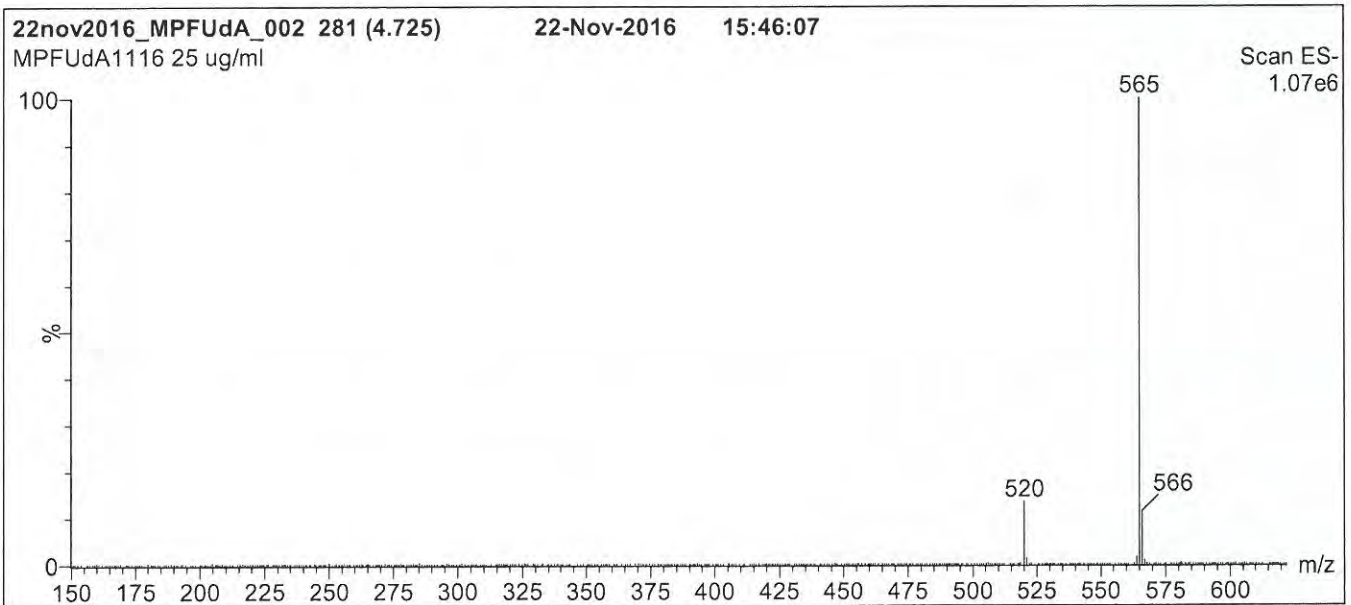
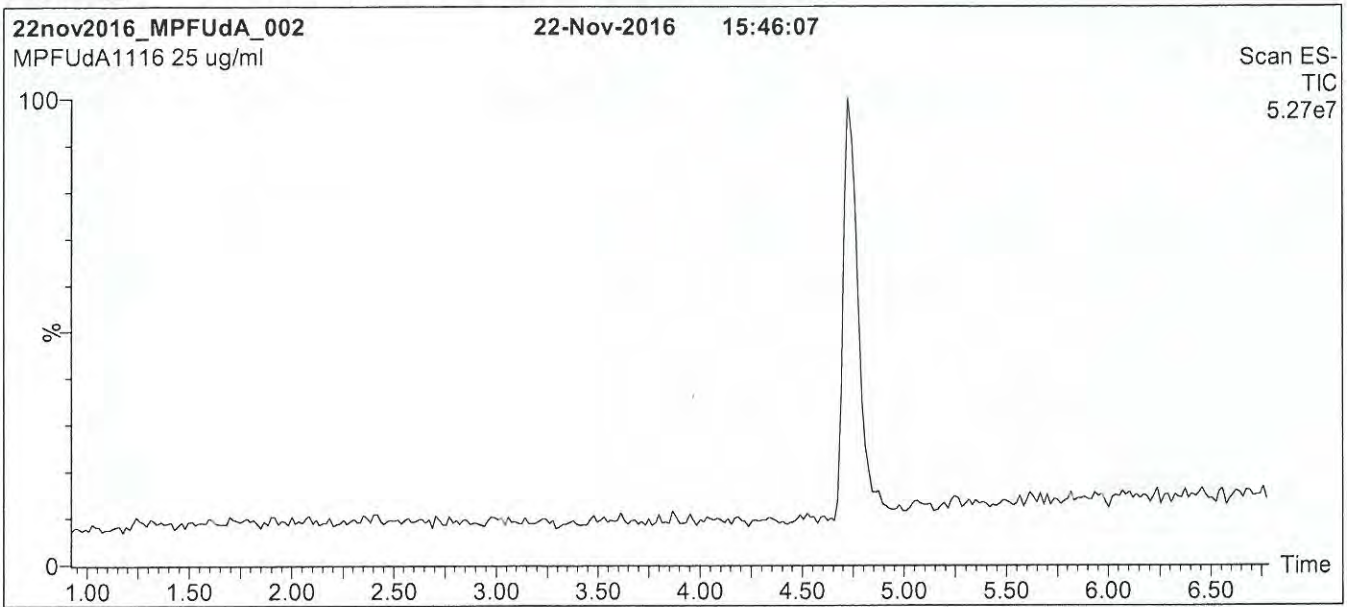
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1507

Figure 1: MPFUdA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

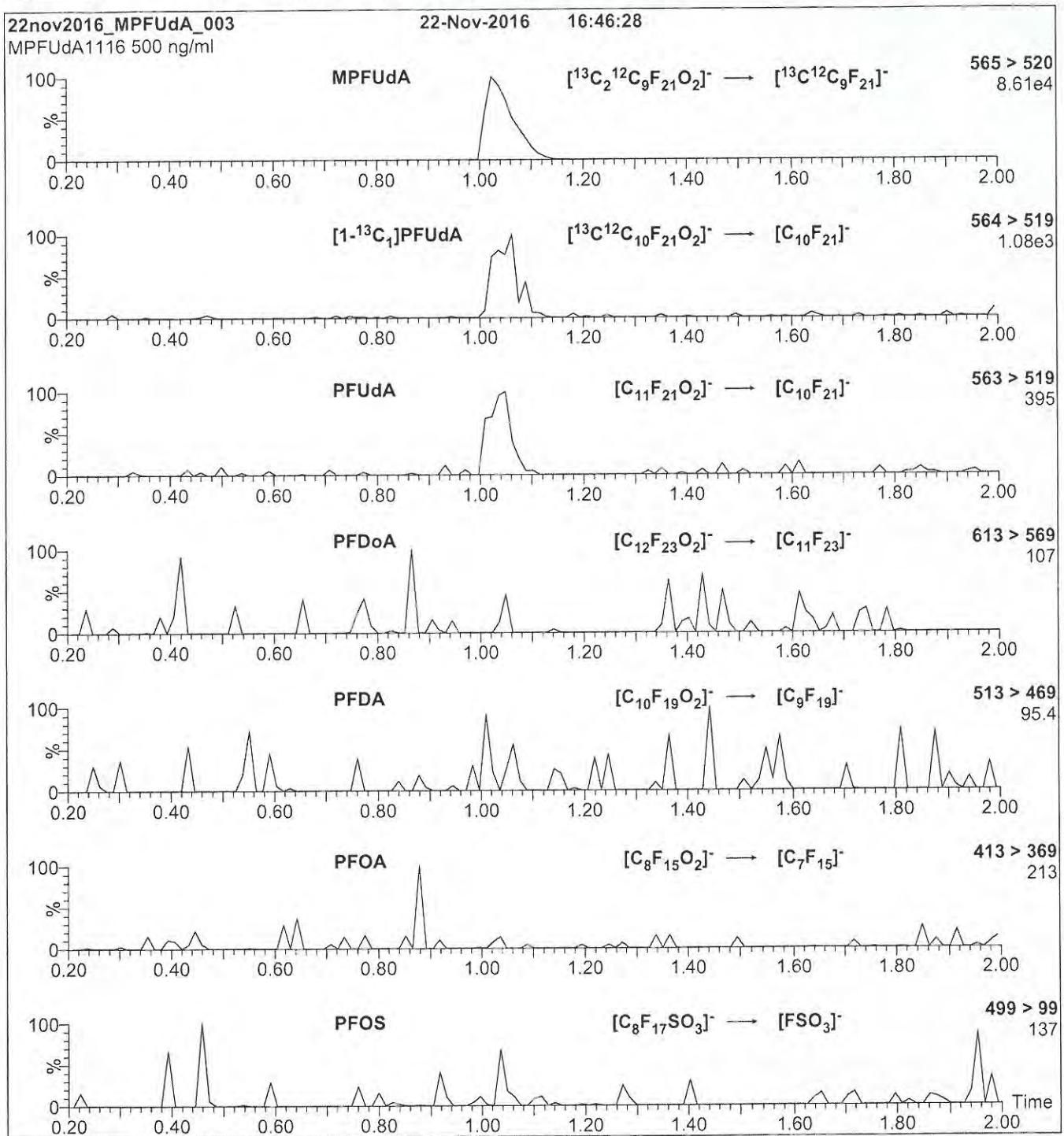
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 65
Desolvation Gas Flow (l/hr) = 750

18B1507

Figure 2: MPFUdA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 μl (500 ng/ml MPFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
 (both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.46e-3
 Collision Energy (eV) = 11

18B1508

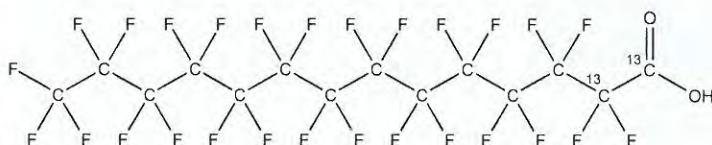


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFTeDA **LOT NUMBER:** M2PFTeDA1117
COMPOUND: Perfluoro-n-[1,2-¹³C₂]tetradecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₂HF₂₇O₂ **MOLECULAR WEIGHT:** 716.10
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 11/30/2017
EXPIRY DATE: (mm/dd/yyyy) 11/30/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/01/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1508

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

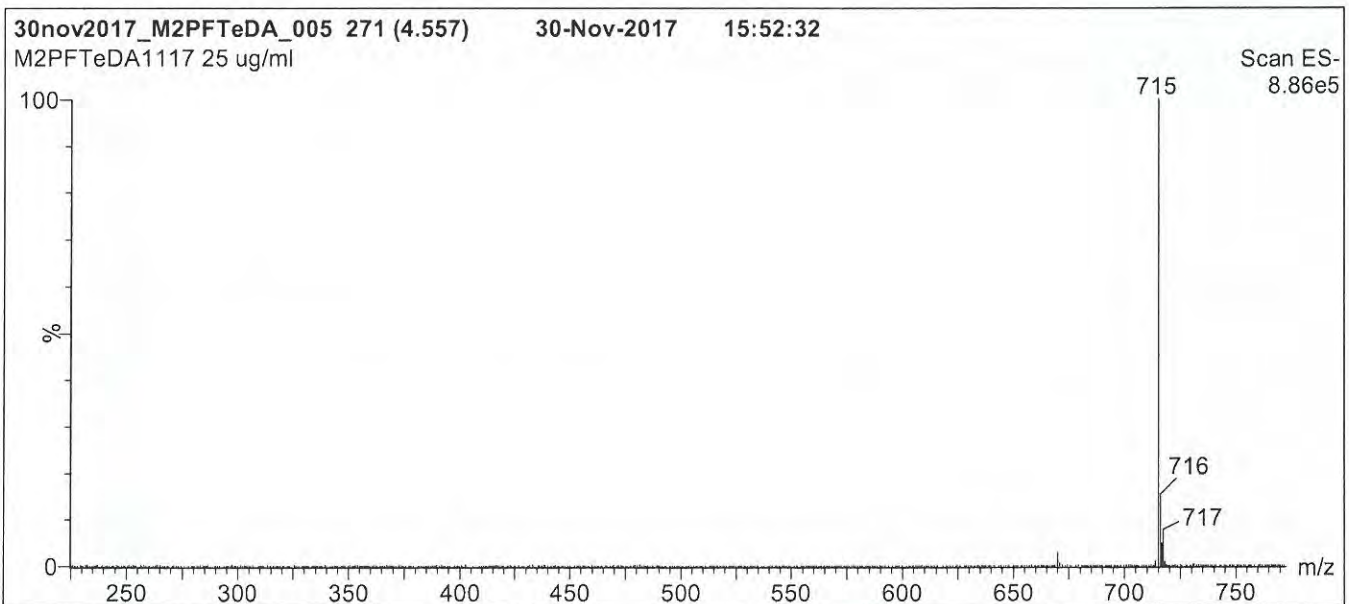
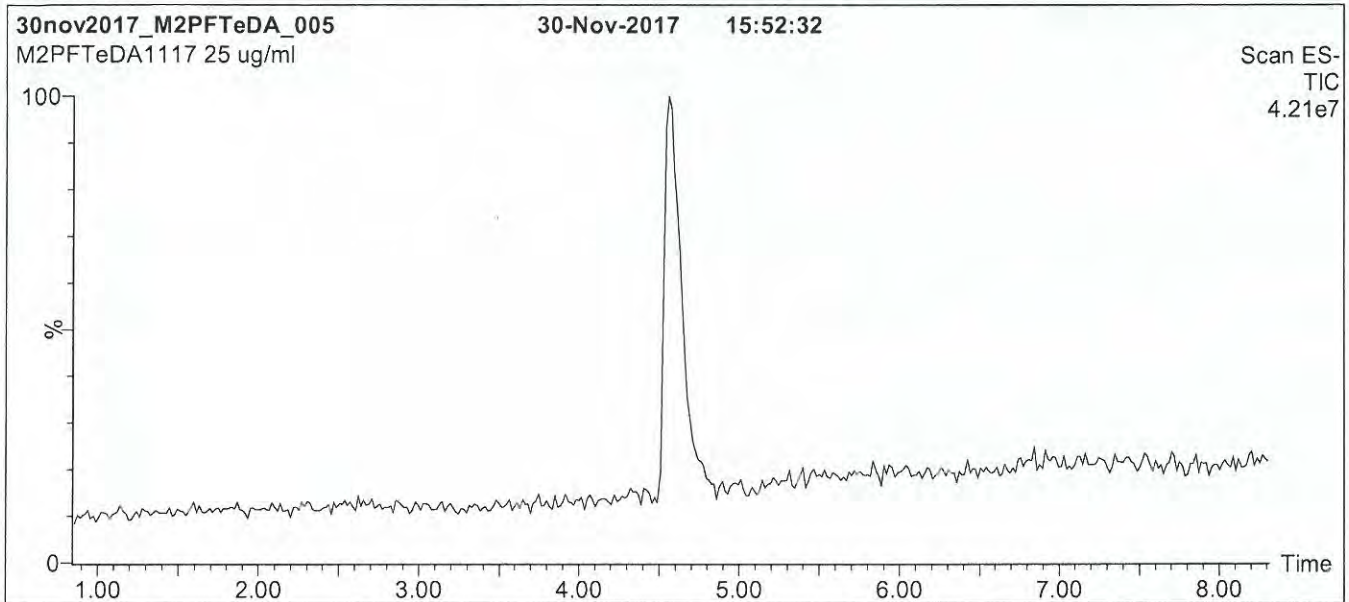
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1508

Figure 1: M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% (80:20 MeOH:ACN) / 35% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

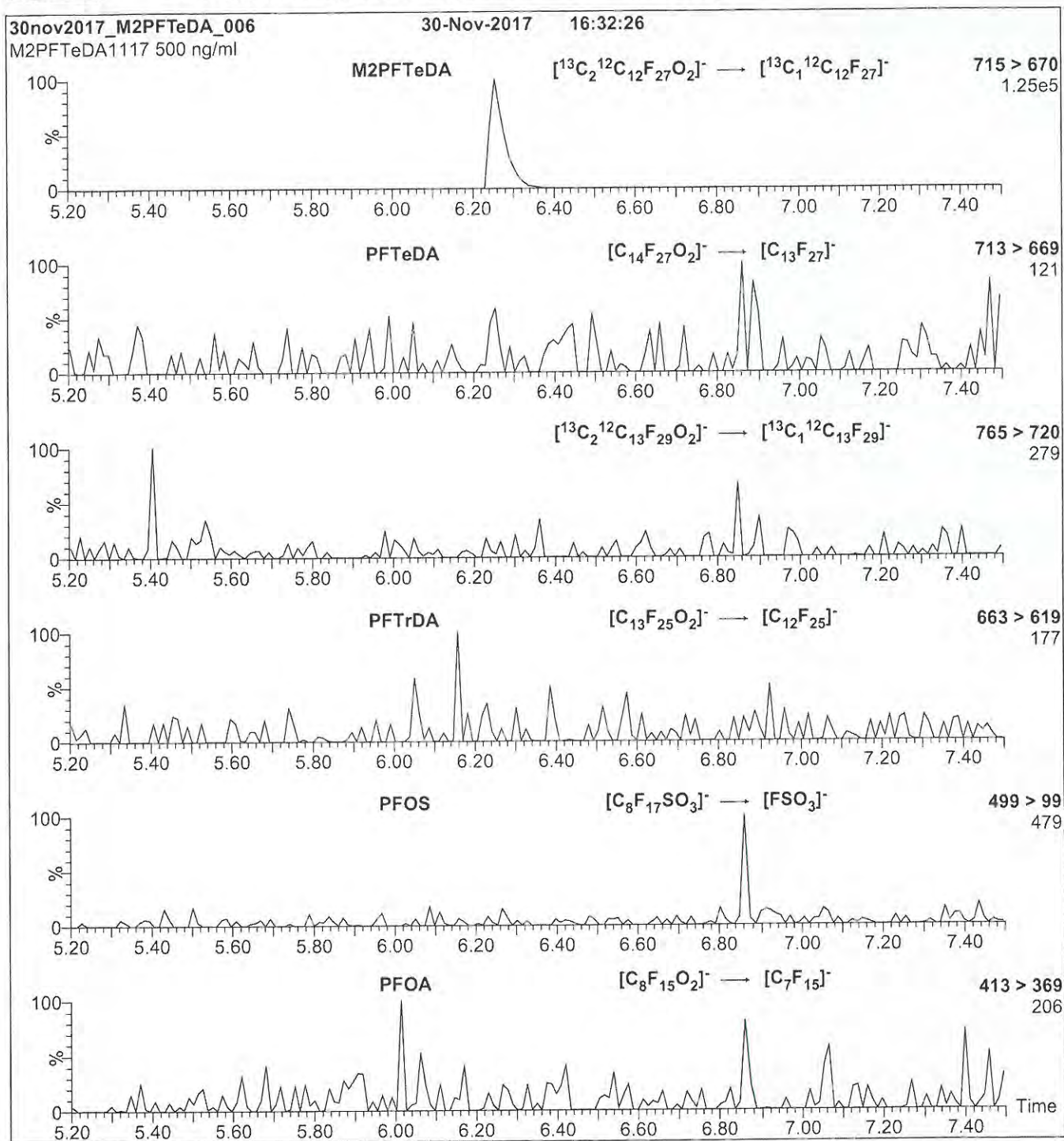
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1508

Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 14

18B1509

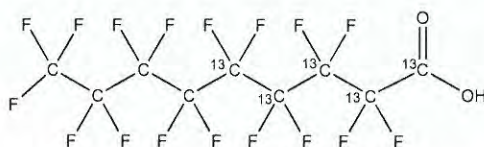


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFNA **LOT NUMBER:** MPFNA1217
COMPOUND: Perfluoro-n-[1,2,3,4,5-¹³C₅]nonanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₅¹²C₄HF₁₇O₂ **MOLECULAR WEIGHT:** 469.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (1,2,3,4,5-¹³C₅)
LAST TESTED: (mm/dd/yyyy) 12/14/2017
EXPIRY DATE: (mm/dd/yyyy) 12/14/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

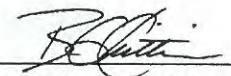
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/19/2017
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1509

INTENDED USE:

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HAZARDS:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

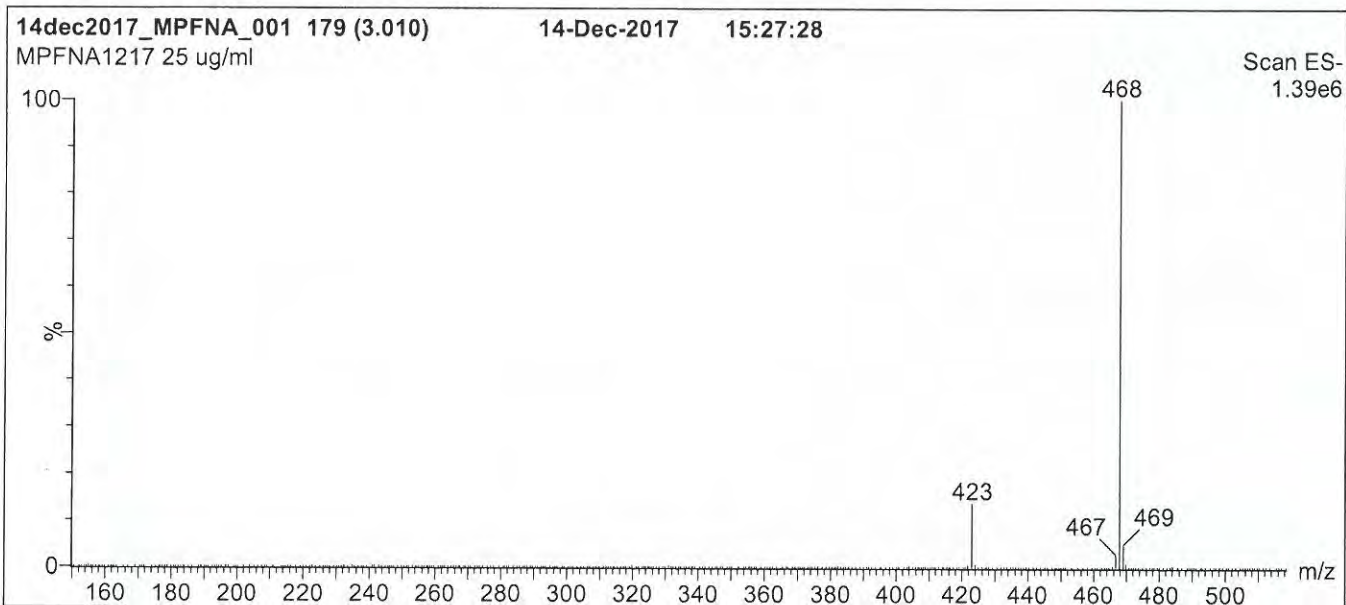
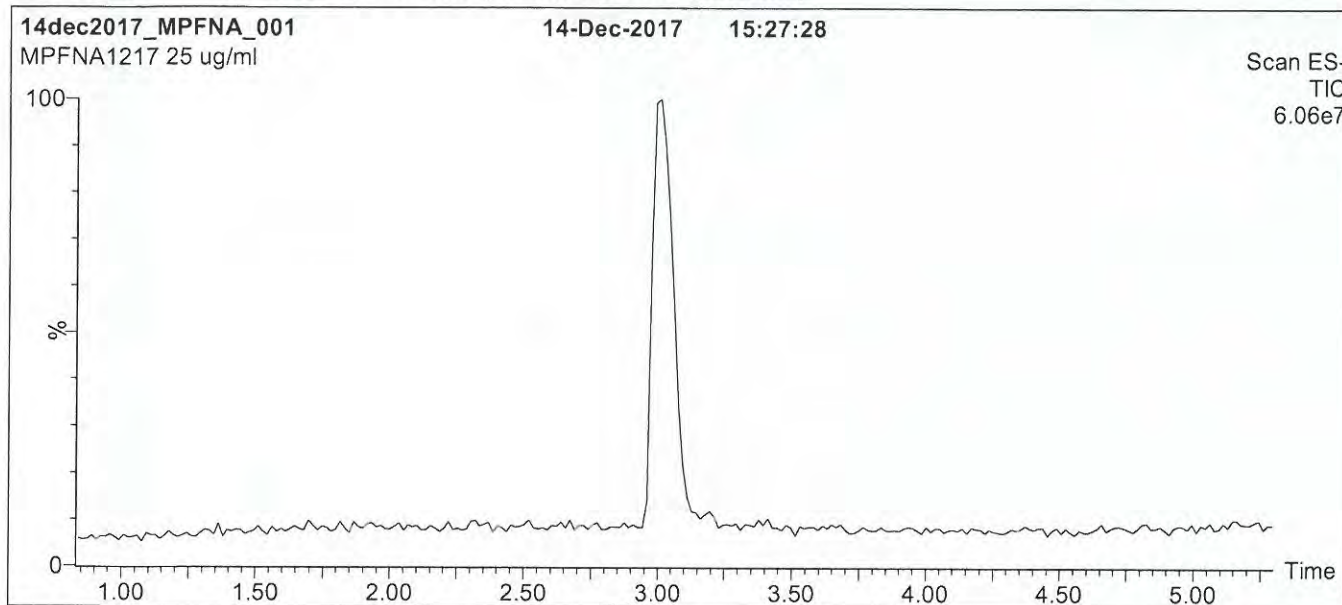
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18B1509

Figure 1: MPFNA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

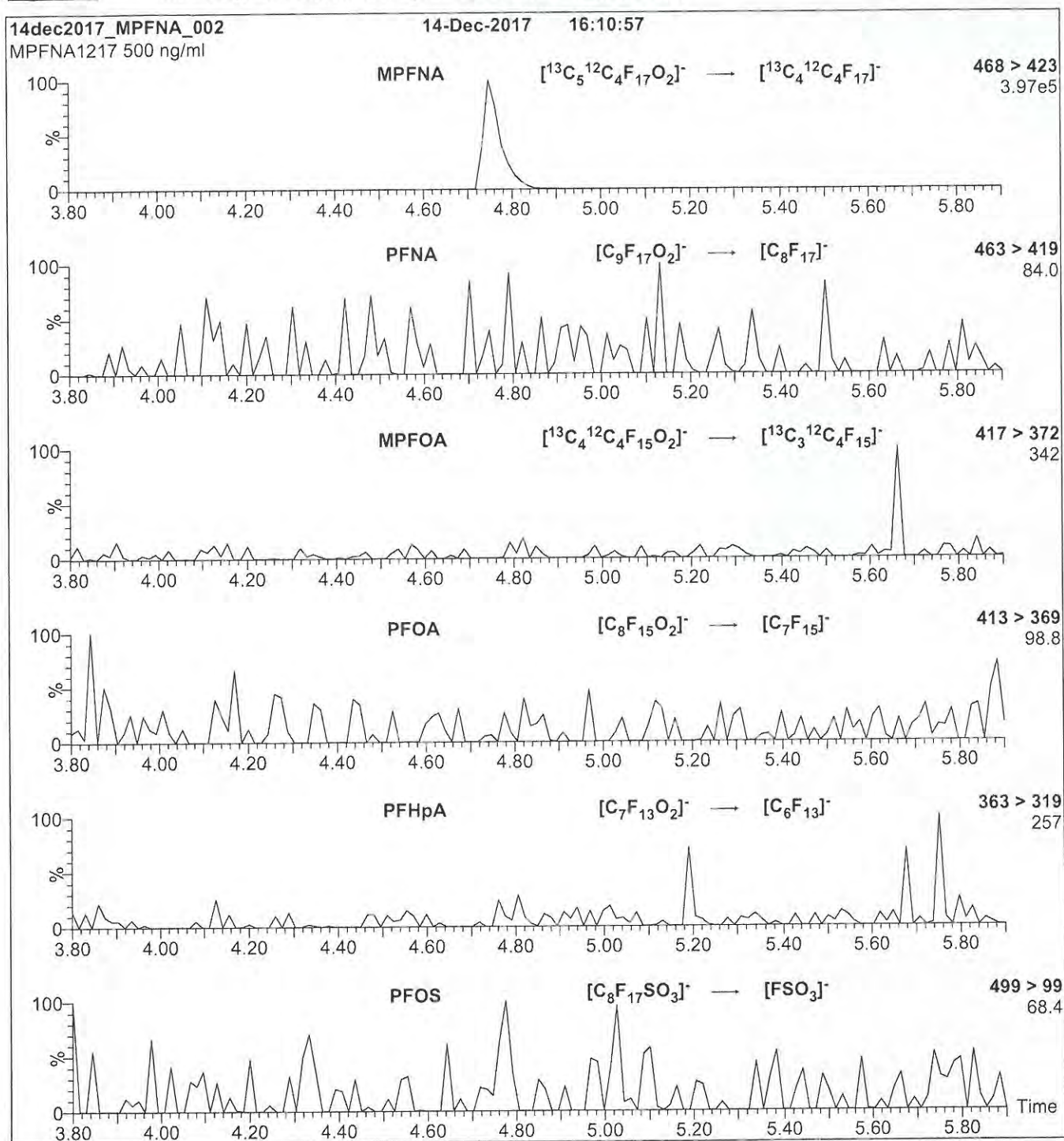
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1509

Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MPFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 11

18B1510

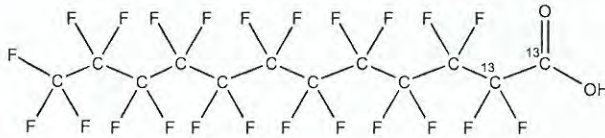


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDoA **LOT NUMBER:** MPFDoA0517
COMPOUND: Perfluoro-n-[1,2-¹³C₂]dodecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $^{13}\text{C}_2^{12}\text{C}_{10}\text{HF}_{23}\text{O}_2$ **MOLECULAR WEIGHT:** 616.08
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** $\geq 99\%$ ^{13}C
LAST TESTED: (mm/dd/yyyy) 05/23/2017 (1,2- $^{13}\text{C}_2$)
EXPIRY DATE: (mm/dd/yyyy) 05/23/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 05/26/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1510

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n H(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

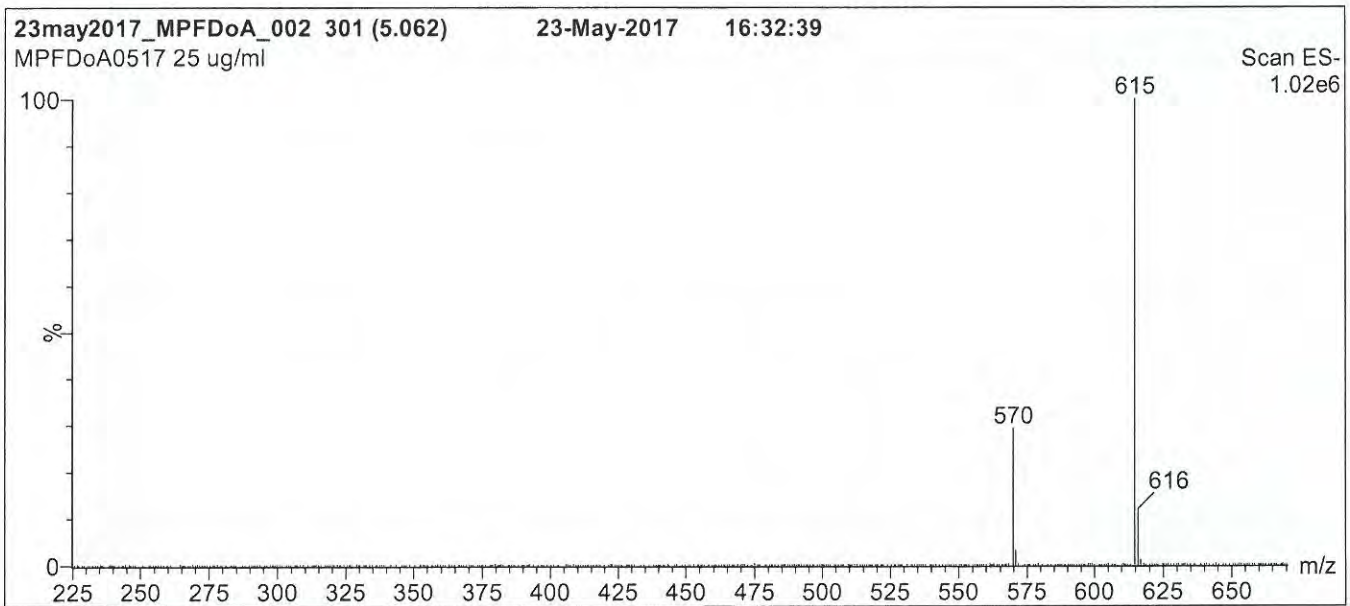
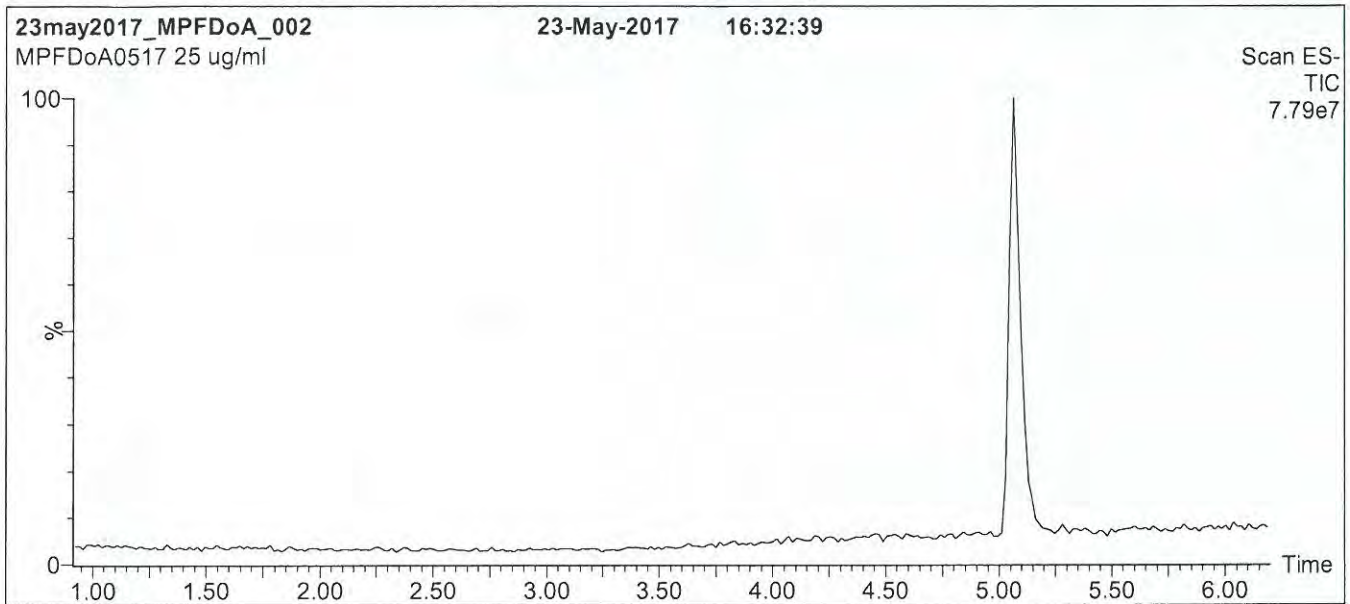
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1510

Figure 1: MPFDoA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

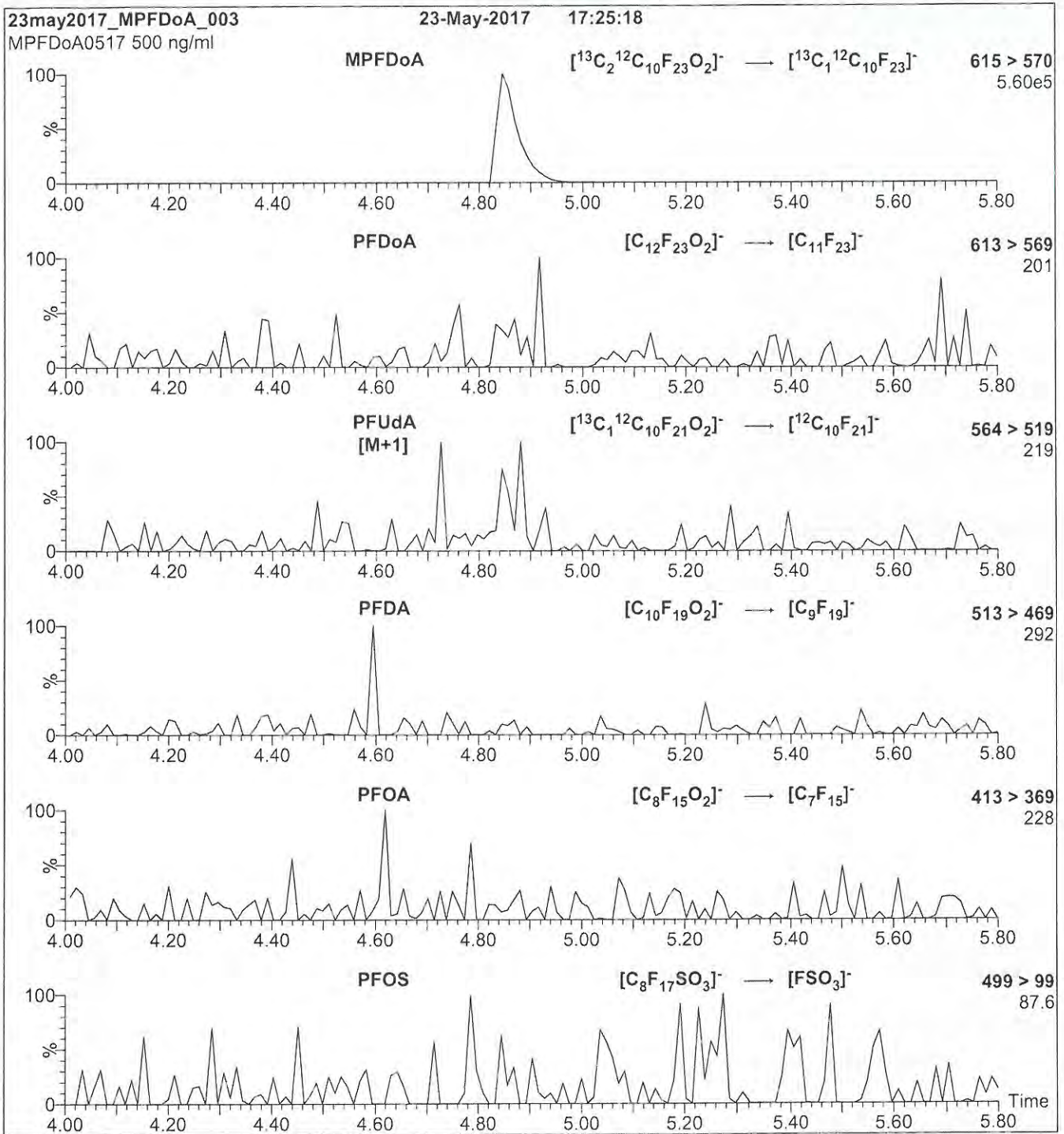
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1510

Figure 2: MPFDoA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MPFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 13

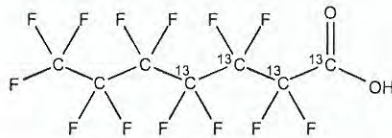
18B1511



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M4PFHpA **LOT NUMBER:** M4PFHpA0517
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]heptanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₃HF₁₃O₂ **MOLECULAR WEIGHT:** 368.03
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (1,2,3,4-¹³C₄)
LAST TESTED: (mm/dd/yyyy) 05/03/2017
EXPIRY DATE: (mm/dd/yyyy) 05/03/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

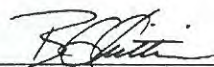
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 05/11/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1881511

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

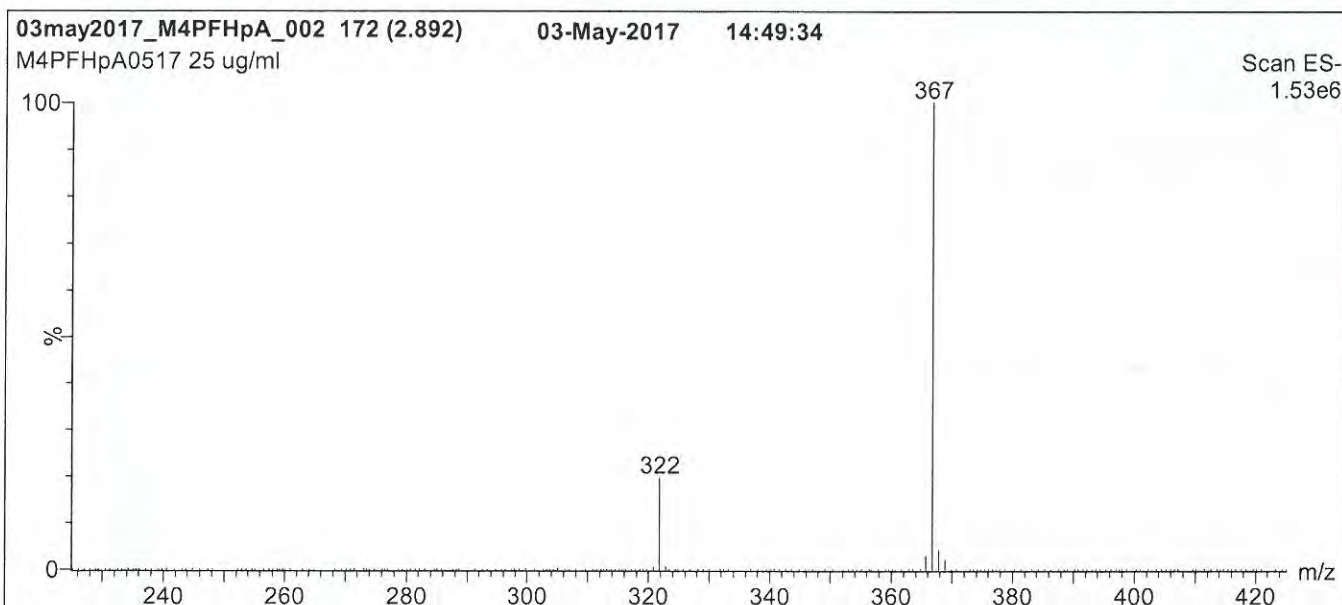
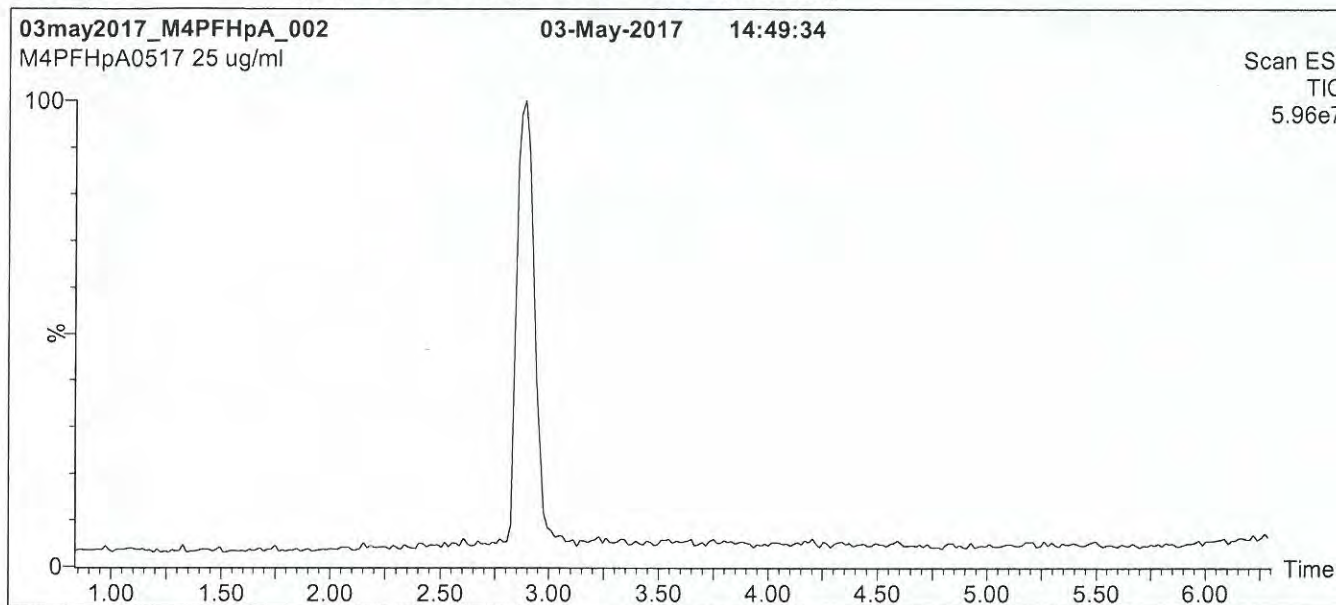
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1511

Figure 1: M4PFHpA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

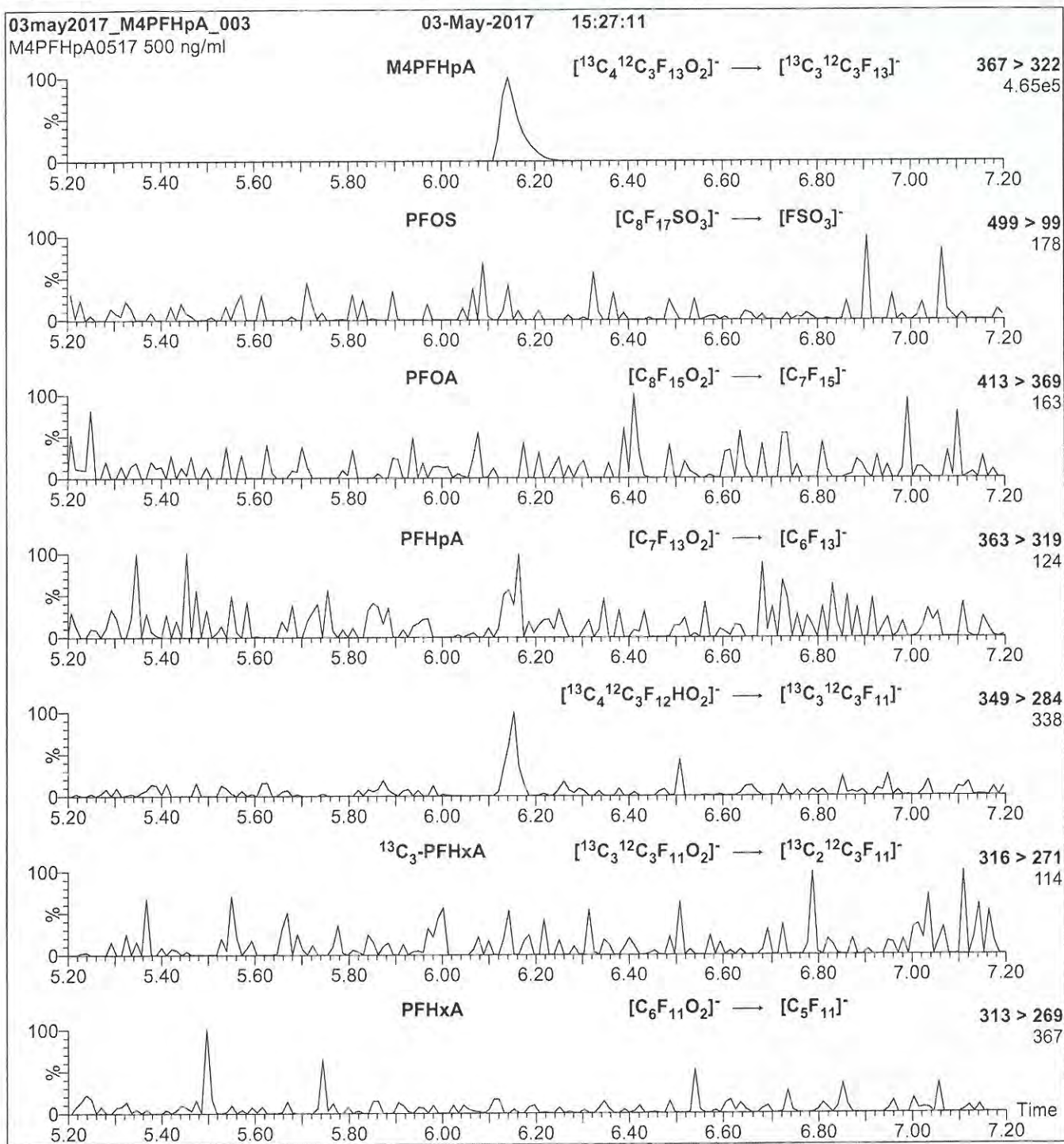
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1511

Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M4PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 9

18B1512



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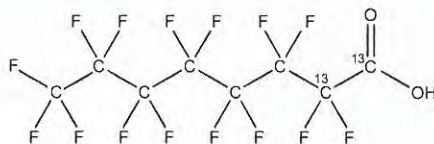
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-[1,2-¹³C₂]octanoic acid

LOT NUMBER: M2PFOA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₂¹²C₆HF₁₅O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 416.05
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/26/2017
EXPIRY DATE: (mm/dd/yyyy) 10/26/2022

ISOTOPIC PURITY: ≥99%¹³C
(1,2-¹³C₂)

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 10/30/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1512

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

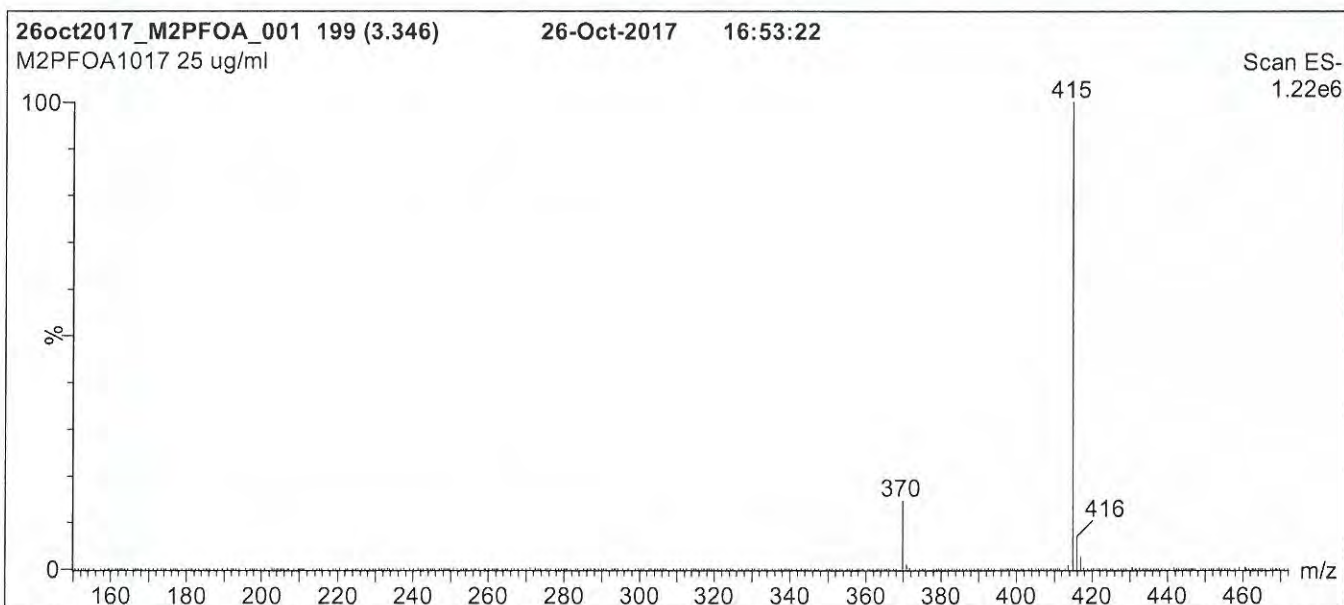
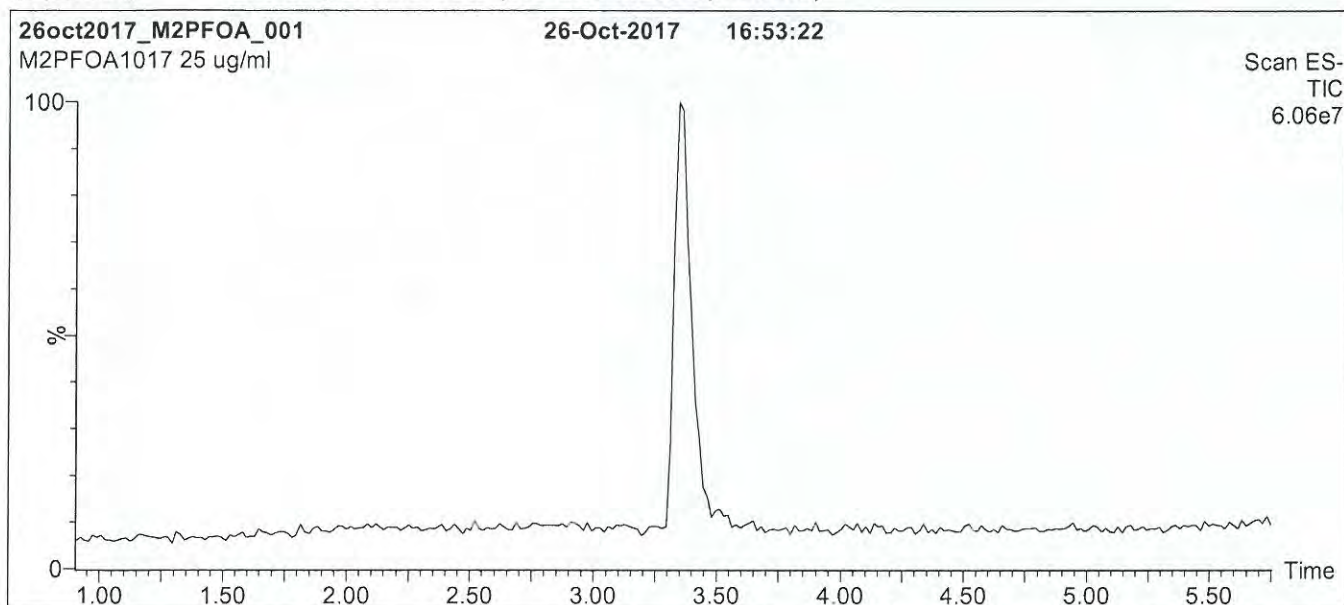
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1512

Figure 1: M2PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

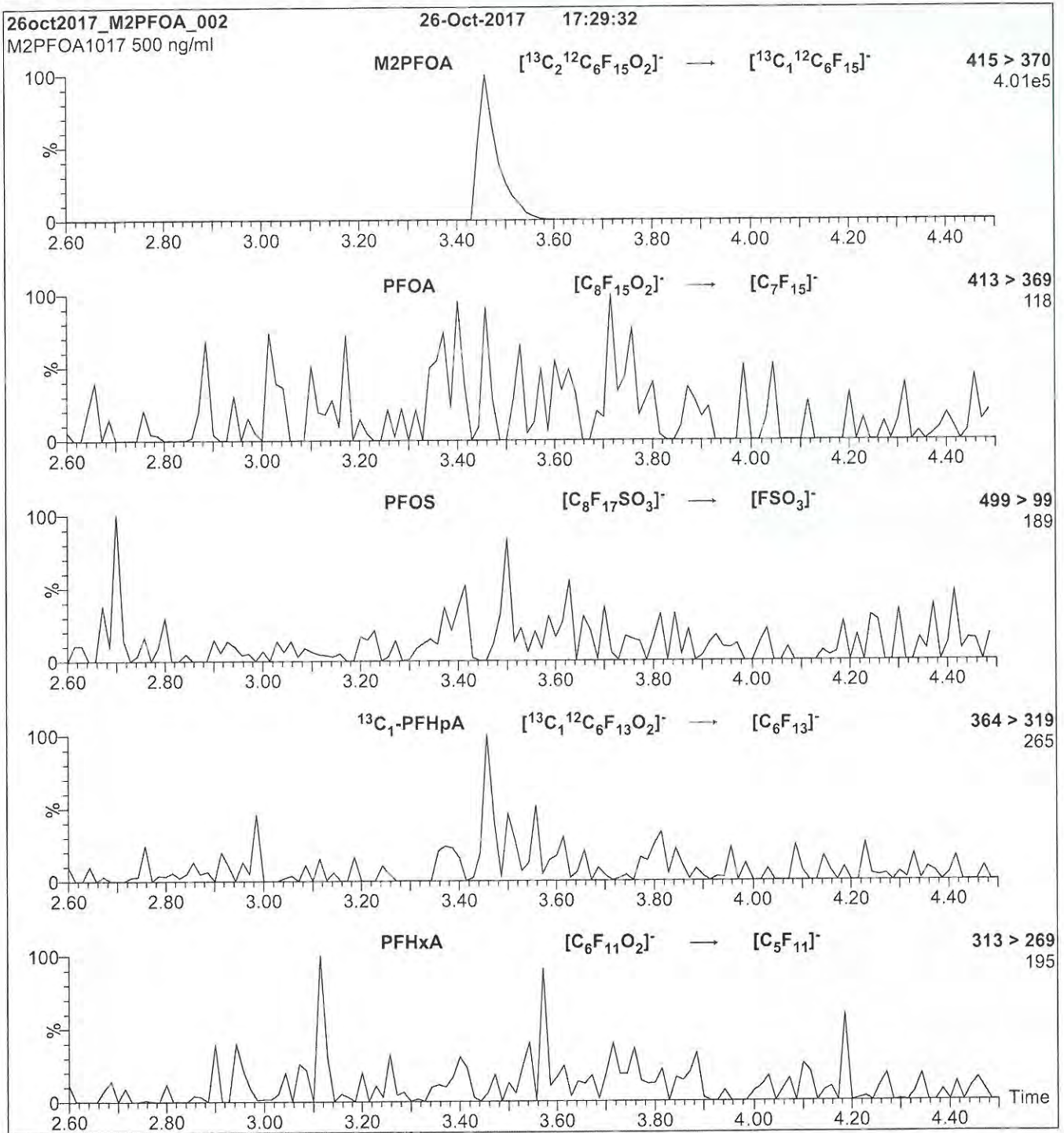
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1512

Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

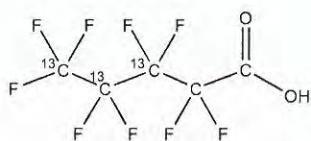
MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 10

18B1513


**WELLINGTON
LABORATORIES**
**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

PRODUCT CODE: M3PFPeA **LOT NUMBER:** M3PFPeA0417
COMPOUND: Perfluoro-n-[3,4,5-¹³C₃]pentanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²C₂HF₉O₂ **MOLECULAR WEIGHT:** 267.02
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (3,4,5-¹³C₃)
LAST TESTED: (mm/dd/yyyy) 04/20/2017
EXPIRY DATE: (mm/dd/yyyy) 04/20/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.95% of perfluoro-n-[¹³C₃]butanoic acid and 0.05% of perfluoro-1-pentanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 04/24/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1513

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

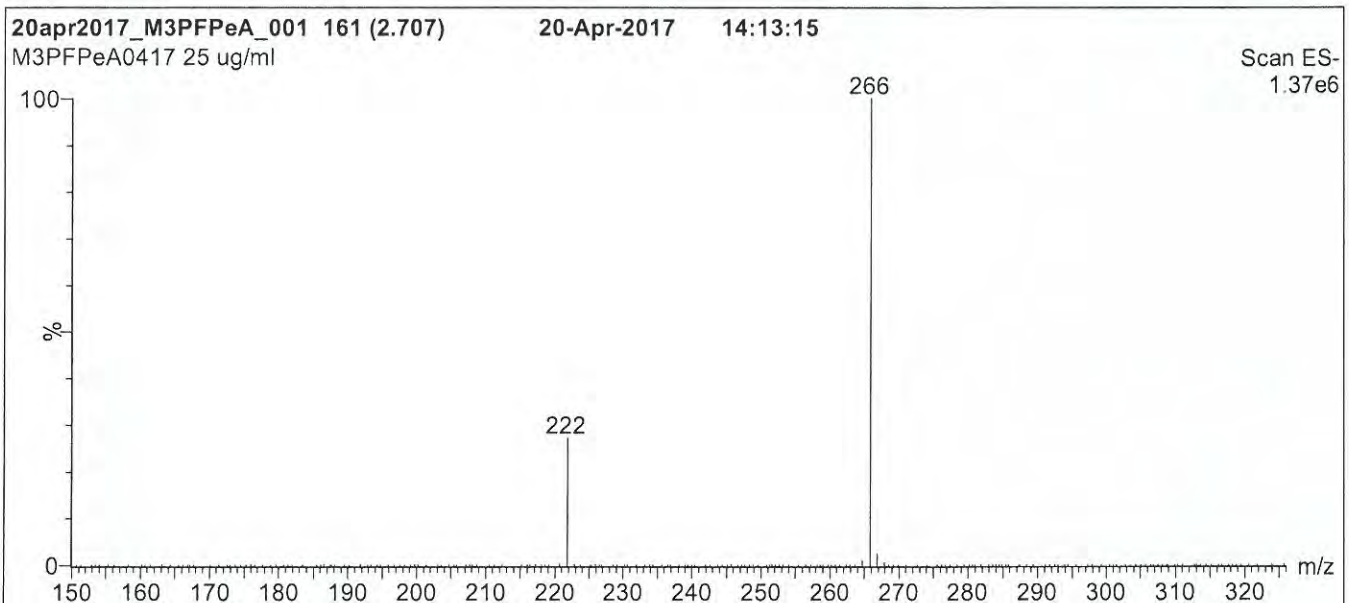
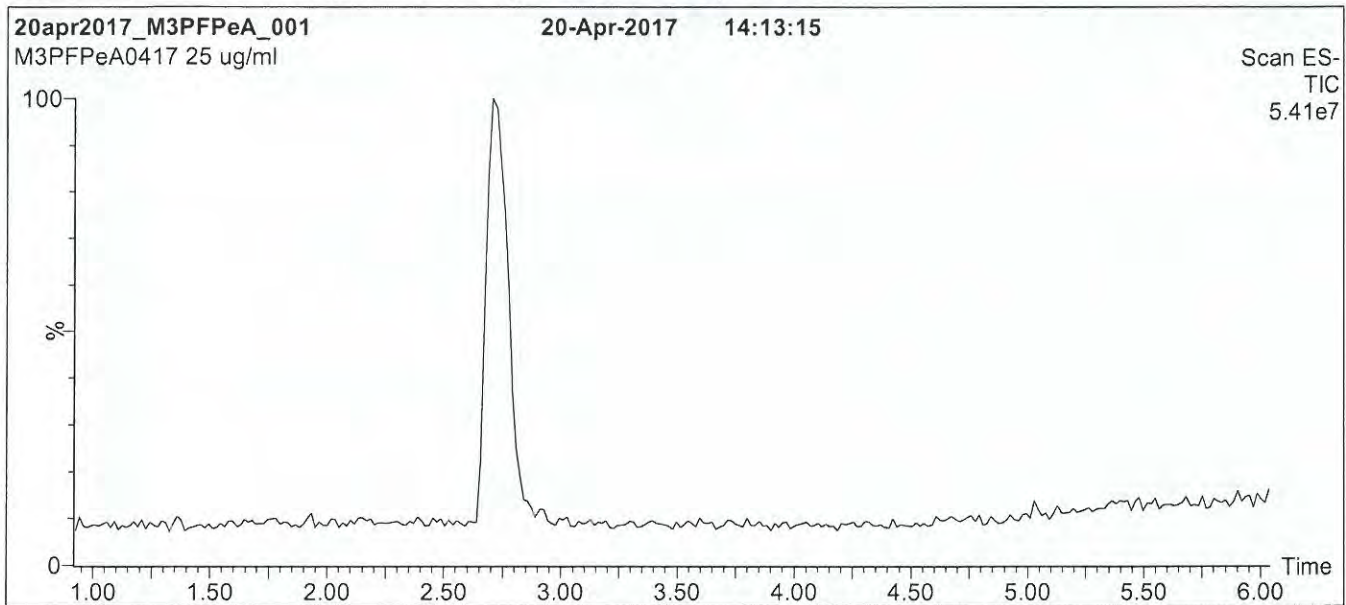
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1513

Figure 1: M3PFPeA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

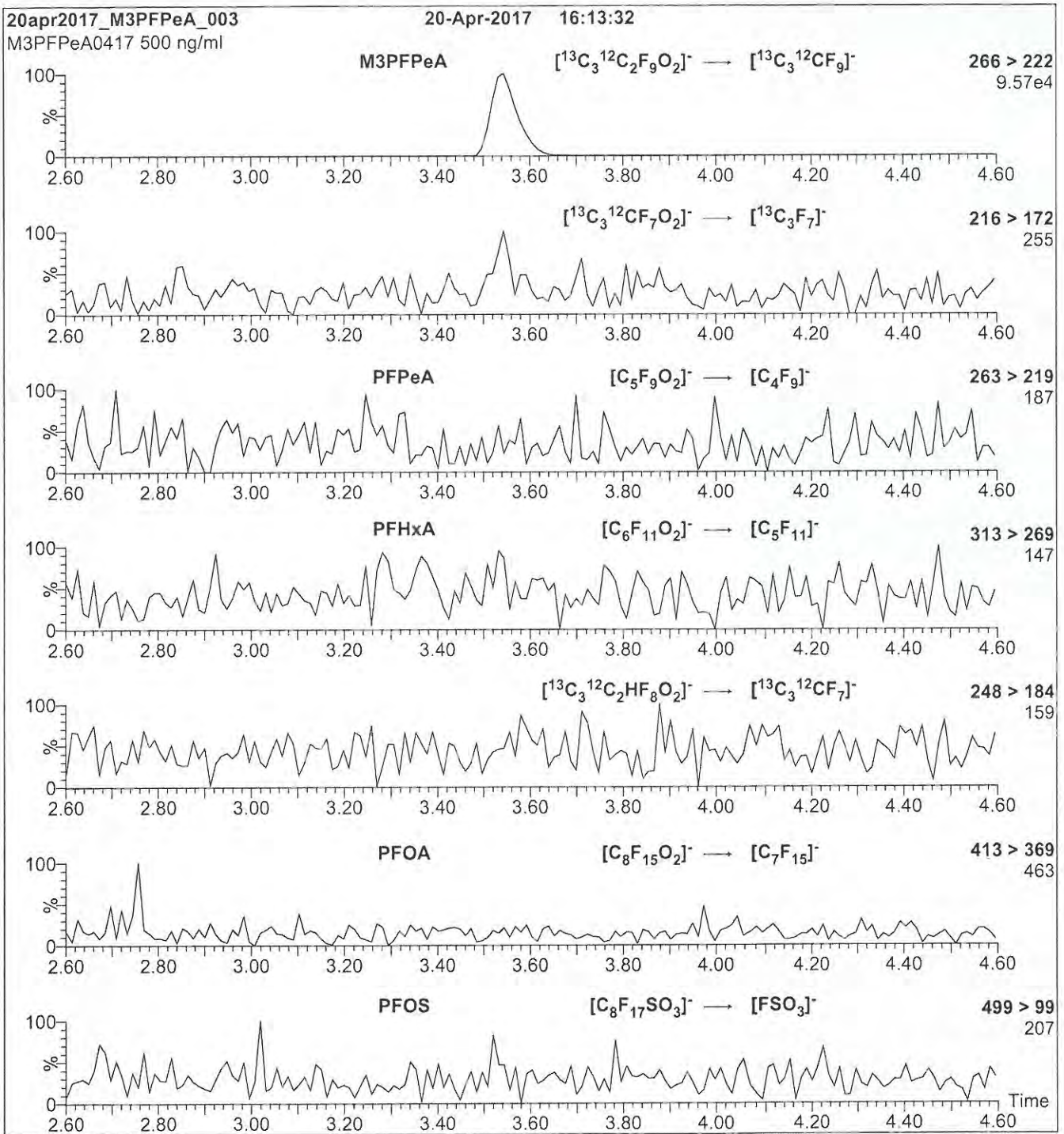
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18B1513

Figure 2: M3PFPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M3PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 9

18B1514

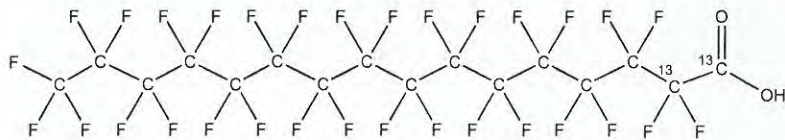


WELLINGTON
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2PFHxDA **LOT NUMBER:** M2PFHxDA0717
COMPOUND: Perfluoro-n-[1,2-¹³C₂]hexadecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₄HF₃₁O₂ **MOLECULAR WEIGHT:** 816.11
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 07/13/2017 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 07/13/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of native perfluoro-n-hexadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/14/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1514

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

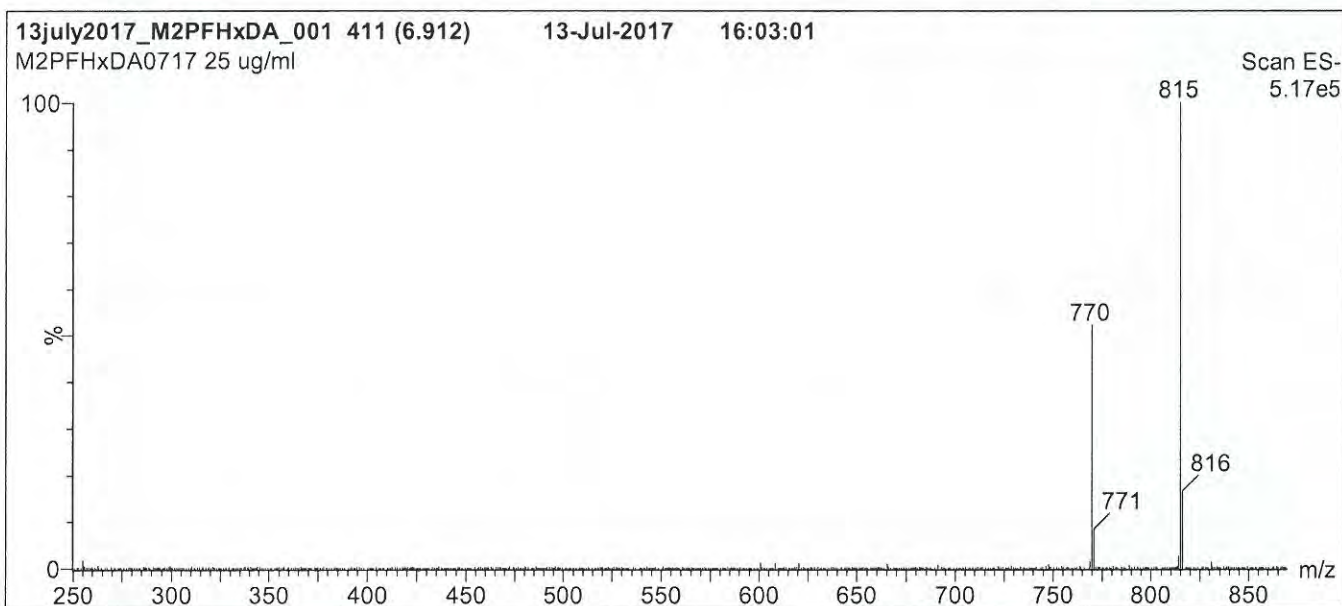
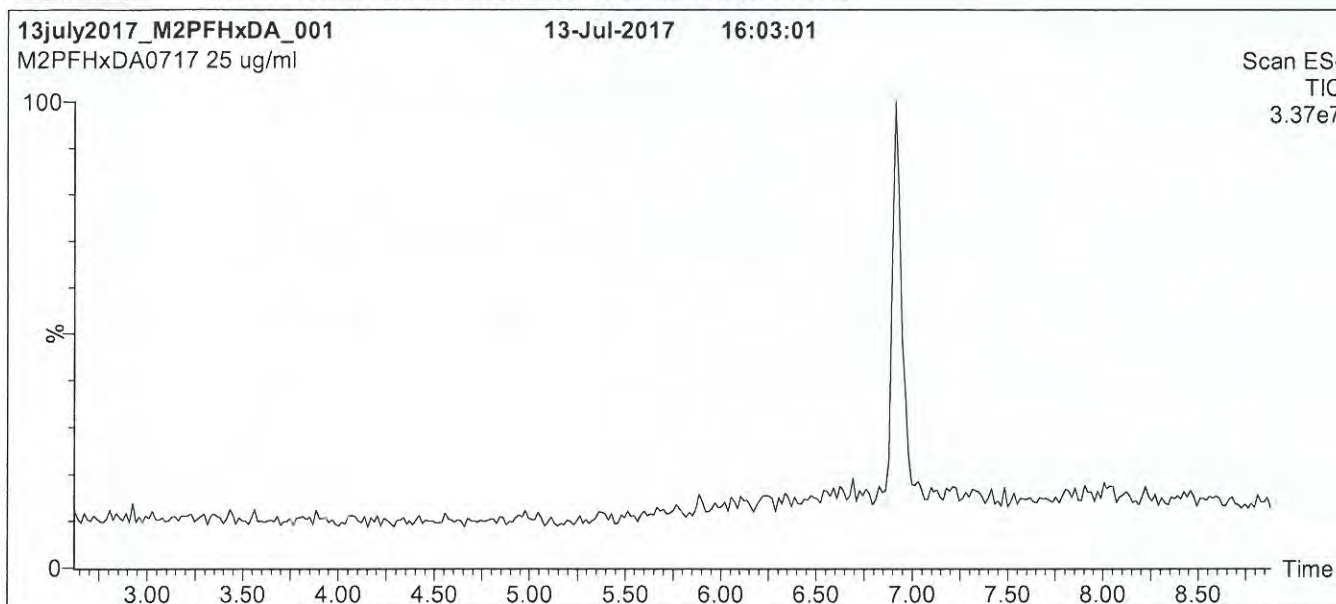
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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188514

Figure 1: M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

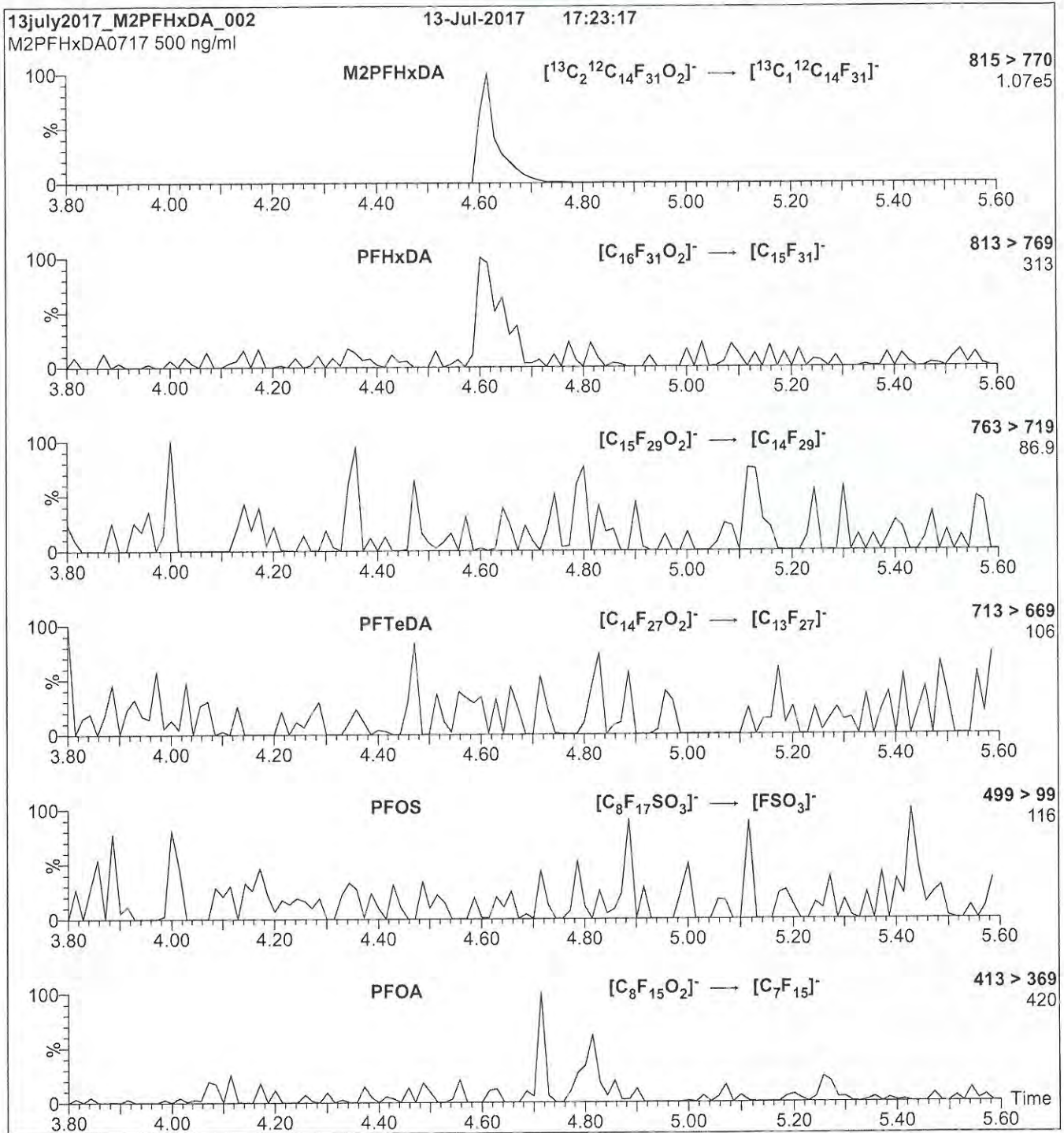
MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18B1514

Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 15

18B1515

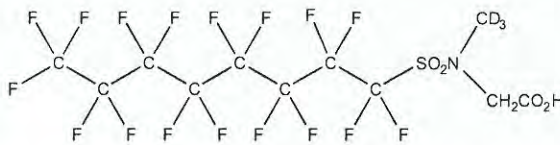


WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA1117
COMPOUND: N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₁₁D₃H₃F₁₇NO₄S **MOLECULAR WEIGHT:** 574.23
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% ²H₃
LAST TESTED: (mm/dd/yyyy) 11/08/2017
EXPIRY DATE: (mm/dd/yyyy) 11/08/2022
RECOMMENDED STORAGE: Refrigerate ampoule

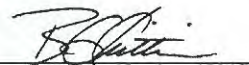
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 11/16/2017
B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

188515

INTENDED USE:

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HAZARDS:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

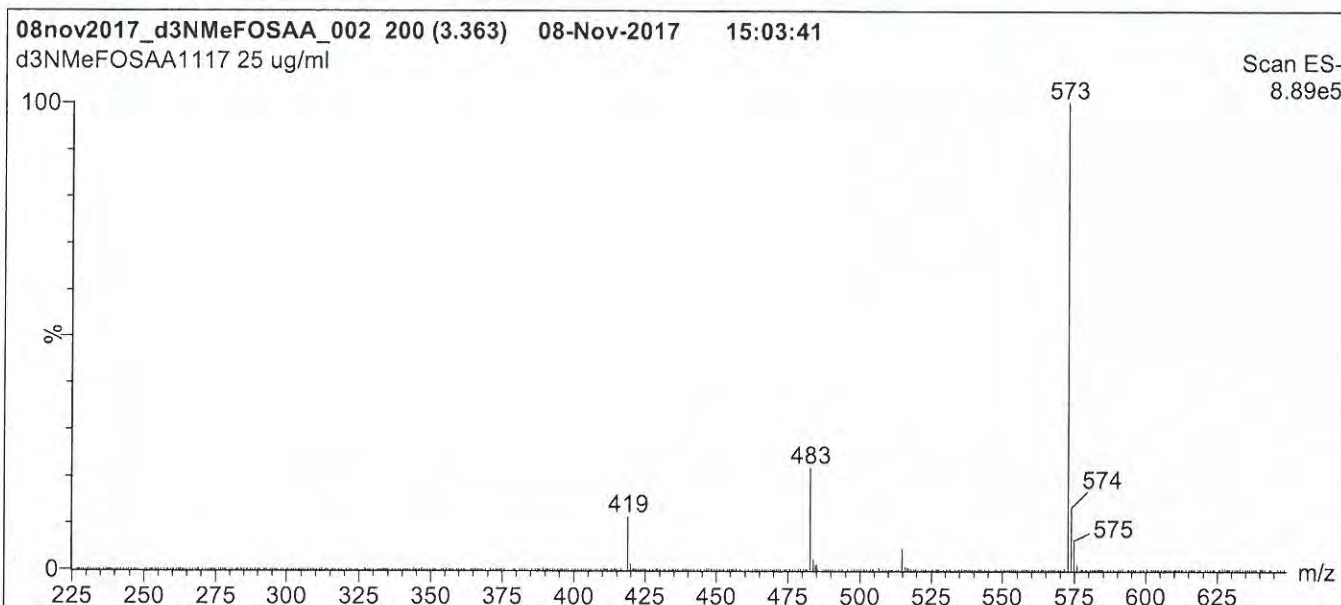
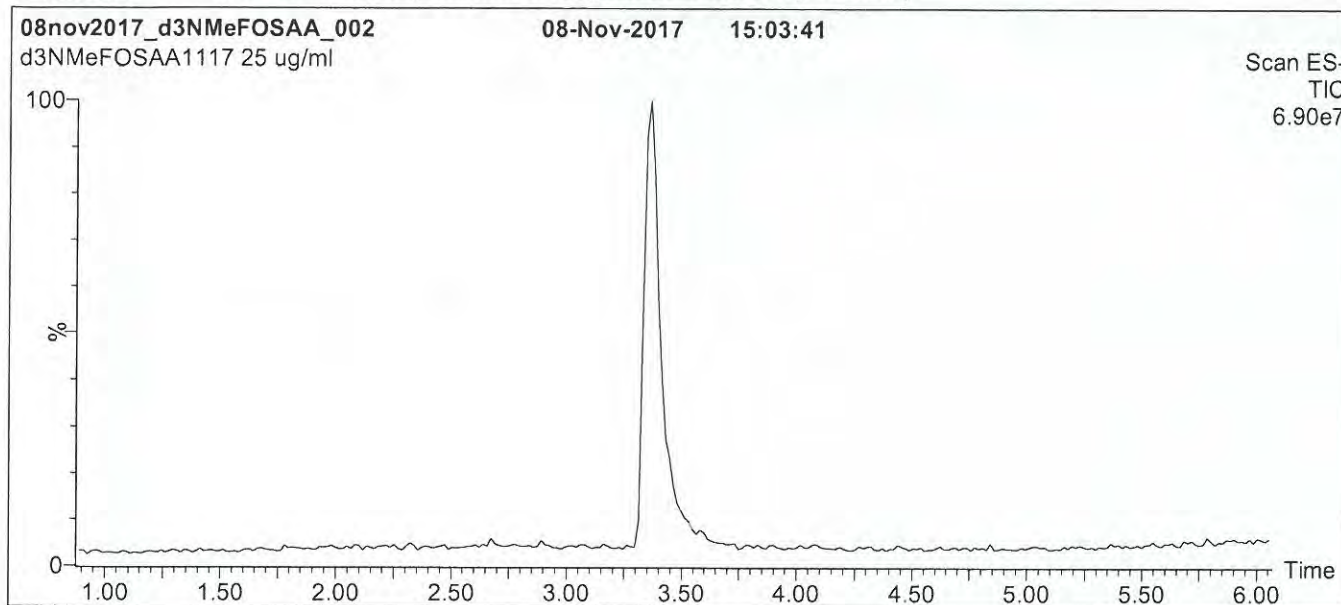
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1515

Figure 1: d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

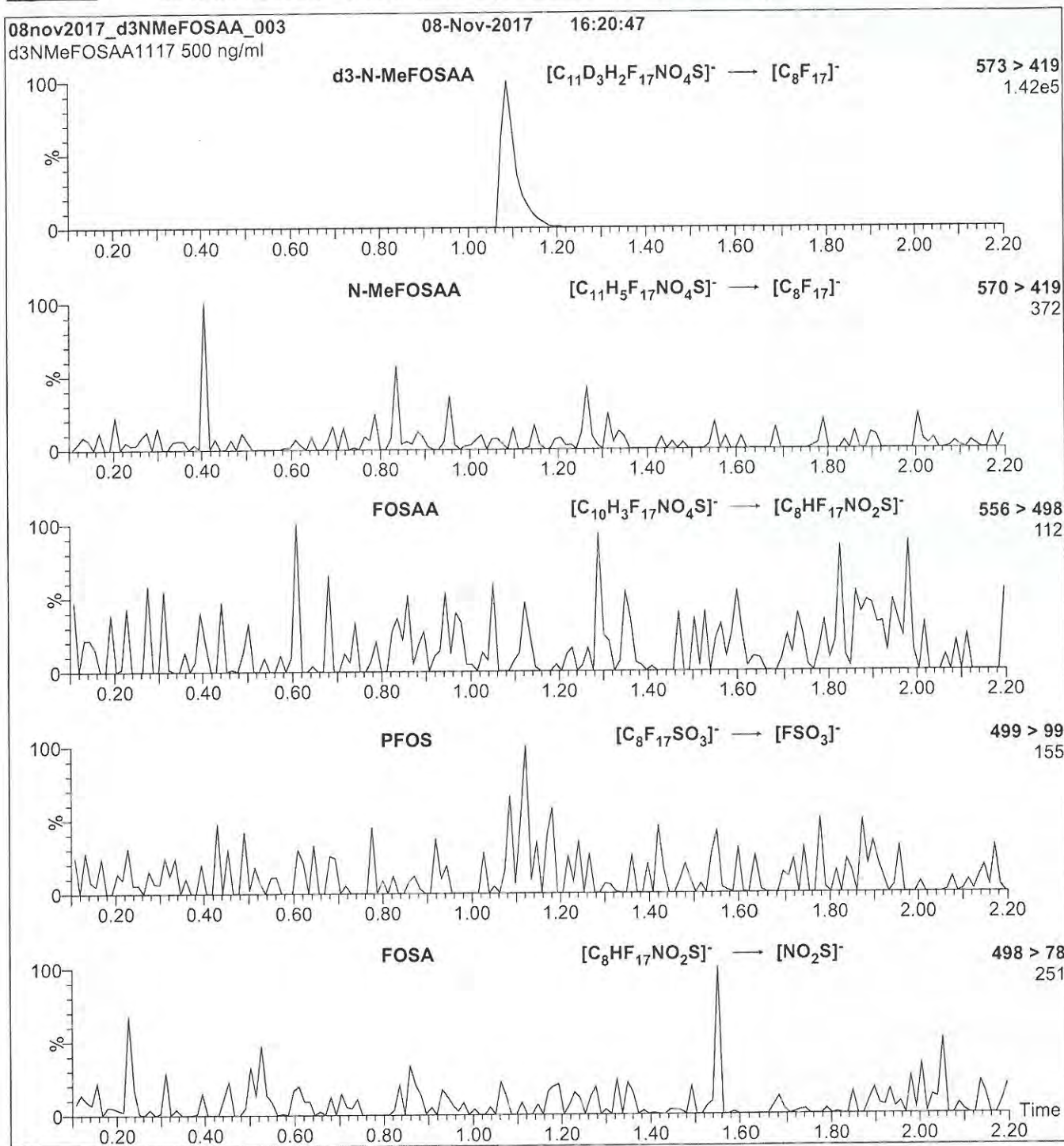
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1801515

Figure 2: d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml d3-N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 20

18B1516

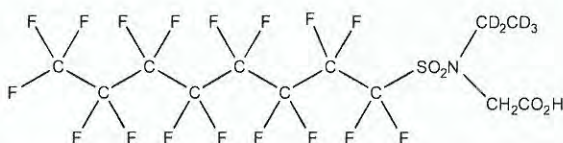


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LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA1117
COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₁₂D₅H₃F₁₇NO₄S
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 590.26
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/08/2017
EXPIRY DATE: (mm/dd/yyyy) 11/08/2022
RECOMMENDED STORAGE: Refrigerate ampoule

ISOTOPIC PURITY: ≥98% ²H₅

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 11/16/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1516

INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

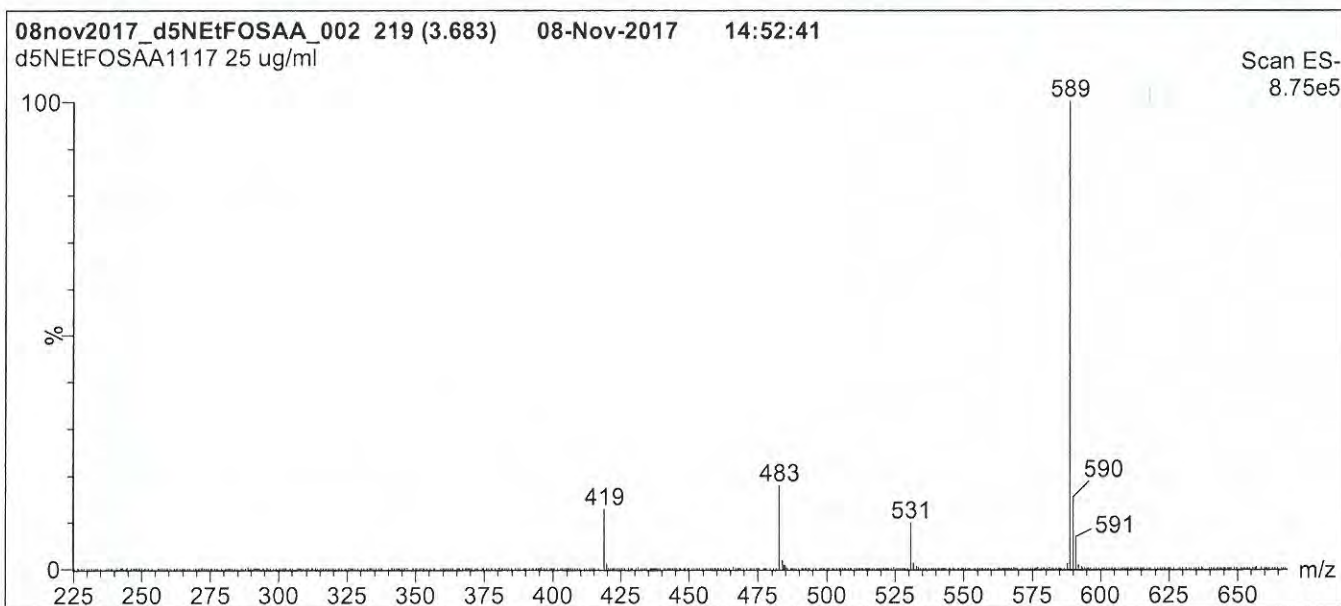
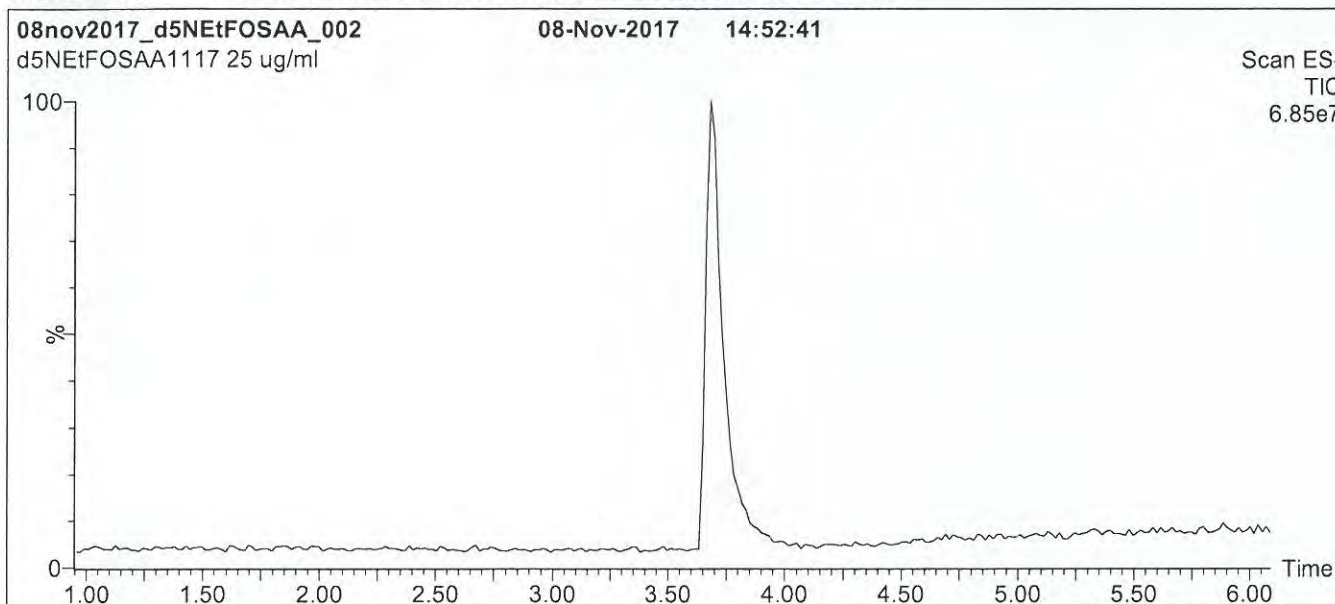
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1516

Figure 1: d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

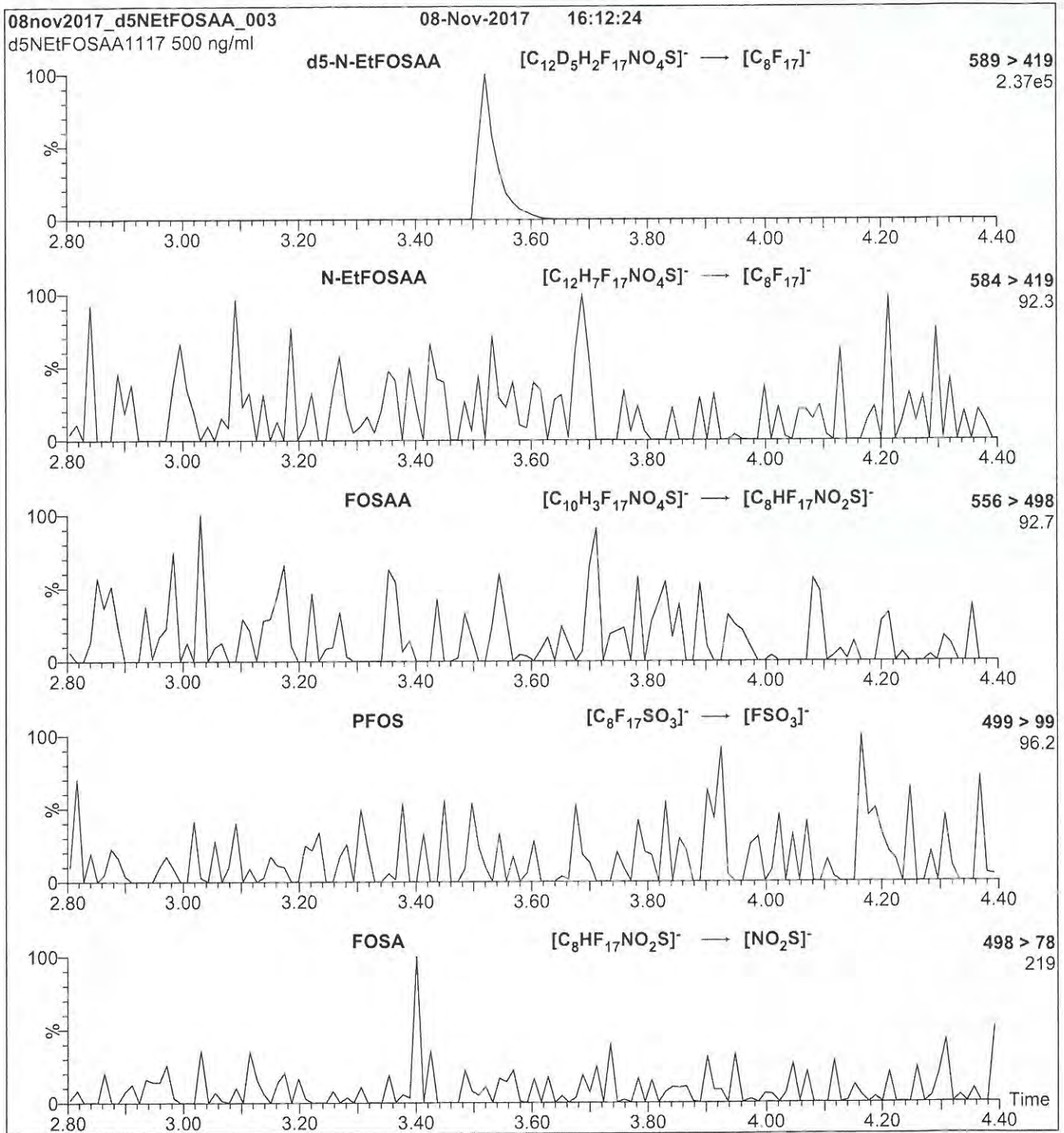
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1576

Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml d5-N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 20

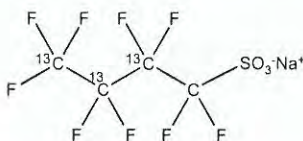
18B1517


WELLINGTON
 LABORATORIES

CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS0815
COMPOUND: Sodium perfluoro-1-[2,3,4-¹³C₃]butanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CF₉SO₃Na **MOLECULAR WEIGHT:** 325.06
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 46.5 ± 2.3 µg/ml (M3PFBS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 05/24/2017 (2,3,4-¹³C₃)
EXPIRY DATE: (mm/dd/yyyy) 05/24/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

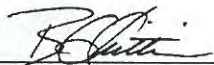
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/25/2017
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1881517

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

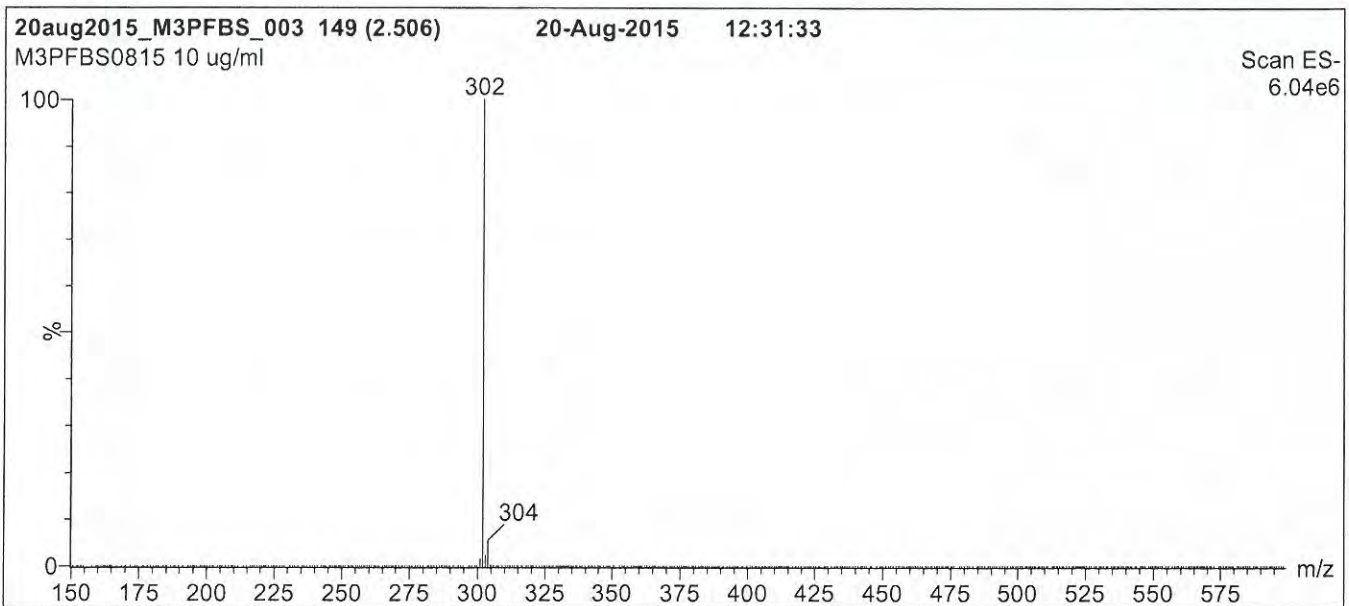
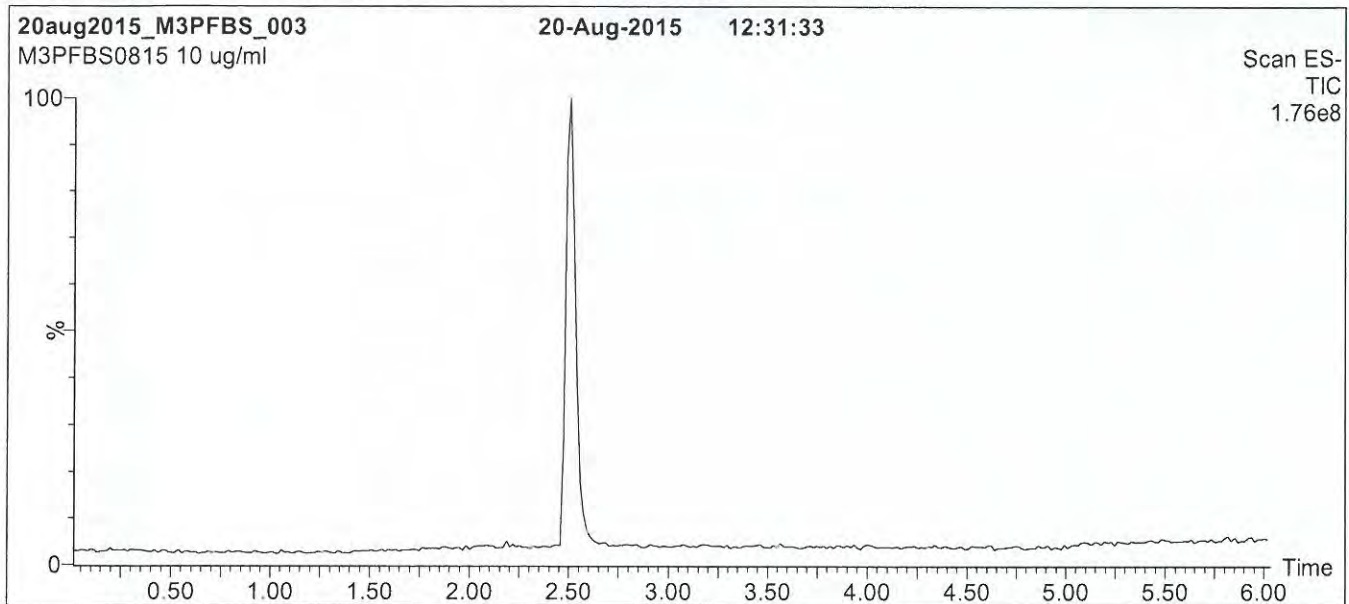
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1517

Figure 1: M3PFBS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

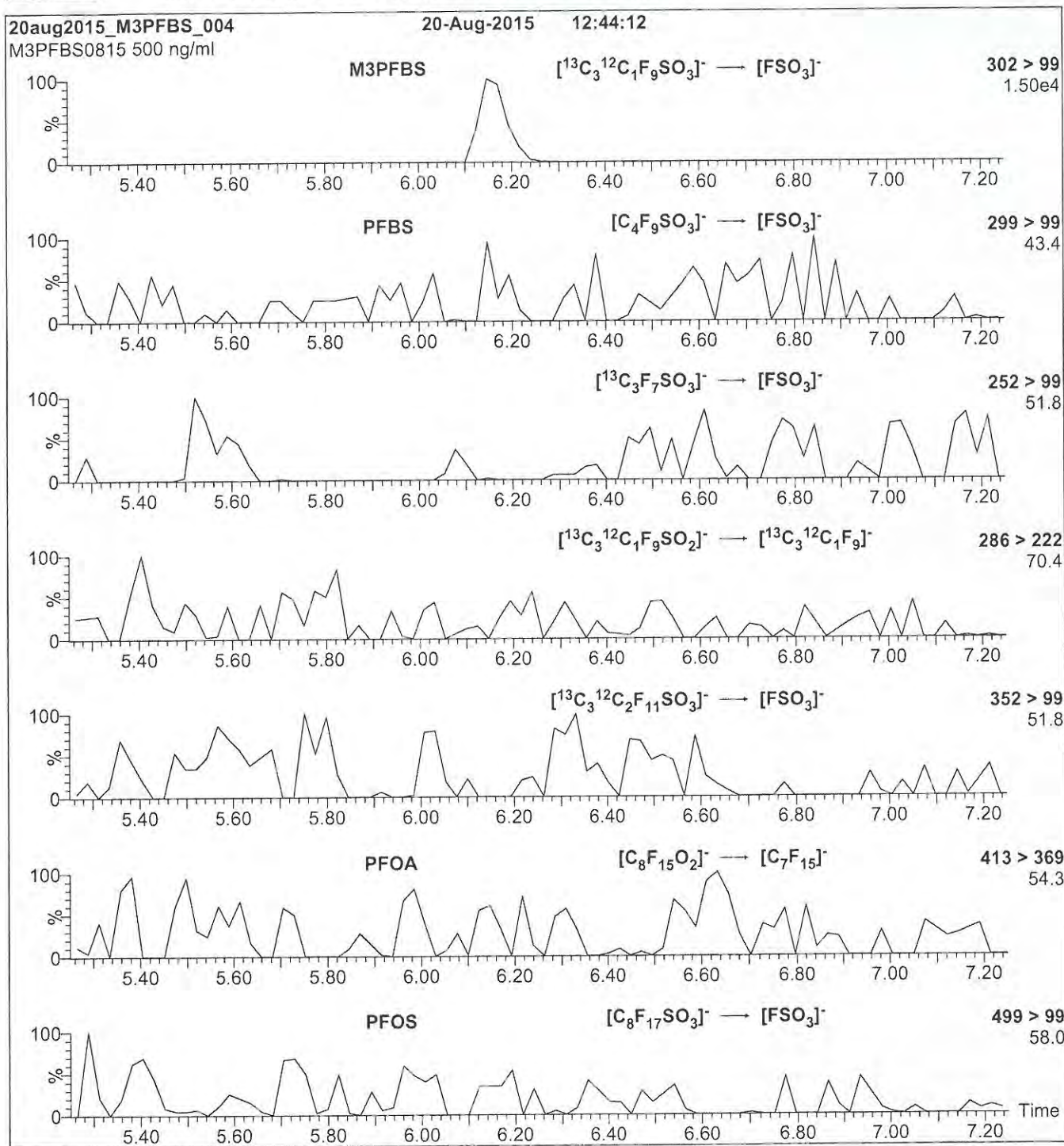
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1517

Figure 2: M3PFBS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M3PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 25

18B1518

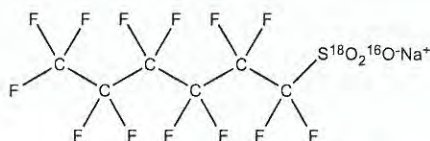


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS **LOT NUMBER:** MPFHxS0217
COMPOUND: Sodium perfluoro-1-hexane[¹⁸O₂]sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₆F₁₃S¹⁸O₂¹⁶ONa **MOLECULAR WEIGHT:** 426.10
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.3 ± 2.4 µg/ml (MPFHxS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** >94% (¹⁸O₂)
LAST TESTED: (mm/dd/yyyy) 02/17/2017
EXPIRY DATE: (mm/dd/yyyy) 02/17/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁶O₃) when both compounds are injected together. This difference may vary between instruments.
- Contains ~ 1.0% of sodium perfluoro-1-octane[¹⁸O₂]sulfonate (¹⁸O₂-PFOS).
- Due to the isotopic purity of the starting material (¹⁸O₂ >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


B.G. Chittim

Date: 03/02/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1518

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

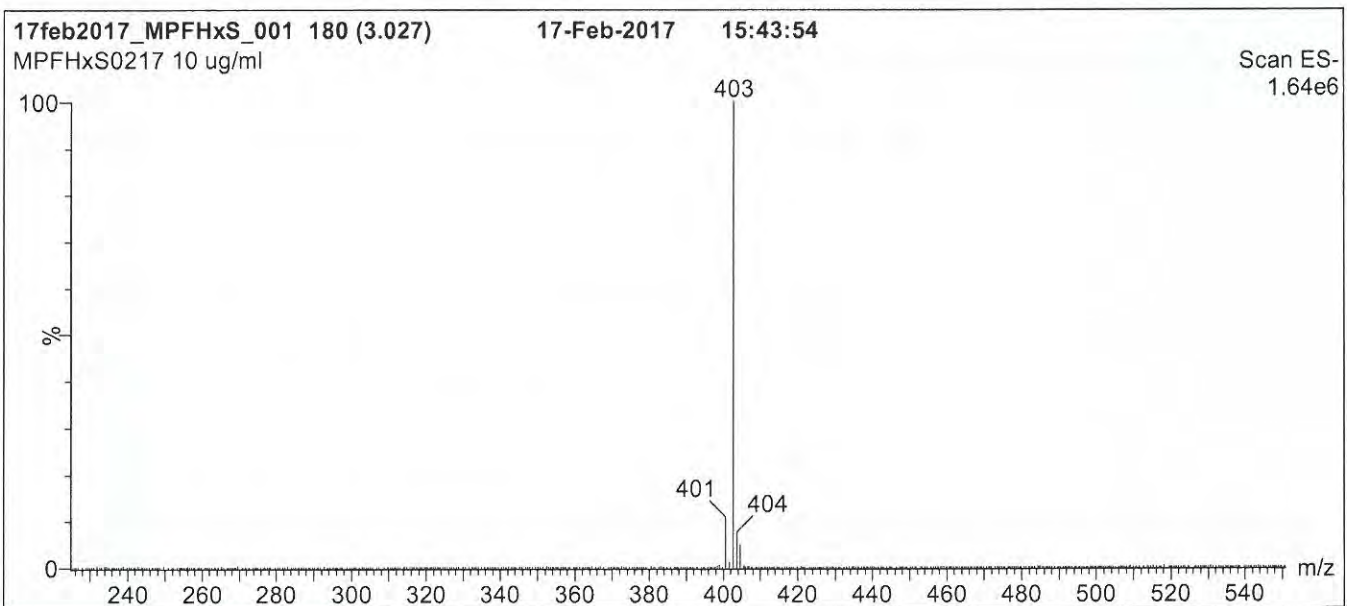
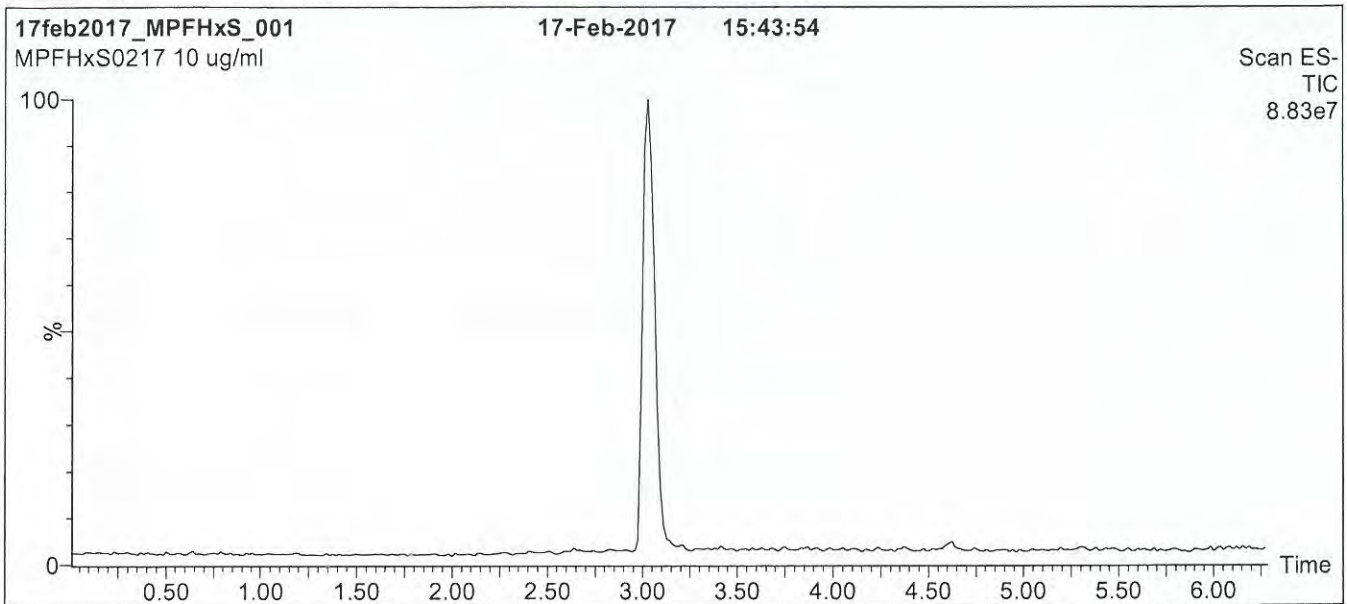
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1518

Figure 1: MPFHxS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

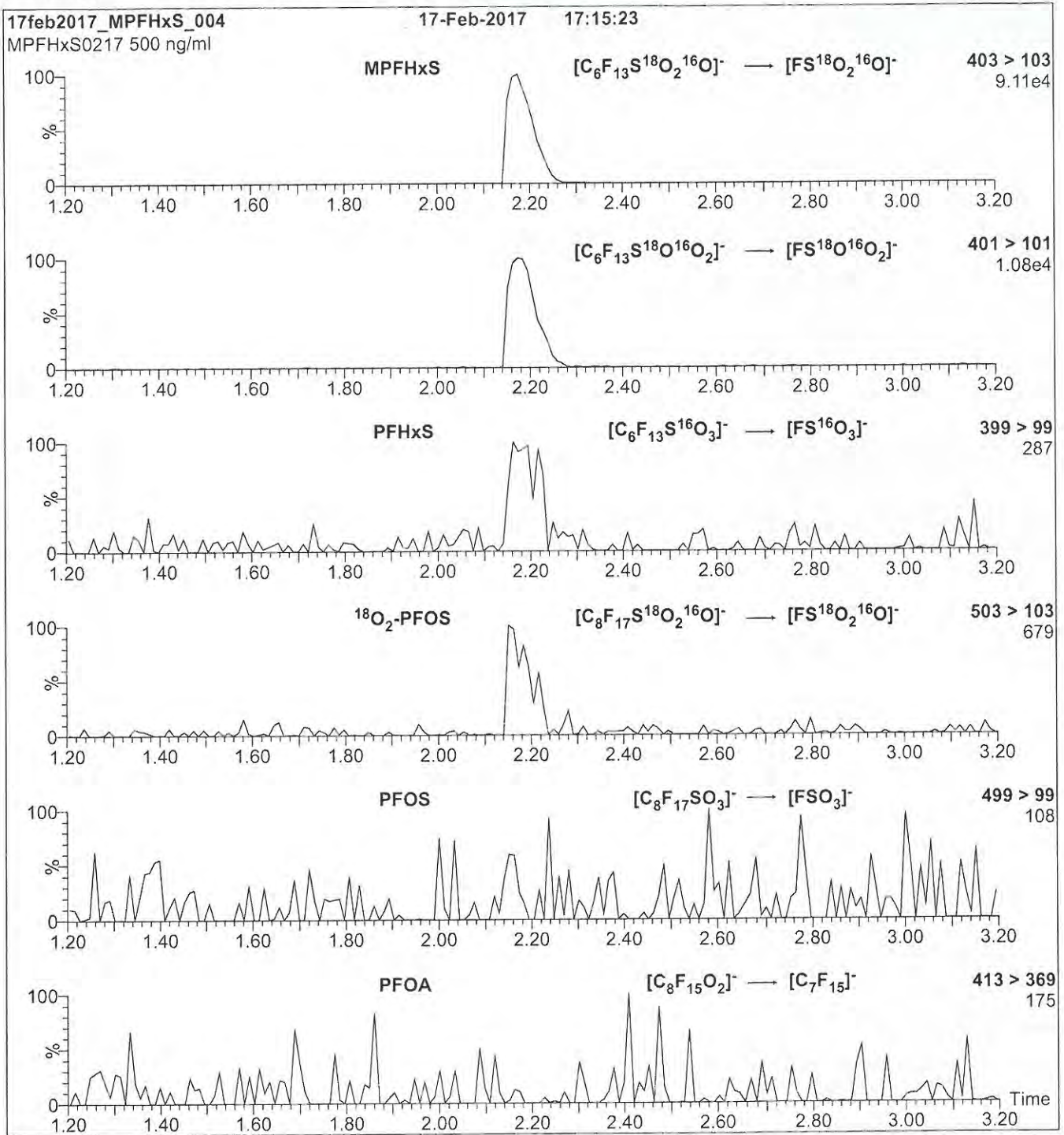
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18B1518

Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

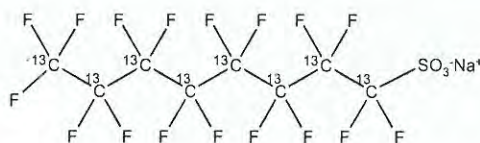
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

18B1520


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CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: M8PFOS **LOT NUMBER:** M8PFOS1117
COMPOUND: Sodium perfluoro-1-[¹³C₈]octanesulfonate
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₈F₁₇SO₃Na **MOLECULAR WEIGHT:** 530.05
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.8 ± 2.4 µg/ml (M8PFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** >99% ¹³C
LAST TESTED: (mm/dd/yyyy) 11/08/2017 (¹³C₈)
EXPIRY DATE: (mm/dd/yyyy) 11/08/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-[¹³C₇]heptanesulfonate (¹³C₇-PFHpS) and ~ 0.8% of sodium perfluoro-1-[¹³C₄]octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date: 11/22/2017

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1520

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

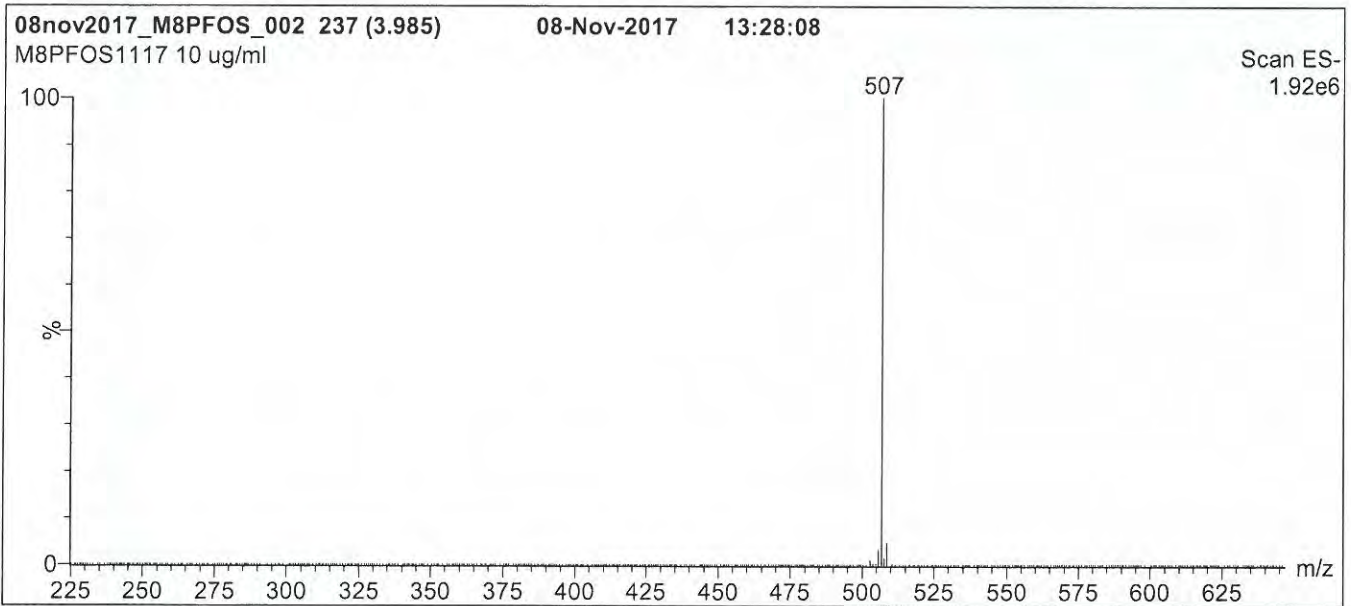
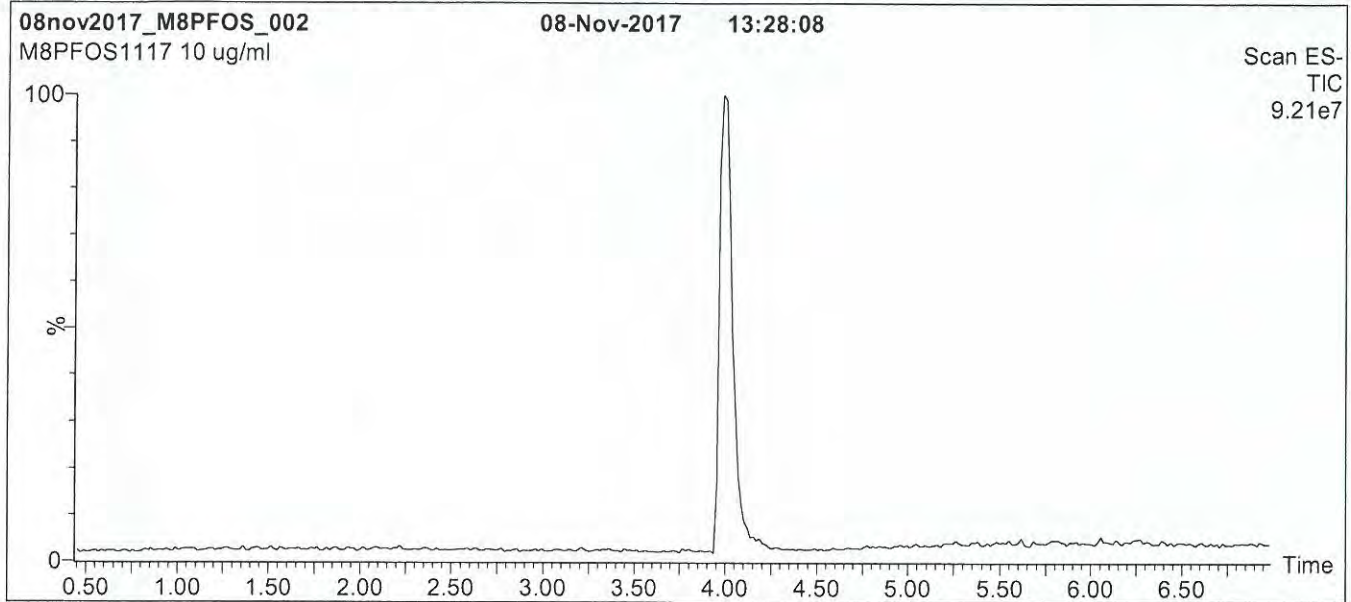
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1520

Figure 1: M8PFOS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

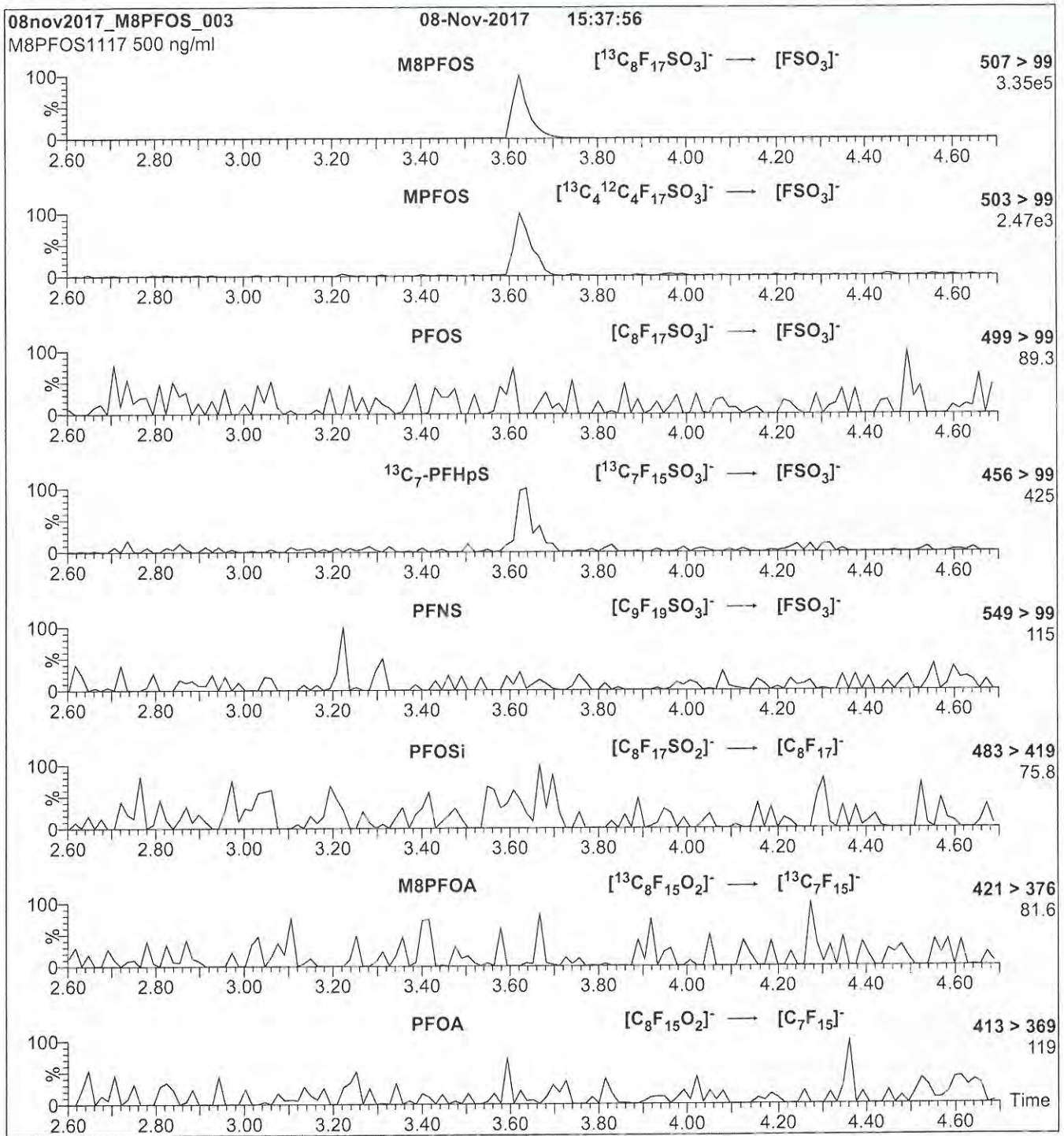
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1520

Figure 2: M8PFOS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M8PFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 40

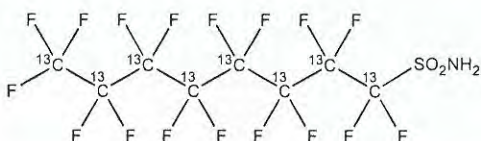
18B1525



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M8FOSA-I **LOT NUMBER:** M8FOSA10171
COMPOUND: Perfluoro-1-[¹³C₈]octanesulfonamide
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₈H₂F₁₇NO₂S **MOLECULAR WEIGHT:** 507.09
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Isopropanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 10/11/2017 (¹³C₈)
EXPIRY DATE: (mm/dd/yyyy) 10/11/2022
RECOMMENDED STORAGE: Refrigerate ampoule

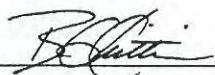
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.1% of perfluoro-1-[¹³C₄]octanesulfonamide and ~ 0.01% of perfluoro-1-[¹³C₇]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 10/20/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1525

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

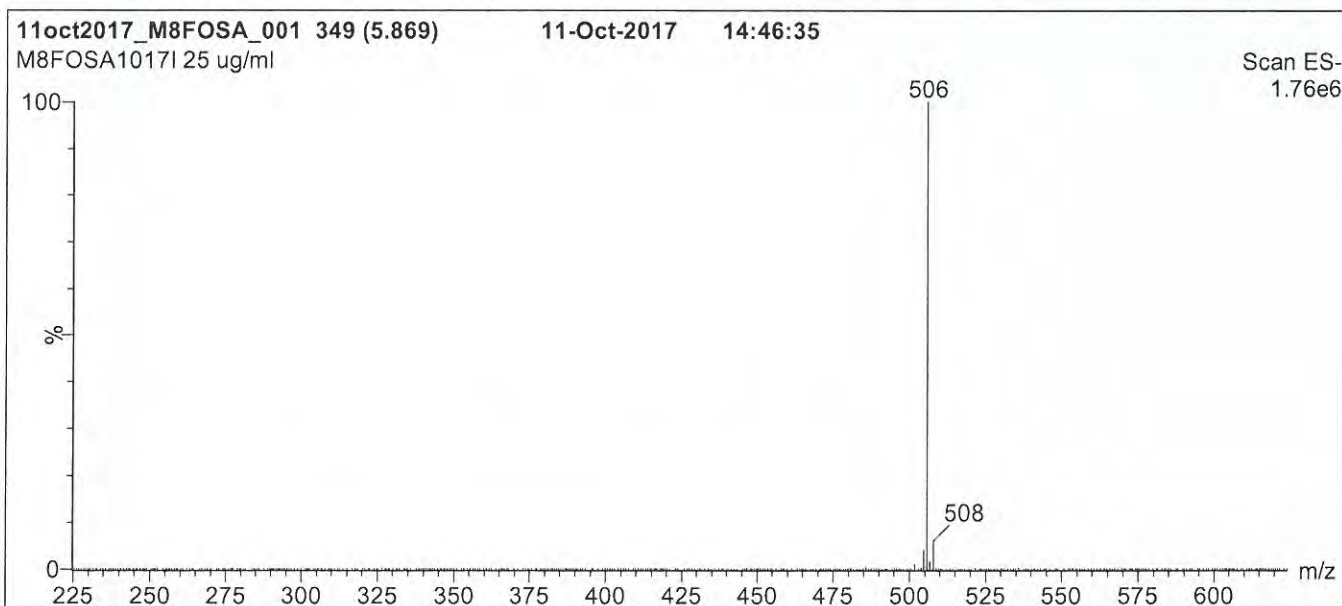
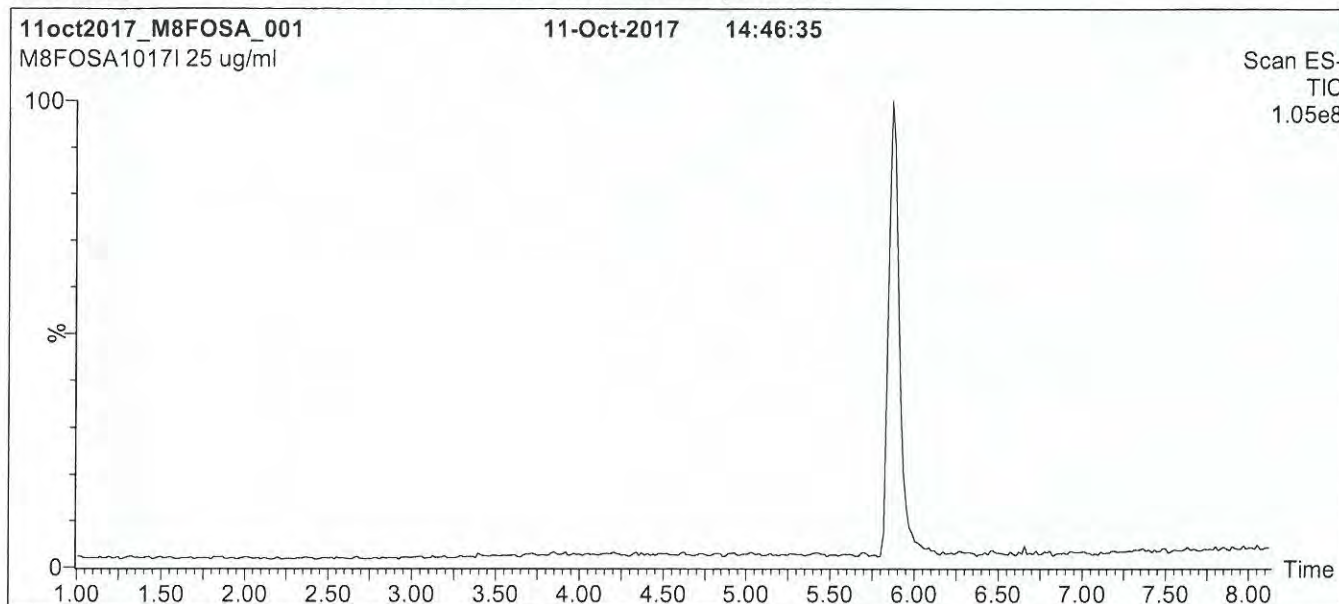
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1525

Figure 1: M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 85% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

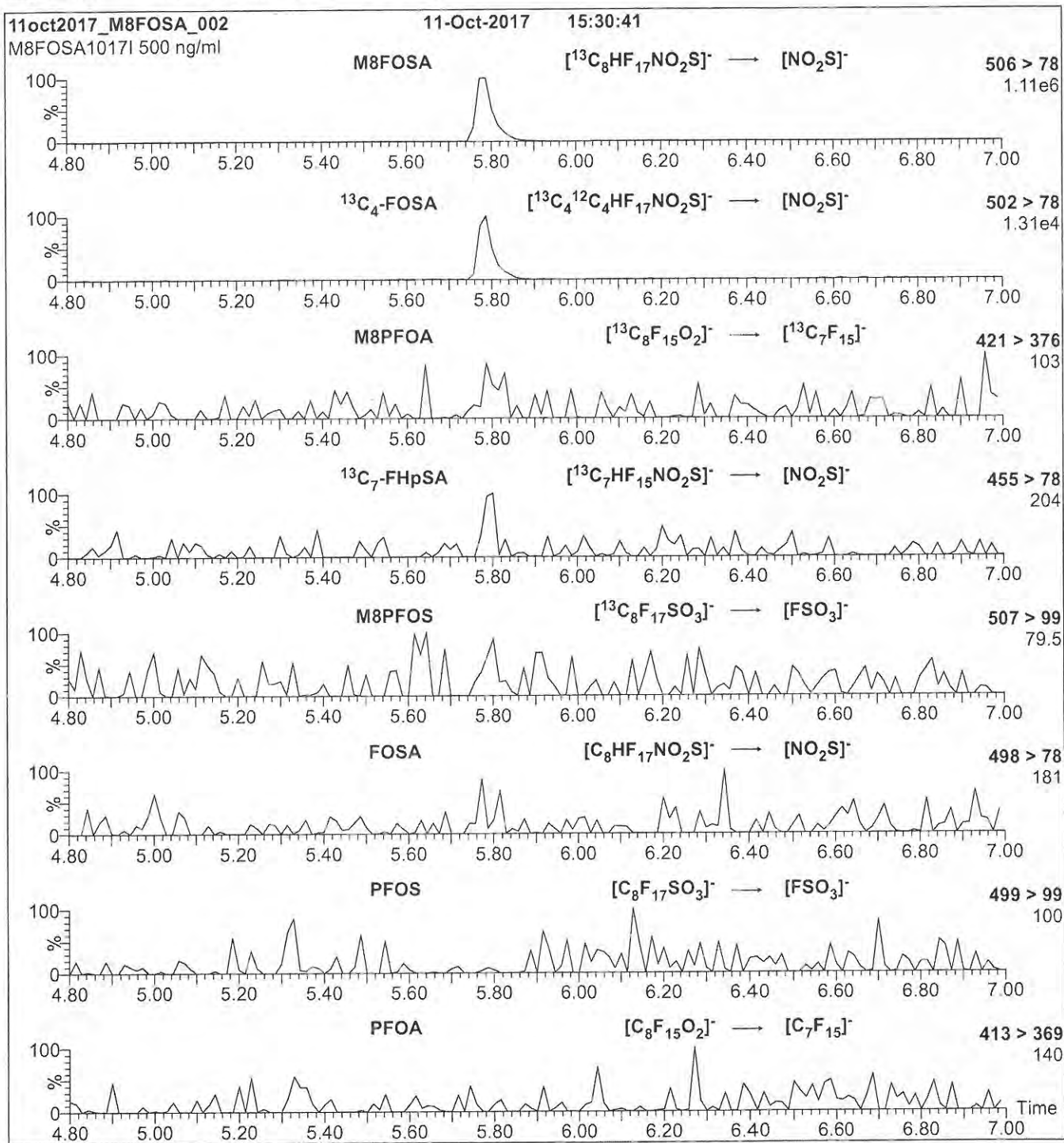
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1525

Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 µl (500 ng/ml M8FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
 Collision Energy (eV) = 30

18C0910

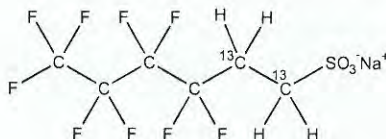


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-4:2FTS **LOT NUMBER:** M242FTS0817
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]hexane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₄H₄F₉SO₃Na **MOLECULAR WEIGHT:** 352.12
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 46.7 ± 2.3 µg/ml (M2-4:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 09/01/2017 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 09/01/2022
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

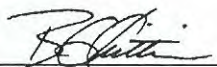
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


 B.G. Chittim, General Manager

Date: 09/29/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C0910

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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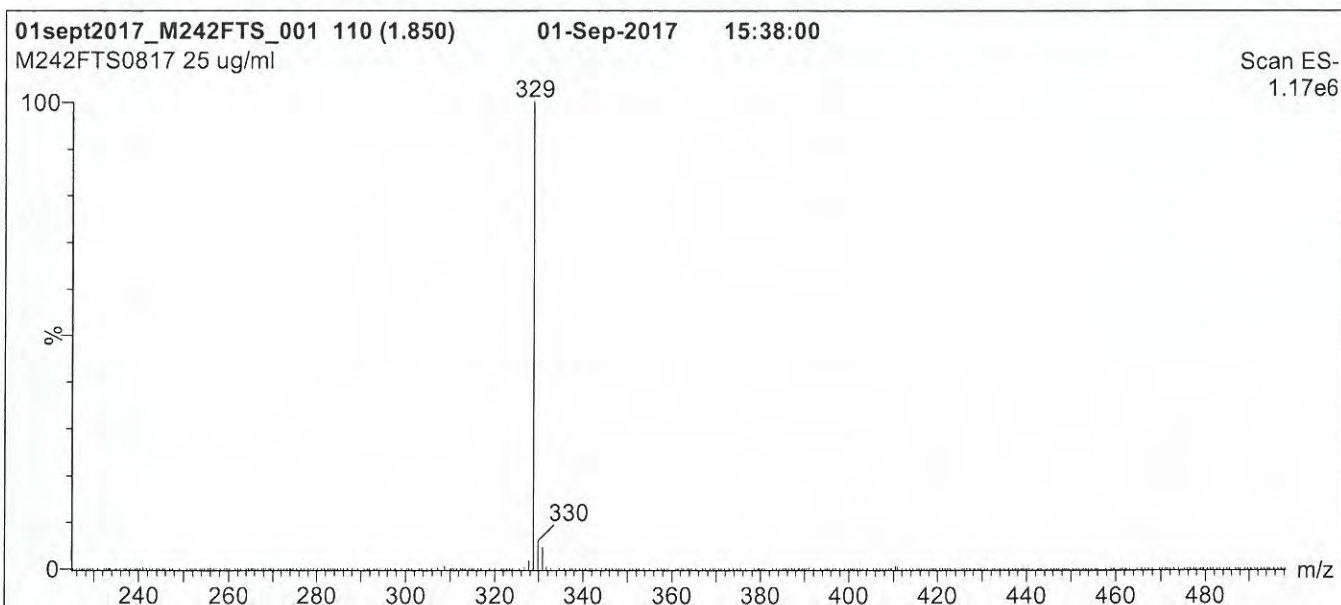
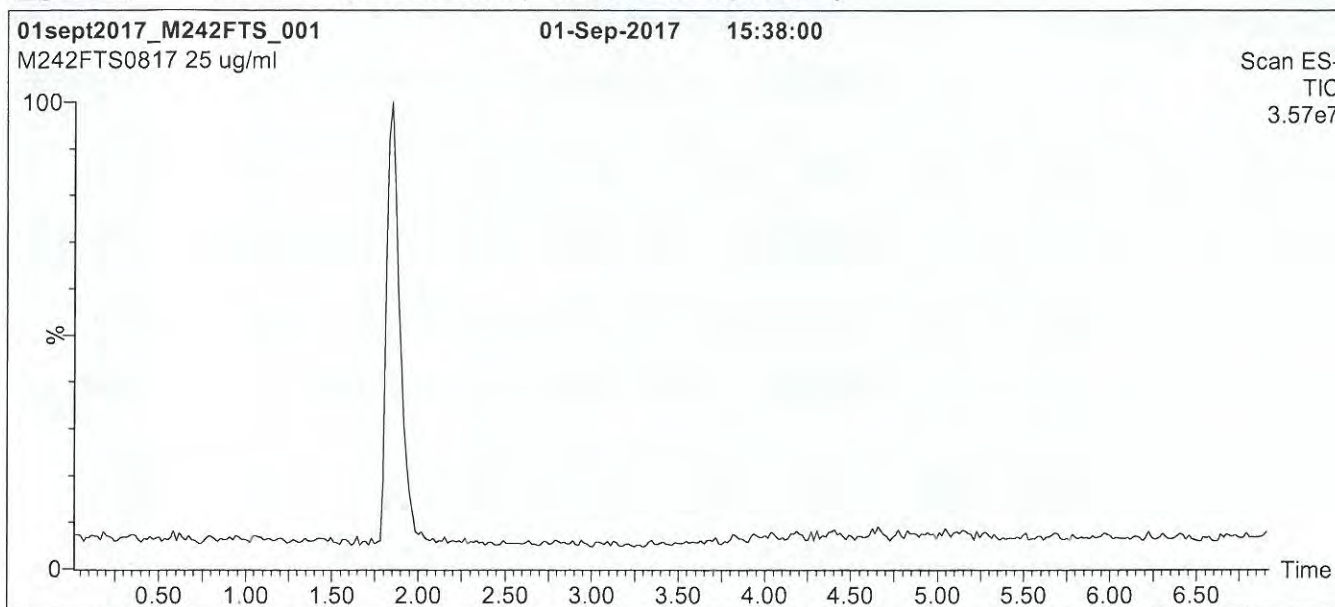
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18C0910

Figure 1: M2-4:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min
and hold for 1 min before returning
to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

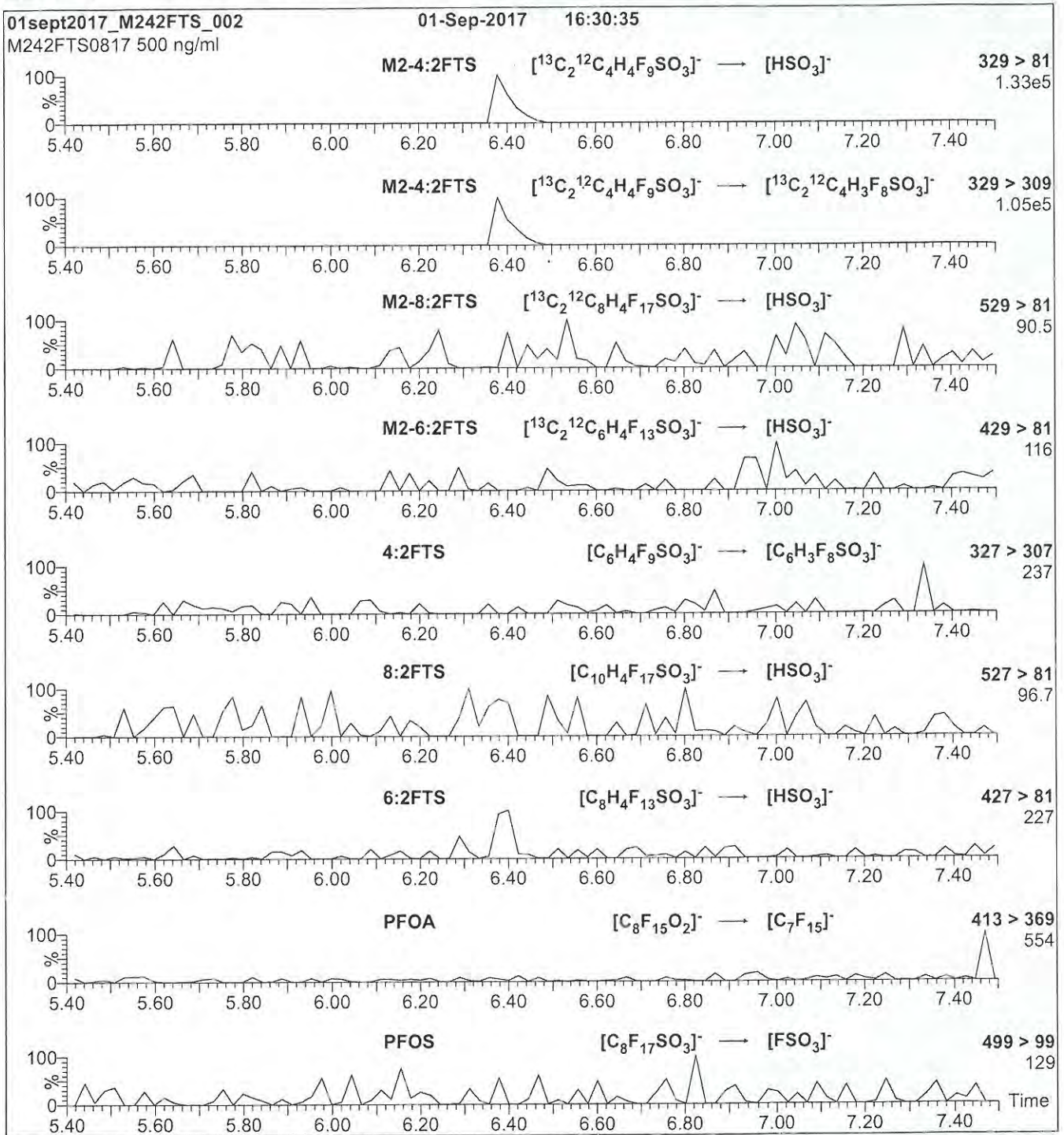
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18CO910

Figure 2: M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M2-4:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 25

Analytical Standard Record

Vista Analytical Laboratory

18E0923

Parent Standards used in this standard:					
Standard	Description	Prepared	Prepared By	Expires	(mls)
18C2711	PFD _o A	27-Mar-18	** Vendor **	29-May-22	0.4
18C2712	PFBA	27-Mar-18	** Vendor **	14-Dec-22	0.4
18C2713	PFPeA	27-Mar-18	** Vendor **	14-Jun-22	0.4
18C2714	PFH _x A	27-Mar-18	** Vendor **	27-Sep-22	0.4
18C2715	PFDA	27-Mar-18	** Vendor **	14-Dec-22	0.4
18C2716	PFU _d A	27-Mar-18	** Vendor **	21-Sep-22	0.4
18C2717	PFT _r DA	27-Mar-18	** Vendor **	02-May-22	0.4
18C2718	PFH _p A	27-Mar-18	** Vendor **	27-Sep-22	0.4
18C2719	PFOA	27-Mar-18	** Vendor **	27-Sep-22	0.4
18C2720	PFNA	27-Mar-18	** Vendor **	20-Jul-22	0.4
18C2721	PFT _e DA	27-Mar-18	** Vendor **	21-Sep-22	0.4
18C2722	PFH _x DA	27-Mar-18	** Vendor **	13-Jul-22	0.4
18C2723	PFODA	27-Mar-18	** Vendor **	13-Jul-22	0.4
18C2724	br-PFH _x SK	27-Mar-18	** Vendor **	04-Jan-22	0.44
18C2725	br-PFOSK anion	27-Mar-18	** Vendor **	12-Jan-22	0.431
18C2726	L-PFBS	27-Mar-18	** Vendor **	21-Sep-22	0.454
18C2727	L-PFPeS	27-Mar-18	** Vendor **	11-Jan-22	0.428
18C2728	L-PFH _p S	27-Mar-18	** Vendor **	01-Sep-22	0.42
18C2729	L-PFNS	27-Mar-18	** Vendor **	27-Sep-22	0.418
18C2730	L-PFDS	27-Mar-18	** Vendor **	08-Nov-22	0.415
18C2731	4:2 FTS	27-Mar-18	** Vendor **	12-Dec-21	0.43
18C2732	6:2FTS	27-Mar-18	** Vendor **	20-Apr-22	0.422
18C2733	8:2FTS	27-Mar-18	** Vendor **	24-Jan-23	0.418
18C2734	FOSA-I	27-Mar-18	** Vendor **	01-Sep-22	0.4
18C2737	N-MeFOSA-M	27-Mar-18	** Vendor **	05-Jul-22	2
18C2738	N-EtFOSA-M	27-Mar-18	** Vendor **	05-Jul-22	2
18C2739	N-MeFOSE-M	27-Mar-18	** Vendor **	24-Apr-22	2
18C2740	N-EtFOSE-M	27-Mar-18	** Vendor **	24-Apr-22	2
18D1306	br-NMeFOSAA	13-Apr-18	** Vendor **	17-Jan-23	0.4
18D1307	br-NEtFOSAA	13-Apr-18	** Vendor **	17-Jan-23	0.4

Description:	PFC NS Stock	Expires:	10-May-20
Standard Type:	Analyte Spike	Prepared:	10-May-18
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	31-May-18 14:02 by AEW

PFOS and PFH _x S linear and branched components		
As of 5/27/18, MeFOSAA and EtFOSAA include Linear and Branched.		
Analyte 180517M1-4	CAS Number	Concentration
QC OPR Tester for New Spikes. Run on May 17, 2018. GRB		

L-PFOA	1	ug/mL
L-PFT _r DA	1	ug/mL
L-PFH _p A	1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

18E0923

Description:	PFC NS Stock	Expires:	10-May-20
Standard Type:	Analyte Spike	Prepared:	10-May-18
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	20	Department:	LCMS
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PFOS and PFHxS linear and branched components			
As of 5/27/18, MeFOSAA and EtFOSAA include Linear and Branched.			
Analyte	CAS Number	Concentration	Units
180517M1-4			
QC OPR Tester for New Spikes. Run on May 17, 2018. GRB			

Analyte	CAS Number	Concentration	Units
L-PFHpS		1	ug/mL
L-PFHxA		1	ug/mL
L-PFHxDA		1	ug/mL
L-PFHxS		0.812	ug/mL
L-PFDoA		1	ug/mL
L-PFNS	68259-12-1	1	ug/mL
L-PFDA		1	ug/mL
L-PFODA		1	ug/mL
L-PFOS		0.789	ug/mL
L-PFOSA		1	ug/mL
L-PFPeA		1	ug/mL
L-PFPeS	2706-91-4	1	ug/mL
4:2 FTS	757124-72-4	1	ug/mL
L-PFNA		1	ug/mL
L-4:2 FTS	75124-72-4	1	ug/mL
6:2 FTS	27619-97-2	1	ug/mL
8:2 FTS	39108-34-4	1	ug/mL
Br-EtFOSAA		0.224	ug/mL
Br-MeFOSAA		0.24	ug/mL
Br-PFHxS	3871-99-6	0.189	ug/mL
EtFOSA	4151-50-2	5	ug/mL
L-PFDS		1	ug/mL
EtFOSE	1691-99-2	5	ug/mL
L-PFUnA		1	ug/mL
L-6:2 FTS		1	ug/mL
L-8:2FTS		1	ug/mL
L-EtFOSAA	2991-50-6	1	ug/mL
L-MeFOSAA	2355-31-9	1	ug/mL
L-PFBA		1	ug/mL
L-PFBS		1	ug/mL
EtFOSAA	2991-50-6	1	ug/mL
Total EtFOSAA		1	ug/mL
L-PFTeDA		1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

18E0923

Description:	PFC NS Stock	Expires:	10-May-20
Standard Type:	Analyte Spike	Prepared:	10-May-18
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	31-May-18 14:02 by AEW

PFOS and PFHxS linear and branched components			
As of 5/27/18, MeFOSAA and EtFOSAA include Linear and Branched.			
Analyte	CAS Number	Concentration	Units
180517M1-4			
QC OPR Tester for New Spikes. Run on May 17, 2018. GRB			

PFOSA	754-91-6	1	ug/mL
PFPeA	2706-90-3	1	ug/mL
PFPeS	2706-91-4	1	ug/mL
PFTeDA	376-06-7	1	ug/mL
PFTrDA	72629-94-8	1	ug/mL
PFODA	16517-11-6	1	ug/mL
Total 6:2 FTS		1	ug/mL
PFOA	335-67-1	1	ug/mL
Total MeFOSAA		1	ug/mL
Total PFDS		1	ug/mL
Total PFHpS		1	ug/mL
Total PFHxS		1	ug/mL
Total PFOA		1	ug/mL
Total PFOS		1	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFHpA	375-85-9	1	ug/mL
MeFOSA	31506-32-8	5	ug/mL
MeFOSAA	2355-31-9	1	ug/mL
MeFOSE	24448-09-7	5	ug/mL
PFBA	375-22-4	1	ug/mL
PFBS	375-73-5	1	ug/mL
PFDA	335-76-2	1	ug/mL
PFOS	1763-23-1	1	ug/mL
PFDS	335-77-3	1	ug/mL
Total PFUnA		1	ug/mL
PFHpS	375-92-8	1	ug/mL
PFHxA	307-24-4	1	ug/mL
PFHxDA	67905-19-5	1	ug/mL
PFHxS	355-46-4	1	ug/mL
PFNA	375-95-1	1	ug/mL
PFNS	68259-12-1	1	ug/mL
PFDoA	307-55-1	1	ug/mL

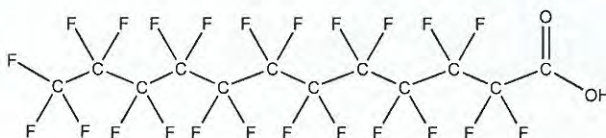
18C2711



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFD0A **LOT NUMBER:** PFD0A0517
COMPOUND: Perfluoro-n-dodecanoic acid
STRUCTURE: **CAS #:** 307-55-1



MOLECULAR FORMULA: $C_{12}HF_{23}O_2$ **MOLECULAR WEIGHT:** 614.10
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/29/2017
EXPIRY DATE: (mm/dd/yyyy) 05/29/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 05/30/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2711

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HAZARDS:

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At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

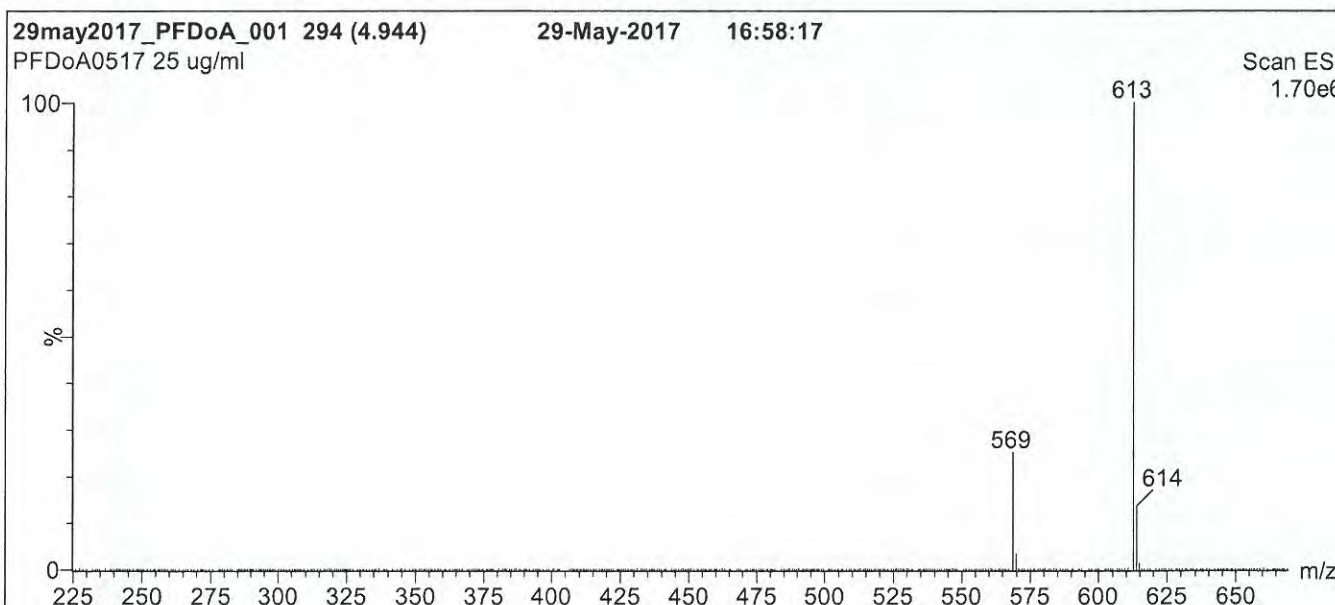
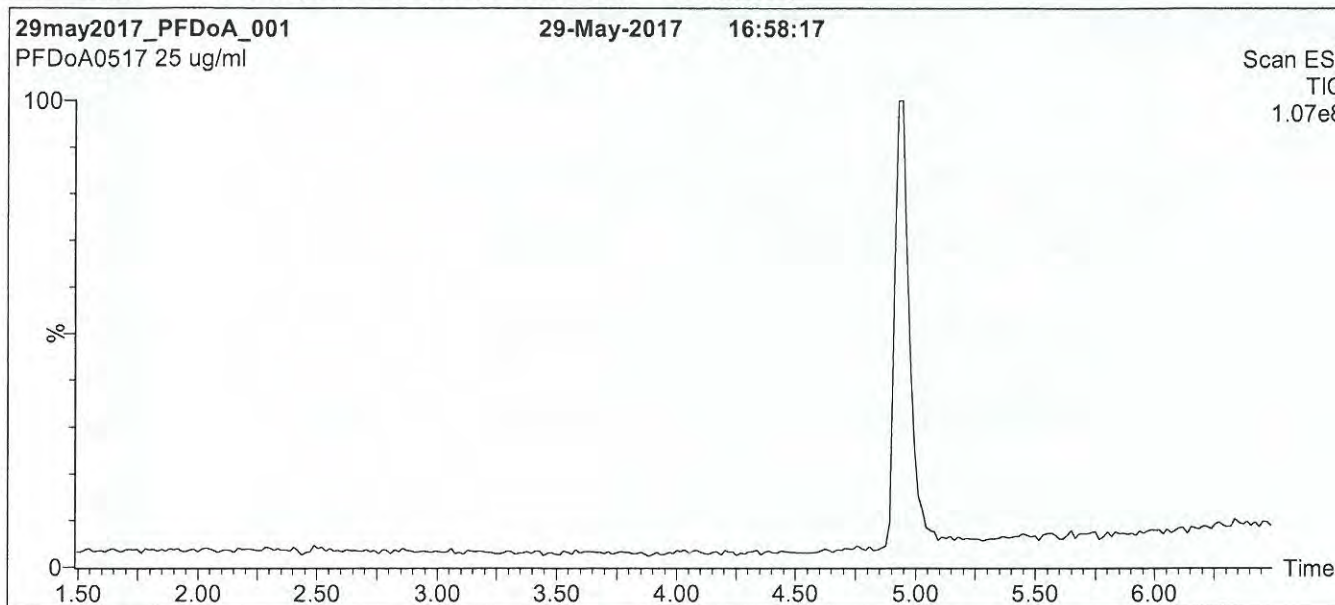
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1802711

Figure 1: PFDoA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 60% (80:20 MeOH:ACN) / 40% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 1.5 min before returning to initial conditions in 0.5 min.
 Time: 10 min

Flow: 300 μ l/min

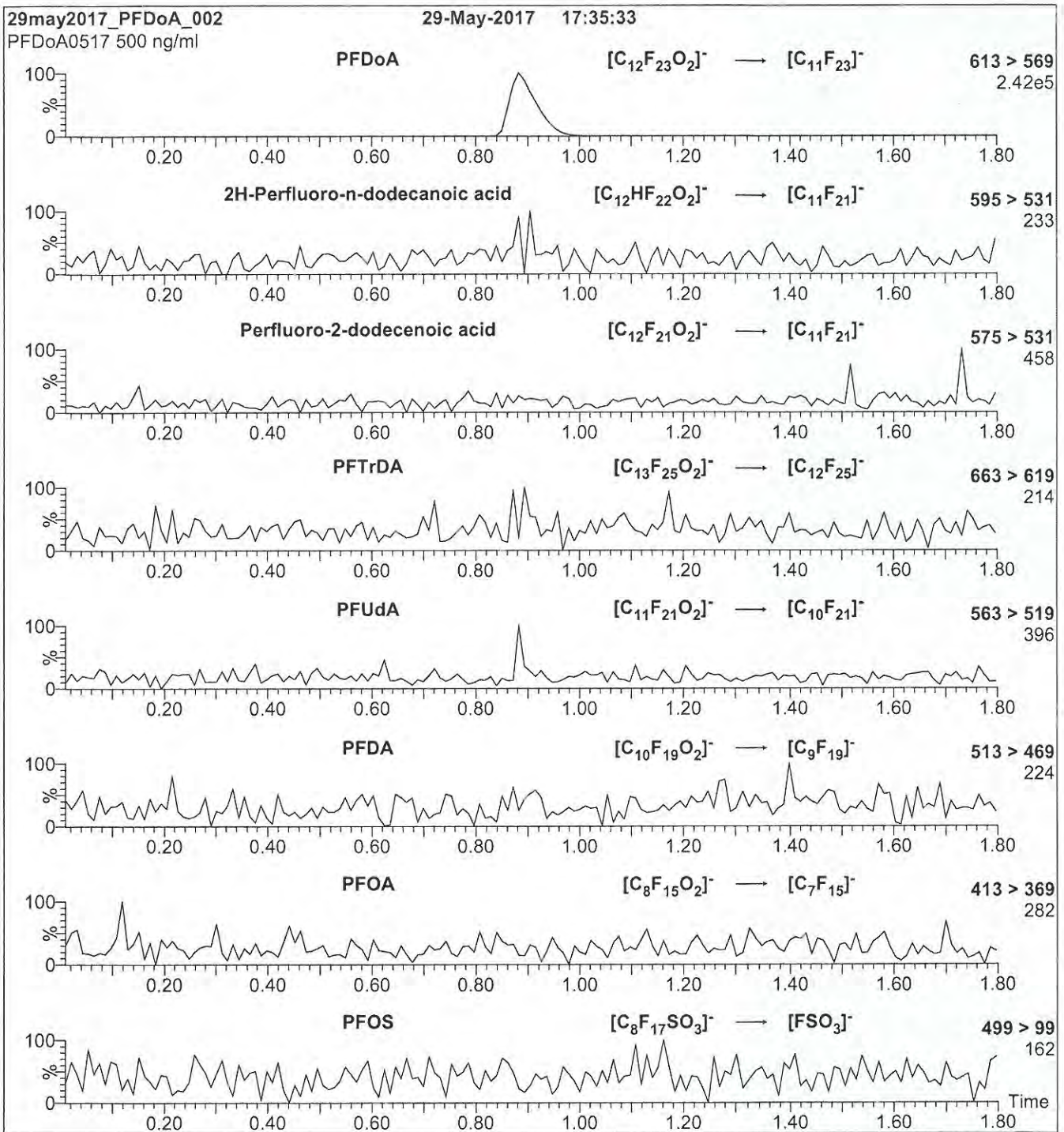
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 20.00
 Cone Gas Flow (l/hr) = 100
 Desolvation Gas Flow (l/hr) = 750

18C2711

Figure 2: PFDoA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 13

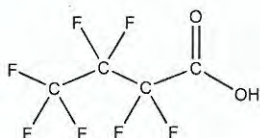
1802712



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFBA **LOT NUMBER:** PFBA1217
COMPOUND: Perfluoro-n-butanoic acid
STRUCTURE: **CAS #:** 375-22-4



MOLECULAR FORMULA: C₄HF₇O₂ **MOLECULAR WEIGHT:** 214.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/14/2017
EXPIRY DATE: (mm/dd/yyyy) 12/14/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/18/2017
B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2712

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

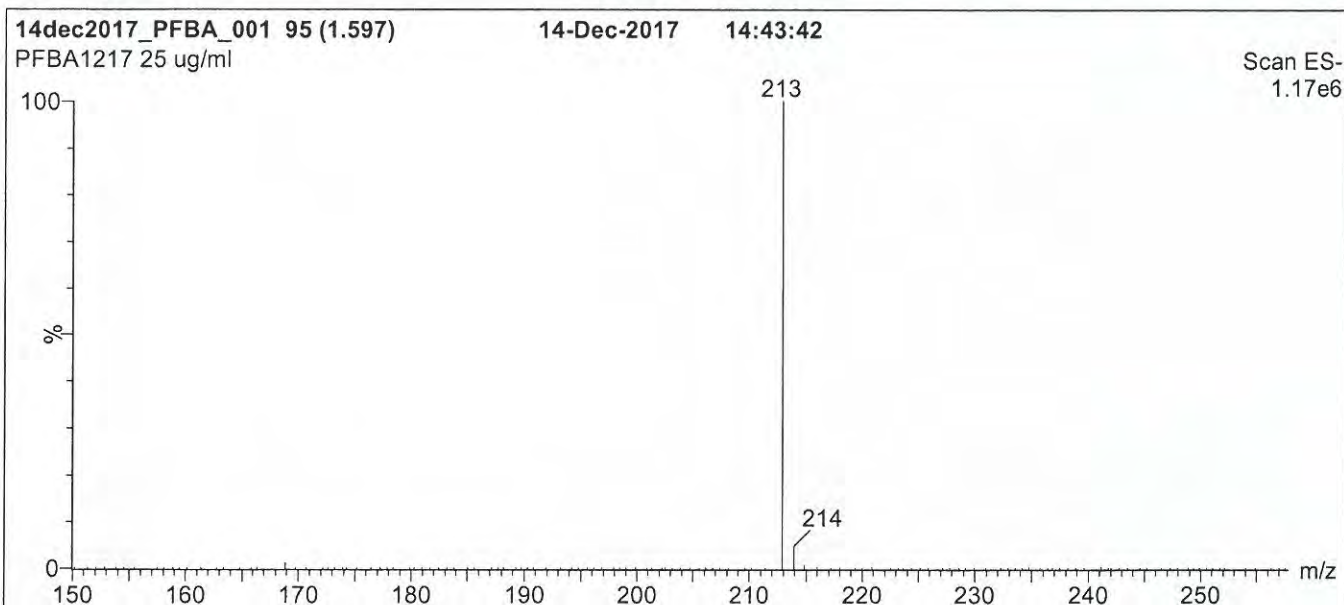
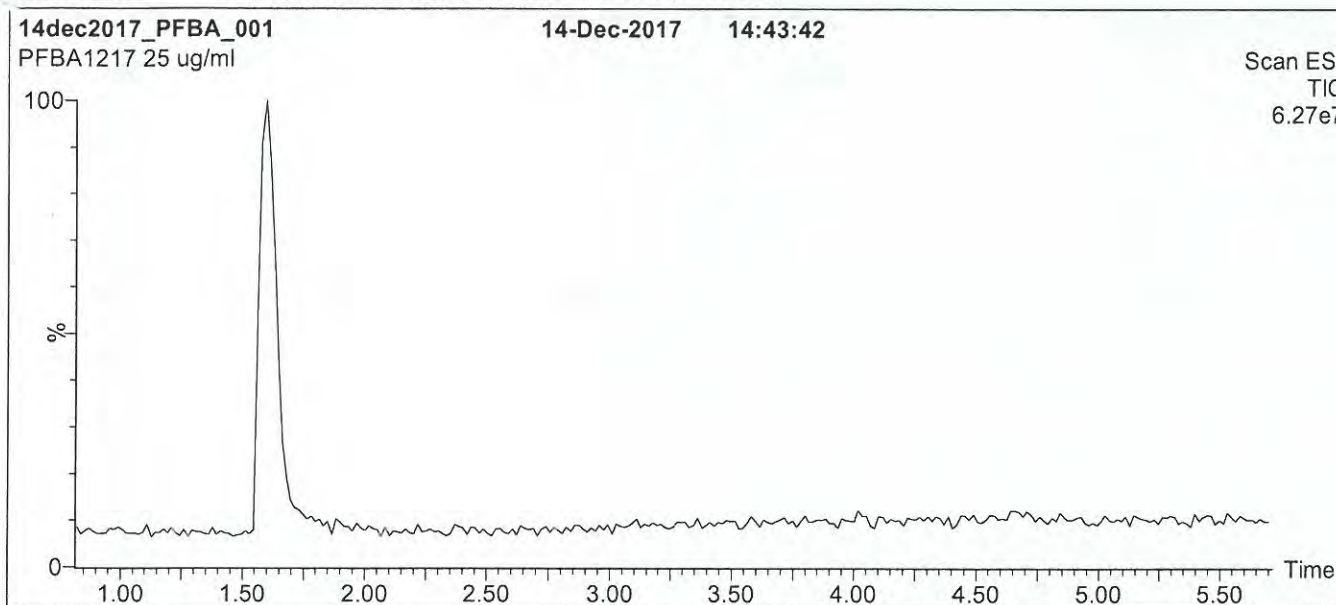
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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1802712

Figure 1: PFBA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

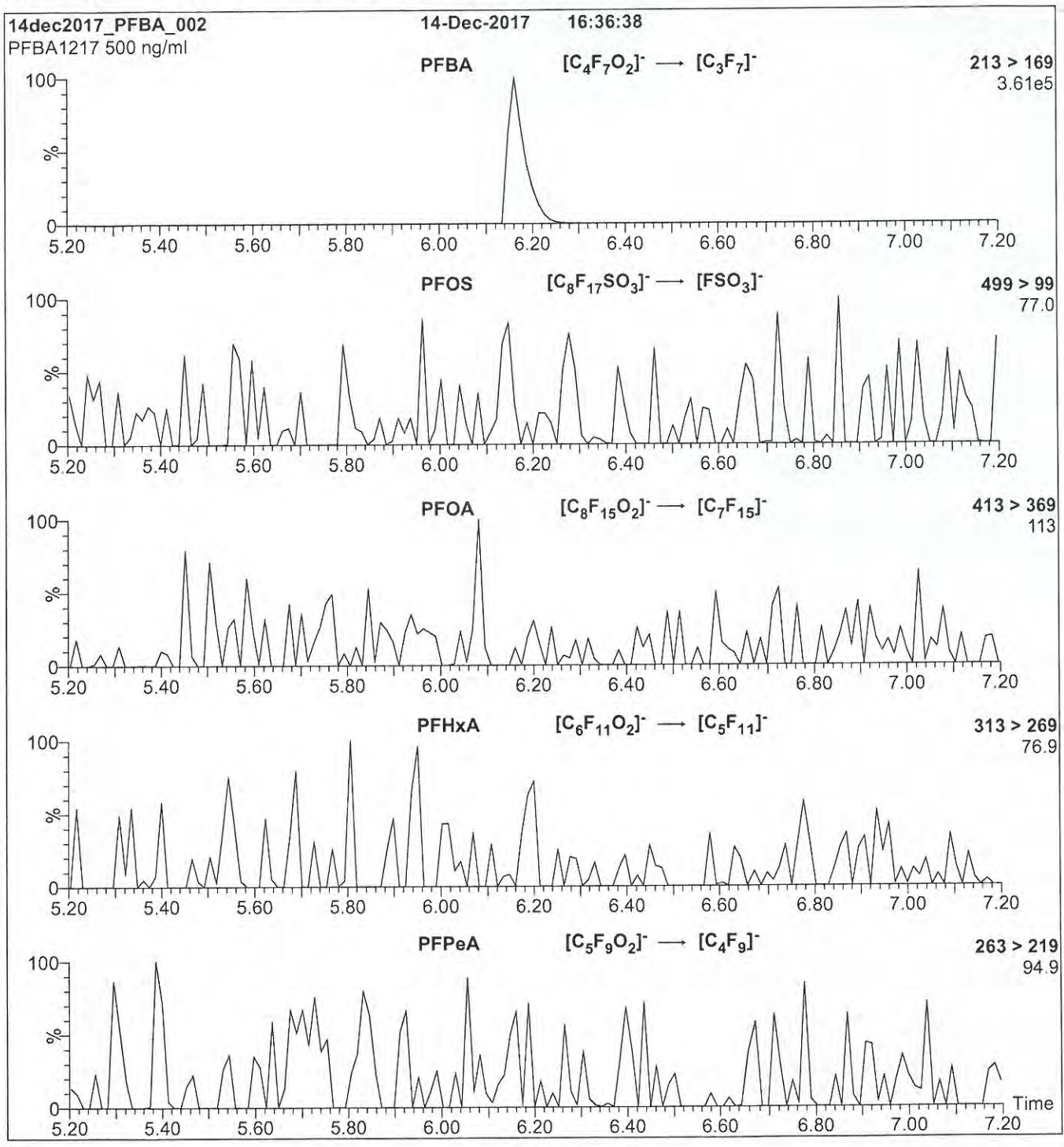
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18C2712

Figure 2: PFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

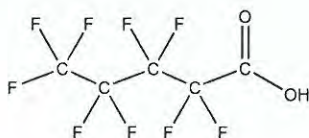
MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 10

18C2713

**WELLINGTON**
LABORATORIESCERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFPeA **LOT NUMBER:** PFPeA0617
COMPOUND: Perfluoro-n-pentanoic acid
STRUCTURE: **CAS #:** 2706-90-3



MOLECULAR FORMULA: $C_5HF_9O_2$ **MOLECULAR WEIGHT:** 264.05
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 06/14/2017
EXPIRY DATE: (mm/dd/yyyy) 06/14/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of $C_5H_2F_8O_2$ (hydrido - derivative) as measured by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 06/16/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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18C27B

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

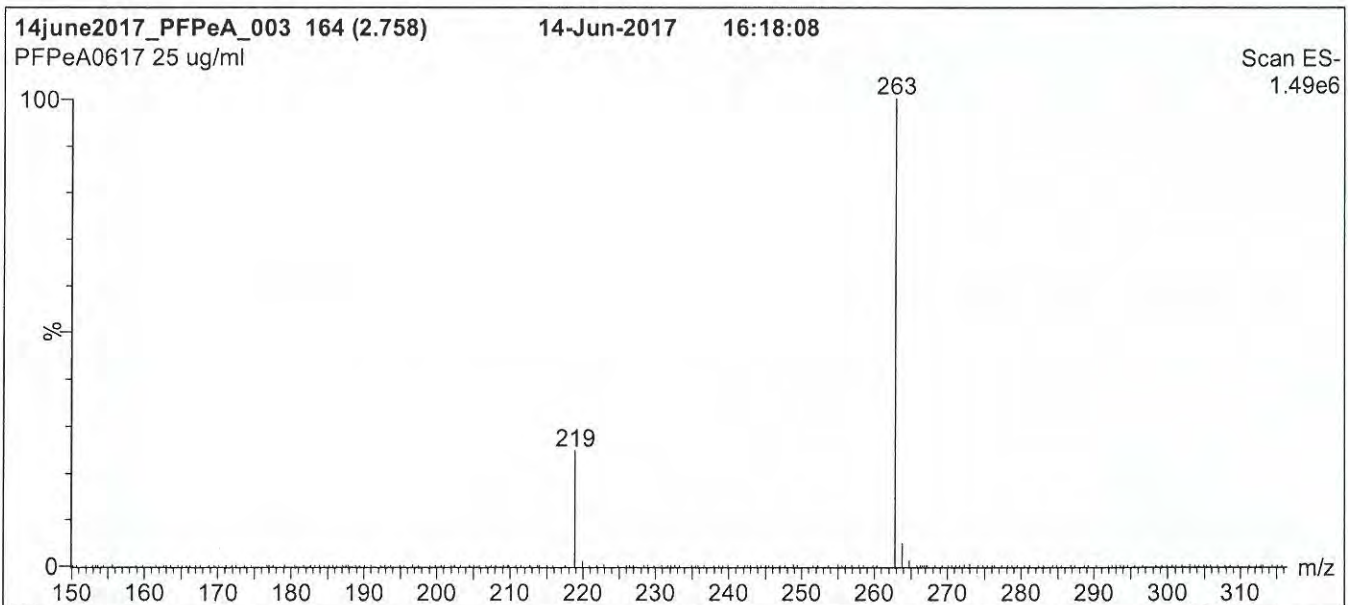
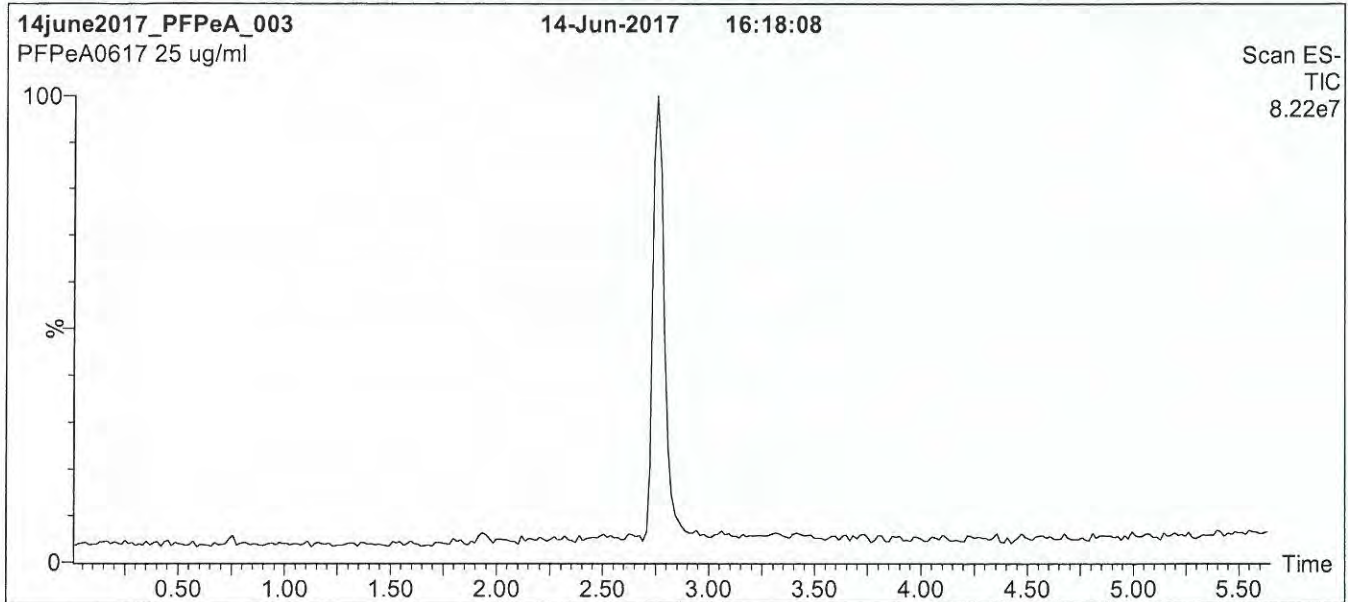
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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182713

Figure 1: PFPeA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μl/min

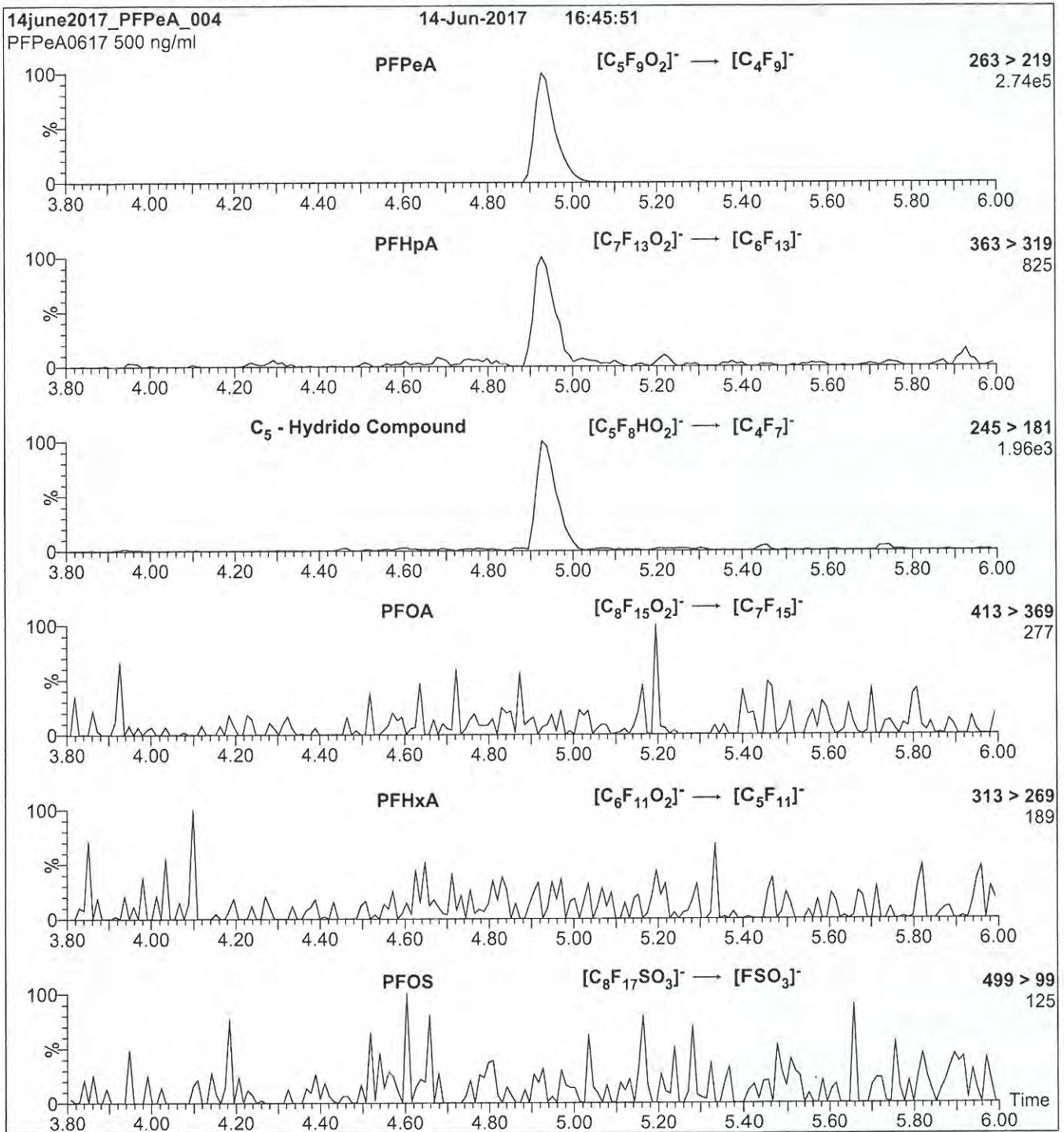
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18C2713

Figure 2: PFPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 µl (500 ng/ml PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3
 Collision Energy (eV) = 9

18C2714


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 LABORATORIES

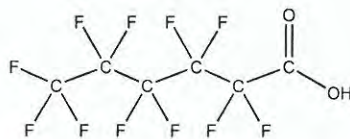
 CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: PFHxA
COMPOUND: Perfluoro-n-hexanoic acid

LOT NUMBER: PFHxA0917

STRUCTURE:

CAS #: 307-24-4



MOLECULAR FORMULA: $C_6HF_{11}O_2$
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$

MOLECULAR WEIGHT: 314.05
SOLVENT(S): Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/27/2017
EXPIRY DATE: (mm/dd/yyyy) 09/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 1.0% of branched isomers.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 11/01/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2714

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

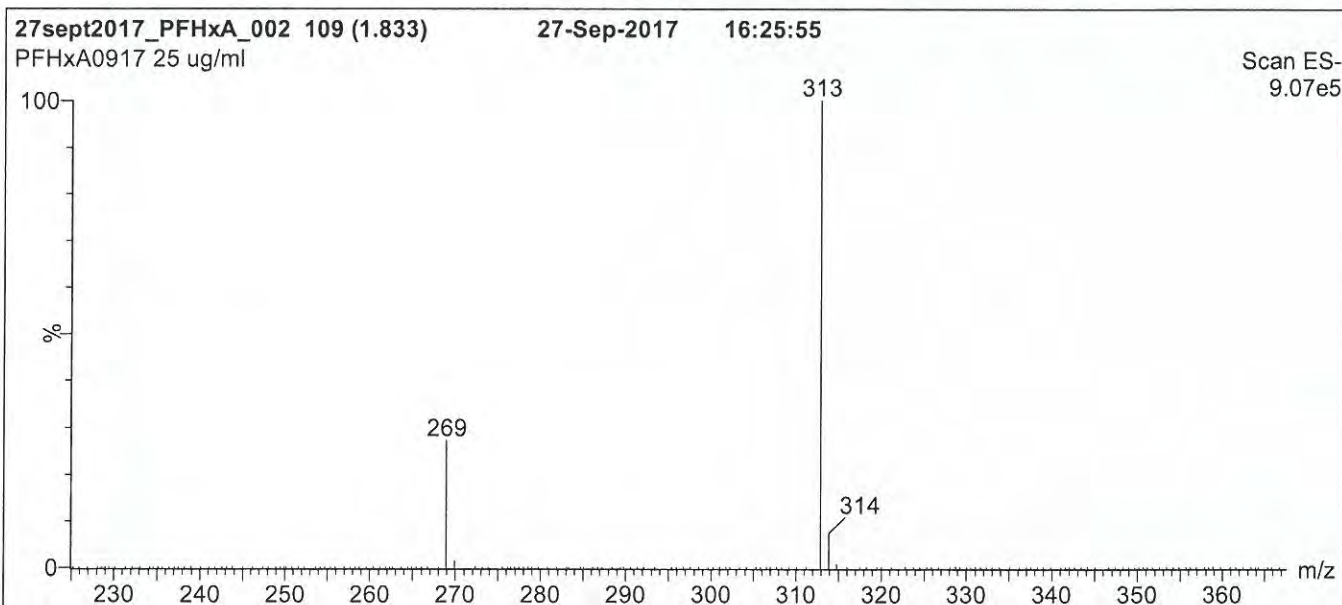
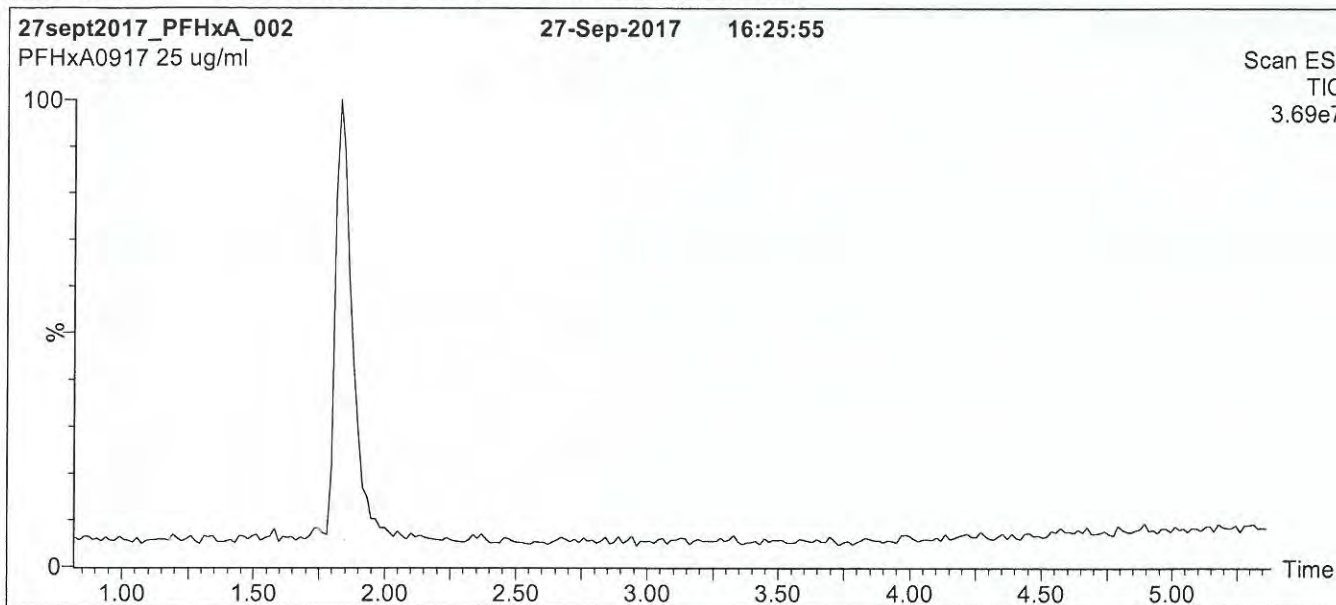
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2714

Figure 1: PFHxA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

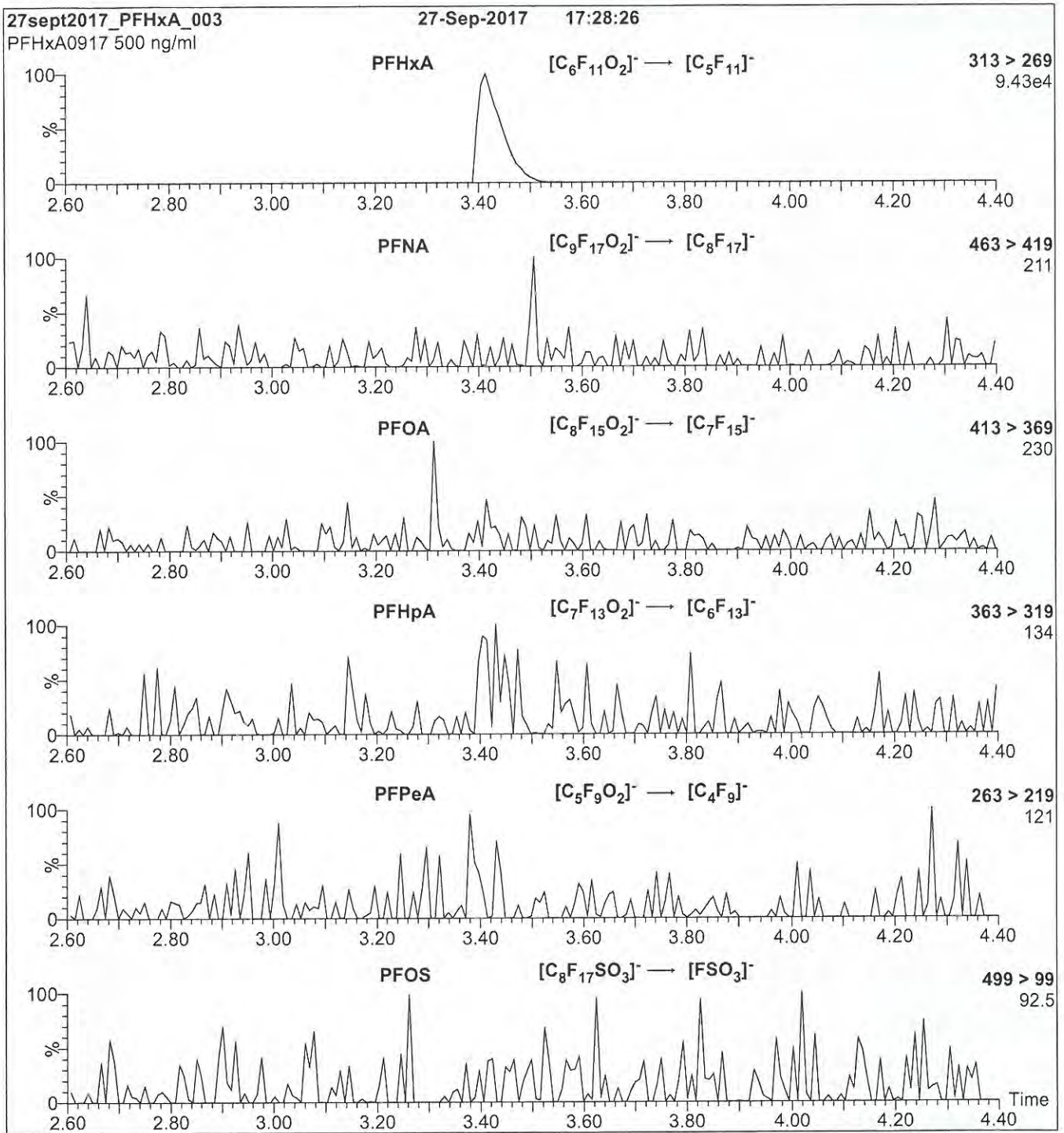
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18C2714

Figure 2: PFHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

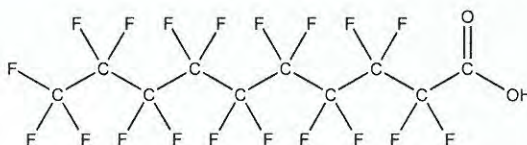
Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 10

18C2715


WELLINGTON
 LABORATORIES

CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: PFDA **LOT NUMBER:** PFDA1217
COMPOUND: Perfluoro-n-decanoic acid
STRUCTURE: **CAS #:** 335-76-2



MOLECULAR FORMULA: C₁₀H₁₉O₂ **MOLECULAR WEIGHT:** 514.08
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/14/2017
EXPIRY DATE: (mm/dd/yyyy) 12/14/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

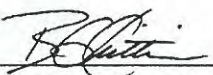
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/18/2017
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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1802715

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

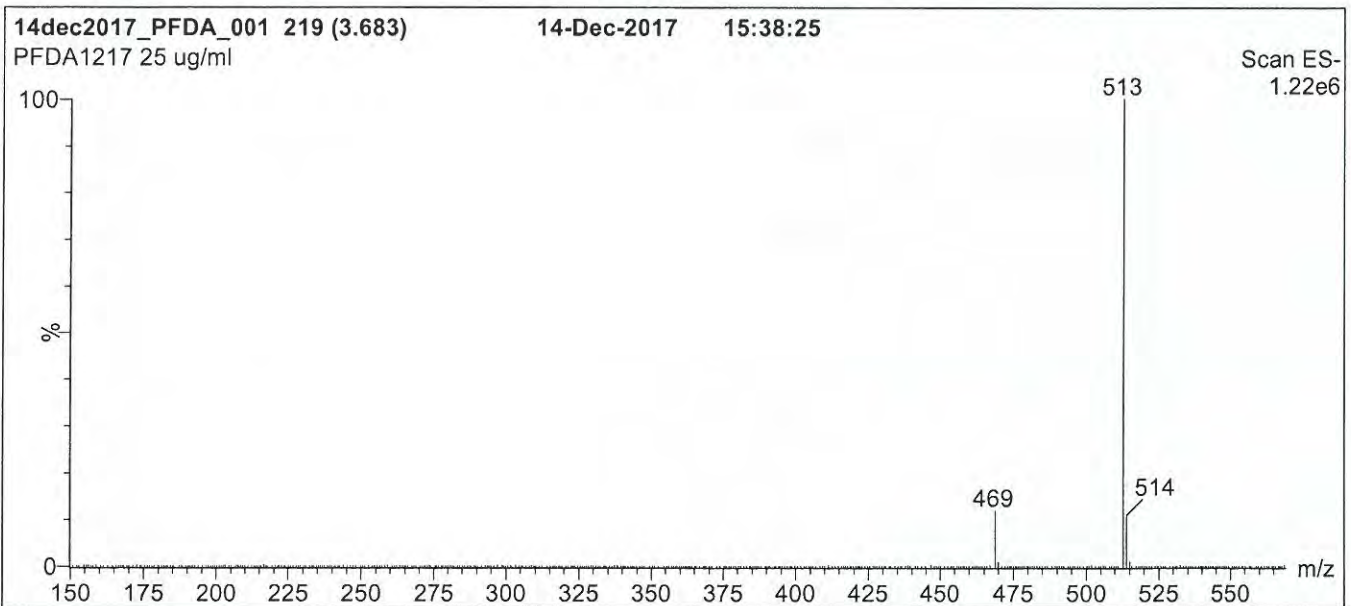
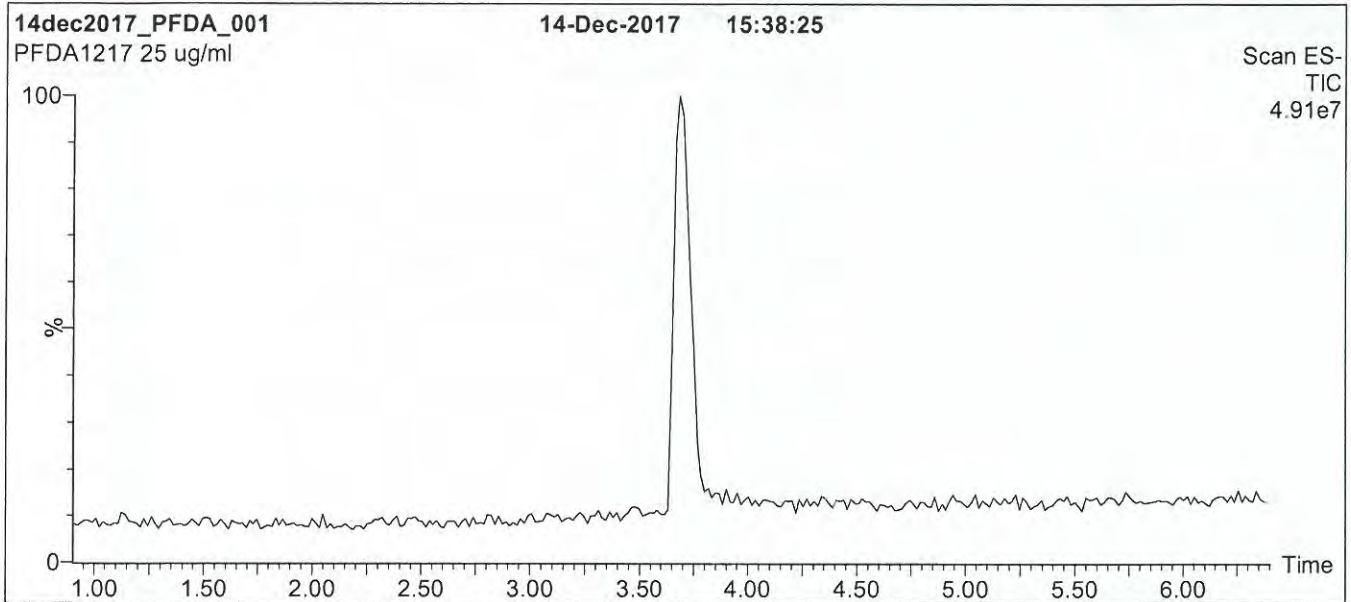
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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1802715

Figure 1: PFDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

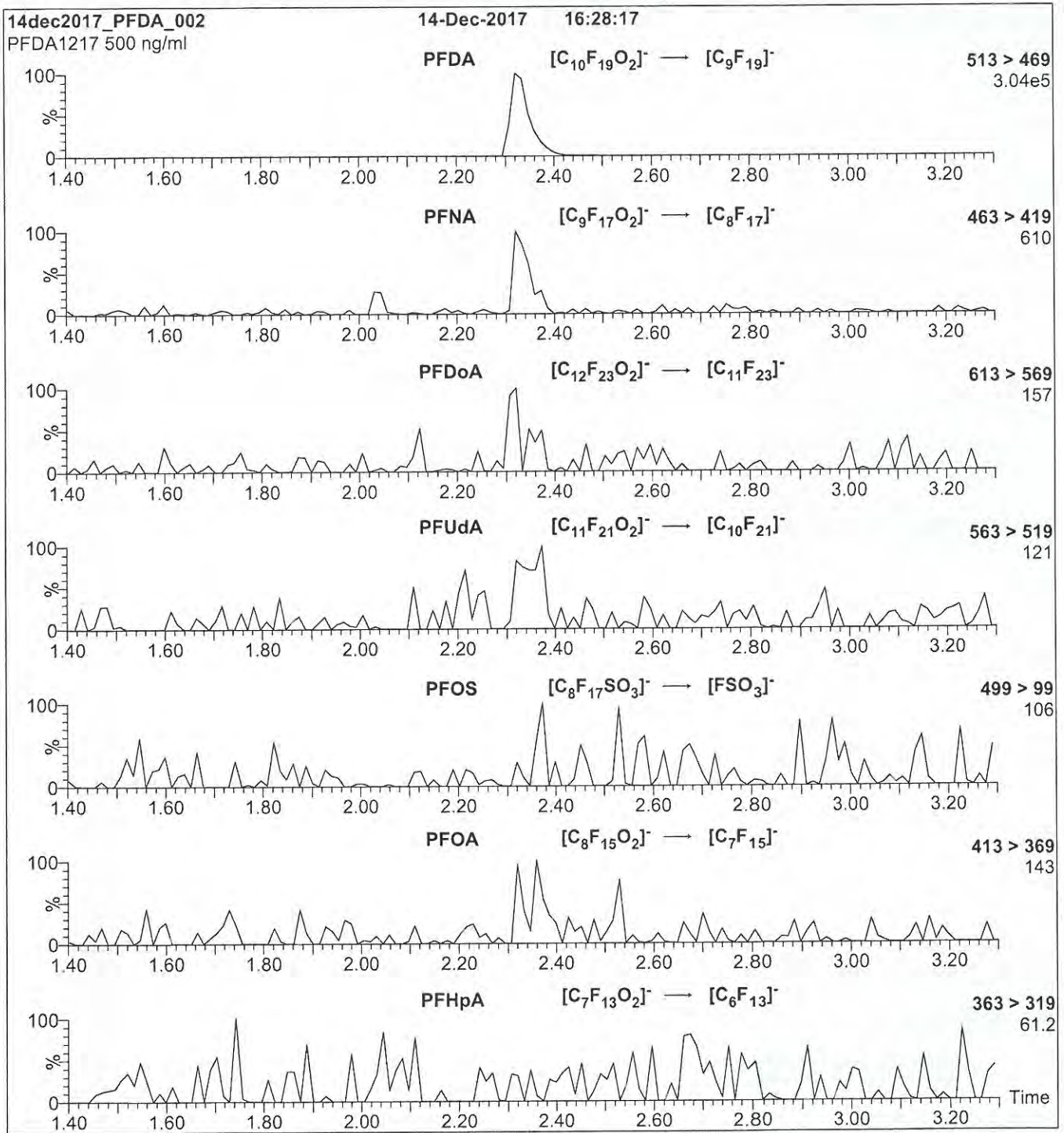
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2715

Figure 2: PFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 13

18C2716

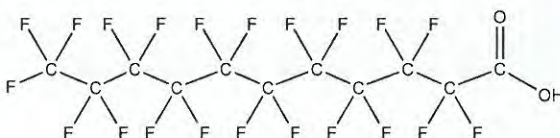


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFUdA **LOT NUMBER:** PFUdA0917
COMPOUND: Perfluoro-n-undecanoic acid

STRUCTURE: **CAS #:** 2058-94-8



MOLECULAR FORMULA: $C_{11}HF_{21}O_2$ **MOLECULAR WEIGHT:** 564.09
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/21/2017
EXPIRY DATE: (mm/dd/yyyy) 09/21/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 09/22/2017
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2716

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

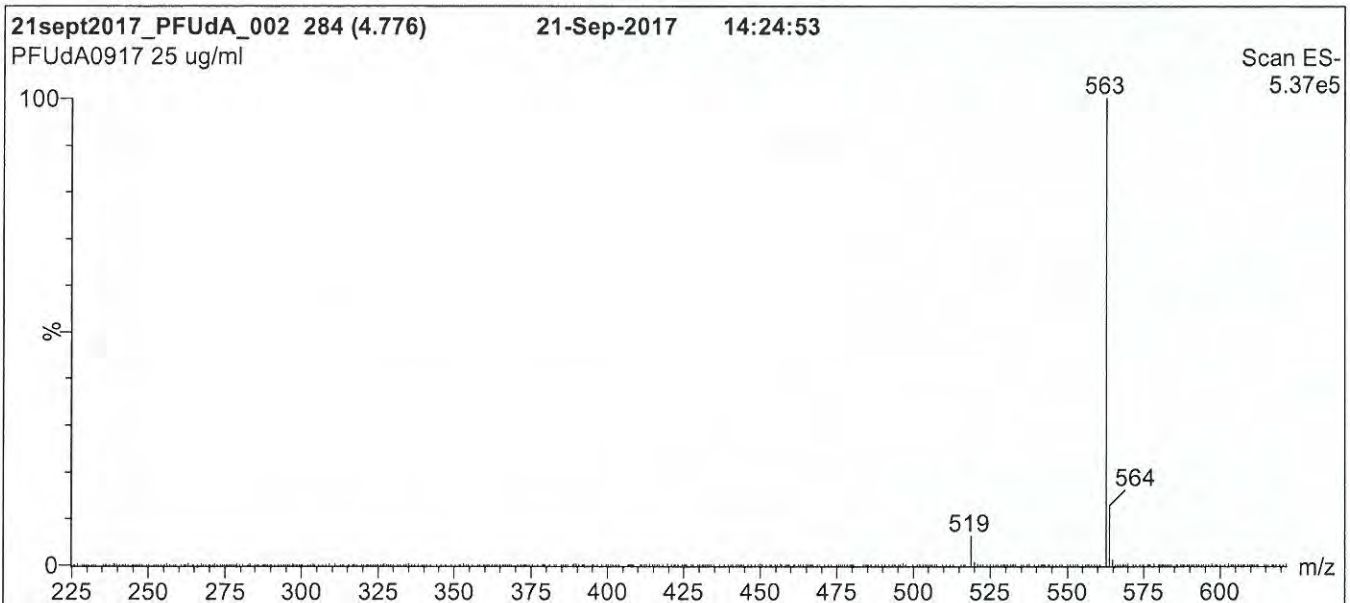
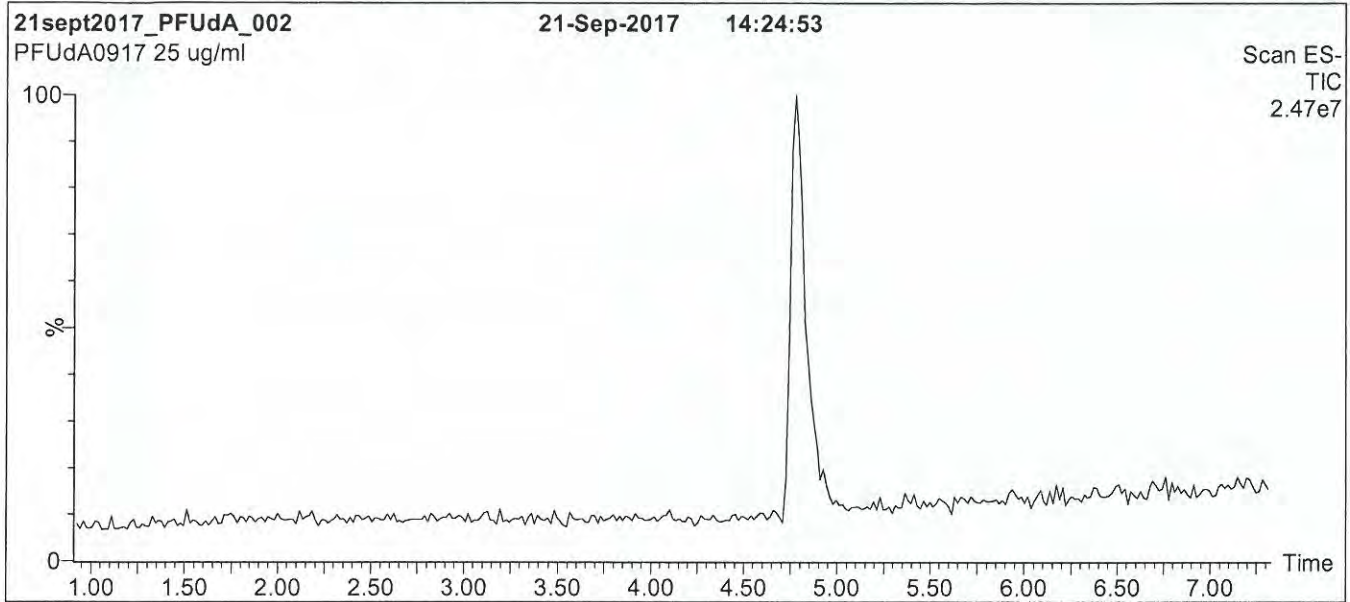
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2716

Figure 1: PFUdA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

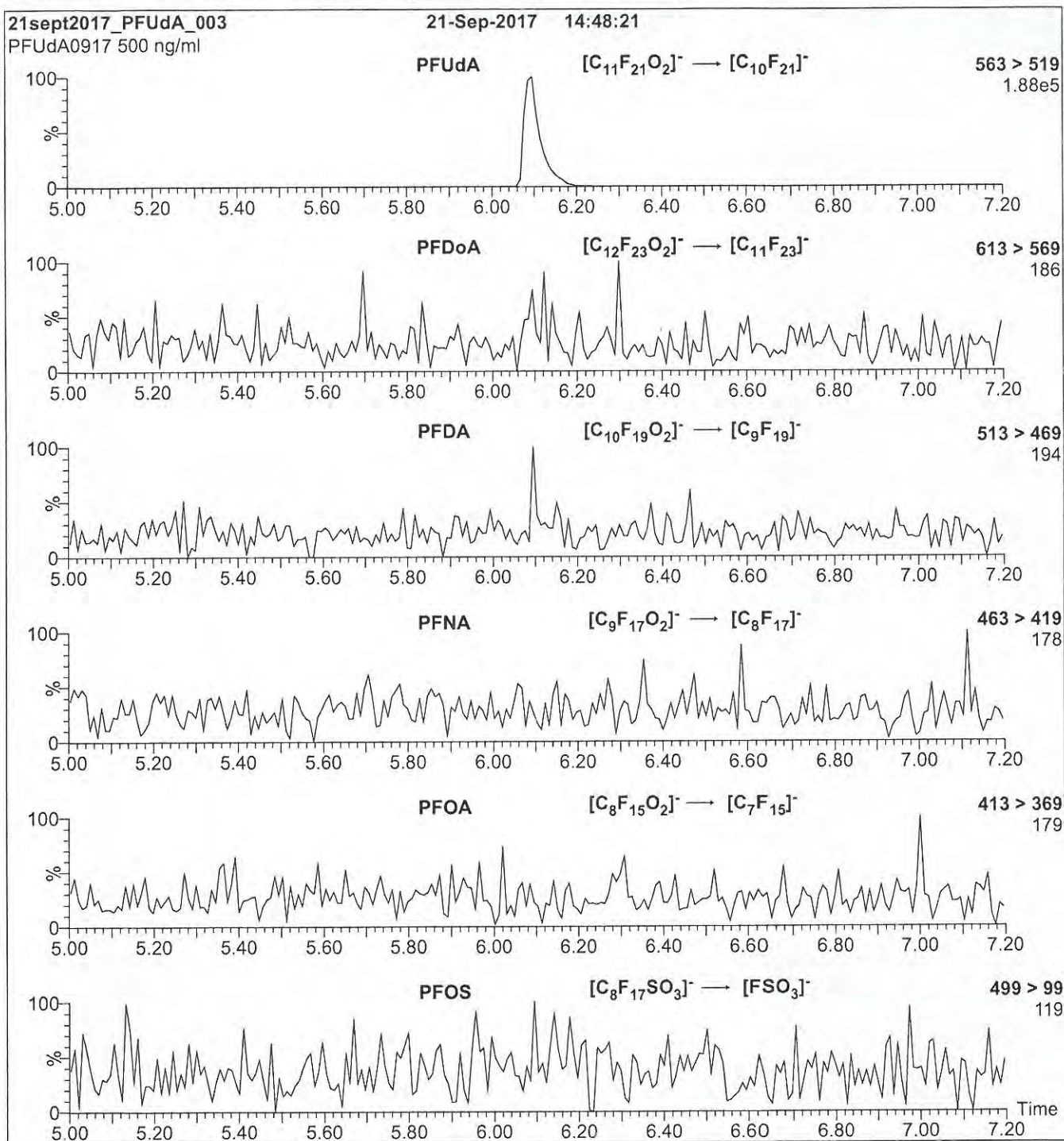
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 65
Desolvation Gas Flow (l/hr) = 750

18C2716

Figure 2: PFUdA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 11

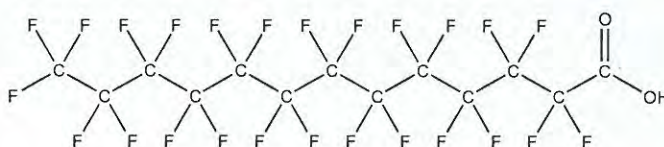
18C2717



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFTTrDA **LOT NUMBER:** PFTTrDA0517
COMPOUND: Perfluoro-n-tridecanoic acid
STRUCTURE: **CAS #:** 72629-94-8



MOLECULAR FORMULA: $C_{13}HF_{25}O_2$ **MOLECULAR WEIGHT:** 664.11
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/02/2017
EXPIRY DATE: (mm/dd/yyyy) 05/02/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA ($C_{11}HF_{21}O_2$), ~ 0.4% of PFDaA ($C_{12}HF_{23}O_2$), and ~ 0.1% of PFTeDA ($C_{14}HF_{27}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 05/04/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2717

INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

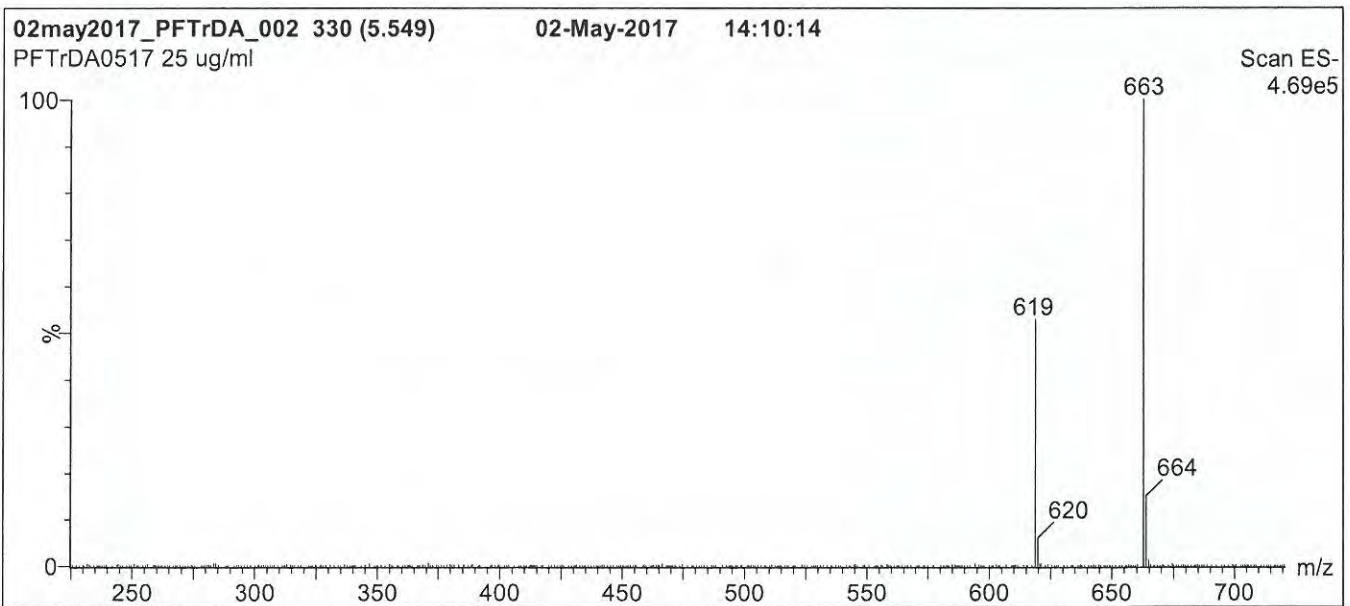
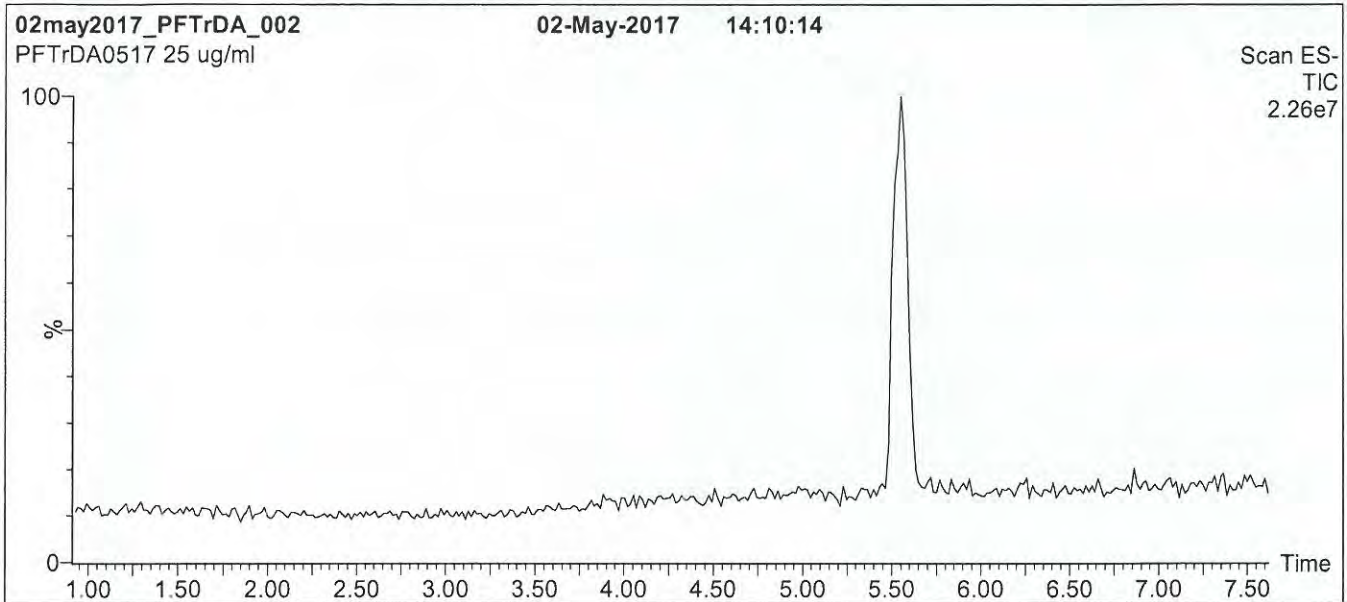
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18C2717

Figure 1: PFTrDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

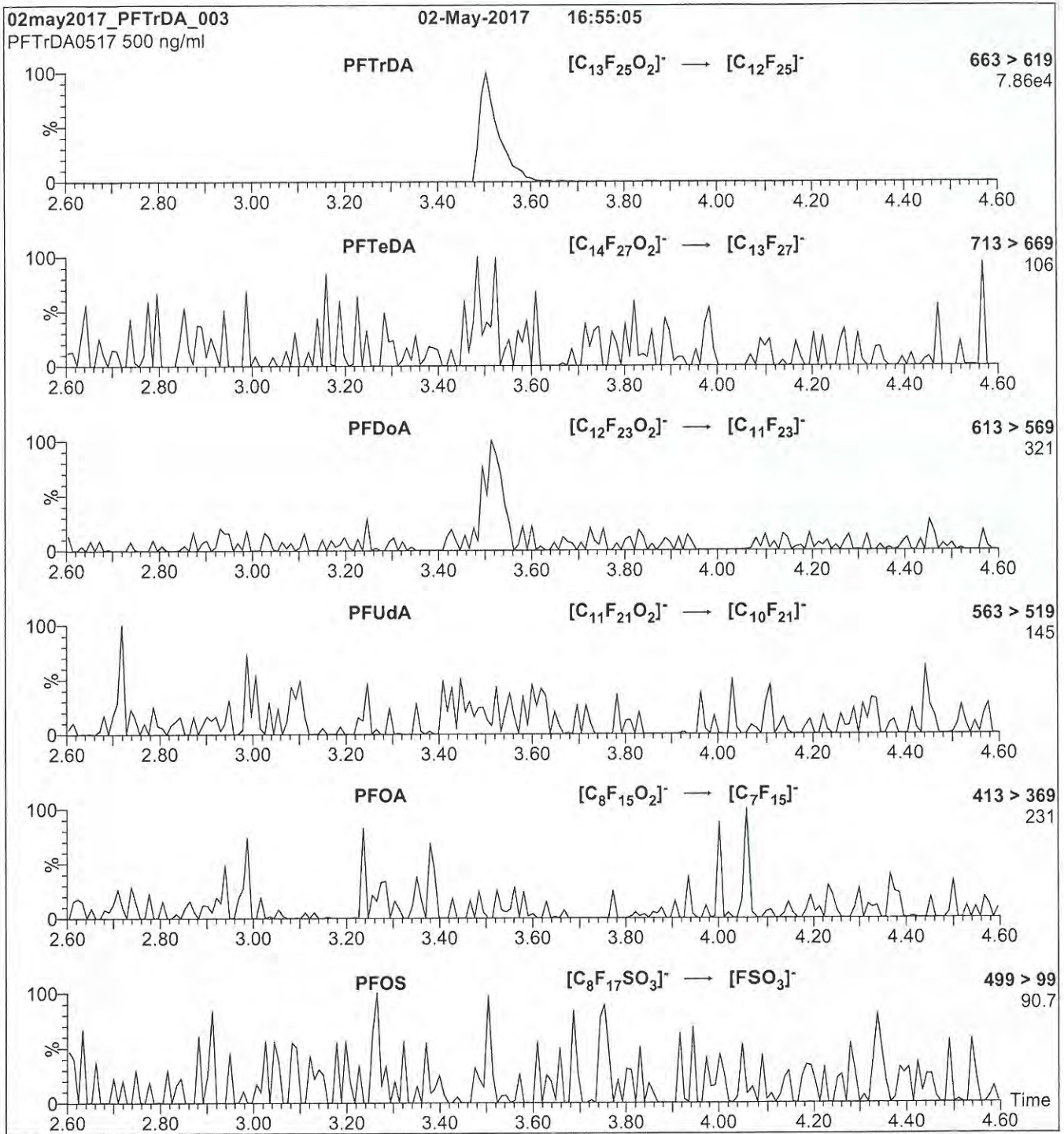
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 22.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 650

18C2717

Figure 2: PFTrDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFTrDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 15

18C2718



WELLINGTON LABORATORIES

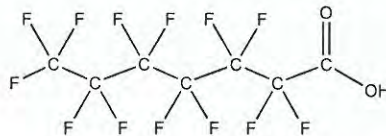
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHpA
COMPOUND: Perfluoro-n-heptanoic acid

LOT NUMBER: PFHpA0917

STRUCTURE:

CAS #: 375-85-9



MOLECULAR FORMULA: $C_7HF_{13}O_2$
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$

MOLECULAR WEIGHT: 364.06
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/27/2017
EXPIRY DATE: (mm/dd/yyyy) 09/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

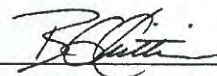
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 09/29/2017
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

18C2718

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QUALITY MANAGEMENT:

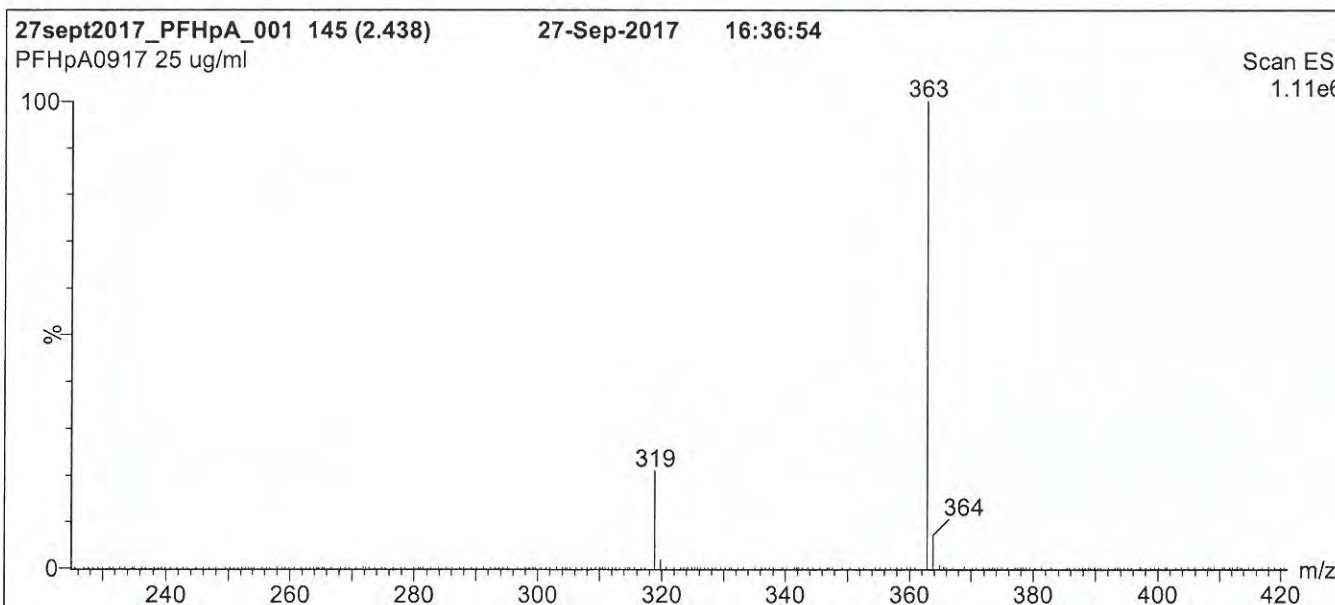
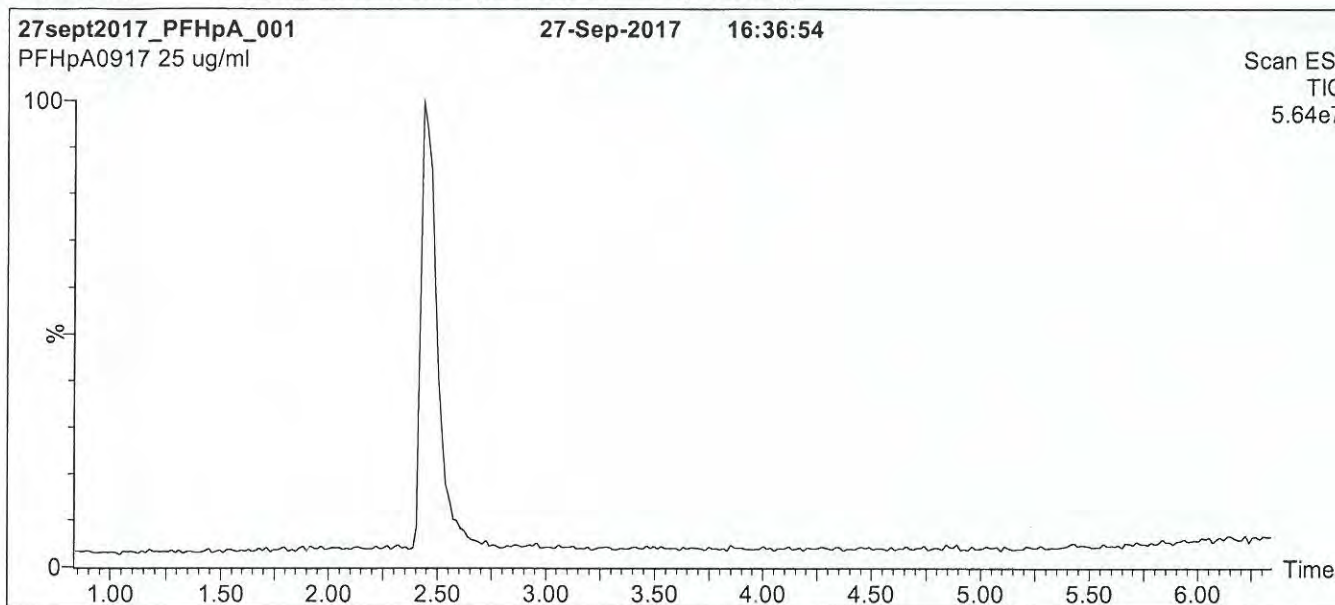
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1802718

Figure 1: PFHpA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 50% (80:20 MeOH:ACN) / 50% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 2 min before returning to initial conditions in 0.5 min.
 Time: 10 min

Flow: 300 μ l/min

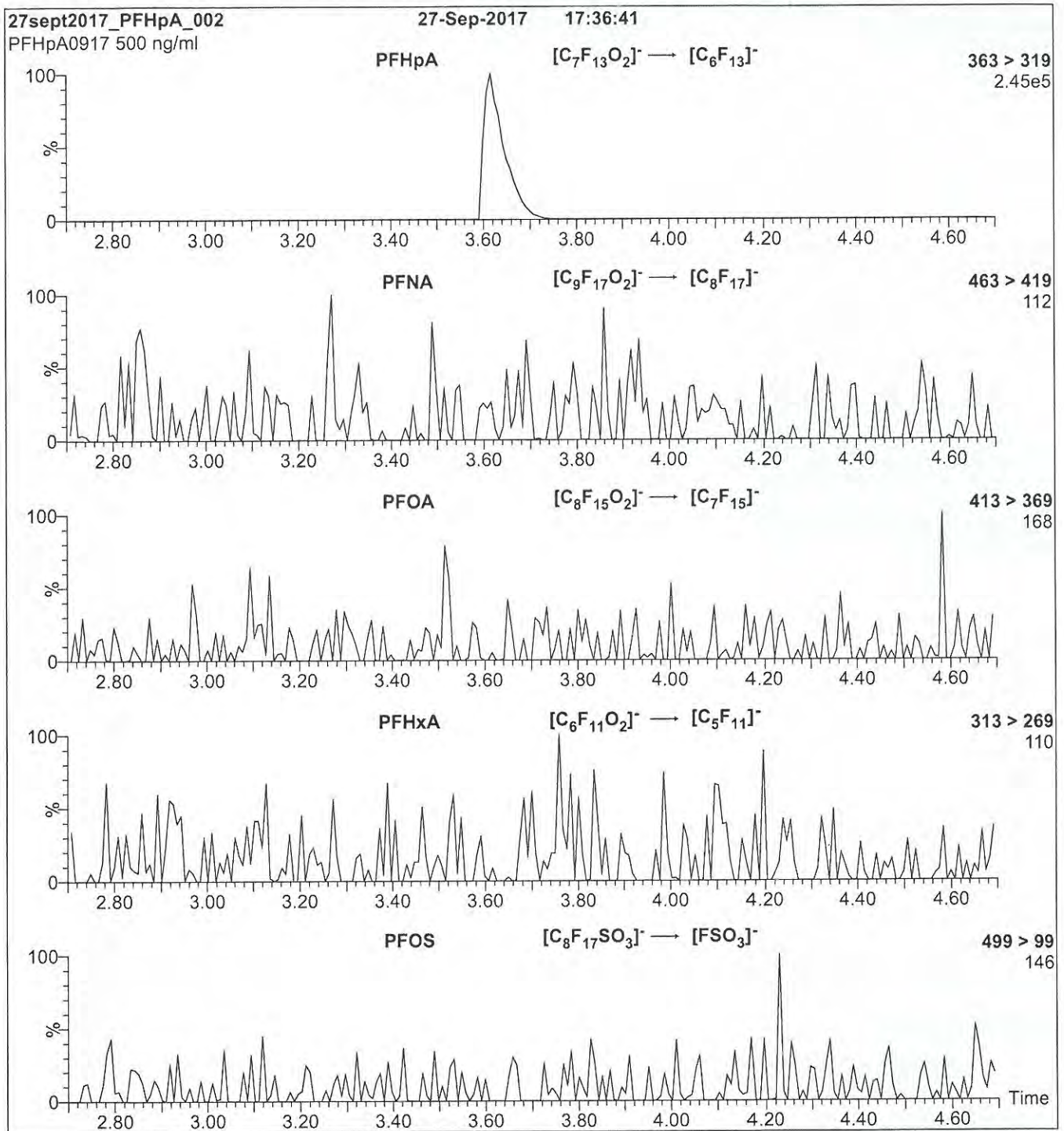
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 2.00
 Cone Voltage (V) = 15.00
 Cone Gas Flow (l/hr) = 50
 Desolvation Gas Flow (l/hr) = 750

18C2718

Figure 2: PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 11

18C2719

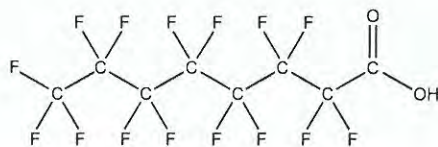


**WELLINGTON
LABORATORIES**

**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

PRODUCT CODE: PFOA **LOT NUMBER:** PFOA0917
COMPOUND: Perfluoro-n-octanoic acid

STRUCTURE: **CAS #:** 335-67-1



MOLECULAR FORMULA: C₈HF₁₅O₂ **MOLECULAR WEIGHT:** 414.07
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/27/2017
EXPIRY DATE: (mm/dd/yyyy) 09/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

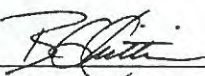
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 09/28/2017
B.G. Chittim, General Manager (mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

18C2719

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INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

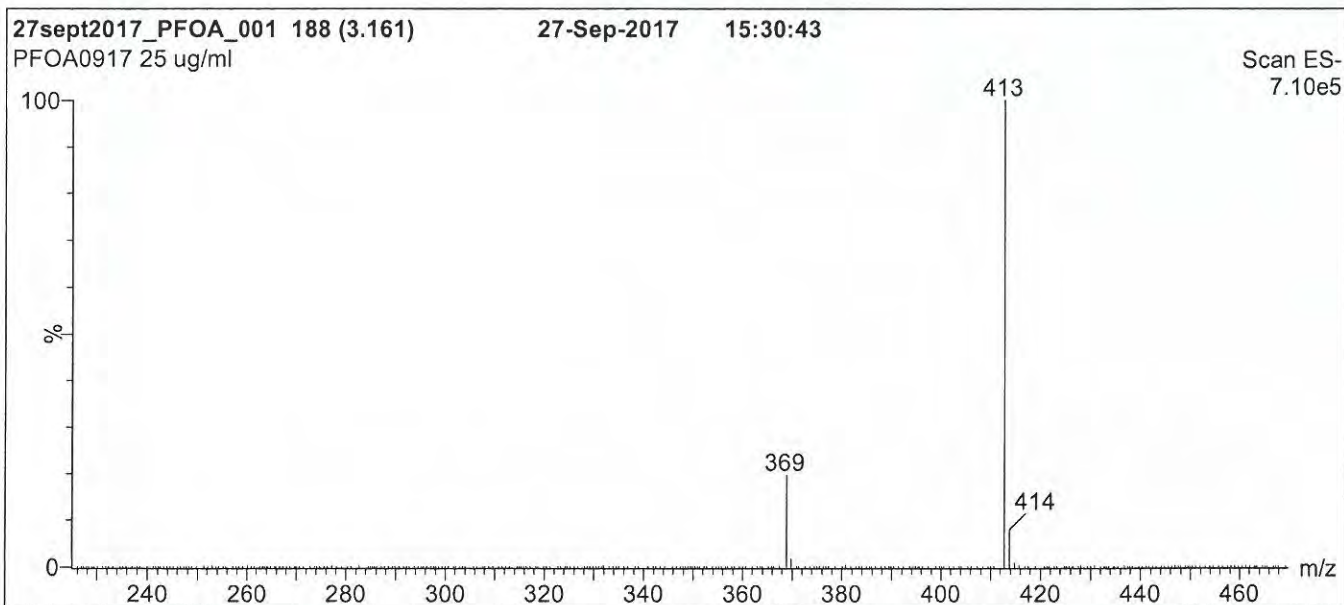
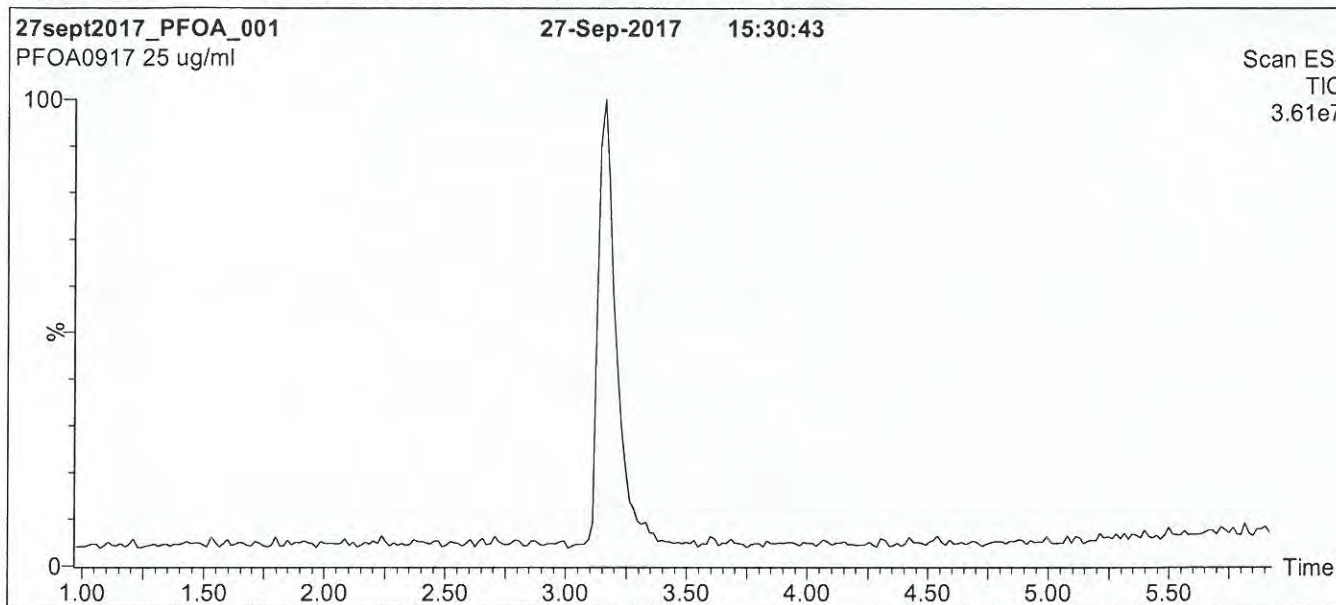
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18C2719

Figure 1: PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

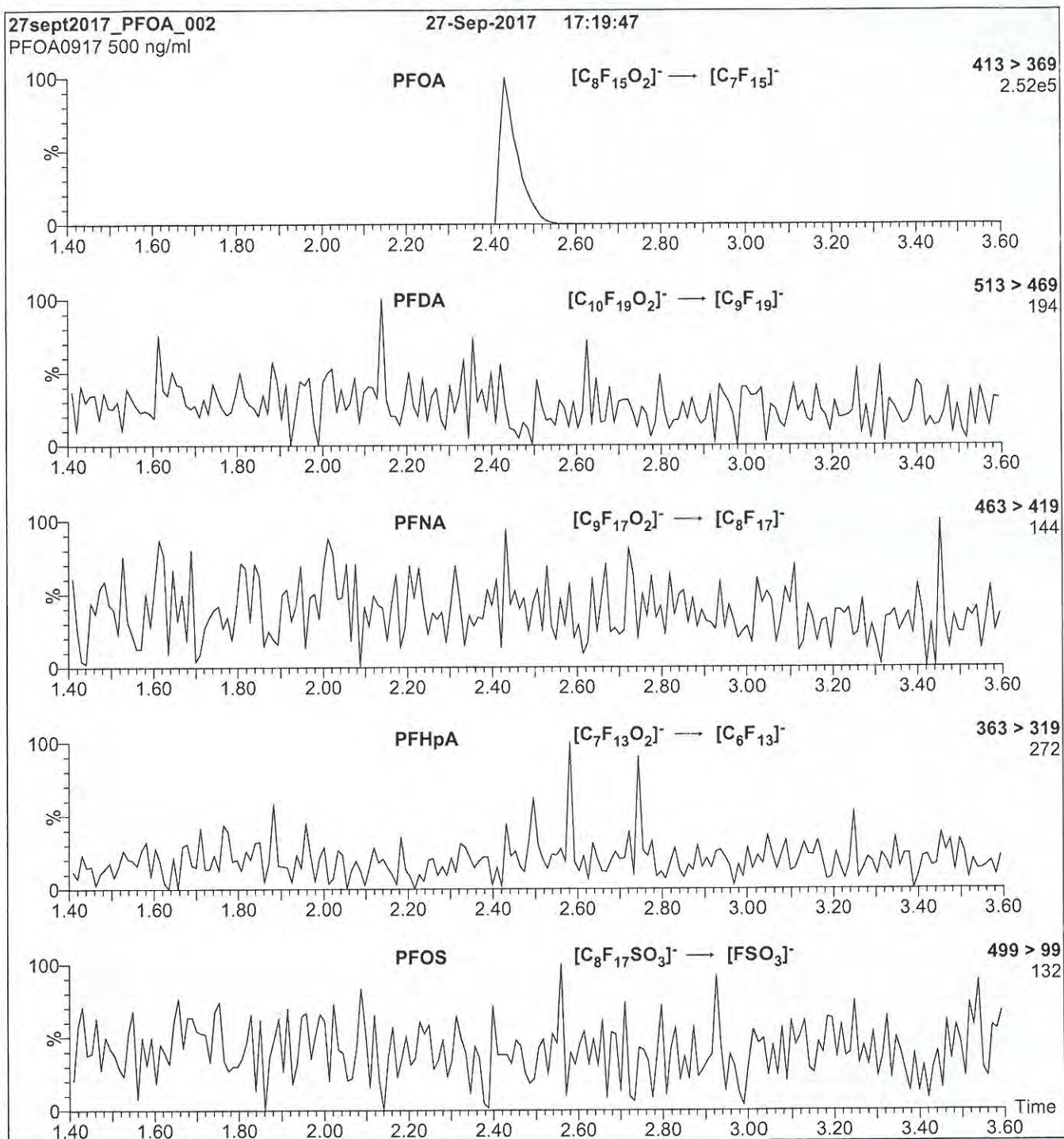
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18C2719

Figure 2: PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 11

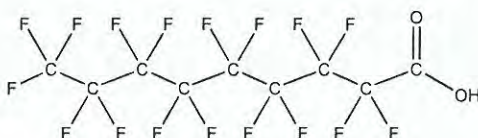
18C2720



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFNA **LOT NUMBER:** PFNA0717
COMPOUND: Perfluoro-n-nonanoic acid
STRUCTURE: **CAS #:** 375-95-1



MOLECULAR FORMULA: $C_9HF_{17}O_2$ **MOLECULAR WEIGHT:** 464.08
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/20/2017
EXPIRY DATE: (mm/dd/yyyy) 07/20/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

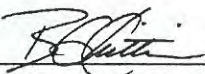
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUdA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


 B.G. Chittim, General Manager

Date: 07/24/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2720

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

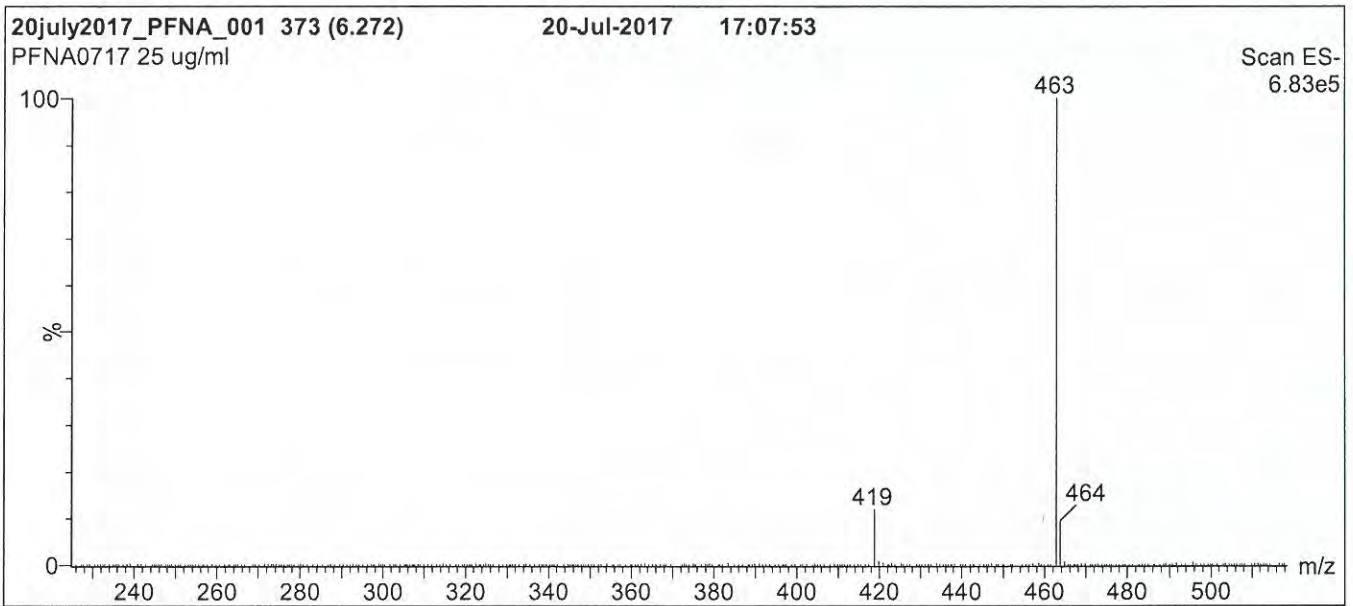
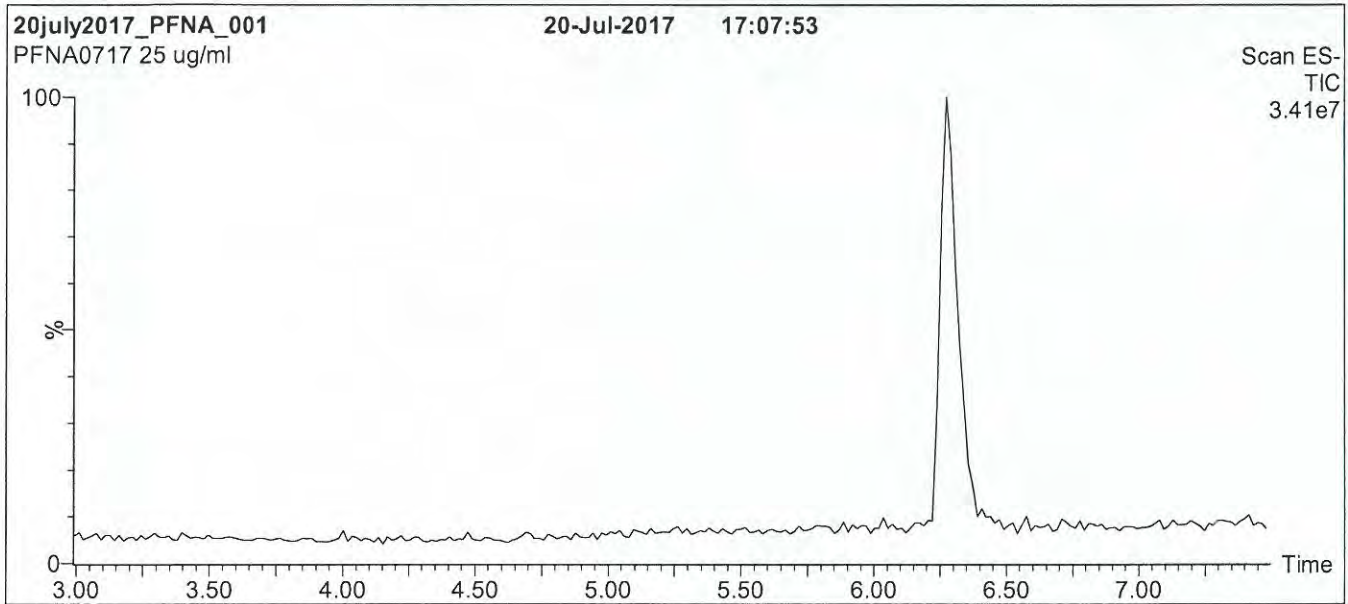
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1802720

Figure 1: PFNA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Hold for 1 min. Ramp to 90% organic over 7 min and hold
for 1 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

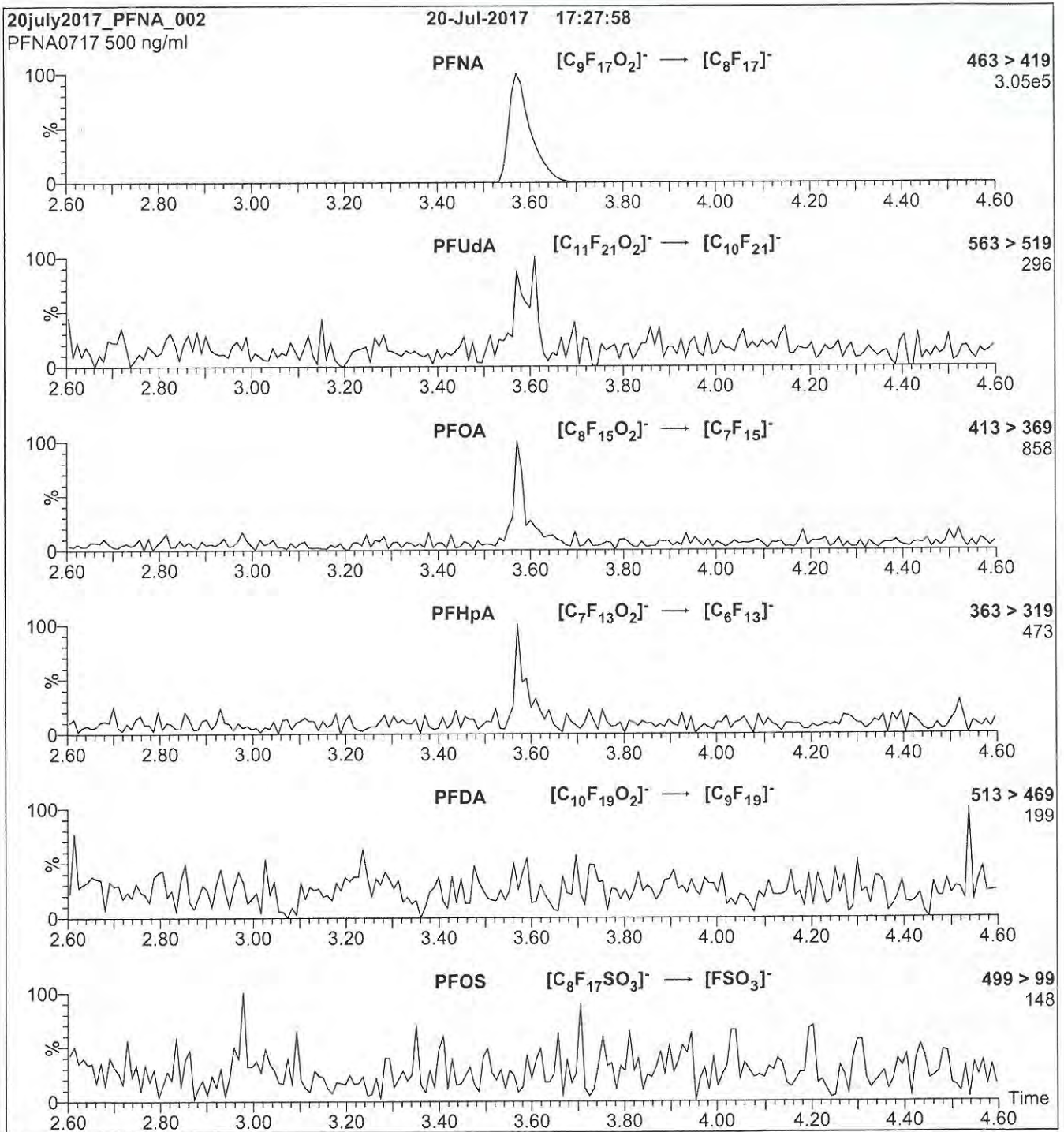
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2720

Figure 2: PFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 11

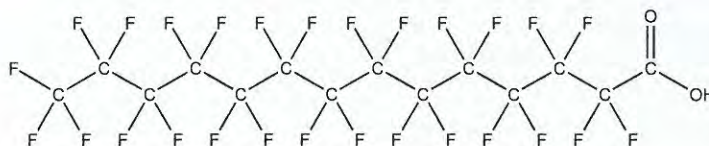
1802721


WELLINGTON
 LABORATORIES

CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: PFTeDA **LOT NUMBER:** PFTeDA0917
COMPOUND: Perfluoro-n-tetradecanoic acid

STRUCTURE: **CAS #:** 376-06-7



MOLECULAR FORMULA: $C_{14}HF_{27}O_2$ **MOLECULAR WEIGHT:** 714.11
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/21/2017
EXPIRY DATE: (mm/dd/yyyy) 09/21/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

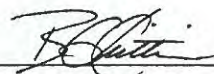
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of PFDaA ($C_{12}HF_{23}O_2$) and ~ 0.2% of PFPeDA ($C_{15}HF_{29}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 09/21/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2721

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

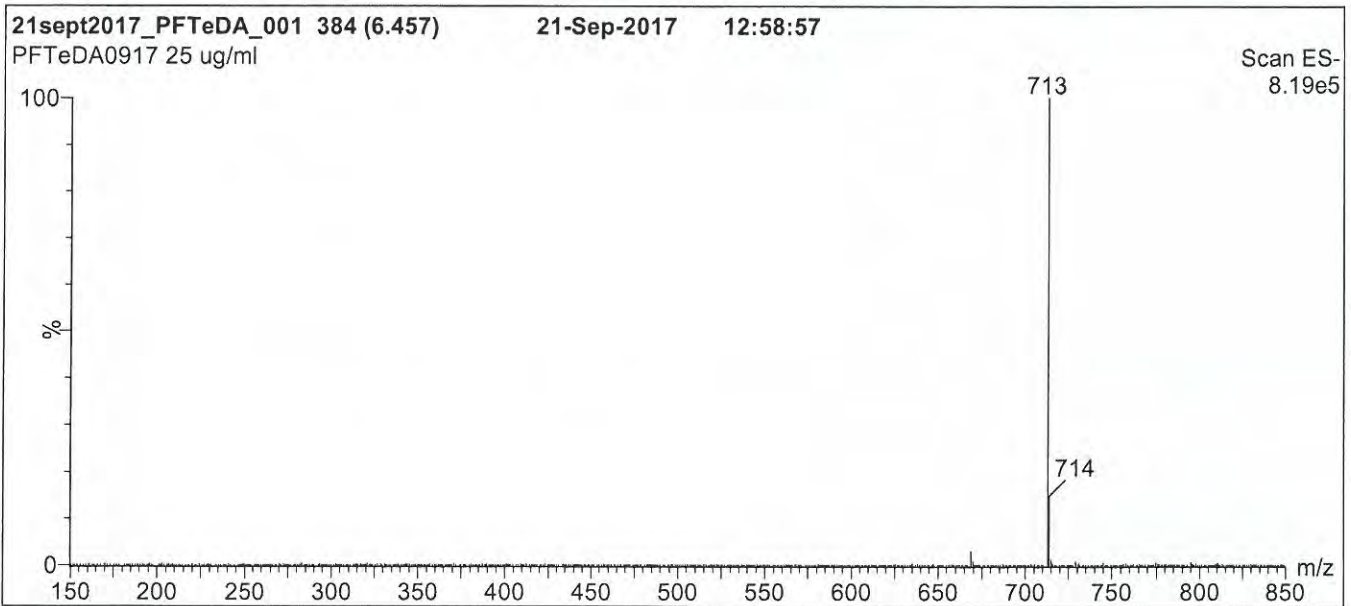
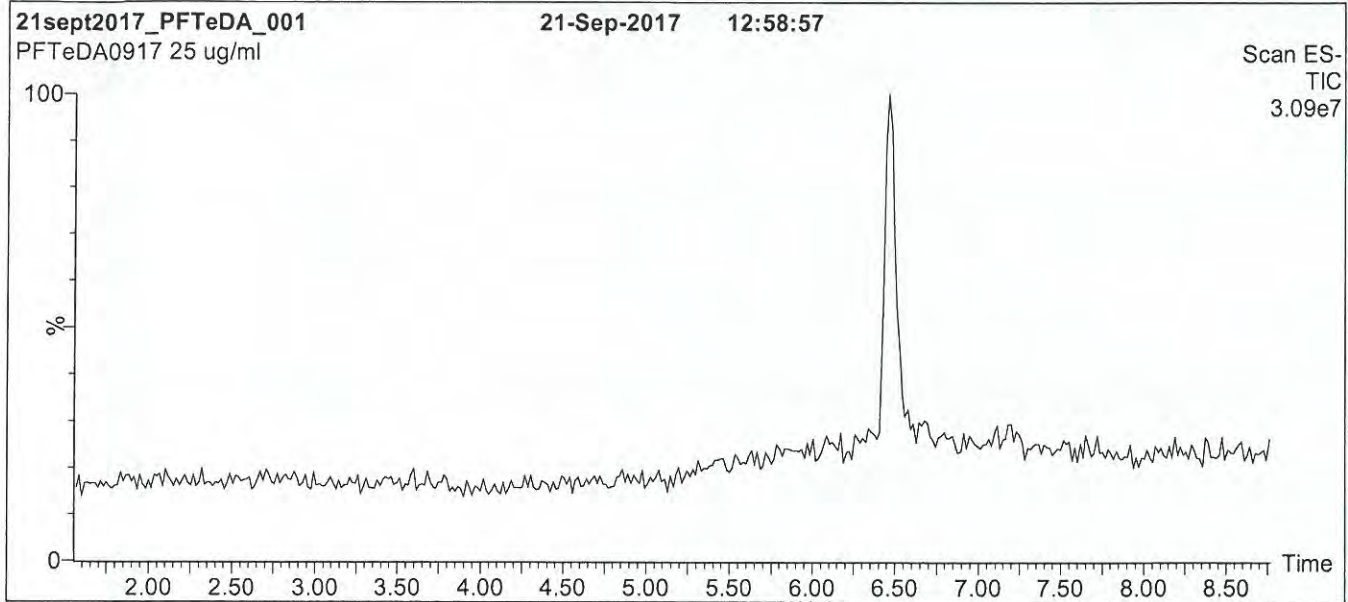
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2721

Figure 1: PFTeDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

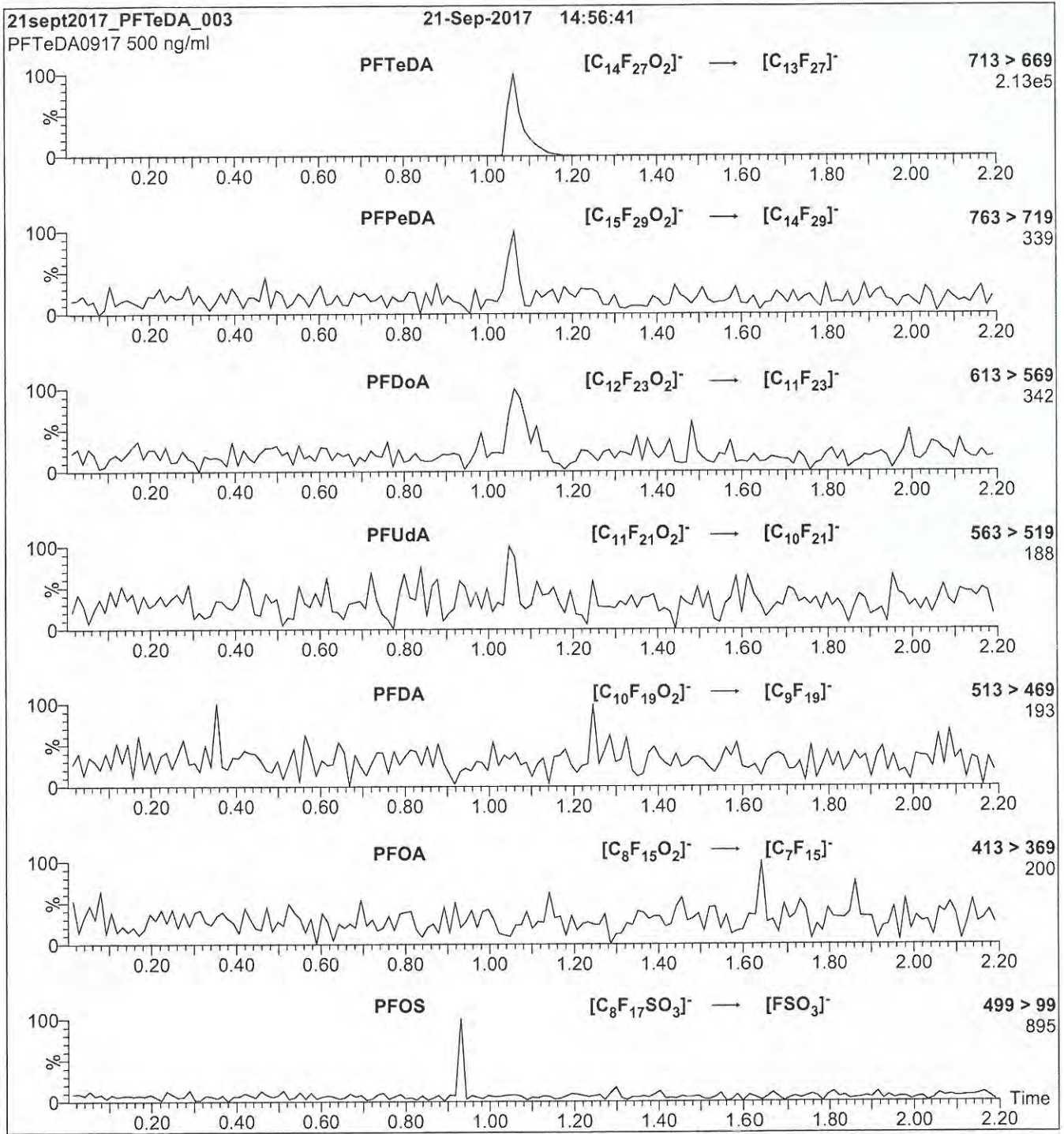
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18C2721

Figure 2: PFTeDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 14

18C2722



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxDA

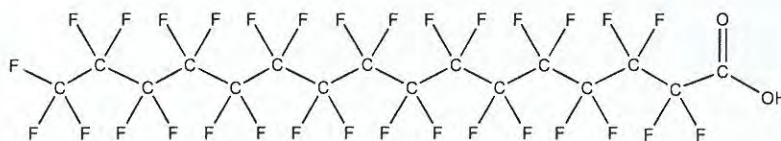
LOT NUMBER: PFHxDA0717

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE:

CAS #:

67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 814.13
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 07/13/2017

EXPIRY DATE: (mm/dd/yyyy) 07/13/2022

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1802722

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

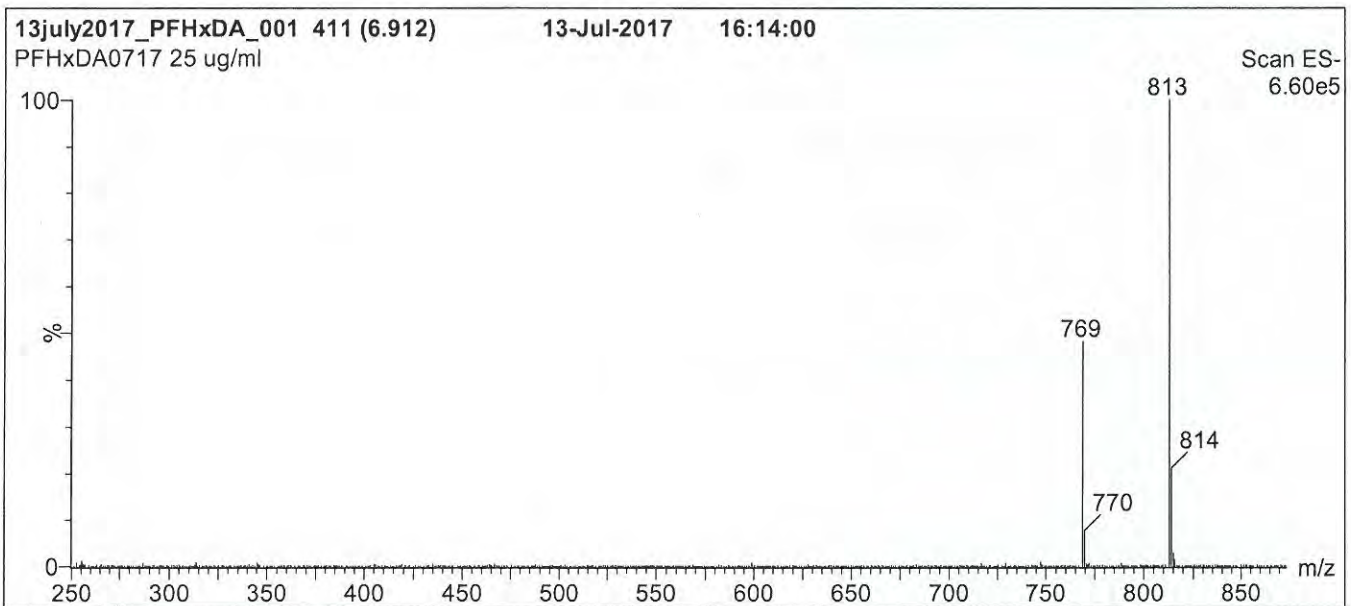
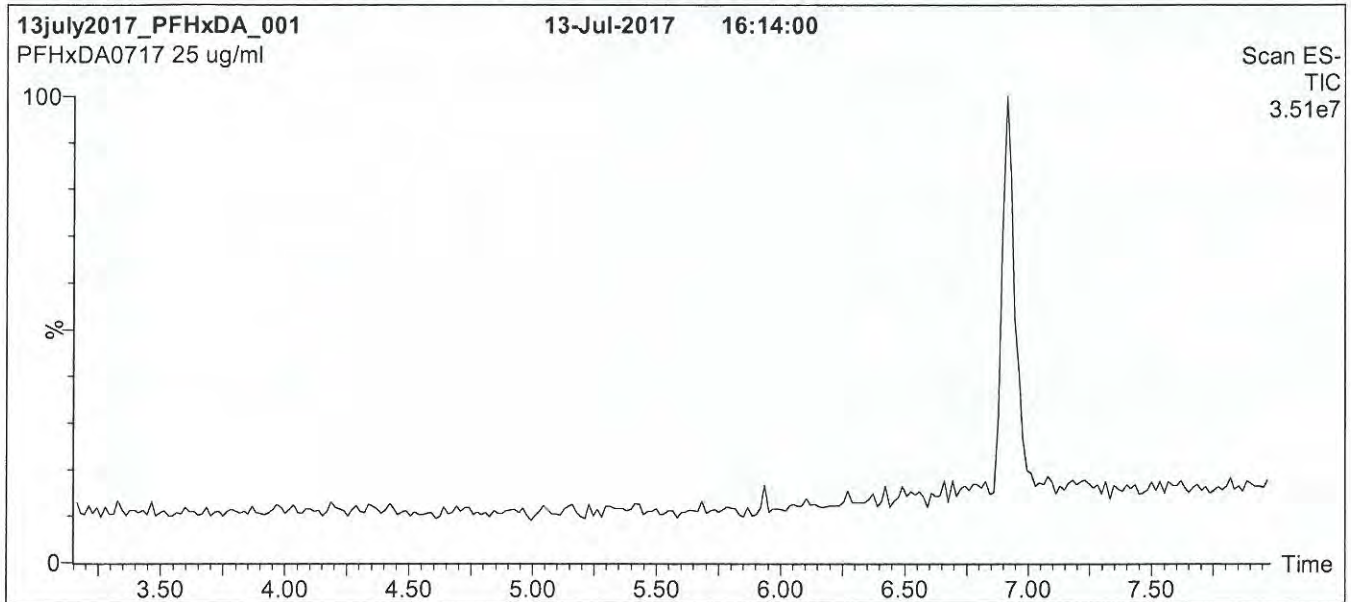
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2722

Figure 1: PFHxDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

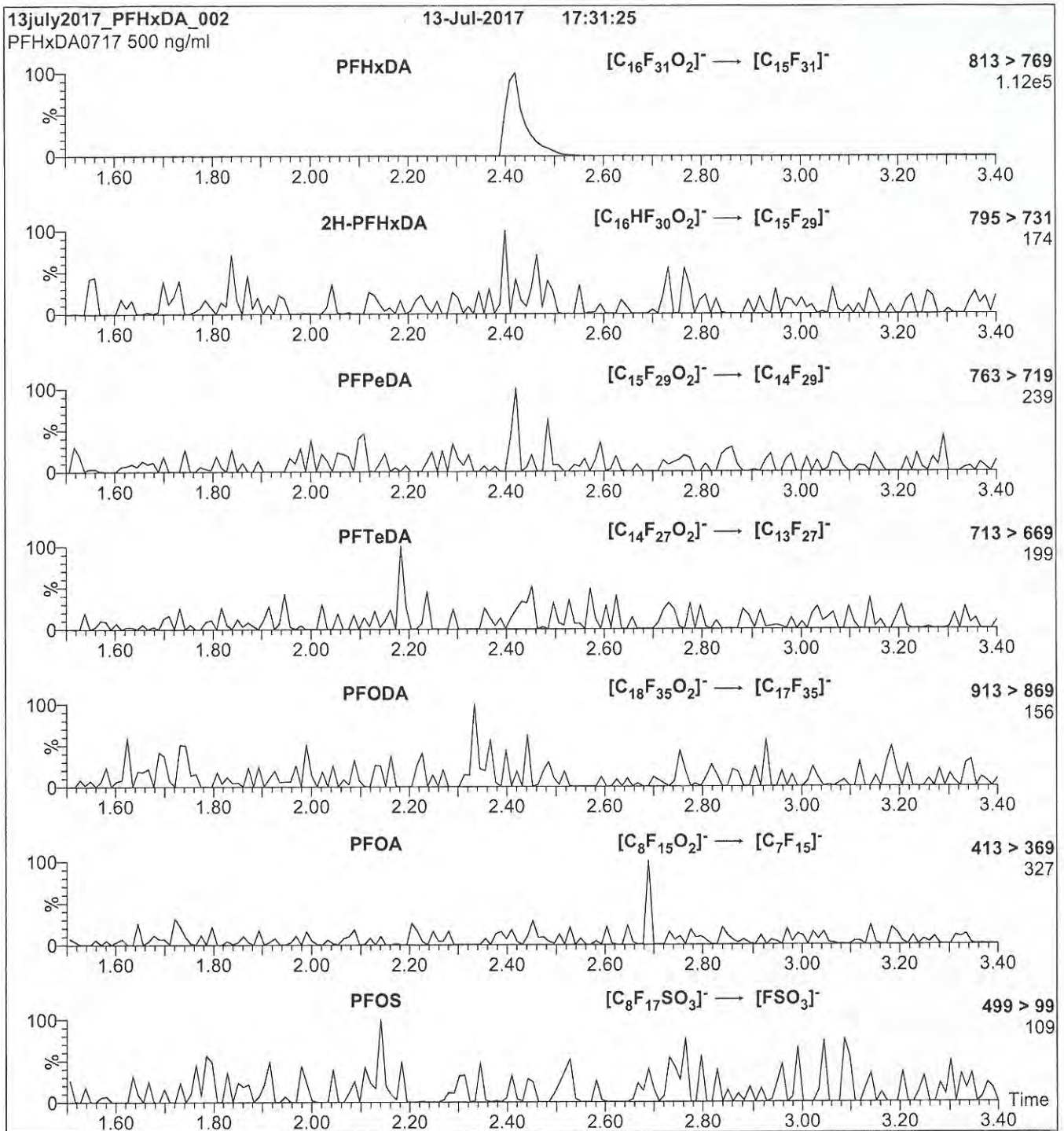
MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18C2722

Figure 2: PFHxDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.13e-3
Collision Energy (eV) = 15

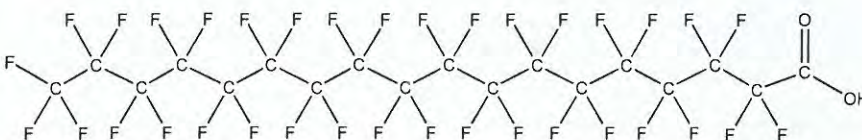
18C2723


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CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: PFODA **LOT NUMBER:** PFODA0717
COMPOUND: Perfluoro-n-octadecanoic acid

STRUCTURE: **CAS #:** 16517-11-6



MOLECULAR FORMULA: $C_{18}HF_{35}O_2$ **MOLECULAR WEIGHT:** 914.14
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/13/2017
EXPIRY DATE: (mm/dd/yyyy) 07/13/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: 
 B.G. Chittim, General Manager

Date: 07/14/2017
 (mm/dd/yyyy)

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18C2723

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

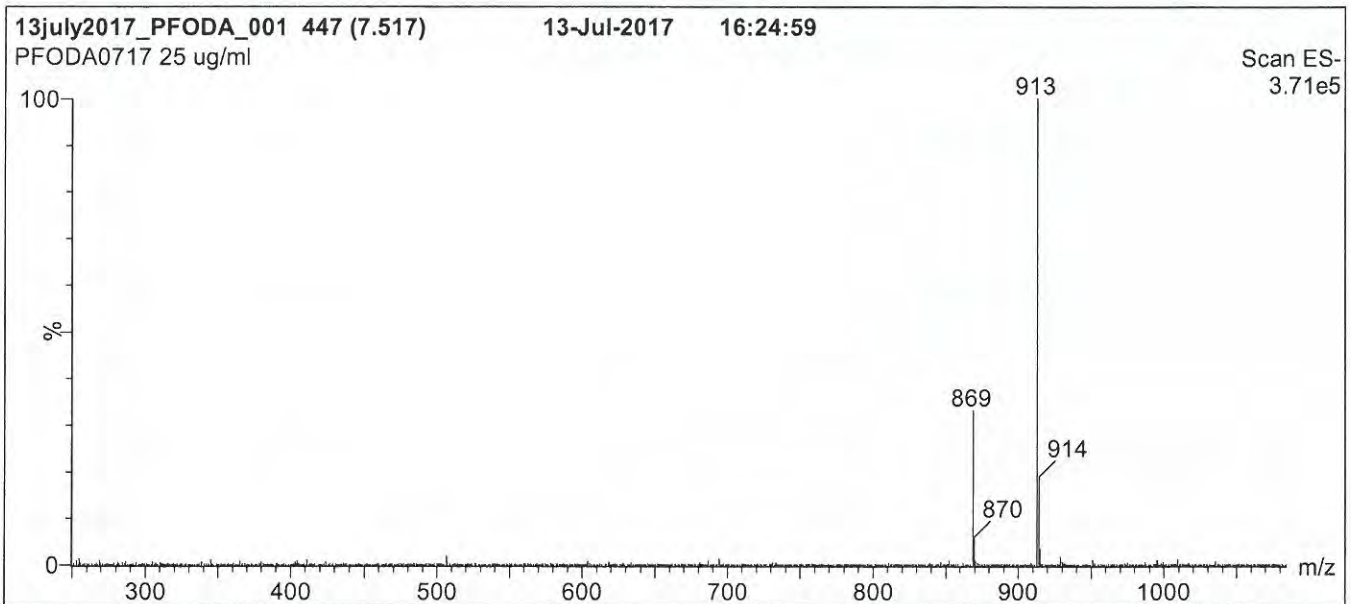
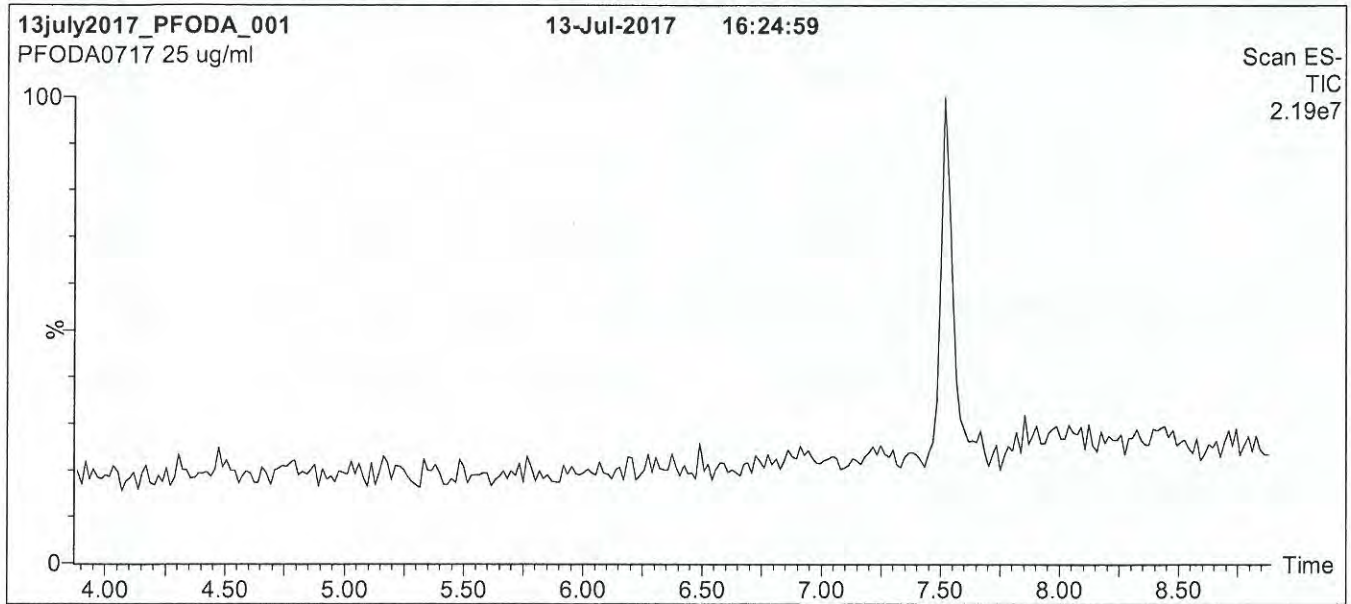
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2723

Figure 1: PFODA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

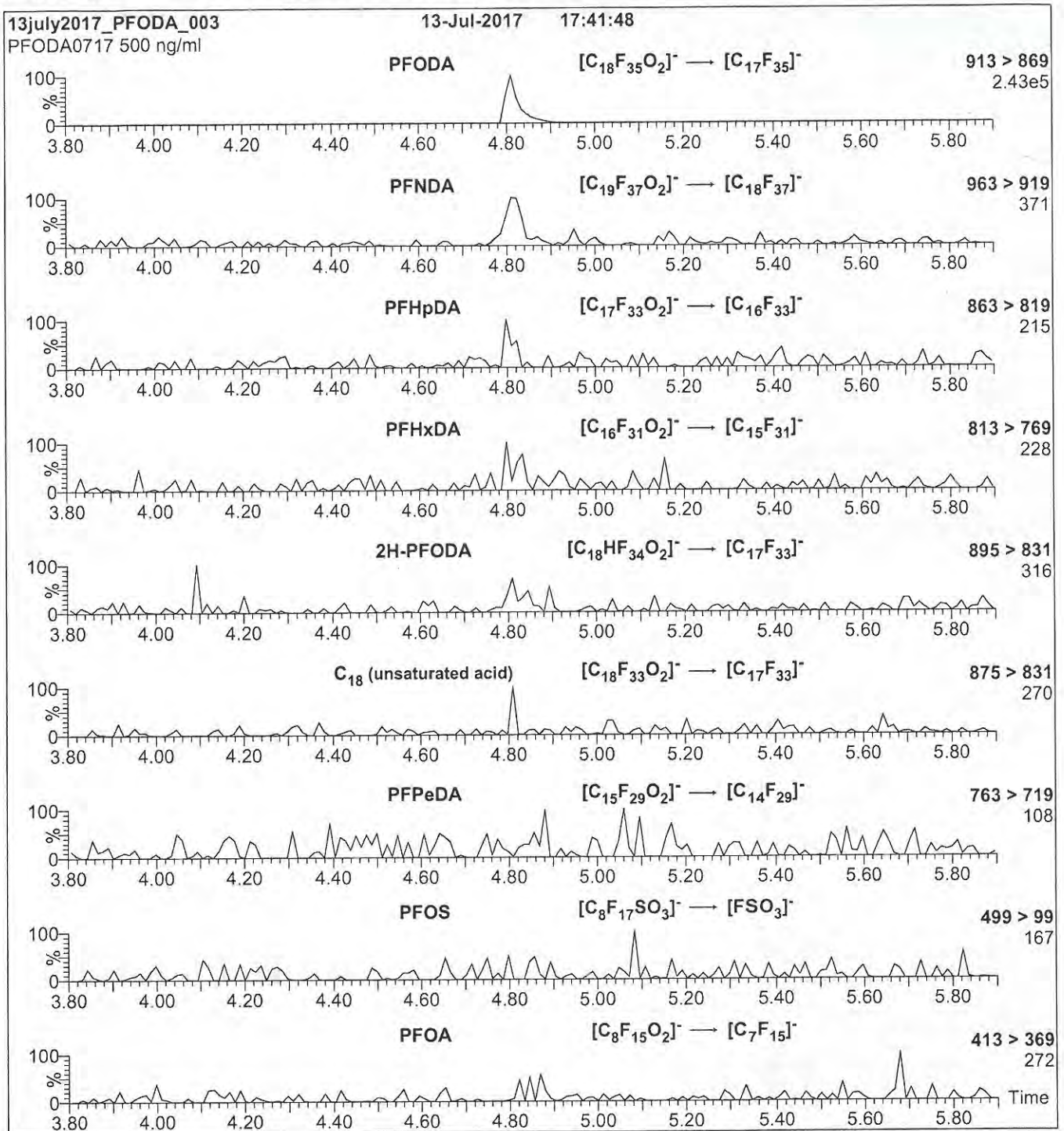
MS Parameters

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18C2723

Figure 2: PFODA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFODA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 15

1802724



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-PFHxSK

**Potassium Perfluorohexanesulfonate
Solution/Mixture of Linear and
Branched Isomers**

PRODUCT CODE: br-PFHxSK
LOT NUMBER: brPFHxSK0117
CONCENTRATION: 50.0 ± 2.5 µg/ml (total potassium salt)
45.5 ± 2.3 µg/ml (total PFHxS anion)
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 01/03/2017
LAST TESTED: (mm/dd/yyyy) 01/04/2017
EXPIRY DATE: (mm/dd/yyyy) 01/04/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorohexanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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Table A: br-PFHxSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-hexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF(SO ₃ ⁻)K ⁺ CF ₃	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	CF ₃ CF ₂ CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	CF ₃ CF ₂ CF(CF ₃)CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	CF ₃ CF(CF ₃)CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.2
7	Other Unidentified Isomers		0.5

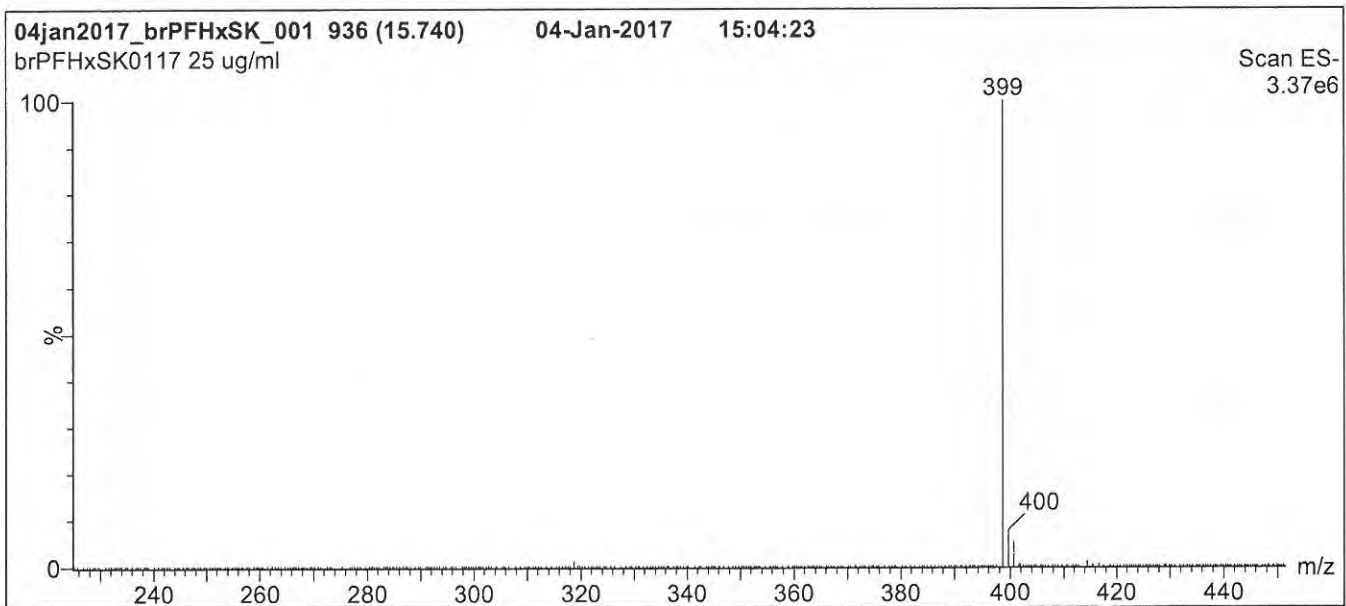
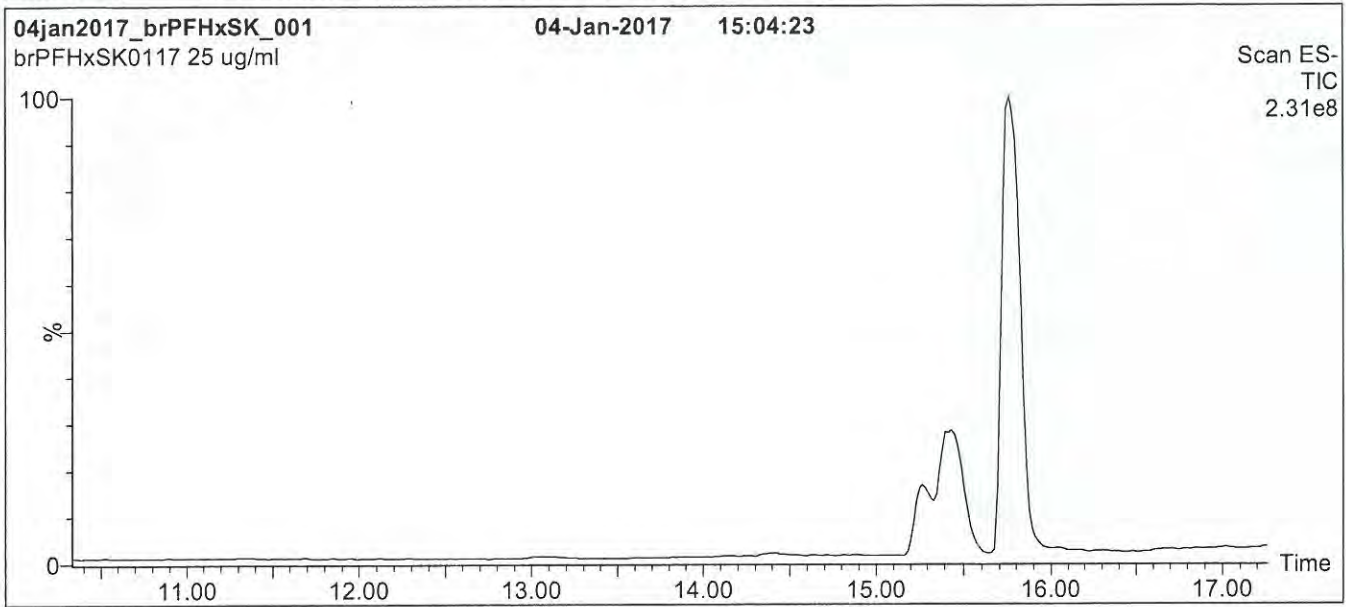
* Percent of total perfluorohexanesulfonate isomers only.
 ** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By:


 B.G. Chittim
Date: 01/20/2017
(mm/dd/yyyy)

18C2724

Figure 1: br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 50% organic over 14 min. Ramp to
90% organic over 3 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 20 min

Flow: 300 μ l/min

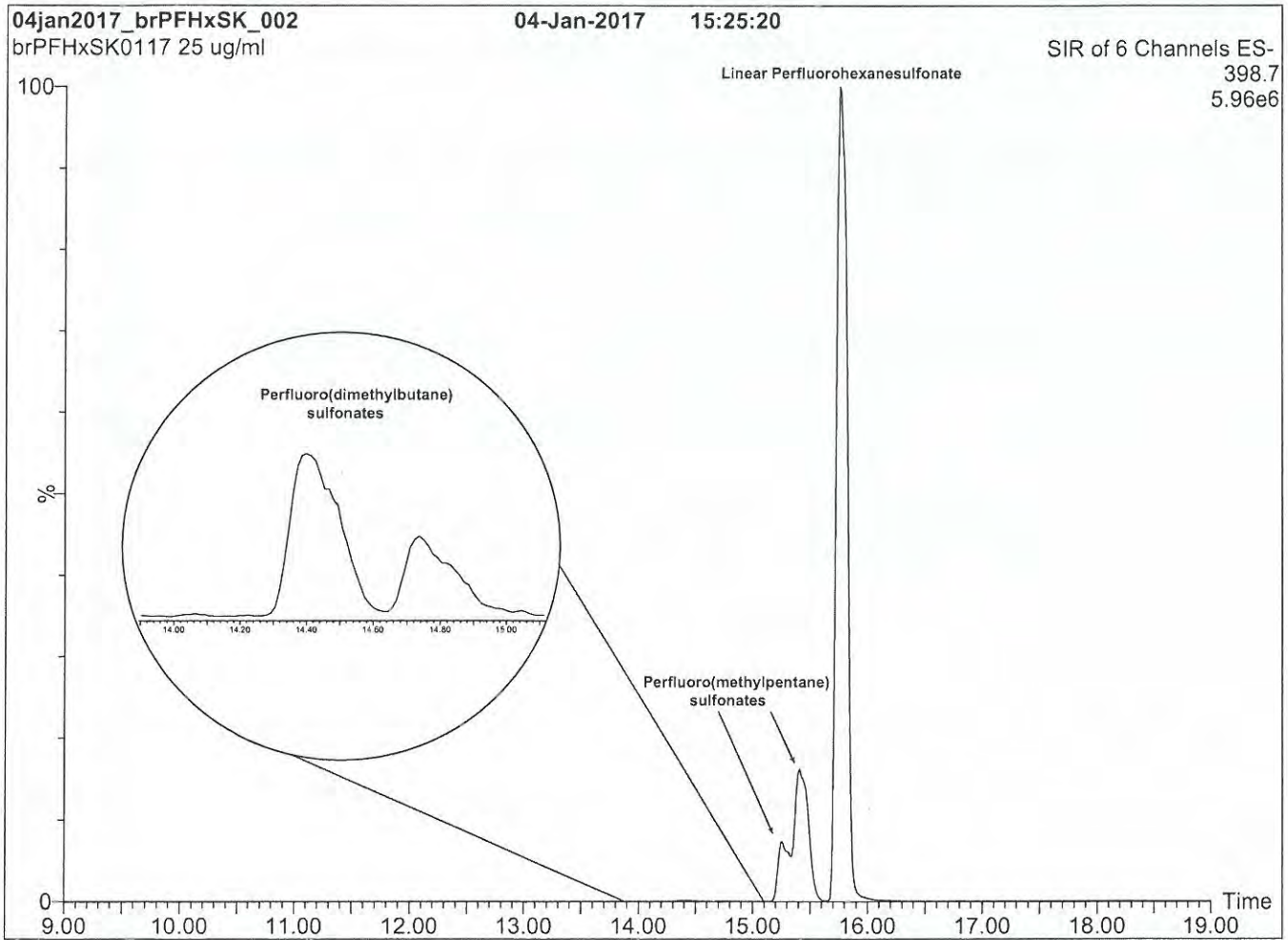
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

1802724

Figure 2: br-PFHxSK; LC/MS Data (SIR)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 20% (80:20 MeOH:ACN) / 80% H₂O
 (both with 10 mM NH₄OAc buffer)
 Ramp to 50% organic over 14 min. Ramp to
 90% organic over 3 min and hold for 1.5 min
 before returning to initial conditions in 0.5 min.
 Time: 20 min

Flow: 300 μ l/min

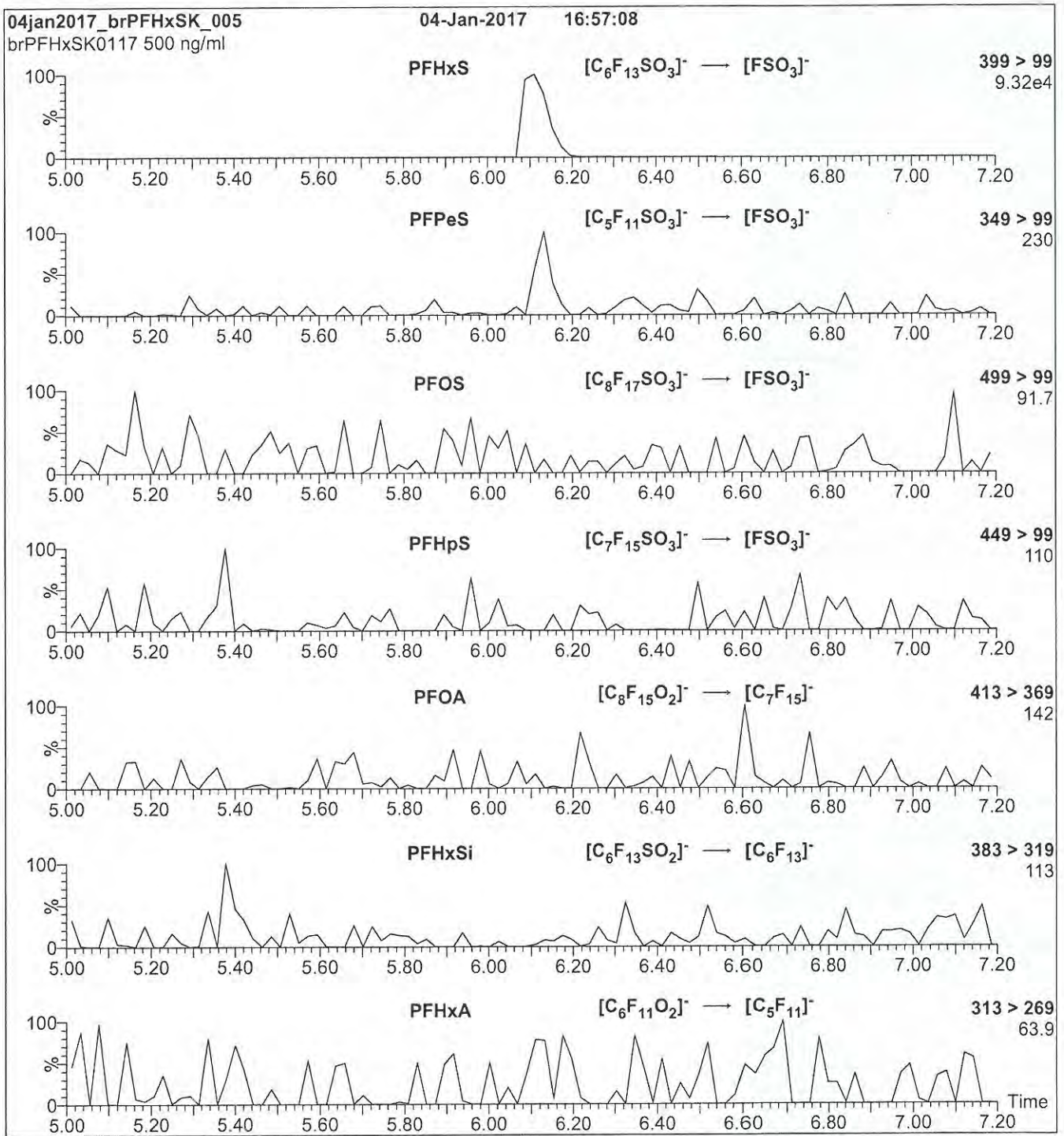
MS Parameters

Experiment: SIR (6 channels)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 3.00
 Cone Voltage (V) = variable (15-62)
 Cone Gas Flow (l/hr) = 60
 Desolvation Gas Flow (l/hr) = 750

18C2724

Figure 3: br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: Direct loop injection
10 μ l (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 30

18C2725



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-PFOSK

**Potassium Perfluorooctanesulfonate
Solution/Mixture of Linear and
Branched Isomers**

PRODUCT CODE: br-PFOSK
LOT NUMBER: brPFOSK0117
CONCENTRATION: 50 ± 2.5 µg/ml (total potassium salt)
46.4 ± 2.3 µg/ml (total PFOS anion)
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 01/09/2017
LAST TESTED: (mm/dd/yyyy) 01/12/2017
EXPIRY DATE: (mm/dd/yyyy) 01/12/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18C2725

Table A: br-PFOSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃ CF ₃	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃ CF ₃	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃ CF ₃	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ·K ⁺ CF ₃ CF ₃	0.07

* Percent of total perfluorooctanesulfonate isomers only. Isomers are labeled in Figure 2.

** Systematic Name: Potassium perfluorooctane-2-sulfonate.

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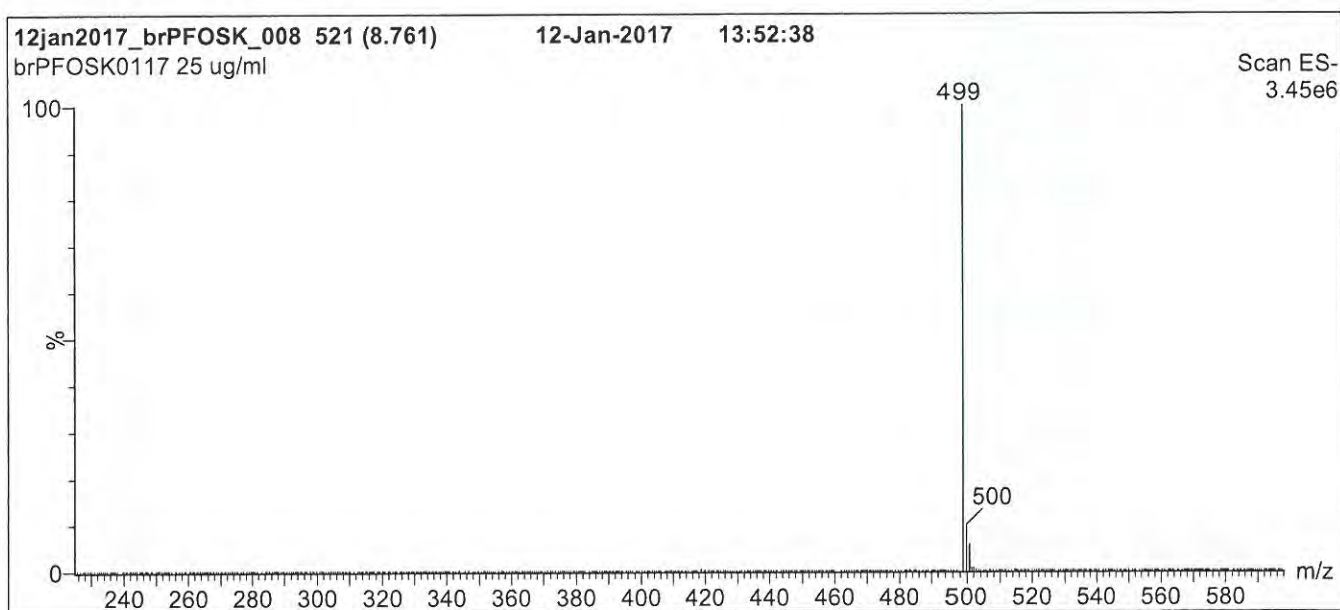
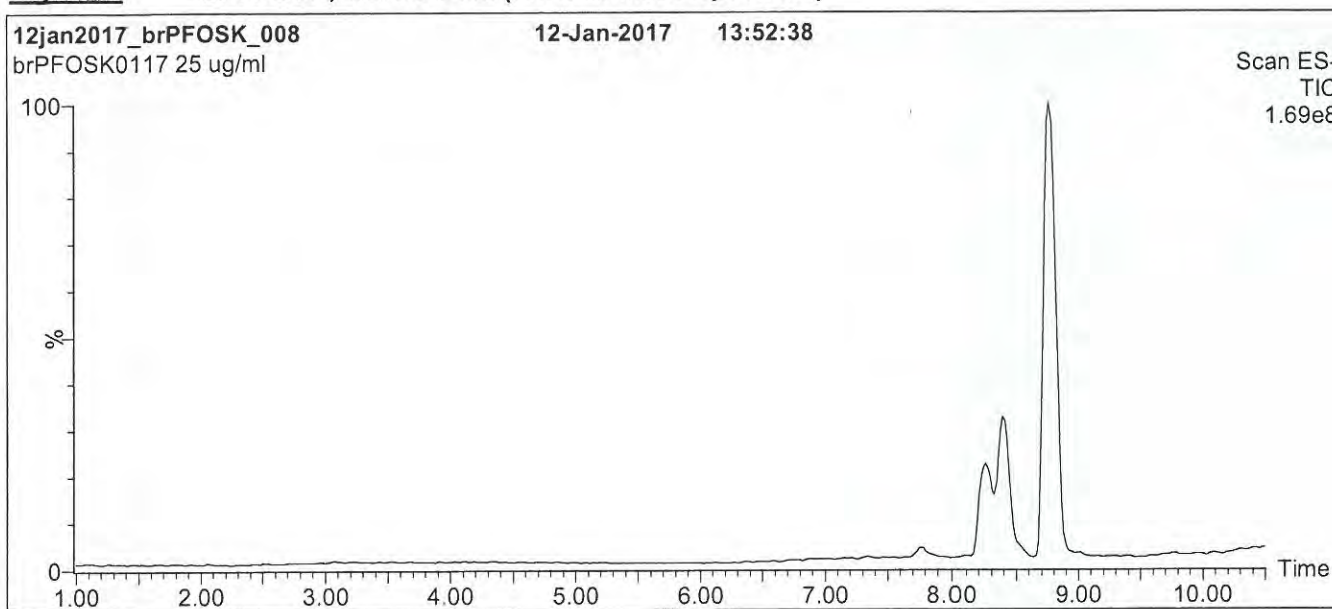

 B.G. Chittim

Date: 01/20/2017

(mm/dd/yyyy)

18C2725

Figure 1: br-PFOSK; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 12 min and hold for 2 min.
Return to initial conditions over 0.5 min.
Time: 16 min

Flow: 300 μl/min

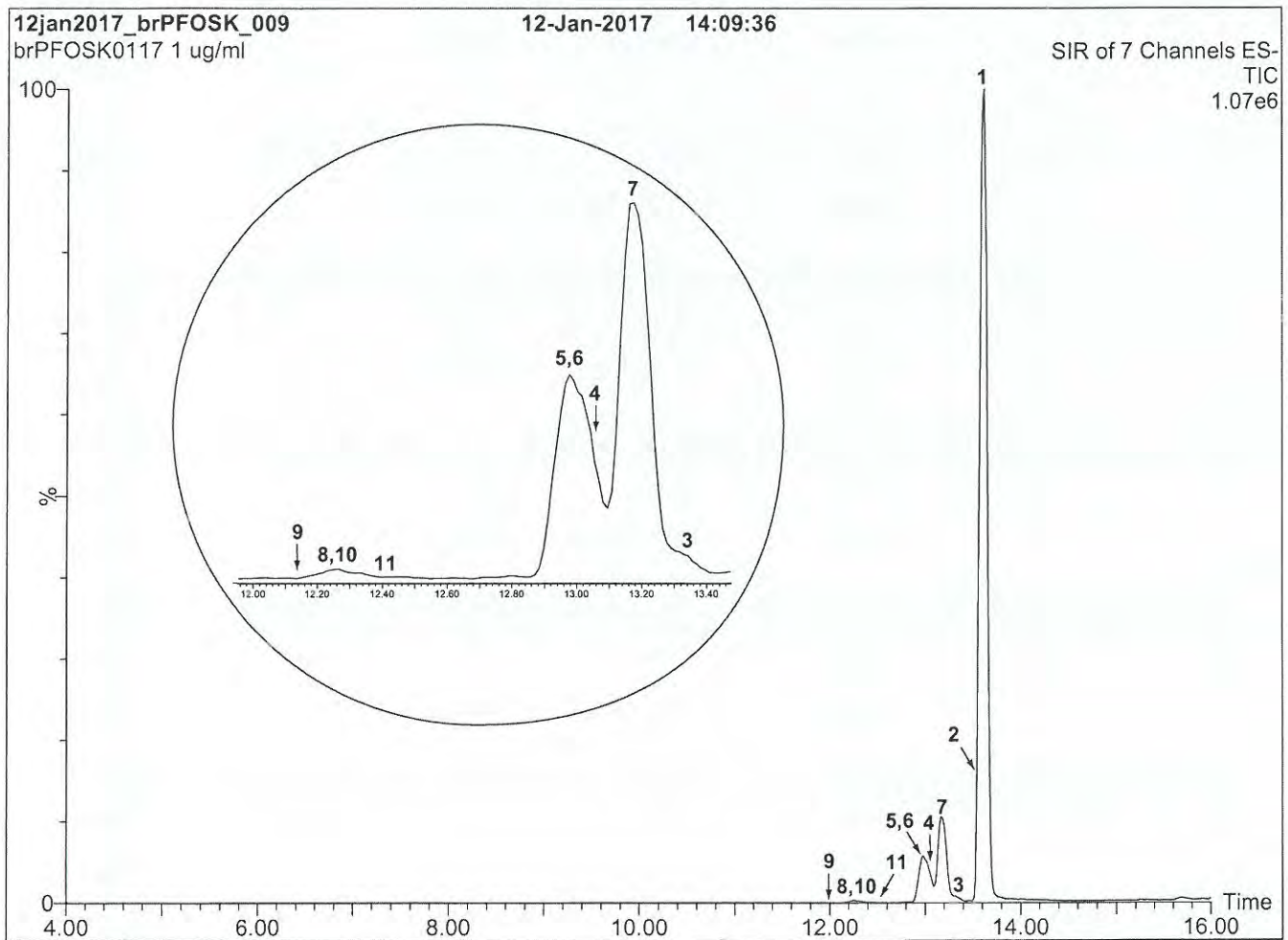
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1802725

Figure 2: br-PFOSK; LC/MS Data (SIR)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions:

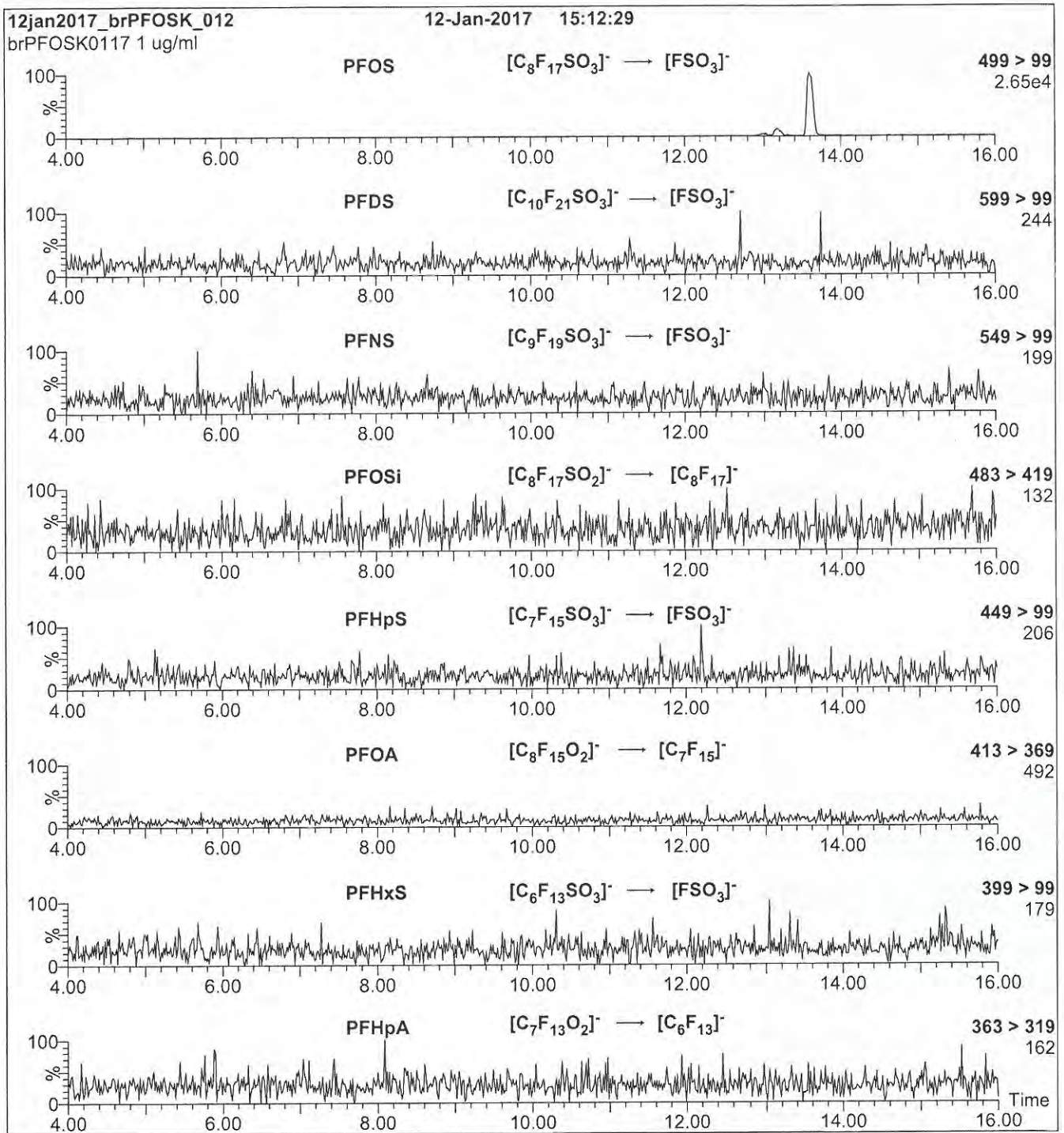
Column: Acquity UPLC BEH Shield RP₁₈ (1.7 μ m, 2.1 x 100 mm)
Injection: 1.0 μ g/ml of br-PFOSK
Mobile Phase: Gradient
45% (80:20 MeOH:ACN) / 55% H₂O (both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 15 min and hold for 3 min.
Return to initial conditions over 1 min.
Time: 20 min
Flow: 300 μ l/min

MS Conditions:

SIR (ES)
Source = 110 $^{\circ}$ C
Desolvation = 325 $^{\circ}$ C
Cone Voltage = 60V

18C2725

Figure 3: br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column
 Mobile phase: Same as Figure 2
 Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
 Collision Energy (eV) = 11-50 (variable)

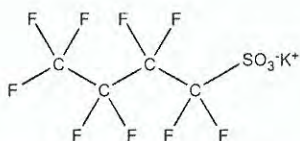
18C2726



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFBS **LOT NUMBER:** LPFBS0917
COMPOUND: Potassium perfluoro-1-butanesulfonate
STRUCTURE: **CAS #:** 29420-49-3



MOLECULAR FORMULA: C₄F₉SO₃K **MOLECULAR WEIGHT:** 338.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
 44.2 ± 2.2 µg/ml (PFBS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/21/2017
EXPIRY DATE: (mm/dd/yyyy) 09/21/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 09/22/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1802726

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

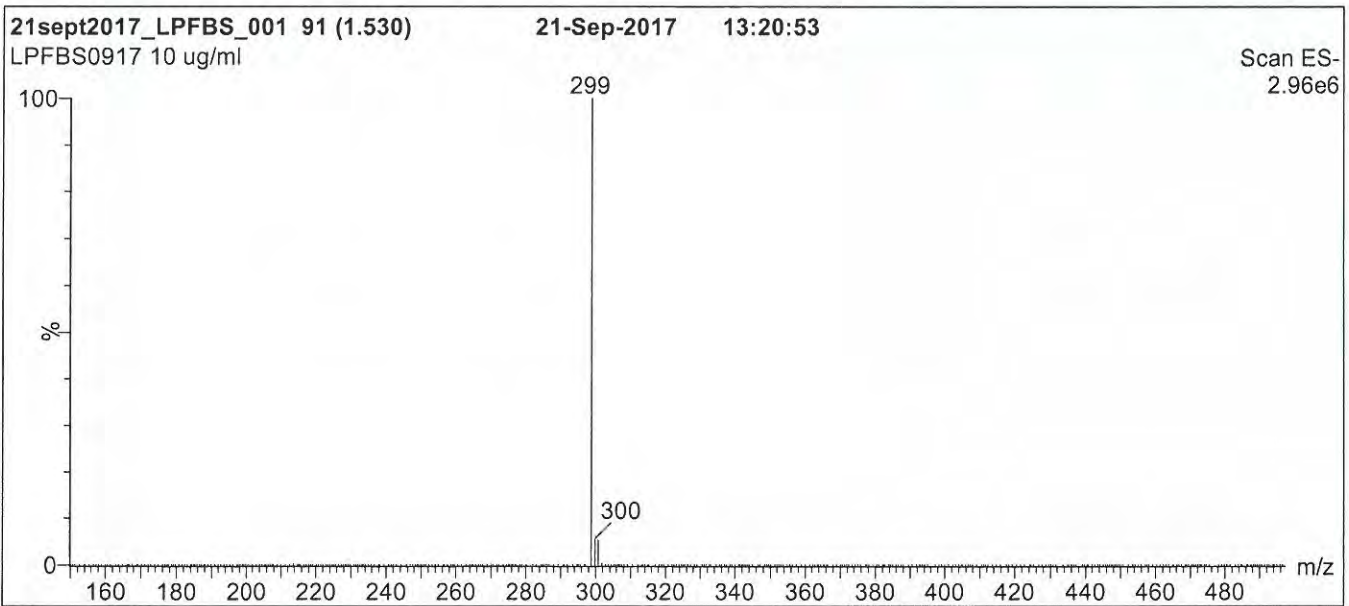
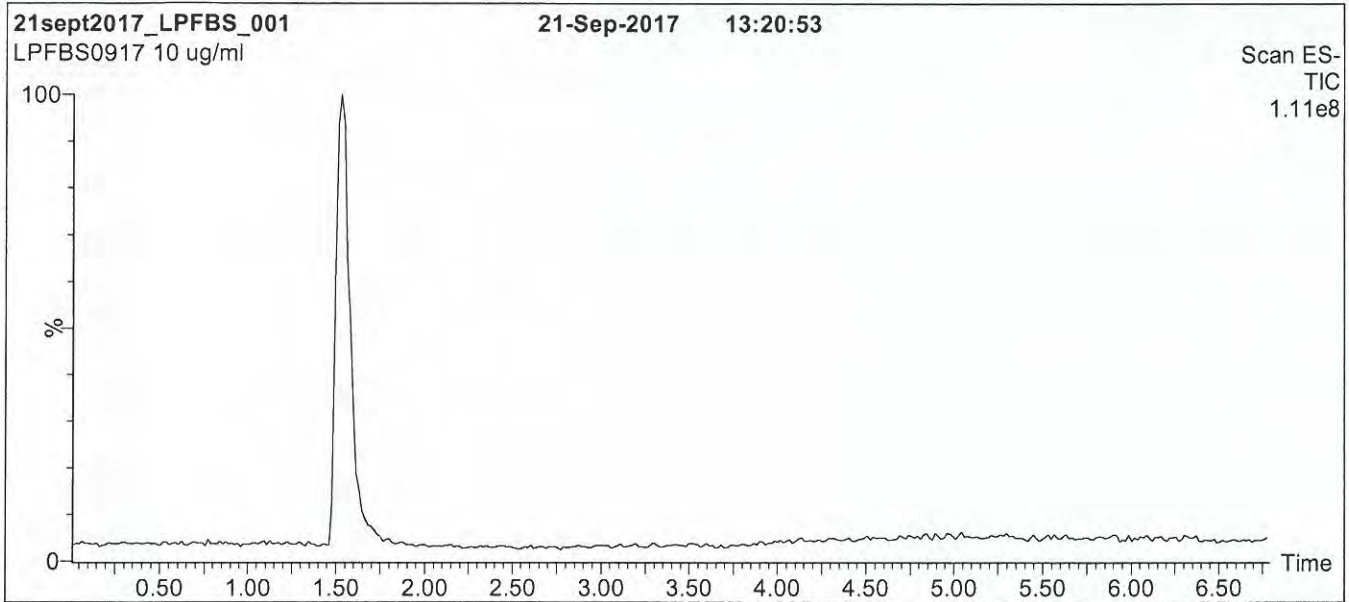
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2726

Figure 1: L-PFBS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

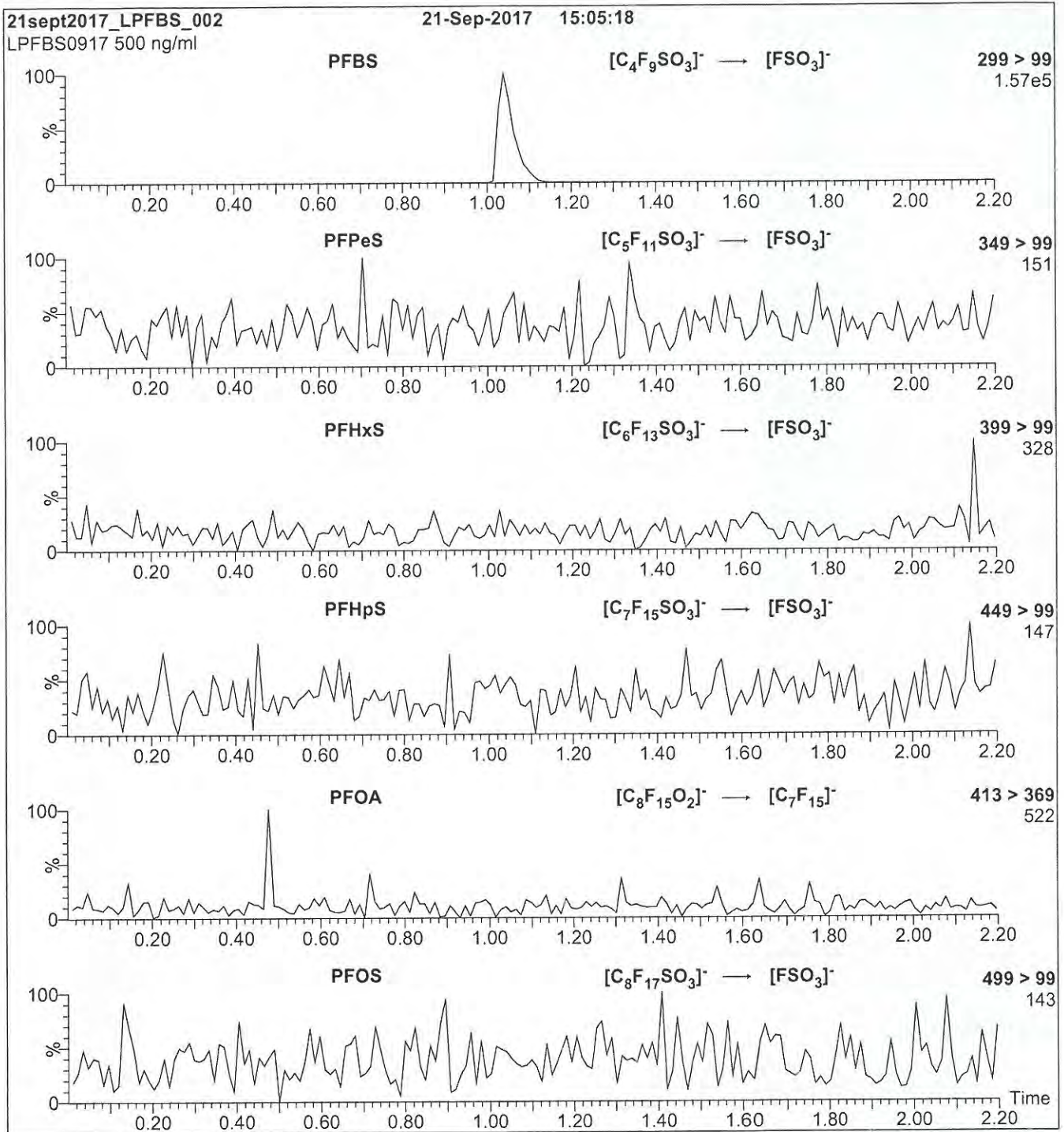
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2726

Figure 2: L-PFBS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

18C2727


WELLINGTON
 LABORATORIES

CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: L-PFPeS **LOT NUMBER:** LPFPeS0117
COMPOUND: Sodium perfluoro-1-pentanesulfonate
STRUCTURE: **CAS #:** 630402-22-1



MOLECULAR FORMULA: C₅F₁₁SO₃Na **MOLECULAR WEIGHT:** 372.09
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 46.9 ± 2.3 µg/ml (PFPeS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/11/2017
EXPIRY DATE: (mm/dd/yyyy) 01/11/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place


DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date: 09/06/2017

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1802727

INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

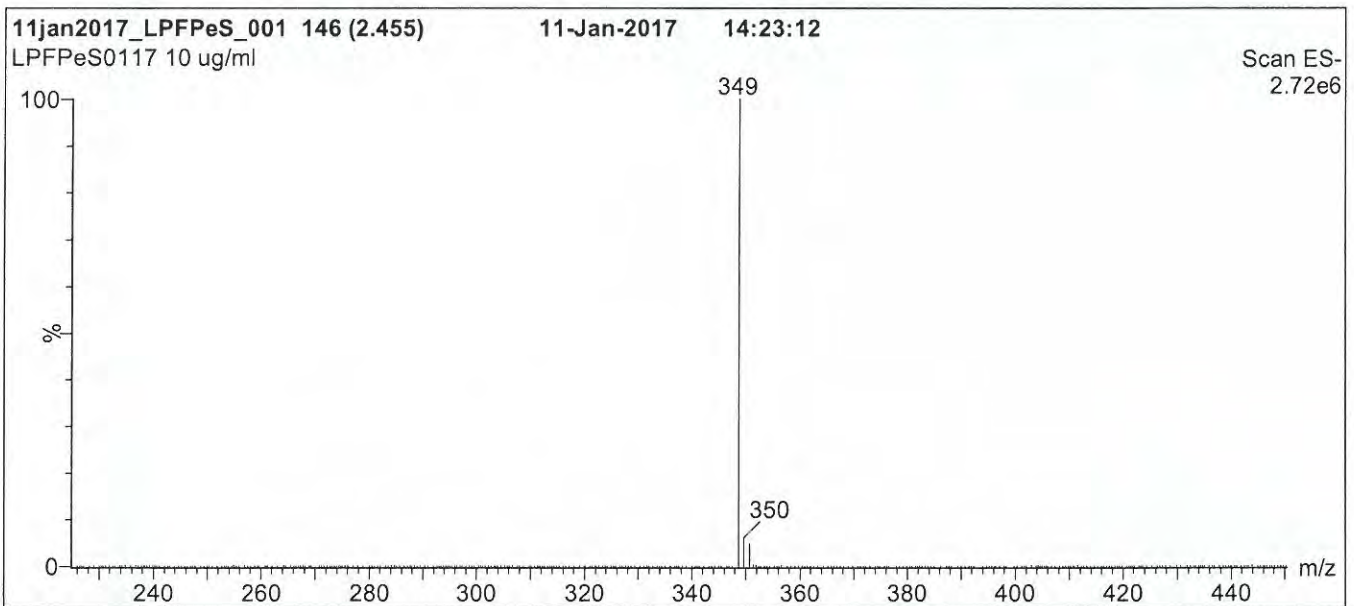
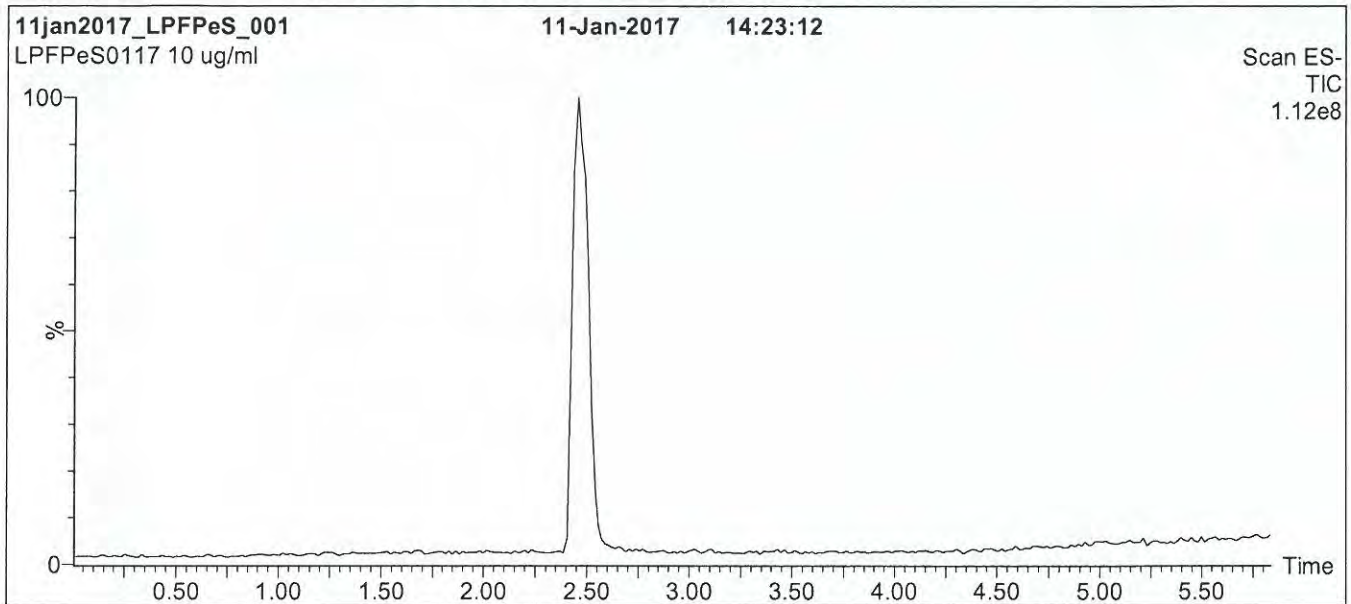
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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1802727

Figure 1: L-PFPeS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions over 0.5 min.
Time: 10 min

Flow: 300 μ l/min

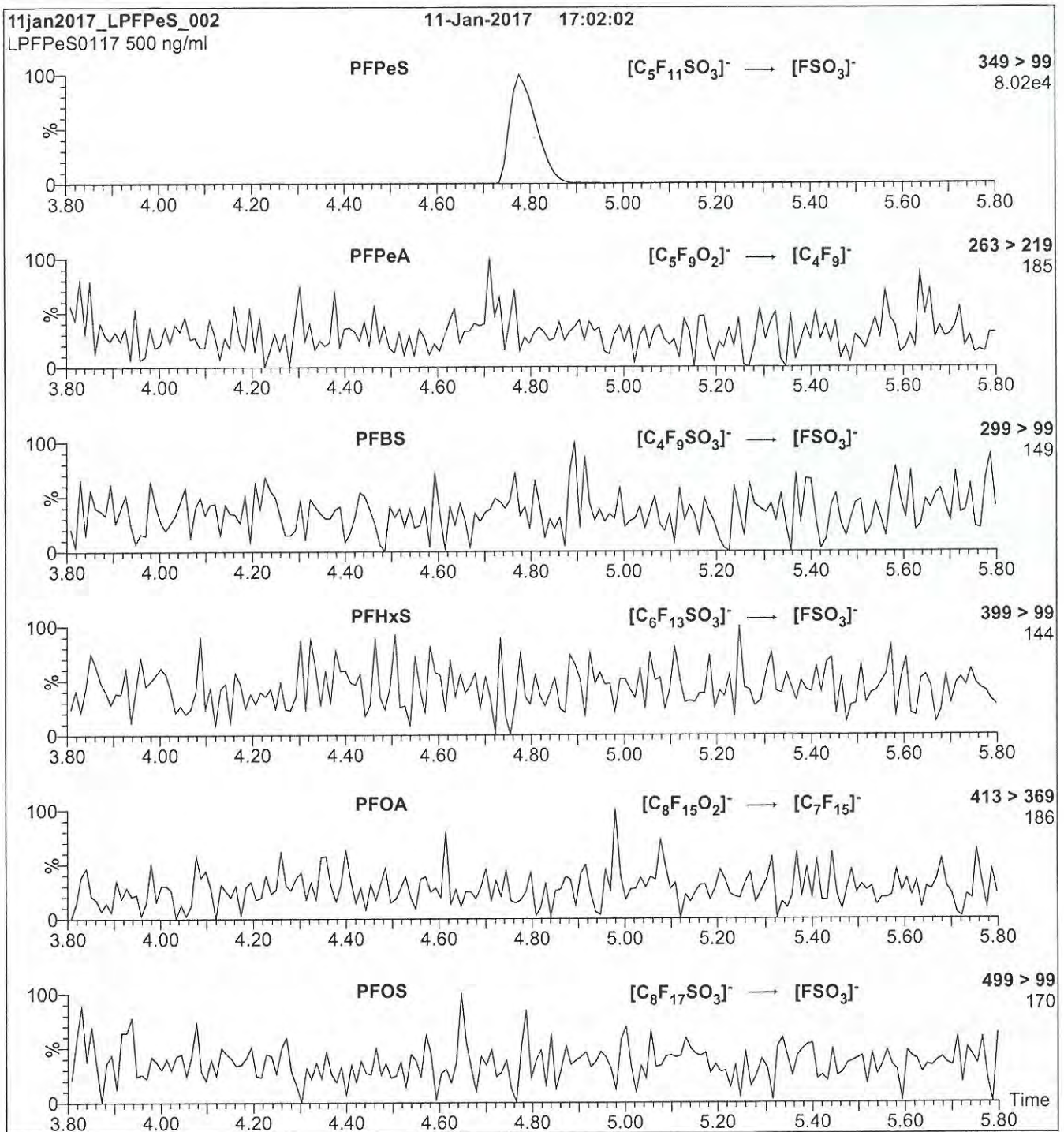
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

1802727

Figure 2: L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml L-PFPeS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 30

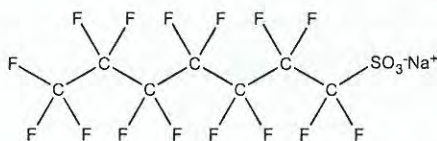
1802728



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFHpS **LOT NUMBER:** LPFHpS0817
COMPOUND: Sodium perfluoro-1-heptanesulfonate
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $C_7F_{15}SO_3Na$ **MOLECULAR WEIGHT:** 472.10
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/ml}$ (Na salt) **SOLVENT(S):** Methanol
 $47.6 \pm 2.4 \mu\text{g/ml}$ (PFHpS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/01/2017
EXPIRY DATE: (mm/dd/yyyy) 09/01/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of L-PFHxS ($C_8F_{13}SO_3Na$) and ~ 0.1% of L-PFOS ($C_8F_{17}SO_3Na$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 09/07/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2728

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

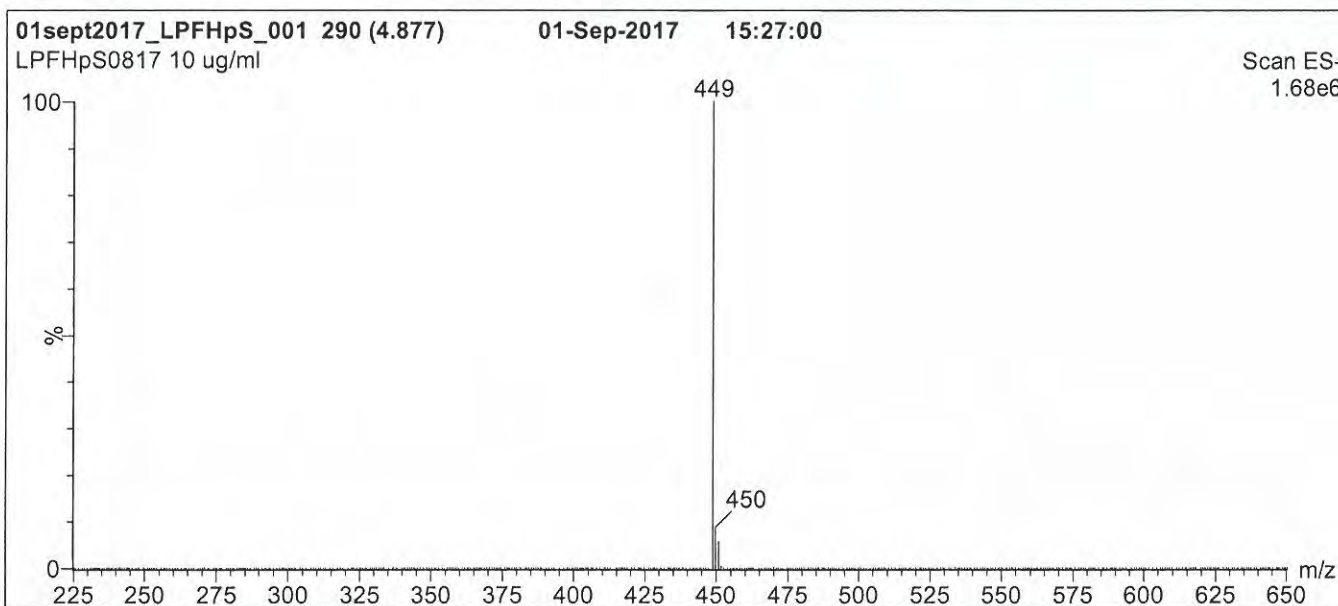
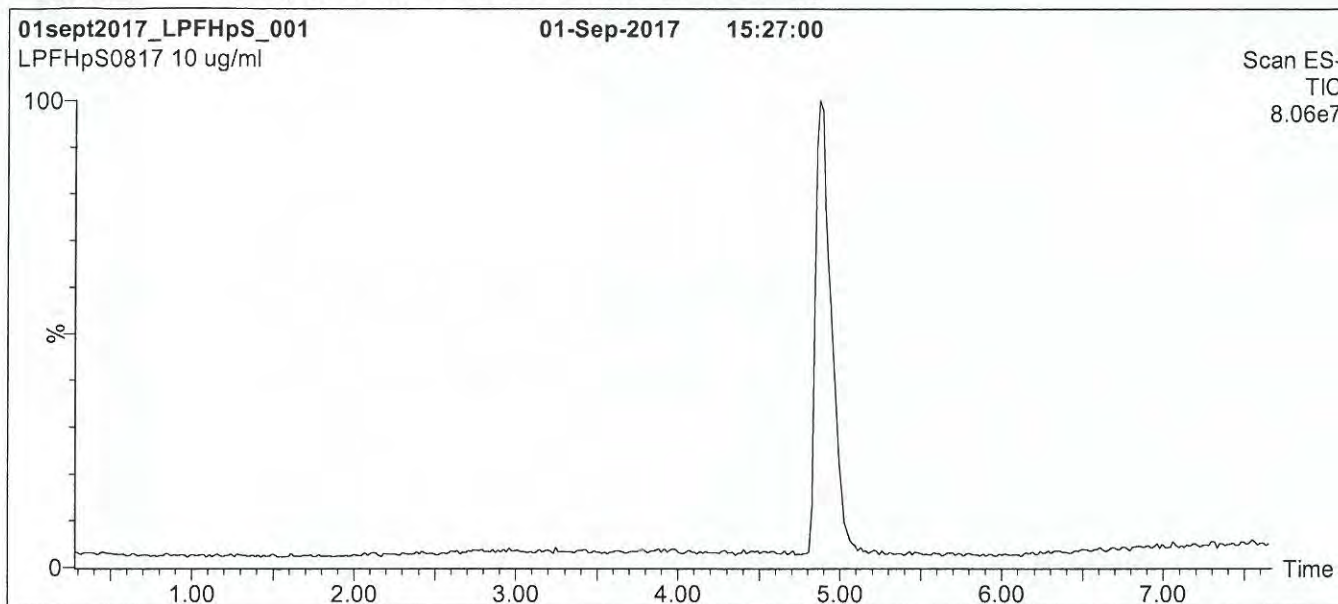
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1802728

Figure 1: L-PFHpS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold
for 1 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

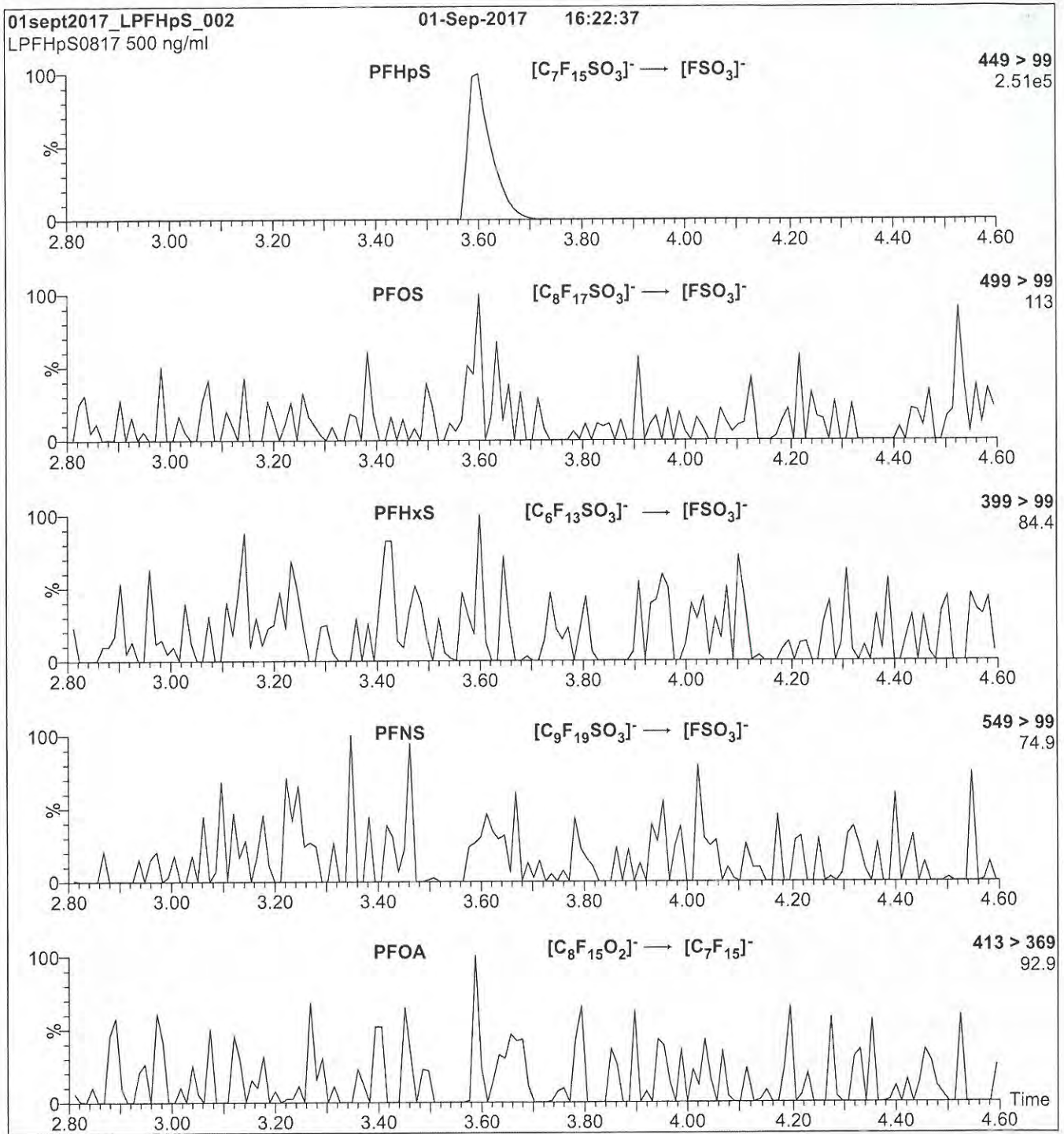
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18C2728

Figure 2: L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 μ l (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
 Collision Energy (eV) = 35

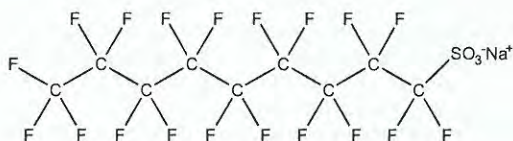
18C2729



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFNS **LOT NUMBER:** LPFNS0917
COMPOUND: Sodium perfluoro-1-nonanesulfonate
STRUCTURE: **CAS #:** 98789-57-2



MOLECULAR FORMULA: C₉F₁₉SO₃Na **MOLECULAR WEIGHT:** 572.12
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
48.0 ± 2.4 µg/ml (PFNS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/27/2017
EXPIRY DATE: (mm/dd/yyyy) 09/27/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 09/28/2017
B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2729

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

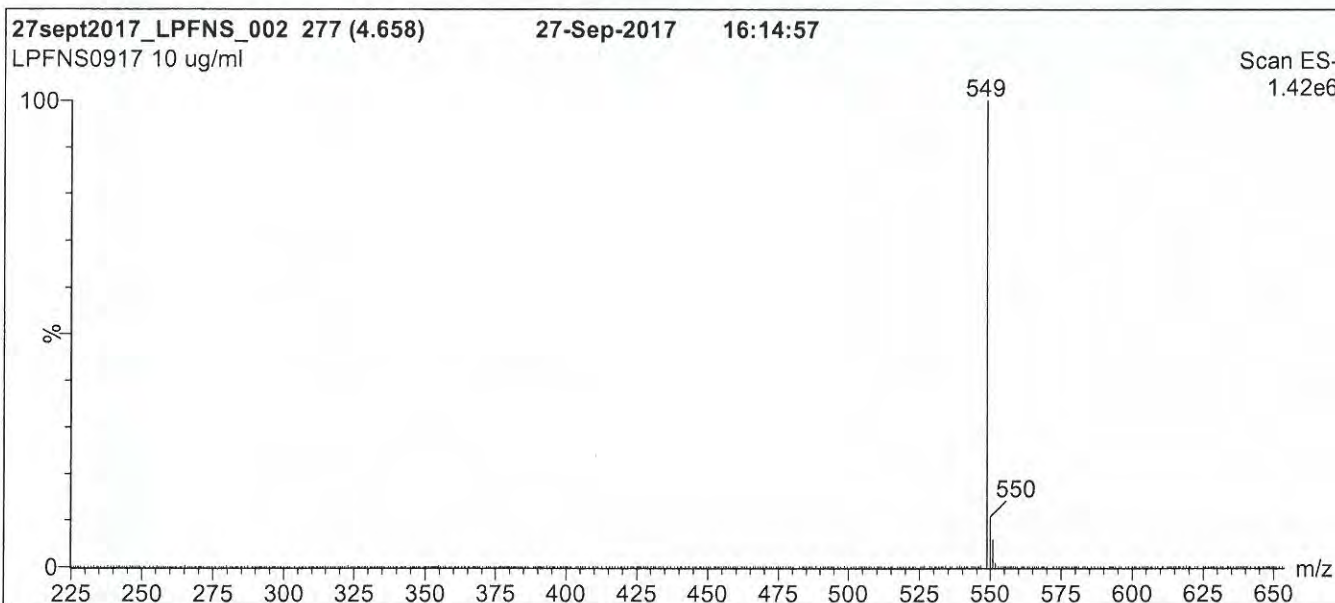
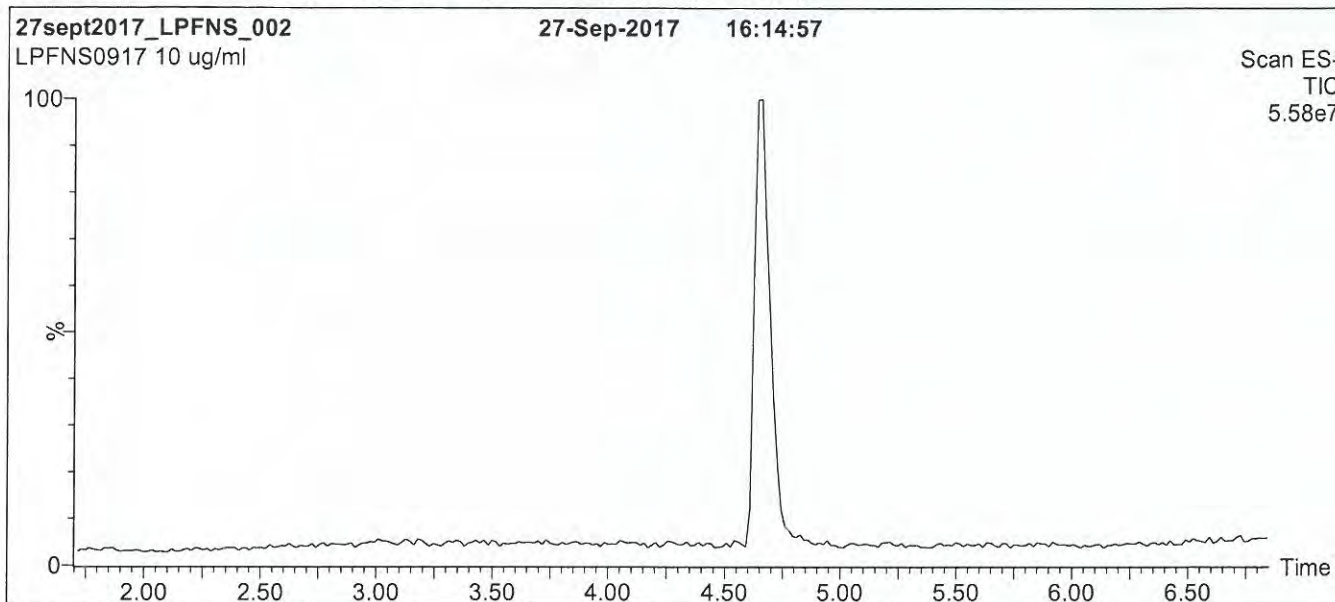
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1802729

Figure 1: L-PFNS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

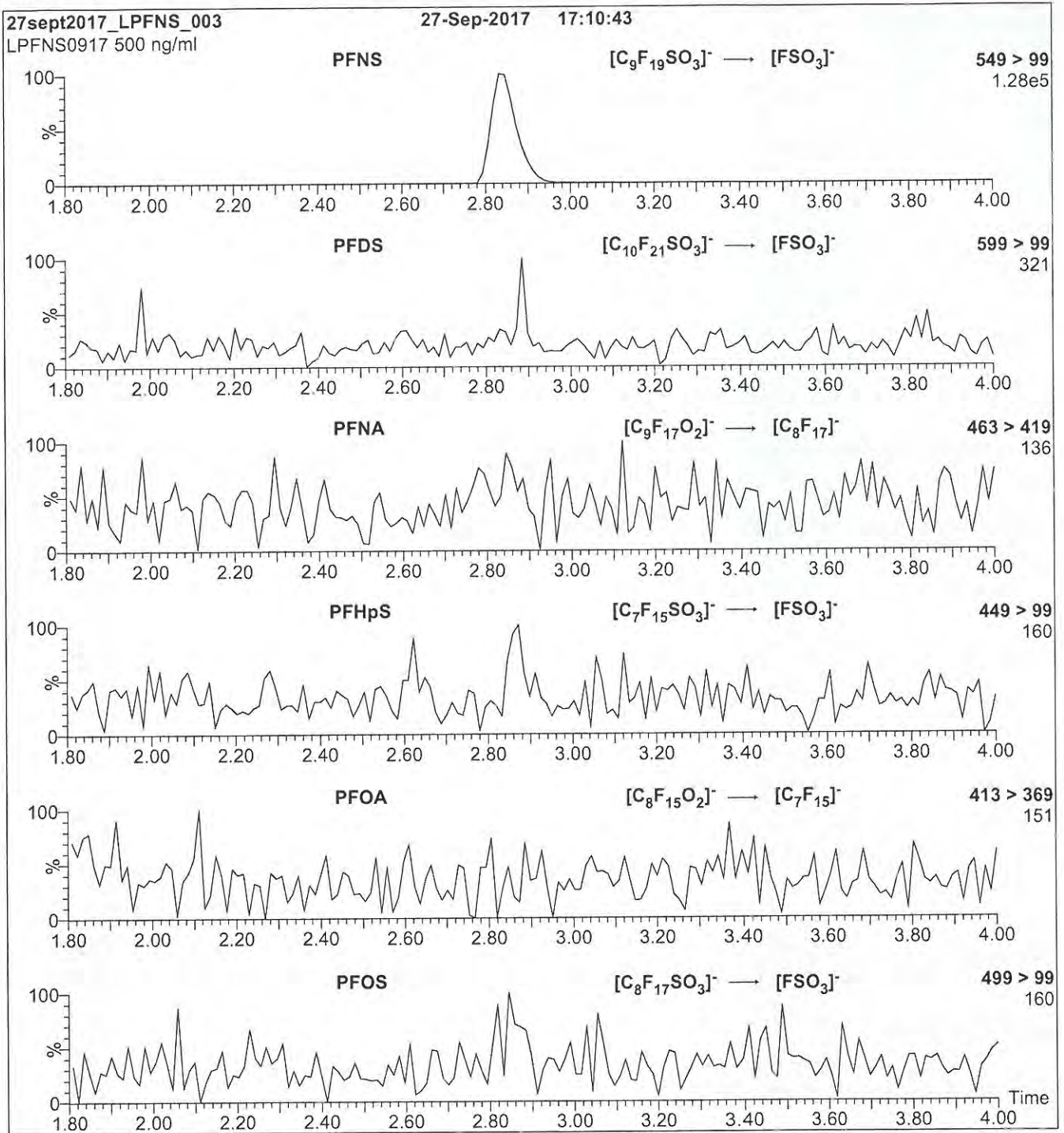
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2729

Figure 2: L-PFNS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 µl (500 ng/ml L-PFNS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
 Collision Energy (eV) = 45

18C2730

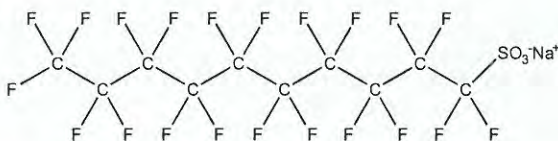


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFDS **LOT NUMBER:** LPFDS1117
COMPOUND: Sodium perfluoro-1-decanesulfonate

STRUCTURE: **CAS #:** 2806-15-7



MOLECULAR FORMULA: $C_{10}F_{21}SO_3Na$ **MOLECULAR WEIGHT:** 622.13
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/ml}$ (Na salt) **SOLVENT(S):** Methanol
 $48.2 \pm 2.4 \mu\text{g/ml}$ (PFDS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/08/2017
EXPIRY DATE: (mm/dd/yyyy) 11/08/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 11/16/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2730

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

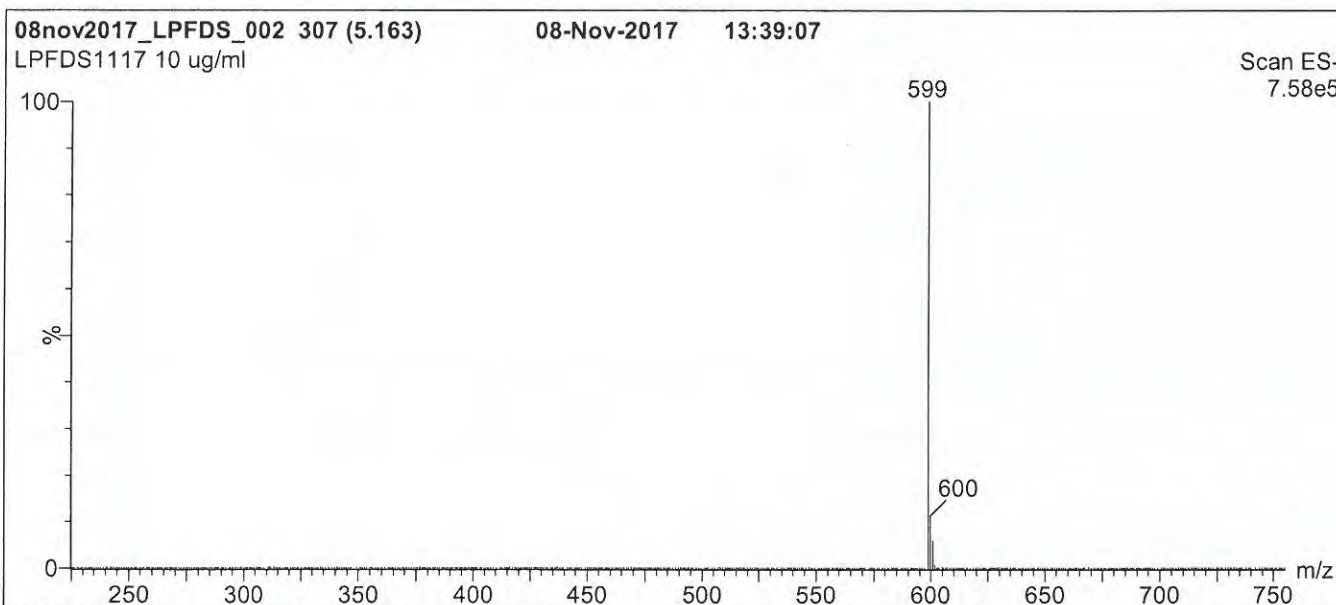
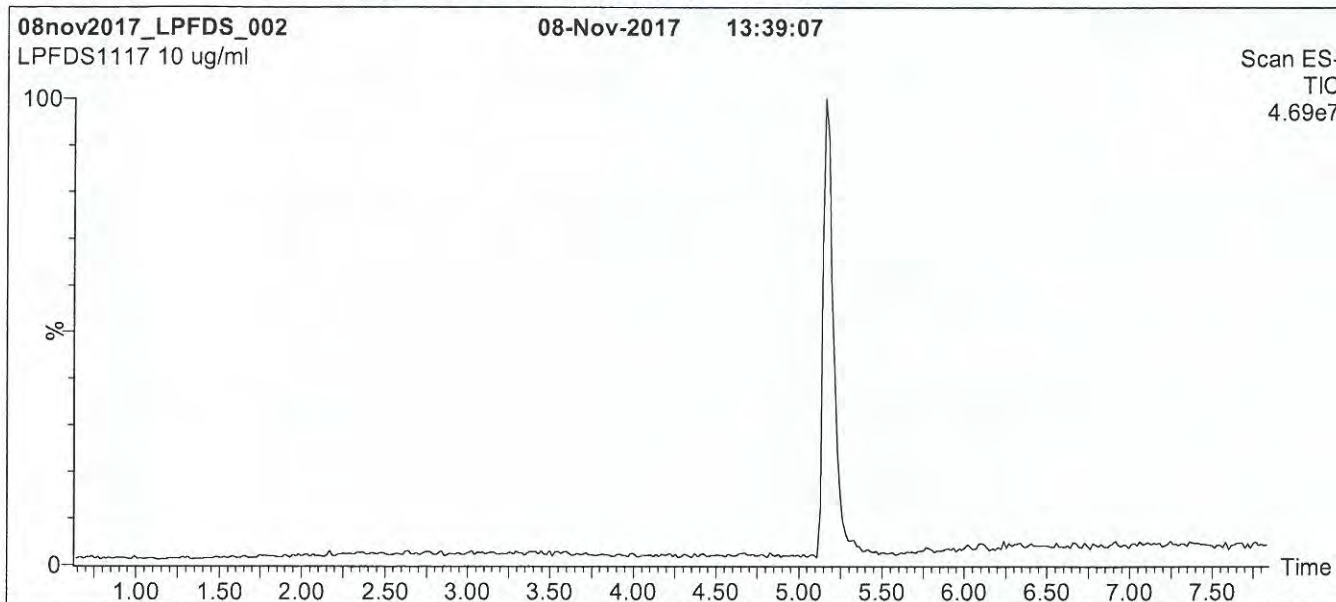
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18C2730

Figure 1: L-PFDS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

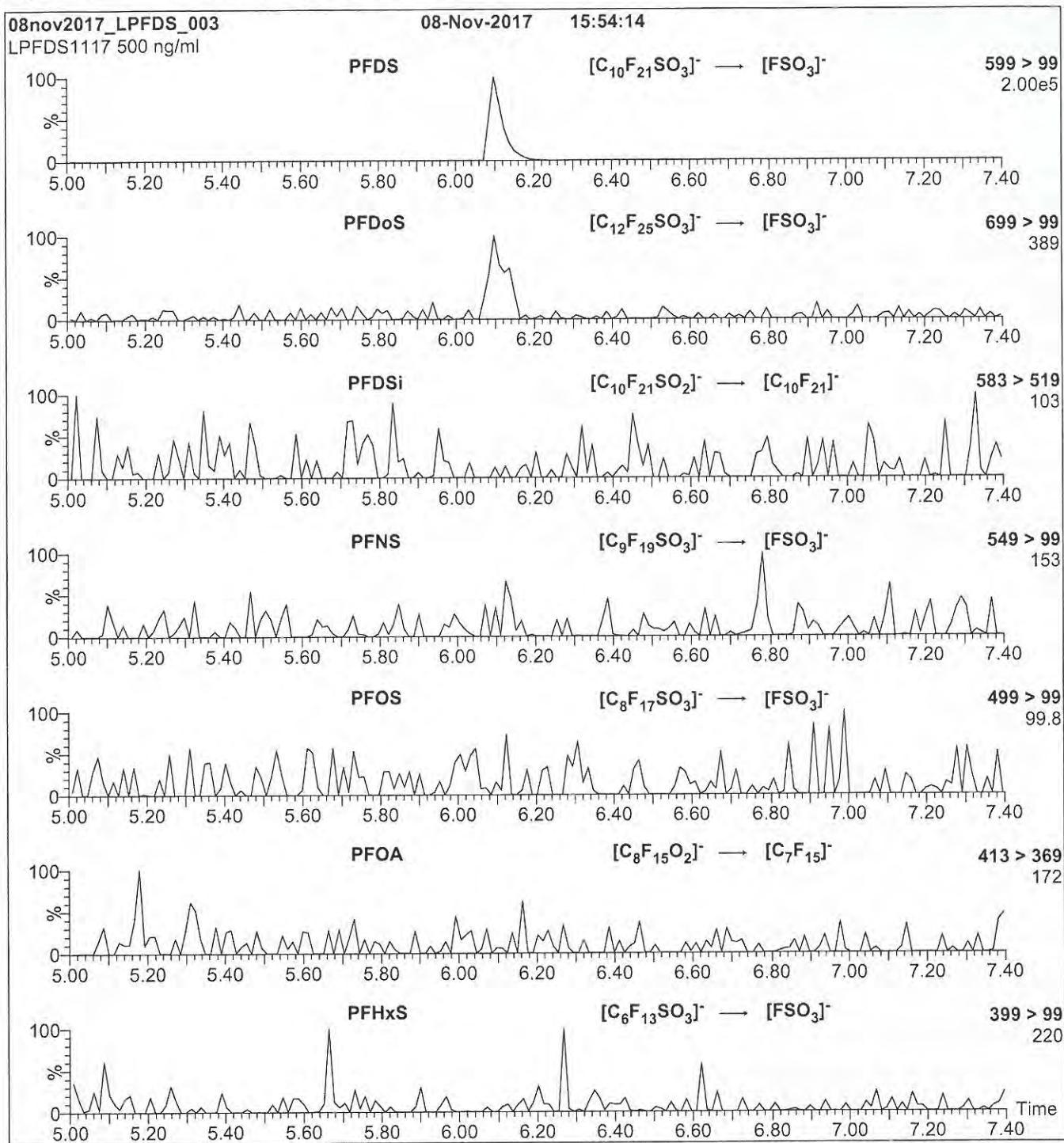
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 70.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2730

Figure 2: L-PFDS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml L-PFDS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 50

18C2731

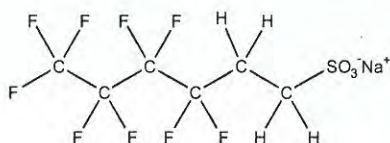


WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 4:2FTS **LOT NUMBER:** 42FTS1216
COMPOUND: Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₆H₄F₉SO₃Na **MOLECULAR WEIGHT:** 350.13
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
46.7 ± 2.3 µg/ml (4:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/12/2016
EXPIRY DATE: (mm/dd/yyyy) 12/12/2021
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim **Date:** 12/21/2016
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2731

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

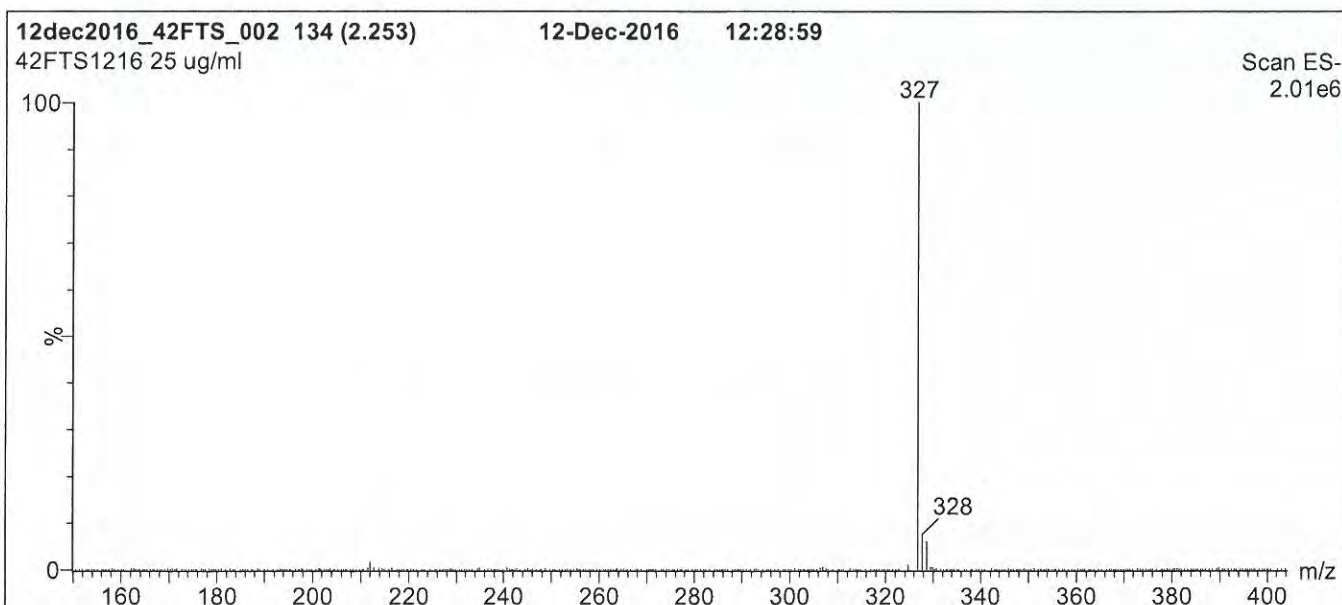
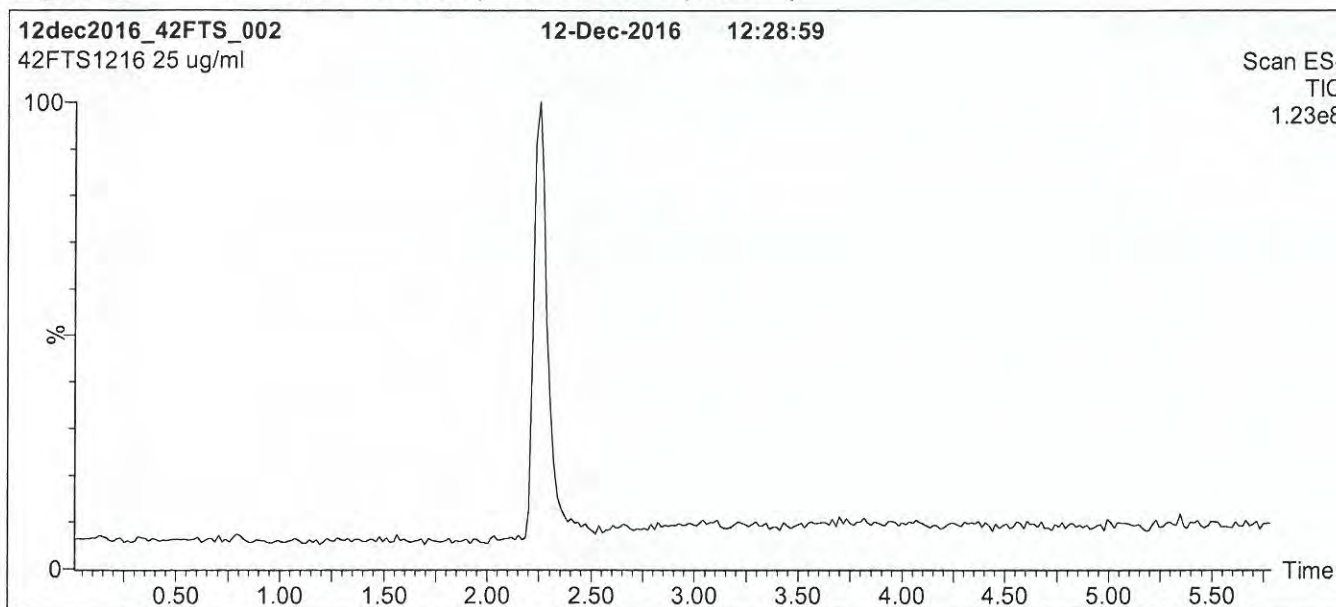
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1802731

Figure 1: 4:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

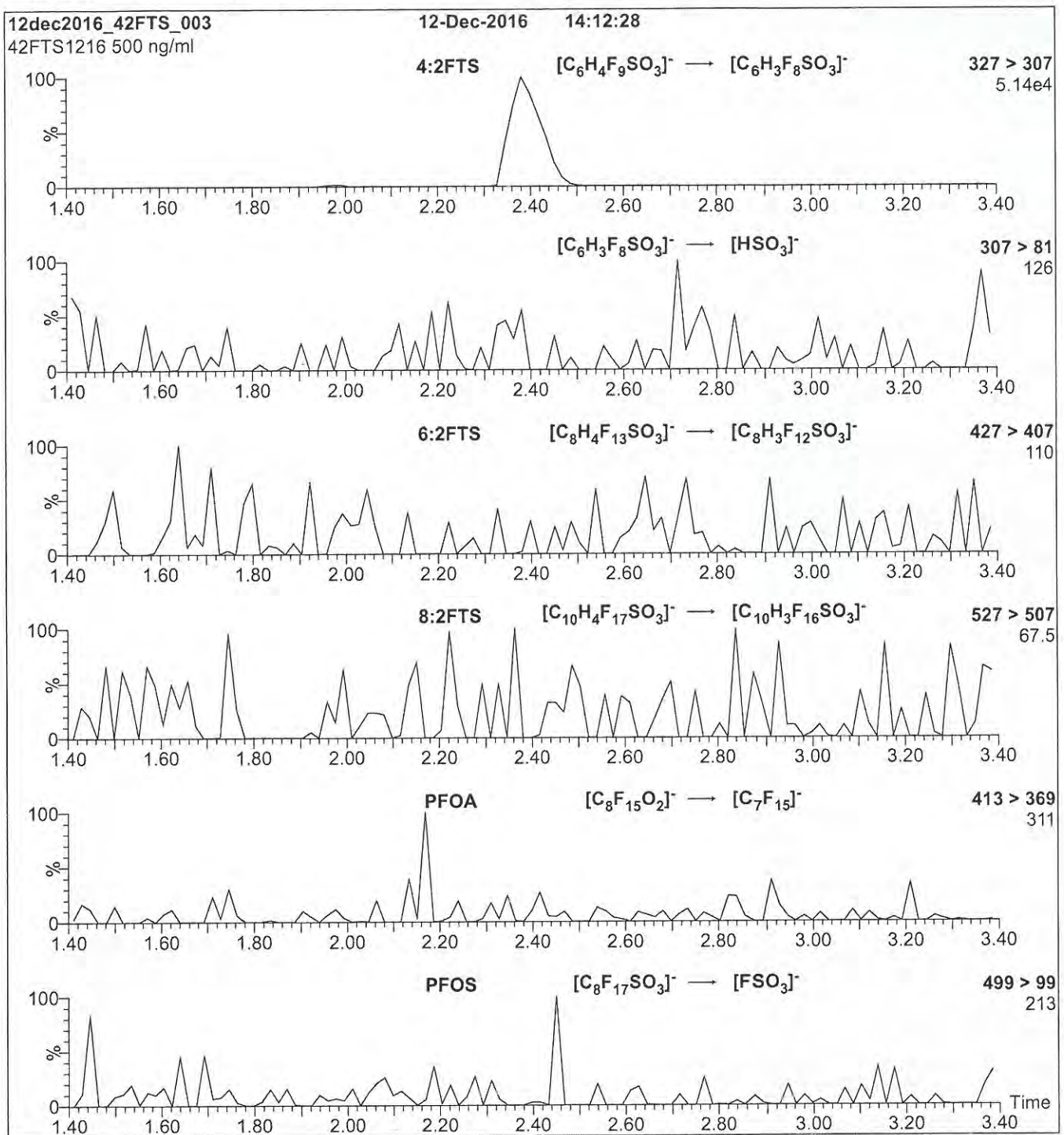
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18C2731

Figure 2: 4:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml 4:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 25

18C2732

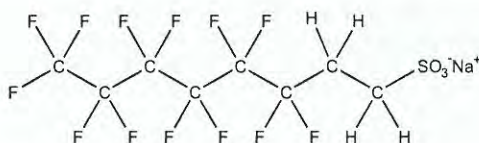


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 6:2FTS **LOT NUMBER:** 62FTS0417
COMPOUND: Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $C_8H_4F_{13}SO_3Na$ **MOLECULAR WEIGHT:** 450.15
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/ml}$ (Na salt) **SOLVENT(S):** Methanol
 $47.4 \pm 2.4 \mu\text{g/ml}$ (6:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/20/2017
EXPIRY DATE: (mm/dd/yyyy) 04/20/2022
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

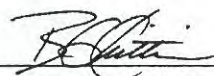
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 04/24/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2732

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

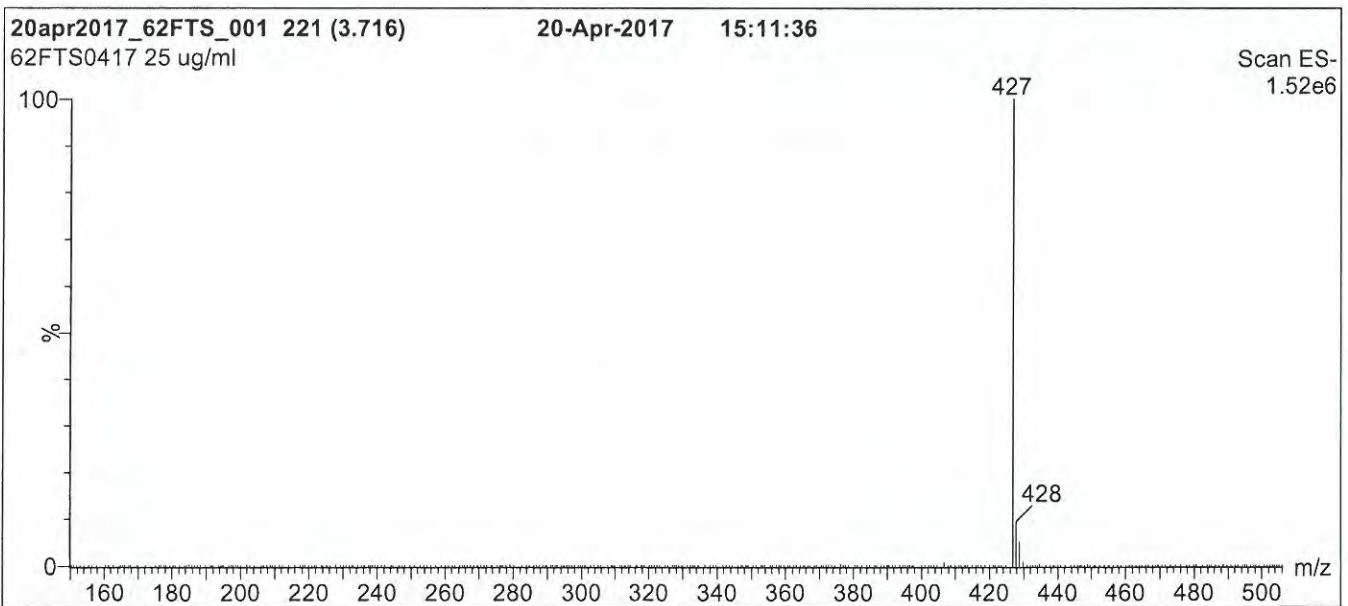
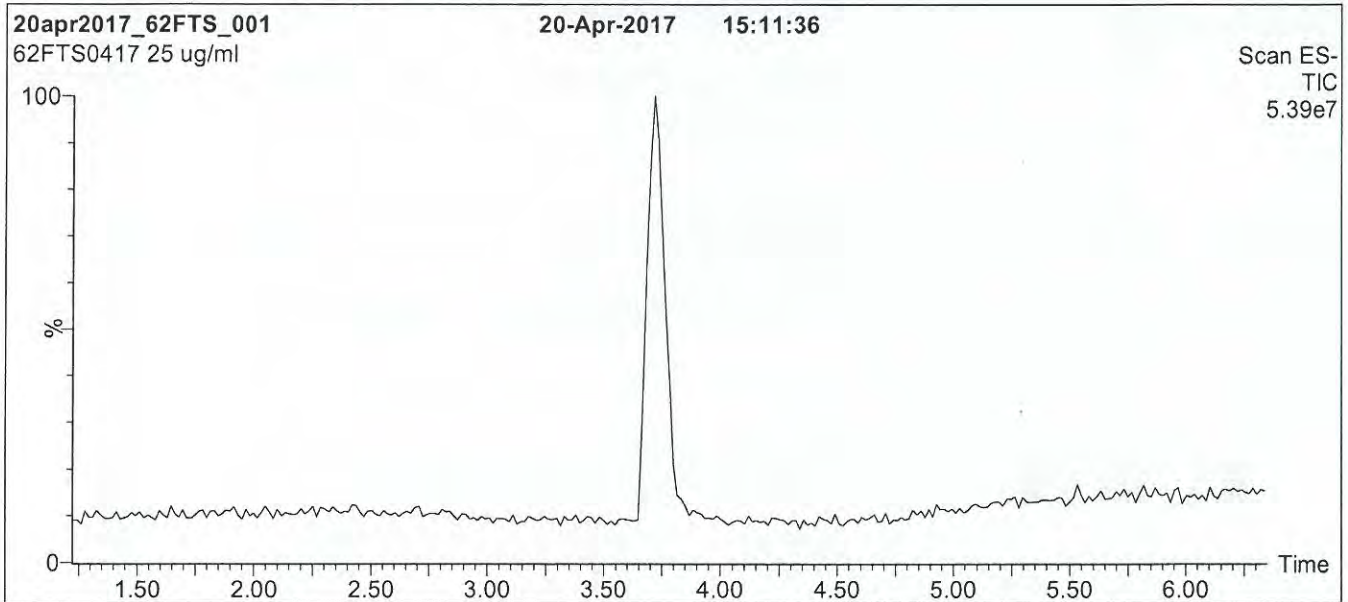
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2732

Figure 1: 6:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 85% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

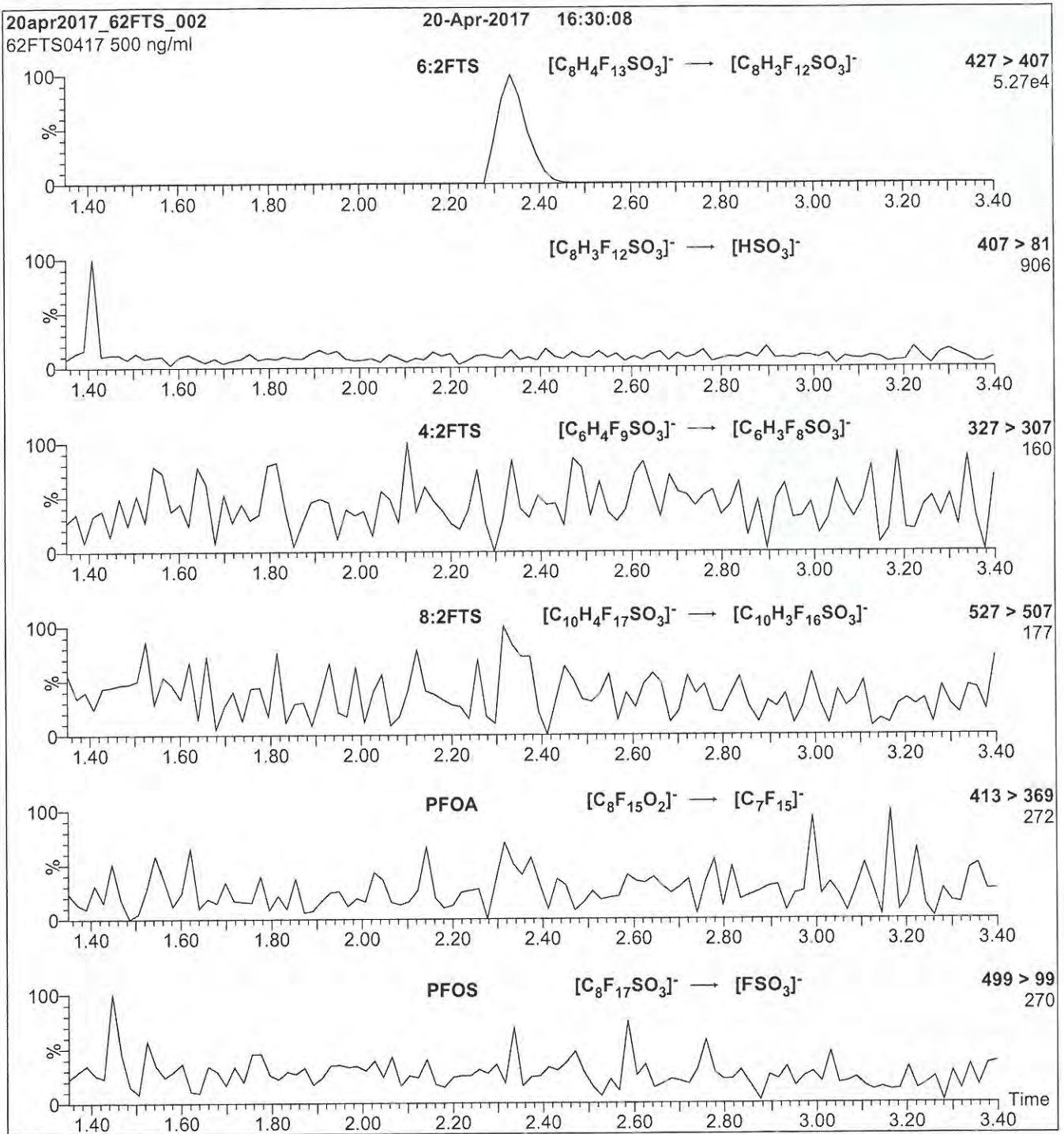
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1802732

Figure 2: 6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml 6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 25

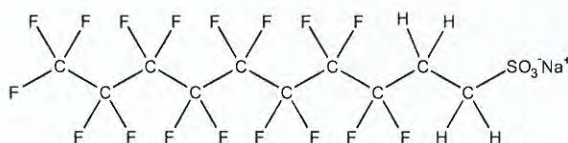
18C2733


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CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS0118

COMPOUND: Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

STRUCTURE: **CAS #:** Not available


MOLECULAR FORMULA:	$C_{10}H_4F_{17}SO_3Na$	MOLECULAR WEIGHT:	550.16
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt)	SOLVENT(S):	Methanol
	47.9 ± 2.4 µg/ml (8:2FTS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	01/24/2018		
EXPIRY DATE: (mm/dd/yyyy)	01/24/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE
Certified By: 
 B.G. Chittim, General Manager

Date: 01/31/2018
 (mm/dd/yyyy)

 Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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TRACEABILITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

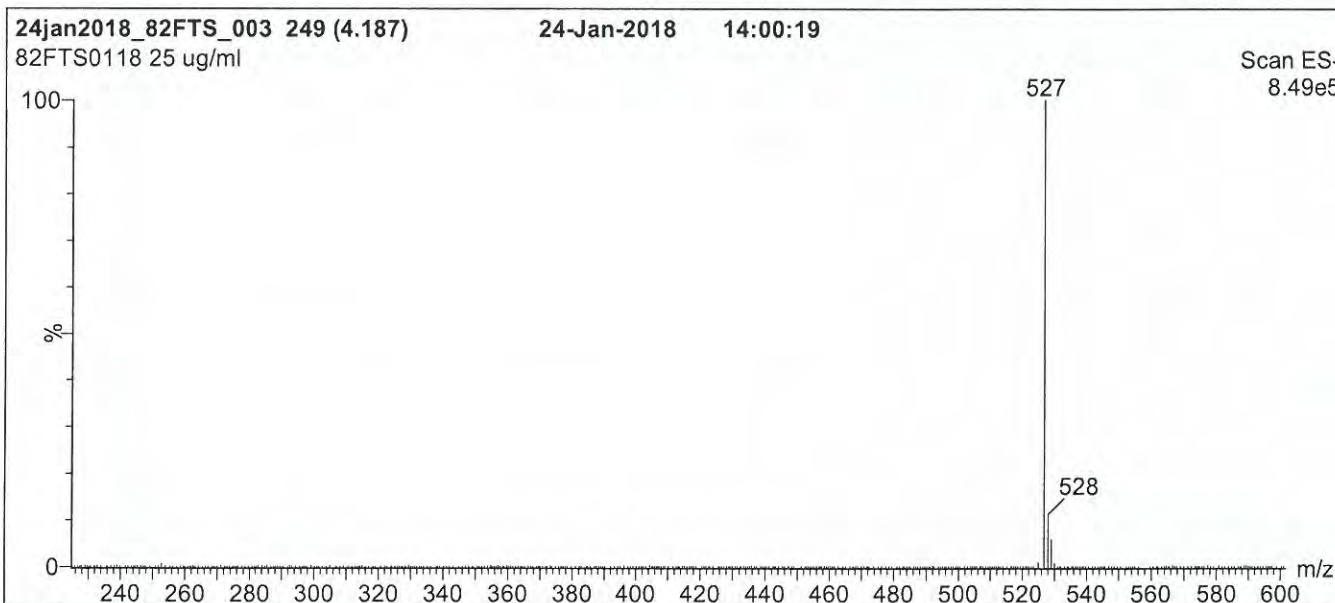
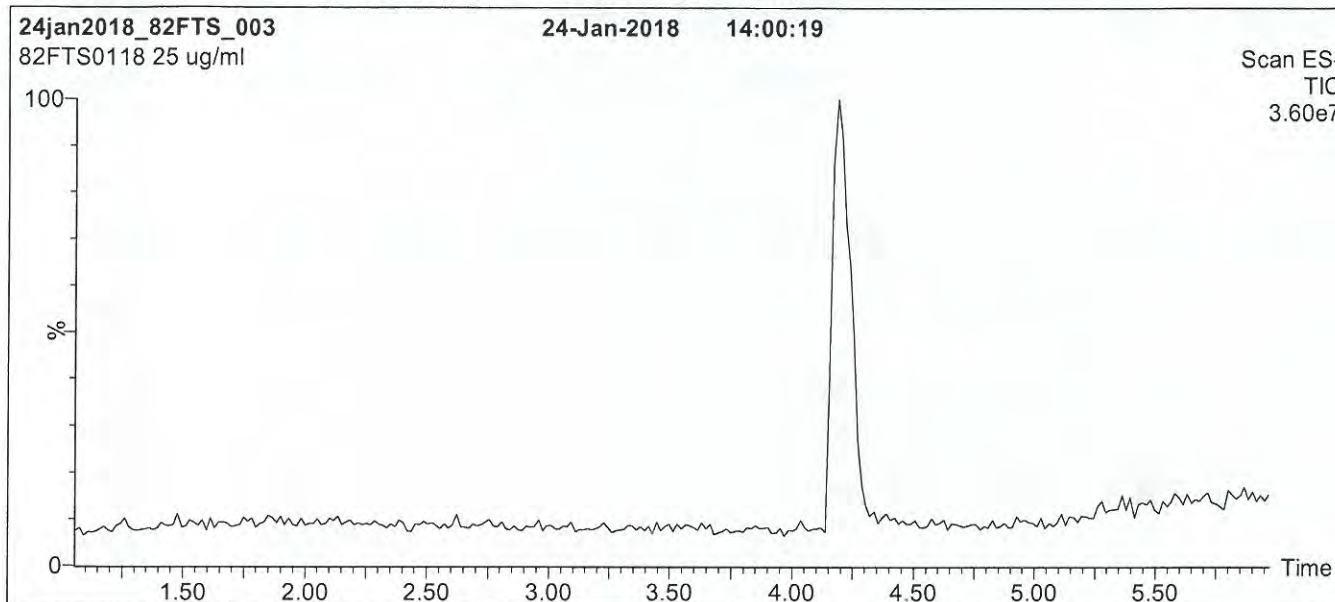
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2733

Figure 1: 8:2FTS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

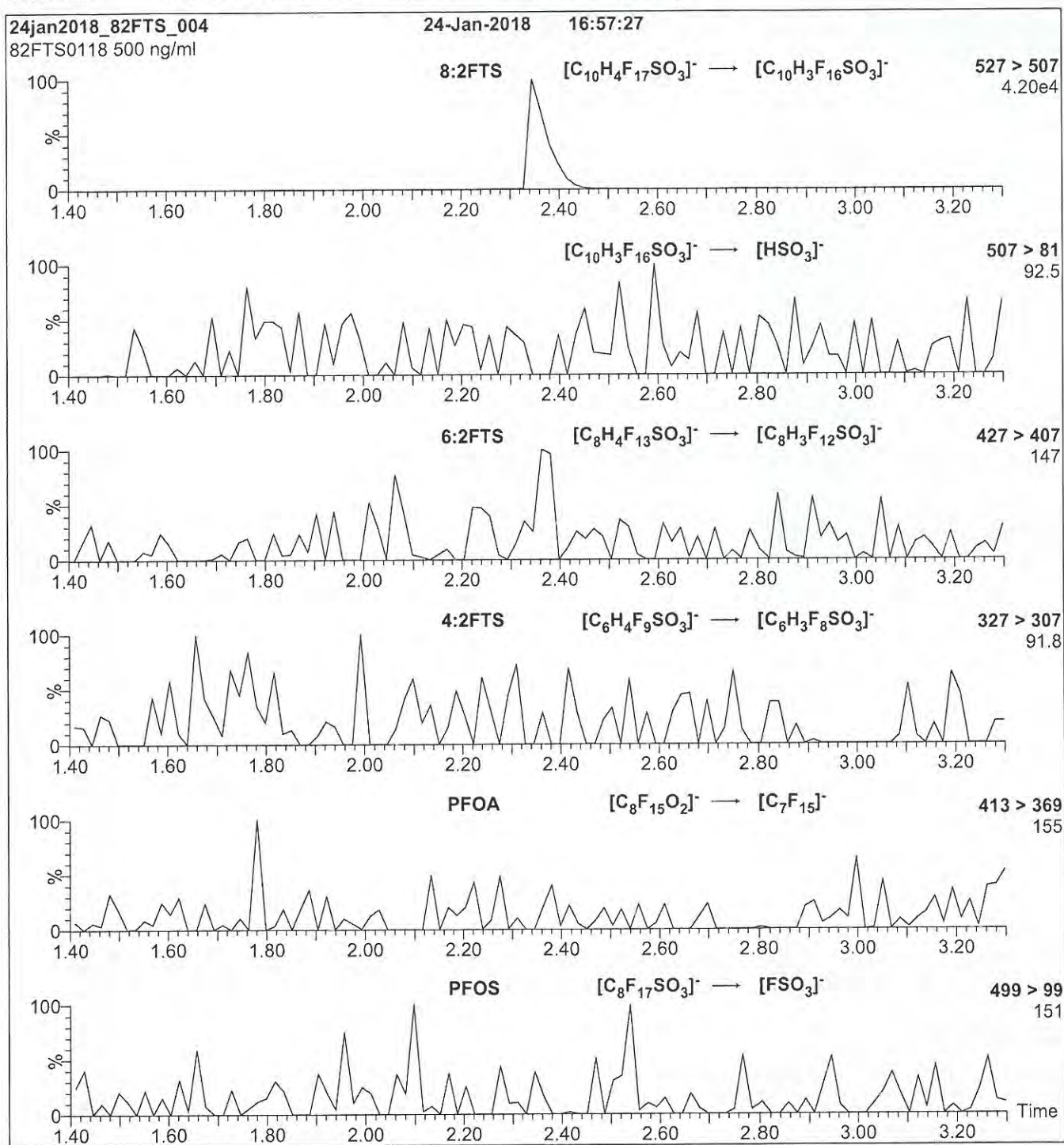
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18C2733

Figure 2: 8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml 8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

18C2734



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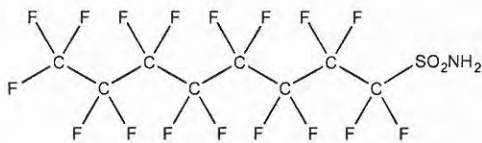
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide

LOT NUMBER: FOSA0817I

STRUCTURE:

CAS #: 754-91-6



MOLECULAR FORMULA: C₈H₂F₁₇NO₂S
CONCENTRATION: 50 ± 2.5 µg/ml
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/01/2017
EXPIRY DATE: (mm/dd/yyyy) 09/01/2022
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 499.14
SOLVENT(S): Isopropanol

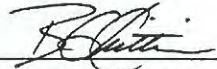
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 09/14/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2734

INTENDED USE:

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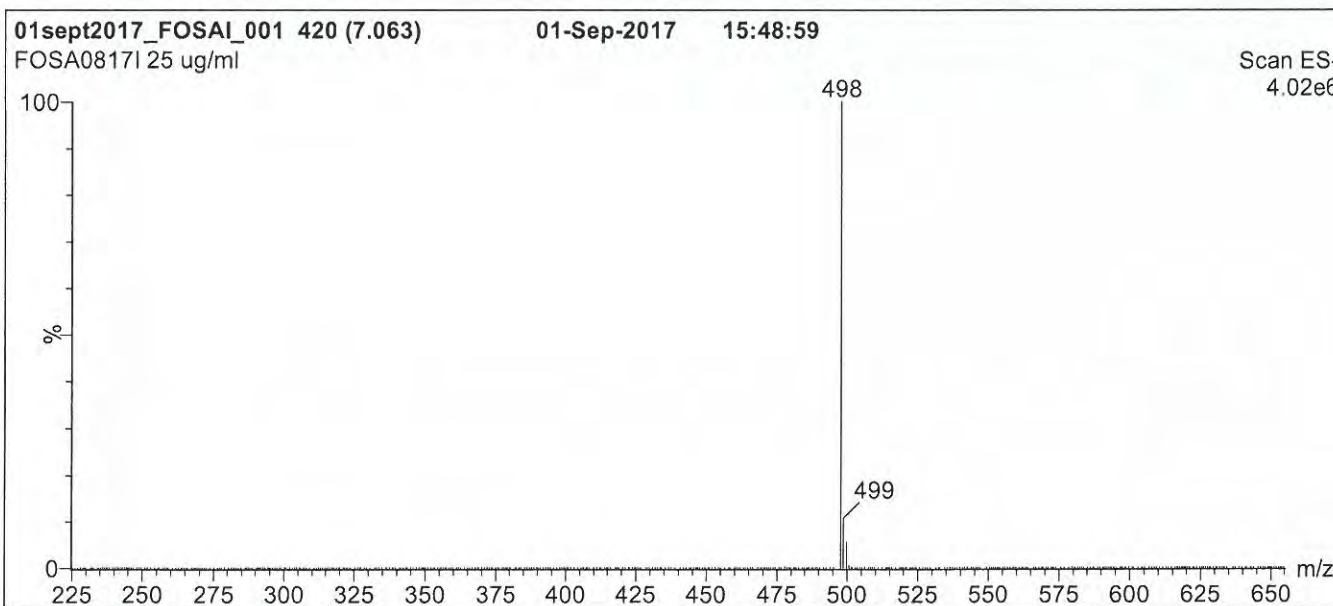
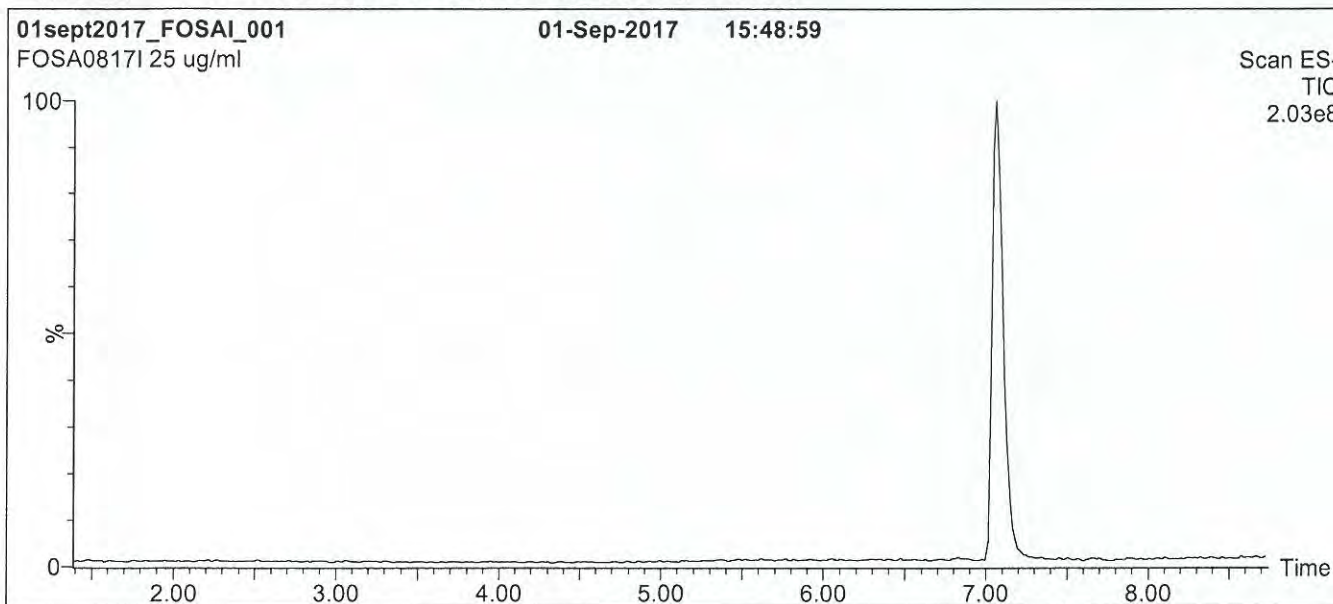
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18C2734

Figure 1: FOSA-I; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

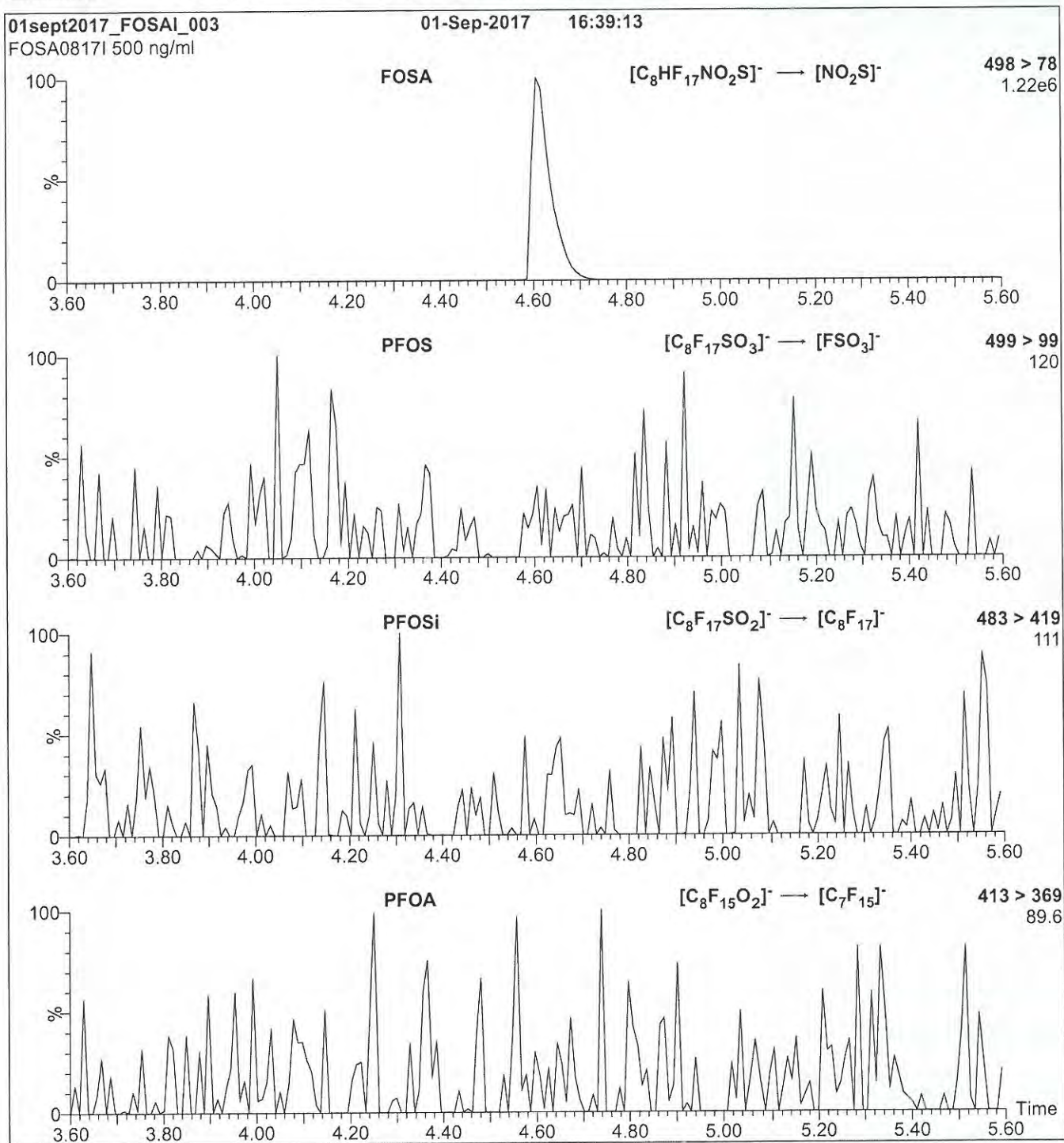
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2734

Figure 2: FOSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 30

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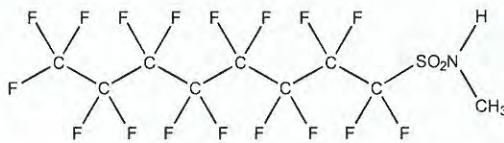


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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M **LOT NUMBER:** NMeFOSA0717M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

STRUCTURE: **CAS #:** 31506-32-8



MOLECULAR FORMULA: C₉H₄F₁₇NO₂S **MOLECULAR WEIGHT:** 513.17
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/05/2017
EXPIRY DATE: (mm/dd/yyyy) 07/05/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

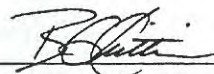
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 07/10/2017
B.G. Chittim, General Manager (mm/dd/yyyy)

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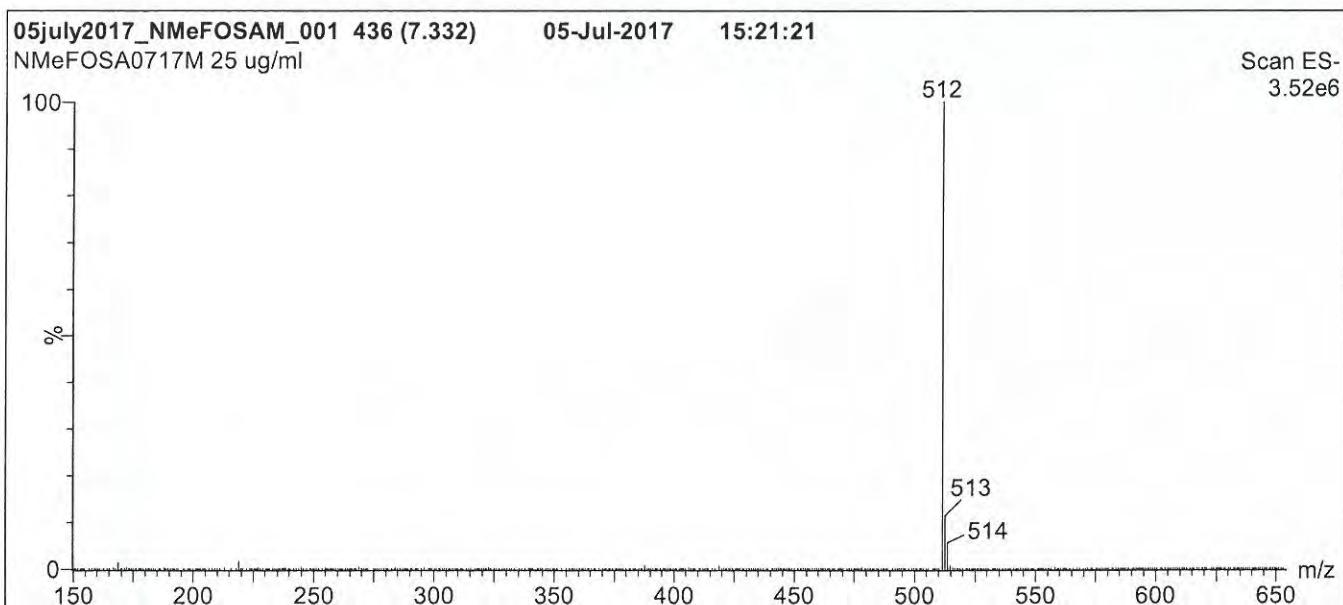
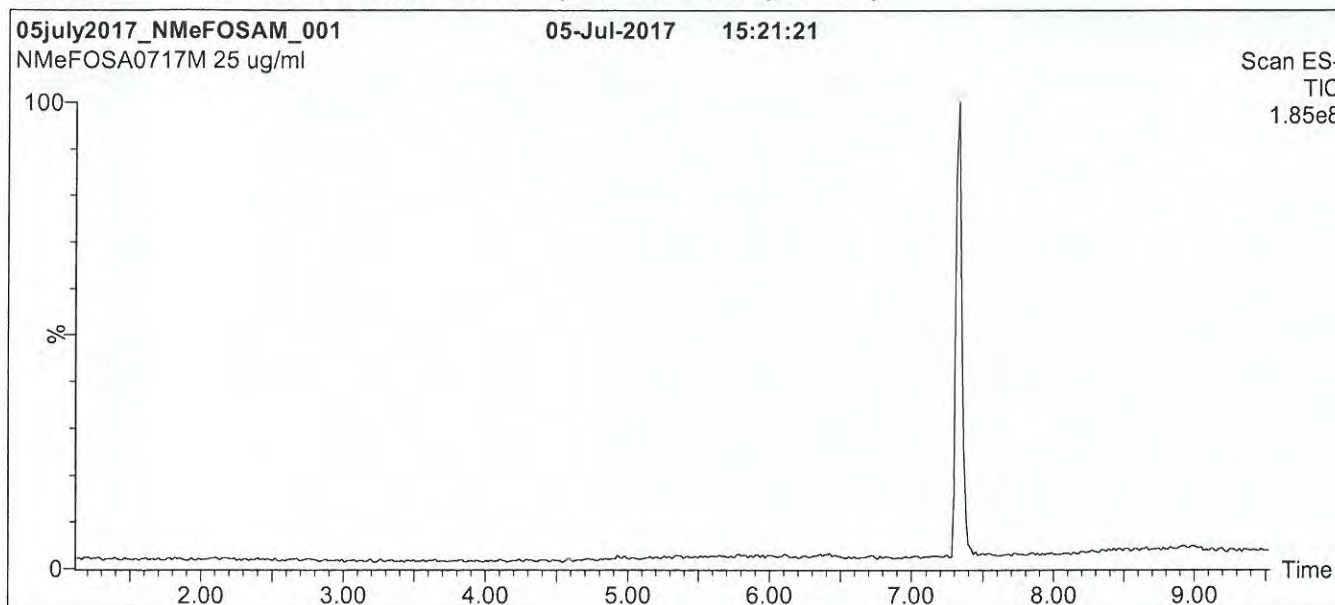
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18C2737

Figure 1: N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

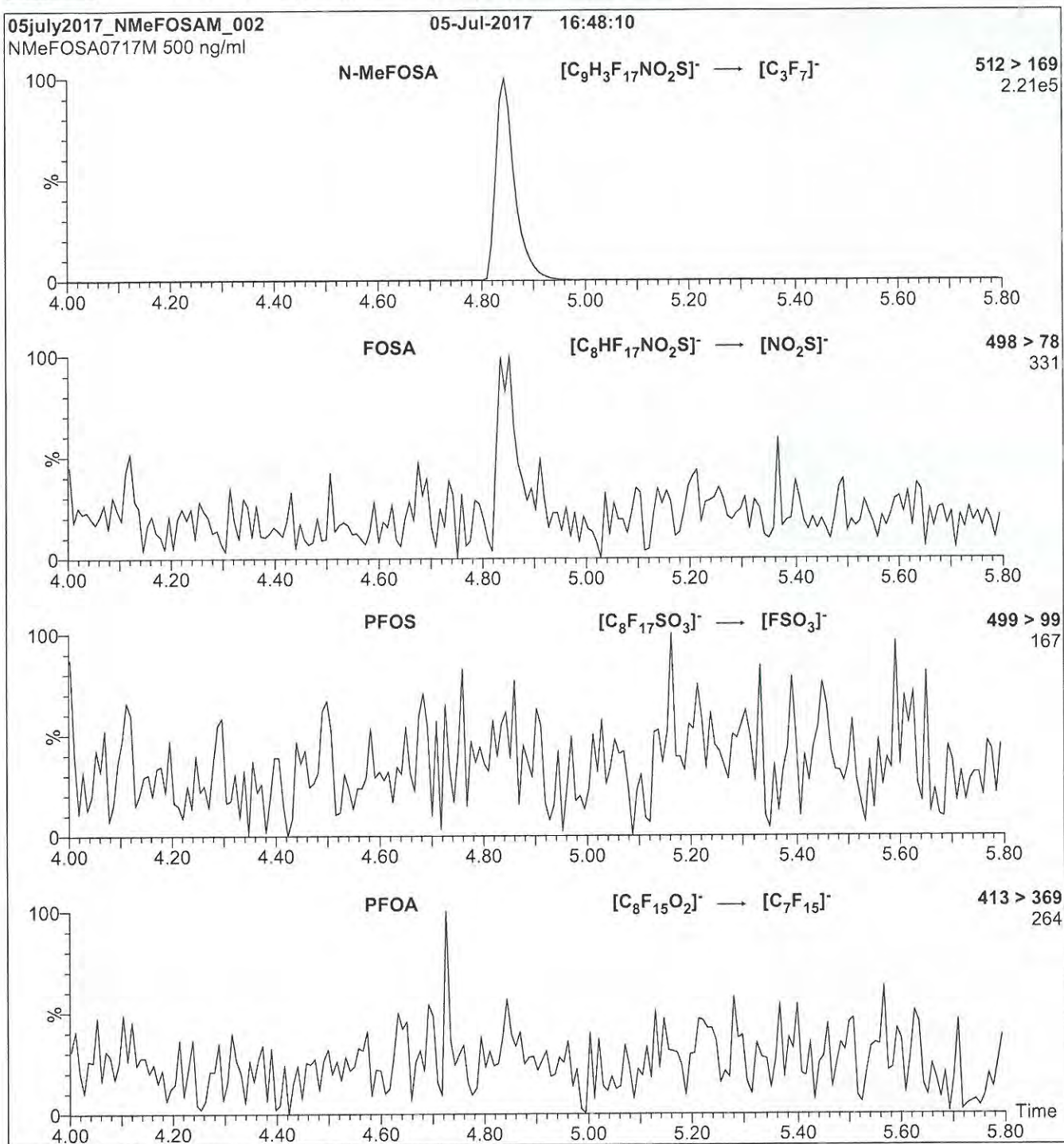
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1802737

Figure 2: N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml N-MeFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 30

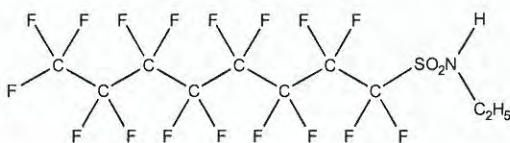
1802738



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M **LOT NUMBER:** NEtFOSA0717M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide
STRUCTURE: **CAS #:** 4151-50-2



MOLECULAR FORMULA: $C_{10}H_6F_{17}NO_2S$ **MOLECULAR WEIGHT:** 527.20
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/05/2017
EXPIRY DATE: (mm/dd/yyyy) 07/05/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

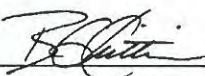
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 07/18/2017
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1802738

INTENDED USE:

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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

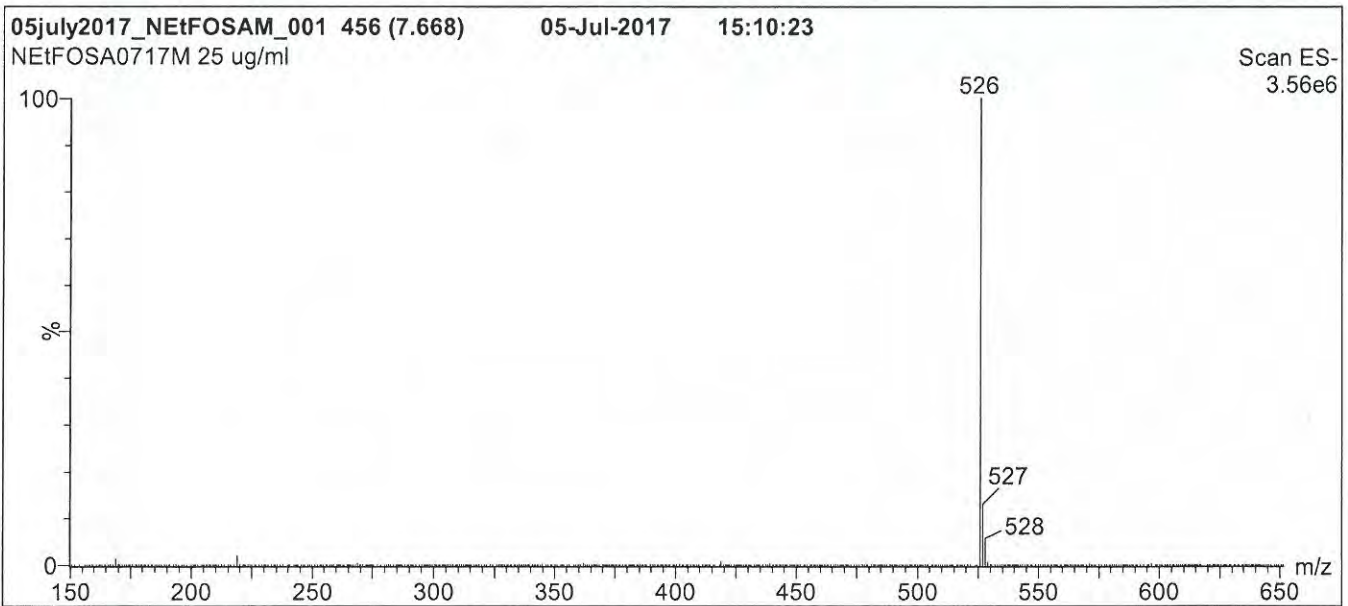
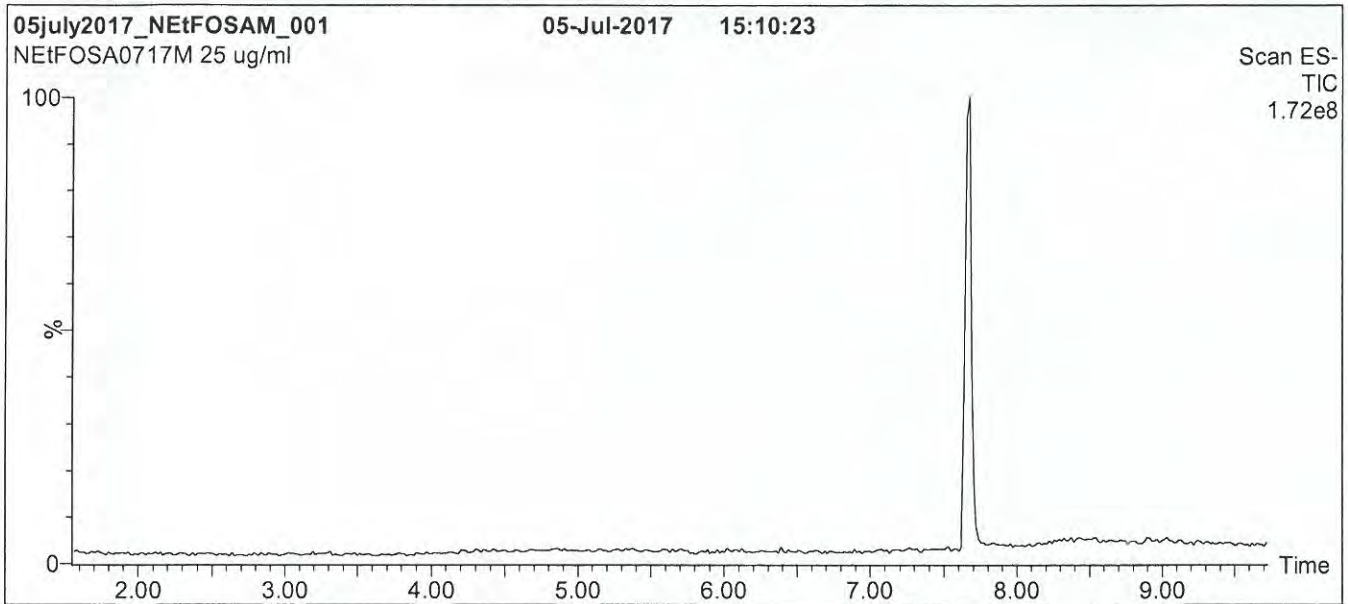
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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1802738

Figure 1: N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

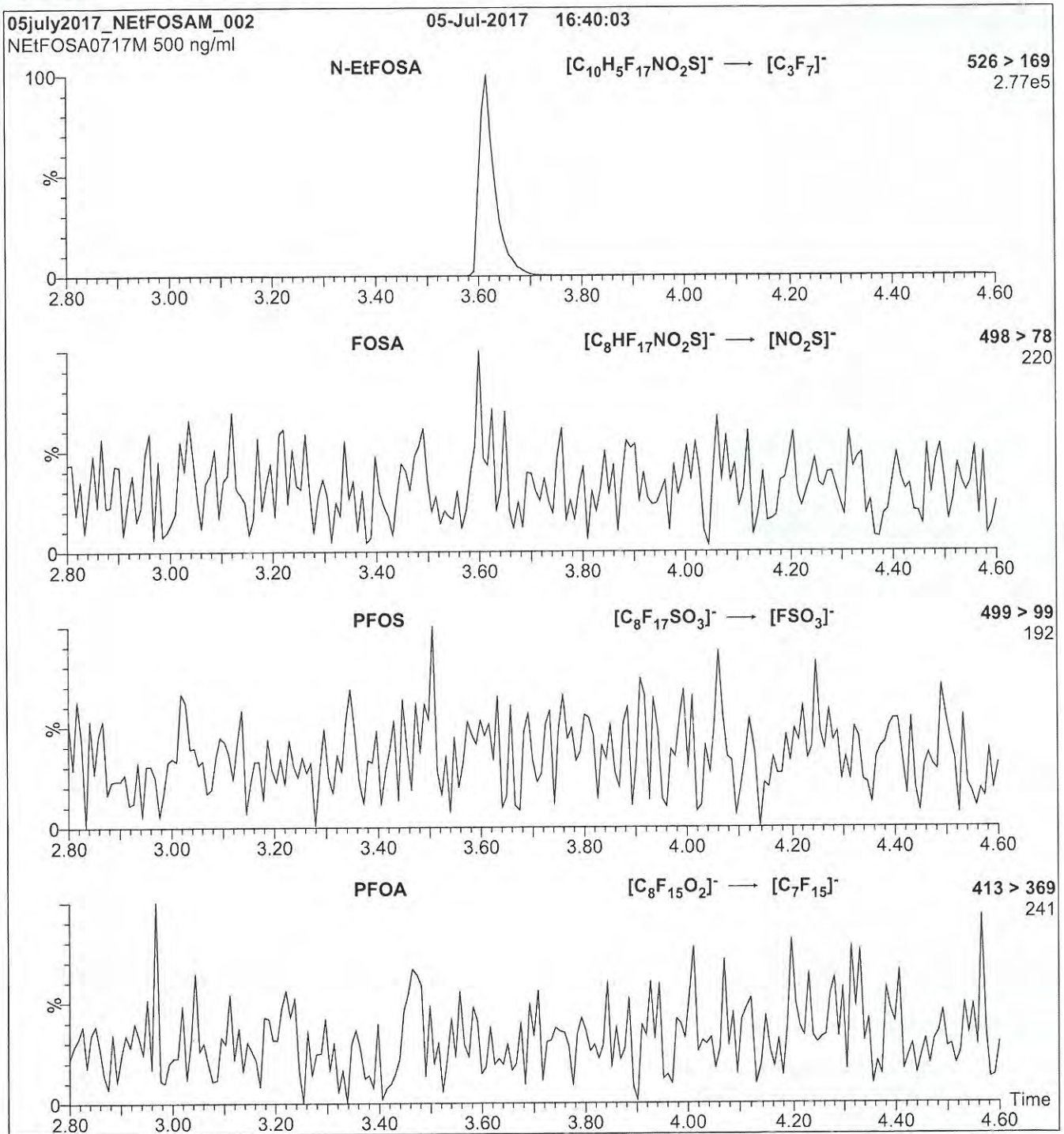
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C2738

Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml N-EtFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

18C2739

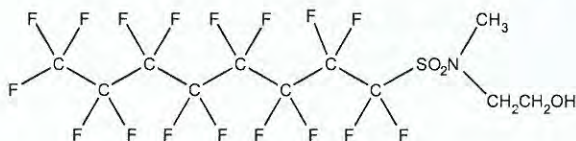


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0417M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 24448-09-7



MOLECULAR FORMULA: C₁₁H₈F₁₇NO₃S **MOLECULAR WEIGHT:** 557.22
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/24/2017 (HRGC/LRMS)
 04/21/2017 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 04/24/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS Data (TIC and Mass Spectrum)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 05/05/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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x_1, x_2, \dots, x_n on which it depends is:

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EXPIRY DATE / PERIOD OF VALIDITY:

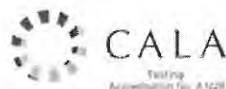
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

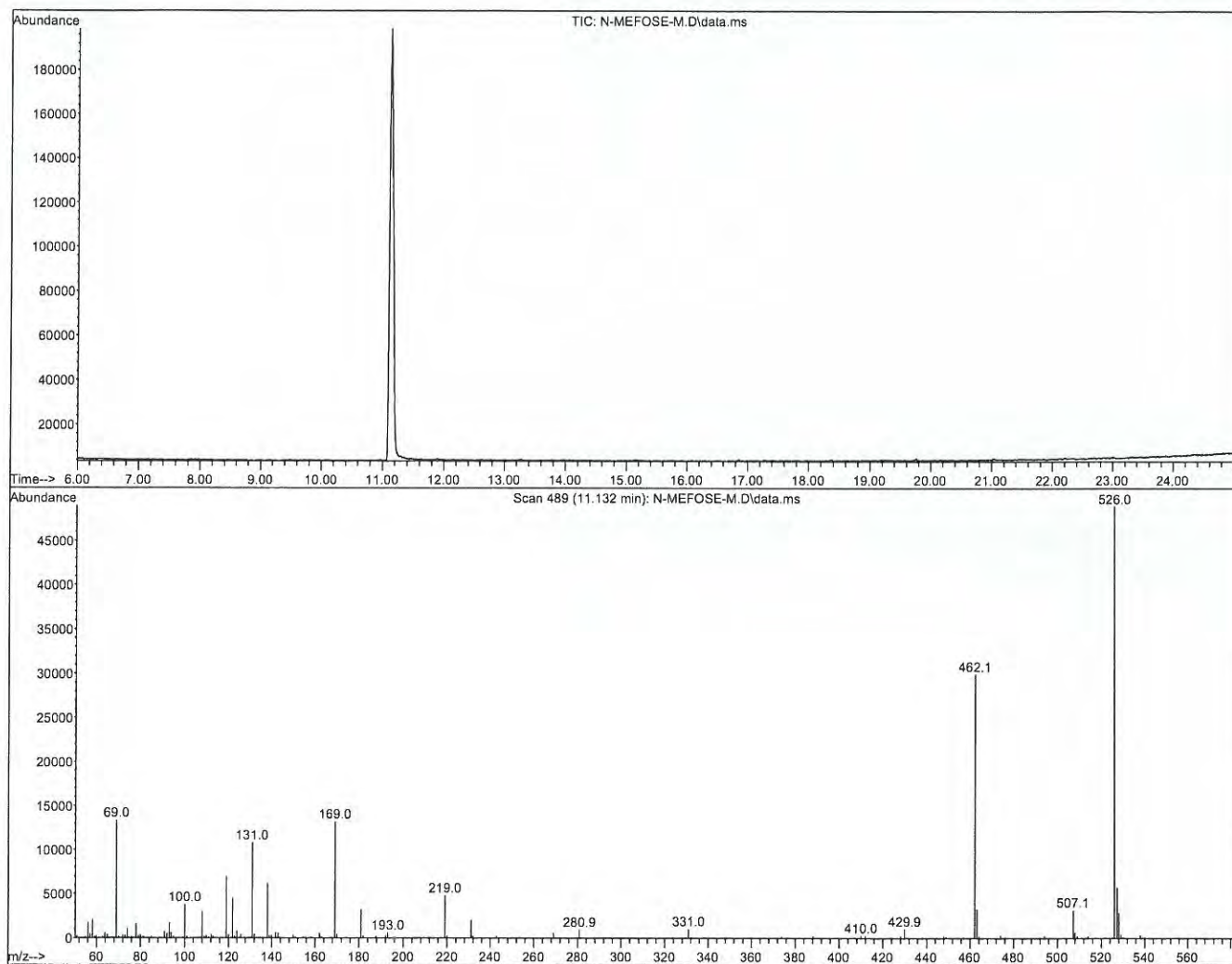
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2739

Figure 1: N-MeFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)



HRGC/LRMS:

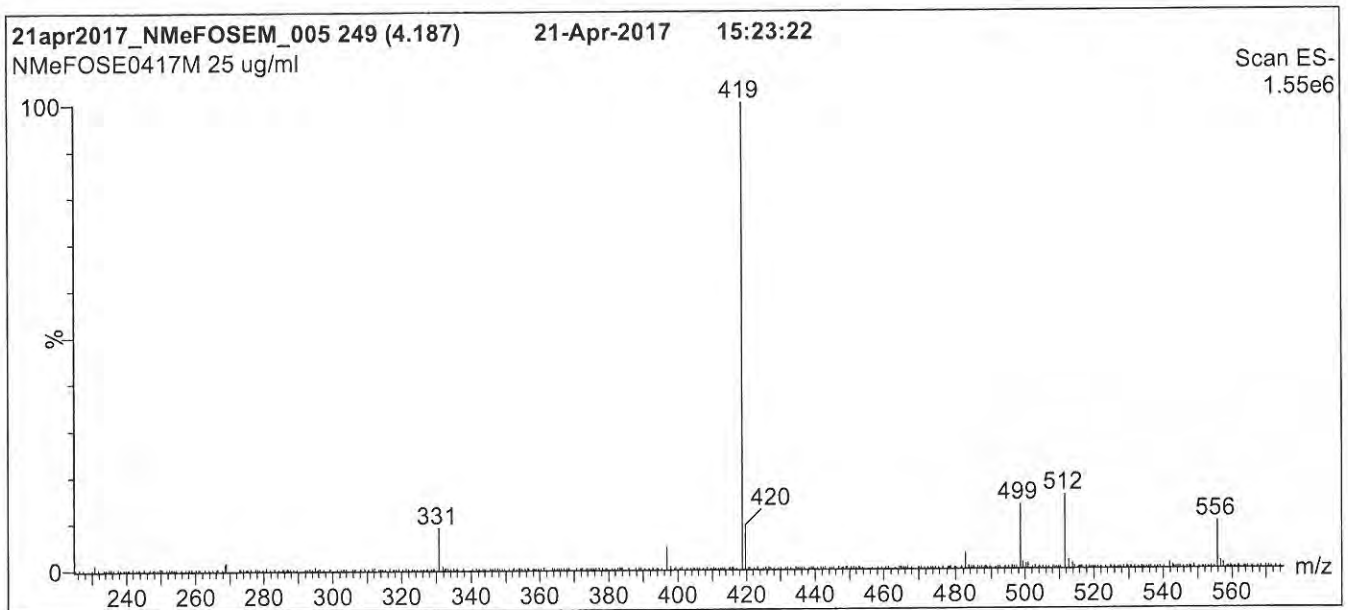
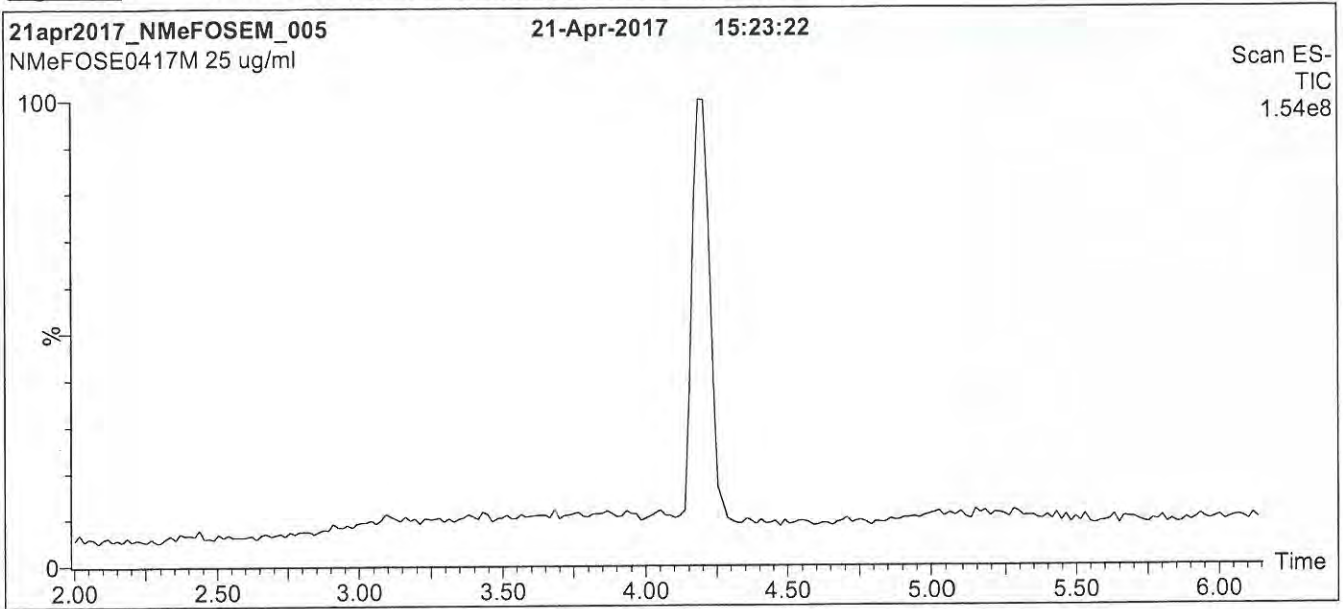
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Injector: 250 °C (Splitless Injection)
Oven: 100 °C (5 min)
10 °C/min to 325 °C
325 °C (20 min)
Ionization: EI+
Detector: 250 °C
Full Scan (50-1000 amu)

18C2739

Figure 2: N-MeFOSE-M; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% MeOH / 40% H₂O
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

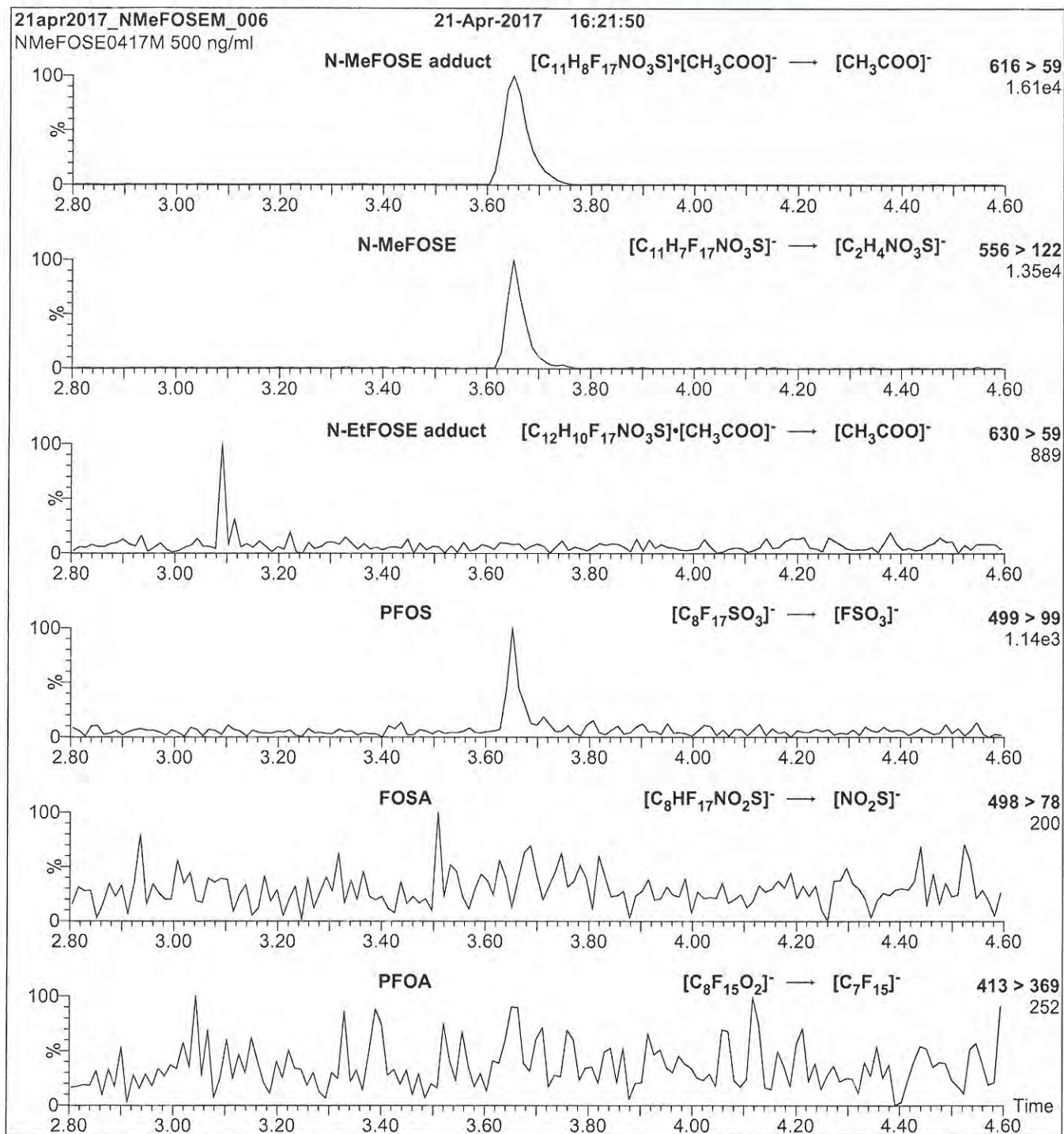
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.50
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

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Figure 3: N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: Direct loop injection
10 μ l (500 ng/ml N-MeFOSE-M)

Mobile phase: Isocratic 80% MeOH / 20% H₂O

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 35

15-1001



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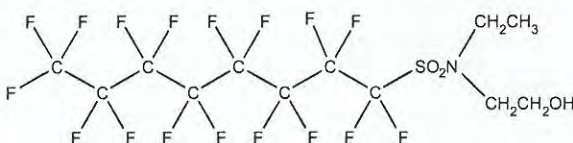


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0417M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: C₁₂H₁₀F₁₇NO₃S **MOLECULAR WEIGHT:** 571.25
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/24/2017 (HRGC/LRMS)
 04/21/2017 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 04/24/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS Data (TIC and Mass Spectrum)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 04/26/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18C2740

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QUALITY MANAGEMENT:

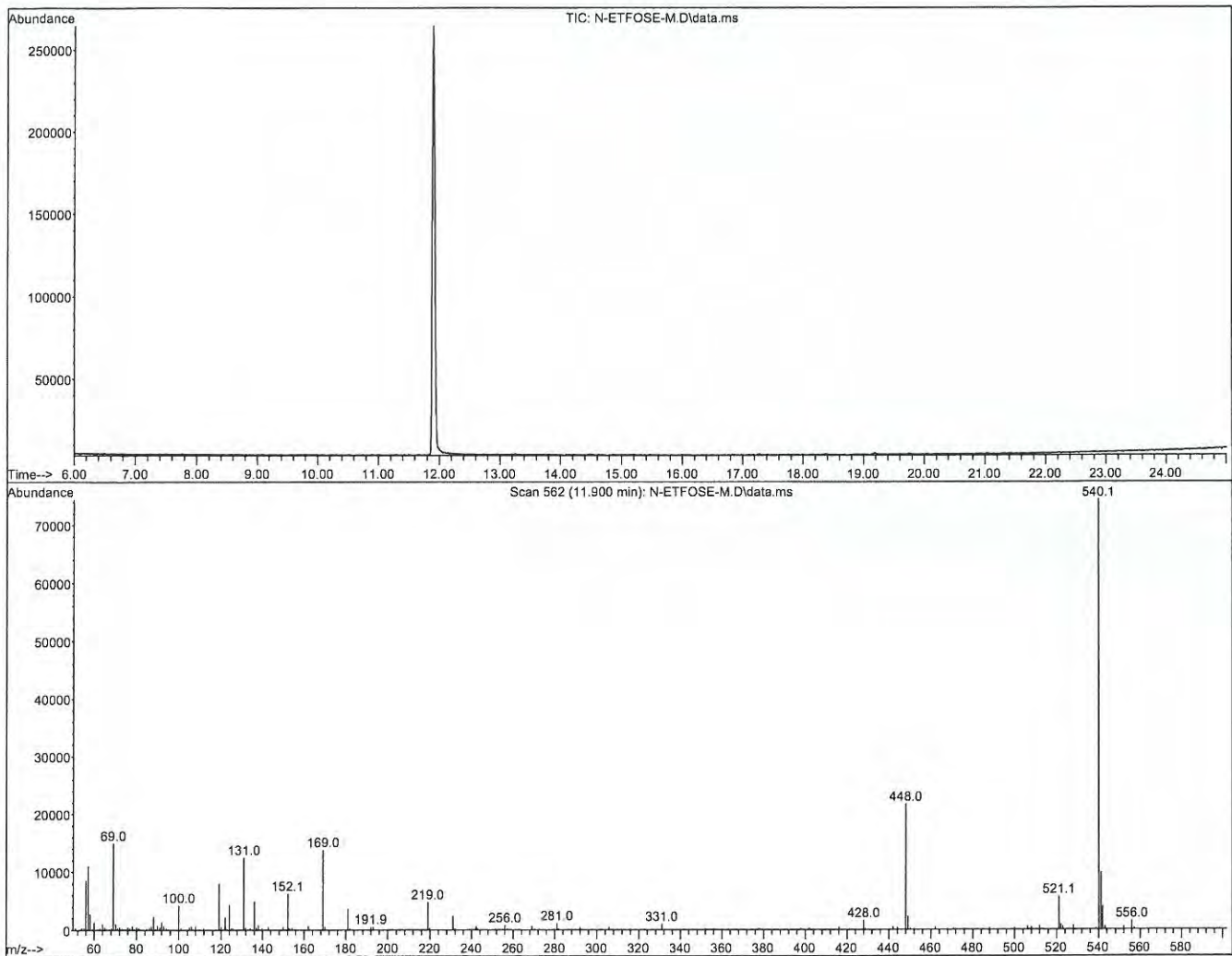
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18C2740

Figure 1: N-EtFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)



HRGC/LRMS:

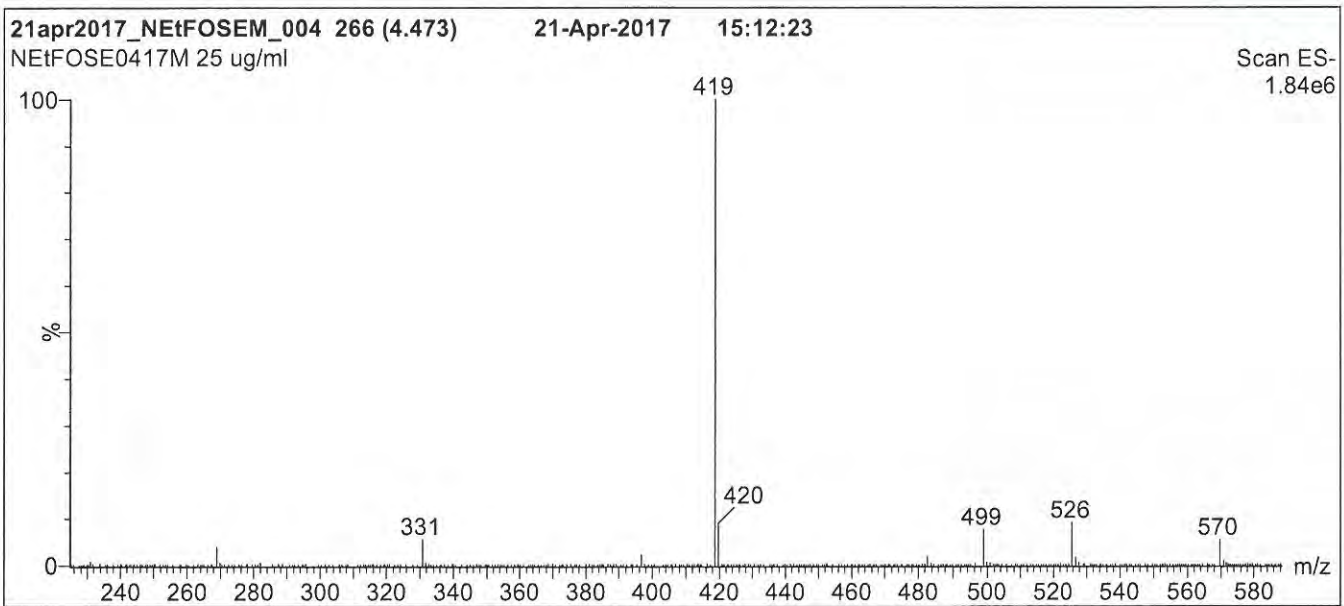
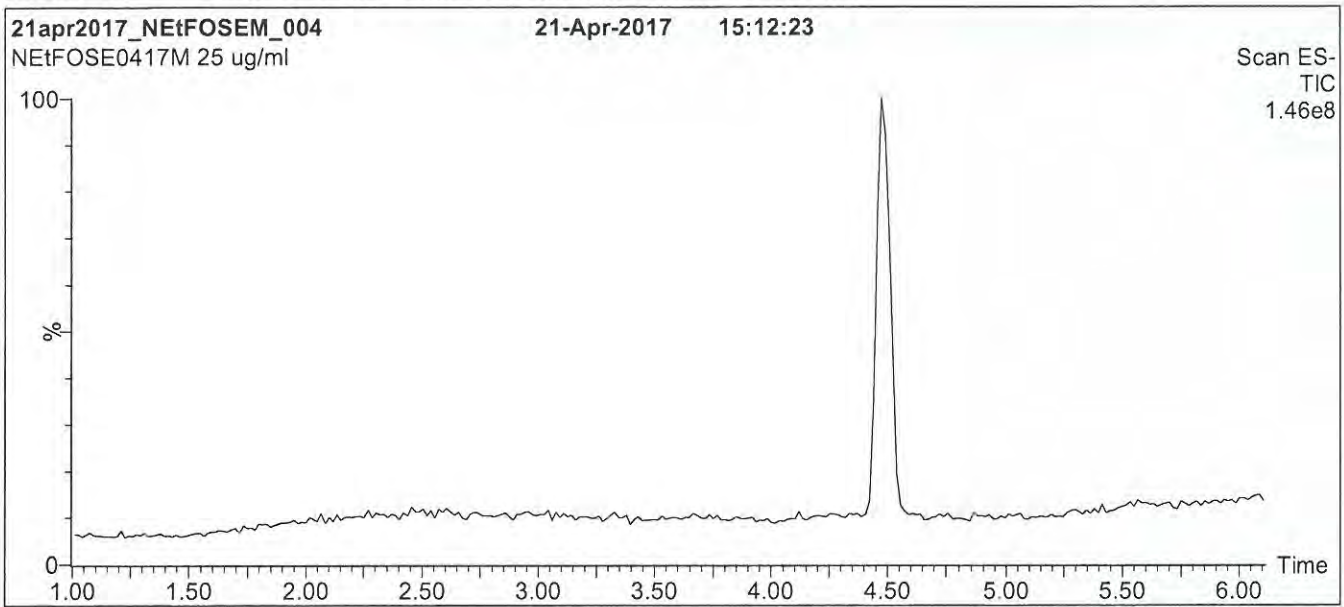
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Injector: 250 °C (Splitless Injection)
Oven: 100 °C (5 min)
10 °C/min to 325 °C
325 °C (20 min)
Ionization: EI+
Detector: 250 °C
Full Scan (50-1000 amu)

18C2746

Figure 2: N-EtFOSE-M; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% MeOH / 40% H₂O
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

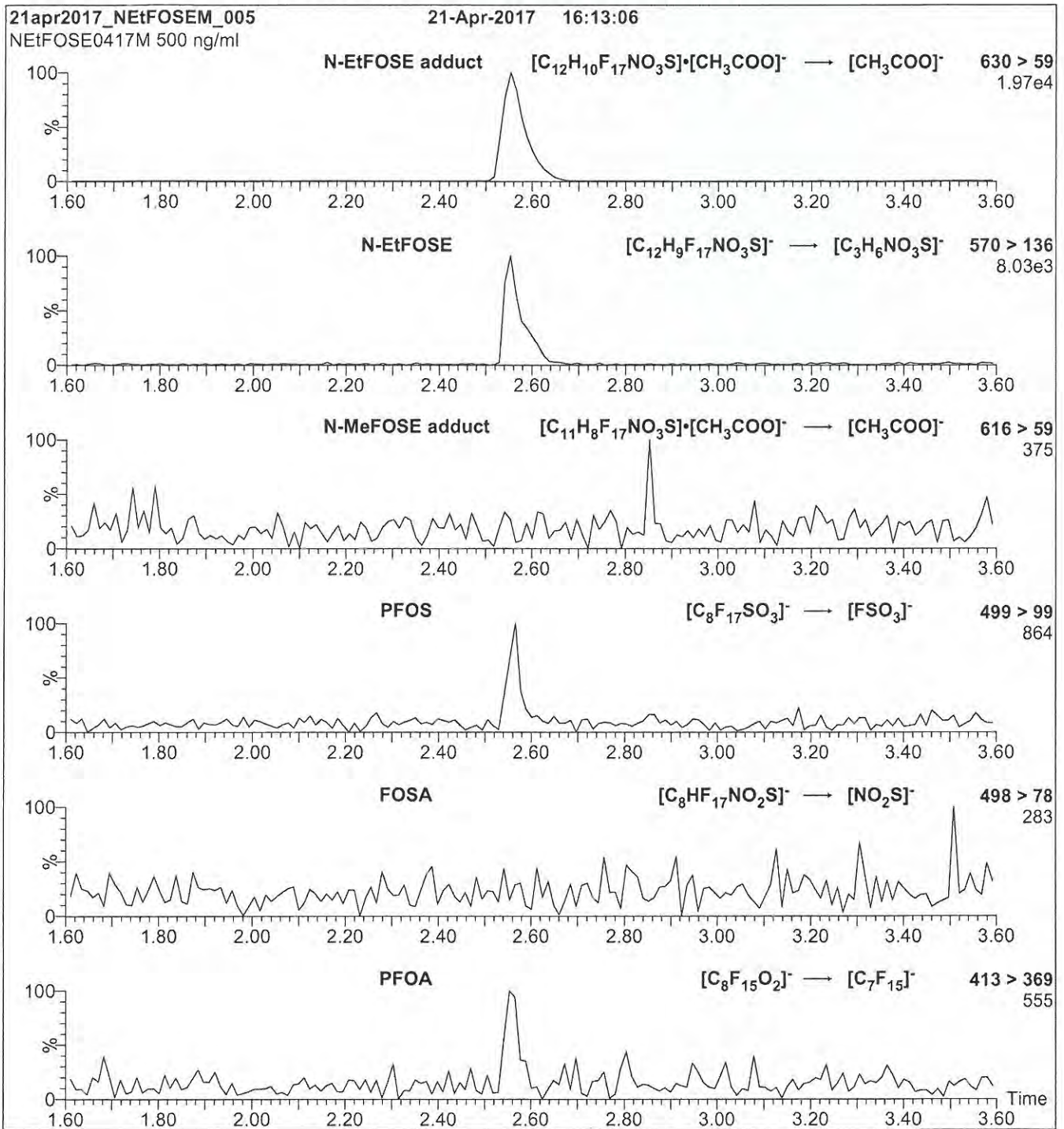
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1802740

Figure 3: N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml N-EtFOSE-M)

Mobile phase: Isocratic 80% MeOH / 20% H₂O

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 33

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18D1306



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSAA

**N-Methylperfluorooctanesulfonamidoacetic
Acid Solution/Mixture of Linear and
Branched Isomers**

PRODUCT CODE: br-NMeFOSAA
LOT NUMBER: brNMeFOSAA0118
CONCENTRATION: 50.0 ± 2.5 µg/ml
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 01/10/2018
LAST TESTED: (mm/dd/yyyy) 01/17/2018
EXPIRY DATE: (mm/dd/yyyy) 01/17/2023
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamidoacetic acid (linear and branched isomers). The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18D1306

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HANDLING:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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1801306

Table A: br-NMeFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	0.7
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	2.0
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	6.0
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	14.0
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\ \\ \text{CF}_3 \end{array}$	0.2
7	Other Unidentified Isomers		1.1

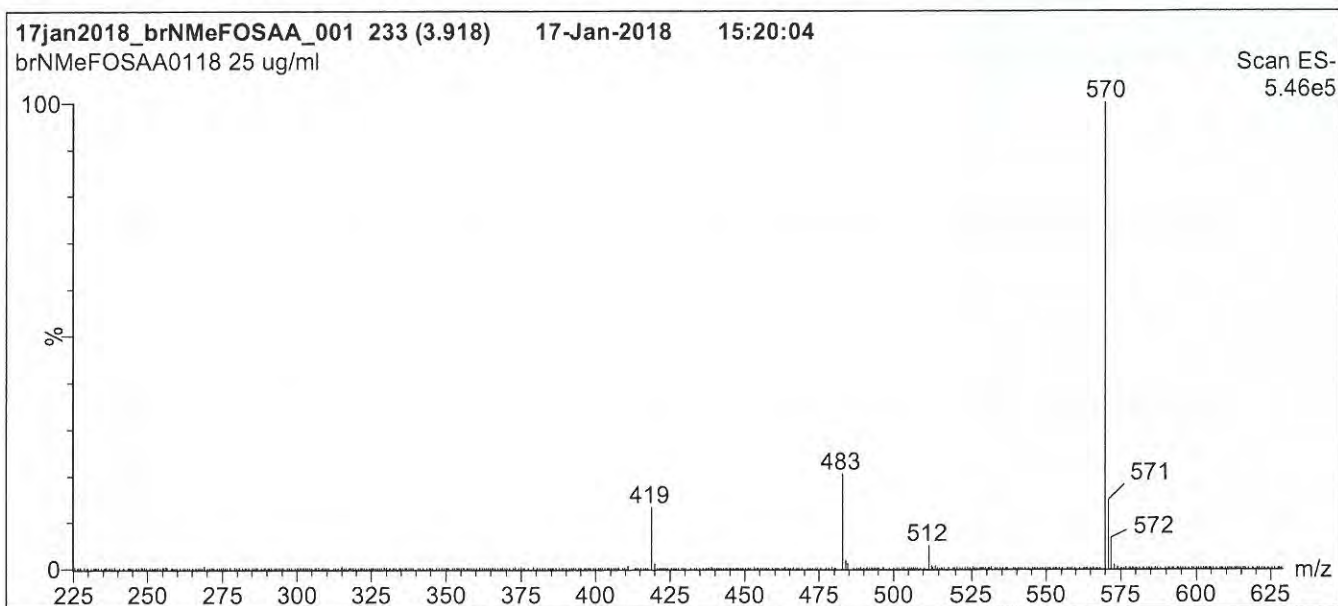
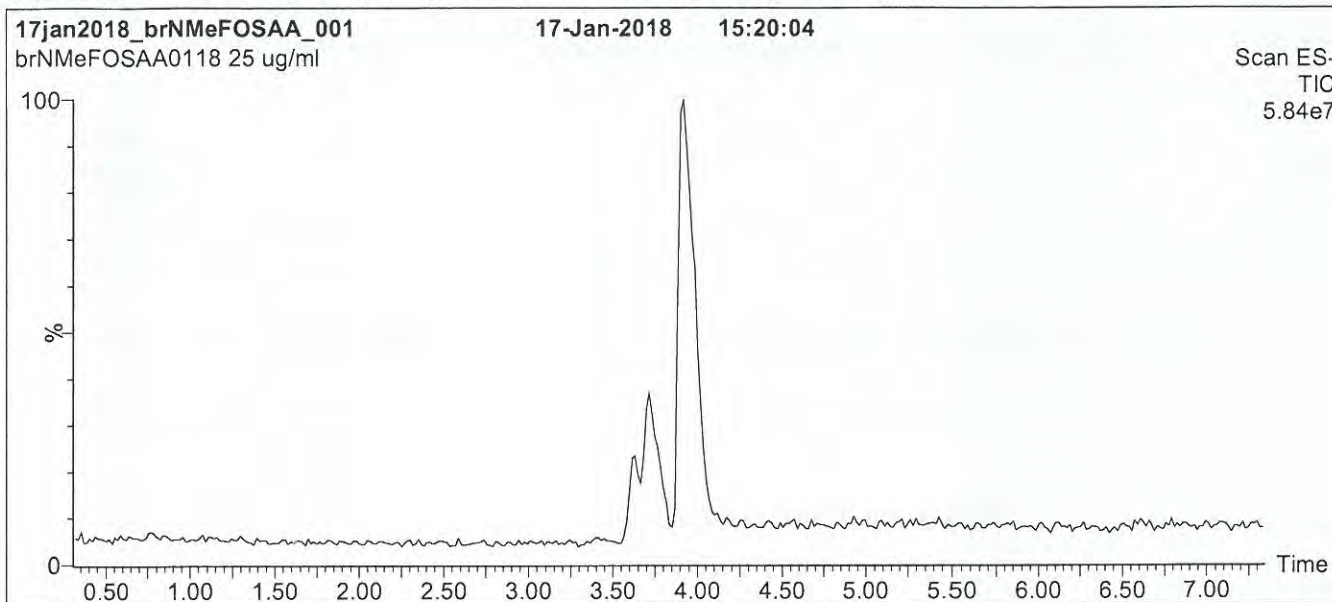
* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Certified By: 
B.G. Chittim, General Manager

Date: 03/22/2018
(mm/dd/yyyy)

1801306

Figure 1: br-NMeFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

Flow: 300 μ l/min

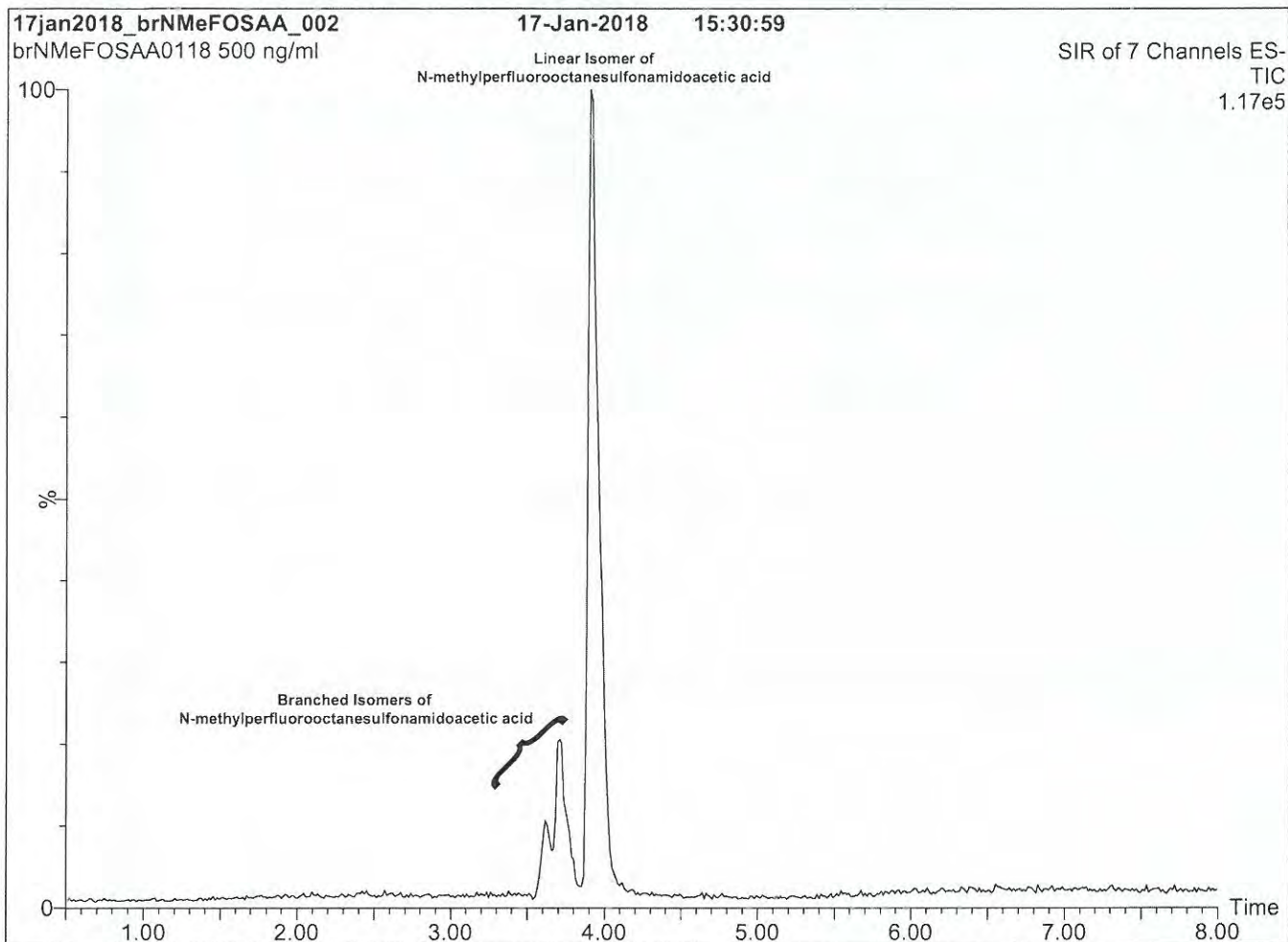
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18D1306

Figure 2: br-NMeFOSAA; LC/MS Data (SIR)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

Flow: 300 μ l/min

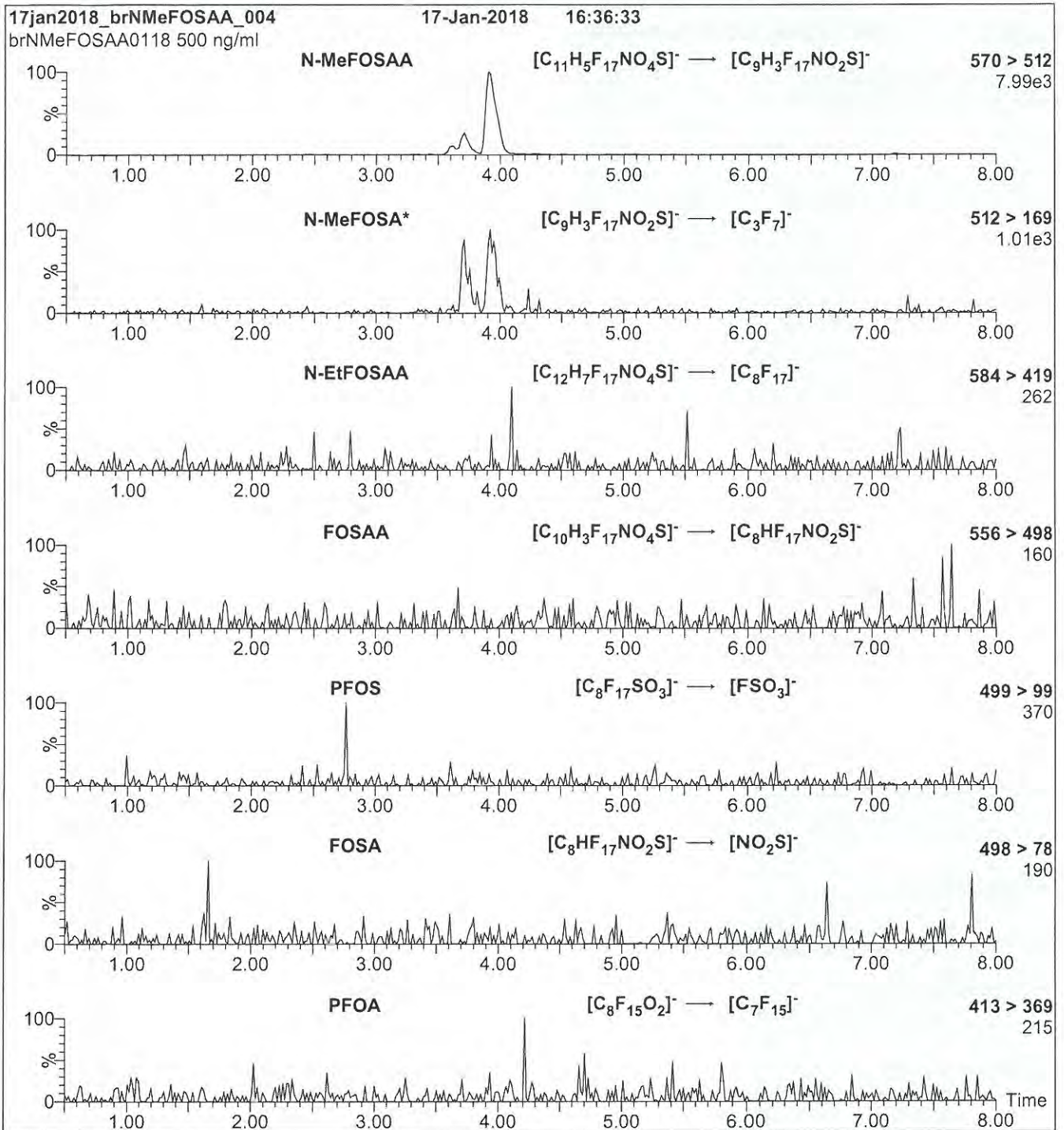
MS Parameters

Experiment: SIR (7 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15-60
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18D1306

Figure 3: br-NMeFOSAA; LC/MS/MS Data (Selected MRM Transitions)



*Note: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
 Collision Energy (eV) = 11-40 (variable)

18D1307



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSAA

**N-Ethylperfluorooctanesulfonamidoacetic
Acid Solution/Mixture of Linear and
Branched Isomers**

PRODUCT CODE: br-NEtFOSAA
LOT NUMBER: brNEtFOSAA0118
CONCENTRATION: 50.0 ± 2.5 µg/ml
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 01/10/2018
LAST TESTED: (mm/dd/yyyy) 01/17/2018
EXPIRY DATE: (mm/dd/yyyy) 01/17/2023
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamidoacetic acid (linear and branched isomers). The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

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1801307

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

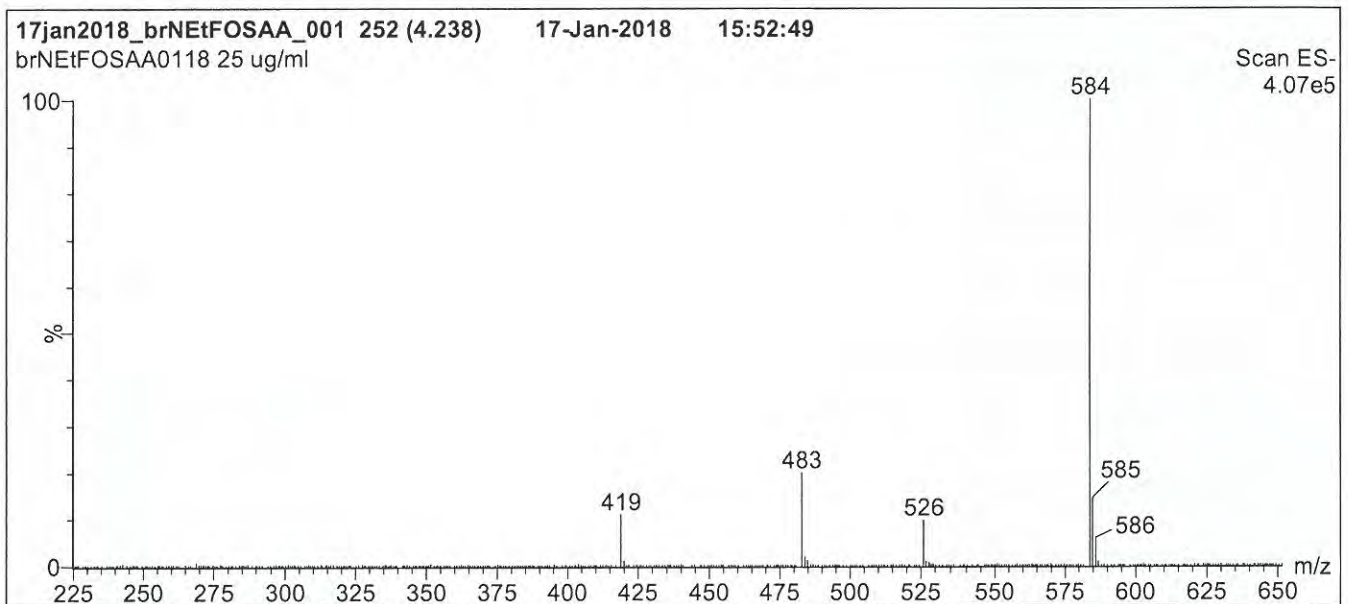
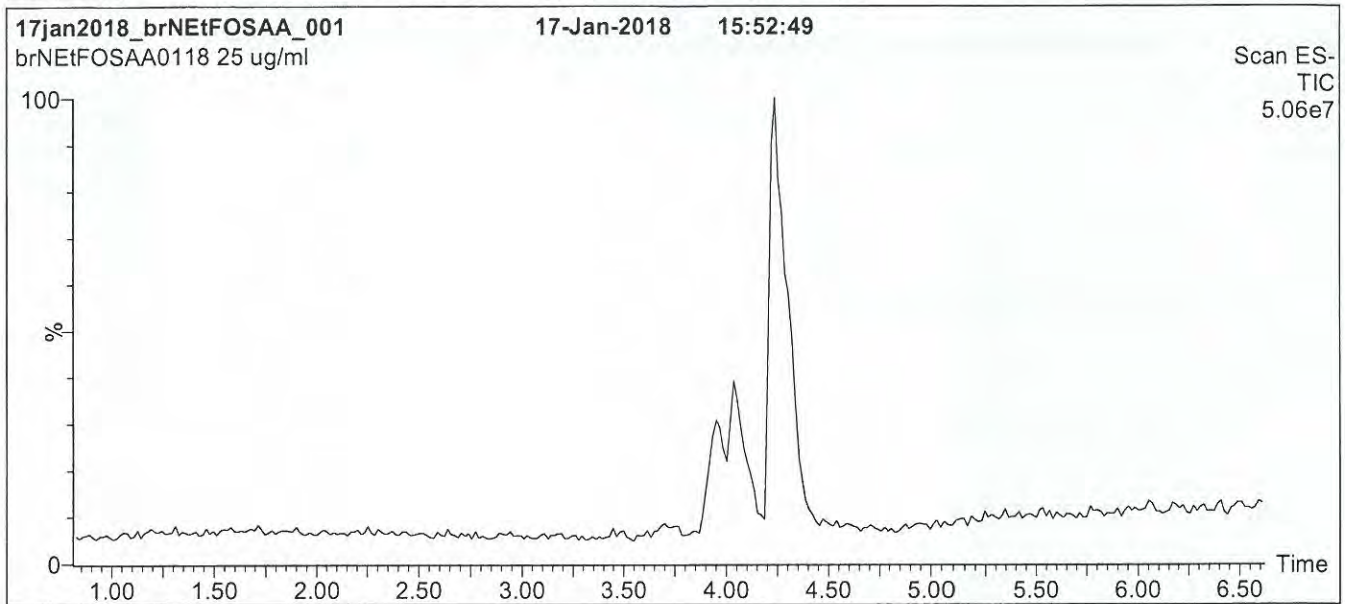
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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1801307

Figure 1: br-NEtFOSAA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

Flow: 300 μ l/min

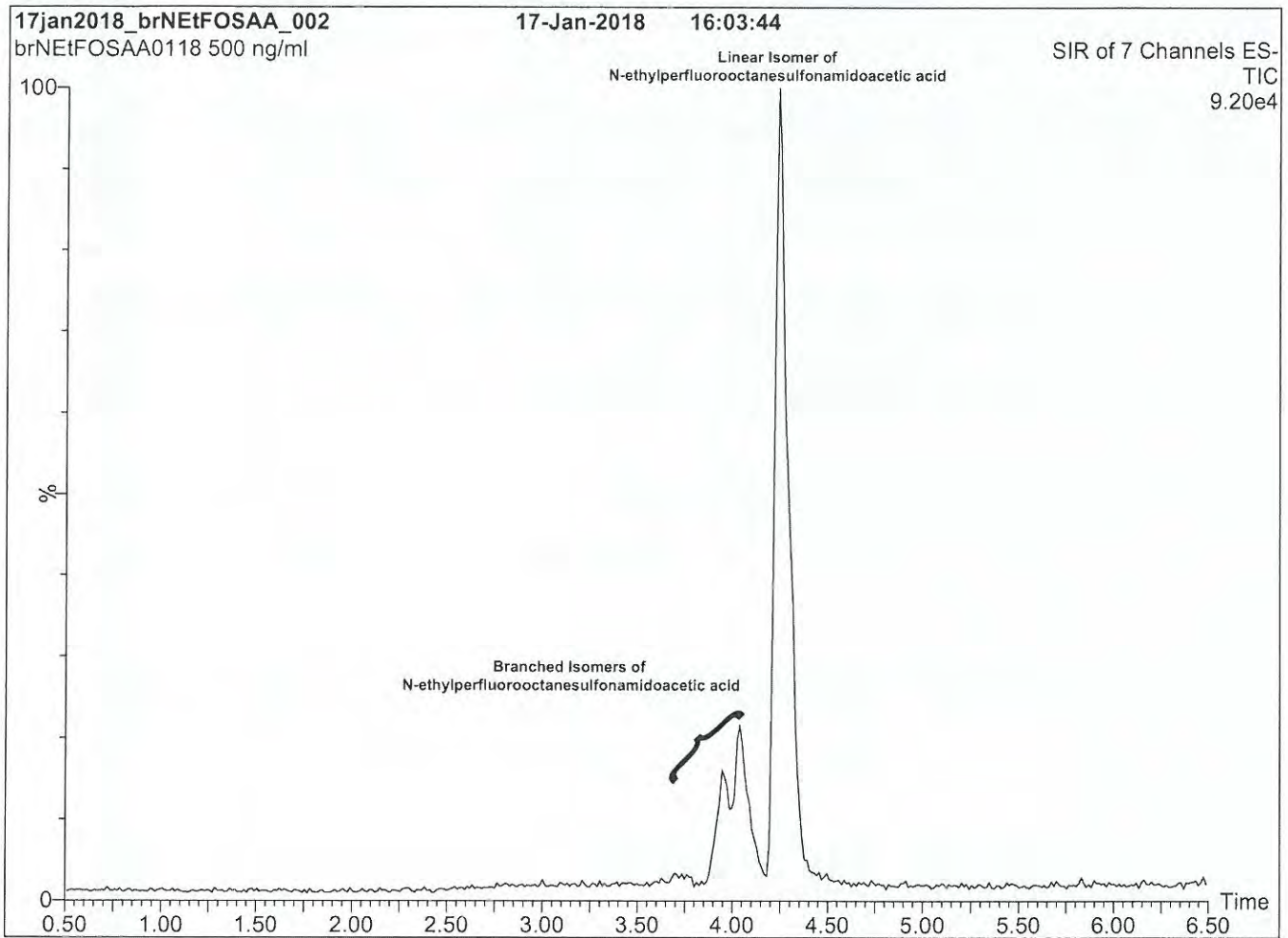
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18D1307

Figure 2: br-NEtFOSAA; LC/MS Data (SIR)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

Flow: 300 μl/min

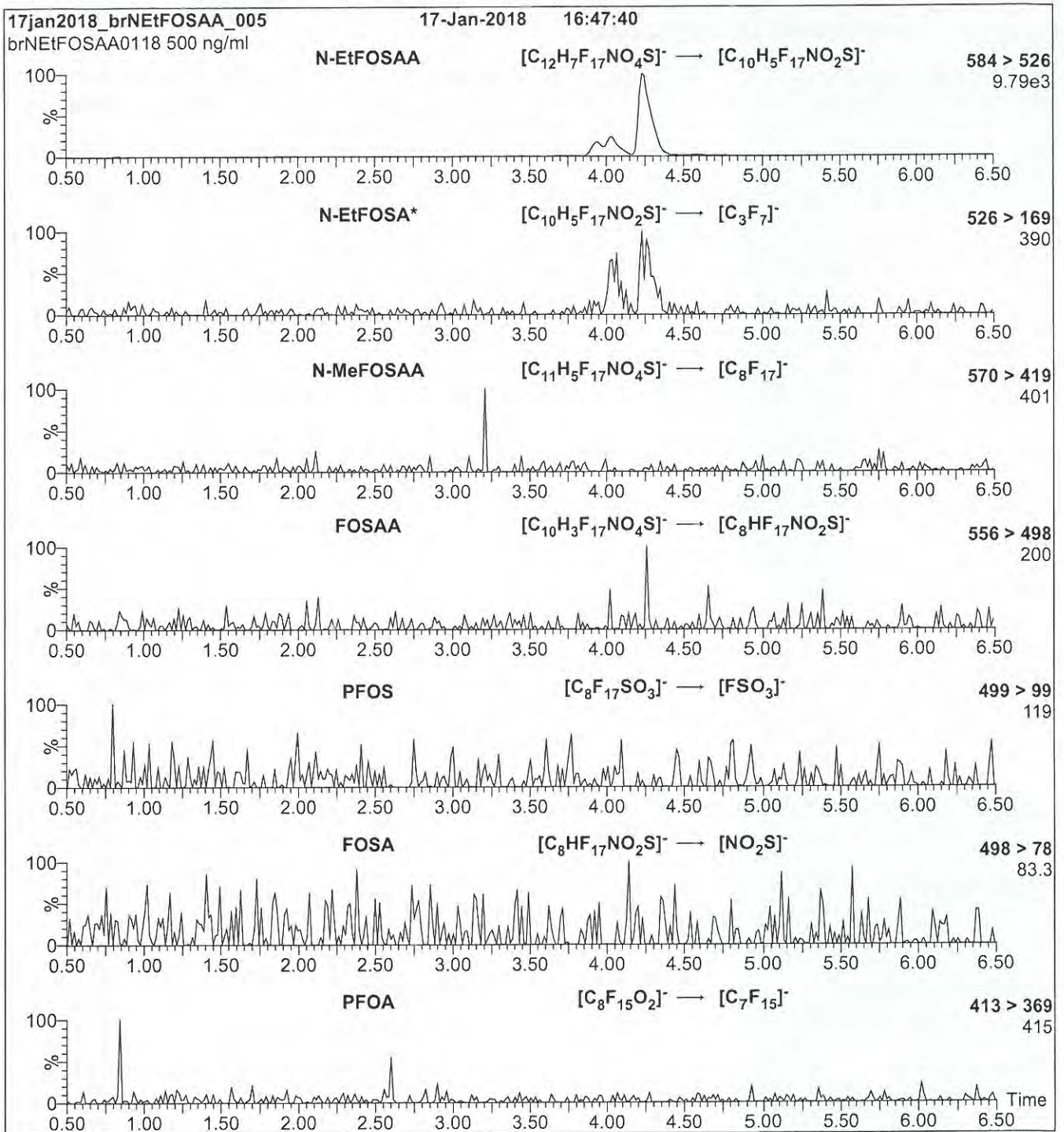
MS Parameters

Experiment: SIR (7 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15-60
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18D1307

Figure 3: br-NEtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



***Note:** N-EtFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 11-40 (variable)

Mobile phase: Same as Figure 2

Flow: 300 µl/min

Analytical Standard Record

Vista Analytical Laboratory

18D2005

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
18B1530	13C2-FOUEA	15-Feb-18	** Vendor **	14-Nov-19	1
18B1531	13C3-PFHxS	15-Feb-18	** Vendor **	05-Jul-22	1.06
18B1532	13C4-PFOS	15-Feb-18	** Vendor **	17-Oct-22	1.05
18B1533	13C7-PFUDa	15-Feb-18	** Vendor **	13-Jul-22	1
18B1534	13C5-PFHxA	15-Feb-18	** Vendor **	17-Oct-22	1
18B1535	13C6-PFDA	15-Feb-18	** Vendor **	17-Oct-22	1
18B1536	13C8-PFOA	15-Feb-18	** Vendor **	05-Jul-22	1.02
18B1537	13C4-PFBA	15-Feb-18	** Vendor **	12-Apr-22	1
18B1538	13C9-PFNA	15-Feb-18	** Vendor **	23-May-22	1

Description: PFC-RS Expires: 20-Apr-20
Standard Type: Reagent Prepared: 20-Apr-18
Solvent: MeOH Prepared By: Giana R. Bilotta
Final Volume (mls): 40 Department: LCMS
Vials: 1 Last Edit: 20-Apr-18 10:41 by GRB

Analyte	CAS Number	Concentration	Units
13C9-PFNA		1.25	ug/mL
13C8-PFOA		1.25	ug/mL
13C7-PFUnA		1.25	ug/mL
13C6-PFDA		1.25	ug/mL
13C5-PFHxA		1.25	ug/mL
13C4-PFOS		1.25	ug/mL
13C4-PFBA		1.25	ug/mL
13C3-PFHxS		1.25	ug/mL
13C2-FOUEA		1.25	ug/mL

18B1530



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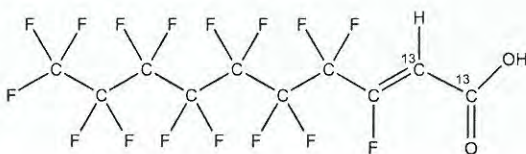
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MFOUEA
COMPOUND: 2H-Perfluoro-[1,2-¹³C₂]-2-decenoic acid

LOT NUMBER: MFOUEA1117

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₂¹²C₈H₂F₁₆O₂
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 460.08
SOLVENT(S): Anhydrous
Isopropanol

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/14/2017
EXPIRY DATE: (mm/dd/yyyy) 11/14/2019
RECOMMENDED STORAGE: Refrigerate ampoule

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-[1,2-¹³C₂]-2-decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 11/15/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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18B1530

INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

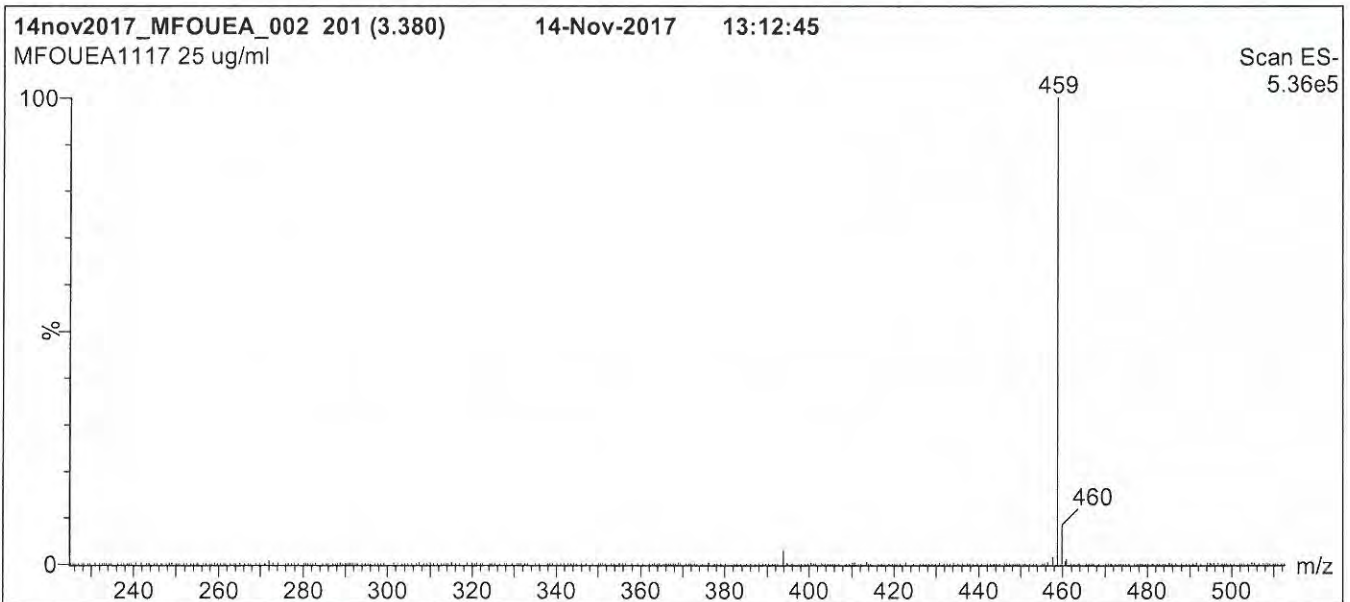
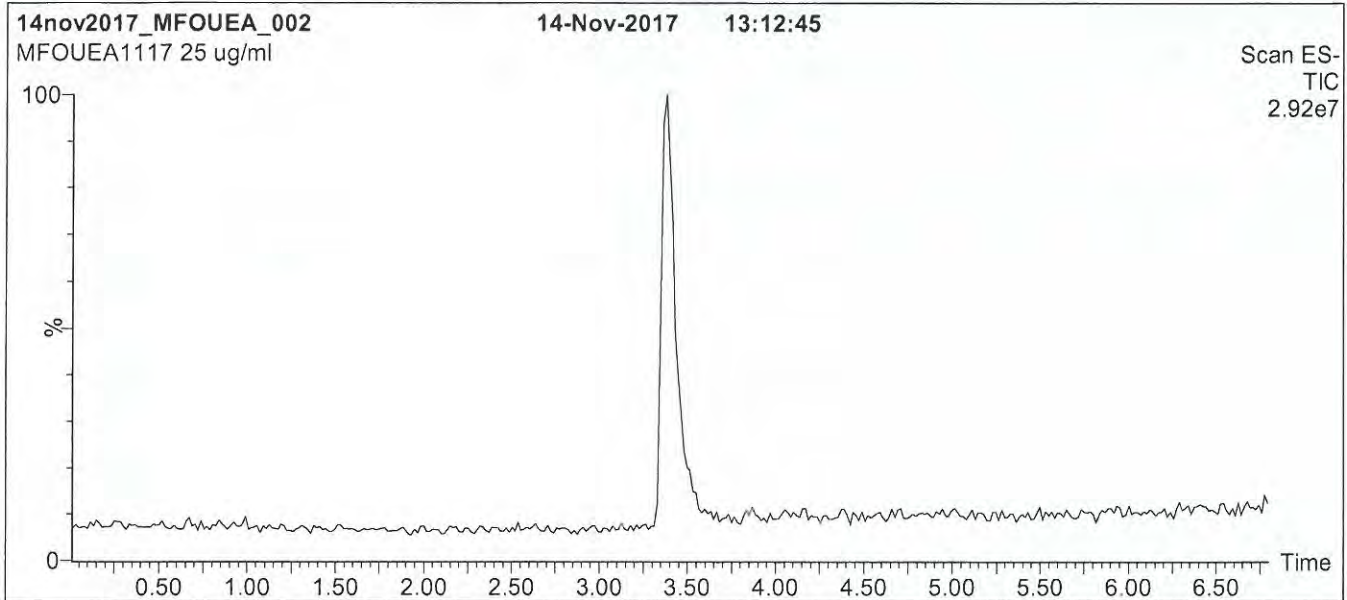
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1530

Figure 1: MFOUEA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold
for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

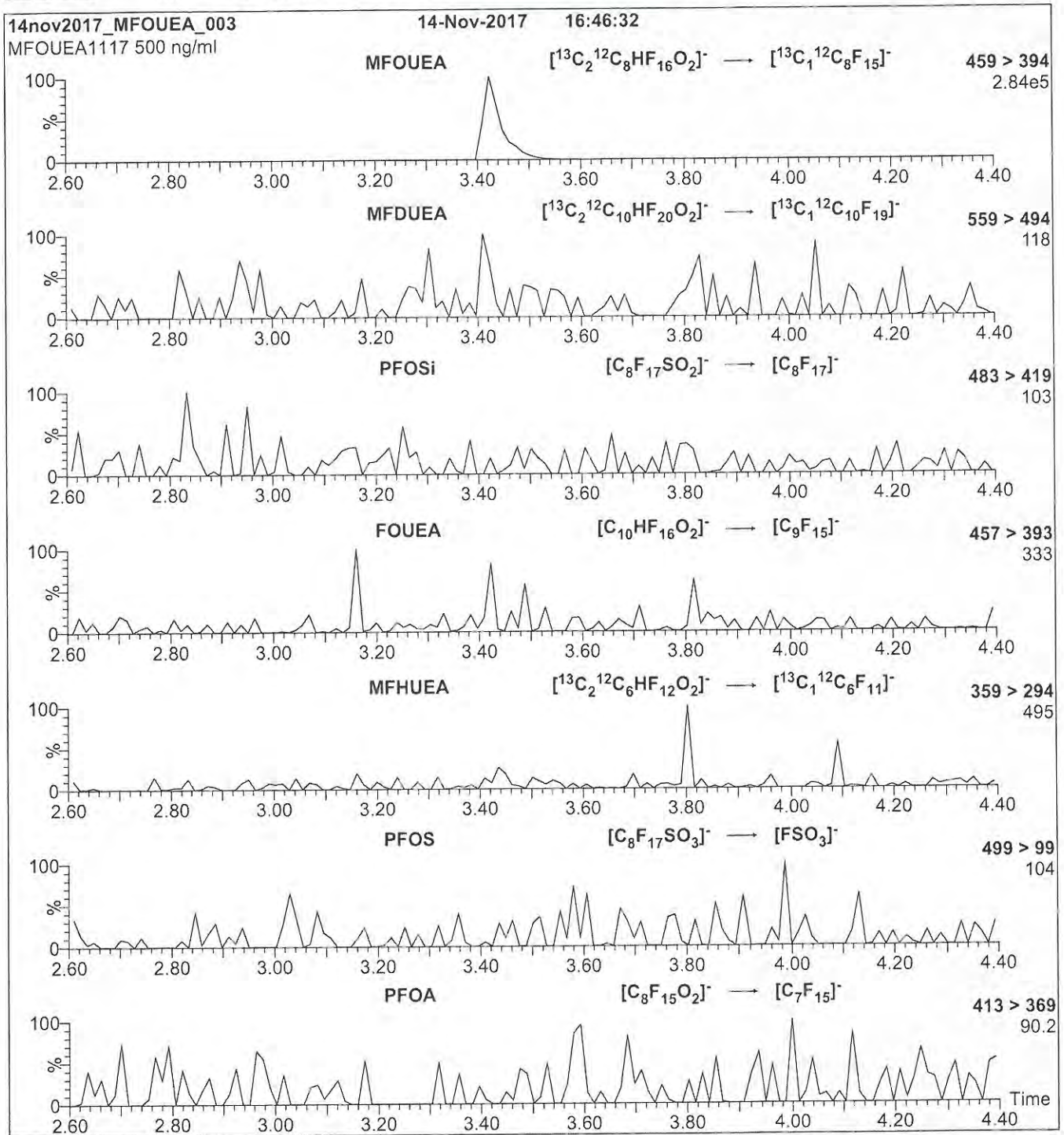
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 14.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18B1530

Figure 2: MFOUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MFOUEA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 21

18B1531

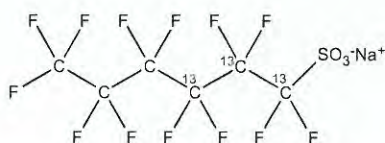


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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFHxS **LOT NUMBER:** M3PFHxS0717
COMPOUND: Sodium perfluoro-1-[1,2,3-¹³C₃]hexanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²C₃F₁₃SO₃Na **MOLECULAR WEIGHT:** 425.07
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.3 ± 2.4 µg/ml (M3PFHxS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 07/05/2017 (1,2,3-¹³C₃)
EXPIRY DATE: (mm/dd/yyyy) 07/05/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

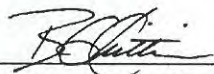
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 07/14/2017

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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18B1531

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

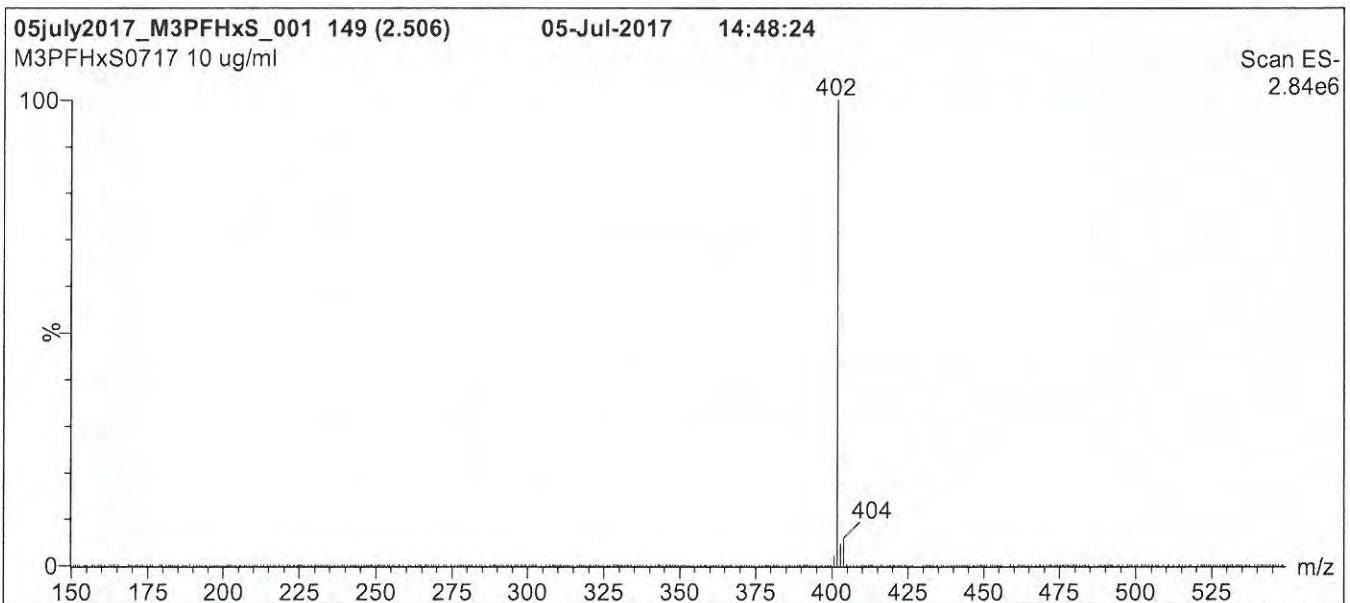
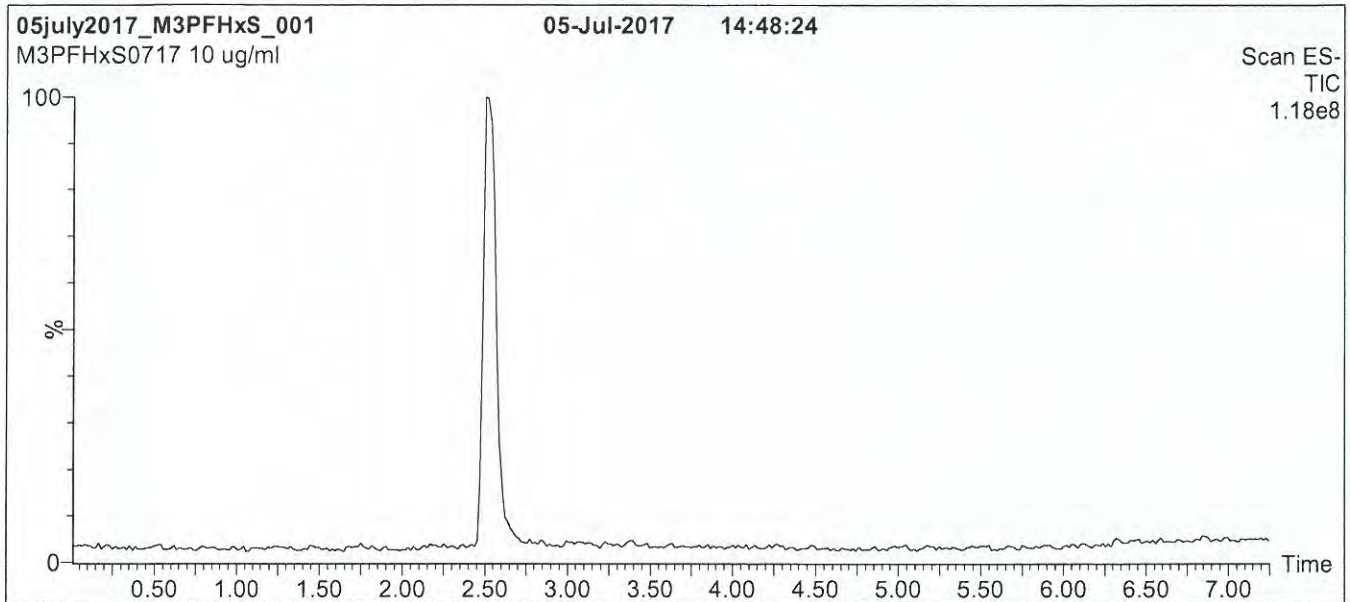
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1531

Figure 1: M3PFHxS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for
1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

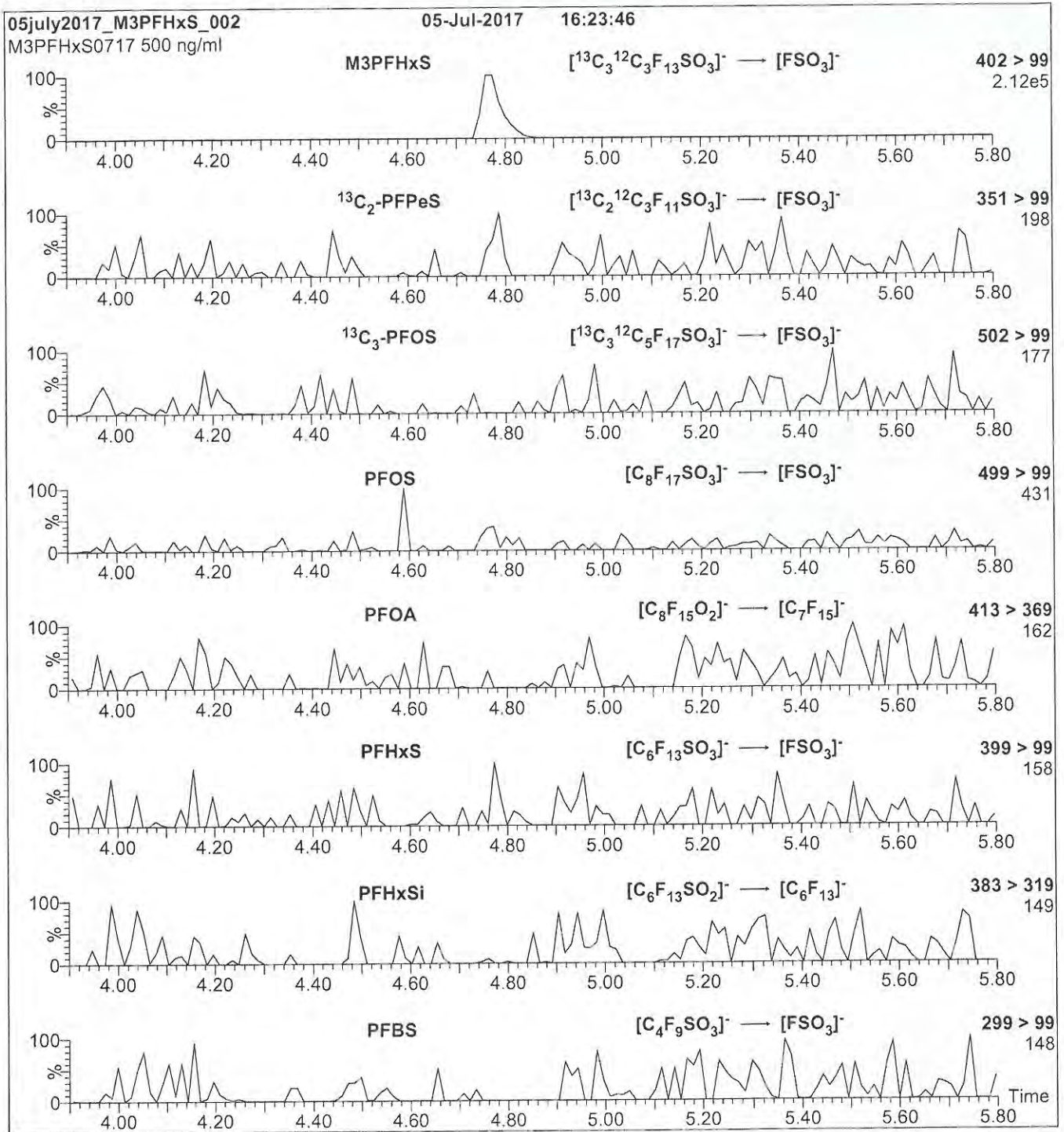
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

18B1531

Figure 2: M3PFHxS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 μ l (500 ng/ml M3PFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 μ l/min

MS Parameters

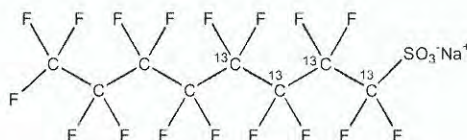
Collision Gas (mbar) = 3.43e-3
 Collision Energy (eV) = 30

18B1532


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 CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS1017
COMPOUND: Sodium perfluoro-1-[1,2,3,4-¹³C₄]octanesulfonate
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 526.08
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.8 ± 2.4 µg/ml (MPFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 10/17/2017 (1,2,3,4-¹³C₄)
EXPIRY DATE: (mm/dd/yyyy) 10/17/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.4% Sodium perfluoro-1-[1,2,3-¹³C₃]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

 Date: 10/18/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1532

INTENDED USE:

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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

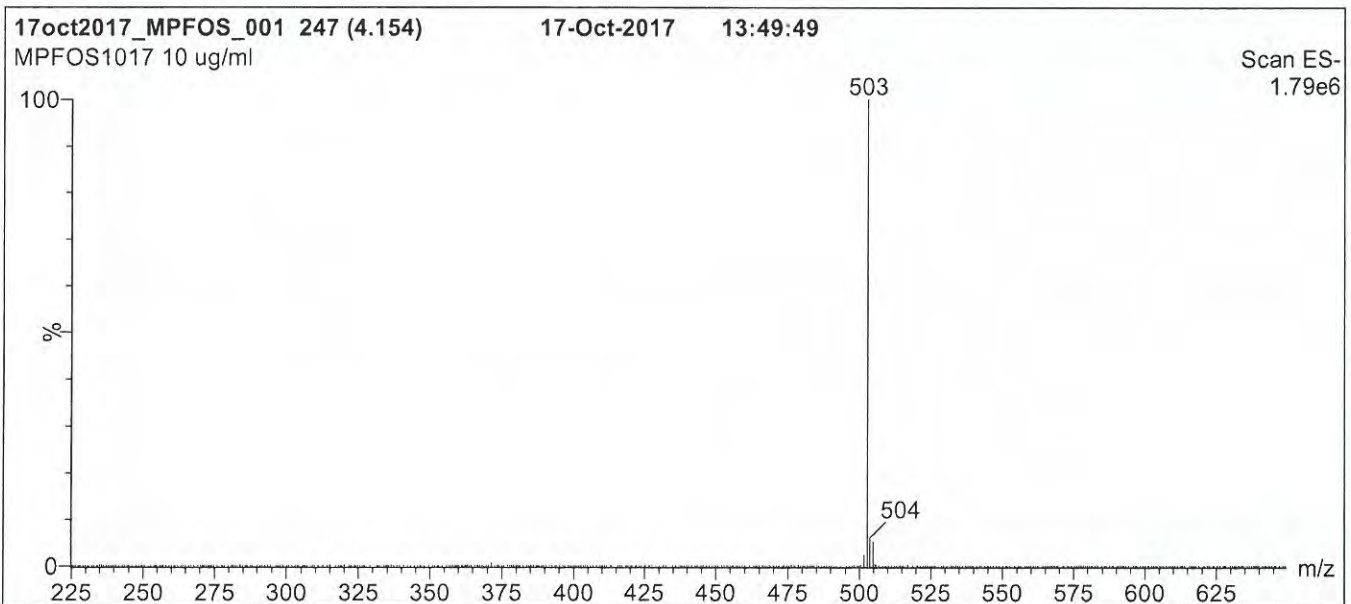
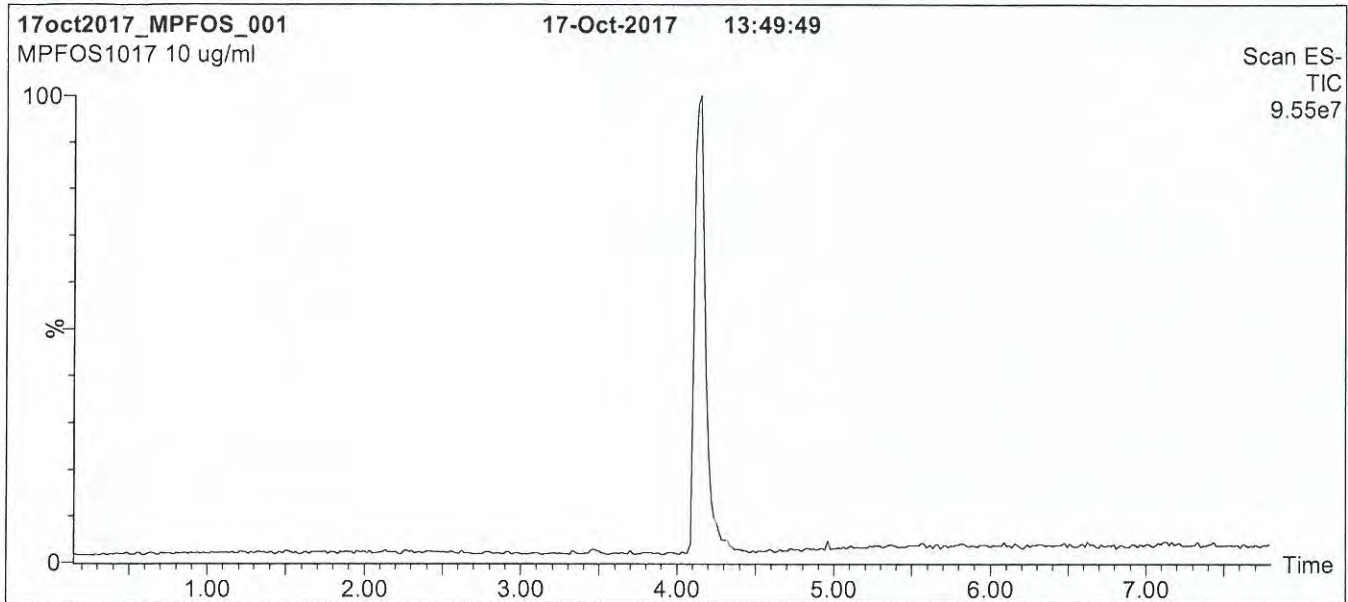
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1532

Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

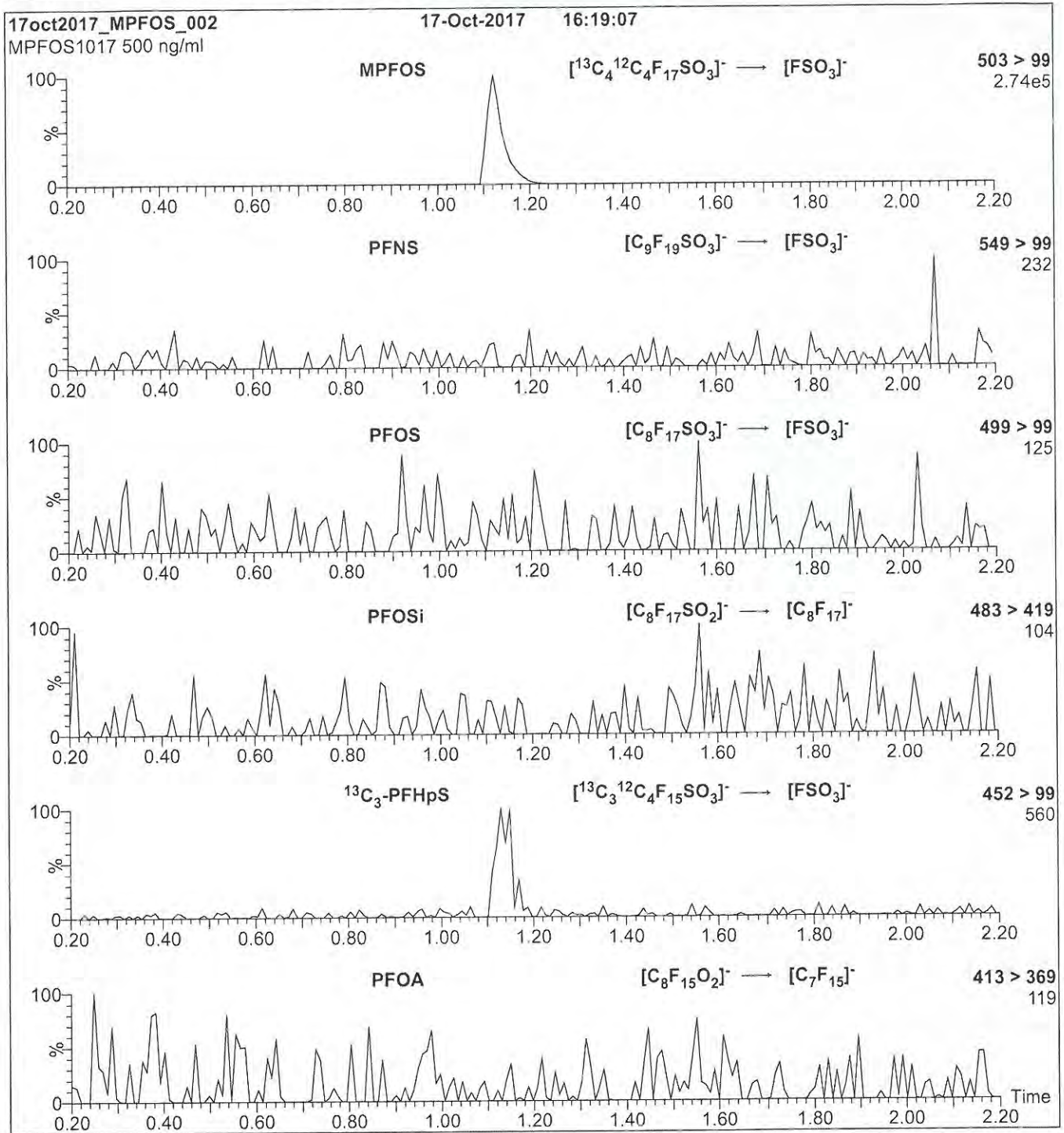
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1532

Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 40

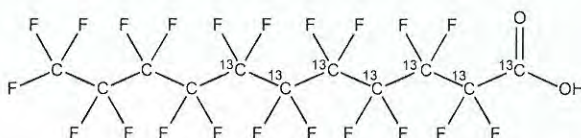
18B1533



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M7PFUdA **LOT NUMBER:** M7PFUdA0717
COMPOUND: Perfluoro-n-[1,2,3,4,5,6,7-¹³C₇]undecanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₇¹²C₄HF₂₁O₂ **MOLECULAR WEIGHT:** 571.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,5,6,7-¹³C₇)
LAST TESTED: (mm/dd/yyyy) 07/13/2017
EXPIRY DATE: (mm/dd/yyyy) 07/13/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 07/14/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1533

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EXPIRY DATE / PERIOD OF VALIDITY:

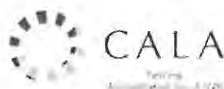
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LIMITED WARRANTY:

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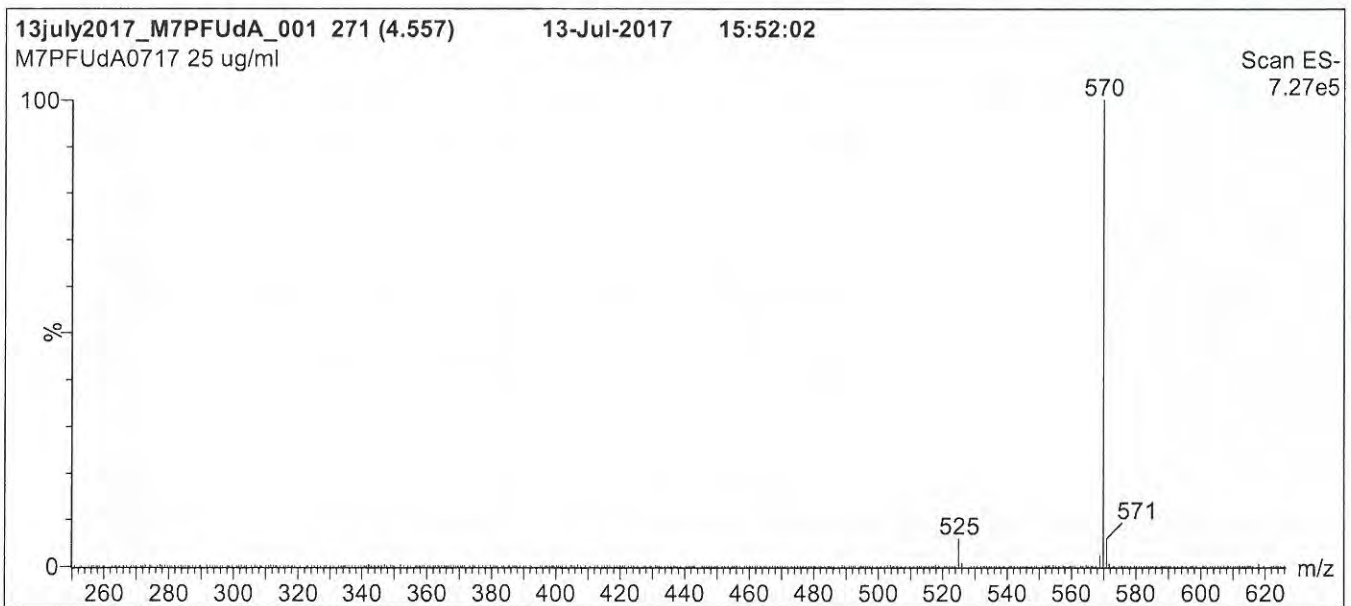
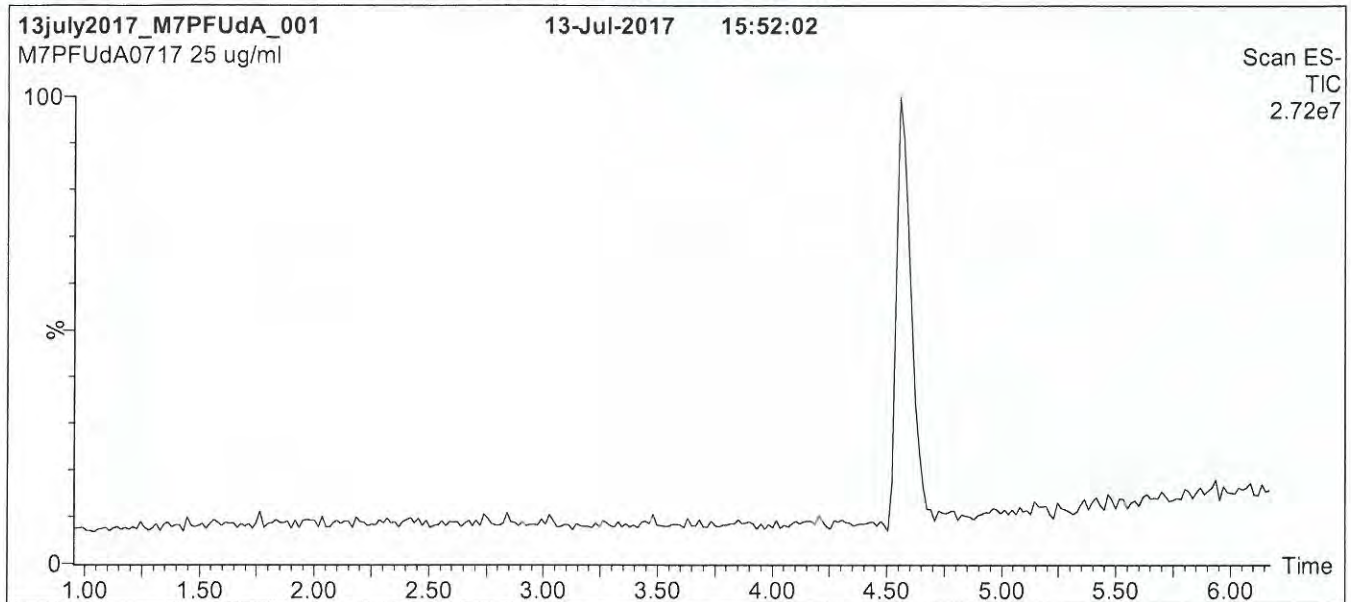
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18B1533

Figure 1: M7PFUdA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

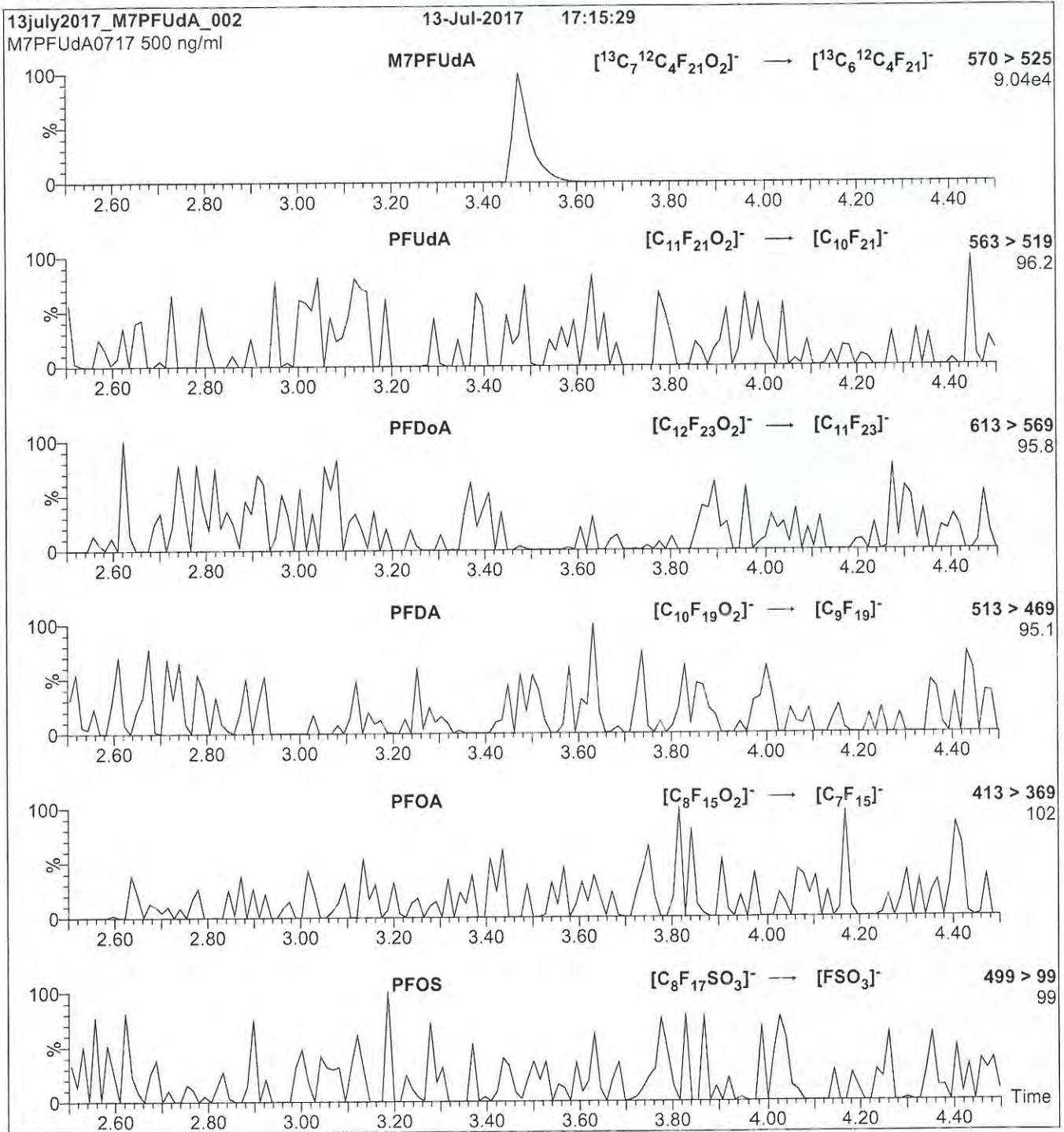
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 65
Desolvation Gas Flow (l/hr) = 750

18B1533

Figure 2: M7PFUdA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M7PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 11

18B1534

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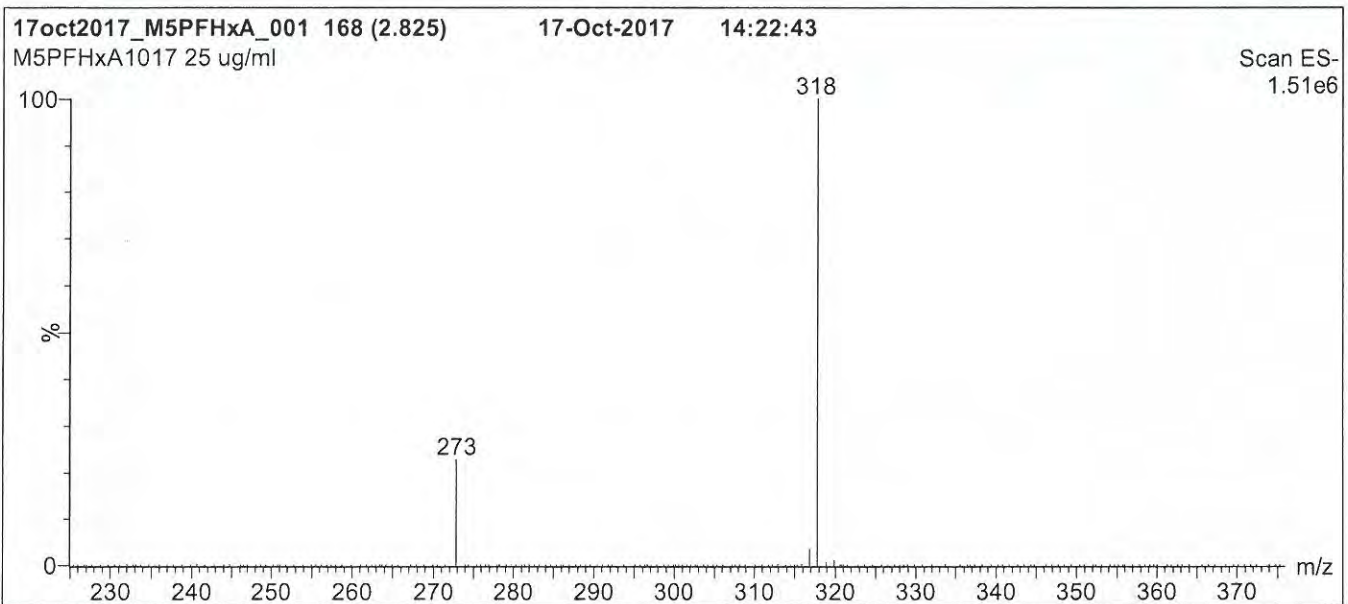
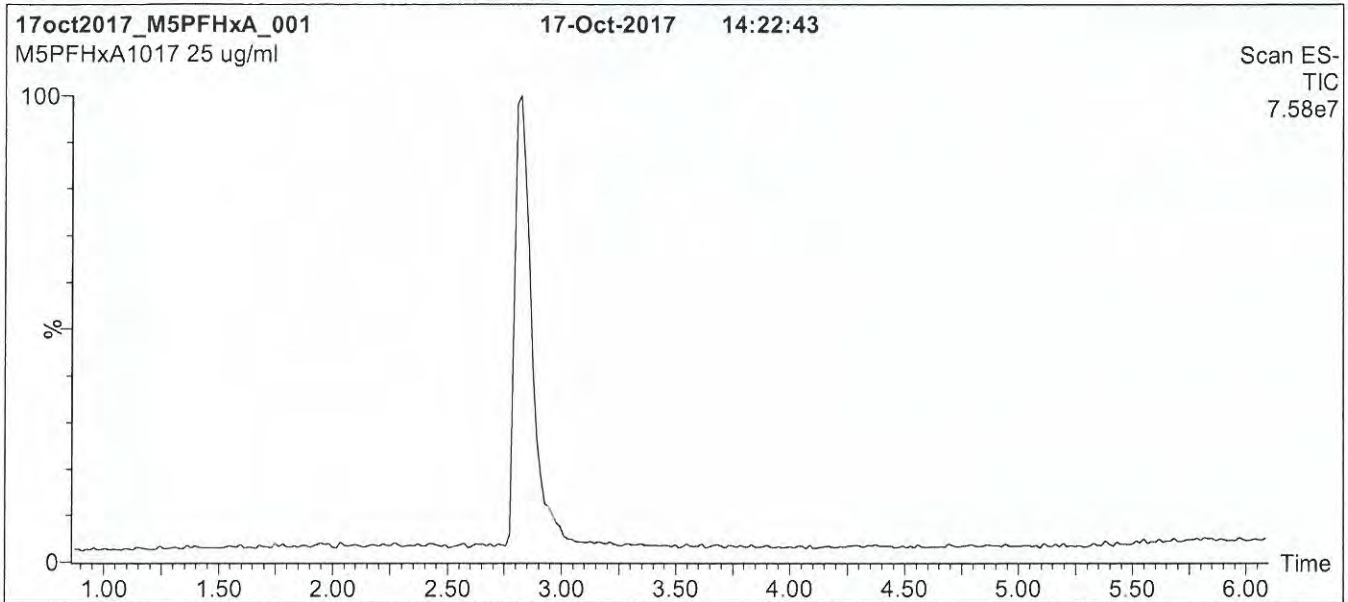
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18B1534

Figure 1: M5PFHxA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

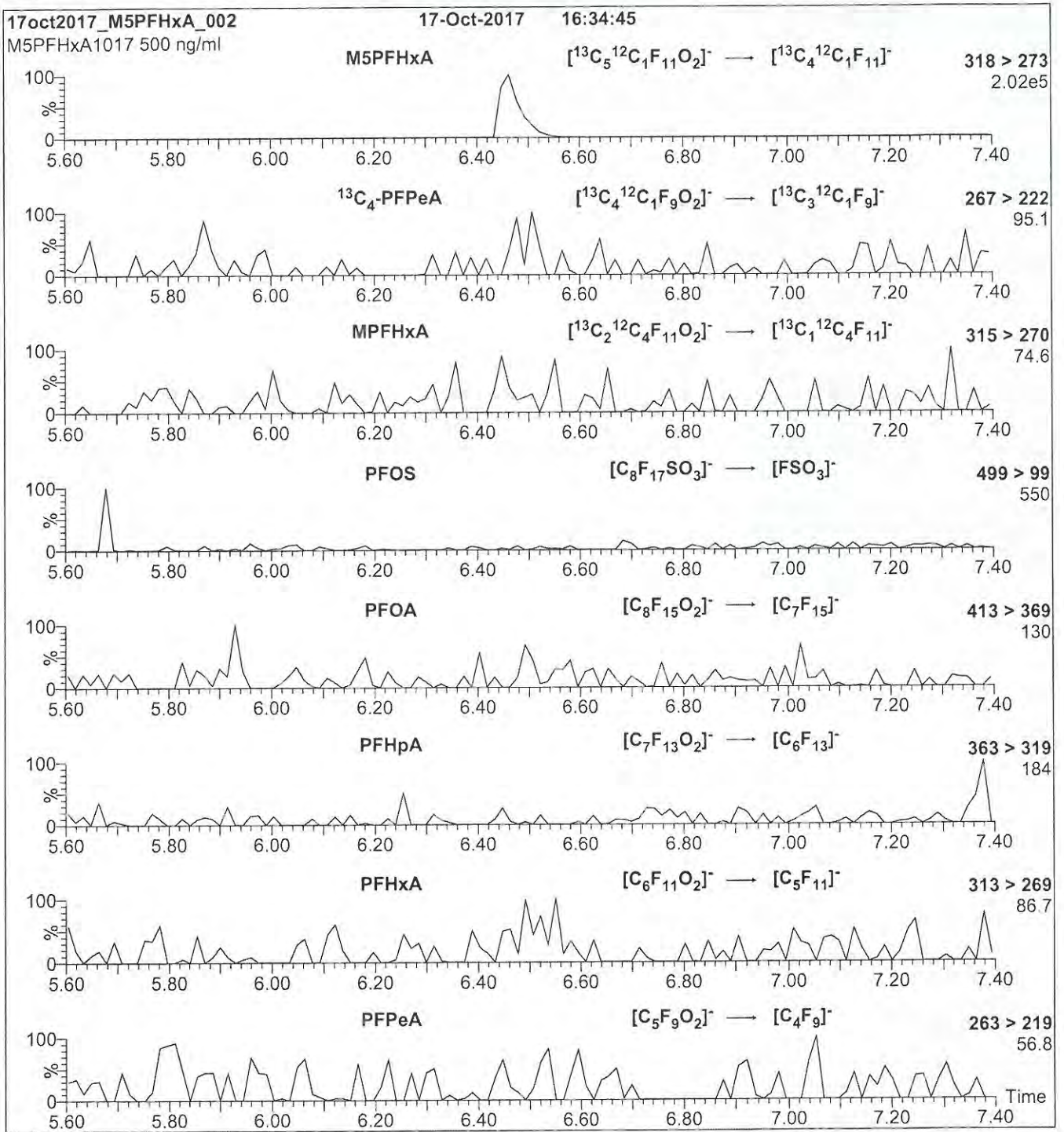
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1534

Figure 2: M5PFHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
 10 µl (500 ng/ml M5PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
 (both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
 Collision Energy (eV) = 9

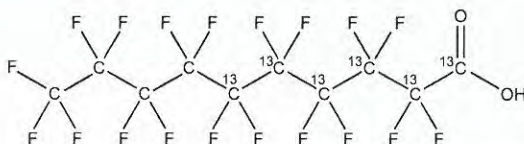
18B1535



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M6PFDA **LOT NUMBER:** M6PFDA1017
COMPOUND: Perfluoro-n-[1,2,3,4,5,6-¹³C₆]decanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₆¹²C₄HF₁₉O₂ **MOLECULAR WEIGHT:** 520.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,5,6-¹³C₆)
LAST TESTED: (mm/dd/yyyy) 10/17/2017
EXPIRY DATE: (mm/dd/yyyy) 10/17/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

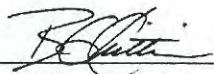
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


 B.G. Chittim, General Manager

Date: 10/20/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18B1535

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

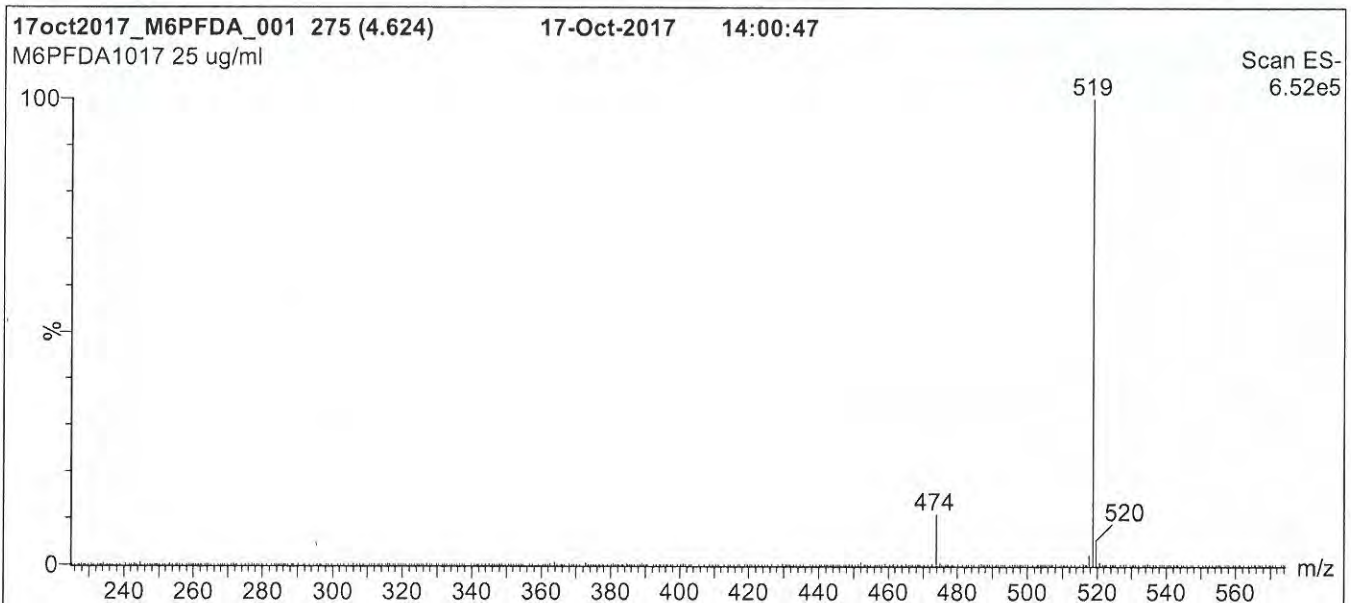
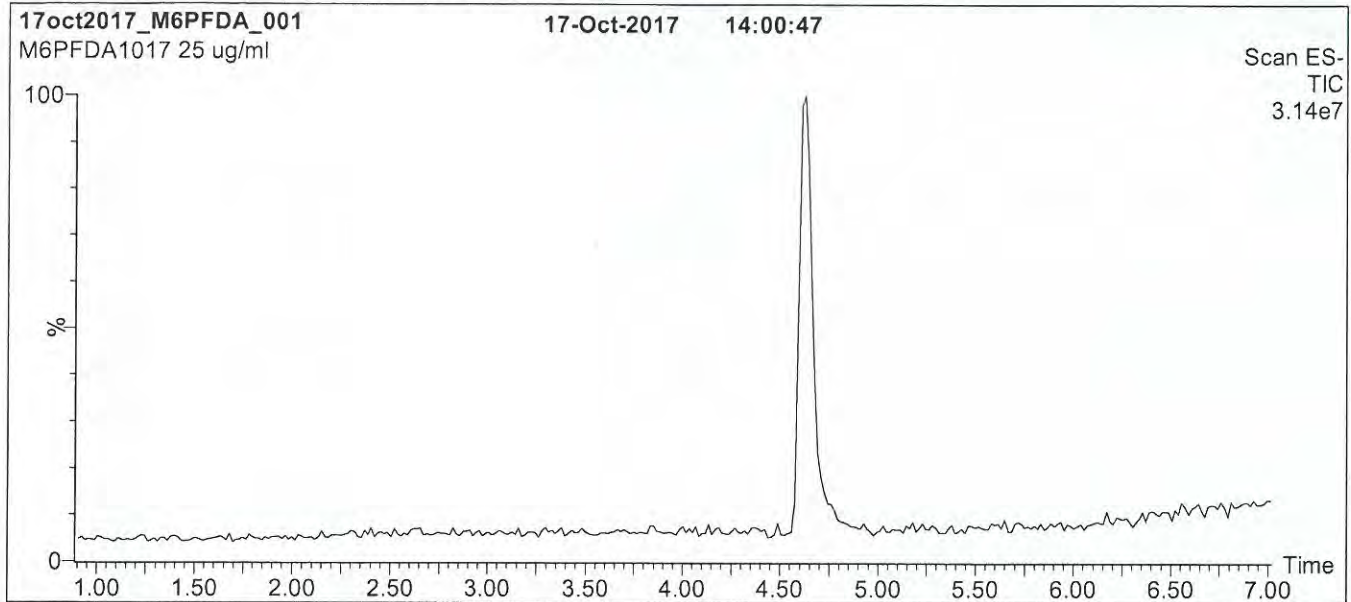
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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Figure 1: M6PFDA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

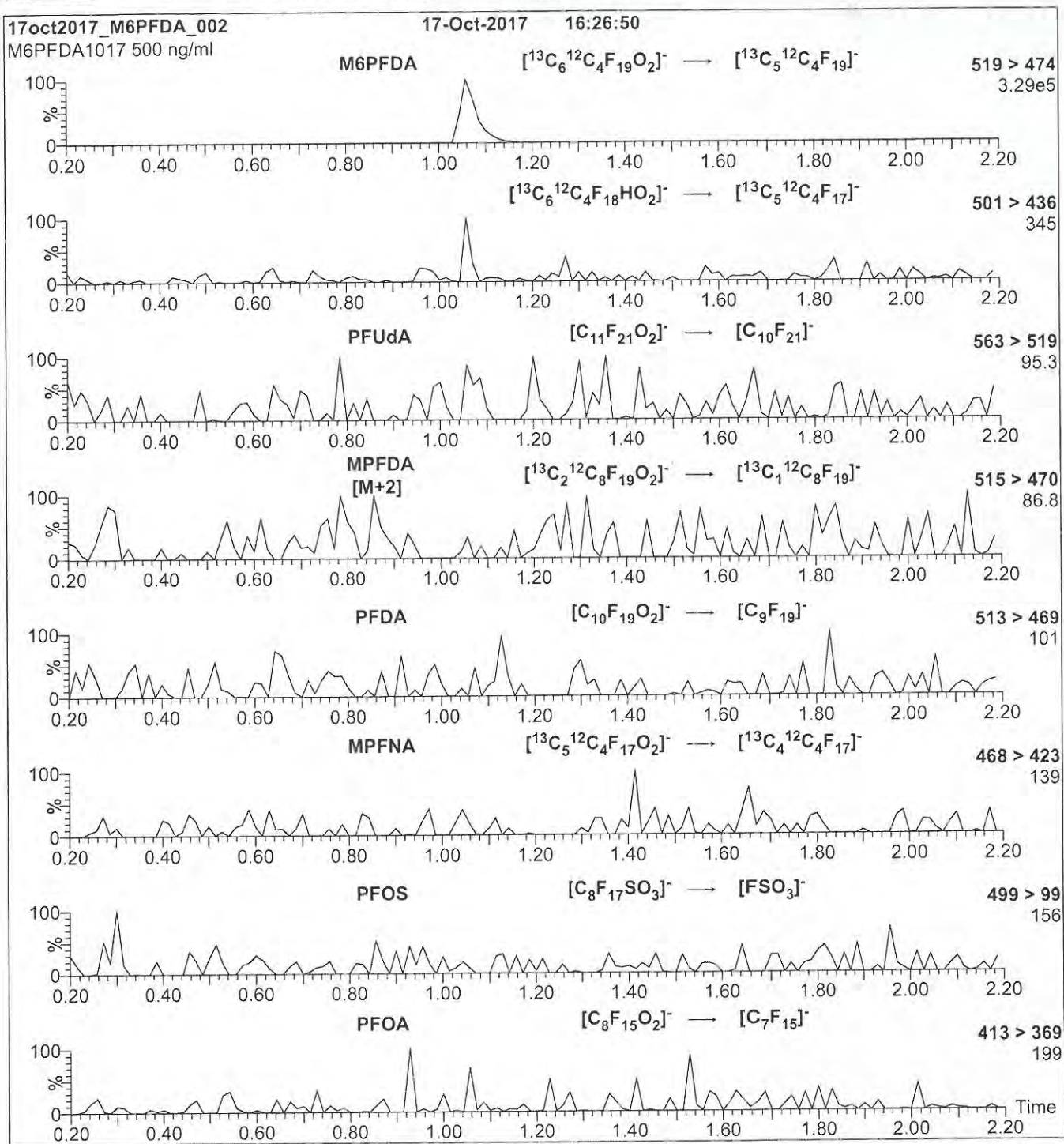
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18B1535

Figure 2: M6PFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M6PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O
(both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 13

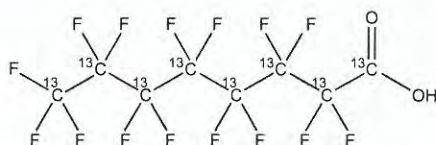
18B1536



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOA **LOT NUMBER:** M8PFOA0717
COMPOUND: Perfluoro-n-[¹³C₈]octanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₈H₁₅O₂ **MOLECULAR WEIGHT:** 422.01
CONCENTRATION: 49 ± 2.45 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: 97.9% (M8PFOA) **ISOTOPIC PURITY:** ≥99% ¹³C
 2.1% (MPFOA [M+4]) (¹³C₈)
LAST TESTED: (mm/dd/yyyy) 07/05/2017
EXPIRY DATE: (mm/dd/yyyy) 07/05/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of native perfluoro-n-octanoic acid (PFOA) and ~ 2.1% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 07/14/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

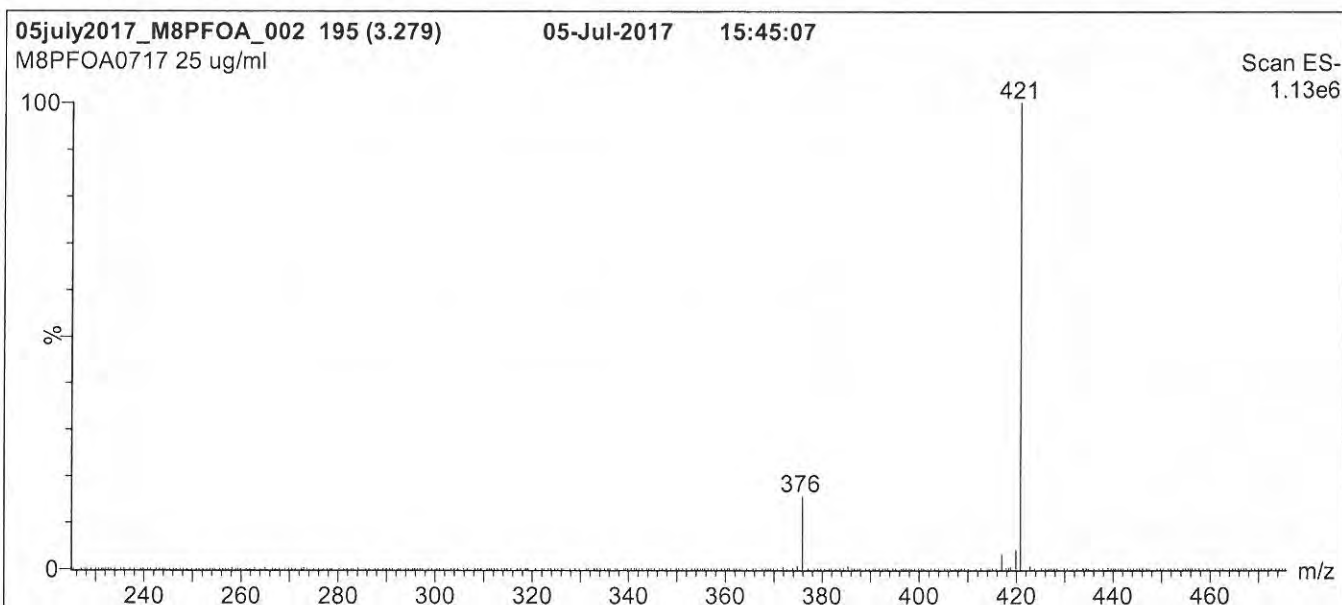
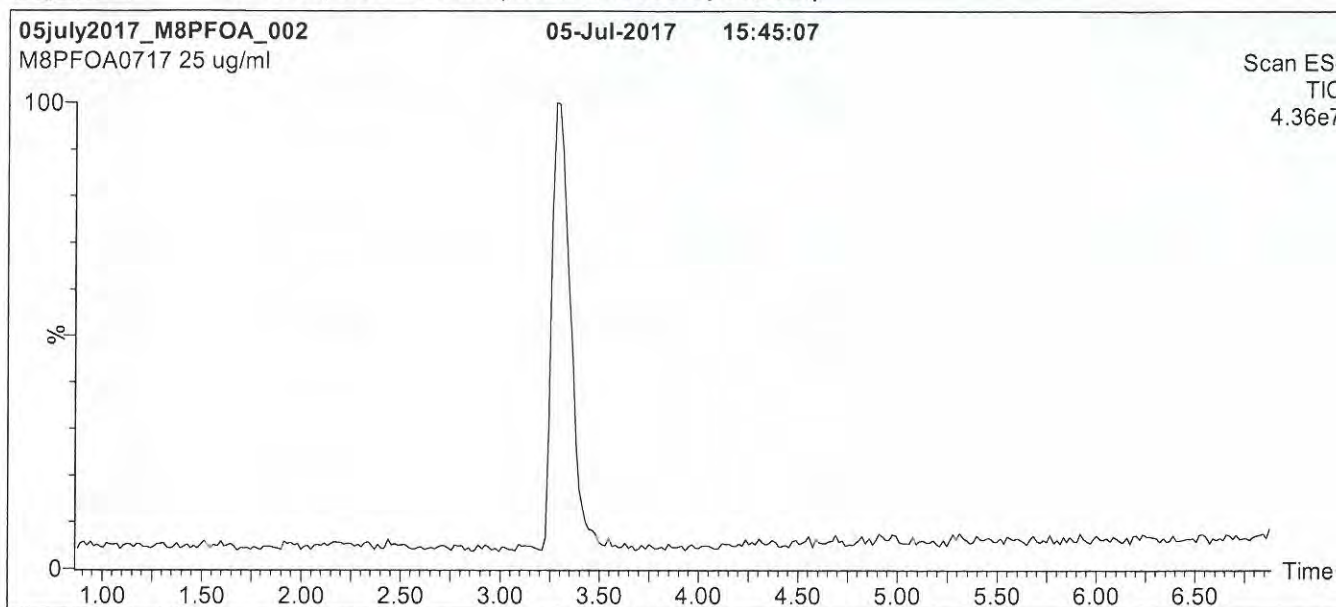
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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18B1536

Figure 1: M8PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

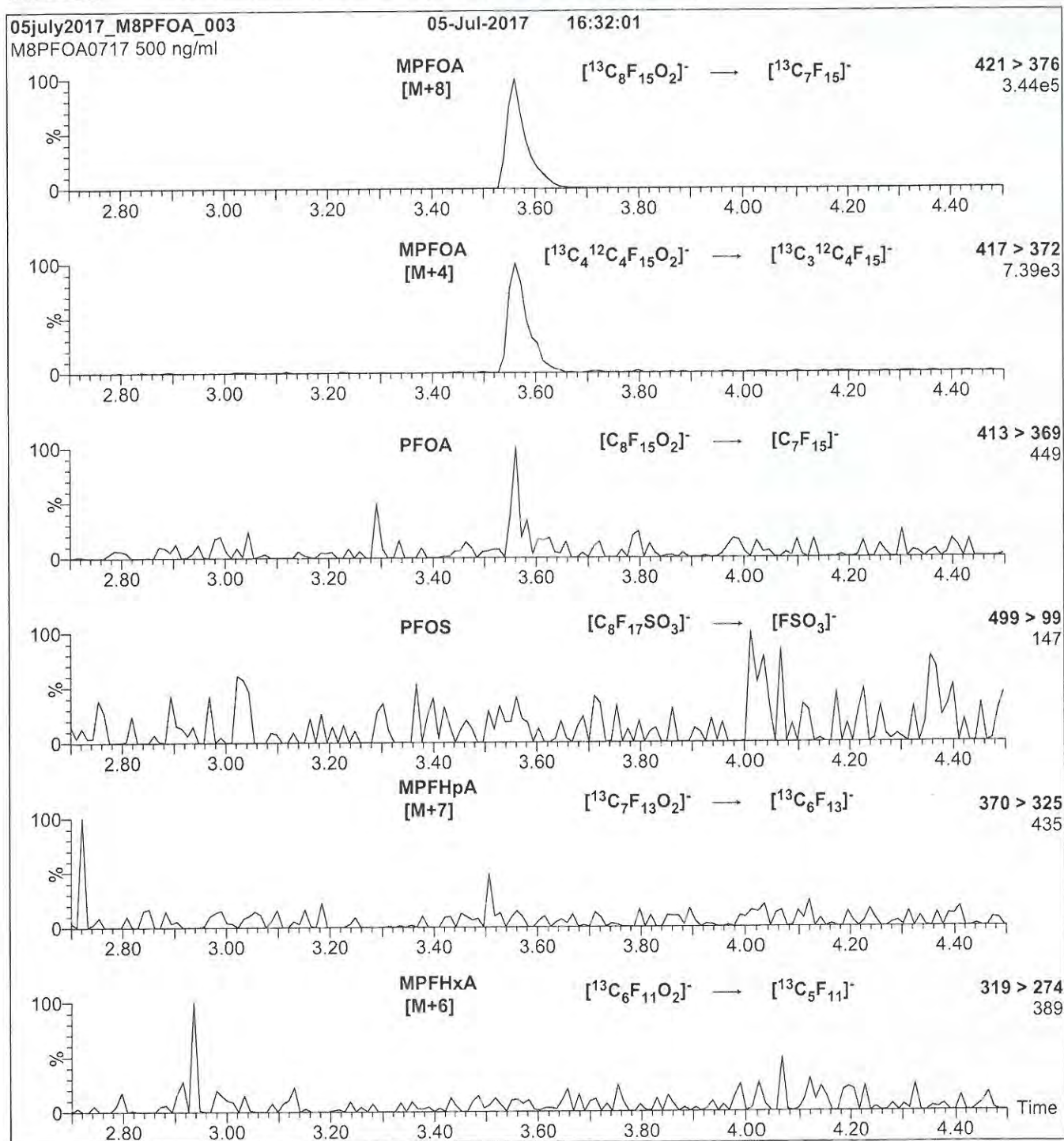
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1536

Figure 2: M8PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M8PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 10

18B1537

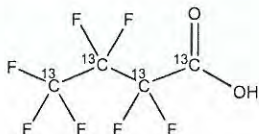


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFBA **LOT NUMBER:** MPFBA0417
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]butanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄HF₇O₂ **MOLECULAR WEIGHT:** 218.01
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4-¹³C₄)
LAST TESTED: (mm/dd/yyyy) 04/12/2017
EXPIRY DATE: (mm/dd/yyyy) 04/12/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 04/20/2017
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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INTENDED USE:

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

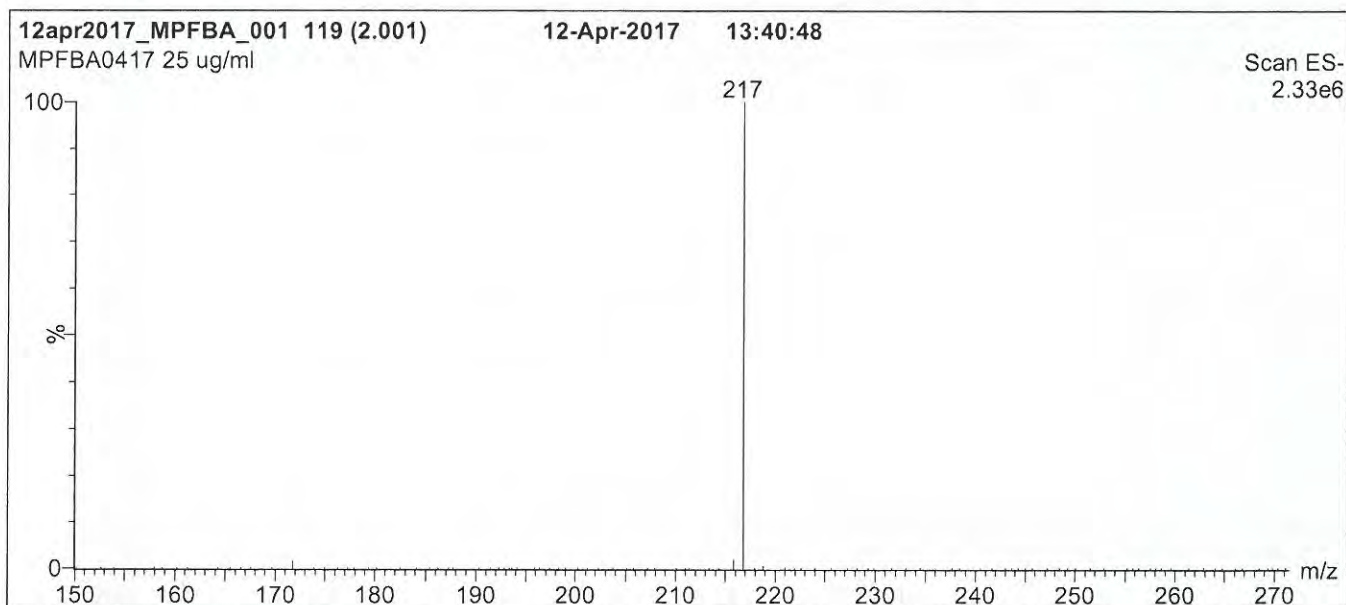
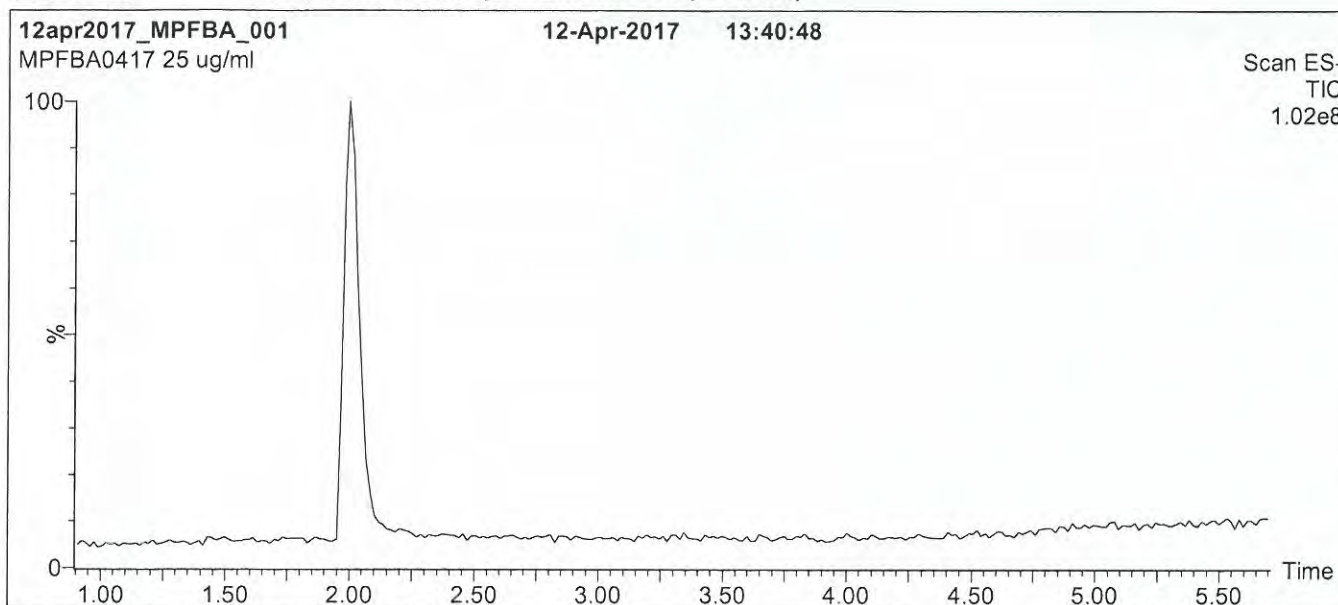
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18B1537

Figure 1: MPFBA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

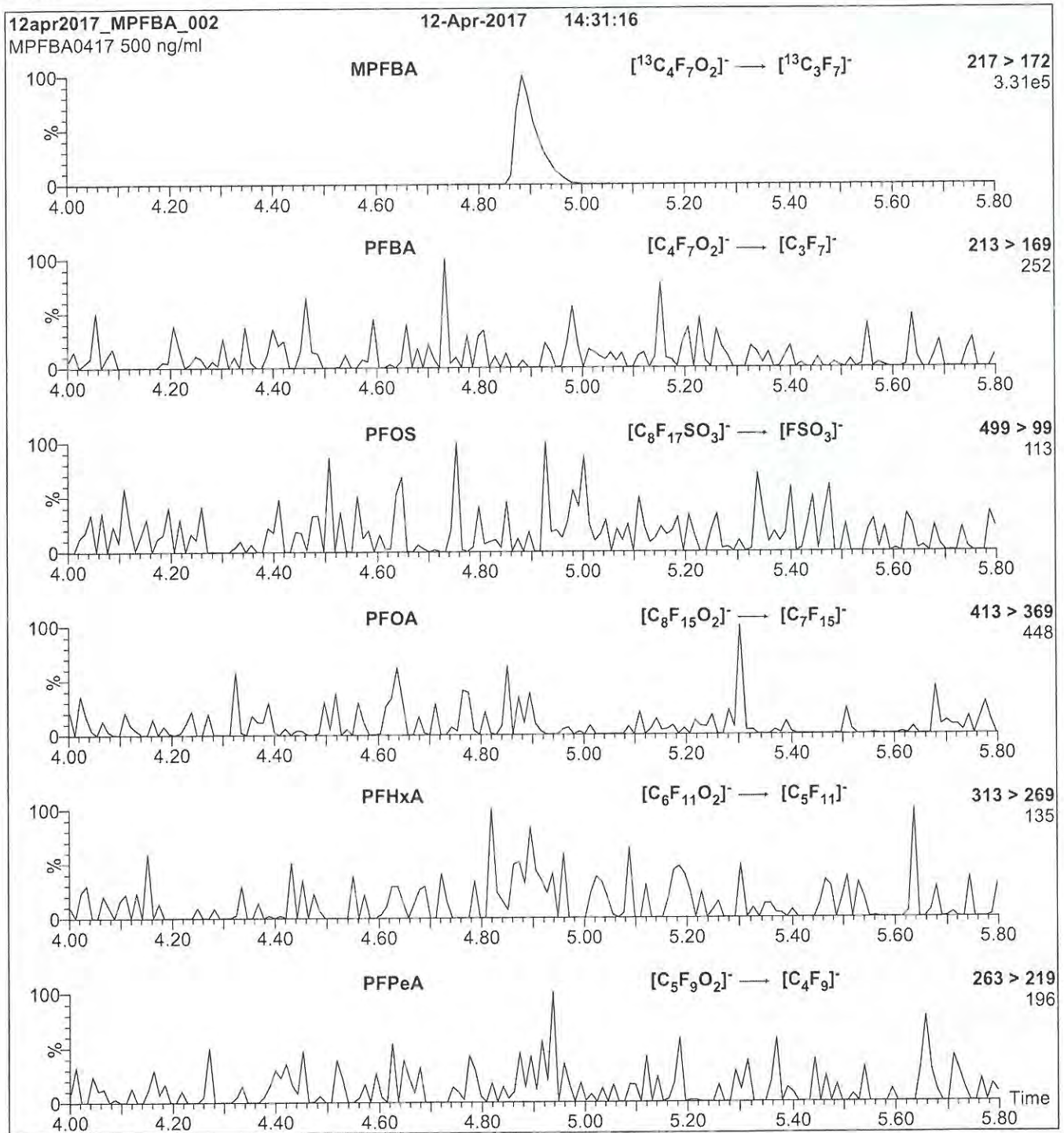
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

18B1537

Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 10

18B1538

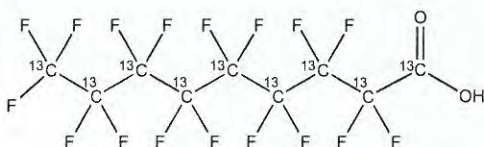


WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M9PFNA **LOT NUMBER:** M9PFNA0517
COMPOUND: Perfluoro-n-[¹³C₉]nonanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₉HF₁₇O₂ **MOLECULAR WEIGHT:** 473.01
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 05/23/2017 (¹³C₉)
EXPIRY DATE: (mm/dd/yyyy) 05/23/2022
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.9% of ¹³C₅¹²C₄HF₁₇O₂ (MPFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 05/25/2017
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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INTENDED USE:

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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

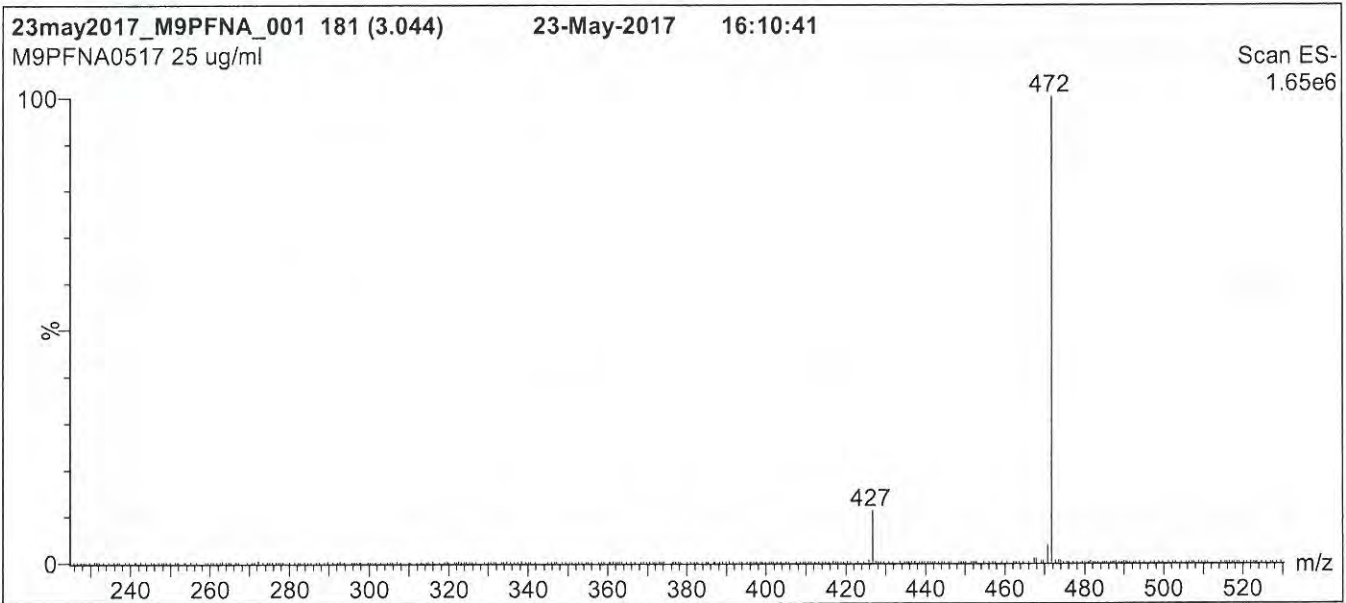
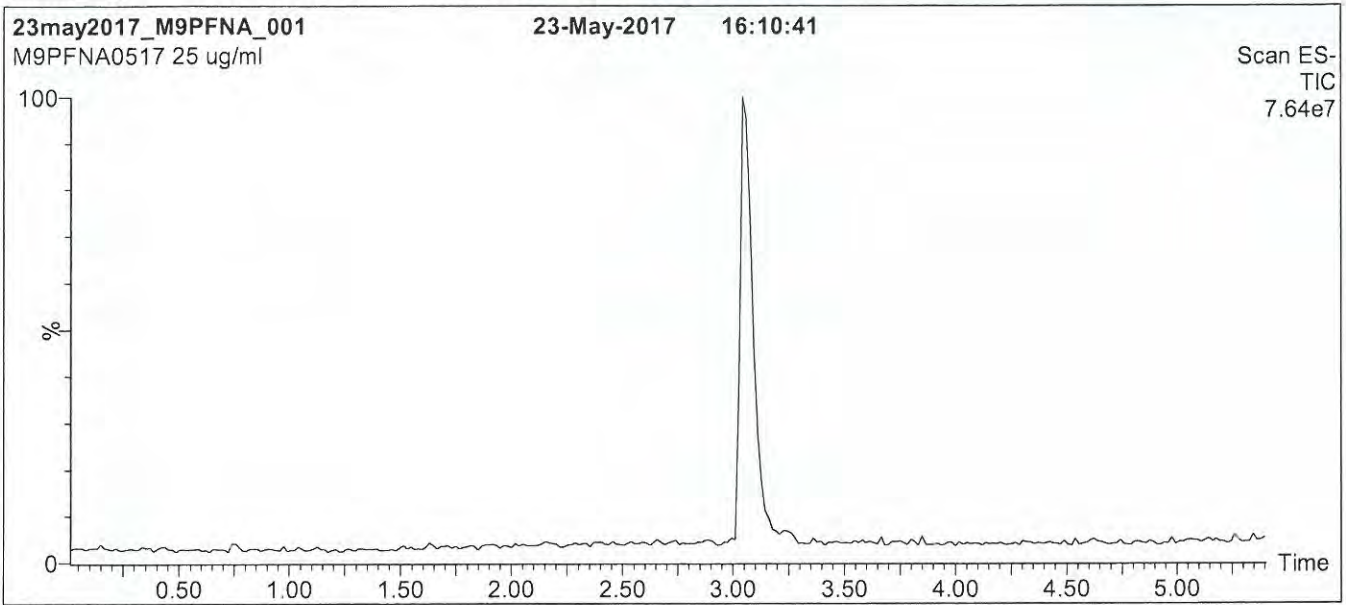
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

18B1538

Figure 1: M9PFNA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 μ l/min

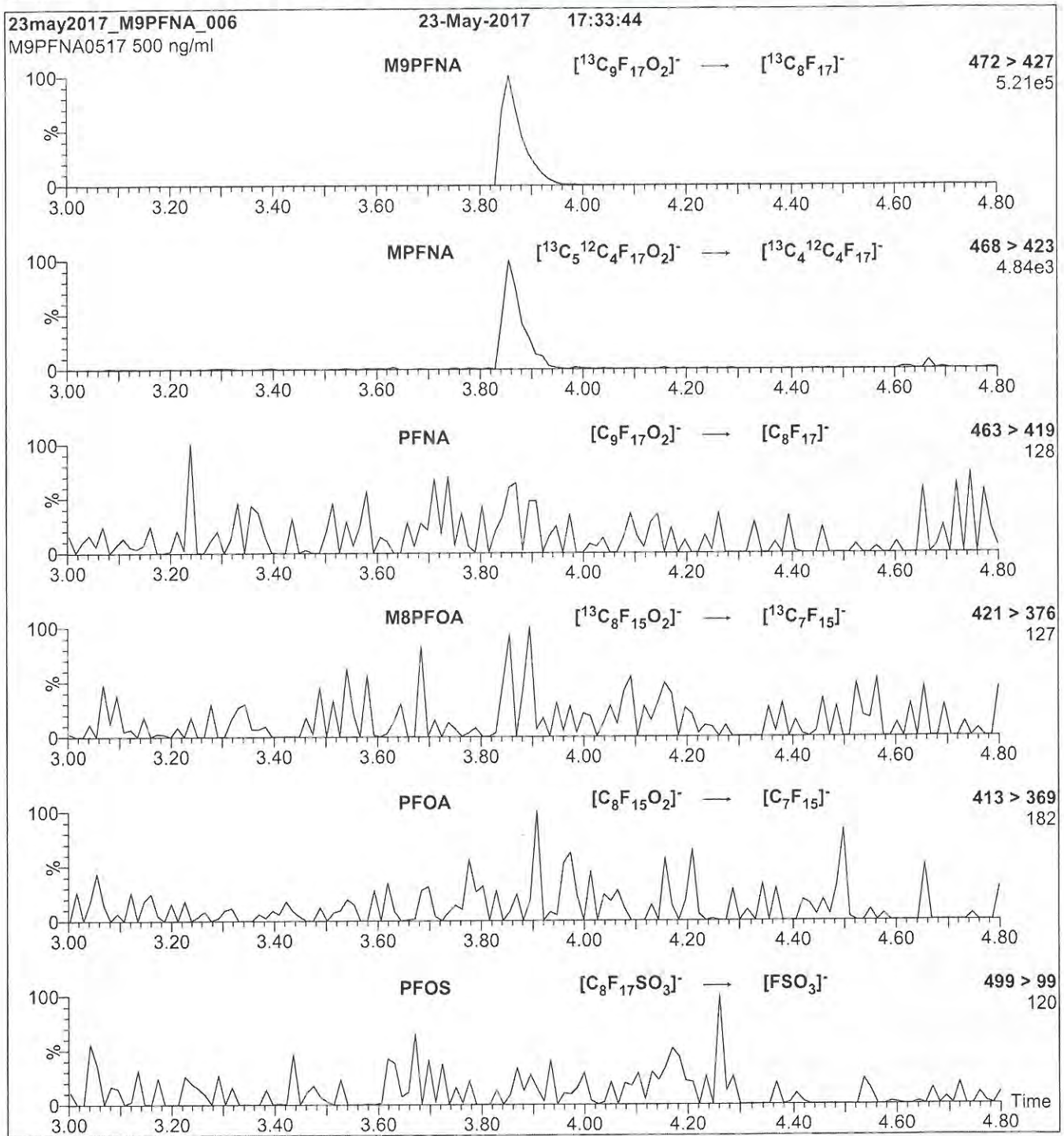
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

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Figure 2: M9PFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μl (500 ng/ml M9PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 11

"A1-MW-27-SA1","537 MOD","RES","1801071-01","Vista","375-73-5","PFBS","0.0819","ug/L","","0.00534","CRDL","","TRG","","","0.00854","CRDL","YES","0.00191"
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7", "PFTeDA", "0.0237", "ug/L", "", "0.00125", "CRDL", "", "SPK", "118", "", "0.00200", "CRDL", "YES", "0.000189"
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PFBS", "112", "%R", "", "", "CRDL", "", "IS", "112", "", "", "CRDL", "", ""
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PFHpA", "88.1", "%R", "", "", "CRDL", "", "IS", "88.1", "", "", "CRDL", "", ""
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PFHxS", "110", "%R", "", "", "CRDL", "", "IS", "110", "", "", "CRDL", "", ""
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PFOA", "97.7", "%R", "", "", "CRDL", "", "IS", "97.7", "", "", "CRDL", "", ""
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PFNA", "90.1", "%R", "", "", "CRDL", "", "IS", "90.1", "", "", "CRDL", "", ""
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PFOS", "95.7", "%R", "", "", "CRDL", "", "IS", "95.7", "", "", "CRDL", "", ""
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MeFOSAA", "88.0", "%R", "", "", "CRDL", "", "IS", "88.0", "", "", "CRDL", "", ""
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EtFOSAA", "92.2", "%R", "", "", "CRDL", "", "IS", "92.2", "", "", "CRDL", "", ""
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5", "PFBS", "0.0210", "ug/L", "", "0.00125", "CRDL", "", "SPK", "105", "1.25", "0.00200", "CRDL", "YES", "0.000448"
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4", "PFHxA", "0.0218", "ug/L", "", "0.00125", "CRDL", "", "SPK", "109", "4.00", "0.00200", "CRDL", "YES", "0.000545"
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9", "NMeFOSAA", "0.0191", "ug/L", "", "0.00125", "CRDL", "", "SPK", "95.6", "5.15", "0.00200", "CRDL", "YES", "0.000413"
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6", "NEtFOSAA", "0.0195", "ug/L", "", "0.00125", "CRDL", "", "SPK", "97.7", "7.23", "0.00200", "CRDL", "YES", "0.000343"
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8", "PFTrDA", "0.0169", "ug/L", "", "0.00125", "CRDL", "", "SPK", "84.3", "1.30", "0.00200", "CRDL", "YES", "0.000124"
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PFHxA", "91.9", "%R", "", "", "CRDL", "", "IS", "91.9", "", "", "CRDL", "", ""
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PFNA", "86.4", "%R", "", "", "CRDL", "", "IS", "86.4", "", "", "CRDL", "", ""
"B8F0004-BSD1", "537 MOD", "RES", "B8F0004-BSD1", "Vista", "13C8-PFOS", "13C8-
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EtFOSAA", "71.4", "%R", "", "", "CRDL", "", "IS", "71.4", "", "", "CRDL", "", ""
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PFUnA", "56.8", "%R", "", "", "CRDL", "", "IS", "56.8", "", "", "CRDL", "", ""
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PFDoA", "87.3", "%R", "", "", "CRDL", "", "IS", "87.3", "", "", "CRDL", "", ""

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"4663.3803","CTO 17F3803 Yuma","A1-MW-27-SA1","05/30/2018 08:18","AQ","1801071-01","","","537
MOD","Gen Prep","RES","06/01/2018 12:00","06/05/2018
00:57","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","05/31/2018
10:03","06/14/2018 00:00"
"4663.3803","CTO 17F3803 Yuma","A1-MW-55-SA1","05/30/2018 10:16","AQ","1801071-02","","","537
MOD","Gen Prep","RES","06/01/2018 12:00","06/05/2018
20:18","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","05/31/2018
10:03","06/14/2018 00:00"
"4663.3803","CTO 17F3803 Yuma","A1-MW-23-SA1","05/30/2018 11:10","AQ","1801071-03","","","537
MOD","Gen Prep","RES","06/01/2018 12:00","06/05/2018
20:28","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","05/31/2018
10:03","06/14/2018 00:00"
"4663.3803","CTO 17F3803 Yuma","A1-MW-07-SA1","05/30/2018 12:06","AQ","1801071-04","","","537
MOD","Gen Prep","RES","06/01/2018 12:00","06/05/2018
20:39","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","05/31/2018
10:03","06/14/2018 00:00"
"4663.3803","CTO 17F3803 Yuma","FRB-20180530","05/30/2018 14:30","AQ","1801071-05","","","537
MOD","Gen Prep","RES","06/01/2018 12:00","06/05/2018
01:38","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","05/31/2018
10:03","06/14/2018 00:00"
"4663.3803","CTO 17F3803 Yuma","B8F0004-BLK1","","AQ","B8F0004-BLK1","MB","","","537 MOD","Gen
Prep","RES","06/01/2018 12:00","06/04/2018
00:17","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","","06/14/2018
00:00"
"4663.3803","CTO 17F3803 Yuma","B8F0004-BS1","","AQ","B8F0004-BS1","LCS","","","537 MOD","Gen
Prep","RES","06/01/2018 12:00","06/03/2018
23:56","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","","06/14/2018
00:00"
"4663.3803","CTO 17F3803 Yuma","B8F0004-BSD1","","AQ","B8F0004-BSD1","LCSD","","","537 MOD","Gen
Prep","RES","06/01/2018 12:00","06/04/2018
00:06","Vista","COA","","","1","","","","","B8F0004","B8F0004","S8F0007","S8F0007","1801071","","06/14/2018
00:00"



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
ATTN: Ms. Sabina Sudoko

July 24, 2018

SUBJECT: MCAS Yuma, CTO 17F3803, Data Validation

Dear Ms. Sudoko,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on July 6, 2018. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #42613:

SDG

Fraction

280-110058-1, 280-110112-1
280-110226-1, 280-110291-1
280-110353-1, L1818881
L1819087, L1819352
L1819562, L1820050
L1820175, 1801024
1801037, 1801039
1801054, 1801071
1801084

Volatiles, 1,4-Dioxane, Wet Chemistry, Perfluorinated
Alkyl Acids

The data validation was performed under Stage 2B & 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona; April 2018
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1; 2017
- USEPA National Functional Guidelines for Superfund Organic Methods Data Review; January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Data Review; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

**Data Validation Report
MCAS Yuma, CTO 17F3803**

**SDGs: 280-110058-1, 280-110112-1, 280-110226-1,
280-110291-1, 280-110353-1, L1818881, L1819087,
L1819352, L1819562, L1820050, L1820175, 1801024,
1801037, 1801039, 1801054, 1801071, and 1801084**

Prepared for

Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

Prepared by

Laboratory Data Consultants, Inc
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

July 24, 2018

INTRODUCTION

This Data Validation Report (DVR) presents Stage 2B and Stage 4 data validation results for samples collected during the May 2018 sampling period. Data validation was performed in accordance with the Final Sampling and Analysis Plan (SAP) for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), a modified outline of the US EPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017), and a modified outline of the US EPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (January 2017). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

1,4-Dioxane by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)

Perfluorinated Alkyl Acids (PFAs) by EPA Method 537 Modified

Wet Chemistry:

Chloride, Nitrate as Nitrogen, and Sulfate by EPA SW 846 Method 9056A

Ferrous Iron by Standard Method 3500-Fe B

pH by EPA SW 846 Method 9040C

For samples reviewed by automated data review, the sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Stage 2B Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Stage 4 validation was performed are presented in Enclosure II. Validation for 1,4-Dioxane was performed manually and DVRs for Stage 2B and Stage 4 manual validation are also presented in Enclosure II.

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ongoing precision recovery (OPR), internal standards, trip blanks, equipment blanks, field rinsate blanks, and field duplicates. Approximately 20 percent of samples were subjected to Stage 4 evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of the calibrations, ICB/CCBs, and internal standards, and all QC for 1,4-Dioxane, which were validated manually. Quality assurance (QA)/QC criteria specified in the SAP, DoD QSM, and NFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
280-110291-1/ 8260B	A1-MW-23-SA1	All compounds	A headspace of >6 mm was apparent in the sample containers.	There should be no headspace in the sample containers.	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures upon receipt by the laboratory met validation criteria with the exception of one cooler in SDG L1818881 that was reported at 7.9°C. No data was qualified based on the cooler temperature.

All technical holding time requirements were met with the exception of twenty-five samples for pH and twenty-one samples for ferrous iron. Due to grossly exceeded holding times (e.g., >2x recommended holding time), 15 ferrous iron results were qualified as rejected (R). Additionally, the remainder of the data were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

II. Instrument Performance Check

A tune was performed at 12 hour intervals as required by the methods.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of each method were met.

IV. Continuing Calibration

All criteria for the continuing calibration of each method were met with the exception of one continuing calibration for PFAs. Since the outlier was associated with laboratory QC and there were no associated client samples, no data were qualified.

V. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software program with the exception of one blank for chloride and sulfate. The associated sample results were not detected or were significantly greater than the concentrations found in the blanks, therefore no data were qualified. The details are presented in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
280-110226-1/ 9056A	ICB/CCB	Nitrate as Nitrogen	0.04663 mg/L	A1-MW-42-SA1 A1-MW-54-SA1 A1-PZ-19-SA1 A1-MW-52-SA1 A1-MW-01-SA1 A1-MW-31-SA1
280-110291-1/ 9056A	ICB/CCB	Sulfate	0.2460 mg/L	A1-MW-14-SA1 A1-MW-23-SA1 A1-MW-55-SA1
280-110353-1/ 9056A	ICB/CCB	Chloride Sulfate	0.5385 mg/L 0.6554 mg/L	A1-MW-13-SA1 A1-MW-11-SA1 A1-MW-15-SA1

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

VI. Field Blank Samples

Five trip blanks were collected and analyzed for VOCs. No contaminants were found.

One equipment blank was collected and analyzed for VOCs and PFAs. No contaminants were found.

Five field rinsate blanks were collected and analyzed for PFAs. No contaminants were found.

VII. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of sample 16-HS-03-SA1 in SDG 280-110112-1 for VOCs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for 1,1-dichloroethene, two MS/MSD pairs for several PFAs, three MS/MSD pairs for chloride and sulfate, and three MS/MSD pairs for ferrous iron. The ferrous iron results in samples 16-HS-03-SA1 and A1-MW-31-SA1 were qualified as rejected (R) due to MS/MSD %Rs grossly outside QC limits (i.e., $\leq 30\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. No data were qualified where sample concentrations were significantly greater ($>4x$) than the spike amount. The details regarding the qualification of data are provided in Enclosures I and II.

X. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

XII. Laboratory Control Samples/Ongoing Precision Recovery

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Ongoing precision recovery (OPR) samples were analyzed as required by Method 537 Mod. Percent recoveries (%R) were within QC limits with the exception of two OPR for PFTrDA. No data were qualified due to high %Rs since the associated results were non-detected. The details are presented in Enclosures I and II.

XIII. Field Duplicate Samples

Two field duplicate pairs were collected and analyzed for all methods. All RPDs were within QC limits. RPDs were not calculated when sample results in one or both samples were less than 5X the limit of quantitation (LOQ). The field duplicate result comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

SDG/ Method	Sample	Internal Standards	%R (Limits)	Compound	Flag	A or P
1801024/ 537	A1-MW-51-SA1	¹³ C3-PFBS	247 (50-150)	PFBS	J (all detects)	P
1801024/ 537	A1-MW-51-SA1	¹³ C3-NEtFOSAA	151 (50-150)	NEtFOSAA	UJ (all non-detects)	P
1801037/ 537	A1-MW-18-SA1	¹³ C3-PFBS	170 (50-150)	PFBS	J (all detects)	P
1801037/ 537	16-MW-08-SA1	¹³ C3-PFBS	187 (50-150)	PFBS	J (all detects)	P
1801037/ 537	A1-MW-19-SA1	¹³ C3-PFBS	214 (50-150)	PFBS	J (all detects)	P
1801037/ 537	A1-MW-37-SA1	¹³ C3-PFBS	228 (50-150)	PFBS	J (all detects)	P
1801037/ 537	A1-MW-37-SA1D	¹³ C3-PFBS	161 (50-150)	PFBS	J (all detects)	P

SDG/ Method	Sample	Internal Standards	%R (Limits)	Compound	Flag	A or P
1801037/ 537	16-HS-03-SA1	¹³ C3-PFBS	154 (50-150)	PFBS	J (all detects)	P
1801037/ 537	16-MW-09-SA1	¹³ C3-PFBS	153 (50-150)	PFBS	J (all detects)	P
1801037/ 537	16-MW-06-SA1	¹³ C3-PFBS	214 (50-150)	PFBS	J (all detects)	P
1801039/ 537	A1-MW-13-SA1	¹³ C3-PFBS	419 (50-150)	PFBS	J (all detects)	P
1801039/ 537	A1-MW-11-SA1	¹³ C3-PFBS	271 (50-150)	PFBS	J (all detects)	P
1801039/ 537	A1-MW-14-SA1	¹³ C3-PFBS	527 (50-150)	PFBS	J (all detects)	P
1801039/ 537	A1-MW-15-SA1	¹³ C3-PFBS	235 (50-150)	PFBS	J (all detects)	P
1801039/ 537	A1-MW-25-SA1	¹³ C3-PFBS	428 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-42-SA1	¹³ C3-PFBS	310 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-54-SA1	¹³ C3-PFBS	175 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-53-SA1	¹³ C3-PFBS	154 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-PZ-19-SA1	¹³ C3-PFBS	182 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-52-SA1	¹³ C3-PFBS	211 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-01-SA1	¹³ C3-PFBS	192 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-01-SA1D	¹³ C3-PFBS	204 (50-150)	PFBS	J (all detects)	P
1801054/ 537	A1-MW-31-SA1	¹³ C3-PFBS	254 (50-150)	PFBS	J (all detects)	P
1801071/ 537	A1-MW-27-SA1	¹³ C3-PFBS	174 (50-150)	PFBS	J (all detects)	P

SDG/ Method	Sample	Internal Standards	%R (Limits)	Compound	Flag	A or P
1801071/ 537	A1-MW-07-SA1	¹³ C3-PFBS	209 (50-150)	PFBS	J (all detects)	P
1801071/ 537	A1-MW-55-SA1	¹³ C3-PFBS	165 (50-150)	PFBS	UJ (all non-detects)	P

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosures I and II.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to severe holding time exceedances and MS/MSD %Rs, data were qualified as rejected in fifteen samples.

Due to headspace, data were qualified as estimated in one sample.

Due to holding time exceedances, data were qualified as estimated in twenty-five samples.

Due to surrogate %R, data were qualified as estimated in one sample.

Due to MS/MSD %R and RPD, data were qualified as estimated in three samples.

Due to internal standard %R, data were qualified as estimated in twenty-five samples.

Due to results below the LOQ, data were qualified as estimated in twenty-six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2018	TB-20180522	280-110058-1	TB	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-51-SA1	1801024-01	N	Gen Prep	537 MOD	Stage 2B
22-May-2018	A1-MW-51-SA1	280-110058-2	N	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-51-SA1	280-110058-2	N	METHOD	9040C	Stage 2B
22-May-2018	A1-MW-51-SA1	280-110058-2	N	METHOD	9056A	Stage 2B
22-May-2018	A1-MW-51-SA1	280-110058-2	N	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-51-SA1DUP	280-110058-2DUP	DUP	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-51-SA1MS	280-110058-2MS	MS	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-51-SA1MS	280-110058-2MS	MS	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-51-SA1MSD	280-110058-2MSD	MSD	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-51-SA1MSD	280-110058-2MSD	MSD	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-50-SA1	1801024-02	N	Gen Prep	537 MOD	Stage 2B
22-May-2018	A1-MW-50-SA1	280-110058-3	N	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-50-SA1	280-110058-3	N	METHOD	9040C	Stage 2B
22-May-2018	A1-MW-50-SA1	280-110058-3	N	METHOD	9056A	Stage 2B
22-May-2018	A1-MW-50-SA1	280-110058-3	N	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-50-SA1DUP	280-110058-3DUP	DUP	METHOD	9040C	Stage 2B
22-May-2018	A1-MW-49-SA1	1801024-03	N	Gen Prep	537 MOD	Stage 2B
22-May-2018	A1-MW-49-SA1	280-110058-4	N	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-49-SA1	280-110058-4	N	METHOD	9040C	Stage 2B
22-May-2018	A1-MW-49-SA1	280-110058-4	N	METHOD	9056A	Stage 2B
22-May-2018	A1-MW-49-SA1	280-110058-4	N	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-05-SA1	1801024-04	N	Gen Prep	537 MOD	Stage 2B
22-May-2018	A1-MW-05-SA1	280-110058-5	N	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-05-SA1	280-110058-5	N	METHOD	9040C	Stage 2B
22-May-2018	A1-MW-05-SA1	280-110058-5	N	METHOD	9056A	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2018	A1-MW-05-SA1	280-110058-5	N	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	A1-MW-04-SA1	1801024-05	N	Gen Prep	537 MOD	Stage 2B
22-May-2018	A1-MW-04-SA1	280-110058-6	N	METHOD	8260B	Stage 2B
22-May-2018	A1-MW-04-SA1	280-110058-6	N	METHOD	9040C	Stage 2B
22-May-2018	A1-MW-04-SA1	280-110058-6	N	METHOD	9056A	Stage 2B
22-May-2018	A1-MW-04-SA1	280-110058-6	N	METHOD	SM3500 Fe B D	Stage 2B
22-May-2018	FRB-20180522	1801024-06	FRB	Gen Prep	537 MOD	Stage 2B
23-May-2018	TB-20180523	280-110112-1	TB	METHOD	8260B	Stage 4
23-May-2018	A1-MW-18-SA1	1801037-01	N	Gen Prep	537 MOD	Stage 4
23-May-2018	A1-MW-18-SA1	280-110112-2	N	METHOD	8260B	Stage 4
23-May-2018	A1-MW-18-SA1	280-110112-2	N	METHOD	9040C	Stage 4
23-May-2018	A1-MW-18-SA1	280-110112-2	N	METHOD	9056A	Stage 4
23-May-2018	A1-MW-18-SA1	280-110112-2	N	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	A1-MW-18-SA1DUP	280-110112-2DUP	DUP	METHOD	9056A	Stage 4
23-May-2018	A1-MW-18-SA1MS	280-110112-2MS	MS	METHOD	9056A	Stage 4
23-May-2018	A1-MW-18-SA1MSD	280-110112-2MSD	MSD	METHOD	9056A	Stage 4
23-May-2018	16-MW-06-SA1	1801037-08	N	Gen Prep	537 MOD	Stage 4
23-May-2018	16-MW-09-SA1	1801037-07	N	Gen Prep	537 MOD	Stage 4
23-May-2018	16-MW-08-SA1	1801037-02	N	Gen Prep	537 MOD	Stage 4
23-May-2018	16-MW-08-SA1	280-110112-3	N	METHOD	8260B	Stage 4
23-May-2018	16-MW-08-SA1	280-110112-3	N	METHOD	9040C	Stage 4
23-May-2018	16-MW-08-SA1	280-110112-3	N	METHOD	9056A	Stage 4
23-May-2018	16-MW-08-SA1	280-110112-3	N	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	A1-MW-19-SA1	1801037-03	N	Gen Prep	537 MOD	Stage 4
23-May-2018	A1-MW-19-SA1	280-110112-4	N	METHOD	8260B	Stage 4
23-May-2018	A1-MW-19-SA1	280-110112-4	N	METHOD	9040C	Stage 4

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-May-2018	A1-MW-19-SA1	280-110112-4	N	METHOD	9056A	Stage 4
23-May-2018	A1-MW-19-SA1	280-110112-4	N	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	A1-MW-37-SA1	1801037-04	N	Gen Prep	537 MOD	Stage 4
23-May-2018	A1-MW-37-SA1	280-110112-6	N	METHOD	8260B	Stage 4
23-May-2018	A1-MW-37-SA1	280-110112-6	N	METHOD	9040C	Stage 4
23-May-2018	A1-MW-37-SA1	280-110112-6	N	METHOD	9056A	Stage 4
23-May-2018	A1-MW-37-SA1	280-110112-6	N	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	A1-MW-37-SA1D	1801037-05	FD	Gen Prep	537 MOD	Stage 4
23-May-2018	A1-MW-37-SA1D	280-110112-5	FD	METHOD	8260B	Stage 4
23-May-2018	16-HS-03-SA1	1801037-06	N	Gen Prep	537 MOD	Stage 4
23-May-2018	16-HS-03-SA1	280-110112-7	N	METHOD	8260B	Stage 4
23-May-2018	16-HS-03-SA1	280-110112-7	N	METHOD	9040C	Stage 4
23-May-2018	16-HS-03-SA1	280-110112-7	N	METHOD	9056A	Stage 4
23-May-2018	16-HS-03-SA1	280-110112-7	N	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	16-HS-03-SA1DUP	280-110112-7DUP	DUP	METHOD	9056A	Stage 4
23-May-2018	16-HS-03-SA1DUP	280-110112-7DUP	DUP	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	16-HS-03-SA1MS	280-110112-7MS	MS	METHOD	8260B	Stage 4
23-May-2018	16-HS-03-SA1MS	280-110112-7MS	MS	METHOD	9056A	Stage 4
23-May-2018	16-HS-03-SA1MS	280-110112-7MS	MS	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	16-HS-03-SA1MSD	280-110112-7MSD	MSD	METHOD	8260B	Stage 4
23-May-2018	16-HS-03-SA1MSD	280-110112-7MSD	MSD	METHOD	9056A	Stage 4
23-May-2018	16-HS-03-SA1MSD	280-110112-7MSD	MSD	METHOD	SM3500 Fe B D	Stage 4
23-May-2018	FRB-20180523	1801037-09	FRB	Gen Prep	537 MOD	Stage 2B
24-May-2018	A1-MW-13-SA1	1801039-01	N	Gen Prep	537 MOD	Stage 2B
24-May-2018	A1-MW-11-SA1	1801039-02	N	Gen Prep	537 MOD	Stage 2B
24-May-2018	A1-MW-14-SA1	1801039-03	N	Gen Prep	537 MOD	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-May-2018	A1-MW-15-SA1	1801039-04	N	Gen Prep	537 MOD	Stage 2B
24-May-2018	A1-MW-25-SA1	1801039-07	N	Gen Prep	537 MOD	Stage 2B
24-May-2018	FRB-20180524	1801039-08	FRB	Gen Prep	537 MOD	Stage 2B
25-May-2018	TB-20180525	280-110226-12	TB	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-42-SA1	1801054-01	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-42-SA1	280-110226-1	N	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-42-SA1	280-110226-1	N	METHOD	9040C	Stage 2B
25-May-2018	A1-MW-42-SA1	280-110226-1	N	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-42-SA1	280-110226-1	N	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-54-SA1	1801054-02	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-54-SA1	280-110226-2	N	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-54-SA1	280-110226-2	N	METHOD	9040C	Stage 2B
25-May-2018	A1-MW-54-SA1	280-110226-2	N	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-54-SA1	280-110226-2	N	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-53-SA1	1801054-03	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-53-SA1	280-110226-3	N	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-53-SA1MS	280-110226-3MS	MS	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-53-SA1MSD	280-110226-3MSD	MSD	METHOD	8260B	Stage 2B
25-May-2018	A1-PZ-19-SA1	1801054-04	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-PZ-19-SA1	280-110226-4	N	METHOD	8260B	Stage 2B
25-May-2018	A1-PZ-19-SA1	280-110226-4	N	METHOD	9040C	Stage 2B
25-May-2018	A1-PZ-19-SA1	280-110226-4	N	METHOD	9056A	Stage 2B
25-May-2018	A1-PZ-19-SA1	280-110226-4	N	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-52-SA1	1801054-05	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-52-SA1	280-110226-5	N	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-52-SA1	280-110226-5	N	METHOD	9040C	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-May-2018	A1-MW-52-SA1	280-110226-5	N	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-52-SA1	280-110226-5	N	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-52-SA1DUP	280-110226-5DUP	DUP	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-52-SA1MS	280-110226-5MS	MS	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-52-SA1MSD	280-110226-5MSD	MSD	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-01-SA1	1801054-06	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-01-SA1	280-110226-6	N	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-01-SA1	280-110226-6	N	METHOD	9040C	Stage 2B
25-May-2018	A1-MW-01-SA1	280-110226-6	N	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-01-SA1	280-110226-6	N	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-01-SA1D	1801054-07	FD	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-01-SA1D	280-110226-7	FD	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-31-SA1	1801054-08	N	Gen Prep	537 MOD	Stage 2B
25-May-2018	A1-MW-31-SA1	280-110226-8	N	METHOD	8260B	Stage 2B
25-May-2018	A1-MW-31-SA1	280-110226-8	N	METHOD	9040C	Stage 2B
25-May-2018	A1-MW-31-SA1	280-110226-8	N	METHOD	9056A	Stage 2B
25-May-2018	A1-MW-31-SA1	280-110226-8	N	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-31-SA1DUP	280-110226-8DUP	DUP	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-31-SA1MS	280-110226-8MS	MS	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	A1-MW-31-SA1MSD	280-110226-8MSD	MSD	METHOD	SM3500 Fe B D	Stage 2B
25-May-2018	FRB-20180525	1801054-09	FRB	Gen Prep	537 MOD	Stage 2B
30-May-2018	TB-20180530	280-110291-1	TB	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-27-SA1	1801071-01	N	Gen Prep	537 MOD	Stage 2B
30-May-2018	A1-MW-27-SA1	280-110291-6	N	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-27-SA1	280-110291-6	N	METHOD	9040C	Stage 2B
30-May-2018	A1-MW-27-SA1	280-110291-6	N	METHOD	9056A	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-May-2018	A1-MW-27-SA1	280-110291-6	N	METHOD	SM3500 Fe B D	Stage 2B
30-May-2018	A1-MW-25-SA1	280-110291-5	N	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-25-SA1	280-110291-5	N	METHOD	9040C	Stage 2B
30-May-2018	A1-MW-25-SA1	280-110291-5	N	METHOD	9056A	Stage 2B
30-May-2018	A1-MW-25-SA1	280-110291-5	N	METHOD	SM3500 Fe B D	Stage 2B
30-May-2018	A1-MW-55-SA1	1801071-02	N	Gen Prep	537 MOD	Stage 2B
30-May-2018	A1-MW-55-SA1	280-110291-4	N	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-55-SA1	280-110291-4	N	METHOD	9040C	Stage 2B
30-May-2018	A1-MW-55-SA1	280-110291-4	N	METHOD	9056A	Stage 2B
30-May-2018	A1-MW-55-SA1	280-110291-4	N	METHOD	SM3500 Fe B D	Stage 2B
30-May-2018	A1-MW-23-SA1	1801071-03	N	Gen Prep	537 MOD	Stage 2B
30-May-2018	A1-MW-23-SA1	280-110291-3	N	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-23-SA1	280-110291-3	N	METHOD	9040C	Stage 2B
30-May-2018	A1-MW-23-SA1	280-110291-3	N	METHOD	9056A	Stage 2B
30-May-2018	A1-MW-23-SA1	280-110291-3	N	METHOD	SM3500 Fe B D	Stage 2B
30-May-2018	A1-MW-07-SA1	1801071-04	N	Gen Prep	537 MOD	Stage 2B
30-May-2018	A1-MW-07-SA1	280-110291-7	N	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-07-SA1	280-110291-7	N	METHOD	9040C	Stage 2B
30-May-2018	A1-MW-07-SA1	280-110291-7	N	METHOD	9056A	Stage 2B
30-May-2018	A1-MW-07-SA1	280-110291-7	N	METHOD	SM3500 Fe B D	Stage 2B
30-May-2018	A1-MW-14-SA1	280-110291-2	N	METHOD	8260B	Stage 2B
30-May-2018	A1-MW-14-SA1	280-110291-2	N	METHOD	9040C	Stage 2B
30-May-2018	A1-MW-14-SA1	280-110291-2	N	METHOD	9056A	Stage 2B
30-May-2018	A1-MW-14-SA1	280-110291-2	N	METHOD	SM3500 Fe B D	Stage 2B
30-May-2018	A1-MW-14-SA1DUP	280-110291-2DUP	DUP	METHOD	9056A	Stage 2B
30-May-2018	A1-MW-14-SA1MS	280-110291-2MS	MS	METHOD	9056A	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-May-2018	A1-MW-14-SA1MSD	280-110291-2MSD	MSD	METHOD	9056A	Stage 2B
30-May-2018	FRB-20180530	1801071-05	FRB	Gen Prep	537 MOD	Stage 2B
31-May-2018	TB-20180531	280-110353-1	TB	METHOD	8260B	Stage 2B
31-May-2018	A1-MW-13-SA1	280-110353-2	N	METHOD	8260B	Stage 2B
31-May-2018	A1-MW-13-SA1	280-110353-2	N	METHOD	9040C	Stage 2B
31-May-2018	A1-MW-13-SA1	280-110353-2	N	METHOD	9056A	Stage 2B
31-May-2018	A1-MW-13-SA1	280-110353-2	N	METHOD	SM3500 Fe B D	Stage 2B
31-May-2018	A1-MW-11-SA1	280-110353-3	N	METHOD	8260B	Stage 2B
31-May-2018	A1-MW-11-SA1	280-110353-3	N	METHOD	9040C	Stage 2B
31-May-2018	A1-MW-11-SA1	280-110353-3	N	METHOD	9056A	Stage 2B
31-May-2018	A1-MW-11-SA1	280-110353-3	N	METHOD	SM3500 Fe B D	Stage 2B
31-May-2018	A1-MW-11-SA1DUP	280-110353-3DUP	DUP	METHOD	9040C	Stage 2B
31-May-2018	A1-MW-15-SA1	280-110353-4	N	METHOD	8260B	Stage 2B
31-May-2018	A1-MW-15-SA1	280-110353-4	N	METHOD	9040C	Stage 2B
31-May-2018	A1-MW-15-SA1	280-110353-4	N	METHOD	9056A	Stage 2B
31-May-2018	A1-MW-15-SA1	280-110353-4	N	METHOD	SM3500 Fe B D	Stage 2B
31-May-2018	EB-20180531	1801084-01	EB	Gen Prep	537 MOD	Stage 2B
31-May-2018	EB-20180531	280-110353-5	EB	METHOD	8260B	Stage 2B
31-May-2018	16-HS-03-SA1MS	B8E0244-MS1	MS	Gen Prep	537 MOD	Stage 4
31-May-2018	A1-MW-53-SA1MS	B8E0244-MS2	MS	Gen Prep	537 MOD	Stage 2B
31-May-2018	16-HS-03-SA1MSD	B8E0244-MSD1	MSD	Gen Prep	537 MOD	Stage 4
31-May-2018	A1-MW-53-SA1MSD	B8E0244-MSD2	MSD	Gen Prep	537 MOD	Stage 2B

N = Normal Sample
FD = Field Duplicate
TB = Trip Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate
EB = Equipment Blank

DUP = Laboratory Duplicate
FRB = Field Rinsate Blank

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-110058-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:A1-MW-04-SA1		5/22/2018 2:06:00 Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-05-SA1		5/22/2018 1:19:00 Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-49-SA1		5/22/2018 12:20:00 Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.8	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-50-SA1		5/22/2018 11:30:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.7	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-51-SA1		5/22/2018 10:14:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM

Method: 9056A

Matrix: AQ

Sample ID:A1-MW-49-SA1		5/22/2018 12:20:00 Collected:PM			Analysis Type:RE/TOT			Dilution: 10	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITRATE	2.82	J	1.00	LOD	5.00	LOQ	mg/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110058-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

5/22/2018 2:06:00
Sample ID:A1-MW-04-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0751	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

5/22/2018 1:19:00
Sample ID:A1-MW-05-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0617	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

5/22/2018 12:20:00
Sample ID:A1-MW-49-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	UJ	StoA

5/22/2018 11:30:00
Sample ID:A1-MW-50-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/22/2018 10:14:00
Sample ID:A1-MW-51-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0563	J HF F1	0.0500	LOD	0.200	LOQ	mg/L	J	RI, Ms, StoA

Method Category: VOA
Method: 8260B **Matrix:** AQ

5/22/2018 11:30:00
Sample ID:A1-MW-50-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.643	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.903	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1

Laboratory: TA DEN

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-110058-1

Method Category: VOA

Method: 8260B

Matrix: AQ

5/22/2018 10:14:00
Sample ID:A1-MW-51-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.629	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.571	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

SDG: 280-110112-1

Method Category: EM

Method: 9040C

Matrix: AQ

5/23/2018 2:19:00
Sample ID:16-HS-03-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.2	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/23/2018 11:09:00
Sample ID:16-MW-08-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/23/2018 9:00:00
Sample ID:A1-MW-18-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.7	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/23/2018 12:03:00
Sample ID:A1-MW-19-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.7	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,

Laboratory: TA DEN

EDD Filename: Prep280-110058-1, Prep280-110112-1,
Prep280-110226-1, Prep280-110291-1, Prep280-110353-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-110112-1

Method Category: EM

Method: 9040C

Matrix: AQ

5/23/2018 1:16:00
Sample ID:A1-MW-37-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.7	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM

Method: 9056A

Matrix: AQ

5/23/2018 2:19:00
Sample ID:16-HS-03-SA1 **Collected:**PM **Analysis Type:**RE2/TOT **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Sulfate	2120	F1	25.0	LOD	250	LOQ	mg/L	J	Ms

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

5/23/2018 2:19:00
Sample ID:16-HS-03-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	Ms

5/23/2018 11:09:00
Sample ID:16-MW-08-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0403	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI

5/23/2018 9:00:00
Sample ID:A1-MW-18-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0215	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110112-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

5/23/2018 1:16:00
Sample ID:A1-MW-37-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.166	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI

Method Category: VOA
Method: 8260B **Matrix:** AQ

5/23/2018 2:19:00
Sample ID:16-HS-03-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.800	U F1 F2	0.800	LOD	1.00	LOQ	ug/L	UJ	Ms, Surr
TETRACHLOROETHENE	0.400	U	0.400	LOD	1.00	LOQ	ug/L	UJ	Surr
TRICHLOROETHENE	0.400	U	0.400	LOD	1.00	LOQ	ug/L	UJ	Surr

5/23/2018 11:09:00
Sample ID:16-MW-08-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	0.669	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

5/23/2018 9:00:00
Sample ID:A1-MW-18-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.452	J	0.800	LOD	1.00	LOQ	ug/L	J	RI

5/23/2018 12:03:00
Sample ID:A1-MW-19-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.424	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-110112-1

Method Category: VOA

Method: 8260B

Matrix: AQ

Sample ID:A1-MW-37-SA1		5/23/2018 1:16:00 Collected:PM			Analysis Type:RES			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.624	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

Sample ID:A1-MW-37-SA1D		5/23/2018 1:26:00 Collected:PM			Analysis Type:RES			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.652	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

SDG: 280-110226-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:A1-MW-01-SA1		5/25/2018 1:56:00 Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-31-SA1		5/25/2018 2:49:00 Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-42-SA1		5/25/2018 7:56:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Sample ID:A1-MW-52-SA1		5/25/2018 1:00:00 Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110226-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: EM
Method: 9040C **Matrix:** AQ

5/25/2018 9:09:00
Sample ID:A1-MW-54-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/25/2018 11:59:00
Sample ID:A1-PZ-19-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM
Method: 9056A **Matrix:** AQ

5/25/2018 1:00:00
Sample ID:A1-MW-52-SA1 **Collected:**PM **Analysis Type:**RE/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	500	F1	2.50	LOD	15.0	LOQ	mg/L	J	Ms

5/25/2018 9:09:00
Sample ID:A1-MW-54-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITRATE	0.343	J	0.100	LOD	0.500	LOQ	mg/L	J	RI

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

5/25/2018 1:56:00
Sample ID:A1-MW-01-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110226-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

5/25/2018 2:49:00
Sample ID:A1-MW-31-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	Ms, StoA

5/25/2018 7:56:00
Sample ID:A1-MW-42-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/25/2018 1:00:00
Sample ID:A1-MW-52-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/25/2018 9:09:00
Sample ID:A1-MW-54-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/25/2018 11:59:00
Sample ID:A1-PZ-19-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.198	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

Method Category: VOA
Method: 8260B **Matrix:** AQ

5/25/2018 2:49:00
Sample ID:A1-MW-31-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.353	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110226-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: VOA
Method: 8260B **Matrix:** AQ

5/25/2018 7:56:00
Sample ID:A1-MW-42-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.298	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.415	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

5/25/2018 1:00:00
Sample ID:A1-MW-52-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.507	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.627	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

5/25/2018 11:59:00
Sample ID:A1-PZ-19-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.269	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

SDG: 280-110291-1

Method Category: EM
Method: 9040C **Matrix:** AQ

5/30/2018 12:06:00
Sample ID:A1-MW-07-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/30/2018 1:38:00
Sample ID:A1-MW-14-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110291-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: EM
Method: 9040C **Matrix:** AQ

5/30/2018 11:10:00
Sample ID:A1-MW-23-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/30/2018 9:12:00
Sample ID:A1-MW-25-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/30/2018 8:18:00
Sample ID:A1-MW-27-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/30/2018 10:16:00
Sample ID:A1-MW-55-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

5/30/2018 12:06:00
Sample ID:A1-MW-07-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/30/2018 1:38:00
Sample ID:A1-MW-14-SA1 **Collected:**PM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

7/24/2018 8:01:24 AM

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110291-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

5/30/2018 11:10:00

Sample ID:A1-MW-23-SA1 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/30/2018 9:12:00

Sample ID:A1-MW-25-SA1 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.123	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

5/30/2018 8:18:00

Sample ID:A1-MW-27-SA1 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

5/30/2018 10:16:00

Sample ID:A1-MW-55-SA1 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

Method Category: VOA

Method: 8260B

Matrix: AQ

5/30/2018 12:06:00

Sample ID:A1-MW-07-SA1 Collected:PM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.405	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.797	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

5/30/2018 1:38:00

Sample ID:A1-MW-14-SA1 Collected:PM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.898	J	0.800	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

7/24/2018 8:01:24 AM

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1
 SDG: 280-110291-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method Category: VOA

Method: 8260B

Matrix: AQ

5/30/2018 1:38:00
Sample ID:A1-MW-14-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.876	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

5/30/2018 11:10:00
Sample ID:A1-MW-23-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.800	U	0.800	LOD	1.00	LOQ	ug/L	UJ	Headspace
TETRACHLOROETHENE	0.400	U	0.400	LOD	1.00	LOQ	ug/L	UJ	Headspace
TRICHLOROETHENE	0.400	U	0.400	LOD	1.00	LOQ	ug/L	UJ	Headspace

5/30/2018 9:12:00
Sample ID:A1-MW-25-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.204	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.418	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

SDG: 280-110353-1

Method Category: EM

Method: 9040C

Matrix: AQ

5/31/2018 8:24:00
Sample ID:A1-MW-11-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.1	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

5/31/2018 7:43:00
Sample ID:A1-MW-13-SA1 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
 EDD Filename: Prep280-110058-1, Prep280-110112-1,
 Prep280-110226-1, Prep280-110291-1, Prep280-110353-1

Laboratory: TA DEN

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-110353-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:A1-MW-15-SA1		5/31/2018 9:16:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.1	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

Sample ID:A1-MW-11-SA1		5/31/2018 8:24:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

Sample ID:A1-MW-13-SA1		5/31/2018 7:43:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

Sample ID:A1-MW-15-SA1		5/31/2018 9:16:00 Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

Method Category: VOA

Method: 8260B

Matrix: AQ

Sample ID:A1-MW-15-SA1		5/31/2018 9:16:00 Collected:AM			Analysis Type:RES			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.321	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-110058-1, 280-110112-1,
EDD Filename: Prep280-110058-1, Prep280-110112-1,
Prep280-110226-1, Prep280-110291-1, Prep280-110353-1

Laboratory: TA DEN

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Headspace	Preservation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Preservation	Preservation
RI	Reporting Limit Trace Value
StoA	Sampling to Analysis Estimation
StoA	Sampling to Analysis Rejection
Surr	Surrogate/Tracer Recovery Lower Estimation

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,
 EDD Filename: 1801024, 1801037, 1801039, 1801054,
 1801071, 1801084

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1801024

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

5/22/2018 2:06:00
Sample ID:A1-MW-04-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOA	0.00333	J	0.00508	LOD	0.00812	LOQ	ug/L	J	RI
PFOS	0.00161	J	0.00508	LOD	0.00812	LOQ	ug/L	J	RI

5/22/2018 1:19:00
Sample ID:A1-MW-05-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHpA	0.000917	J	0.00525	LOD	0.00842	LOQ	ug/L	J	RI
PFHxS	0.00278	J	0.00525	LOD	0.00842	LOQ	ug/L	J	RI

5/22/2018 12:20:00
Sample ID:A1-MW-49-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.00627	J	0.00508	LOD	0.00812	LOQ	ug/L	J	RI

5/22/2018 10:14:00
Sample ID:A1-MW-51-SA1 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00521	U	0.00521	LOD	0.00836	LOQ	ug/L	UJ	Is
PFBS	0.0613		0.00521	LOD	0.00836	LOQ	ug/L	J	Is
PFOS	0.00303	J	0.00521	LOD	0.00836	LOQ	ug/L	J	RI

SDG: 1801037

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

5/23/2018 2:19:00
Sample ID:16-HS-03-SA1 **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.582		0.00500	LOD	0.00803	LOQ	ug/L	J	Is
PFHxS	0.150		0.00500	LOD	0.00803	LOQ	ug/L	J	Ms

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,

Laboratory: Vista

EDD Filename: 1801024, 1801037, 1801039, 1801054,
1801071, 1801084

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1801037

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

5/23/2018 2:19:00
Sample ID:16-HS-03-SA1 Collected:PM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOA	0.0218		0.00500	LOD	0.00803	LOQ	ug/L	J	Ms
PFHpA	0.198		0.00500	LOD	0.00803	LOQ	ug/L	J	Ms, Ms

5/23/2018 9:50:00
Sample ID:16-MW-06-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.112		0.00563	LOD	0.00897	LOQ	ug/L	J	Is
PFOS	0.00227	J	0.00563	LOD	0.00897	LOQ	ug/L	J	RI

5/23/2018 11:09:00
Sample ID:16-MW-08-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	1.29		0.00543	LOD	0.00870	LOQ	ug/L	J	Is
PFNA	0.00102	J	0.00543	LOD	0.00870	LOQ	ug/L	J	RI

5/23/2018 10:15:00
Sample ID:16-MW-09-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.124		0.00543	LOD	0.00871	LOQ	ug/L	J	Is
PFDA	0.00440	J	0.00543	LOD	0.00871	LOQ	ug/L	J	RI
PFNA	0.00326	J	0.00543	LOD	0.00871	LOQ	ug/L	J	RI

5/23/2018 9:00:00
Sample ID:A1-MW-18-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.0244		0.00553	LOD	0.00888	LOQ	ug/L	J	Is
PFOA	0.00187	J	0.00553	LOD	0.00888	LOQ	ug/L	J	RI
PFOS	0.00437	J	0.00553	LOD	0.00888	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,

Laboratory: Vista

EDD Filename: 1801024, 1801037, 1801039, 1801054,
1801071, 1801084

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1801037

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

Sample ID:A1-MW-19-SA1		5/23/2018 12:03:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.0166		0.00530	LOD	0.00846	LOQ	ug/L	J	Is		
PFDA	0.00727	J	0.00530	LOD	0.00846	LOQ	ug/L	J	RI		

Sample ID:A1-MW-37-SA1		5/23/2018 1:16:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.230		0.00525	LOD	0.00839	LOQ	ug/L	J	Is		
PFNA	0.00170	J	0.00525	LOD	0.00839	LOQ	ug/L	J	RI		

Sample ID:A1-MW-37-SA1D		5/23/2018 1:26:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.252		0.00539	LOD	0.00862	LOQ	ug/L	J	Is		
PFNA	0.00210	J	0.00539	LOD	0.00862	LOQ	ug/L	J	RI		
PFUnA	0.00135	J	0.00539	LOD	0.00862	LOQ	ug/L	J	RI		

SDG: 1801039

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

Sample ID:A1-MW-11-SA1		5/24/2018 8:51:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFOS	0.00359	J	0.00539	LOD	0.00860	LOQ	ug/L	J	RI		
PFBS	0.109		0.00539	LOD	0.00860	LOQ	ug/L	J	Is		

Sample ID:A1-MW-13-SA1		5/24/2018 7:44:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.318		0.00568	LOD	0.00912	LOQ	ug/L	J	Is		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,
 EDD Filename: 1801024, 1801037, 1801039, 1801054,
 1801071, 1801084

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1801039

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

Sample ID:A1-MW-14-SA1		5/24/2018 10:05:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.118		0.00558	LOD	0.00893	LOQ	ug/L	J	Is		

Sample ID:A1-MW-15-SA1		5/24/2018 11:11:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.523		0.00558	LOD	0.00889	LOQ	ug/L	J	Is		

Sample ID:A1-MW-25-SA1		5/24/2018 2:18:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.355		0.00553	LOD	0.00889	LOQ	ug/L	J	Is		

SDG: 1801054

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

Sample ID:A1-MW-01-SA1		5/25/2018 1:56:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.0524		0.00568	LOD	0.00907	LOQ	ug/L	J	Is		
PFHpA	0.00225	J	0.00568	LOD	0.00907	LOQ	ug/L	J	RI		

Sample ID:A1-MW-01-SA1D		5/25/2018 2:06:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.0557		0.00534	LOD	0.00854	LOQ	ug/L	J	Is		
PFHpA	0.00273	J	0.00534	LOD	0.00854	LOQ	ug/L	J	RI		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,

Laboratory: Vista

EDD Filename: 1801024, 1801037, 1801039, 1801054,
1801071, 1801084

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1801054

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

Sample ID:A1-MW-31-SA1		5/25/2018 2:49:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.0634		0.00553	LOD	0.00887	LOQ	ug/L	J	Is		
PFHpA	0.00851	J	0.00553	LOD	0.00887	LOQ	ug/L	J	RI		

Sample ID:A1-MW-42-SA1		5/25/2018 7:56:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.292		0.00553	LOD	0.00887	LOQ	ug/L	J	Is		
PFOS	0.00186	J	0.00553	LOD	0.00887	LOQ	ug/L	J	RI		

Sample ID:A1-MW-52-SA1		5/25/2018 1:00:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.146		0.00543	LOD	0.00869	LOQ	ug/L	J	Is		

Sample ID:A1-MW-53-SA1		5/25/2018 10:14:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.551		0.00548	LOD	0.00878	LOQ	ug/L	J	Is		
PFOS	0.00188	J	0.00548	LOD	0.00878	LOQ	ug/L	J	RI		

Sample ID:A1-MW-54-SA1		5/25/2018 9:09:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.536		0.00558	LOD	0.00892	LOQ	ug/L	J	Is		
PFOS	0.00652	J	0.00558	LOD	0.00892	LOQ	ug/L	J	RI		

Sample ID:A1-PZ-19-SA1		5/25/2018 11:59:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PFBS	0.0152		0.00534	LOD	0.00852	LOQ	ug/L	J	Is		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,

Laboratory: Vista

EDD Filename: 1801024, 1801037, 1801039, 1801054,
1801071, 1801084

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1801054

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

5/25/2018 11:59:00

Sample ID:A1-PZ-19-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHpA	0.00326	J	0.00534	LOD	0.00852	LOQ	ug/L	J	RI
PFOA	0.00756	J	0.00534	LOD	0.00852	LOQ	ug/L	J	RI
PFOS	0.00115	J	0.00534	LOD	0.00852	LOQ	ug/L	J	RI

SDG: 1801071

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

5/30/2018 12:06:00

Sample ID:A1-MW-07-SA1 Collected:PM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.112		0.00525	LOD	0.00840	LOQ	ug/L	J	Is

5/30/2018 11:10:00

Sample ID:A1-MW-23-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHxS	0.00581	J	0.00548	LOD	0.00874	LOQ	ug/L	J	RI

5/30/2018 8:18:00

Sample ID:A1-MW-27-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.0819		0.00534	LOD	0.00854	LOQ	ug/L	J	Is

5/30/2018 10:16:00

Sample ID:A1-MW-55-SA1 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFBS	0.00548	U	0.00548	LOD	0.00875	LOQ	ug/L	UJ	Is

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

7/19/2018 12:54:59 PM

ADR version 1.9.0.325

Page 6 of 7

Data Qualifier Summary

Lab Reporting Batch ID: 1801024, 1801037, 1801039,

Laboratory: Vista

EDD Filename: 1801024, 1801037, 1801039, 1801054,
1801071, 1801084

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Is	Internal Standard Estimation
Lcs	Laboratory Control Spike Upper Estimation
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

7/19/2018 12:54:59 PM

ADR version 1.9.0.325

Page 7 of 7

Enclosure I
Stage 2B ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

280-110058-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-110058-1
 EDD Filename: 280-110058-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-04-SA1 (RES/TOT)	Sampling To Analysis	226.00	24.00	HOURS	J (all detects)
A1-MW-05-SA1 (RES/TOT)		319.25	24.00	HOURS	
A1-MW-49-SA1 (RES/TOT)		227.75	24.00	HOURS	
A1-MW-50-SA1 (RES/TOT)		228.25	24.00	HOURS	
A1-MW-50-SA1DUP (RES/TOT)		228.50	24.00	HOURS	
A1-MW-51-SA1 (RES/TOT)		229.25	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-04-SA1 (RES/TOT)	Sampling To Analysis	45.75	24.00	HOURS	J(all detects)
A1-MW-05-SA1 (RES/TOT)		46.50	24.00	HOURS	UJ(all non-detects)
A1-MW-49-SA1 (RES/TOT)		47.50	24.00	HOURS	
A1-MW-50-SA1 (RES/TOT)	Sampling To Analysis	48.25	24.00	HOURS	J(all detects)
A1-MW-51-SA1 (RES/TOT)		49.50	24.00	HOURS	R(all non-detects)
A1-MW-51-SA1DUP (RES/TOT)		49.50	24.00	HOURS	
A1-MW-51-SA1MS (RES/TOT)		49.50	24.00	HOURS	
A1-MW-51-SA1MSD (RES/TOT)		49.50	24.00	HOURS	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 280-110058-1

Laboratory: TA DEN

EDD Filename: 280-110058-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: SM3500 Fe B D

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-51-SA1MS A1-MW-51-SA1MSD (A1-MW-51-SA1)	Ferrous Iron	38	39	85.00-113.00	-	Ferrous Iron	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 280-110058-1

Laboratory: TA DEN

EDD Filename: 280-110058-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-50-SA1	1,1-DICHLOROETHENE	J	0.643	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.903	1.00	LOQ	ug/L	
A1-MW-51-SA1	1,1-DICHLOROETHENE	J	0.629	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.571	1.00	LOQ	ug/L	

Method: 9056A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-49-SA1	NITRATE	J	2.82	5.00	LOQ	mg/L	J (all detects)

Method: SM3500 Fe B D

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-04-SA1	Ferrous Iron	J HF	0.0751	0.200	LOQ	mg/L	J (all detects)
A1-MW-05-SA1	Ferrous Iron	J HF	0.0617	0.200	LOQ	mg/L	J (all detects)
A1-MW-51-SA1	Ferrous Iron	J HF F1	0.0563	0.200	LOQ	mg/L	J (all detects)

LDC #: 42613A1

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-110058-1

ADR

Laboratory: Test America, Inc.

Date: 7/2/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RS0 ≤ 15% . 1CV ≤ 20%
IV.	Continuing calibration <i>pending</i>	A	2CV ≤ 20/50%
V.	Laboratory Blanks	N	
VI.	Field blanks	ND	TB = 1 .
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	TB-20180522	280-110058-1	Water	05/22/18
2	A1-MW-51-SA1	280-110058-2	Water	05/22/18
3	A1-MW-50-SA1	280-110058-3	Water	05/22/18
4	A1-MW-49-SA1	280-110058-4	Water	05/22/18
5	A1-MW-05-SA1	280-110058-5	Water	05/22/18
6	A1-MW-04-SA1	280-110058-6	Water	05/22/18
7	A1-MW-51-SA1MS	280-110058-2MS	Water	05/22/18
8	A1-MW-51-SA1MSD	280-110058-2MSD	Water	05/22/18
9				
10				

Notes:

LDC #: 42613A6
 SDG #: 280-110058-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 7/18/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B)
 pH (EPA SW846 Method (9040C))

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A ✓	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	A	
V	Field blanks	—	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	—	
X.	Sample result verification	N	
XI	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-51-SA1	280-110058-2	Water	05/22/18
2	A1-MW-50-SA1	280-110058-3	Water	05/22/18
3	A1-MW-49-SA1	280-110058-4	Water	05/22/18
4	A1-MW-05-SA1	280-110058-5	Water	05/22/18
5	A1-MW-04-SA1	280-110058-6	Water	05/22/18
6	A1-MW-51-SA1MS	280-110058-2MS	Water	05/22/18
7	A1-MW-51-SA1MSD	280-110058-2MSD	Water	05/22/18
8	A1-MW-51-SA1DUP	280-110058-2DUP	Water	05/22/18
9	A1-MW-50-SA1DUP	280-110058-3DUP	Water	05/22/18
10				
11				
12				
13				
14				
15				

Notes: _____

LDC #: 4263A6

VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: 1 of 1

Reviewer: CR

2nd reviewer: KVE

All circled methods are applicable to each sample.

Sample ID	Parameter
1-5	<p> <input checked="" type="checkbox"/> pH <input checked="" type="checkbox"/> TDS <input checked="" type="checkbox"/> Cl <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> NO₃ <input checked="" type="checkbox"/> NO₂ <input checked="" type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ <input checked="" type="checkbox"/> Fe²⁺ </p>
	<p> <input type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ </p>
QC: 6,7	<p> <input type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ <input checked="" type="checkbox"/> Fe²⁺ </p>
8	<p> <input type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ <input checked="" type="checkbox"/> Fe²⁺ </p>
9	<p> <input checked="" type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ </p>
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	<p> <input type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ </p>
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	<p> <input type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ </p>
	<p> <input type="checkbox"/> pH <input type="checkbox"/> TDS <input type="checkbox"/> Cl <input type="checkbox"/> F <input type="checkbox"/> NO₃ <input type="checkbox"/> NO₂ <input type="checkbox"/> SO₄ <input type="checkbox"/> O-PO₄ <input type="checkbox"/> Alk <input type="checkbox"/> CN <input type="checkbox"/> NH₃ <input type="checkbox"/> TKN <input type="checkbox"/> TOC <input type="checkbox"/> Cr6+ <input type="checkbox"/> ClO₄ </p>

Comments: _____

Quality Control Outlier Reports

280-110112-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-110112-1
 EDD Filename: 280-110112-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
16-HS-03-SA1 (RES/TOT)	Sampling To Analysis	201.25	24.00	HOURS	J (all detects)
16-MW-08-SA1 (RES/TOT)		204.25	24.00	HOURS	
A1-MW-18-SA1 (RES/TOT)		206.25	24.00	HOURS	
A1-MW-19-SA1 (RES/TOT)		203.25	24.00	HOURS	
A1-MW-37-SA1 (RES/TOT)		202.25	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-18-SA1 (RES/TOT)	Sampling To Analysis	26.85	24.00	HOURS	J(all detects) UJ(all non-detects)

Surrogate Outlier Report

Lab Reporting Batch ID: 280-110112-1

Laboratory: TA DEN

EDD Filename: 280-110112-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B
Matrix: AQ

<i>Sample ID (Analysis Type)</i>	<i>Surrogate</i>	<i>Sample % Recovery</i>	<i>% Recovery Limits</i>	<i>Affected Compounds</i>	<i>Flag</i>
16-HS-03-SA1	TOLUENE-D8	75	89.00-112.00	All Target Analytes	J (all detects) UJ (all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 280-110112-1

Laboratory: TA DEN

EDD Filename: 280-110112-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: SM3500 Fe B D
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
16-HS-03-SA1MS 16-HS-03-SA1MSD (16-HS-03-SA1)	Ferrous Iron	1	0	85.00-113.00	-	Ferrous Iron	J (all detects) R (all non-detects)

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
16-HS-03-SA1MS 16-HS-03-SA1MSD (16-HS-03-SA1)	1,1-DICHLOROETHENE	56	33	71.00-131.00	53 (20.00)	1,1-DICHLOROETHENE	J(all detects) UJ(all non-detects)

Method: 9056A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
16-HS-03-SA1MSD (16-HS-03-SA1)	Sulfate	-	86	87.00-112.00	-	Sulfate	J(all detects) UJ(all non-detects)
A1-MW-18-SA1MS A1-MW-18-SA1MSD (A1-MW-18-SA1)	CHLORIDE Sulfate	50 73	45 72	87.00-111.00 87.00-112.00	- -	CHLORIDE Sulfate	No Qual, >4x

Reporting Limit Outliers

Lab Reporting Batch ID: 280-110112-1

Laboratory: TA DEN

EDD Filename: 280-110112-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
16-MW-08-SA1	TETRACHLOROETHENE	J	0.669	1.00	LOQ	ug/L	J (all detects)
A1-MW-18-SA1	1,1-DICHLOROETHENE	J	0.452	1.00	LOQ	ug/L	J (all detects)
A1-MW-19-SA1	TRICHLOROETHENE	J	0.424	1.00	LOQ	ug/L	J (all detects)
A1-MW-37-SA1	TRICHLOROETHENE	J	0.624	1.00	LOQ	ug/L	J (all detects)
A1-MW-37-SA1D	TRICHLOROETHENE	J	0.652	1.00	LOQ	ug/L	J (all detects)

Method: SM3500 Fe B D

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
16-MW-08-SA1	Ferrous Iron	J HF	0.0403	0.200	LOQ	mg/L	J (all detects)
A1-MW-18-SA1	Ferrous Iron	J HF	0.0215	0.200	LOQ	mg/L	J (all detects)
A1-MW-37-SA1	Ferrous Iron	J HF	0.166	0.200	LOQ	mg/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 280-110112-1

Laboratory: TA DEN

EDD Filename: 280-110112-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-37-SA1	A1-MW-37-SA1D			
TRICHLOROETHENE	0.624	0.652	NC	30.00	No Qualifiers Applied

Quality Control Outlier Reports

280-110226-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-110226-1
 EDD Filename: 280-110226-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-01-SA1 (RES/TOT)	Sampling To Analysis	154.50	24.00	HOURS	J (all detects)
A1-MW-31-SA1 (RES/TOT)		154.00	24.00	HOURS	
A1-MW-42-SA1 (RES/TOT)		160.25	24.00	HOURS	
A1-MW-52-SA1 (RES/TOT)		155.50	24.00	HOURS	
A1-MW-54-SA1 (RES/TOT)		159.25	24.00	HOURS	
A1-PZ-19-SA1 (RES/TOT)		156.50	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-01-SA1 (RES/TOT)	Sampling To Analysis	452.25	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-31-SA1 (RES/TOT)		451.25	24.00	HOURS	
A1-MW-31-SA1DUP (RES/TOT)		451.25	24.00	HOURS	
A1-MW-31-SA1DUP (RE/TOT)		452.25	24.00	HOURS	
A1-MW-31-SA1MS (RES/TOT)		451.25	24.00	HOURS	
A1-MW-31-SA1MS (RE/TOT)		452.25	24.00	HOURS	
A1-MW-31-SA1MSD (RES/TOT)		451.50	24.00	HOURS	
A1-MW-31-SA1MSD (RE/TOT)		452.25	24.00	HOURS	
A1-MW-42-SA1 (RES/TOT)		458.25	24.00	HOURS	
A1-MW-52-SA1 (RES/TOT)		453.25	24.00	HOURS	
A1-MW-54-SA1 (RES/TOT)		457.00	24.00	HOURS	
A1-PZ-19-SA1 (RES/TOT)		454.25	24.00	HOURS	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 280-110226-1

Laboratory: TA DEN

EDD Filename: 280-110226-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9056A

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-52-SA1MS A1-MW-52-SA1MSD (A1-MW-52-SA1)	CHLORIDE Sulfate	- 75	84 70	87.00-111.00 87.00-112.00	- -	CHLORIDE Sulfate**	J (all detects) ** No Qual, >4x

Method: SM3500 Fe B D

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-31-SA1MS A1-MW-31-SA1MSD (A1-MW-31-SA1)	Ferrous Iron	21	21	85.00-113.00	-	Ferrous Iron	J(all detects) R(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 280-110226-1

Laboratory: TA DEN

EDD Filename: 280-110226-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-31-SA1	TRICHLOROETHENE	J	0.353	1.00	LOQ	ug/L	J (all detects)
A1-MW-42-SA1	1,1-DICHLOROETHENE	J	0.298	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.415	1.00	LOQ	ug/L	J (all detects)
A1-MW-52-SA1	1,1-DICHLOROETHENE	J	0.507	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.627	1.00	LOQ	ug/L	J (all detects)
A1-PZ-19-SA1	TRICHLOROETHENE	J	0.269	1.00	LOQ	ug/L	J (all detects)

Method: 9056A
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-54-SA1	NITRATE	J	0.343	0.500	LOQ	mg/L	J (all detects)

Method: SM3500 Fe B D
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-PZ-19-SA1	Ferrous Iron	J HF	0.198	0.200	LOQ	mg/L	J (all detects)

LDC #: 42613C1

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-110226-1

ADR

Laboratory: Test America, Inc.

Date: 7/13/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD ≤ 15%. CV ≤ 20%
IV.	Continuing calibration <i>ending</i>	A	CV ≤ 20%
V.	Laboratory Blanks	N	
VI.	Field blanks	ND	TB = 9
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	ND	D = 6 + 7
XI.	Internal standards	A	(MS/MSD - FS only)
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB = Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-42-SA1	280-110226-1	Water	05/25/18
2	A1-MW-54-SA1	280-110226-2	Water	05/25/18
3	A1-MW-53-SA1	280-110226-3	Water	05/25/18
4	A1-PZ-19-SA1	280-110226-4	Water	05/25/18
5	A1-MW-52-SA1	280-110226-5	Water	05/25/18
6	A1-MW-01-SA1	280-110226-6	Water	05/25/18
7	A1-MW-01-SA1D	280-110226-7	Water	05/25/18
8	A1-MW-31-SA1	280-110226-8	Water	05/25/18
9	TB-20180525	280-110226-12	Water	05/25/18
10	A1-MW-53-SA1MS	280-110226-3MS	Water	05/25/18
11	A1-MW-53-SA1MSD	280-110226-3MSD	Water	05/25/18
12				
13				

LDC #: 42613C6
 SDG #: 280-110226-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 7/18/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B)
 pH (EPA SW846 Method (9040C))

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	ASW	
V	Field blanks	-	
VI.	Matrix Spike/Matrix Spike Duplicates	N	7/18:50474x
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	-	
X.	Sample result verification	N	
XI	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-42-SA1	280-110226-1	Water	05/25/18
2	A1-MW-54-SA1	280-110226-2	Water	05/25/18
3	A1-PZ-19-SA1	280-110226-4	Water	05/25/18
4	A1-MW-52-SA1	280-110226-5	Water	05/25/18
5	A1-MW-01-SA1	280-110226-6	Water	05/25/18
6	A1-MW-31-SA1	280-110226-8	Water	05/25/18
7	A1-MW-52-SA1MS	280-110226-5MS	Water	05/25/18
8	A1-MW-52-SA1MSD	280-110226-5MSD	Water	05/25/18
9	A1-MW-52-SA1DUP	280-110226-5DUP	Water	05/25/18
10	A1-MW-31-SA1MS1	280-110226-8MS1	Water	05/25/18
11	A1-MW-31-SA1MSD1	280-110226-8MSD1	Water	05/25/18
12	A1-MW-31-SA1DUP1	280-110226-8DUP2	Water	05/25/18
13	A1-MW-31-SA1MS2	280-110226-8MS2	Water	05/25/18
14	A1-MW-31-SA1MSD2	280-110226-8MSD2	Water	05/25/18
15	A1-MW-31-SA1DUP2	280-110226-8DUP2	Water	05/25/18
16				

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: All

Analyte	Blank ID	Blank ID	Blank Action Limit															
	PB	ICB/CCB (mg/L)		No qual (>5x)														
NO3-N		0.04663	0.23315															

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

280-110291-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-110291-1
 EDD Filename: 280-110291-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-07-SA1 (RES/TOT)	Sampling To Analysis	78.25	24.00	HOURS	J (all detects)
A1-MW-14-SA1 (RES/TOT)		76.25	24.00	HOURS	
A1-MW-23-SA1 (RES/TOT)		79.00	24.00	HOURS	
A1-MW-25-SA1 (RES/TOT)		81.00	24.00	HOURS	
A1-MW-27-SA1 (RES/TOT)		82.00	24.00	HOURS	
A1-MW-55-SA1 (RES/TOT)		79.75	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-07-SA1 (RES/TOT)	Sampling To Analysis	334.25	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-14-SA1 (RES/TOT)		332.50	24.00	HOURS	
A1-MW-23-SA1 (RES/TOT)		335.00	24.00	HOURS	
A1-MW-25-SA1 (RES/TOT)		337.00	24.00	HOURS	
A1-MW-27-SA1 (RES/TOT)		338.00	24.00	HOURS	
A1-MW-55-SA1 (RES/TOT)		336.00	24.00	HOURS	

Reporting Limit Outliers

Lab Reporting Batch ID: 280-110291-1

Laboratory: TA DEN

EDD Filename: 280-110291-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-07-SA1	1,1-DICHLOROETHENE	J	0.405	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.797	1.00	LOQ	ug/L	
A1-MW-14-SA1	1,1-DICHLOROETHENE	J	0.898	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.876	1.00	LOQ	ug/L	
A1-MW-25-SA1	1,1-DICHLOROETHENE	J	0.204	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.418	1.00	LOQ	ug/L	

Method: SM3500 Fe B D

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-25-SA1	Ferrous Iron	J HF	0.123	0.200	LOQ	mg/L	J (all detects)

LDC #: 42613D1

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-110291-1

ADR

Laboratory: Test America, Inc.

Date: 7/18/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	W/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15% . CV ≤ 20%
IV.	Continuing calibration / ending	A	CV ≤ 20/50%
V.	Laboratory Blanks	N	
VI.	Field blanks	ND	TB = 1
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	TB-20180530	280-110291-1	Water	05/30/18
2	A1-MW-14-SA1	280-110291-2	Water	05/30/18
3	A1-MW-23-SA1	280-110291-3	Water	05/30/18
4	A1-MW-55-SA1	280-110291-4	Water	05/30/18
5	A1-MW-25-SA1	280-110291-5	Water	05/30/18
6	A1-MW-27-SA1	280-110291-6	Water	05/30/18
7	A1-MW-07-SA1	280-110291-7	Water	05/30/18
8				
9				

Notes:

LDC #: 42613D6
 SDG #: 280-110291-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 7/18/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B)
 pH (EPA SW846 Method (9040C))

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, -	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	SW	
V	Field blanks	-	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	-	
X.	Sample result verification	N	
XI	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank
 SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-14-SA1	280-110291-2	Water	05/30/18
2	A1-MW-23-SA1	280-110291-3	Water	05/30/18
3	A1-MW-55-SA1	280-110291-4	Water	05/30/18
4	A1-MW-25-SA1	280-110291-5	Water	05/30/18
5	A1-MW-27-SA1	280-110291-6	Water	05/30/18
6	A1-MW-07-SA1	280-110291-7	Water	05/30/18
7	A1-MW-14-SA1MS	280-110291-2MS	Water	05/30/18
8	A1-MW-14-SA1MSD	280-110291-2MSD	Water	05/30/18
9	A1-MW-14-SA1DUP	280-110291-2DUP	Water	05/30/18
10				
11				
12				
13				
14				
15				
16				

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: 1-3

Analyte	Blank ID	Blank ID	Blank Action Limit															
	PB	ICB/CCB (mg/L)		No qual (>5x)														
SO4		0.2460	1.23															

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

280-110353-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-110353-1
 EDD Filename: 280-110353-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-11-SA1 (RES/TOT)	Sampling To Analysis	111.75	24.00	HOURS	J (all detects)
A1-MW-11-SA1DUP (RES/TOT)		111.75	24.00	HOURS	
A1-MW-13-SA1 (RES/TOT)		112.50	24.00	HOURS	
A1-MW-15-SA1 (RES/TOT)		110.50	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-11-SA1 (RES/TOT)	Sampling To Analysis	313.75	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-13-SA1 (RES/TOT)		314.50	24.00	HOURS	
A1-MW-15-SA1 (RES/TOT)		313.00	24.00	HOURS	

Method Blank Outlier Report

Lab Reporting Batch ID: 280-110353-1

Laboratory: TA DEN

EDD Filename: 280-110353-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9056A
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 280-417070/6	6/1/2018 12:10:00 PM	CHLORIDE Sulfate	0.5189 mg/L 0.6146 mg/L	A1-MW-11-SA1 A1-MW-13-SA1 A1-MW-15-SA1

Reporting Limit Outliers

Lab Reporting Batch ID: 280-110353-1

Laboratory: TA DEN

EDD Filename: 280-110353-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
A1-MW-15-SA1	TRICHLOROETHENE	J	0.321	1.00	LOQ	ug/L	J (all detects)

LDC #: 42613E1

VALIDATION COMPLETENESS WORKSHEET

Date: 7/12/18

SDG #: 280-110353-1

ADR

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration	A	ICV ≤ 20/50%
V.	Laboratory Blanks	N	
VI.	Field blanks	ND	TB = 1. EB = 5
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	TB-20180531	280-110353-1	Water	05/31/18
2	A1-MW-13-SA1	280-110353-2	Water	05/31/18
3	A1-MW-11-SA1	280-110353-3	Water	05/31/18
4	A1-MW-15-SA1	280-110353-4	Water	05/31/18
5	EB-20180531	280-110353-5	Water	05/31/18
6				
7				
8				

Notes:

LDC #: 42613E6
 SDG #: 280-110353-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 7/18/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B)
pH (EPA SW846 Method (9040C))

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, -	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	SW	
V	Field blanks	-	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	-	
X.	Sample result verification	N	
XI	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-13-SA1	280-110353-2	Water	05/31/18
2	A1-MW-11-SA1	280-110353-3	Water	05/31/18
3	A1-MW-15-SA1	280-110353-4	Water	05/31/18
4	A1-MW-11-SA1DUP	280-110353-3DUP	Water	05/31/18
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

Notes: _____

LDC #: U2613E6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
 Reviewer: CR
 2nd reviewer: KU

All circled methods are applicable to each sample.

Sample ID	Parameter
1-3	(pH) TDS (Cl) F (NO ₃) NO ₂ (SO ₄) O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄ (Fe ²⁺)
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
QC:4	(pH) TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄
	pH TDS Cl F NO ₃ NO ₂ SO ₄ O-PO ₄ Alk CN NH ₃ TKN TOC Cr6+ ClO ₄

Comments: _____

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: All

Analyte	Blank ID	Blank ID	Blank Action Limit														
	PB	ICB/CCB (mg/L)		No qual (>5x)													
Cl		0.5385	2.6925														
SO4		0.6554	3.277														

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

1801024

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1801024

Laboratory: Vista

EDD Filename: 1801024

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B8E0250-BS1 (A1-MW-04-SA1 A1-MW-05-SA1 A1-MW-49-SA1 A1-MW-50-SA1 A1-MW-51-SA1 FRB-20180522)	PFTrDA	138	-	70.00-130.00	-	PFTrDA	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 1801024

Laboratory: Vista

EDD Filename: 1801024

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-04-SA1	PFOA	J	0.00333	0.00812	LOQ	ug/L	J (all detects)
	PFOS	J	0.00161	0.00812	LOQ	ug/L	
A1-MW-05-SA1	PFHpA	J	0.000917	0.00842	LOQ	ug/L	J (all detects)
	PFHxS	J	0.00278	0.00842	LOQ	ug/L	
A1-MW-49-SA1	PFBS	J	0.00627	0.00812	LOQ	ug/L	J (all detects)
A1-MW-51-SA1	PFOS	J	0.00303	0.00836	LOQ	ug/L	J (all detects)

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	AA	RSO = 207%. True / ICV = 30%
IV.	Continuing calibration	A	CCV = 30%
V.	Laboratory Blanks	N	
VI.	Field blanks	NO	FRB = 6
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-51-SA1	1801024-01	Water	05/22/18
2	A1-MW-50-SA1	1801024-02	Water	05/22/18
3	A1-MW-49-SA1	1801024-03	Water	05/22/18
4	A1-MW-05-SA1	1801024-04	Water	05/22/18
5	A1-MW-04-SA1	1801024-05	Water	05/22/18
6	FRB-20180522	1801024-06	Water	05/22/18
7				
8				
9				

Notes:

B8E075D-BA1				

Quality Control Outlier Reports

1801037

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1801037

Laboratory: Vista

EDD Filename: 1801037

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
16-HS-03-SA1MS 16-HS-03-SA1MSD (16-HS-03-SA1)	NMeFOSAA PFDA PFDoA PFHpA PFHxS PFOA PFTTrDA	- 132 136 140 146 131 136	- - - - - - 133	70.00-130.00 70.00-130.00 70.00-130.00 70.00-130.00 70.00-130.00 70.00-130.00 70.00-130.00	41.1 (30.00) - - 49.6 (30.00) - - -	NMeFOSAA PFDA PFDoA PFHpA PFHxS PFOA PFTTrDA	J (all detects)
16-HS-03-SA1MS 16-HS-03-SA1MSD (16-HS-03-SA1)	PFHxA PFBS	-21 182	- -	70.00-130.00 70.00-130.00	329 (30.00) 45.9 (30.00)	PFHxA PFBS	No Qual, >4x

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1801037

Laboratory: Vista

EDD Filename: 1801037

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B8E0244-BS1 (16-HS-03-SA1 16-MW-06-SA1 16-MW-08-SA1 16-MW-09-SA1 A1-MW-18-SA1 A1-MW-19-SA1 A1-MW-37-SA1 A1-MW-37-SA1D FRB-20180523)	PFTrDA	153	-	70.00-130.00	-	PFTrDA	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 1801037

Laboratory: Vista

EDD Filename: 1801037

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
16-MW-06-SA1	PFOS	J	0.00227	0.00897	LOQ	ug/L	J (all detects)
16-MW-08-SA1	PFNA	J	0.00102	0.00870	LOQ	ug/L	J (all detects)
16-MW-09-SA1	PFDA	J	0.00440	0.00871	LOQ	ug/L	J (all detects)
	PFNA	J	0.00326	0.00871	LOQ	ug/L	
A1-MW-18-SA1	PFOA	J	0.00187	0.00888	LOQ	ug/L	J (all detects)
	PFOS	J	0.00437	0.00888	LOQ	ug/L	
A1-MW-19-SA1	PFDA	J	0.00727	0.00846	LOQ	ug/L	J (all detects)
A1-MW-37-SA1	PFNA	J	0.00170	0.00839	LOQ	ug/L	J (all detects)
A1-MW-37-SA1D	PFNA	J	0.00210	0.00862	LOQ	ug/L	J (all detects)
	PfUnA	J	0.00135	0.00862	LOQ	ug/L	

Field Duplicate RPD Report

Lab Reporting Batch ID: 1801037

Laboratory: Vista

EDD Filename: 1801037

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-37-SA1	A1-MW-37-SA1D			
PFBS	0.230	0.252	9	30.00	No Qualifiers Applied
PFHpA	0.0328	0.0322	NC	30.00	
PFHxA	1.66	1.71	3	30.00	
PFHxS	0.155	0.152	2	30.00	
PFNA	0.00170	0.00210	NC	30.00	
PFOA	0.0196	0.0203	NC	30.00	
PFOS	0.0458	0.0416	NC	30.00	
PFUnA	0.00839 U	0.00135	NC	30.00	

LDC #: 42613M96

VALIDATION COMPLETENESS WORKSHEET

Date: 7/23/18

SDG #: 1801037

ADR/Stage 4

Page: 1 of 1

Laboratory: Vista Analytical Laboratory

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	Not reviewed for ADR validation
VI.	Field blanks	ND	FRB = 9
VII.	Surrogate spikes	N	Not reviewed for ADR validation
VIII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation
IX.	Laboratory control samples	↓	Not reviewed for ADR validation
X.	Field duplicates	TW	D = 4+5
XI.	Internal standards	TW	Not reviewed for ADR validation
XII.	Compound quantitation RL/LOQ/LODs	N	Not reviewed for ADR validation
XIII.	Target compound identification	↓	Not reviewed for ADR validation
XIV.	System performance	↓	Not reviewed for ADR validation
XV.	Overall assessment of data	↓	Not reviewed for ADR validation

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-18-SA1**	1801037-01**	Water	05/23/18
2	16-MW-08-SA1**	1801037-02**	Water	05/23/18
3	A1-MW-19-SA1**	1801037-03**	Water	05/23/18
4	A1-MW-37-SA1**	1801037-04**	Water	05/23/18
5	A1-MW-37-SA1D**	1801037-05**	Water	05/23/18
6	16-HS-03-SA1**	1801037-06**	Water	05/23/18
7	16-MW-09-SA1**	1801037-07**	Water	05/23/18
8	16-MW-06-SA1**	1801037-08**	Water	05/23/18
9	FRB-20180523	1801037-09	Water	05/23/18
10	16-HS-03-SA1MS	1801037-06MS	Water	05/23/18
11	16-HS-03-SA1MSD	1801037-06MSD	Water	05/23/18
12				
13	B820 244-BK1			
14				

VALIDATION FINDINGS WORKSHEET

Internal Standards

METHOD: LC/MS PFCs

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N/A Were all internal standard area counts within 50-150% limits?

N/A Were the retention times of the internal standards within +/- 30 seconds of the retention times of the associated calibration standard?

#	Date	Sample ID	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		1 (detb)	EC3-PFBS	170 (50-150)		✓/N/A (PFBS)
		2		187		
		3		214		
		4		228		
		5		161		
		6		154		
		7		153		
		8 ✓		214		↓
		10 (MS)		167		No qual
		11 (MSD)	↓	165 ↓		↓

LDC#: 42613M96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: PFCs

Compound	Concentration (ug/L)		RPD (≤30)	Qual
	4	5		
PFBS	0.230	0.252	9	
PFHxA	1.66	1.71	3	
PFHpA	0.0328	0.0322	2 NC	
PFHxS	0.155	0.152	2	
PFOA	0.0196	0.0203	4 NC	
PFNA	0.00170	0.00210	24 NC	
PFOS	0.0458	0.0416	10 NC	
PFUnA	0.00525U	0.00135	NC	

Quality Control Outlier Reports

1801039

Reporting Limit Outliers

Lab Reporting Batch ID: 1801039

Laboratory: Vista

EDD Filename: 1801039

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
A1-MW-11-SA1	PFOS	J	0.00359	0.00860	LOQ	ug/L	J (all detects)

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 *Modified*)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	★	
II.	GC/MS Instrument performance check	★	
III.	Initial calibration/ICV	★/★	
IV.	Continuing calibration	★	
V.	Laboratory Blanks	N	
VI.	Field blanks	NO	FRB=6
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	SW	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-13-SA1	1801039-01	Water	05/24/18
2	A1-MW-11-SA1	1801039-02	Water	05/24/18
3	A1-MW-14-SA1	1801039-03	Water	05/24/18
4	A1-MW-15-SA1	1801039-04	Water	05/24/18
5	A1-MW-25-SA1	1801039-07	Water	05/24/18
6	FRB-20180524	1801039-08	Water	05/24/18
7				
8				
9				

Notes:

<u>BB Food BK</u>				

Quality Control Outlier Reports

1801054

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1801054

Laboratory: Vista

EDD Filename: 1801054

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-53-SA1MS A1-MW-53-SA1MSD (A1-MW-53-SA1)	NMeFOSAA PFTrDA	- 141	- 148	70.00-130.00 70.00-130.00	32.9 (30.00) -	NMeFOSAA PFTrDA	J (all detects)
A1-MW-53-SA1MS A1-MW-53-SA1MSD (A1-MW-53-SA1)	PFBS PFHxS PFHxA	- 141 232	37.7 58.4 175	70.00-130.00 70.00-130.00 70.00-130.00	96.5 (30.00) 82.8 (30.00) -	PFBS PFHxS PFHxA	No Qual, >4x

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1801054

Laboratory: Vista

EDD Filename: 1801054

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B8E0244-BS1 (A1-MW-01-SA1 A1-MW-01-SA1D A1-MW-31-SA1 A1-MW-42-SA1 A1-MW-52-SA1 A1-MW-53-SA1 A1-MW-54-SA1 A1-PZ-19-SA1 FRB-20180525)	PFTrDA	153	-	70.00-130.00	-	PFTrDA	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 1801054

Laboratory: Vista

EDD Filename: 1801054

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-01-SA1	PFHpA	J	0.00225	0.00907	LOQ	ug/L	J (all detects)
A1-MW-01-SA1D	PFHpA	J	0.00273	0.00854	LOQ	ug/L	J (all detects)
A1-MW-31-SA1	PFHpA	J	0.00851	0.00887	LOQ	ug/L	J (all detects)
A1-MW-42-SA1	PFOS	J	0.00186	0.00887	LOQ	ug/L	J (all detects)
A1-MW-53-SA1	PFOS	J	0.00188	0.00878	LOQ	ug/L	J (all detects)
A1-MW-54-SA1	PFOS	J	0.00652	0.00892	LOQ	ug/L	J (all detects)
A1-PZ-19-SA1	PFHpA	J	0.00326	0.00852	LOQ	ug/L	J (all detects)
	PFOA	J	0.00756	0.00852	LOQ	ug/L	
	PFOS	J	0.00115	0.00852	LOQ	ug/L	

Field Duplicate RPD Report

Lab Reporting Batch ID: 1801054

Laboratory: Vista

EDD Filename: 1801054

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-01-SA1	A1-MW-01-SA1D			
PFBS	0.0524	0.0557	6	30.00	No Qualifiers Applied
PFHpA	0.00225	0.00273	NC	30.00	
PFHxA	0.101	0.0971	4	30.00	
PFHxS	0.0230	0.0238	NC	30.00	

LDC #: 42613096

VALIDATION COMPLETENESS WORKSHEET

SDG #: 1801054

ADR

Laboratory: Vista Analytical Laboratory

Date: 7/13/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537, Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSB = 20% . Y ² TRW / ICV = 30%
IV.	Continuing calibration	A	CEV = 30%
V.	Laboratory Blanks	N	
VI.	Field blanks	NO	FRB = 9
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	SW	B = 6+7
XI.	Internal standards	SW	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-42-SA1	1801054-01	Water	05/25/18
2	A1-MW-54-SA1	1801054-02	Water	05/25/18
3	A1-MW-53-SA1	1801054-03	Water	05/25/18
4	A1-PZ-19-SA1	1801054-04	Water	05/25/18
5	A1-MW-52-SA1	1801054-05	Water	05/25/18
6	A1-MW-01-SA1	1801054-06	Water	05/25/18
7	A1-MW-01-SA1D	1801054-07	Water	05/25/18
8	A1-MW-31-SA1	1801054-08	Water	05/25/18
9	FRB-20180525	1801054-09	Water	05/25/18
10	A1-MW-53-SA1MS	1801054-03MS	Water	05/25/18
11	A1-MW-53-SA1MSD	1801054-03MSD	Water	05/25/18
12				
13				
14	B8E024A-BA			

LDC#: 42613096

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: PFCs

Compound	Concentration (ug/L)		(<=30) RPD	Qual
	6	7		
PFBS	0.0524	0.0557	6	
PFHxA	0.101	0.0971	4	
PFHpA	0.00225	0.00273	10 <i>NC</i>	
PFHxS	0.0230	0.0238	2 <i>NC</i>	

VALIDATION FINDINGS WORKSHEET Internal Standards

METHOD: LC/MS PFCs

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N/A Were all internal standard area counts within 50-150% limits?

N/A Were the retention times of the internal standards within +/- 30 seconds of the retention times of the associated calibration standard?

#	Date	Sample ID	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		1 (dots)	13C3-PFBS	310 (50-150)		✓ N/A (PFBS)
		2 (dots)		175		↓
		3 ↓		154		↓
		10 (MS)		169		No area
		11 (MSD)		161		↓
		4 (dots)		182		✓ N/A (PFBS)
		5		211		↓
		6		192		↓
		7		204		↓
		8 ↓	↓	254 ↓		↓

Quality Control Outlier Reports

1801071

Reporting Limit Outliers

Lab Reporting Batch ID: 1801071

Laboratory: Vista

EDD Filename: 1801071

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
A1-MW-23-SA1	PFHxS	J	0.00581	0.00874	LOQ	ug/L	J (all detects)

LDC #: 42613P96

VALIDATION COMPLETENESS WORKSHEET

SDG #: 1801071

ADR

Laboratory: Vista Analytical Laboratory

Date: 7/13/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	
VI.	Field blanks	NO	FRB = 5
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	SN	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-27-SA1	1801071-01	Water	05/30/18
2	A1-MW-55-SA1	1801071-02	Water	05/30/18
3	A1-MW-23-SA1	1801071-03	Water	05/30/18
4	A1-MW-07-SA1	1801071-04	Water	05/30/18
5	FRB-20180530	1801071-05	Water	05/30/18
6				
7				
8				
9				

Notes:

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 6:2 FTS			
S. 8:2 FTS			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			

Quality Control Outlier Reports

1801084

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A A	$RSD \leq 20\%$, r^2 $TMO/ICV \leq 30\%$
IV.	Continuing calibration	M	$CCV \leq 30\%$ 50%
V.	Laboratory Blanks	N	
VI.	Field blanks	ND	EB = 1
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	EB-20180531	1801084-01	Water	05/31/18
2				
3				
4				
5				
6				
7				
8				
9				

Notes:

#870069-BK-1				

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			

Enclosure II

Manual Stage 2B and Stage 4 Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 16, 2018

Parameters: Volatiles

Validation Level: Stage 4

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-110112-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TB-20180523	280-110112-1	Water	05/23/18
A1-MW-18-SA1	280-110112-2	Water	05/23/18
16-MW-08-SA1	280-110112-3	Water	05/23/18
A1-MW-19-SA1	280-110112-4	Water	05/23/18
A1-MW-37-SA1D	280-110112-5	Water	05/23/18
A1-MW-37-SA1	280-110112-6	Water	05/23/18
16-HS-03-SA1	280-110112-7	Water	05/23/18
16-HS-03-SA1MS	280-110112-7MS	Water	05/23/18
16-HS-03-SA1MSD	280-110112-7MSD	Water	05/23/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample TB-20180523 was identified as a trip blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Affected Compound	Flag	A or P
16-HS-03-SA1	Toluene-d8	75 (89-112)	All compounds	UJ (all non-detects)	A

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	1,1-Dichloroethene	56 (71-131)	33 (71-131)	UJ (all non-detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	1,1-Dichloroethene	53 (≤ 20)	NA	-

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples A1-MW-37-SA1 and A1-MW-37-SA1D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	A1-MW-37-SA1D	A1-MW-37-SA1			
Trichloroethene	0.652	0.624	Not calculable	-	-

RPDs were not calculated when sample results in one or both samples were less than 5x the limit of quantitation (LOQ).

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1D A1-MW-37-SA1	All compounds reported below the LOQ.	J (all detects)	A

XIII. Target Compound Identifications

All target compound identifications met validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R, MS/MSD %R, and results below the LOQ, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
Volatiles - Data Qualification Summary - SDG 280-110112-1**

Sample	Compound	Flag	A or P	Reason
16-HS-03-SA1	All compounds	UJ (all non-detects)	A	Surrogates (%R)
16-HS-03-SA1	1,1-Dichloroethene	UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1D A1-MW-37-SA1	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

**MCAS Yuma, CTO 17F3803
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-110112-1**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
Volatiles - Field Blank Data Qualification Summary - SDG 280-110112-1**

No Sample Data Qualified in this SDG

LDC #: 42613B1

VALIDATION COMPLETENESS WORKSHEET

Date: 7/13/18

SDG #: 280-110112-1

Stage 4

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: Q

2nd Reviewer: KLE

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSO ≤ 15% ICV ≤ 20%
IV.	Continuing calibration	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	TB = 1
VII.	Surrogate spikes	SW	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 5+6
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	D	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	TB-20180523	280-110112-1	Water	05/23/18
2	A1-MW-18-SA1	280-110112-2	Water	05/23/18
3	16-MW-08-SA1	280-110112-3	Water	05/23/18
4	A1-MW-19-SA1	280-110112-4	Water	05/23/18
5	A1-MW-37-SA1D	280-110112-5	Water	05/23/18
6	A1-MW-37-SA1	280-110112-6	Water	05/23/18
7	16-HS-03-SA1	280-110112-7	Water	05/23/18
8	16-HS-03-SA1MS	280-110112-7MS	Water	05/23/18
9	16-HS-03-SA1MSD	280-110112-7MSD	Water	05/23/18
10				
11				
12				
13				

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	/			
Was cooler temperature criteria met?	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?			/	
Were all percent relative standard deviations (%RSD) $\leq 30\%/15\%$ and relative response factors (RRF) > 0.05 ?	/			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	/			
Were all percent differences (%D) $< 20\%$ or percent recoveries (%R) 80-120%?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) $\leq 20\%$ and relative response factors (RRF) ≥ 0.05 ?	/			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	/			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Field blanks				
Were field blanks were identified in this SDG?	/			
Were target compounds detected in the field blanks?		/		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?		/		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	/			

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	/			
Were target compounds detected in the field duplicates?	/			
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds of the associated calibration standard?	/			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

VALIDATION FINDINGS WORKSHEET Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all surrogate %R within QC limits?
- Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		7	TOL	75 (89-112)	✓ N/A (NO)
				()	
				()	
				()	
				()	
				()	
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				()	
				()	
				()	

(TOL) = Toluene-d8 (DCE) = 1,2-Dichloroethane-d4
 (BFB) = Bromofluorobenzene (DFM) = Dibromofluoromethane

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		<u>8/9</u>	<u>H</u>	<u>56 (71-131)</u>	<u>33 (71-131)</u>	<u>()</u>	<u>7 (ND)</u>	<u>N/A</u>
			<u>H</u>	<u>()</u>	<u>()</u>	<u>53 (≤20)</u>		<u>N/A</u>
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		
				<u>()</u>	<u>()</u>	<u>()</u>		

LDC#: 42613B

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: 9
2nd Reviewer: KK

METHOD: GCMS VOA 8260B

Compound	Concentration (ug/L)		(≤ 30) RPD	Qual
	5	6		
S	0.652	0.624	<u>NC</u>	

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (/ 0 std)	RRF (/ 0 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	10A2 (RI)	5/16/18	H (1st internal standard)	0.3187	0.3187	0.3149	0.3149	4.8	4.8
			AA (2nd internal standard)	1.3348	1.3348	1.3251	1.3251	3.5	3.5
			(3rd internal standard)						
			(4th internal standard)						
2			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET Continuing Calibration Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 A_x = Area of compound, A_{is} = Area of associated internal standard
 C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	R1275	6/4/18	H (1st internal standard)	0.3149	0.3312	0.3312	5.2	5.2
			AA (2nd internal standard)	1.3751	1.401	1.401	5.7	5.7
			(3rd internal standard)					
			(4th internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	11.5	12.2	106	106	0
1,2-Dichloroethane-d4	↓	12.4	108	108	↓
Toluene-d8	↓	11.5	100	100	↓
Bromofluorobenzene	↓	11.6	100	102	↓

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = $|MSC - MSC| * 2 / (MSC + MSDC)$

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD sample: 8/9

Compound	Spike Added (<u>MSD</u>)		Sample Concentration (<u>MSD</u>)	Spiked Sample Concentration (<u>MSD</u>)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	<u>5.00</u>	<u>5.00</u>	<u>ND</u>	<u>2.795</u>	<u>1.629</u>	<u>56</u>	<u>56</u>	<u>33</u>	<u>33</u>	<u>53</u>	<u>53</u>
Trichloroethene	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>4.86</u>	<u>4.489</u>	<u>97</u>	<u>97</u>	<u>90</u>	<u>90</u>	<u>8</u>	<u>8</u>
Benzene											
Toluene											
Chlorobenzene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA

Where: SSC = Spiked sample concentration
 SA = Spike added

RPD = | LCSC - LCSDC | * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 280-417198/4

Compound	Spike Added (<u>µg/L</u>)		Spiked Sample Concentration (<u>µg/L</u>)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	<u>5.00</u>	<u>NA</u>	<u>5.615</u>	<u>NA</u>	<u>112</u>	<u>112</u>				
Trichloroethene	<u>↓</u>	<u>↓</u>	<u>5.111</u>	<u>↓</u>	<u>102</u>	<u>102</u>				
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 19, 2018

Parameters: Wet Chemistry

Validation Level: Stage 4

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-110112-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-18-SA1	280-110112-2	Water	05/23/18
16-MW-08-SA1	280-110112-3	Water	05/23/18
A1-MW-19-SA1	280-110112-4	Water	05/23/18
A1-MW-37-SA1	280-110112-6	Water	05/23/18
16-HS-03-SA1	280-110112-7	Water	05/23/18
A1-MW-18-SA1MS	280-110112-2MS	Water	05/23/18
A1-MW-18-SA1MSD	280-110112-2MSD	Water	05/23/18
A1-MW-18-SA1DUP	280-110112-2DUP	Water	05/23/18
16-HS-03-SA1MS	280-110112-7MS	Water	05/23/18
16-HS-03-SA1MSD	280-110112-7MSD	Water	05/23/18
16-HS-03-SA1DUP	280-110112-7DUP	Water	05/23/18
16-HS-03-SA1DLMS	280-110112-7DLMS	Water	05/23/18
16-HS-03-SA1DLMSD	280-110112-7DLMSD	Water	05/23/18
16-HS-03-SA1DLDUP	280-110112-7DLDUP	Water	05/23/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Chloride, Nitrate as Nitrogen, and Sulfate by Environmental Protection Agency (EPA) SW 846 Method 9056A
Ferrous Iron by Standard Method 3500-Fe B
pH by EPA SW 846 Method 9040C

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1 16-HS-03-SA1	pH	8 days	24 hours	J (all detects)	P
A1-MW-18-SA1	Ferrous Iron	26.85 hours	24 hours	J (all detects)	P

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	Sulfate	88 (87-112)	86 (87-112)	J (all detects)	A
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	Ferrous Iron	1 (85-113)	0 (85-113)	R (all non-detects)	A

For A1-MW-18-SA1MS/MSD, no data were qualified for Chloride and Sulfate percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-37-SA1	All analytes reported below the LOQ.	J (all detects)	A

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R, data were rejected in one sample.

Due to technical holding time, MS/MSD %R, and results below the LOQ, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
Wet Chemistry - Data Qualification Summary - SDG 280-110112-1**

Sample	Analyte	Flag	A or P	Reason
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1 16-HS-03-SA1	pH	J (all detects)	P	Technical holding times
A1-MW-18-SA1	Ferrous Iron	J (all detects)	P	Technical holding times
16-HS-03-SA1	Sulfate	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
16-HS-03-SA1	Ferrous Iron	R (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-37-SA1	All analytes reported below the LOQ.	J (all detects)	A	Sample result verification

**MCAS Yuma, CTO 17F3803
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-110112-1**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-110112-1**

No Sample Data Qualified in this SDG

LDC #: 42613B6
 SDG #: 280-110112-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Statge 4

Date: 7/18/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B) pH (EPA SW846 Method (9040C))

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A SW	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	A	
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	SW	10# Cl ₂ SO ₄ : 7/8 74x
VII.	Duplicate sample analysis	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	(4,5) a
X.	Sample result verification	A	
XI	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-18-SA1	280-110112-2	Water	05/23/18
2	16-MW-08-SA1	280-110112-3	Water	05/23/18
3	A1-MW-19-SA1	280-110112-4	Water	05/23/18
4	A1-MW-37-SA1D	280-110112-5	Water	05/23/18
5	A1-MW-37-SA1	280-110112-6	Water	05/23/18
6	16-HS-03-SA1	280-110112-7	Water	05/23/18
7	A1-MW-18-SA1MS	280-110112-2MS	Water	05/23/18
8	A1-MW-18-SA1MSD	280-110112-2MSD	Water	05/23/18
9	A1-MW-18-SA1DUP	280-110112-2DUP	Water	05/23/18
10	16-HS-03-SA1MS	280-110112-7MS	Water	05/23/18
11	16-HS-03-SA1MSD	280-110112-7MSD	Water	05/23/18
12	16-HS-03-SA1DUP	280-110112-7DUP	Water	05/23/18
13	*6 DL MS			
14	↓ MSO			
15	↓ DUP			

Notes: _____

Method: Inorganics (EPA Method *See cover*)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.		✓		
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients > 0.995 ?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\leq \text{CRDL}$ ($\leq 2\text{X CRDL}$ for soil) was used for samples that were $\leq 5\text{X}$ the CRDL, including when only one of the duplicate sample values were $\leq 5\text{X}$ the CRDL.	✓			
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 426BB6

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: OR
2nd Reviewer: KIK

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
X. Field blanks				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

LDC #: 426386

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
 Reviewer: AK
 2nd Reviewer: KK

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of Cl was recalculated. Calibration date: 3/21/18

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found} \times 100}{\text{True}}$$

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated	Reported	Acceptable (Y/N)
					r or r ²	r or r ²	
Initial calibration	Cl	s1	1.0	16911296	1.000	1.000	Y
		s2	2.5	43759132			
		s3	5	85841374			
		s4	60	1053445301			
		s5	120	2068634717			
		s6	200	3433898767			
Calibration verification	NO ₃ N	ICV	4	3.93	98	98	Y
Calibration verification	SO ₄	CCV	100	102.1	102	102	Y
Calibration verification	Fe ²⁺	CCV	1.0	10686	107	107	Y

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 42613 B6

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: OR
2nd Reviewer: KK

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$
 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD	%R / RPD	
LCS	Laboratory control sample	Ferrous Iron	2,2416	200	112	112	Y
10	Matrix spike sample	NO ₃ -N	(SSR-SR) 10.0	10	100	100	↓
12	Duplicate sample	SO ₄	42.4	38.4	10	10	

Comments: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 19, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1818881

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-51-SA1	L1818881-01	Water	05/22/18
A1-MW-50-SA1	L1818881-02	Water	05/22/18
A1-MW-49-SA1	L1818881-03	Water	05/22/18
A1-MW-05-SA1	L1818881-04	Water	05/22/18
A1-MW-04-SA1	L1818881-05	Water	05/22/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

The chain-of-custodies were reviewed for documentation of cooler temperatures. Cooler temperatures for all samples were reported at 7.9°C upon receipt by the laboratory. No data was qualified based on the cooler temperature.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1818881**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1818881**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1818881**

No Sample Data Qualified in this SDG

LDC #: 42613F2b

VALIDATION COMPLETENESS WORKSHEET

Date: 7/13/18

SDG #: L1818881

Stage 2B

Page: 1

Laboratory: Alpha Analytical, Inc.

Reviewer: [Signature]
2nd Reviewer: KV

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	Temp @ 7.9°C
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15% . 1CV ≤ 20%
IV.	Continuing calibration / 2nd day	A	CCV ≤ 20 / 50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-51-SA1	L1818881-01	Water	05/22/18
2	A1-MW-50-SA1	L1818881-02	Water	05/22/18
3	A1-MW-49-SA1	L1818881-03	Water	05/22/18
4	A1-MW-05-SA1	L1818881-04	Water	05/22/18
5	A1-MW-04-SA1	L1818881-05	Water	05/22/18
6				
7				
8				

Notes:

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 16, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 4

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1819087

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-18-SA	L1819087-01	Water	05/23/18
16-MW-08-SA1	L1819087-02	Water	05/23/18
A1-MW-19-SA1	L1819087-03	Water	05/23/18
A1-MW-37-SA1	L1819087-04	Water	05/23/18
A1-MW-37-SA1D	L1819087-05	Water	05/23/18
16-HS-03-SA1	L1819087-06	Water	05/23/18
16-HS-03-SA1MS	L1819087-06MS	Water	05/23/18
16-HS-03-SA1MSD	L1819087-06MSD	Water	05/23/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples A1-MW-37-SA1 and A1-MW-37-SA1D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	A1-MW-37-SA1	A1-MW-37-SA1D			
1,4-Dioxane	7780	7500	4 (≤30)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations were within validation criteria.

XIII. Target Compound Identifications

All target compound identifications were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1819087**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1819087**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1819087**

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD ≤ 15%, 1CV ≤ 20%
IV.	Continuing calibration / ending	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	1CS/D
X.	Field duplicates	SW	D = 415
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-18-SA	L1819087-01	Water	05/23/18
2	16-MW-08-SA1	L1819087-02	Water	05/23/18
3	A1-MW-19-SA1	L1819087-03	Water	05/23/18
4	A1-MW-37-SA1	L1819087-04	Water	05/23/18
5	A1-MW-37-SA1D	L1819087-05	Water	05/23/18
6	16-HS-03-SA1	L1819087-06	Water	05/23/18
7	16-HS-03-SA1MS	L1819087-06MS	Water	05/23/18
8	16-HS-03-SA1MSD	L1819087-06MSD	Water	05/23/18
9				

Notes:

LDC #: 12613456

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

Method: Semivolatiles (EPA SW 846 Method 8270C-SIM)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check (Not required)				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) \leq 15% and relative response factors (RRF) \geq 0.05?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 20% and relative response factors (RRF) \geq 0.05?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Surrogate spikes				
Were all surrogate percent differences (%R) within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any percent recoveries (%R) was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	AA. 2-Chloronaphthalene	AAA. Butylbenzylphthalate	AAAA. Dibenzothiophene	A1.
B. Bis (2-chloroethyl) ether	BB. 2-Nitroaniline	BBB. 3,3'-Dichlorobenzidine	BBBB. Benzo(a)fluoranthene	B1.
C. 2-Chlorophenol	CC. Dimethylphthalate	CCC. Benzo(a)anthracene	CCCC. Benzo(b)fluorene	C1.
D. 1,3-Dichlorobenzene	DD. Acenaphthylene	DDD. Chrysene	DDDD. cis/trans-Decalin	D1.
E. 1,4-Dichlorobenzene	EE. 2,6-Dinitrotoluene	EEE. Bis(2-ethylhexyl)phthalate	EEEE. Biphenyl	E1.
F. 1,2-Dichlorobenzene	FF. 3-Nitroaniline	FFF. Di-n-octylphthalate	FFFF. Retene	F1.
G. 2-Methylphenol	GG. Acenaphthene	GGG. Benzo(b)fluoranthene	GGGG. C30-Hopane	G1.
H. 2,2'-Oxybis(1-chloropropane)	HH. 2,4-Dinitrophenol	HHH. Benzo(k)fluoranthene	HHHH. 1-Methylphenanthrene	H1.
I. 4-Methylphenol	II. 4-Nitrophenol	III. Benzo(a)pyrene	IIII. 1,4-Dioxane	I1.
J. N-Nitroso-di-n-propylamine	JJ. Dibenzofuran	JJJ. Indeno(1,2,3-cd)pyrene	JJJJ. Acetophenone	J1.
K. Hexachloroethane	KK. 2,4-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	KKKK. Atrazine	K1.
L. Nitrobenzene	LL. Diethylphthalate	LLL. Benzo(g,h,i)perylene	LLLL. Benzaldehyde	L1.
M. Isophorone	MM. 4-Chlorophenyl-phenyl ether	MMM. Bis(2-Chloroisopropyl)ether	MMMM. Caprolactam	M1.
N. 2-Nitrophenol	NN. Fluorene	NNN. Aniline	NNNN. 2,6-Dichlorophenol	N1.
O. 2,4-Dimethylphenol	OO. 4-Nitroaniline	OOO. N-Nitrosodimethylamine	OOOO. 1,2-Diphenylhydrazine	O1.
P. Bis(2-chloroethoxy)methane	PP. 4,6-Dinitro-2-methylphenol	PPP. Benzoic Acid	PPPP. 3-Methylphenol	P1.
Q. 2,4-Dichlorophenol	QQ. N-Nitrosodiphenylamine	QQQ. Benzyl alcohol	QQQQ. 3&4-Methylphenol	Q1.
R. 1,2,4-Trichlorobenzene	RR. 4-Bromophenyl-phenylether	RRR. Pyridine	RRRR. 4-Dimethyldibenzothiophene (4MDT)	R1.
S. Naphthalene	SS. Hexachlorobenzene	SSS. Benzidine	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	S1.
T. 4-Chloroaniline	TT. Pentachlorophenol	TTT. 1-Methylnaphthalene	TTTT. 1-Methyldibenzothiophene (1MDT)	T1.
U. Hexachlorobutadiene	UU. Phenanthrene	UUU. Benzo(b)thiophene	UUUU.	U1.
V. 4-Chloro-3-methylphenol	VV. Anthracene	VVV. Benzonaphthothiophene	VVVV.	V1.
W. 2-Methylnaphthalene	WW. Carbazole	WWW. Benzo(e)pyrene	WWWW.	W1.
X. Hexachlorocyclopentadiene	XX. Di-n-butylphthalate	XXX. 2,6-Dimethylnaphthalene	XXXX.	X1.
Y. 2,4,6-Trichlorophenol	YY. Fluoranthene	YYY. 2,3,5-Trimethylnaphthalene	YYYY.	Y1.
Z. 2,4,5-Trichlorophenol	ZZ. Pyrene	ZZZ. Perylene	ZZZZ.	Z1.

LDC#: 42613G2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: 9
2nd Reviewer: KK

METHOD: GCMS SVOA 8270D-SIM

Compound	Concentration (ng/L)		(≤ 30) RPD	Qual
	4	5		
1,4-Dioxane	7780	7500	4	

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2018\42613G2b.wpd

VALIDATION FINDINGS WORKSHEET I
Initial Calibration Calculation Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270C-SIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is}) / (A_{is})(C_x)$
 average RRF = sum of the RRFs/number of standards
 %RSD = 100 * (S/X)

A_x = Area of compound, A_{is} = Area of associated internal standard
 C_x = Concentration of compound, C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (500 std)	RRF (500 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	10A2	5/29/18	1111 (1st internal standard)	1.618	1.618	1.686	1.686	7.57	7.57
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Phenanthrene (4th internal standard)						
			Chrysene (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
2	10A2	6/1/18	1111 (1st internal standard)	1.471	1.471	1.437	1.437	4.02	4.02
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Phenanthrene (4th internal standard)						
			Chrysene (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
3			(1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Phenanthrene (4th internal standard)						
			Chrysene (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET Continuing Calibration Results Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270C-SIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 A_x = Area of compound, A_{is} = Area of associated internal standard
 C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	<u>F606011802</u>	<u>6/1/18</u>	<u>1111</u> (1st internal standard)	<u>1.686</u>	<u>1.767</u>	<u>1.767</u>	<u>4.8</u>	<u>4.8</u>
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Phenanthrene (4th internal standard)					
			Chrysene (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
2	<u>F160605187</u>	<u>6/5/18</u>	<u>1111</u> (1st internal standard)	<u>1.437</u>	<u>1.538</u>	<u>1.538</u>	<u>7</u>	<u>7</u>
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Phenanthrene (4th internal standard)					
			Chrysene (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
3	<u>X</u>		(1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Phenanthrene (4th internal standard)					
			Chrysene (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C-SIM)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
<u>1,4-Dioxane-d8</u>	<u>500</u>	<u>98.325</u>	<u>20</u>	<u>20</u>	<u>0</u>

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

VALIDATION FINDINGS WORKSHEET I
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC/MS (EPA SW 846 Method 8270C-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = |MSC - MSC| * 2/(MSC + MSDC)

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD samples: 7/8

Compound	Spike Added		Sample Concentration	Spiked Sample Concentration		Matrix Spike		Matrix Spike Duplicate		MS/MSD		
	(NS/A)			(NS/A)		(NS/A)		Percent Recovery		Percent Recovery		RPD
	MS	MSD	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated		
Acenaphthene												
Pyrene												
1,4-Dioxane	5100	5100	3270	8340	8660	99	99	106	106	+	+	

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA)

Where: SSC = Spike concentration
 SA = Spike added

RPD = | LCSC - LCSDC | * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: NA 1120650-2-3

Compound	Spike Added		Spike Concentration		LCS		LCSD		LCS/LCSD	
	(113/4)		(113/4)		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Acenaphthene										
Pyrene										
1,4-Dioxane	5000	5000	5640	5660	113	113	113	113	0	0

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC/MS PAHs (EPA SW 846 Method 8270D-SIM)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_i)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_t)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured
 A_{is} = Area of the characteristic ion (EICP) for the specific internal standard
 I_s = Amount of internal standard added in nanograms (ng)
 V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).
 V_i = Volume of extract injected in microliters (ul)
 V_t = Volume of the concentrated extract in microliters (ul)
 Df = Dilution Factor.
 $\%S$ = Percent solids, applicable to soil and solid matrices only.
 2.0 = Factor of 2 to account for GPC cleanup

Example:
 Sample I.D. 1, 1,4-Dioxane
 $Conc. = \frac{(2376)(500)(5)(1)}{(5587)(1.686)(0.5)()}$
 = 1261.1 ng/L

#	Sample ID	Compound	Reported Concentration <u>1260</u>	Calculated Concentration ()	Qualification
	<u>1</u>	<u>1,4-Dioxane</u>	<u>1260</u>		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 19, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1819352

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-13-SA1	L1819352-01	Water	05/24/18
A1-MW-11-SA1	L1819352-02	Water	05/24/18
A1-MW-14-SA1	L1819352-03	Water	05/24/18
A1-MW-15-SA1	L1819352-04	Water	05/24/18
A1-MW-25-SA1	L1819352-07	Water	05/24/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1819352**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1819352**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1819352**

No Sample Data Qualified in this SDG

LDC #: 42613H2b

VALIDATION COMPLETENESS WORKSHEET

Date: 7/13/18

SDG #: L1819352

Stage 2B

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: [Signature]
2nd Reviewer: KK

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15%, ICV ≤ 20%
IV.	Continuing calibration <i>pending</i>	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LC5/B
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-13-SA1	L1819352-01	Water	05/24/18
2	A1-MW-11-SA1	L1819352-02	Water	05/24/18
3	A1-MW-14-SA1	L1819352-03	Water	05/24/18
4	A1-MW-15-SA1	L1819352-04	Water	05/24/18
5	A1-MW-25-SA1	L1819352-07	Water	05/24/18
6				
7				
8				

Notes:

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 19, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1819562

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-42-SA1	L1819562-01	Water	05/25/18
A1-MW-54-SA1	L1819562-02	Water	05/25/18
A1-MW-53-SA1	L1819562-03	Water	05/25/18
A1-PZ-19-SA1	L1819562-04	Water	05/25/18
A1-MW-52-SA1	L1819562-05	Water	05/25/18
A1-MW-01-SA1	L1819562-06	Water	05/25/18
A1-MW-01-SA1D	L1819562-07	Water	05/25/18
A1-MW-31-SA1	L1819562-08	Water	05/25/18
A1-MW-53-SA1MS	L1819562-03MS	Water	05/25/18
A1-MW-53-SA1MSD	L1819562-03MSD	Water	05/25/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples A1-MW-01-SA1 and A1-MW-01-SA1D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	A1-MW-01-SA1	A1-MW-01-SA1D			
1,4-Dioxane	1840	1880	2 (≤30)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1819562

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1819562

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1819562

No Sample Data Qualified in this SDG

LDC #: 4261312b

VALIDATION COMPLETENESS WORKSHEET

Date: 7/2/18

SDG #: L1819562

Stage 2B

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: [Signature]

2nd Reviewer: KK

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A-A	RSO ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration <i>10/2/18</i>	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS/0
X.	Field duplicates	MW	D = 6+7
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-42-SA1	L1819562-01	Water	05/25/18
2	A1-MW-54-SA1	L1819562-02	Water	05/25/18
3	A1-MW-53-SA1	L1819562-03	Water	05/25/18
4	A1-PZ-19-SA1	L1819562-04	Water	05/25/18
5	A1-MW-52-SA1	L1819562-05	Water	05/25/18
6	A1-MW-01-SA1	L1819562-06	Water	05/25/18
7	A1-MW-01-SA1D	L1819562-07	Water	05/25/18
8	A1-MW-31-SA1	L1819562-08	Water	05/25/18
9	A1-MW-53-SA1MS	L1819562-03MS	Water	05/25/18
10	A1-MW-53-SA1MSD	L1819562-03MSD	Water	05/25/18
11				
12				
13				

LDC#: 426131-6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: KK

METHOD: GCMS SVOA 8270D-SIM

Compound	Concentration (ng/L)		(<30) RPD	Qual
	6	7		
1,4-Dioxane	1840	1880	2	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 19, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1820050

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-27-SA1	L1820050-01	Water	05/30/18
A1-MW-55-SA1	L1820050-02	Water	05/30/18
A1-MW-23-SA1	L1820050-03	Water	05/30/18
A1-MW-07-SA1	L1820050-04	Water	05/30/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the reporting limit (RL) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-23-SA1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results below the RL, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1820050**

Sample	Compound	Flag	A or P	Reason
A1-MW-23-SA1	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1820050**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1820050**

No Sample Data Qualified in this SDG

LDC #: 42613J2b

VALIDATION COMPLETENESS WORKSHEET

SDG #: L1820050

Stage 2B

Laboratory: Alpha Analytical, Inc.

Date: 7/2/18

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: KK

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15% ICV ≤ 20%
IV.	Continuing calibration	A	ECV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	1 CS/2
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-27-SA1	L1820050-01	Water	05/30/18
2	A1-MW-55-SA1	L1820050-02	Water	05/30/18
3	A1-MW-23-SA1	L1820050-03	Water	05/30/18
4	A1-MW-07-SA1	L1820050-04	Water	05/30/18
5				
6				
7				
8				

Notes:

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 19, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1820175

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EB-20180531	L1820175-01	Water	05/31/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB-20180531 was identified as an equipment blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1820175

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1820175

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1820175

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	PSD = 1570. ICV = 2070
IV.	Continuing calibration / 15 days	A	CCV = 20/5070
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	1CS/6
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	EB-20180531	L1820175-01	Water	05/31/18
2				
3				
4				
5				
6				
7				
8				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: July 16, 2018

Parameters: Perfluorinated Alkyl Acids

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1801037

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-18-SA1	1801037-01	Water	05/23/18
16-MW-08-SA1	1801037-02	Water	05/23/18
A1-MW-19-SA1	1801037-03	Water	05/23/18
A1-MW-37-SA1	1801037-04	Water	05/23/18
A1-MW-37-SA1D	1801037-05	Water	05/23/18
16-HS-03-SA1	1801037-06	Water	05/23/18
16-MW-09-SA1	1801037-07	Water	05/23/18
16-MW-06-SA1	1801037-08	Water	05/23/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked as applicable.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration point, the percent differences (%D) for their true value were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample FRB-20180523 was identified as a field rinsate blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	PFHpA PFHxS PFOA	140 (70-130) 146 (70-130) 131 (70-130)	- - -	J (all detects) J (all detects) J (all detects)	A
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	PFDA PFDoA PFTrDA	132 (70-130) 136 (70-130) 136 (70-130)	- - 133 (70-130)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	PFHpA	49.6 (≤ 30)	J (all detects)	A
16-HS-03-SA1MS/MSD (16-HS-03-SA1)	NMeFOSAA	41.1 (≤ 30)	NA	-

For 16-HS-03-SA1MS/MSD, no data were qualified for PFBS and PFHxA percent recoveries (%R) and relative percent differences (RPD) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

VIII. Ongoing Precision Recovery

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

OPR ID (Associated Samples)	Compound	%R (Limits)	Flag	A or P
B8E0244-BS1 (All samples in SDG 1801037)	PFTTrDA	153 (70-130)	NA	-

IX. Field Duplicates

Samples A1-MW-37-SA1 and A1-MW-37-SA1D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	A1-MW-37-SA1	A1-MW-37-SA1D			
PFBS	0.230	0.252	9 (≤30)	-	-
PFHxA	1.66	1.71	3 (≤30)	-	-
PFHpA	0.0328	0.0322	Not calculable	-	-
PFHxS	0.155	0.152	2 (≤30)	-	-
PFOA	0.0196	0.0203	Not calculable	-	-
PFNA	0.00170	0.00210	Not calculable	-	-
PFOS	0.0458	0.0416	Not calculable	-	-
PFUnA	0.00525U	0.00135	Not calculable	-	-

RPDs were not calculated when sample results in one or both samples were less than 5x the limit of quantitation (LOQ).

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Affected Compound	Flag	A or P
A1-MW-18-SA1	¹³ C3-PFBS	170 (50-150)	PFBS	J (all detects)	P
16-MW-08-SA1	¹³ C3-PFBS	187 (50-150)	PFBS	J (all detects)	P
A1-MW-19-SA1	¹³ C3-PFBS	214 (50-150)	PFBS	J (all detects)	P
A1-MW-37-SA1	¹³ C3-PFBS	228 (50-150)	PFBS	J (all detects)	P
A1-MW-37-SA1D	¹³ C3-PFBS	161 (50-150)	PFBS	J (all detects)	P
16-HS-03-SA1	¹³ C3-PFBS	154 (50-150)	PFBS	J (all detects)	P
16-MW-09-SA1	¹³ C3-PFBS	153 (50-150)	PFBS	J (all detects)	P
16-MW-06-SA1	¹³ C3-PFBS	214 (50-150)	PFBS	J (all detects)	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1 A1-MW-37-SA1D 16-MW-09-SA1 16-MW-06-SA1	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and RPD, internal standard %R, and results below the LOQ, data were qualified as estimated in eight samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1801037**

Sample	Compound	Flag	A or P	Reason
16-HS-03-SA1	PFHpA PFHxS PFOA	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
16-HS-03-SA1	PFHpA	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1 A1-MW-37-SA1D 16-HS-03-SA1 16-MW-09-SA1 16-MW-06-SA1	PFBS	J (all detects)	P	Internal standards (%R)
A1-MW-18-SA1 16-MW-08-SA1 A1-MW-19-SA1 A1-MW-37-SA1 A1-MW-37-SA1D 16-MW-09-SA1 16-MW-06-SA1	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

**MCAS Yuma, CTO 17F3803
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG 1801037**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
Perfluorinated Alkyl Acids - Field Blank Data Qualification Summary - SDG 1801037**

No Sample Data Qualified in this SDG

LDC #: 42613M96 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 1801037
 Laboratory: Vista Analytical Laboratory

Stage 4

Date: 7/13/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: LC/MS Perfluorinated Alkyl Acids (EPA Method 537 Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 20%. Y ² True value/ICV ≤ 30%
IV.	Continuing calibration	A	CV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FRB = 9
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples	SW	DPR
X.	Field duplicates	SW	σ = 4.5
XI.	Internal standards	SW	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-18-SA1**	1801037-01**	Water	05/23/18
2	16-MW-08-SA1**	1801037-02**	Water	05/23/18
3	A1-MW-19-SA1**	1801037-03**	Water	05/23/18
4	A1-MW-37-SA1**	1801037-04**	Water	05/23/18
5	A1-MW-37-SA1D**	1801037-05**	Water	05/23/18
6	16-HS-03-SA1**	1801037-06**	Water	05/23/18
7	16-MW-09-SA1**	1801037-07**	Water	05/23/18
8	16-MW-06-SA1**	1801037-08**	Water	05/23/18
9	FRB-20180523	1801037-09	Water	05/23/18
10	16-HS-03-SA1MS	1801037-06MS	Water	05/23/18
11	16-HS-03-SA1MSD	1801037-06MSD	Water	05/23/18
12				
13				
14				

Method: LC/MS PFOS/PFOAs (EPA Method 537M)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) \leq 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of \geq 0.990?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the S/N ratio for all compounds within validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) \leq 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 30%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 30%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the S/N ratio for all compounds within validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VII. Surrogate spikes				
Were all surrogate %R within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Matrix spike/Matrix spike duplicates				

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>			
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		<input checked="" type="checkbox"/>		
IV. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>			
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		<input checked="" type="checkbox"/>		
X. Field duplicates				
Field duplicate pairs were identified in this SDG.	<input checked="" type="checkbox"/>			
Target compounds were detected in the field duplicates.	<input checked="" type="checkbox"/>			
XI. Internal standards				
Were internal standard area counts within acceptance limits?	<input checked="" type="checkbox"/>			
XII. Target compound identification				
Were the retention times of reported detects within the RT windows?	<input checked="" type="checkbox"/>			
XIII. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>			
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>			

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 6:2 FTS			
S. 8:2 FTS			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			

LDC#: 42613M96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: KK

METHOD: PFCs

Compound	Concentration (ug/L)		(<=30) RPD	Qual
	4	5		
PFBS	0.230	0.252	9	
PFHxA	1.66	1.71	3	
PFHpA	0.0328	0.0322	2 NC	
PFHxS	0.155	0.152	2	
PFOA	0.0196	0.0203	1 NC	
PFNA	0.00170	0.00210	2 NC	
PFOS	0.0458	0.0416	10 NC	
PFUnA	0.00525U	0.00135	NC	

VALIDATION FINDINGS WORKSHEET
Internal Standards

METHOD: LC/MS PFCs

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N/A Were all internal standard area counts within 50-150% limits?

N/A Were the retention times of the internal standards within +/- 30 seconds of the retention times of the associated calibration standard?

#	Date	Sample ID	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		1 (dets)	13C3-PFBS	170 (50-150)		✓ N/A (PFBS)
		2		187		
		3		214		
		4		228		
		5		161		
		6		154		
		7		153		
		8 ✓		214		↓
		10 (MS)		167		No Qual
		11 (MSD)	↓	165 ↓		↓

LDC #: 6613M96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Page: 1 of 3
 Reviewer: [Signature]
 2nd Reviewer: KK

Method: PFCs (EPA Method 537)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Response	(X) Conc.	(X ²) Conc.
6/6/2018	M2	PFBS	0	0.51953	0.25	0.0625
			s1	0.9040925	0.5	0.25
			s2	1.9572675	1	1
			s3	3.7049862	2	4
			s4	10.06541	5	25
			s5	19.886856	10	100
			s6	99.722347	50	2500
			s7	204.60758	100	10000
			s8	513.09516	250	62500
			s9	1017.3084	500	250000

Regression Output	Calculated		Reported	
Constant	c	-0.63805	c	-0.0700934
Std Err of Y Est				
R Squared		0.9999897		0.9999340
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	2.063159148	-5.34413E-05	2.03725	2.30679E-06
Std Err of Coef.				
Correlation Coefficient		0.999995		
Coefficient of Determination (r ²)		0.999990		

**Validation Findings Worksheet
Initial Calibration Calculation Verification**

Method: PFCs (EPA Method 537)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Response	(X) Conc.	(X ²) Conc.
6/6/2018	M2	PFOA	0	0.2482712	0.25	0.0625
			s1	0.5747737	0.5	0.25
			s2	1.0592625	1	1
			s3	1.846235	2	4
			s4	4.6900387	5	25
			s5	10.243193	10	100
			s6	51.521462	50	2500
			s7	93.85144027	100	10000
			s8	228.044994	250	62500
			s9	451.7265496	500	250000

Regression Output	Calculated		Reported	
Constant	c	0.76340	c	0.0441882
Std Err of Y Est				
R Squared		0.9998726		0.9994240
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.931889278	-6.1517E-05	0.964706	-0.000132122
Std Err of Coef.				
Correlation Coefficient		0.999936		
Coefficient of Determination (r ²)		0.999873		

Validation Findings Worksheet
Initial Calibration Calculation Verification

Method: PFCs (EPA Method 537)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Response	(X) Conc.	(X ²) Conc.
6/13/2018	M2	PFHxA	0	0.4266035	0.25	0.0625
			s1	0.97093	0.5	0.25
			s2	1.9639255	1	1
			s3	3.6634565	2	4
			s4	8.4481905	5	25
			s5	15.881127	10	100
			s6	85.352945	50	2500
			s7	154.4073192	100	10000
			s8	412.8312447	250	62500
			s9	789.7483287	500	250000

Regression Output	Calculated		Reported	
Constant	c	-0.57068	c	0.0713566
Std Err of Y Est				
R Squared		0.9997320		0.9993330
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.676648676	-0.000187679	1.64736	-0.000124659
Std Err of Coef.				
Correlation Coefficient		0.999866		
Coefficient of Determination (r ²)		0.999732		

VALIDATION FINDINGS WORKSHEET

Continuing Calibration Results Verification

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,A_{is} = Area of associated internal standardC_x = Concentration of compound,C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)		Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
						RRF (CC)	RRF (CC)	%D	%D
1	180601M2-3	6/7/18	PFBS	(1st internal standard)	1.0	0.913	0.911	8.7	8.9
			PFOA	(2nd internal standard)	1.0	1.05	1.06	5.4	5.8
				(3rd internal standard)					
2	180601M2-8	6/7/18	PFBS	(1st internal standard)	10.0	9.27	9.27	7.3	7.3
			PFOA	(2nd internal standard)	10.0	9.52	9.53	4.8	4.7
				(3rd internal standard)					
3	180601M2-45	6/7/18	PFBS	(1st internal standard)	1.0	0.885	0.884	11.5	11.8
			PFOA	(2nd internal standard)	1.0	1.10	1.10	9.8	10.1
				(3rd internal standard)					
4	180601M2-40	6/13/18	PFHxA	(1st internal standard)	10.0	10.4	10.4	4.2	4.5
				(2nd internal standard)					
				(3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

VALIDATION FINDINGS WORKSHEET I
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = $|MSC - MSC1| * 2 / (MSC + MSCD)$

MSC = Matrix spike concentration

MSCD = Matrix spike duplicate concentration

MS/MSD samples: 10/11

Compound	Spike Added (<u>µg/L</u>)		Sample Concentration (<u>µg/L</u>)	Spiked Sample Concentration (<u>µg/L</u>)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFBS	0.0907	0.0883	0.582	0.746	0.682	182	181	114	113	45.9	45.9
PFOA	↓	↓	0.0218	0.141	0.113	131	131	103	103	23.9	23.9

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA)

Where: SSC = Spike concentration
 SA = Spike added

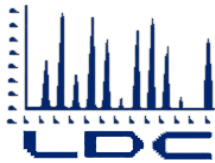
RPD = |LCSC - LCSDC| * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B3E0244 - B51

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFBS	0.0800	NA	0.0918	NA	115	115				
PFOA	↓	↓	0.0941	↓	118	118				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
ATTN: Ms. Sabina Sudoko

January 2, 2019

SUBJECT: MCAS Yuma, CTO 3803, Data Validation

Dear Ms. Sudoko,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 10, 2018. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #43888:

SDG

Fraction

280-116898-1, 280-116942-1
280-117007-1, 280-117103-1
280-117110-1, L1846366
L1846592, L1846856
L1847243, L1847316
1803615, 1803626
1803659, 1803676
1803678

Volatiles, 1,4-Dioxane, Wet Chemistry, Perfluoroalkyl
and Polyfluoroalkyl Substances

The data validation was performed under Stage 2B & 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona; April 2018
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1; 2017
- USEPA National Functional Guidelines for Superfund Organic Methods Data Review; January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Data Review; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

**Data Validation Report
MCAS Yuma, CTO 3803**

**SDGs: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1, L1846366, L1846592,
L1846856, L1847243, L1847316, 1803615, 1803626,
1803659, 1803676, and 1803678**

Prepared for

Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

Prepared by

Laboratory Data Consultants, Inc
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

January 2, 2019

INTRODUCTION

This Data Validation Report (DVR) presents Stage 2B and Stage 4 data validation results for samples collected during the November 2018 sampling period. Data validation was performed in accordance with the Final Sampling and Analysis Plan (SAP) for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), a modified outline of the US EPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017), and a modified outline of the US EPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (January 2017). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

1,4-Dioxane by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by EPA Method 537 Modified

Wet Chemistry:

Chloride, Nitrate as Nitrogen, and Sulfate by EPA SW 846 Method 9056A

Ferrous Iron by Standard Method 3500-Fe B

pH by EPA SW 846 Method 9040C

For samples reviewed by automated data review, the sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Stage 2B Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Stage 4 validation was performed are presented in Enclosure II. Validation for 1,4-Dioxane was performed manually and DVRs for Stage 2B and Stage 4 manual validation are also presented in Enclosure II.

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ongoing precision recovery (OPR), internal standards, trip blanks, equipment blanks, field rinsate blanks, and field duplicates. Approximately 20 percent of samples were subjected to Stage 4 evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of the calibrations, ICB/CCBs, and internal standards, and all QC for 1,4-Dioxane, which were validated manually. Quality assurance (QA)/QC criteria specified in the SAP, DoD QSM, and NFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the exception of eight samples for PFAs, twenty-eight samples for pH, one sample for nitrate as N, and twenty-eight samples for ferrous iron. Due to grossly exceeded holding times (e.g., >2x recommended holding time), 23 ferrous iron results were qualified as rejected (R). The remainder of the data were qualified as detected estimated (J) and non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

II. Instrument Performance Check

A tune was performed at 12 hour intervals as required by the methods.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of each method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of each method were met with the following exceptions:

SDG/ Method	Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
1803676/ 537 Mod.	12/03/18	PFTeDA	42.4 (≤30)	A1-MW-11-SA2 A1-MW-13-SA2 A1-MW-14-SA2 A1-MW-15-SA2 A1-MW-37-SA2 A1-MW-37-SA2D FRB-20181115 A1-MW-31-SA2	UJ (all non-detects)	A
1803678/ 537 Mod.	12/03/18	PFTeDA	42.4 (≤30)	A1-MW-01-SA2 A1-MW-42-SA2 FRB-20181116 EB-20181116	UJ (all non-detects)	A

V. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software program with the exception of several blanks for chloride, nitrate as N, and sulfate. The associated sample results were not detected or were significantly greater than the concentrations found in the blanks, therefore no data were qualified. The details are presented in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
280-116898-1/ 9056A	ICB/CCB	Nitrate as Nitrogen Sulfate	0.04526 mg/L 0.3841 mg/L	A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-51-SA2 A1-PZ-19-SA2 A1-MW-52-SA2
280-116942-1/ 9056A	ICB/CCB	Sulfate	0.6931 mg/L	16-HS-03-SA2 16-MW-06-SA2 16-MW-08-SA2 16-MW-09-SA2 A1-MW-19-SA2
280-116942-1/ 9056A	ICB/CCB	Chloride	0.3086 mg/L	16-MW-06-SA2 16-MW-08-SA2 16-MW-09-SA2 A1-MW-53-SA2
280-117007-1/ 9056A	ICB/CCB	Chloride	0.2558 mg/L	A1-MW-07-SA2 A1-MW-23-SA2 A1-MW-25-SA2 A1-MW-27-SA2 A1-MW-55-SA2
280-117007-1/ 9056A	ICB/CCB	Chloride	0.2618 mg/L	A1-MW-54-SA2
280-117103-1/ 9056A	ICB/CCB	Chloride Sulfate	0.2982 mg/L 0.4094 mg/L	A1-MW-11-SA2 A1-MW-13-SA2 A1-MW-14-SA2 A1-MW-15-SA2 A1-MW-37-SA2 A1-MW-31-SA2
280-117103-1/ 9056A	ICB/CCB	Nitrate as N	0.04805 mg/L	A1-MW-11-SA2 A1-MW-13-SA2 A1-MW-14-SA2 A1-MW-15-SA2 A1-MW-37-SA2
280-117103-1/ 9056A	ICB/CCB	Nitrate as N	0.04749 mg/L	A1-MW-31-SA2
280-117110-1/ 9056A	ICB/CCB	Chloride Sulfate	0.6147 mg/L 0.3987 mg/L	A1-MW-42-SA2

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

VI. Field Blank Samples

Five trip blanks were collected and analyzed for VOCs. No contaminants were found. One equipment blank was collected and analyzed for VOCs and PFAs. No contaminants were found.

Five field rinsate blanks were collected and analyzed for PFAs. No contaminants were found.

VII. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of sample EB-20181116 in SDG 280-117110-1 for VOCs. No data were qualified due to high %Rs since the associated results were non-detected.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for 1,1-dichloroethene, one MS/MSD pair for PFTeDA, one MS/MSD pair for sulfate, three MS/MSD pairs for ferrous iron. The ferrous iron results in sample A1-MW-42-SA2 was qualified as rejected (R) due to MS/MSD %Rs grossly outside QC limits (i.e., < 30%). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

X. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

XII. Laboratory Control Samples/Ongoing Precision Recovery

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Ongoing precision recovery (OPR) samples were analyzed as required by Method 537 Mod. Percent recoveries (%R) were within QC limits with the exception of two OPR samples for PFTeDA. No data were qualified due to high %Rs since the associated results were non-detected. The details are presented in Enclosure I.

XIII. Field Duplicate Samples

Three field duplicate pairs were collected and analyzed for all methods. All RPDs were within QC limits. RPDs were not calculated when sample results in one or both samples were less than 5X the limit of quantitation (LOQ). The field duplicate result comparisons are provided in Enclosures I and II.

XIV. Internal Standards/Labeled Compounds

All internal standard areas and retention times were within QC limits. All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

The laboratory indicated that the parent/product transition ion ratios met laboratory requirements with the following exceptions:

SDG/Method	Sample	Compound	Finding
1803615/537M	A1-MW-05-SA2 A1-MW-50-SA2 A1-PZ-19-SA2	All compounds qualified 'Q' by the laboratory	The parent/product transition ion ratio was outside of the 70-130% laboratory limits.
1803626/537M	A1-MW-53-SA2	All compounds qualified 'Q' by the laboratory	The parent/product transition ion ratio was outside of the 70-130% laboratory limits.
1803659/537M	A1-MW-25-SA2 A1-MW-54-SA2	All compounds qualified 'Q' by the laboratory	The parent/product transition ion ratio was outside of the 70-130% laboratory limits.
1803678/537M	A1-MW-01-SA2	All compounds qualified 'Q' by the laboratory	The parent/product transition ion ratio was outside of the 70-130% laboratory limits.

Since there are no established transition ion ratio requirements in the validation documents for this project, using professional judgment, no data were qualified.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosures I and II.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to severe holding time exceedances, data were qualified as rejected in twenty-three samples.

Due to gross MS/MSD %R exceedance, data were qualified as rejected in one sample.

Due to holding time exceedances, data were qualified as estimated in thirty samples.

Due to CCV %D, data were qualified as estimated in twelve samples.

Due to MS/MSD %R, data were qualified as estimated in one sample.

Due to results below the LOQ, data were qualified as estimated in twenty-two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Nov-2018	TB-20181112	280-116898-7	TB	METHOD	8260B	Stage 2B
12-Nov-2018	A1-MW-49-SA2	1803615-03	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-49-SA2	280-116898-3	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-49-SA2	280-116898-3	N	METHOD	9040C	Stage 4
12-Nov-2018	A1-MW-49-SA2	280-116898-3	N	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-49-SA2	280-116898-3	N	METHOD	SM3500 Fe B D	Stage 4
12-Nov-2018	A1-MW-50-SA2	1803615-04	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-50-SA2	280-116898-4	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-50-SA2	280-116898-4	N	METHOD	9040C	Stage 4
12-Nov-2018	A1-MW-50-SA2	280-116898-4	N	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-50-SA2	280-116898-4	N	METHOD	SM3500 Fe B D	Stage 4
12-Nov-2018	A1-MW-50-SA2DUP	280-116898-4DUP	DUP	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-50-SA2MS	280-116898-4MS	MS	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-50-SA2MS	280-116898-4MS	MS	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-50-SA2MSD	280-116898-4MSD	MSD	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-50-SA2MSD	280-116898-4MSD	MSD	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-50-SA2D	1803615-05	FD	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-50-SA2D	280-116898-5	FD	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-51-SA2	1803615-06	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-51-SA2	280-116898-6	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-51-SA2	280-116898-6	N	METHOD	9040C	Stage 2B
12-Nov-2018	A1-MW-51-SA2	280-116898-6	N	METHOD	9056A	Stage 2B
12-Nov-2018	A1-MW-51-SA2	280-116898-6	N	METHOD	SM3500 Fe B D	Stage 2B
12-Nov-2018	A1-MW-04-SA2	1803615-01	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-04-SA2	280-116898-1	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-04-SA2	280-116898-1	N	METHOD	9040C	Stage 4

N = Normal Sample
FD = Field Duplicate
TB = Trip Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate
EB = Equipment Blank

DUP = Laboratory Duplicate
FRB = Field Rinsate Blank

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Nov-2018	A1-MW-04-SA2	280-116898-1	N	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-04-SA2	280-116898-1	N	METHOD	SM3500 Fe B D	Stage 4
12-Nov-2018	A1-PZ-19-SA2	1803615-09	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-PZ-19-SA2	280-116898-8	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-PZ-19-SA2	280-116898-8	N	METHOD	9040C	Stage 4
12-Nov-2018	A1-PZ-19-SA2	280-116898-8	N	METHOD	9056A	Stage 4
12-Nov-2018	A1-PZ-19-SA2	280-116898-8	N	METHOD	SM3500 Fe B D	Stage 4
12-Nov-2018	A1-MW-52-SA2	1803615-07	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-52-SA2	280-116898-9	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-52-SA2	280-116898-9	N	METHOD	9040C	Stage 4
12-Nov-2018	A1-MW-52-SA2	280-116898-9	N	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-52-SA2	280-116898-9	N	METHOD	SM3500 Fe B D	Stage 4
12-Nov-2018	A1-MW-05-SA2	1803615-02	N	Gen Prep	537 MOD	Stage 4
12-Nov-2018	A1-MW-05-SA2	280-116898-2	N	METHOD	8260B	Stage 4
12-Nov-2018	A1-MW-05-SA2	280-116898-2	N	METHOD	9040C	Stage 4
12-Nov-2018	A1-MW-05-SA2	280-116898-2	N	METHOD	9056A	Stage 4
12-Nov-2018	A1-MW-05-SA2	280-116898-2	N	METHOD	SM3500 Fe B D	Stage 4
12-Nov-2018	FRB-20181112	1803615-08	FRB	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	TB-20181113	280-116942-7	TB	METHOD	8260B	Stage 2B
13-Nov-2018	16-MW-06-SA2	1803626-02	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	16-MW-06-SA2	280-116942-2	N	METHOD	8260B	Stage 2B
13-Nov-2018	16-MW-06-SA2	280-116942-2	N	METHOD	9040C	Stage 2B
13-Nov-2018	16-MW-06-SA2	280-116942-2	N	METHOD	9056A	Stage 2B
13-Nov-2018	16-MW-06-SA2	280-116942-2	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-MW-06-SA2DUP	280-116942-2DUP	DUP	METHOD	9056A	Stage 2B
13-Nov-2018	16-MW-06-SA2MS	280-116942-2MS	MS	METHOD	9056A	Stage 2B

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DUP = Laboratory Duplicate
 FRB = Field Rinsate Blank

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Nov-2018	16-MW-06-SA2MSD	280-116942-2MSD	MSD	METHOD	9056A	Stage 2B
13-Nov-2018	A1-MW-18-SA2	1803626-05	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	A1-MW-18-SA2	280-116942-5	N	METHOD	8260B	Stage 2B
13-Nov-2018	A1-MW-18-SA2	280-116942-5	N	METHOD	9040C	Stage 2B
13-Nov-2018	A1-MW-18-SA2	280-116942-5	N	METHOD	9056A	Stage 2B
13-Nov-2018	A1-MW-18-SA2	280-116942-5	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	A1-MW-19-SA2	1803626-06	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	A1-MW-19-SA2	280-116942-6	N	METHOD	8260B	Stage 2B
13-Nov-2018	A1-MW-19-SA2	280-116942-6	N	METHOD	9040C	Stage 2B
13-Nov-2018	A1-MW-19-SA2	280-116942-6	N	METHOD	9056A	Stage 2B
13-Nov-2018	A1-MW-19-SA2	280-116942-6	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-HS-03-SA2	1803626-01	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	16-HS-03-SA2	280-116942-1	N	METHOD	8260B	Stage 2B
13-Nov-2018	16-HS-03-SA2	280-116942-1	N	METHOD	9040C	Stage 2B
13-Nov-2018	16-HS-03-SA2	280-116942-1	N	METHOD	9056A	Stage 2B
13-Nov-2018	16-HS-03-SA2	280-116942-1	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-HS-03-SA2D	1803626-09	FD	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	16-HS-03-SA2D	280-116942-9	FD	METHOD	8260B	Stage 2B
13-Nov-2018	16-MW-08-SA2	1803626-03	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	16-MW-08-SA2	280-116942-3	N	METHOD	8260B	Stage 2B
13-Nov-2018	16-MW-08-SA2	280-116942-3	N	METHOD	9040C	Stage 2B
13-Nov-2018	16-MW-08-SA2	280-116942-3	N	METHOD	9056A	Stage 2B
13-Nov-2018	16-MW-08-SA2	280-116942-3	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-MW-09-SA2	1803626-04	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	16-MW-09-SA2	280-116942-4	N	METHOD	8260B	Stage 2B
13-Nov-2018	16-MW-09-SA2	280-116942-4	N	METHOD	9040C	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Nov-2018	16-MW-09-SA2	280-116942-4	N	METHOD	9056A	Stage 2B
13-Nov-2018	16-MW-09-SA2	280-116942-4	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-MW-09-SA2DUP	280-116942-4DUP	DUP	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-MW-09-SA2MS	280-116942-4MS	MS	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	16-MW-09-SA2MSD	280-116942-4MSD	MSD	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	A1-MW-53-SA2	1803626-08	N	Gen Prep	537 MOD	Stage 2B
13-Nov-2018	A1-MW-53-SA2	280-116942-8	N	METHOD	8260B	Stage 2B
13-Nov-2018	A1-MW-53-SA2	280-116942-8	N	METHOD	9040C	Stage 2B
13-Nov-2018	A1-MW-53-SA2	280-116942-8	N	METHOD	9056A	Stage 2B
13-Nov-2018	A1-MW-53-SA2	280-116942-8	N	METHOD	SM3500 Fe B D	Stage 2B
13-Nov-2018	FRB-20181113	1803626-07	FRB	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	TB-20181114	280-117007-6	TB	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-07-SA2	1803659-01	N	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-07-SA2	280-117007-1	N	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-07-SA2	280-117007-1	N	METHOD	9040C	Stage 2B
14-Nov-2018	A1-MW-07-SA2	280-117007-1	N	METHOD	9056A	Stage 2B
14-Nov-2018	A1-MW-07-SA2	280-117007-1	N	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-07-SA2MS	280-117007-1MS	MS	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-07-SA2MSD	280-117007-1MSD	MSD	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-23-SA2	1803659-02	N	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-23-SA2	280-117007-2	N	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-23-SA2	280-117007-2	N	METHOD	9040C	Stage 2B
14-Nov-2018	A1-MW-23-SA2	280-117007-2	N	METHOD	9056A	Stage 2B
14-Nov-2018	A1-MW-23-SA2	280-117007-2	N	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-55-SA2	1803659-05	N	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-55-SA2	280-117007-5	N	METHOD	8260B	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Nov-2018	A1-MW-55-SA2	280-117007-5	N	METHOD	9040C	Stage 2B
14-Nov-2018	A1-MW-55-SA2	280-117007-5	N	METHOD	9056A	Stage 2B
14-Nov-2018	A1-MW-55-SA2	280-117007-5	N	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-25-SA2	1803659-03	N	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-25-SA2	280-117007-3	N	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-25-SA2	280-117007-3	N	METHOD	9040C	Stage 2B
14-Nov-2018	A1-MW-25-SA2	280-117007-3	N	METHOD	9056A	Stage 2B
14-Nov-2018	A1-MW-25-SA2	280-117007-3	N	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-27-SA2	1803659-04	N	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-27-SA2	280-117007-4	N	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-27-SA2	280-117007-4	N	METHOD	9040C	Stage 2B
14-Nov-2018	A1-MW-27-SA2	280-117007-4	N	METHOD	9056A	Stage 2B
14-Nov-2018	A1-MW-27-SA2	280-117007-4	N	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	FRB-20181114	1803659-07	FRB	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-54-SA2	1803659-06	N	Gen Prep	537 MOD	Stage 2B
14-Nov-2018	A1-MW-54-SA2	280-117007-7	N	METHOD	8260B	Stage 2B
14-Nov-2018	A1-MW-54-SA2	280-117007-7	N	METHOD	9040C	Stage 2B
14-Nov-2018	A1-MW-54-SA2	280-117007-7	N	METHOD	9056A	Stage 2B
14-Nov-2018	A1-MW-54-SA2	280-117007-7	N	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-54-SA2DUP	280-117007-7DUP	DUP	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-54-SA2MS	280-117007-7MS	MS	METHOD	SM3500 Fe B D	Stage 2B
14-Nov-2018	A1-MW-54-SA2MSD	280-117007-7MSD	MSD	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	TB-20181115	280-117103-7	TB	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-13-SA2	1803676-02	N	Gen Prep	537 MOD	Stage 2B
15-Nov-2018	A1-MW-13-SA2	280-117103-2	N	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-13-SA2	280-117103-2	N	METHOD	9040C	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Nov-2018	A1-MW-13-SA2	280-117103-2	N	METHOD	9056A	Stage 2B
15-Nov-2018	A1-MW-13-SA2	280-117103-2	N	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	A1-MW-11-SA2	1803676-01	N	Gen Prep	537 MOD	Stage 2B
15-Nov-2018	A1-MW-11-SA2	280-117103-1	N	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-11-SA2	280-117103-1	N	METHOD	9040C	Stage 2B
15-Nov-2018	A1-MW-11-SA2	280-117103-1	N	METHOD	9056A	Stage 2B
15-Nov-2018	A1-MW-11-SA2	280-117103-1	N	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	A1-MW-15-SA2	1803676-04	N	Gen Prep	537 MOD	Stage 2B
15-Nov-2018	A1-MW-15-SA2	280-117103-4	N	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-15-SA2	280-117103-4	N	METHOD	9040C	Stage 2B
15-Nov-2018	A1-MW-15-SA2	280-117103-4	N	METHOD	9056A	Stage 2B
15-Nov-2018	A1-MW-15-SA2	280-117103-4	N	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	A1-MW-14-SA2	1803676-03	N	Gen Prep	537 MOD	Stage 2B
15-Nov-2018	A1-MW-14-SA2	280-117103-3	N	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-14-SA2	280-117103-3	N	METHOD	9040C	Stage 2B
15-Nov-2018	A1-MW-14-SA2	280-117103-3	N	METHOD	9056A	Stage 2B
15-Nov-2018	A1-MW-14-SA2	280-117103-3	N	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	A1-MW-14-SA2DUP	280-117103-3DUP	DUP	METHOD	9040C	Stage 2B
15-Nov-2018	A1-MW-37-SA2	1803676-05	N	Gen Prep	537 MOD	Stage 2B
15-Nov-2018	A1-MW-37-SA2	280-117103-5	N	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-37-SA2	280-117103-5	N	METHOD	9040C	Stage 2B
15-Nov-2018	A1-MW-37-SA2	280-117103-5	N	METHOD	9056A	Stage 2B
15-Nov-2018	A1-MW-37-SA2	280-117103-5	N	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	A1-MW-37-SA2D	1803676-06	FD	Gen Prep	537 MOD	Stage 2B
15-Nov-2018	A1-MW-37-SA2D	280-117103-6	FD	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-31-SA2	1803676-08	N	Gen Prep	537 MOD	Stage 2B

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Nov-2018	A1-MW-31-SA2	280-117103-8	N	METHOD	8260B	Stage 2B
15-Nov-2018	A1-MW-31-SA2	280-117103-8	N	METHOD	9040C	Stage 2B
15-Nov-2018	A1-MW-31-SA2	280-117103-8	N	METHOD	9056A	Stage 2B
15-Nov-2018	A1-MW-31-SA2	280-117103-8	N	METHOD	SM3500 Fe B D	Stage 2B
15-Nov-2018	FRB-20181115	1803676-07	FRB	Gen Prep	537 MOD	Stage 2B
16-Nov-2018	TB-20181116	280-117110-3	TB	METHOD	8260B	Stage 2B
16-Nov-2018	A1-MW-01-SA2	1803678-01	N	Gen Prep	537 MOD	Stage 2B
16-Nov-2018	A1-MW-01-SA2	280-117110-1	N	METHOD	8260B	Stage 2B
16-Nov-2018	A1-MW-01-SA2	280-117110-1	N	METHOD	9040C	Stage 2B
16-Nov-2018	A1-MW-01-SA2	280-117110-1	N	METHOD	9056A	Stage 2B
16-Nov-2018	A1-MW-01-SA2	280-117110-1	N	METHOD	SM3500 Fe B D	Stage 2B
16-Nov-2018	A1-MW-01-SA2MS	280-117110-1MS	MS	METHOD	8260B	Stage 2B
16-Nov-2018	A1-MW-01-SA2MSD	280-117110-1MSD	MSD	METHOD	8260B	Stage 2B
16-Nov-2018	A1-MW-42-SA2	1803678-02	N	Gen Prep	537 MOD	Stage 2B
16-Nov-2018	A1-MW-42-SA2	280-117110-2	N	METHOD	8260B	Stage 2B
16-Nov-2018	A1-MW-42-SA2	280-117110-2	N	METHOD	9040C	Stage 2B
16-Nov-2018	A1-MW-42-SA2	280-117110-2	N	METHOD	9056A	Stage 2B
16-Nov-2018	A1-MW-42-SA2	280-117110-2	N	METHOD	SM3500 Fe B D	Stage 2B
16-Nov-2018	A1-MW-42-SA2DUP	280-117110-2DUP	DUP	METHOD	SM3500 Fe B D	Stage 2B
16-Nov-2018	A1-MW-42-SA2MS	280-117110-2MS	MS	METHOD	SM3500 Fe B D	Stage 2B
16-Nov-2018	A1-MW-42-SA2MSD	280-117110-2MSD	MSD	METHOD	SM3500 Fe B D	Stage 2B
16-Nov-2018	FRB-20181116	1803678-03	FRB	Gen Prep	537 MOD	Stage 2B
16-Nov-2018	EB-20181116	1803678-04	EB	Gen Prep	537 MOD	Stage 2B
16-Nov-2018	EB-20181116	280-117110-4	EB	METHOD	8260B	Stage 2B
19-Nov-2018	A1-MW-50-SA2MS	B8K0091-MS1	MS	Gen Prep	537 MOD	Stage 4
19-Nov-2018	A1-MW-50-SA2MSD	B8K0091-MSD1	MSD	Gen Prep	537 MOD	Stage 4

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MSD = Matrix Spike Duplicate
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DUP = Laboratory Duplicate
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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-Nov-2018	A1-MW-01-SA2MS	B8K0153-MS1	MS	Gen Prep	537 MOD	Stage 2B
30-Nov-2018	A1-MW-01-SA2MSD	B8K0153-MSD1	MSD	Gen Prep	537 MOD	Stage 2B

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Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116898-1

Method Category: EM
Method: 9040C **Matrix:** AQ

11/12/2018 11:40:00
Sample ID:A1-MW-04-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/12/2018 2:24:00
Sample ID:A1-MW-05-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/12/2018 8:32:00
Sample ID:A1-MW-49-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/12/2018 9:25:00
Sample ID:A1-MW-50-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	7.8	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/12/2018 10:46:00
Sample ID:A1-MW-51-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/12/2018 1:39:00
Sample ID:A1-MW-52-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116898-1

Method Category: EM

Method: 9040C

Matrix: AQ

11/12/2018 12:43:00

Sample ID:A1-PZ-19-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM

Method: 9056A

Matrix: AQ

11/12/2018 12:43:00

Sample ID:A1-PZ-19-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITRATE	0.896	J B	0.200	LOD	1.00	LOQ	mg/L	J	RI

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

11/12/2018 11:40:00

Sample ID:A1-MW-04-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

11/12/2018 2:24:00

Sample ID:A1-MW-05-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.119	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

11/12/2018 8:32:00

Sample ID:A1-MW-49-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116898-1

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

11/12/2018 9:25:00

Sample ID:A1-MW-50-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.380	HF	0.0500	LOD	0.200	LOQ	mg/L	J	StoA

11/12/2018 10:46:00

Sample ID:A1-MW-51-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0278	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

11/12/2018 1:39:00

Sample ID:A1-MW-52-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

11/12/2018 12:43:00

Sample ID:A1-PZ-19-SA2 Collected:PM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0591	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA

Method Category: VOA
Method: 8260B **Matrix:** AQ

11/12/2018 9:25:00

Sample ID:A1-MW-50-SA2 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.564	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.780	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

11/12/2018 9:35:00

Sample ID:A1-MW-50-SA2D Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.630	J	0.800	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116898-1

Method Category: VOA

Method: 8260B

Matrix: AQ

Sample ID:A1-MW-50-SA2D		11/12/2018 9:35:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TRICHLOROETHENE	0.949	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:A1-MW-52-SA2		11/12/2018 1:39:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
1,1-DICHLOROETHENE	0.458	J	0.800	LOD	1.00	LOQ	ug/L	J	RI		
TRICHLOROETHENE	0.811	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:A1-PZ-19-SA2		11/12/2018 12:43:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TRICHLOROETHENE	0.430	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

SDG: 280-116942-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:16-HS-03-SA2		11/13/2018 12:00:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	8.4	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:16-MW-06-SA2		11/13/2018 9:38:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	8.2	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116942-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:16-MW-08-SA2		11/13/2018 1:00:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:16-MW-09-SA2		11/13/2018 1:44:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:A1-MW-18-SA2		11/13/2018 10:31:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	7.8	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:A1-MW-19-SA2		11/13/2018 11:15:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:A1-MW-53-SA2		11/13/2018 2:54:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Method Category: GENCHEM

Method: 9056A

Matrix: AQ

Sample ID:16-MW-06-SA2		11/13/2018 9:38:00			Collected:AM			Analysis Type:RE/TOT		Dilution: 10	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Sulfate	695	F1	5.00	LOD	50.0	LOQ	mg/L	J	Ms		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116942-1

Method Category: GENCHEM

Method: 9056A

Matrix: AQ

Sample ID:A1-MW-18-SA2		11/13/2018 10:31:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 5	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
NITRATE	11.0	H	0.500	LOD	2.50	LOQ	mg/L	J	StoA		

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

Sample ID:16-HS-03-SA2		11/13/2018 12:00:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:16-MW-06-SA2		11/13/2018 9:38:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:16-MW-08-SA2		11/13/2018 1:00:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:16-MW-09-SA2		11/13/2018 1:44:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF F1	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-18-SA2		11/13/2018 10:31:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-116942-1

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

Sample ID:A1-MW-19-SA2		11/13/2018 11:15:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-53-SA2		11/13/2018 2:54:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Method Category: VOA

Method: 8260B

Matrix: AQ

Sample ID:16-MW-06-SA2		11/13/2018 9:38:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TRICHLOROETHENE	0.195	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:16-MW-08-SA2		11/13/2018 1:00:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TETRACHLOROETHENE	0.538	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:16-MW-09-SA2		11/13/2018 1:44:00			Collected:PM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TETRACHLOROETHENE	0.271	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:A1-MW-19-SA2		11/13/2018 11:15:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TRICHLOROETHENE	0.545	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117007-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:A1-MW-07-SA2		11/14/2018 9:07:00			Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code			
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA			

Sample ID:A1-MW-23-SA2		11/14/2018 10:03:00			Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code			
PH	7.9	HF	0.1	LOD	0.1	LOQ	SU	J	StoA			

Sample ID:A1-MW-25-SA2		11/14/2018 12:15:00			Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code			
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA			

Sample ID:A1-MW-27-SA2		11/14/2018 1:03:00			Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code			
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA			

Sample ID:A1-MW-54-SA2		11/14/2018 3:17:00			Collected:PM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code			
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA			

Sample ID:A1-MW-55-SA2		11/14/2018 11:02:00			Collected:AM			Analysis Type:RES/TOT			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code			
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA			

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117007-1

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

Sample ID:A1-MW-07-SA2		11/14/2018 9:07:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-23-SA2		11/14/2018 10:03:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-25-SA2		11/14/2018 12:15:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-27-SA2		11/14/2018 1:03:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-54-SA2		11/14/2018 3:17:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF F1	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-55-SA2		11/14/2018 11:02:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117007-1

Method Category: VOA
Method: 8260B **Matrix:** AQ

11/14/2018 9:07:00

Sample ID:A1-MW-07-SA2 Collected:AM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.357	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.826	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

11/14/2018 12:15:00

Sample ID:A1-MW-25-SA2 Collected:PM Analysis Type:RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.273	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.539	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

SDG: 280-117103-1

Method Category: EM
Method: 9040C **Matrix:** AQ

11/15/2018 9:06:00

Sample ID:A1-MW-11-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.1	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/15/2018 8:20:00

Sample ID:A1-MW-13-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/15/2018 10:53:00

Sample ID:A1-MW-14-SA2 Collected:AM Analysis Type:RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117103-1

Method Category: EM

Method: 9040C

Matrix: AQ

Sample ID:A1-MW-15-SA2		11/15/2018 10:07:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	8.1	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:A1-MW-31-SA2		11/15/2018 2:16:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Sample ID:A1-MW-37-SA2		11/15/2018 11:54:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
PH	7.8	HF	0.1	LOD	0.1	LOQ	SU	J	StoA		

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

Sample ID:A1-MW-11-SA2		11/15/2018 9:06:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-13-SA2		11/15/2018 8:20:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-14-SA2		11/15/2018 10:53:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

12/21/2018 9:21:17 AM

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117103-1

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

Sample ID:A1-MW-15-SA2		11/15/2018 10:07:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-31-SA2		11/15/2018 2:16:00			Collected:PM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA		

Sample ID:A1-MW-37-SA2		11/15/2018 11:54:00			Collected:AM			Analysis Type:RES/TOT		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
Ferrous Iron	0.156	J HF	0.0500	LOD	0.200	LOQ	mg/L	J	RI, StoA		

Method Category: VOA

Method: 8260B

Matrix: AQ

Sample ID:A1-MW-14-SA2		11/15/2018 10:53:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
1,1-DICHLOROETHENE	0.635	J	0.800	LOD	1.00	LOQ	ug/L	J	RI		
TRICHLOROETHENE	0.728	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:A1-MW-15-SA2		11/15/2018 10:07:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
TRICHLOROETHENE	0.426	J	0.400	LOD	1.00	LOQ	ug/L	J	RI		

Sample ID:A1-MW-37-SA2		11/15/2018 11:54:00			Collected:AM			Analysis Type:RES		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
1,1-DICHLOROETHENE	0.379	J	0.800	LOD	1.00	LOQ	ug/L	J	RI		

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117103-1

Method Category: VOA
Method: 8260B **Matrix:** AQ

11/15/2018 11:54:00
Sample ID:A1-MW-37-SA2 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.914	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

11/15/2018 12:04:00
Sample ID:A1-MW-37-SA2D **Collected:**PM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.373	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.909	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

SDG: 280-117110-1

Method Category: EM
Method: 9040C **Matrix:** AQ

11/16/2018 8:12:00
Sample ID:A1-MW-01-SA2 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

11/16/2018 9:17:00
Sample ID:A1-MW-42-SA2 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PH	8.0	HF	0.1	LOD	0.1	LOQ	SU	J	StoA

Method Category: GENCHEM
Method: SM3500 Fe B D **Matrix:** AQ

11/16/2018 8:12:00
Sample ID:A1-MW-01-SA2 **Collected:**AM **Analysis Type:**RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF	0.0500	LOD	0.200	LOQ	mg/L	R	StoA

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

SDG: 280-117110-1

Method Category: GENCHEM

Method: SM3500 Fe B D

Matrix: AQ

11/16/2018 9:17:00

Sample ID: A1-MW-42-SA2 Collected: AM Analysis Type: RES/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Ferrous Iron	0.0500	U HF F1	0.0500	LOD	0.200	LOQ	mg/L	R	Ms, StoA

Method Category: VOA

Method: 8260B

Matrix: AQ

11/16/2018 9:17:00

Sample ID: A1-MW-42-SA2 Collected: AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1-DICHLOROETHENE	0.238	J	0.800	LOD	1.00	LOQ	ug/L	J	RI
TRICHLOROETHENE	0.367	J	0.400	LOD	1.00	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

Lab Reporting Batch ID: 280-116898-1, 280-116942-1,

Laboratory: TA DEN

EDD Filename: 280-116898-1, 280-116942-1, 280-117007-1,
280-117103-1, 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
RI	Reporting Limit Trace Value
StoA	Sampling to Analysis Estimation
StoA	Sampling to Analysis Rejection
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803615

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/12/2018 11:40

Sample ID: A1-MW-04-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOA	0.00646	J	0.00442	LOD	0.00881	LOQ	ug/L	J	RI

11/12/2018 2:24:0

Sample ID: A1-MW-05-SA2 **Collected:** PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHxS	0.00359	J, Q	0.00431	LOD	0.00864	LOQ	ug/L	J	RI

11/12/2018 9:25:0

Sample ID: A1-MW-50-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHpA	0.00474	J, Q	0.00446	LOD	0.00894	LOQ	ug/L	J	RI

11/12/2018 9:35:0

Sample ID: A1-MW-50-SA2D **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHpA	0.00494	J	0.00439	LOD	0.00874	LOQ	ug/L	J	RI

11/12/2018 1:39:0

Sample ID: A1-MW-52-SA2 **Collected:** PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOS	0.00356	J	0.00435	LOD	0.00872	LOQ	ug/L	J	RI

11/12/2018 12:43

Sample ID: A1-PZ-19-SA2 **Collected:** PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHpA	0.00548	J	0.00442	LOD	0.00884	LOQ	ug/L	J	RI
PFOS	0.00321	J, Q	0.00442	LOD	0.00884	LOQ	ug/L	J	RI

SDG: 1803626

* denotes a non-reportable result

Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803626

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/13/2018 9:38:0

Sample ID: 16-MW-06-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOS	0.00582	J	0.00417	LOD	0.00835	LOQ	ug/L	J	RI

11/13/2018 1:44:0

Sample ID: 16-MW-09-SA2 **Collected:** PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOA	0.00449	J	0.00427	LOD	0.00852	LOQ	ug/L	J	RI
PFOS	0.00503	J	0.00427	LOD	0.00852	LOQ	ug/L	J	RI

11/13/2018 10:31:

Sample ID: A1-MW-18-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOA	0.00309	J	0.00427	LOD	0.00856	LOQ	ug/L	J	RI

11/13/2018 11:15:

Sample ID: A1-MW-19-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFDA	0.00721	J	0.00431	LOD	0.00861	LOQ	ug/L	J	RI
PFNA	0.00398	J	0.00431	LOD	0.00861	LOQ	ug/L	J	RI

11/13/2018 2:54:0

Sample ID: A1-MW-53-SA2 **Collected:** PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFOS	0.00400	J, Q	0.00420	LOD	0.00841	LOQ	ug/L	J	RI

SDG: 1803659

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/14/2018 10:03:

Sample ID: A1-MW-23-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFHxS	0.00594	J	0.00424	LOD	0.00849	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803676

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/15/2018 9:06:0

Sample ID: A1-MW-11-SA2

Collected: AM

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFBS	0.184		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFDA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFDoA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFHpA	0.0352		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFHxA	0.460		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFHxS	0.109		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFNA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFOS	0.00916		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFTeDA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFUnA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFOA	0.0349		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE

11/15/2018 8:20:0

Sample ID: A1-MW-13-SA2

Collected: AM

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE
PFBS	0.259		0.00455	LOD	0.00906	LOQ	ug/L	J	StoE
PFDA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE
PFDoA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE
PFHpA	0.105		0.00455	LOD	0.00906	LOQ	ug/L	J	StoE
PFHxA	0.655		0.00455	LOD	0.00906	LOQ	ug/L	J	StoE
PFHxS	0.368		0.00455	LOD	0.00906	LOQ	ug/L	J	StoE
PFNA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE
PFOA	0.0695		0.00455	LOD	0.00906	LOQ	ug/L	J	StoE
PFOS	0.107		0.00455	LOD	0.00906	LOQ	ug/L	J	StoE
PFTeDA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE
PFUnA	0.00455	U	0.00455	LOD	0.00906	LOQ	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803676

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/15/2018 10:53

Sample ID: A1-MW-14-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFBS	0.101		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFDA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFDoA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFHpA	0.0658		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFHxA	0.327		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFHxS	0.253		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFNA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFOA	0.0527		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFOS	0.0604		0.00431	LOD	0.00860	LOQ	ug/L	J	StoE
PFTeDA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE
PFUnA	0.00431	U	0.00431	LOD	0.00860	LOQ	ug/L	UJ	StoE

11/15/2018 10:07

Sample ID: A1-MW-15-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE
PFBS	0.363		0.00450	LOD	0.00902	LOQ	ug/L	J	StoE
PFDA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE
PFDoA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE
PFHpA	0.0773		0.00450	LOD	0.00902	LOQ	ug/L	J	StoE
PFHxA	0.596		0.00450	LOD	0.00902	LOQ	ug/L	J	StoE
PFHxS	0.322		0.00450	LOD	0.00902	LOQ	ug/L	J	StoE
PFNA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE
PFOA	0.190		0.00450	LOD	0.00902	LOQ	ug/L	J	StoE
PFOS	0.0185		0.00450	LOD	0.00902	LOQ	ug/L	J	StoE
PFTeDA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE
PFUnA	0.00450	U	0.00450	LOD	0.00902	LOQ	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

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Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803676

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/15/2018 2:16:0

Sample ID: A1-MW-31-SA2 **Collected:** PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFBS	0.0235		0.00427	LOD	0.00855	LOQ	ug/L	J	StoE
PFDA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFDoA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFHpA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFHxA	0.0732		0.00427	LOD	0.00855	LOQ	ug/L	J	StoE
PFHxS	0.00855		0.00427	LOD	0.00855	LOQ	ug/L	J	StoE
PFNA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFOA	0.00388	J	0.00427	LOD	0.00855	LOQ	ug/L	J	RI, StoE
PFOS	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFTeDA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE
PFUnA	0.00427	U	0.00427	LOD	0.00855	LOQ	ug/L	UJ	StoE

11/15/2018 11:54

Sample ID: A1-MW-37-SA2 **Collected:** AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE
PFBS	0.151		0.00424	LOD	0.00851	LOQ	ug/L	J	StoE
PFDA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE
PFDoA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE
PFHpA	0.0856		0.00424	LOD	0.00851	LOQ	ug/L	J	StoE
PFHxA	0.520		0.00424	LOD	0.00851	LOQ	ug/L	J	StoE
PFHxS	0.438		0.00424	LOD	0.00851	LOQ	ug/L	J	StoE
PFNA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE
PFOA	0.0599		0.00424	LOD	0.00851	LOQ	ug/L	J	StoE
PFOS	0.0288		0.00424	LOD	0.00851	LOQ	ug/L	J	StoE
PFTeDA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE
PFUnA	0.00424	U	0.00424	LOD	0.00851	LOQ	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

12/28/2018 11:47:26 AM

ADR version 1.9.0.325

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Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803676

Method Category: SVOA

Method: 537 MOD

Matrix: AQ

11/15/2018 12:04

Sample ID: A1-MW-37-SA2D Collected: PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE
PFBS	0.150		0.00435	LOD	0.00870	LOQ	ug/L	J	StoE
PFDA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE
PFDoA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE
PFHpA	0.0830		0.00435	LOD	0.00870	LOQ	ug/L	J	StoE
PFHxA	0.529		0.00435	LOD	0.00870	LOQ	ug/L	J	StoE
PFHxS	0.429		0.00435	LOD	0.00870	LOQ	ug/L	J	StoE
PFNA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE
PFOA	0.0555		0.00435	LOD	0.00870	LOQ	ug/L	J	StoE
PFOS	0.0275		0.00435	LOD	0.00870	LOQ	ug/L	J	StoE
PFTeDA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE
PFUnA	0.00435	U	0.00435	LOD	0.00870	LOQ	ug/L	UJ	StoE

11/15/2018 2:30:0

Sample ID: FRB-20181115 Collected: PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NEtFOSAA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
NMeFOSAA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFBS	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFDA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFDoA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFHpA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFHxA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFHxS	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFNA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFOA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFOS	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFTeDA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE, Ccv
PFTrDA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE
PFUnA	0.00450	U	0.00450	LOD	0.00904	LOQ	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

12/28/2018 11:47:26 AM

ADR version 1.9.0.325

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Data Qualifier Summary

1803676, 1803678
 EDD Filename: Prep1803615, Prep1803626, Prep1803659,
 Prep1803676, Prep1803678

Laboratory: Vista
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

SDG: 1803678

Method Category: SVOA
Method: 537 MOD **Matrix:** AQ

11/16/2018 8:12:0

Sample ID:A1-MW-01-SA2 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFTeDA	0.00446	U	0.00446	LOD	0.00894	LOQ	ug/L	UJ	Ccv

11/16/2018 9:17:0

Sample ID:A1-MW-42-SA2 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFTeDA	0.00424	U	0.00424	LOD	0.00849	LOQ	ug/L	UJ	Ccv

11/16/2018 9:50:0

Sample ID:EB-20181116 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFTeDA	0.00424	U	0.00424	LOD	0.00849	LOQ	ug/L	UJ	Ccv

11/16/2018 9:40:0

Sample ID:FRB-20181116 **Collected:**AM **Analysis Type:**RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PFTeDA	0.00481	U	0.00481	LOD	0.00965	LOQ	ug/L	UJ	Ccv

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

12/28/2018 11:47:26 AM

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Data Qualifier Summary

1803676, 1803678
EDD Filename: Prep1803615, Prep1803626, Prep1803659,
Prep1803676, Prep1803678

Laboratory: Vista
eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Lcs	Laboratory Control Spike Upper Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation

* denotes a non-reportable result

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

12/28/2018 11:47:26 AM

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Enclosure I
Stage 2B ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

280-116898-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-116898-1

Laboratory: TA DEN

EDD Filename: 280-116898-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-04-SA2 (RES/TOT)	Sampling To Analysis	267.00	24.00	HOURS	J (all detects)
A1-MW-05-SA2 (RES/TOT)		335.00	24.00	HOURS	
A1-MW-49-SA2 (RES/TOT)		341.00	24.00	HOURS	
A1-MW-50-SA2 (RES/TOT)		270.00	24.00	HOURS	
A1-MW-51-SA2 (RES/TOT)		268.75	24.00	HOURS	
A1-MW-52-SA2 (RES/TOT)		265.75	24.00	HOURS	
A1-PZ-19-SA2 (RES/TOT)		336.75	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-04-SA2 (RES/TOT)	Sampling To Analysis	222.75	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-05-SA2 (RES/TOT)		220.00	24.00	HOURS	
A1-MW-49-SA2 (RES/TOT)		226.00	24.00	HOURS	
A1-MW-50-SA2 (RES/TOT)		225.00	24.00	HOURS	
A1-MW-51-SA2 (RES/TOT)		223.75	24.00	HOURS	
A1-MW-52-SA2 (RES/TOT)		220.75	24.00	HOURS	
A1-PZ-19-SA2 (RES/TOT)		221.75	24.00	HOURS	

Method Blank Outlier Report

Lab Reporting Batch ID: 280-116898-1

Laboratory: TA DEN

EDD Filename: 280-116898-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9056A
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 280-437370/6	11/13/2018 12:25:00 PM	Sulfate	0.3332 mg/L	A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-51-SA2 A1-MW-52-SA2 A1-PZ-19-SA2
MB 280-437371/6	11/13/2018 12:25:00 PM	NITRATE	0.04530 mg/L	A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-51-SA2 A1-MW-52-SA2 A1-PZ-19-SA2

Reporting Limit Outliers

Lab Reporting Batch ID: 280-116898-1

Laboratory: TA DEN

EDD Filename: 280-116898-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-50-SA2	1,1-DICHLOROETHENE	J	0.564	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.780	1.00	LOQ	ug/L	
A1-MW-50-SA2D	1,1-DICHLOROETHENE	J	0.630	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.949	1.00	LOQ	ug/L	
A1-MW-52-SA2	1,1-DICHLOROETHENE	J	0.458	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.811	1.00	LOQ	ug/L	
A1-PZ-19-SA2	TRICHLOROETHENE	J	0.430	1.00	LOQ	ug/L	J (all detects)

Method: 9056A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-PZ-19-SA2	NITRATE	J B	0.896	1.00	LOQ	mg/L	J (all detects)

Method: SM3500 Fe B D

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-05-SA2	Ferrous Iron	J HF	0.119	0.200	LOQ	mg/L	J (all detects)
A1-MW-51-SA2	Ferrous Iron	J HF	0.0278	0.200	LOQ	mg/L	J (all detects)
A1-PZ-19-SA2	Ferrous Iron	J HF	0.0591	0.200	LOQ	mg/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 280-116898-1

Laboratory: TA DEN

EDD Filename: Prep280-116898-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-50-SA2	A1-MW-50-SA2D			
1,1-DICHLOROETHENE	0.564	0.630	NC	30.00	No Qualifiers Applied
TRICHLOROETHENE	0.780	0.949	NC	30.00	

LDC #: 43888A1a
 SDG #: 280-116898-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/Stage 2B 4

Date: 12/18/18
 Page: 1 of 1
 Reviewer: JY
 2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL = 15% ICV = 20%
IV.	Continuing calibration	A	CCV = 20/50%
V.	Laboratory Blanks	N	Not reviewed for ADR validation.
VI.	Field blanks		
VII.	Surrogate spikes		Not reviewed for ADR validation.
VIII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
IX.	Laboratory control samples		Not reviewed for ADR validation.
X.	Field duplicates	X	
XI.	Internal standards	A	Not reviewed for ADR validation.
XII.	Compound quantitation RL/LOQ/LODs	N	Not reviewed for ADR validation.
XIII.	Target compound identification		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-04-SA2**	280-116898-1**	Water	11/12/18
2	A1-MW-05-SA2**	280-116898-2**	Water	11/12/18
3	A1-MW-49-SA2**	280-116898-3**	Water	11/12/18
4	A1-MW-50-SA2**	280-116898-4**	Water	11/12/18
5	A1-MW-50-SA2D**	280-116898-5**	Water	11/12/18
6	A1-MW-51-SA2**	280-116898-6**	Water	11/12/18
7	TB-20181112	280-116898-7	Water	11/12/18
8	A1-PZ-19-SA2**	280-116898-8**	Water	11/12/18
9	A1-MW-52-SA2**	280-116898-9**	Water	11/12/18
10	A1-MW-50-SA2MS	280-116898-4MS	Water	11/12/18
11	A1-MW-50-SA2MSD	280-116898-4MSD	Water	11/12/18
12				
13	MB 280-498700/6 - 498747/4			

LDC #: 43888A6
 SDG #: 280-116898-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR/Stage-4

Date: 12-20-18
 Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B), pH (EPA SW846 Method 9040C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	SW	
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/MSD
VII.	Duplicate sample analysis	A	Not reviewed for ADR validation. DUP
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
IX.	Field duplicates	N	
X.	Sample result verification	A	Not reviewed for ADR validation.
XI	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-04-SA2**	280-116898-1**	Water	11/12/18
2	A1-MW-05-SA2**	280-116898-2**	Water	11/12/18
3	A1-MW-49-SA2**	280-116898-3**	Water	11/12/18
4	A1-MW-50-SA2**	280-116898-4**	Water	11/12/18
5	A1-MW-51-SA2	280-116898-6	Water	11/12/18
6	A1-PZ-19-SA2**	280-116898-8**	Water	11/12/18
7	A1-MW-52-SA2**	280-116898-9**	Water	11/12/18
8	A1-MW-50-SA2MS	280-116898-4MS	Water	11/12/18
9	A1-MW-50-SA2MSD	280-116898-4MSD	Water	11/12/18
10	A1-MW-50-SA2DUP	280-116898-4DUP	Water	11/12/18
11				
12				
13				
14				
15	PBW			

Notes: _____

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

All circled dates have exceeded the technical holding time.
 N N/A Were all samples preserved as applicable to each method?
 N N/A Were all cooler temperatures within validation criteria?

Method:		9040C	SM3500 Fe B				
Parameters:		pH	Ferrous Iron				
Technical holding time:		24 hr	24 hr				
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	11:40 11-12-18	14:43 11-23-18	(11 days)				J/UJ/P (det)
2	14:24 11-12-18	13:27 11-26-18	(14)				()
3	08:33 11-12-18	13:36 11-26-18	(14)				()
4	09:35 11-12-18	15:19 11-23-18	(11)				()
5	10:46 11-12-18	15:33 11-23-18	(11)				()
6	13:43 11-12-18	13:32 11-26-18	(14)				()
7	13:39 11-12-18	15:23 11-23-18	(11)				()
1	11:40 11-12-18			18:30 11-21-18	(9 days)		J/R/P (N.D.)
2	14:24 11-12-18				()		(det)
3	08:33 11-12-18				()		(ND)
4	09:35 11-12-18				()		(det)
5	10:46 11-12-18				()		()
6	13:43 11-12-18				()		()
7	13:39 11-12-18				()		(ND)

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: all (NO3-N: 2x dil, SO4: 20x dil, >5x or ND)

Analyte	Blank ID	Blank ID	Blank Action Limit														
	PB	ICB/CCB (mg/L)		No Qual's.													
NO3-N	0.04530	0.04526	0.4526														
SO4	0.3332	0.3841	38.41														

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

280-116942-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-116942-1
 EDD Filename: 280-116942-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C **Preparation Method:** METHOD
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
16-HS-03-SA2 (RES/TOT)	Sampling To Analysis	316.00	24.00	HOURS	J (all detects)
16-MW-06-SA2 (RES/TOT)		318.50	24.00	HOURS	
16-MW-08-SA2 (RES/TOT)		314.75	24.00	HOURS	
16-MW-09-SA2 (RES/TOT)		314.50	24.00	HOURS	
A1-MW-18-SA2 (RES/TOT)		317.50	24.00	HOURS	
A1-MW-19-SA2 (RES/TOT)		316.25	24.00	HOURS	
A1-MW-53-SA2 (RES/TOT)		312.75	24.00	HOURS	

Method: 9056A **Preparation Method:** METHOD
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-18-SA2 (RES/TOT)	Sampling To Analysis	62.25	48.00	HOURS	J(all detects)
		62.50	48.00	HOURS	UJ(all non-detects)

Method: SM3500 Fe B D **Preparation Method:** METHOD
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
16-HS-03-SA2 (RES/TOT)	Sampling To Analysis	198.50	24.00	HOURS	J(all detects) R(all non-detects)
16-MW-06-SA2 (RES/TOT)		200.75	24.00	HOURS	
16-MW-08-SA2 (RES/TOT)		197.50	24.00	HOURS	
16-MW-09-SA2 (RES/TOT)		196.75	24.00	HOURS	
16-MW-09-SA2DUP (RES/TOT)		196.75	24.00	HOURS	
16-MW-09-SA2MS (RES/TOT)		196.75	24.00	HOURS	
16-MW-09-SA2MSD (RES/TOT)		196.75	24.00	HOURS	
A1-MW-18-SA2 (RES/TOT)		200.00	24.00	HOURS	
A1-MW-19-SA2 (RES/TOT)		199.25	24.00	HOURS	
A1-MW-53-SA2 (RES/TOT)		195.50	24.00	HOURS	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 280-116942-1

Laboratory: TA DEN

EDD Filename: 280-116942-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9056A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
16-MW-06-SA2MS 16-MW-06-SA2MSD (16-MW-06-SA2)	Sulfate	80	74	87.00-112.00	-	Sulfate	J (all detects) UJ (all non-detects)

Method: SM3500 Fe B D
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
16-MW-09-SA2MS 16-MW-09-SA2MSD (16-MW-09-SA2)	Ferrous Iron	53	51	85.00-113.00	-	Ferrous Iron	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 280-116942-1

Laboratory: TA DEN

EDD Filename: 280-116942-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
16-MW-06-SA2	TRICHLOROETHENE	J	0.195	1.00	LOQ	ug/L	J (all detects)
16-MW-08-SA2	TETRACHLOROETHENE	J	0.538	1.00	LOQ	ug/L	J (all detects)
16-MW-09-SA2	TETRACHLOROETHENE	J	0.271	1.00	LOQ	ug/L	J (all detects)
A1-MW-19-SA2	TRICHLOROETHENE	J	0.545	1.00	LOQ	ug/L	J (all detects)

LDC #: 43888B1a

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: 280-116942-1

ADR

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *NY*

2nd Reviewer: *[Signature]*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL $\leq 15\%$ ICV $\leq 20\%$
IV.	Continuing calibration	A	CCV $\leq 20/50\%$
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	N A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

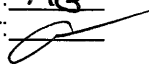
SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	16-HS-03-SA2	280-116942-1	Water	11/13/18
2	16-MW-06-SA2	280-116942-2	Water	11/13/18
3	16-MW-08-SA2	280-116942-3	Water	11/13/18
4	16-MW-09-SA2	280-116942-4	Water	11/13/18
5	A1-MW-18-SA2	280-116942-5	Water	11/13/18
6	A1-MW-19-SA2	280-116942-6	Water	11/13/18
7	TB-20181113	280-116942-7	Water	11/13/18
8	A1-MW-53-SA2	280-116942-8	Water	11/13/18
9	16-HS-063-SA2D	280-116942-9	Water	11/13/18
10				
11				
12	MB 280-438817/4			
13				

(H, AA, S only)

LDC #: 43888B6
 SDG #: 280-116942-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 12-20-18
 Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: 

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B), pH (EPA SW846 Method 9040C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW	HT out for all pH, Fe ⁺² ; NO ₃ out for # 5
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	MS/MSD (#8/9: SO ₄ fails, #11/12: Fe ⁺² fails)
VII.	Duplicate sample analysis	N	DUP
VIII.	Laboratory control samples	N	LCS/LCSD
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	16-HS-03-SA2	280-116942-1	Water	11/13/18
2	16-MW-06-SA2	280-116942-2	Water	11/13/18
3	16-MW-08-SA2	280-116942-3	Water	11/13/18
4	16-MW-09-SA2	280-116942-4	Water	11/13/18
5	A1-MW-18-SA2	280-116942-5	Water	11/13/18
6	A1-MW-19-SA2	280-116942-6	Water	11/13/18
7	A1-MW-53-SA2	280-116942-8	Water	11/13/18
8	16-MW-06-SA2MS	280-116942-2MS	Water	11/13/18
9	16-MW-06-SA2MSD	280-116942-2MSD	Water	11/13/18
10	16-MW-06-SA2DUP	280-116942-2DUP	Water	11/13/18
11	16-MW-09-SA2MS	280-116942-4MS	Water	11/13/18
12	16-MW-09-SA2MSD	280-116942-4MSD	Water	11/13/18
13	16-MW-09-SA2DUP	280-116942-4DUP	Water	11/13/18
14	PBW 1			
15	PBW 2			

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L Associated Samples: 1-4,6 (various dilutions, >5x)

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qual's.									
SO4		0.6931	3.466										

Conc. units: mg/L Associated Samples: 2,3,4,7 (various dilutions, >5x)

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qual's.									
Cl		0.3086	1.543										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

280-117007-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-117007-1
 EDD Filename: 280-117007-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-07-SA2 (RES/TOT)	Sampling To Analysis	363.25	24.00	HOURS	J (all detects)
A1-MW-23-SA2 (RES/TOT)		362.25	24.00	HOURS	
A1-MW-25-SA2 (RES/TOT)		359.75	24.00	HOURS	
A1-MW-27-SA2 (RES/TOT)		359.25	24.00	HOURS	
A1-MW-54-SA2 (RES/TOT)		356.75	24.00	HOURS	
A1-MW-55-SA2 (RES/TOT)		361.00	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-07-SA2 (RES/TOT)	Sampling To Analysis	177.50	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-23-SA2 (RES/TOT)		176.50	24.00	HOURS	
A1-MW-25-SA2 (RES/TOT)		174.25	24.00	HOURS	
A1-MW-27-SA2 (RES/TOT)		173.50	24.00	HOURS	
A1-MW-54-SA2 (RES/TOT)		171.25	24.00	HOURS	
A1-MW-54-SA2DUP (RES/TOT)		171.25	24.00	HOURS	
A1-MW-54-SA2MS (RES/TOT)		171.25	24.00	HOURS	
A1-MW-54-SA2MSD (RES/TOT)		171.25	24.00	HOURS	
A1-MW-55-SA2 (RES/TOT)		175.50	24.00	HOURS	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 280-117007-1

Laboratory: TA DEN

EDD Filename: 280-117007-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: SM3500 Fe B D

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-54-SA2MS A1-MW-54-SA2MSD (A1-MW-54-SA2)	Ferrous Iron	34	35	85.00-113.00	-	Ferrous Iron	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 280-117007-1

Laboratory: TA DEN

EDD Filename: 280-117007-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
A1-MW-07-SA2	1,1-DICHLOROETHENE	J	0.357	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.826	1.00	LOQ	ug/L	
A1-MW-25-SA2	1,1-DICHLOROETHENE	J	0.273	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.539	1.00	LOQ	ug/L	

LDC #: 43888C1a

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: 280-117007-1

ADR

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *JK*2nd Reviewer: *[Signature]*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICV \leq 15% ICV \leq 20%
IV.	Continuing calibration	A	CV \leq 20/50%
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	N A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-07-SA2	280-117007-1	Water	11/14/18
2	A1-MW-23-SA2	280-117007-2	Water	11/14/18
3	A1-MW-25-SA2	280-117007-3	Water	11/14/18
4	A1-MW-27-SA2	280-117007-4	Water	11/14/18
5	A1-MW-55-SA2	280-117007-5	Water	11/14/18
6	TB-20181114	280-117007-6	Water	11/14/18
7	A1-MW-54-SA2	280-117007-7	Water	11/14/18
8	A1-MW-07-SA2MS	280-117007-1MS	Water	11/14/18
9	A1-MW-07-SA2MSD	280-117007-1MSD	Water	11/14/18
10				
11	MB 280-438841/6			
12				
13				

(H, AA, S only)

LDC #: 43888C6

VALIDATION COMPLETENESS WORKSHEET

Date: 12-20-18

SDG #: 280-117007-1

ADR

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: MG

2nd Reviewer: 

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B), pH (EPA SW846 Method 9040C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW	HT out for all pH, Fe ⁺²
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	MS/MSD (# 7/8: Fe ⁺² fails)
VII.	Duplicate sample analysis	N	DUP
VIII.	Laboratory control samples	N	LCS/LCSD
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-07-SA2	280-117007-1	Water	11/14/18
2	A1-MW-23-SA2	280-117007-2	Water	11/14/18
3	A1-MW-25-SA2	280-117007-3	Water	11/14/18
4	A1-MW-27-SA2	280-117007-4	Water	11/14/18
5	A1-MW-55-SA2	280-117007-5	Water	11/14/18
6	A1-MW-54-SA2	280-117007-7	Water	11/14/18
7	A1-MW-54-SA2MS	280-117007-7MS	Water	11/14/18
8	A1-MW-54-SA2MSD	280-117007-7MSD	Water	11/14/18
9	A1-MW-54-SA2DUP	280-117007-7DUP	Water	11/14/18
10				
11				
12				
13				
14				
15	PBW			

Notes:

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: 1-5 (10x dil, >5x)

Analyte	Blank ID	Blank ID	Blank Action Limit													
	PB	ICB/CCB (mg/L)		No Qual's.												
Cl		0.2558	12.79													

Conc. units: mg/L

Associated Samples: 6 (10x dil, >5x)

Analyte	Blank ID	Blank ID	Blank Action Limit													
	PB	ICB/CCB (mg/L)		No Qual.												
Cl		0.2618	13.09													

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

280-117103-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-117103-1
 EDD Filename: 280-117103-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-11-SA2 (RES/TOT)	Sampling To Analysis	340.75	24.00	HOURS	J (all detects)
A1-MW-13-SA2 (RES/TOT)		341.00	24.00	HOURS	
A1-MW-14-SA2 (RES/TOT)		338.75	24.00	HOURS	
A1-MW-14-SA2DUP (RES/TOT)		338.75	24.00	HOURS	
A1-MW-15-SA2 (RES/TOT)		339.75	24.00	HOURS	
A1-MW-31-SA2 (RES/TOT)		335.50	24.00	HOURS	
A1-MW-37-SA2 (RES/TOT)		337.75	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-11-SA2 (RES/TOT)	Sampling To Analysis	153.50	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-13-SA2 (RES/TOT)		154.25	24.00	HOURS	
A1-MW-14-SA2 (RES/TOT)		151.75	24.00	HOURS	
A1-MW-15-SA2 (RES/TOT)		152.50	24.00	HOURS	
A1-MW-31-SA2 (RES/TOT)		148.25	24.00	HOURS	
A1-MW-37-SA2 (RES/TOT)		150.75	24.00	HOURS	

Method Blank Outlier Report

Lab Reporting Batch ID: 280-117103-1

Laboratory: TA DEN

EDD Filename: 280-117103-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9056A
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 280-437914/6	11/16/2018 5:36:00 PM	CHLORIDE Sulfate	0.2635 mg/L 0.3386 mg/L	A1-MW-11-SA2 A1-MW-13-SA2 A1-MW-14-SA2 A1-MW-15-SA2 A1-MW-31-SA2 A1-MW-37-SA2
MB 280-437915/6	11/16/2018 5:36:00 PM	NITRATE	0.04638 mg/L	A1-MW-11-SA2 A1-MW-13-SA2 A1-MW-14-SA2 A1-MW-15-SA2 A1-MW-31-SA2 A1-MW-37-SA2

Reporting Limit Outliers

Lab Reporting Batch ID: 280-117103-1

Laboratory: TA DEN

EDD Filename: 280-117103-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-14-SA2	1,1-DICHLOROETHENE	J	0.635	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.728	1.00	LOQ	ug/L	
A1-MW-15-SA2	TRICHLOROETHENE	J	0.426	1.00	LOQ	ug/L	J (all detects)
A1-MW-37-SA2	1,1-DICHLOROETHENE	J	0.379	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.914	1.00	LOQ	ug/L	
A1-MW-37-SA2D	1,1-DICHLOROETHENE	J	0.373	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.909	1.00	LOQ	ug/L	

Method: SM3500 Fe B D

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-37-SA2	Ferrous Iron	J HF	0.156	0.200	LOQ	mg/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 280-117103-1

Laboratory: TA DEN

EDD Filename: Prep280-117103-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-37-SA2	A1-MW-37-SA2D			
1,1-DICHLOROETHENE	0.379	0.373	NC	30.00	No Qualifiers Applied
TRICHLOROETHENE	0.914	0.909	NC	30.00	

LDC #: 43888D1a

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: 280-117103-1

ADR

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVK

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	LCAL \leq 15% ICV \leq 20%
IV.	Continuing calibration	A	CV \leq 20/50%
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	N/A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-11-SA2	280-117103-1	Water	11/15/18
2	A1-MW-13-SA2	280-117103-2	Water	11/15/18
3	A1-MW-14-SA2	280-117103-3	Water	11/15/18
4	A1-MW-15-SA2	280-117103-4	Water	11/15/18
5	A1-MW-37-SA2	280-117103-5	Water	11/15/18
6	A1-MW-37-SA2D	280-117103-6	Water	11/15/18
7	TB-20181115	280-117103-7	Water	11/15/18
8	A1-MW-31-SA2	280-117103-8	Water	11/15/18
9				
10				
11				
12	MB 280-438823/9			
13				

(H, AA, S only)

LDC #: 43888D6
 SDG #: 280-117103-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 12-20-18
 Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: _____

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B), pH (EPA SW846 Method 9040C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW	HT out for all pH, Fe ⁺²
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	client specified
VII.	Duplicate sample analysis	N	DUP
VIII.	Laboratory control samples	N	LCS/LCSD
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-11-SA2	280-117103-1	Water	11/15/18
2	A1-MW-13-SA2	280-117103-2	Water	11/15/18
3	A1-MW-14-SA2	280-117103-3	Water	11/15/18
4	A1-MW-15-SA2	280-117103-4	Water	11/15/18
5	A1-MW-37-SA2	280-117103-5	Water	11/15/18
6	A1-MW-31-SA2	280-117103-8	Water	11/15/18
7	A1-MW-14-SA2DUP	280-117103-3DUP	Water	11/15/18
8				
9				
10				
11				
12				
13				
14				
15	PBW			

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L Associated Samples: all (20x dil, >5x)

Analyte	Blank ID	Blank ID	Blank Action Limit													
	PB	ICB/CCB (mg/L)		No Qual's.												
Cl		0.2982	29.82													
SO4		0.4094	40.94													

Conc. units: mg/L Associated Samples: 1-5 (>5x)

Analyte	Blank ID	Blank ID	Blank Action Limit													
	PB	ICB/CCB (mg/L)		No Qual's.												
NO3-N		0.04805	0.2402													

Conc. units: mg/L Associated Samples: 6 (>5x)

Analyte	Blank ID	Blank ID	Blank Action Limit													
	PB	ICB/CCB (mg/L)		No Qual.												
NO3-N		0.04749	0.2374													

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

280-117110-1

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 280-117110-1
 EDD Filename: 280-117110-1

Laboratory: TA DEN
 eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 9040C	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-01-SA2 (RES/TOT)	Sampling To Analysis	318.00	24.00	HOURS	J (all detects)
A1-MW-42-SA2 (RES/TOT)		316.75	24.00	HOURS	

Method: SM3500 Fe B D	Preparation Method: METHOD
Matrix: AQ	

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-01-SA2 (RES/TOT)	Sampling To Analysis	130.25	24.00	HOURS	J(all detects) R(all non-detects)
A1-MW-42-SA2 (RES/TOT)		129.25	24.00	HOURS	
A1-MW-42-SA2DUP (RES/TOT)		129.25	24.00	HOURS	
A1-MW-42-SA2MS (RES/TOT)		129.25	24.00	HOURS	
A1-MW-42-SA2MSD (RES/TOT)		129.25	24.00	HOURS	

Surrogate Outlier Report

Lab Reporting Batch ID: 280-117110-1

Laboratory: TA DEN

EDD Filename: 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

<i>Sample ID (Analysis Type)</i>	<i>Surrogate</i>	<i>Sample % Recovery</i>	<i>% Recovery Limits</i>	<i>Affected Compounds</i>	<i>Flag</i>
EB-20181116	1,2-DICHLOROETHANE-D4	122	81.00-118.00	All Target Analytes	J (all detects)

Project Name and Number: 4663.3803 - CTO 17F3803 Yuma

12/21/2018 9:19:11 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 280-117110-1

Laboratory: TA DEN

EDD Filename: 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: SM3500 Fe B D

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-42-SA2MS A1-MW-42-SA2MSD (A1-MW-42-SA2)	Ferrous Iron	27	27	85.00-113.00	-	Ferrous Iron	J (all detects) R (all non-detects)

Method: 8260B

Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-01-SA2MSD (A1-MW-01-SA2)	1,1-DICHLOROETHENE	-	-	71.00-131.00	22 (20.00)	1,1-DICHLOROETHENE	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 280-117110-1

Laboratory: TA DEN

EDD Filename: 280-117110-1

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Denver

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-42-SA2	1,1-DICHLOROETHENE	J	0.238	1.00	LOQ	ug/L	J (all detects)
	TRICHLOROETHENE	J	0.367	1.00	LOQ	ug/L	

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 15% ICV ≤ 20%
IV.	Continuing calibration	A	CCV ≤ 20/50%
V.	Laboratory Blanks	N	
VI.	Field blanks	N	TB
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	NA	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-01-SA2	280-117110-1	Water	11/16/18
2	A1-MW-42-SA2	280-117110-2	Water	11/16/18
3	TB-20181116	280-117110-3	Water	11/16/18
4	EB-20181116	280-117110-4	Water	11/16/18
5	A1-MW-01-SA2MS	280-117110-1MS	Water	11/16/18
6	A1-MW-01-SA2MSD	280-117110-1MSD	Water	11/16/18
7				
8				
9				

Notes:

(H, AA, S only)

LDC #: 43888E6
 SDG #: 280-117110-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 12-20-18
 Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B), pH (EPA SW846 Method 9040C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW	HT out for all pH, Fe ⁺²
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	SW	ICB/CCB only
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	MS/MSD (#3/4: Fe ⁺² fails)
VII.	Duplicate sample analysis	N	DUP
VIII.	Laboratory control samples	N	LCS/LCSD
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-01-SA2	280-117110-1	Water	11/16/18
2	A1-MW-42-SA2	280-117110-2	Water	11/16/18
3	A1-MW-42-SA2MS	280-117110-2MS	Water	11/16/18
4	A1-MW-42-SA2MSD	280-117110-2MSD	Water	11/16/18
5	A1-MW-42-SA2DUP	280-117110-2DUP	Water	11/16/18
6				
7				
8				
9				
10				
11				
12				
13				
14				
15	PBW			

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: 2 (20x dil, >5x)

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qual's.									
Cl		0.6147	61.47										
SO4		0.3987	39.87										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

Quality Control Outlier Reports

1803615

Reporting Limit Outliers

Lab Reporting Batch ID: 1803615

Laboratory: Vista

EDD Filename: 1803615

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-04-SA2	PFOA	J	0.00646	0.00881	LOQ	ug/L	J (all detects)
A1-MW-05-SA2	PFHxS	J, Q	0.00359	0.00864	LOQ	ug/L	J (all detects)
A1-MW-50-SA2	PFHpA	J, Q	0.00474	0.00894	LOQ	ug/L	J (all detects)
A1-MW-50-SA2D	PFHpA	J	0.00494	0.00874	LOQ	ug/L	J (all detects)
A1-MW-52-SA2	PFOS	J	0.00356	0.00872	LOQ	ug/L	J (all detects)
A1-PZ-19-SA2	PFHpA PFOS	J J, Q	0.00548 0.00321	0.00884 0.00884	LOQ LOQ	ug/L ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 1803615

Laboratory: Vista

EDD Filename: Prep1803615

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
 Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-50-SA2	A1-MW-50-SA2D			
PFBS	0.0250	0.0264	5	30.00	No Qualifiers Applied
PFHpA	0.00474	0.00494	NC	30.00	
PFHxA	0.0806	0.0829	3	30.00	
PFHxS	0.0367	0.0355	3	30.00	
PFOA	0.00947	0.00878	8	30.00	

LDC #: 43888K96

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: 1803615

ADR/Stage 4

Page: 1 of 1

Laboratory: Vista Analytical Laboratory

Reviewer: *JVL*2nd Reviewer: *[Signature]***METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	ICAL $\leq 20\%$ Individual $\leq 30\%$ 1st $\leq 30\%$
IV.	Continuing calibration/ISC	A	CCV $\leq 30\%$ true conc.
V.	Laboratory Blanks	N	Not reviewed for ADR validation.
VI.	Field blanks		
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Field duplicates		
X.	Labeled Compounds	A	Not reviewed for ADR validation.
XI.	Compound quantitation RL/LOQ/LODs	N	Not reviewed for ADR validation.
XII.	Target compound identification		Not reviewed for ADR validation.
XIII.	System performance		Not reviewed for ADR validation.
XIV.	Overall assessment of data		Not reviewed for ADR validation.

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-04-SA2**	1803615-01**	Water	11/12/18
2	A1-MW-05-SA2**	1803615-02**	Water	11/12/18
3	A1-MW-49-SA2**	1803615-03**	Water	11/12/18
4	A1-MW-50-SA2**	1803615-04**	Water	11/12/18
5	A1-MW-50-SA2D**	1803615-05**	Water	11/12/18
6	A1-MW-51-SA2**	1803615-06**	Water	11/12/18
7	A1-MW-52-SA2**	1803615-07**	Water	11/12/18
8	FRB-20181112	1803615-08	Water	11/12/18
9	^{PZ} A1-MW -19-SA2**	1803615-09**	Water	11/12/18
10	A1-MW-50-SA2MS	1803615-04MS	Water	11/12/18
11	A1-MW-50-SA2MSD	1803615-04MSD	Water	11/12/18
12				
13				
14	<i>pg 10091- bk I</i>			
15				

Quality Control Outlier Reports

1803626

Reporting Limit Outliers

Lab Reporting Batch ID: 1803626

Laboratory: Vista

EDD Filename: 1803626

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
16-MW-06-SA2	PFOS	J	0.00582	0.00835	LOQ	ug/L	J (all detects)
16-MW-09-SA2	PFOA	J	0.00449	0.00852	LOQ	ug/L	J (all detects)
	PFOS	J	0.00503	0.00852	LOQ	ug/L	J (all detects)
A1-MW-18-SA2	PFOA	J	0.00309	0.00856	LOQ	ug/L	J (all detects)
A1-MW-19-SA2	PFDA	J	0.00721	0.00861	LOQ	ug/L	J (all detects)
	PFNA	J	0.00398	0.00861	LOQ	ug/L	J (all detects)
A1-MW-53-SA2	PFOS	J, Q	0.00400	0.00841	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 1803626

Laboratory: Vista

EDD Filename: 1803626

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	16-HS-03-SA2	16-HS-03-SA2D			
PFBS	1.34	1.39	4	30.00	No Qualifiers Applied
PFHpA	0.405	0.412	2	30.00	
PFHxA	10.3	11.7	13	30.00	
PFHxS	0.324	0.312	4	30.00	
PFOA	0.0206	0.0200	3	30.00	

LDC #: 43888L96

VALIDATION COMPLETENESS WORKSHEET

SDG #: 1803626

ADR

Laboratory: Vista Analytical Laboratory

Date: 12/19/18

Page: 1 of 1

Reviewer: JVC

2nd Reviewer: [Signature]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	rv Individual $\leq 30\%$ True values 100 $\leq 30\%$
IV.	Continuing calibration/ISC	A	COV $\leq 30\%$
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Labeled Compounds	A/A	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	16-HS-03-SA2	1803626-01	Water	11/13/18
2	16-MW-06-SA2	1803626-02	Water	11/13/18
3	16-MW-08-SA2	1803626-03	Water	11/13/18
4	16-MW-09-SA2	1803626-04	Water	11/13/18
5	A1-MW-18-SA2	1803626-05	Water	11/13/18
6	A1-MW-19-SA2	1803626-06	Water	11/13/18
7	FRB-20181113	1803626-07	Water	11/13/18
8	A1-MW-53-SA2	1803626-08	Water	11/13/18
9	16-HS-03-SA2D	1803626-09	Water	11/13/18
10				
11				

Notes:

Quality Control Outlier Reports

1803659

Reporting Limit Outliers

Lab Reporting Batch ID: 1803659

Laboratory: Vista

EDD Filename: 1803659

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-23-SA2	PFHxS	J	0.00594	0.00849	LOQ	ug/L	J (all detects)

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	<i>to r2 Individual CV ≤ 30% True value</i>
IV.	Continuing calibration/ISC	A	<i>CV ≤ 30%</i>
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Labeled Compounds	A	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-07-SA2	1803659-01	Water	11/14/18
2	A1-MW-23-SA2	1803659-02	Water	11/14/18
3	A1-MW-25-SA2	1803659-03	Water	11/14/18
4	A1-MW-27-SA2	1803659-04	Water	11/14/18
5	A1-MW-55-SA2	1803659-05	Water	11/14/18
6	A1-MW-54-SA2	1803659-06	Water	11/14/18
7	FRB-20181114	1803659-07	Water	11/14/18
8				
9				
10				

Notes:

<i>BSK0144-Blk 4</i>				

Quality Control Outlier Reports

1803676

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 1803676

Laboratory: Vista

EDD Filename: 1803676

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD Preparation Method: Gen Prep
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
A1-MW-11-SA2 (RES)	Sampling To Extraction	15.00	14.00	DAYS	J (all detects)
A1-MW-13-SA2 (RES)		15.00	14.00	DAYS	UJ (all non-detects)
A1-MW-14-SA2 (RES)		15.00	14.00	DAYS	
A1-MW-15-SA2 (RES)		15.00	14.00	DAYS	
A1-MW-31-SA2 (RES)		15.00	14.00	DAYS	
A1-MW-37-SA2 (RES)		15.00	14.00	DAYS	
A1-MW-37-SA2D (RES)		15.00	14.00	DAYS	
FRB-20181115 (RES)		15.00	14.00	DAYS	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1803676

Laboratory: Vista

EDD Filename: 1803676

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B8K0153-BS1 (A1-MW-11-SA2 A1-MW-13-SA2 A1-MW-14-SA2 A1-MW-15-SA2 A1-MW-31-SA2 A1-MW-37-SA2 A1-MW-37-SA2D FRB-20181115)	PFTeDA	140	-	70.00-130.00	-	PFTeDA	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 1803676

Laboratory: Vista

EDD Filename: 1803676

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
A1-MW-31-SA2	PFOA	J	0.00388	0.00855	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 1803676

Laboratory: Vista

EDD Filename: 1803676

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD

Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	A1-MW-37-SA2	A1-MW-37-SA2D			
PFBS	0.151	0.150	1	30.00	No Qualifiers Applied
PFHpA	0.0856	0.0830	3	30.00	
PFHxA	0.520	0.529	2	30.00	
PFHxS	0.438	0.429	2	30.00	
PFOA	0.0599	0.0555	8	30.00	
PFOS	0.0288	0.0275	5	30.00	

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, SW	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	rv Individual $\leq 30\%$ ICV $\leq 30\%$ true value
IV.	Continuing calibration/ISC	SW	CW $\leq 30\%$
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Labeled Compounds	NA	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-11-SA2	1803676-01	Water	11/15/18
2	A1-MW-13-SA2	1803676-02	Water	11/15/18
3	A1-MW-14-SA2	1803676-03	Water	11/15/18
4	A1-MW-15-SA2	1803676-04	Water	11/15/18
5	A1-MW-37-SA2	1803676-05	Water	11/15/18
6	A1-MW-37-SA2D	1803676-06	Water	11/15/18
7	FRB-20181115	1803676-07	Water	11/15/18
8	A1-MW-31-SA2	1803676-08	Water	11/15/18
9				
10				
11				

Notes:

8	K0153 - blank			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFHxA			
B. PFHpA			
C. PFOA			
D. PFNA			
E. PFDA			
F. PFUnA			
G. PFDoA			
H. PFTriA			
I. PFTeDA			
J. PFBS			
K. PFHxS			
L. PFHpS			
M. PFOS			
N. PFDS			
O. FOSA			
P. PFBA			
Q. PFPeA			
R. 6:2FTS			
S. 8:2FTS			
T. MeFOSAA			
U. EtFOSAA			
V. Combined PFOAS/PFOS			

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed after every 10 injections for each instrument?

Y N N/A Were all continuing calibration percent differences (%D) ≤ 30 %?

#	Date	Standard ID	Compound	Finding %D (Limit: $\leq 30.0\%$)	Associated Samples	Qualifications
	12/03/18	181203 M1_3	I	42.4	All (ND)	J/US/A

Quality Control Outlier Reports

1803678

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1803678

Laboratory: Vista

EDD Filename: 1803678

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
A1-MW-01-SA2MS A1-MW-01-SA2MSD (A1-MW-01-SA2)	PFTeDA	139	-	70.00-130.00	31.7 (30.00)	PFTeDA	J (all detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 1803678

Laboratory: Vista

EDD Filename: 1803678

eQAPP Name: SW RAC 6_CTO 3803 YUMA - Vista

Method: 537 MOD
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
B8K0153-BS1 (A1-MW-01-SA2 A1-MW-42-SA2 EB-20181116 FRB-20181116)	PFTeDA	140	-	70.00-130.00	-	PFTeDA	J (all detects)

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	to r ^r Individual $\leq 30\%$ CV $\leq 30\%$
IV.	Continuing calibration/ISC	SW	True value COV $\leq 30\%$
V.	Laboratory Blanks	N	
VI.	Field blanks	N	FRB = 3 EB = 4
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Labeled Compounds	N/A	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	A1-MW-01-SA2	1803678-01	Water	11/16/18
2	A1-MW-42-SA2	1803678-02	Water	11/16/18
3	FRB-20181116	1803678-03	Water	11/16/18
4	EB-20181116	1803678-04	Water	11/16/18
5	A1-MW-01-SA2MS	1803678-01MS	Water	11/16/18
6	A1-MW-01-SA2MSD	1803678-01MSD	Water	11/16/18
7				
8				
9				
10				

Notes:

B8K0153 BUKI				

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFHxA			
B. PFHpA			
C. PFOA			
D. PFNA			
E. PFDA			
F. PFUnA			
G. PFDoA			
H. PFTriA			
I. PFTeDA			
J. PFBS			
K. PFHxS			
L. PFHpS			
M. PFOS			
N. PFDS			
O. FOSA			
P. PFBA			
Q. PFPeA			
R. 6:2FTS			
S. 8:2FTS			
T. MeFOSAA			
U. EtFOSAA			
V. Combined PFOAS/PFOS			

Enclosure II

Manual Stage 2B and Stage 4 Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: December 20, 2018

Parameters: Volatiles

Validation Level: Stage 4

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-116898-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-04-SA2	280-116898-1	Water	11/12/18
A1-MW-05-SA2	280-116898-2	Water	11/12/18
A1-MW-49-SA2	280-116898-3	Water	11/12/18
A1-MW-50-SA2	280-116898-4	Water	11/12/18
A1-MW-50-SA2D	280-116898-5	Water	11/12/18
A1-MW-51-SA2	280-116898-6	Water	11/12/18
A1-PZ-19-SA2	280-116898-8	Water	11/12/18
A1-MW-52-SA2	280-116898-9	Water	11/12/18
A1-MW-50-SA2MS	280-116898-4MS	Water	11/12/18
A1-MW-50-SA2MSD	280-116898-4MSD	Water	11/12/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample TB-20181112 was identified as a trip blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples A1-MW-50-SA2 and A1-MW-50-SA2D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	A1-MW-50-SA2	A1-MW-50-SA2D			
1,1-Dichloroethene	0.564	0.630	Not calculable	-	-
Trichloroethene	0.780	0.949	Not calculable	-	-

RPDs were not calculated when sample results in one or both samples were less than 5x the limit of quantitation (LOQ).

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-50-SA2D A1-MW-51-SA2 A1-PZ-19-SA2 A1-MW-52-SA2	All compounds reported below the LOQ.	J (all detects)	A

XIII. Target Compound Identifications

All target compound identifications met validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results below the LOQ, data were qualified as estimated in eight samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
Volatiles - Data Qualification Summary - SDG 280-116898-1**

Sample	Compound	Flag	A or P	Reason
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-50-SA2D A1-MW-51-SA2 A1-PZ-19-SA2 A1-MW-52-SA2	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

**MCAS Yuma, CTO 17F3803
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-116898-1**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
Volatiles - Field Blank Data Qualification Summary - SDG 280-116898-1**

No Sample Data Qualified in this SDG

LDC #: 43888A1a

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: 280-116898-1

ADR/Stage 2B 4

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SL2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL = 15% ICV = 20%
IV.	Continuing calibration	A	CCV = 20/50%
V.	Laboratory Blanks	A	Not reviewed for ADR validation.
VI.	Field blanks	ND	TB = 7
VII.	Surrogate spikes	A	Not reviewed for ADR validation.
VIII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
IX.	Laboratory control samples	A	Not reviewed for ADR validation. <u>LES</u>
X.	Field duplicates	SW	D = 4/5
XI.	Internal standards	A	Not reviewed for ADR validation.
XII.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Target compound identification	A	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-04-SA2**	280-116898-1**	Water	11/12/18
2	A1-MW-05-SA2**	280-116898-2**	Water	11/12/18
3	A1-MW-49-SA2**	280-116898-3**	Water	11/12/18
4	A1-MW-50-SA2**	280-116898-4**	Water	11/12/18
5	A1-MW-50-SA2D**	280-116898-5**	Water	11/12/18
6	A1-MW-51-SA2**	280-116898-6**	Water	11/12/18
7	TB-20181112	280-116898-7	Water	11/12/18
8	A1-PZ-19-SA2**	280-116898-8**	Water	11/12/18
9	A1-MW-52-SA2**	280-116898-9**	Water	11/12/18
10	A1-MW-50-SA2MS	280-116898-4MS	Water	11/12/18
11	A1-MW-50-SA2MSD	280-116898-4MSD	Water	11/12/18
12	MB 280-438700/6			
13	↓ - 438747/4			

(H, AA, S only)

LDC #: 43888A1A

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
 Reviewer: JVG
 2nd Reviewer: [Signature]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 30\%/15\%$ and relative response factors (RRF) > 0.05 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ and relative response factors (RRF) ≥ 0.05 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field blanks				
Were field blanks were identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

LDC #: 43888A1a

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: JVG
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2.
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.	Z2.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GCMS VOA (EPA SW 846 Method 8260B)

Y/N/NA Were field duplicate pairs identified in this SDG?

Y/N/NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤30%)	Qualifications (Parent only)
	4	5		
H	0.564	0.630	NC	
S	0.780	0.949	NC	

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is}) / (A_{is})(C_x)$	A _x = Area of Compound	A _{is} = Area of associated internal standard
average RRF = sum of the RRFs/number of standards	C _x = Concentration of compound	C _{is} = Concentration of internal standard
%RSD = 100 * (S/X)	S = Standard deviation of the RRFs	X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10-std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL GC MSV G	10/29/2018	Trichloroethene (IS1)	0.4141	0.4141	0.3989	0.3989	3.0	3.0
			Tetrachloroethene (IS2)	1.5494	1.5494	1.4974	1.4974	2.5	2.5
2	ICAL GC MSV Z	11/3/2018	Trichloroethene (IS1)	0.4665	0.4665	0.4837	0.4837	6.8	6.8
			Tetrachloroethene (IS2)	1.6975	1.6975	1.7599	1.7599	5.9	5.9

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$$

Where:

ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 Ax = Area of compound

Cx = Concentration of compound,
 Ais = Area of associated internal standard
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	G2197 GC MSV G	11/26/2018	Trichloroethene (IS1)	0.3989	0.4216	0.4216	5.7	5.7
			Tetrachloroethene (IS2)	1.4974	1.5171	1.5171	1.3	1.3
2	Z3472 GC MSV Z	11/26/2018	Trichloroethene (IS1)	0.4837	0.5081	0.5081	5.0	5.0
			Tetrachloroethene (IS2)	1.7599	1.7106	1.7106	2.8	2.8

LDC #: 43888 A1a

VALIDATION FINDINGS WORKSHEET Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer: [Signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.0	10.1	101	101	0
1,2-Dichloroethane-d4		9.22	92	92	
Toluene-d8		10.3	103	103	
Bromofluorobenzene		10.1	101	101	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 42 888 A1a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = $|MSC - MSC1| * 2 / (MSC + MSC1)$

MSC = Matrix spike concentration

MSC1 = Matrix spike duplicate concentration

MS/MSD sample: 60 / 11

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated	
1,1-Dichloroethene	5.00	5.00	0.564	5.549	5.972	100	100	108	108	7	7
Trichloroethene	↓	↓	0.780	5.580	5.935	96	96	103	107	6	6
Benzene											
Toluene											
Chlorobenzene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 93 888 A1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA

Where: SSC = Spiked sample concentration
 SA = Spike added

RPD = | LCSC - LCSDC | * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS 280-498700/4

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	5.00	NA	4.874	NA	97	97				
Trichloroethene	5.00	↓	5.029	↓	101	101				
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: January 2, 2019

Parameters: Wet Chemistry

Validation Level: Stage 4

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-116898-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-04-SA2	280-116898-1	Water	11/12/18
A1-MW-05-SA2	280-116898-2	Water	11/12/18
A1-MW-49-SA2	280-116898-3	Water	11/12/18
A1-MW-50-SA2	280-116898-4	Water	11/12/18
A1-PZ-19-SA2	280-116898-8	Water	11/12/18
A1-MW-52-SA2	280-116898-9	Water	11/12/18
A1-MW-50-SA2MS	280-116898-4MS	Water	11/12/18
A1-MW-50-SA2MSD	280-116898-4MSD	Water	11/12/18
A1-MW-50-SA2DUP	280-116898-4DUP	Water	11/12/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Chloride, Nitrate as Nitrogen, and Sulfate by Environmental Protection Agency (EPA) SW 846 Method 9056A

Ferrous Iron by Standard Method 3500-Fe B

pH by EPA SW 846 Method 9040C

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
A1-MW-04-SA2 A1-MW-50-SA2 A1-MW-52-SA2	pH	11 days	24 hours	J (all detects)	P
A1-MW-05-SA2 A1-MW-49-SA2 A1-PZ-19-SA2	pH	14 days	24 hours	J (all detects)	P
A1-MW-04-SA2 A1-MW-49-SA2 A1-MW-52-SA2	Ferrous Iron	9 days	24 hours	R (all non-detects)	P
A1-MW-05-SA2 A1-MW-50-SA2 A1-PZ-19-SA2	Ferrous Iron	9 days	24 hours	J (all detects)	P

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Nitrate as N Sulfate	0.04530 mg/L 0.3332 mg/L	All samples in SDG 280-116898-1
ICB/CCB	Nitrate as N Sulfate	0.04526 mg/L 0.3841 mg/L	All samples in SDG 280-116898-1

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-PZ-19-SA2 A1-MW-52-SA2	All analytes reported below the LOQ.	J (all detects)	A

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to technical holding time, data were rejected in three samples.

Due to technical holding time and results below the LOQ, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS Yuma, CTO 17F3803

Wet Chemistry - Data Qualification Summary - SDG 280-116898-1

Sample	Analyte	Flag	A or P	Reason
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-PZ-19-SA2 A1-MW-52-SA2	pH	J (all detects)	P	Technical holding times
A1-MW-04-SA2 A1-MW-49-SA2 A1-MW-52-SA2	Ferrous Iron	R (all non-detects)	P	Technical holding times
A1-MW-05-SA2 A1-MW-50-SA2 A1-PZ-19-SA2	Ferrous Iron	J (all detects)	P	Technical holding times
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-PZ-19-SA2 A1-MW-52-SA2	All analytes reported below the LOQ.	J (all detects)	A	Sample result verification

MCAS Yuma, CTO 17F3803

Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-116898-

1

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803

Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-116898-1

No Sample Data Qualified in this SDG

LDC #: 43888A6
 SDG #: 280-116898-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/Stage 4

Date: 12-20-18
 Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: [Signature]

METHOD: (Analyte) Chloride, Nitrate-N, Sulfate (EPA SW846 Method 9056A), Ferrous Iron (SM3500-Fe B), pH (EPA SW846 Method 9040C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/MSD
VII.	Duplicate sample analysis	A	Not reviewed for ADR validation. DUP
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
IX.	Field duplicates	N	
X.	Sample result verification	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
1	A1-MW-04-SA2**	280-116898-1**	Water	11/12/18
2	A1-MW-05-SA2**	280-116898-2**	Water	11/12/18
3	A1-MW-49-SA2**	280-116898-3**	Water	11/12/18
4	A1-MW-50-SA2**	280-116898-4**	Water	11/12/18
5	A1-MW-51-SA2	280-116898-6	Water	11/12/18
6	A1-PZ-19-SA2**	280-116898-8**	Water	11/12/18
7	A1-MW-52-SA2**	280-116898-9**	Water	11/12/18
8	A1-MW-50-SA2MS	280-116898-4MS	Water	11/12/18
9	A1-MW-50-SA2MSD	280-116898-4MSD	Water	11/12/18
10	A1-MW-50-SA2DUP	280-116898-4DUP	Water	11/12/18
11				
12				
13				
14				
15	PBW			

Notes: _____

Method: Inorganics (EPA Method *See cover*)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.		✓		
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995 ?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\leq \text{CRDL}$ ($\leq 2\text{X CRDL}$ for soil) was used for samples that were $\leq 5\text{X}$ the CRDL, including when only one of the duplicate sample values were $< 5\text{X}$ the CRDL.	✓			
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

All circled dates have exceeded the technical holding time.
 N N/A Were all samples preserved as applicable to each method?
 N N/A Were all cooler temperatures within validation criteria?

Method:		9040C	SM	3500 Fe B			
Parameters:		pH		Ferrous Iron			
Technical holding time:		24 hr		24 hr			
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	11-12-18 11:40	11-23-18 14:43	(11 days)				J/UJ/P (det)
2	11-12-18 14:24	11-26-18 13:27	(14)				()
3	11-12-18 08:33	11-26-18 13:36	(14)				()
4	11-12-18 09:25	11-23-18 15:19	(11)				()
5	11-12-18 10:46	11-23-18 15:33	(11)				()
6	11-12-18 12:43	11-26-18 13:32	(14)				()
7	11-12-18 13:39	11-23-18 15:23	(11)				()
1	11-12-18 11:40			11-21-18 18:30	(9 days)		J/R/P (N.D.)
2	11-12-18 14:24				()		(det)
3	11-12-18 08:32				()		(ND)
4	11-12-18 09:25				()		(det)
5	11-12-18 10:46				()		()
6	11-12-18 12:43				()		()
7	11-12-18 13:39				()		(ND)

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Conc. units: mg/L

Associated Samples: all (NO3-N: 2x dil, SO4: 20x dil, >5x or ND)

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qual's.									
NO3-N	0.04530	0.04526	0.4526										
SO4	0.3332	0.3841	38.41										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 43888A6

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: [Signature]

METHOD: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of Cl was recalculated. Calibration date: 9-1-18

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{\text{Found}}{\text{True}} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte	Standard ID	Conc. Found (units)	Area True (units)	Recalculated	Reported	Acceptable (Y/N)
					r or %R	r or %R	
Initial calibration	Cl	Blank	-	-	r=1.000	r=1.000	Y
		Standard 1	1.0 (mg/L)	17320827			
		Standard 2	2.5 ()	46063990			
		Standard 3	5.0 ()	94576246			
		Standard 4	60.0 ()	1169987193			
		Standard 5	120.0 ()	2305131911			
		Standard 6	200.0 (↓)	3845262113			
		Standard 7	-	-			
Calibration verification	Ferrous Iron	1830 ICV	1.045 (mg/L)	1.00 (mg/L)	104	105	↓
Calibration verification	NO ₃ -N	1052 CCV	4.85 (mg/L)	5.00 (mg/L)	97	97	
Calibration verification	SO ₄	1646 CCV	102.2 (mg/L)	100 (mg/L)	102	102	

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 43888A6

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
 Reviewer: MG
 2nd Reviewer: [Signature]

METHOD: Inorganics, Method see cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{\text{Found}}{\text{True}} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
 True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD	%R / RPD	
<u>1830</u> <u>LCS</u>	Laboratory control sample	<u>Ferrous Iron</u>	<u>2.13 (mg/L)</u>	<u>2.00 (mg/L)</u>	<u>106</u>	<u>106</u>	<u>Y</u>
<u>1801</u> <u>8</u>	Matrix spike sample	<u>Cl</u>	(SSR-SR) <u>512 (mg/L)</u>	<u>500 (mg/L)</u>	<u>102</u>	<u>102</u>	↓
<u>1734/1743</u> <u>10</u>	Duplicate sample	<u>SO4</u>	<u>894 (mg/L)</u>	<u>866 (mg/L)</u>	<u>3</u>	<u>3</u>	

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 43888A6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
 Reviewer: MG
 2nd reviewer: _____

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Have results been reported and calculated correctly?
- Y N N/A Are results within the calibrated range of the instruments?
- Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for #1, SO4 reported with a positive detect were recalculated and verified using the following equation:

Concentration =
 $y = mx + b$
 where
 $m = 14253830$
 $b = -272056$
 $d.i. = 20 \times$

Recalculation:
 $601084316 = 14253830 \left(\frac{x}{20} \right) - 272056$
 $843.78 \text{ mg/L} = x$

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	1	SO4	847	844	Y
2	2	Ferrous Iron	0.119	0.119	↓
3	3	pH	7.9 (SU)	7.9 (SU)	
4	4	NO3-N	3.26	3.18	
5	6	Ferrous Iron	0.0591	0.0591	
6	7	pH	8.0 (SU)	8.0 (SU)	

Note: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: December 20, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B & 4

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1846366

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-04-SA2**	L1846366-01**	Water	11/12/18
A1-MW-05-SA2**	L1846366-02**	Water	11/12/18
A1-MW-49-SA2**	L1846366-03**	Water	11/12/18
A1-MW-50-SA2**	L1846366-04**	Water	11/12/18
A1-MW-50-SA2D	L1846366-05	Water	11/12/18
A1-MW-51-SA2**	L1846366-06**	Water	11/12/18
A1-PZ-19-SA2**	L1846366-07**	Water	11/12/18
A1-MW-52-SA2**	L1846366-08**	Water	11/12/18
A1-MW-50-SA2MS	L1846366-04MS	Water	11/12/18
A1-MW-50-SA2MSD	L1846366-04MSD	Water	11/12/18

**Indicates sample underwent Stage 4 validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Stage 4 data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples A1-MW-50-SA2** and A1-MW-50-SA2D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	A1-MW-50-SA2**	A1-MW-50-SA2D			
1,4-Dioxane	592	591	0 (≤30)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

The system performance was acceptable for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1846366

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1846366

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1846366

No Sample Data Qualified in this SDG

LDC #: 43888F2b

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: L1846366

ADR/Stage 4 *AP*

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: *SL*

2nd Reviewer: *A*

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL $\leq 15\%$ ICV $\leq 20\%$
IV.	Continuing calibration	A	CV $\leq 20/50\%$
V.	Laboratory Blanks	A	Not reviewed for ADR validation.
VI.	Field blanks	N	
VII.	Surrogate spikes	A	Not reviewed for ADR validation.
VIII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
IX.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
X.	Field duplicates	SW	D = 4/5
XI.	Internal standards	A	Not reviewed for ADR validation.
XII.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Target compound identification	A	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
+ 1	A1-MW-04-SA2**	L1846366-01**	Water	11/12/18
+ 2	A1-MW-05-SA2**	L1846366-02**	Water	11/12/18
+ 3	A1-MW-49-SA2**	L1846366-03**	Water	11/12/18
+ 4	A1-MW-50-SA2**	L1846366-04**	Water	11/12/18
+ 5	A1-MW-50-SA2D	L1846366-05	Water	11/12/18
+ 6	A1-MW-51-SA2**	L1846366-06**	Water	11/12/18
+ 7	A1-PZ-19-SA2**	L1846366-07**	Water	11/12/18
+ 8	A1-MW-52-SA2**	L1846366-08**	Water	11/12/18
9	A1-MW-50-SA2MS	L1846366-04MS	Water	11/12/18
10	A1-MW-50-SA2MSD	L1846366-04MSD	Water	11/12/18
11				
12				
- 13	NG 1180911-1 BLANK			

LDC #: 4388 F2b

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
 Reviewer: JVG
 2nd Reviewer: [Signature]

SVDA

Method: **PAH** (EPA SW 846 Method 8270D-SIM)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	/			
Was cooler temperature criteria met?	/			
II. GC/MS Instrument performance check (Not required)				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) \leq 20% and relative response factors (RRF) \geq 0.05?	/			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of $>$ 0.990?			/	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	/			
Were all percent differences (%D) \leq 30% or percent recoveries (%R) 70-130%?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) \leq 20% and relative response factors (RRF) $>$ 0.05?	/			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed for each matrix and concentration?	/			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.			/	
VI. Field blanks				
Were field blanks identified in this SDG?		/		
Were target compounds detected in the field blanks?			/	
VII. Surrogate spikes				
Were all surrogate percent differences (%R) within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any percent recoveries (%R) was less than 10 percent, was a reanalysis performed to confirm %R?			/	

LDC #: 43888F26

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: JVG
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	/			
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	/	-		
Were target compounds detected in the field duplicates?	/			
XI. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds of the associated calibration standard?	/			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (500 std)	Recalculated RRF (500 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL MS16	11/15/2018	1,4-Dioxane (DXN-d8)	1.428	1.428	1.407	1.407	3.61	3.60

LDC #: 42588 F26

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1

Reviewer: JVG
 2nd reviewer: [Signature]

METHOD: GC/MS-^{SVA}PAH (EPA SW 846 Method 8270D-SIM)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5 ^{1,4-Dioxane-d8}	500	126.288	25	25	0
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					

LDC #: 43 888 F26

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS ^{SVA} PAH (EPA SW 846 Method 8270D-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = |MSC - MSC| * 2 / (MSC + MSDC)

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD samples: 9/10

Compound	Spike Added (ng/L)		Sample Concentration (ng/L)	Spiked Sample Concentration (ng/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Acenaphthene											
Pyrene											
1,4-Dioxane-dg	5000	5000	592	6560	6760	119	119	123	123	3	3

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 43868 F26

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer: [Signature]

^{SVA}
METHOD: GC/MS ~~PAH~~ (EPA SW 846 Method 8270D-SIM)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA)

Where: SSC = Spike concentration
 SA = Spike added

RPD = | LCSC - LCSDC | * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: WG11 80911- 2/3

Compound	Spike Added (ng/L)		Spike Concentration (ng/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc	Reported	Recalc	Reported	Recalculated
Acenaphthene										
Pyrene										
<u>1,4-Dioxane</u>	<u>5000</u>	<u>5000</u>	<u>5780</u>	<u>5890</u>	<u>116</u>	<u>116</u>	<u>118</u>	<u>118</u>	<u>2</u>	<u>2</u>

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: December 20, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1846592

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
16-HS-03-SA2	L1846592-01	Water	11/13/18
16-MW-06-SA2	L1846592-02	Water	11/13/18
16-MW-08-SA2	L1846592-03	Water	11/13/18
16-MW-09-SA2	L1846592-04	Water	11/13/18
A1-MW-18-SA2	L1846592-05	Water	11/13/18
A1-MW-19-SA2	L1846592-06	Water	11/13/18
A1-MW-53-SA2	L1846592-07	Water	11/13/18
16-HS-03-SA2D	L1846592-08	Water	11/13/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples 16-HS-03-SA2 and 16-HS-03-SA2D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	16-HS-03-SA2	16-HS-03-SA2D			
1,4-Dioxane	5330	6120	14 (≤ 30)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1846592

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1846592

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1846592

No Sample Data Qualified in this SDG

LDC #: 43888G2b

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: L1846592

ADR Stage 2B

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: SW

2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL = 15% ICV = 20%
IV.	Continuing calibration	A	COV = 20/50%
V.	Laboratory Blanks	NA	
VI.	Field blanks	N	
VII.	Surrogate spikes	NA	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	NA	LCS D
X.	Field duplicates	SW	D = 1/8
XI.	Internal standards	NA	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	NA	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1 ⁺	16-HS-03-SA2 D	L1846592-01	Water	11/13/18
2 ⁻	16-MW-06-SA2	L1846592-02	Water	11/13/18
3 ⁺	16-MW-08-SA2	L1846592-03	Water	11/13/18
4 ⁺	16-MW-09-SA2	L1846592-04	Water	11/13/18
5 ⁺	A1-MW-18-SA2	L1846592-05	Water	11/13/18
6 ⁺	A1-MW-19-SA2	L1846592-06	Water	11/13/18
7 ⁺	A1-MW-53-SA2	L1846592-07	Water	11/13/18
8 ⁺	16-HS-03-SA2D D	L1846592-08	Water	11/13/18
9				
10				

Notes:

WG 11809A-1 BLANK				
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VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GCMS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

Y/N/NA Were field duplicate pairs identified in this SDG?

Y/N/NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD (≤30%)	Qualifications (Parent only)
	1	8		
1,4-Dioxane	5330	6120	14	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: December 20, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1846856

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-07-SA2	L1846856-01	Water	11/14/18
A1-MW-23-SA2	L1846856-02	Water	11/14/18
A1-MW-25-SA2	L1846856-03	Water	11/14/18
A1-MW-27-SA2	L1846856-04	Water	11/14/18
A1-MW-55-SA2	L1846856-05	Water	11/14/18
A1-MW-54-SA2	L1846856-06	Water	11/14/18

Introduction

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The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1846856

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1846856

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1846856

No Sample Data Qualified in this SDG

LDC #: 43888H2b

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: L1846856

ADR Stage 2B

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: SVG

2nd Reviewer: 

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	AIA	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	AIA	ICAL = 15% ICV = 20.2
IV.	Continuing calibration	A	CCV = 20/50%
V.	Laboratory Blanks	NA	
VI.	Field blanks	N	
VII.	Surrogate spikes	NA	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	NA	LCS 10
X.	Field duplicates	N	
XI.	Internal standards	NA	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	NA	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
+	1 A1-MW-07-SA2	L1846856-01	Water	11/14/18
-	2 A1-MW-23-SA2	L1846856-02	Water	11/14/18
+	3 A1-MW-25-SA2	L1846856-03	Water	11/14/18
+	4 A1-MW-27-SA2	L1846856-04	Water	11/14/18
-	5 A1-MW-55-SA2	L1846856-05	Water	11/14/18
-	6 A1-MW-54-SA2	L1846856-06	Water	11/14/18
	7			
	8			
	9			

Notes:

-	WG1181575-1 BLANK			

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: December 20, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1847243

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-11-SA2	L1847243-01	Water	11/15/18
A1-MW-13-SA2	L1847243-02	Water	11/15/18
A1-MW-14-SA2	L1847243-03	Water	11/15/18
A1-MW-15-SA2	L1847243-04	Water	11/15/18
A1-MW-37-SA2	L1847243-05	Water	11/15/18
A1-MW-37-SA2D	L1847243-06	Water	11/15/18
A1-MW-31-SA2	L1847243-07	Water	11/15/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples A1-MW-37-SA2 and A1-MW-37-SA2D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/L)		RPD (Limits)	Flag	A or P
	A1-MW-37-SA2	A1-MW-37-SA2D			
1,4-Dioxane	13100	13200	1 (≤30)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1847243**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1847243**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1847243**

No Sample Data Qualified in this SDG

LDC #: 43888I2b

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: L1847243

ADR Stage 2B

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: *[Signature]*

2nd Reviewer: *[Signature]*

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	ICAL $\leq 15\%$ ICV $\leq 20\%$
IV.	Continuing calibration	A	CCV $\leq 20/50\%$
V.	Laboratory Blanks	*A	
VI.	Field blanks	N	
VII.	Surrogate spikes	*A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	*A	LCS/D
X.	Field duplicates	SW	D = 5/6
XI.	Internal standards	*A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	*A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-11-SA2	L1847243-01	Water	11/15/18
2	A1-MW-13-SA2	L1847243-02	Water	11/15/18
3	A1-MW-14-SA2	L1847243-03	Water	11/15/18
4	A1-MW-15-SA2	L1847243-04	Water	11/15/18
5	A1-MW-37-SA2	L1847243-05	Water	11/15/18
6	A1-MW-37-SA2D	L1847243-06	Water	11/15/18
7	A1-MW-31-SA2	L1847243-07	Water	11/15/18
8				
9				

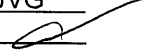
Notes:

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(EB - on hold)

LDC#: 43888I2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: 

METHOD: GCMS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD ($\leq 30\%$)	Qualifications (Parent only)
	5	6		
1,4-Dioxane	13100	13200	1	

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**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: December 20, 2018

Parameters: 1,4-Dioxane

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): L1847316

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-01-SA2	L1847316-01	Water	11/16/18
A1-MW-42-SA2	L1847316-02	Water	11/16/18
EB-20181116	L1847316-03	Water	11/16/18
A1-MW-01-SA2MS	L1847316-01MS	Water	11/16/18
A1-MW-01-SA2MSD	L1847316-01MSD	Water	11/16/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB-20181116 was identified as an equipment blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Data Qualification Summary - SDG L1847316

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG L1847316

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
1,4-Dioxane - Field Blank Data Qualification Summary - SDG L1847316

No Sample Data Qualified in this SDG

LDC #: 43888J2b

VALIDATION COMPLETENESS WORKSHEET

Date: 2/19/18

SDG #: L1847316

ADR Stage 2B

Page: 1 of 1

Laboratory: Alpha Analytical, Inc.

Reviewer: JVL
2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ICAL ≤ 15% ICV ≤ 20%
IV.	Continuing calibration	A	CV ≤ 20%/50%
V.	Laboratory Blanks	NA	
VI.	Field blanks	ND	EB = 3
VII.	Surrogate spikes	NA	
VIII.	Matrix spike/Matrix spike duplicates	NA	
IX.	Laboratory control samples	NA	LCS
X.	Field duplicates	N	
XI.	Internal standards	NA	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	NA	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
SB = Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	A1-MW-01-SA2	L1847316-01	Water	11/16/18
2	A1-MW-42-SA2	L1847316-02	Water	11/16/18
3	EB-20181116	L1847316-03	Water	11/16/18
4	A1-MW-01-SA2MS	L1847316-01MS	Water	11/16/18
5	A1-MW-01-SA2MSD	L1847316-01MSD	Water	11/16/18
6				
7				
8				

Notes:

1	WG1181887-1 BLANK				

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: January 2, 2019

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1803615

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
A1-MW-04-SA2	1803615-01	Water	11/12/18
A1-MW-05-SA2	1803615-02	Water	11/12/18
A1-MW-49-SA2	1803615-03	Water	11/12/18
A1-MW-50-SA2	1803615-04	Water	11/12/18
A1-MW-50-SA2D	1803615-05	Water	11/12/18
A1-MW-51-SA2	1803615-06	Water	11/12/18
A1-MW-52-SA2	1803615-07	Water	11/12/18
FRB-20181112	1803615-08	Water	11/12/18
A1-PZ-19-SA2	1803615-09	Water	11/12/18
A1-MW-50-SA2MS	1803615-04MS	Water	11/12/18
A1-MW-50-SA2MSD	1803615-04MSD	Water	11/12/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Groundwater Long-Term Monitoring Program at Operable Unit-1 Area 1, Marine Corps Air Station Yuma, Arizona (April 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were less than or equal to 30% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample FRB-20181112 was identified as a field rinsate blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Ongoing Precision Recovery

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples A1-MW-50-SA2 and A1-MW-50-SA2D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	A1-MW-50-SA2	A1-MW-50-SA2D			
PFTeDA	0.0250	0.0264	5 (≤30)	-	-
PFHxA	0.0806	0.0829	3 (≤30)	-	-
PFHpA	0.00474	0.00494	Not calculable	-	-
PFHxS	0.0367	0.0355	3 (≤30)	-	-
PFOA	0.00947	0.00878	Not calculable	-	-

RPDs were not calculated when sample results in one or both samples were less than 5x the limit of quantitation (LOQ).

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

XI. Compound Quantitation

All compound quantitations met validation criteria.

The laboratory indicated that the parent/product transition ion ratios met laboratory requirements with the following exceptions:

Sample	Compound	Finding
A1-MW-05-SA2 A1-MW-50-SA2 A1-PZ-19-SA2	All compounds qualified 'Q' by the laboratory	The parent/product transition ion ratio was outside of the 70-130% laboratory limits.

Since there are no established transition ion ratio requirements in the validation documents for this project, using professional judgment, no data were qualified.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-50-SA2D A1-MW-51-SA2 A1-MW-52-SA2 A1-PZ-19-SA2	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results below the LOQ, data were qualified as estimated in eight samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

**MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG
1803615**

Sample	Compound	Flag	A or P	Reason
A1-MW-04-SA2 A1-MW-05-SA2 A1-MW-49-SA2 A1-MW-50-SA2 A1-MW-50-SA2D A1-MW-51-SA2 A1-MW-52-SA2 A1-PZ-19-SA2	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

**MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification
Summary - SDG 1803615**

No Sample Data Qualified in this SDG

**MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification
Summary - SDG 1803615**

No Sample Data Qualified in this SDG

LDC #: 43888K96

VALIDATION COMPLETENESS WORKSHEET

Date: 12/19/18

SDG #: 1803615

ADR/Stage 4

Page: 1 of 1

Laboratory: Vista Analytical Laboratory

Reviewer: SVL

2nd Reviewer: **METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	ICV \leq 30% Individual \leq 30% True value
IV.	Continuing calibration/ISC	A	COV \leq 30%
V.	Laboratory Blanks	A	Not reviewed for ADR validation.
VI.	Field blanks	ND	FRB = 8
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. OPR
IX.	Field duplicates	SW	D = 4/5
X.	Labeled Compounds	A	Not reviewed for ADR validation.
XI.	Compound quantitation RL/LOQ/LODs	SW	Not reviewed for ADR validation.
XII.	Target compound identification	A	Not reviewed for ADR validation.
XIII.	System performance	A	Not reviewed for ADR validation.
XIV.	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:
FRB = Field Rinsate Blk

** Indicates sample underwent Stage 4 validation

	Client ID	Lab ID	Matrix	Date
+	1 A1-MW-04-SA2**	1803615-01**	Water	11/12/18
+	2 A1-MW-05-SA2**	1803615-02**	Water	11/12/18
+	3 A1-MW-49-SA2**	1803615-03**	Water	11/12/18
	4 A1-MW-50-SA2**	1803615-04**	Water	11/12/18
	5 A1-MW-50-SA2D**	1803615-05**	Water	11/12/18
	6 A1-MW-51-SA2**	1803615-06**	Water	11/12/18
	7 A1-MW-52-SA2**	1803615-07**	Water	11/12/18
	8 FRB-20181112	1803615-08	Water	11/12/18
	9 A1-MW-19-SA2**	1803615-09**	Water	11/12/18
	10 A1-MW-50-SA2MS	1803615-04MS	Water	11/12/18
	11 A1-MW-50-SA2MSD	1803615-04MSD	Water	11/12/18
	12			
	13			
-	14 B8K0091 - Blk 1			
	15			

Method: LCMS (EPA Method 537 Modified)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 20%?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of > 0.990?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all analytes within 70-130% or percent differences (%D) < 30% of their true value for each calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the Instrument Sensitivity Check < 30%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field blanks				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LDC #: P3888K96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did reported results include both branched and linear isomers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFHxA			
B. PFHpA			
C. PFOA			
D. PFNA			
E. PFDA			
F. PFUnA			
G. PFDoA			
H. PFTriA			
I. PFTeDA			
J. PFBS			
K. PFHxS			
L. PFHpS			
M. PFOS			
N. PFDS			
O. FOSA			
P. PFBA			
Q. PFPeA			
R. 6:2FTS			
S. 8:2FTS			
T. MeFOSAA			
U. EtFOSAA			
V. Combined PFOAS/PFOS			

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: LCMS PFAS (EPA Method 537M)

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤30%)	Qualifications (Parent only)
	4	5		
J	0.0250	0.0264	5	
A	0.0806	0.0829	3	
B	0.00474	0.00494	NC	
K	0.0367	0.0355	3	
C	0.00947	0.00878	NC	

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported RLs

METHOD: LCMS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
 Y N N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Samples	Compound	Finding	Qualifications
	2, 4, 9	All compounds qualified "Q" by the lab.	The laboratory indicated that the parent/product transition ion ratio was outside of the 70-130% laboratory limits.	Since there are no established transition ion ratio requirements in the validation documents for this project, using professional judgment, no data were qualified.

Comments: See sample calculation verification worksheet for recalculations

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X ²) Conc. Ratio
11/19/2018	SCN960	PFOA	1	0.0327	0.02	0.00040
			2	0.0593	0.04	0.0016
		13C2-PFOA	3	0.1197	0.08	0.0064
			4	0.2358	0.16	0.0256
			5	0.5699	0.40	0.1600
			6	1.0165	0.80	0.6400
			7	5.1296	4.00	16.0000
			8	10.3516	8.00	64.0000
			9	25.6395	20.00	400.0000
			10	51.9892	40.00	1600.0000

Regression Output	Calculated		Reported WQR	
Constant	<i>c</i>	0.03180	<i>c</i>	0.1398430
Std Err of Y Est				
R Squared		0.9999917		0.9999030
Degrees of Freedom				
	<i>m1</i>	<i>m2</i>	<i>m1</i>	<i>m2</i>
X Coefficient(s)	1.2736124	0.0006421	1.2814700	0.000032442
Std Err of Coef.				
Correlation Coefficient		0.999996		
Coefficient of Determination (r ²)		0.999992		

LDC#: 43888K96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 2_of_2_
 Reviewer: JVG_
 2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
11/19/2018	SCN960	PFOS	1	0.02405	0.020
			2	0.04028	0.040
		13C8-PFOS	3	0.00828	0.080
			4	0.15076	0.160
			5	0.42475	0.400
			6	0.84488	0.800
			7	4.25487	4.000
			8	8.43628	8.000
			9	21.03584	20.000
			10	43.32010	40.000

Regression Output	Calculated	Reported WLR
Constant	-0.073380	-0.0118865
Std Err of Y Est		
R Squared	0.999854	0.999775
Degrees of Freedom		
X Coefficient(s)	1.07855632	1.069710
Std Err of Coef.		
Correlation Coefficient	0.999927	
Coefficient of Determination (r^2)	0.999854	0.999775

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

METHOD: LC/MS PFAs (EPA Method 537Mod)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:

$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$ $\text{ave. RRF} = \text{initial calibration average RRF}$ $C_x = \text{Concentration of compound,}$
 $\text{RRF} = (\text{A}_x)(\text{C}_{\text{is}}) / (\text{A}_{\text{is}})(\text{C}_x)$ $\text{RRF} = \text{continuing calibration RRF}$ $\text{A}_{\text{is}} = \text{Area of associated internal standard}$
 $\text{A}_x = \text{Area of compound}$ $\text{C}_{\text{is}} = \text{Concentration of internal standard}$

#	Standard ID	Calibration Date	Compound (IS)	Conc	Reported	Recalculated	Reported % R	Recalculated % R
1	181120M1_58	11/20/2018	PFOA (13C2-PFOA)	1.00	1.139	1.139	113.9	113.9
			PFOS (13C8-PFOS)	1.00	1.092	1.092	109.2	109.2

LDC #: 43888196

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: LC/MS PFAS (EPA Method 537Mod)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

$\text{RPD} = | \text{MSC} - \text{MSD} | * 2 / (\text{MSC} + \text{MSD})$

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD samples: 10/11

Compound	Spike Added (ug/L)		Sample Conc (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0567	0.0863	0.00947	0.12	0.118	118	118	116	116	1.71	1.80
PFOS	↓	↓	0	0.0954	0.0910	110	110	105	105	4.65	4.72

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 43888K96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/ Sample Duplicates Results Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: LC/MS PFCs (EPA Method 537Mod)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA)

Where: SSC = Spike concentration
 SA = Spike added

RPD = |LCSC - LCSDC| * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B8K0091- B31

Compound	Spike Added (ng/L)		Spike Concentration (ng/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOs	0.0800	0.0800 NA	0.0864	NA	108	168				
PFOA	L	L	0.0949	L	119	119				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: LC/MS PFAS (EPA Method 537M)

- Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_i)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_t)(\%S)}$$

- A_x = Area of the characteristic ion (EICP) for the compound to be measured
- A_{is} = Area of the characteristic ion (EICP) for the specific internal standard
- I_s = Amount of internal standard added in nanograms (ng)
- V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).
- V_i = Volume of extract injected in microliters (ul)
- V_t = Volume of the concentrated extract in microliters (ul)
- Df = Dilution Factor.
- %S = Percent solids, applicable to soil and solid matrices only.
- 2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1 PFOA:

$$\text{Conc.} = \frac{[(437)(12.5)]}{(5070)} = 3.24421e-5X^2 + 1.28147X + 0.139843$$

$$X = 0.73163$$

$$\text{find conc.} = \frac{(0.73163)(1L)}{(0.113459)(1000)} = 0.00645 \text{ ug/L}$$

#	Sample ID	Compound	Reported Concentration (ug/L)	Calculated Concentration ()	Qualification
			0.00646		

LOCATION-NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIC_DESC	COLLECT_DATE
A1-MW-07	SITE 00019	YUMA_MCAS	WLM	Monitoring well	1801071	439541.91	606106.3553	Perfluoroalkyl Compounds	A1-MW-07-SA1	WG	GROUNDWATER	5/30/2018
A1-MW-23	SITE 00019	YUMA_MCAS	WLM	Monitoring well	1801071	439180.7795	606307.5976	Perfluoroalkyl Compounds	A1-MW-23-SA1	WG	GROUNDWATER	5/30/2018
A1-MW-27	SITE 00019	YUMA_MCAS	WLM	Monitoring well	1801071	437455.9739	606818.6576	Perfluoroalkyl Compounds	A1-MW-27-SA1	WG	GROUNDWATER	5/30/2018
A1-MW-55	OU 0000001 AREA 1	YUMA_MCAS	WLM	Monitoring well	1801071	439126.157	606237.177	Perfluoroalkyl Compounds	A1-MW-55-SA1	WG	GROUNDWATER	5/30/2018