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NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Combined Level 2 and Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 1701970

Naval Weapons Industrial Reserve Plant Calverton
Riverhead, New York

August 2019

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

January 18, 2018

Vista Work Order No. 1701970

Ms. Kristi Francisco
Tetra Tech
5700 Lake Wright Drive, Suite 309
Norfolk, VA 23502

Dear Ms. Francisco,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 15, 2017. This sample set was analyzed on a standard turn-around time, under your Project Name 'NWIRP Calverton Site 2/SA 112G08005-WE05'. The SDG Number is WE05.

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.

As requested, an MS/MSD was performed on sample "SA-MW132I-20171214". The MS/MSD recoveries and/or RPDs were out of the acceptance criteria for PFHxA, PFHpA and PFNA.

I Anna Helak, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (916) 673 1520 If there are any questions or problems with the enclosed electronic deliverables.

Signature: _____ Title: QA Manager Date: 01/17/2018

Revision 9
ISG
08/18/16

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701970-01	FT-PZ458S-20171214		14-Dec-17 09:13	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-02	FT-PZ458I-20171214		14-Dec-17 09:07	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-03	SA-MW132S-20171214		14-Dec-17 11:01	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-04	SA-MW132S-FRB-20171214		14-Dec-17 11:01	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-05	SA-MW132I-20171214	MS/MSD	14-Dec-17 11:02	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-06	FT-PZ459S-20171214		14-Dec-17 12:17	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-07	FT-PZ459I-20171214		14-Dec-17 12:20	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-08	FT-PZ463S-20171214		14-Dec-17 13:57	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-09	FT-PZ463I-20171214		14-Dec-17 13:52	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1701970-10	CV-TANK-20171214		14-Dec-17 16:45	15-Dec-17 09:50	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

Modified EPA Method 537

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
Matrix: Aqueous

Laboratory Data

Lab Sample: B7L0188-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.895	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFHxA	ND	1.09	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFHpA	ND	0.296	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFHxS	ND	0.474	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFOA	ND	0.326	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFOS	ND	0.404	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFNA	ND	0.405	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFDA	ND	0.745	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
MeFOSAA	ND	0.825	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFUnA	ND	0.525	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
EtFOSAA	ND	0.685	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFDoA	ND	0.396	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFTrDA	ND	0.247	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
PFTeDA	ND	0.378	2.50	4.00		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.6	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C2-PFHxA	IS	93.6	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C4-PFHpA	IS	84.5	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
18O2-PFHxS	IS	82.5	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C2-PFOA	IS	98.4	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C8-PFOS	IS	84.1	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C5-PFNA	IS	98.9	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C2-PFDA	IS	77.8	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
d3-MeFOSAA	IS	93.4	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C2-PFUnA	IS	93.9	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
d5-EtFOSAA	IS	78.8	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C2-PFDoA	IS	105	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1
13C2-PFTeDA	IS	136	50 - 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 16:09	1

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

Sample ID: OPR **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
Matrix: Aqueous

Laboratory Data

Lab Sample: B7L0188-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	38.5	40.0	96.3	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFHxA	40.1	40.0	100	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFHpA	38.2	40.0	95.4	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFHxS	42.2	40.0	106	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFOA	38.5	40.0	96.2	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFOS	42.4	40.0	106	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFNA	32.0	40.0	80.1	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFDA	34.6	40.0	86.5	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
MeFOSAA	50.7	40.0	127	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFUnA	48.1	40.0	120	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
EtFOSAA	35.8	40.0	89.5	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFDoA	33.3	40.0	83.2	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFTrDA	28.2	40.0	70.4	60-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
PFTeDA	28.6	40.0	71.5	70-130		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C2-PFHxA	IS	102	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C4-PFHpA	IS	113	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
18O2-PFHxS	IS	93.2	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C2-PFOA	IS	102	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C8-PFOS	IS	82.3	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C5-PFNA	IS	92.5	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C2-PFDA	IS	89.9	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
d3-MeFOSAA	IS	64.2	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C2-PFUnA	IS	66.9	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
d5-EtFOSAA	IS	72.6	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C2-PFDoA	IS	81.1	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1
13C2-PFTeDA	IS	88.3	50- 150		B7L0188	28-Dec-17	0.250 L	10-Jan-18 15:46	1

Sample ID: FT-PZ458S-20171214 **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 09:13

Laboratory Data

Lab Sample: 1701970-01
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1.33	0.861	2.40	3.85	J	B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFHxA	1.90	1.05	2.40	3.85	J	B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFHpA	2.58	0.284	2.40	3.85	J	B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFHxS	9.72	0.455	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFOA	10.4	0.313	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFOS	4.53	0.388	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFNA	44.7	0.389	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFDA	ND	0.716	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
MeFOSAA	ND	0.793	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFUnA	ND	0.505	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
EtFOSAA	ND	0.659	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFDoA	ND	0.381	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFTrDA	ND	0.238	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
PFTeDA	ND	0.363	2.40	3.85		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	85.4	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C2-PFHxA	IS	80.7	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C4-PFHpA	IS	80.9	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
18O2-PFHxS	IS	81.5	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C2-PFOA	IS	78.3	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C8-PFOS	IS	77.8	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C5-PFNA	IS	88.6	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C2-PFDA	IS	72.9	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
d3-MeFOSAA	IS	92.0	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C2-PFUnA	IS	73.8	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
d5-EtFOSAA	IS	84.6	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C2-PFDoA	IS	66.2	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1
13C2-PFTeDA	IS	58.7	50 - 150		B7L0188	28-Dec-17	0.260 L	12-Jan-18 17:03	1

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

Sample ID: FT-PZ458I-20171214 **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 09:07

Laboratory Data

Lab Sample: 1701970-02
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1.44	0.885	2.47	3.95	J	B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFHxA	53.9	1.08	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFHpA	28.0	0.292	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFHxS	11.4	0.468	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFOA	34.9	0.322	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFOS	16.8	0.399	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFNA	569	0.400	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFDA	10.0	0.736	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
MeFOSAA	ND	0.816	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFUnA	ND	0.519	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
EtFOSAA	ND	0.677	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFDoA	ND	0.391	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFTrDA	ND	0.244	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
PFTeDA	ND	0.373	2.47	3.95		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	107	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C2-PFHxA	IS	87.6	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C4-PFHpA	IS	93.5	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
18O2-PFHxS	IS	94.3	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C2-PFOA	IS	73.4	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C8-PFOS	IS	90.4	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C5-PFNA	IS	96.7	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C2-PFDA	IS	84.5	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
d3-MeFOSAA	IS	101	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C2-PFUnA	IS	94.2	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
d5-EtFOSAA	IS	118	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C2-PFDoA	IS	102	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1
13C2-PFTeDA	IS	88.4	50 - 150		B7L0188	28-Dec-17	0.253 L	12-Jan-18 17:15	1

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

Sample ID: SA-MW132S-20171214

Modified EPA Method 537

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 11:01

Laboratory Data

Lab Sample: 1701970-03
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1.27	0.868	2.42	3.88	J	B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFHxA	63.0	1.06	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFHpA	42.0	0.287	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFHxS	7.42	0.459	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFOA	59.8	0.316	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFOS	4.93	0.392	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFNA	1270	3.93	24.2	38.8	D	B7L0188	28-Dec-17	0.258 L	15-Jan-18 12:17	10
PFDA	6.59	0.723	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
MeFOSAA	ND	0.801	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFUnA	49.8	0.509	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
EtFOSAA	ND	0.665	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFDoA	ND	0.384	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFTrDA	ND	0.240	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
PFTeDA	ND	0.366	2.42	3.88		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	107	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C2-PFHxA	IS	93.0	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C4-PFHpA	IS	90.3	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
18O2-PFHxS	IS	93.0	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C2-PFOA	IS	90.8	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C8-PFOS	IS	97.1	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C5-PFNA	IS	74.3	50 - 150	D	B7L0188	28-Dec-17	0.258 L	15-Jan-18 12:17	10
13C2-PFDA	IS	93.0	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
d3-MeFOSAA	IS	107	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C2-PFUnA	IS	91.7	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
d5-EtFOSAA	IS	106	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C2-PFDoA	IS	89.2	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1
13C2-PFTeDA	IS	96.8	50 - 150		B7L0188	28-Dec-17	0.258 L	12-Jan-18 17:27	1

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

Sample ID: SA-MW132S-FRB-20171214

Modified EPA Method 537

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 11:01

Laboratory Data

Lab Sample: 1701970-04
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.958	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFHxA	ND	1.17	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFHpA	ND	0.316	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFHxS	ND	0.507	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFOA	ND	0.348	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFOS	ND	0.432	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFNA	ND	0.433	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFDA	ND	0.797	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
MeFOSAA	ND	0.883	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFUnA	ND	0.562	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
EtFOSAA	ND	0.733	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFDoA	ND	0.424	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFTrDA	ND	0.264	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
PFTeDA	ND	0.404	2.67	4.28		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C2-PFHxA	IS	106	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C4-PFHpA	IS	94.4	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
18O2-PFHxS	IS	97.1	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C2-PFOA	IS	86.5	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C8-PFOS	IS	94.5	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C5-PFNA	IS	83.7	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C2-PFDA	IS	97.9	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
d3-MeFOSAA	IS	89.9	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C2-PFUnA	IS	77.6	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
d5-EtFOSAA	IS	92.8	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C2-PFDoA	IS	69.5	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	1
13C2-PFTeDA	IS	70.0	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:39	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: SA-MW132I-20171214

Modified EPA Method 537

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 11:02

Laboratory Data

Lab Sample: 1701970-05
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.955	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFHxA	83.7	1.16	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFHpA	81.2	0.315	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFHxS	1.90	0.505	2.67	4.27	J	B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFOA	128	0.347	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFOS	8.69	0.430	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFNA	2900	4.32	26.7	42.7	D	B7L0188	28-Dec-17	0.234 L	15-Jan-18 12:29	10
PFDA	5.82	0.795	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
MeFOSAA	ND	0.880	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFUnA	6.47	0.560	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
EtFOSAA	ND	0.731	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFDoA	ND	0.422	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFTrDA	ND	0.263	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
PFTeDA	ND	0.403	2.67	4.27		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C2-PFHxA	IS	104	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C4-PFHpA	IS	101	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
18O2-PFHxS	IS	101	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C2-PFOA	IS	96.3	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C8-PFOS	IS	84.6	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C5-PFNA	IS	90.9	50 - 150	D	B7L0188	28-Dec-17	0.234 L	15-Jan-18 12:29	10
13C2-PFDA	IS	86.8	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
d3-MeFOSAA	IS	96.3	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C2-PFUnA	IS	96.0	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
d5-EtFOSAA	IS	100	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C2-PFDoA	IS	71.4	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1
13C2-PFTeDA	IS	67.0	50 - 150		B7L0188	28-Dec-17	0.234 L	12-Jan-18 17:52	1

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

Sample ID: SA-MW132I-20171214 **Modified EPA Method 537**

Name:	Tetra Tech	Lab Sample:	B7L0188-MS1/B7L0188-MSD1	Source Lab Sample:	1701970-05
Project:	NWIRP Calverton Site 2/SA 112G08005-WE05	QC Batch:	B7L0188	Date Extracted:	28-Dec-17
Matrix:	Aqueous	Samp Size:	0.249/0.237 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	37.1	40.2	92.2		39.4	42.1	93.7	1.61		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFHxA	83.7	145	40.2	151	H	136	42.1	123	20.4		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFHpA	81.2	111	40.2	73.7		108	42.1	64.7	13.0	H	70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFHxS	1.90	39.7	40.2	93.9		44.4	42.1	101	7.29		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFOA	128	157	40.2	72.4		164	42.1	87.1	18.4		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFOS	8.69	43.7	40.2	87.2		46.9	42.1	90.8	4.04		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFNA	2900	2990	402	23.1	D, H	2950	421	12.4	60.3	D, H	70-130	30	15-Jan-18 11:54	10	15-Jan-18 12:06	10
PFDA	5.82	41.3	40.2	88.3		38.1	42.1	76.8	13.9		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
MeFOSAA	ND	31.2	40.2	77.6		38.4	42.1	91.2	16.1		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFUnA	6.47	46.5	40.2	99.5		50.4	42.1	104	4.42		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
EtFOSAA	ND	38.4	40.2	95.6		40.1	42.1	95.2	0.419		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFDoA	ND	45.7	40.2	114		39.5	42.1	93.9	19.3		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFTrDA	ND	45.5	40.2	113		50.7	42.1	120	6.01		60-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1
PFTeDA	ND	35.6	40.2	88.6		42.8	42.1	102	14.1		70-130	30	12-Jan-18 16:40	1	12-Jan-18 16:51	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	97.1		115		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C2-PFHxA	IS	88.4		92.6		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C4-PFHpA	IS	99.5		105		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
18O2-PFHxS	IS	103		103		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C2-PFOA	IS	85.9		86.7		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C8-PFOS	IS	95.7		87.4		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C5-PFNA	IS	93.8	D	121	D	50-150	15-Jan-18 11:54	10	15-Jan-18 12:06	10
13C2-PFDA	IS	86.7		91.9		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
d3-MeFOSAA	IS	101		127		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C2-PFUnA	IS	86.6		114		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
d5-EtFOSAA	IS	101		114		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C2-PFDoA	IS	73.2		106		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1
13C2-PFTeDA	IS	69.4		102		50-150	12-Jan-18 16:40	1	12-Jan-18 16:51	1

Sample ID: FT-PZ459S-20171214

Modified EPA Method 537

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 12:17

Laboratory Data

Lab Sample: 1701970-06
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.884	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFHxA	ND	1.08	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFHpA	0.430	0.292	2.47	3.95	J	B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFHxS	ND	0.468	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFOA	1.17	0.321	2.47	3.95	J	B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFOS	ND	0.398	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFNA	ND	0.400	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFDA	ND	0.736	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
MeFOSAA	ND	0.815	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFUnA	ND	0.518	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
EtFOSAA	ND	0.676	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFDoA	ND	0.391	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFTrDA	ND	0.244	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
PFTeDA	ND	0.373	2.47	3.95		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C2-PFHxA	IS	96.1	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C4-PFHpA	IS	93.2	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
18O2-PFHxS	IS	107	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C2-PFOA	IS	94.9	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C8-PFOS	IS	92.1	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C5-PFNA	IS	104	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C2-PFDA	IS	78.1	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
d3-MeFOSAA	IS	78.3	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C2-PFUnA	IS	80.6	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
d5-EtFOSAA	IS	77.7	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C2-PFDoA	IS	138	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	1
13C2-PFTeDA	IS	119	50 - 150		B7L0188	28-Dec-17	0.253 L	15-Jan-18 12:53	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: FT-PZ459I-20171214 **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 12:20

Laboratory Data

Lab Sample: 1701970-07
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.911	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFHxA	2.43	1.11	2.54	4.07	J	B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFHpA	2.48	0.301	2.54	4.07	J	B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFHxS	2.36	0.482	2.54	4.07	J	B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFOA	8.06	0.331	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFOS	11.2	0.411	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFNA	33.0	0.412	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFDA	1.05	0.758	2.54	4.07	J	B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
MeFOSAA	ND	0.839	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFUnA	23.4	0.534	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
EtFOSAA	13.1	0.697	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFDoA	ND	0.403	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFTrDA	ND	0.251	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
PFTeDA	ND	0.384	2.54	4.07		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	118	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C2-PFHxA	IS	99.4	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C4-PFHpA	IS	93.8	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
18O2-PFHxS	IS	104	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C2-PFOA	IS	83.2	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C8-PFOS	IS	111	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C5-PFNA	IS	92.8	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C2-PFDA	IS	109	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
d3-MeFOSAA	IS	90.2	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C2-PFUnA	IS	101	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
d5-EtFOSAA	IS	105	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C2-PFDoA	IS	74.7	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1
13C2-PFTeDA	IS	75.3	50 - 150		B7L0188	28-Dec-17	0.246 L	12-Jan-18 18:15	1

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

Sample ID: FT-PZ463S-20171214 **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 13:57

Laboratory Data

Lab Sample: 1701970-08
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.869	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFHxA	ND	1.06	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFHpA	ND	0.287	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFHxS	ND	0.460	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFOA	1.73	0.316	2.43	3.89	J	B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFOS	ND	0.392	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFNA	2.54	0.393	2.43	3.89	J	B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFDA	ND	0.724	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
MeFOSAA	ND	0.801	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFUnA	ND	0.510	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
EtFOSAA	ND	0.665	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFDoA	ND	0.385	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFTrDA	ND	0.240	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
PFTeDA	ND	0.367	2.43	3.89		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	94.2	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C2-PFHxA	IS	96.2	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C4-PFHpA	IS	102	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
18O2-PFHxS	IS	87.9	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C2-PFOA	IS	79.3	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C8-PFOS	IS	92.8	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C5-PFNA	IS	101	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C2-PFDA	IS	86.6	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
d3-MeFOSAA	IS	80.0	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C2-PFUnA	IS	101	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
d5-EtFOSAA	IS	91.7	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C2-PFDoA	IS	67.9	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	1
13C2-PFTeDA	IS	51.8	50 - 150		B7L0188	28-Dec-17	0.257 L	12-Jan-18 18:26	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: FT-PZ463I-20171214 **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 13:52

Laboratory Data

Lab Sample: 1701970-09
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.855	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFHxA	14.0	1.04	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFHpA	12.6	0.282	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFHxS	27.0	0.452	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFOA	31.9	0.311	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFOS	16.5	0.386	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFNA	62.3	0.387	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFDA	2.15	0.712	2.39	3.82	J	B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
MeFOSAA	ND	0.788	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFUnA	4.09	0.502	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
EtFOSAA	ND	0.655	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFDoA	ND	0.378	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFTrDA	ND	0.236	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
PFTeDA	ND	0.361	2.39	3.82		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	98.6	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C2-PFHxA	IS	84.4	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C4-PFHpA	IS	91.0	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
18O2-PFHxS	IS	82.9	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C2-PFOA	IS	90.9	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C8-PFOS	IS	79.2	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C5-PFNA	IS	83.9	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C2-PFDA	IS	75.1	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
d3-MeFOSAA	IS	76.5	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C2-PFUnA	IS	76.7	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
d5-EtFOSAA	IS	71.2	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C2-PFDoA	IS	82.2	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1
13C2-PFTeDA	IS	71.0	50 - 150		B7L0188	28-Dec-17	0.262 L	12-Jan-18 18:37	1

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

Sample ID: CV-TANK-20171214 **Modified EPA Method 537**

Client Data

Name: Tetra Tech
Project: NWIRP Calverton Site 2/SA 112G08005-WE05
SDG: WE05
Matrix: Aqueous
Date Collected: 14-Dec-17 16:45

Laboratory Data

Lab Sample: 1701970-10
Date Received: 15-Dec-17 09:50
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.864	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFHxA	ND	1.05	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFHpA	ND	0.285	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFHxS	ND	0.457	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFOA	ND	0.314	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFOS	ND	0.390	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFNA	ND	0.391	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFDA	ND	0.719	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
MeFOSAA	ND	0.797	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFUnA	4.09	0.507	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
EtFOSAA	ND	0.661	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFDoA	ND	0.382	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFTrDA	ND	0.239	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
PFTeDA	ND	0.365	2.41	3.86		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	107	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C2-PFHxA	IS	93.9	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C4-PFHpA	IS	93.7	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
18O2-PFHxS	IS	87.9	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C2-PFOA	IS	99.3	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C8-PFOS	IS	109	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C5-PFNA	IS	93.5	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C2-PFDA	IS	74.7	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
d3-MeFOSAA	IS	78.1	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C2-PFUnA	IS	72.0	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
d5-EtFOSAA	IS	74.8	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C2-PFDoA	IS	77.2	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1
13C2-PFTeDA	IS	57.7	50 - 150		B7L0188	28-Dec-17	0.259 L	12-Jan-18 18:48	1

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
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.

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701970 Temp: 2.5 °C
Storage ID: WR-2 Storage Secured: Yes ☒ No ☐

Project ID: NWIRP Calverton Site 2/SA 112G08005-WE05 PO#: _____ Sampler: Jacob Birkett (name)

TAT (check one): Standard: ☒ 21 days Rush (surcharge may apply) ☐ 14 days ☐ 7 days Specify: _____

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
	Tetra Tech	5700 Lake Wright Dr. Suite 102	Norfolk	VA	757-466-4902	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Jacob Birkett	12-14-17		B. Benedict	12/15/17	1020
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

ATTN: _____

Method of Shipment: FedEx

Tracking No.: 8102-9107-0525

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 26	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
FT-PZ458S-20171214	12/14/17	0913	FTPZ458	2	P	AQ			X						
FT-PZ458I-20171214	12/14/17	0907	↓												
SA-MW132S-20171214		1101	SA-MW132												
SA-MW132S-FRB-20171214		1101		↓											FRB
SA-MW132I-20171214		1102	↓	6											MS/MSD
FT-PZ459S-20171214		1217	FT-PZ459	2											
FT-PZ459I-20171214		1220	↓												
FT-PZ463S-20171214		1357	FT-PZ463												
FT-PZ463I-20171214	↓	1352	↓	↓	↓	↓			↓						
CV-TANK-20171214	↓	1645	Tanks	↓	↓	↓			↓						

Special Instructions/Comments: _____

SEND DOCUMENTATION AND RESULTS TO:

Name: Kristi Francisco
Company: Tetra Tech
Address: 5700 Lake Wright Dr. Suite 102
City: Norfolk State: VA Zip: 23502
Phone: 757-466-4902 Fax: _____
Email: Kristi.Francisco@tetratech.com

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

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

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

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701970 **TAT** Std

Samples Arrival:	**Date/Time** 12/15/17 0950	**Initials:** WB	**Location:** Wk-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 12/16/17 1429	**Initials:** MMS	**Location:** WR-2 **Shelf/Rack:** F-5

Delivered By:	FedEx	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	Ice		Blue Ice		Dry Ice		None

Temp °C: 2.5 (uncorrected)	**Time:** 1025	**Thermometer ID:** IR-1
Temp °C: 2.5 (corrected)	**Probe used:** Yes☑ No☐	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill Trk # 8102 9107 0525	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓

If Chlorinated or Drinking Water Samples, Acceptable Preservation?						✓
Preservation Documented:	$Na_2S_2O_3$	Trizma	None	Yes	No	NA
Shipping Container	Vista	Client	Retain	Return	Dispose	

Comments: sample label *

FT-PZ-458S-20171214
FT-PZ-458I-20171214
FT-PZ-459S-20171214
FT-PZ-459I-20171214
FT-PZ-463I-20171214

COC ID

FT-PZ458S-20171214
FT-PZ458I-20171214
FT-PZ459S-20171214
FT-PZ459I-20171214
FT-PZ463I-20171214

* extra dash present in ID's on sample labels

EXTRACTION INFORMATION

Process Sheet

Workorder: 1701970

Prep Expiration: 2017-Dec-28
Client: Tetra Tech

Workorder Due: 08-Jan-18 00:00

TAT: 24

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

Prep Batch: B710188

Prep Data Entered: GRB 12/29/17
Date and Initials

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

Initial Sequence: S8A0034

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701970-01	"A"	☑	☐	FT-PZ458S-20171214	"FT-PZ-458S-20171214"	WR-2 F-5	HDPE Bottle, 250 mL
1701970-02	↓	☑	☐	FT-PZ458I-20171214	"FT-PZ-458I-20171214"	WR-2 F-5	HDPE Bottle, 250 mL
1701970-03	↓	☑	☑	SA-MW132S-20171214		WR-2 F-5	HDPE Bottle, 250 mL
1701970-04	↓	☑	☑	SA-MW132S-FRB-20171214		WR-2 F-5	HDPE Bottle, 250 mL
1701970-05	A,B,C	☑	☑	SA-MW132I-20171214	**MS/MSD**	WR-2 F-5	HDPE Bottle, 250 mL
1701970-06	"A"	☑	☑	FT-PZ459S-20171214	"FT-PZ-459S-20171214"	WR-2 F-5	HDPE Bottle, 250 mL
1701970-07	↓	☑	☐	FT-PZ459I-20171214	"FT-PZ-459I-20171214"	WR-2 F-5	HDPE Bottle, 250 mL
1701970-08	↓	☑	☑	FT-PZ463S-20171214	"FT-PZ-463I-20171214"	WR-2 F-5	HDPE Bottle, 250 mL
1701970-09	↓	☑	☑	FT-PZ463I-20171214		WR-2 F-5	HDPE Bottle, 250 mL
1701970-10	↓	☑	☑	CV-TANK-20171214		WR-2 F-5	HDPE Bottle, 250 mL

WO Comments: **Provide all analytical runs.**
MS/MSD per batch, if MS/MSD is not provided - LCS/LCSD.

Pre-Prep Check Out: GRB 12/27/17
Pre-Prep Check In: SJ 12/27/17

Prep Check Out: HC 12.28.17
Prep Check In: NA

Prep Reconciled Initals/Date: GRB 12/27/17
Spike Reconciled Initals/Date: HC 12.28.17
VialBoxID: Cleveland

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537M PFAS DOD (LOQ as mRL)

B7L0188

Chemist: KL

Prep Date/Time: ~~27~~ 28-Dec-17 ~~08:04~~ 1000

KL 12/28/17

Prepared using: LCMS - SPE Extraction-LCMS

Date/Initals: 12/27/17 ST

BalanceID: ABMS-4

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
☐	B7L0188-BLK1	5	2	0	2	~~to~~ 12/27/17 ST N/A	N/A	(0.250)	KL GRB 12/28/17	HC GRB 12/28/17	HC GRB 12/28/17
☐	B7L0188-BS1	5	2	0	2	N/A	↓	(0.250)	✓	↓	↓
☒	B7L0188-MS1 1701970-05	6	2	0	3	276.07	27.11	0.24896	✓		
☒	B7L0188-MSD1 1701970-05	6	2	0	3	265.29	27.80	0.23749	✓		
☒	1701970-01 (A)(B)	5	2	0	2	287.91	27.93	0.25998	✓		
☒	1701970-02	6	2	0	3	280.43	27.52	0.25291	✓		
☒	1701970-03	5	2	0	2	285.37	27.73	0.25764	✓		
☐	1701970-04	5	2	0	2	261.51	27.84	0.23367	✓		
☒	1701970-05	6	2	0	3	262.10	27.69	0.23441	✓		
☐	1701970-06	5	2	0	2	280.97	27.79	0.25318	✓		
☒	1701970-07	6	2	0	3	273.45	27.75	0.24570	✓		
☒	1701970-08	5	2	0	2	285.07	27.71	0.25736	✓		
☒	1701970-09	5	2	0	2	289.24	27.59	0.26165	✓		
☐	1701970-10	5	2	0	2	286.57	27.68	0.25889	✓	↓	↓

IS: 17L2601, 10µL (Vq)

IS SUP: NA

NS: 17L2103, 10µL (Vq)

RS: 17L2332, 10µL (Vq)

SPE Chem: Strata x-AW 33µm 200mg/6mL

Ele SOLV: 0.5% NH4OH in MeOH/MeOH

Final Volume(s): 1mL

Notes: (A) 4 microcentrifuge tubes run to test for particulate. Nothing found. 12/27/17 ST

(B) Sample has dark amber color, took longer and required more vacum to SPE HC 12.28.17

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Batch: B7L0188

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701970-01	0.25998	NA	NA	1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-02	0.25291			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-03	0.25764			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-04	0.23367			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-05	0.23441			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-06	0.25318			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-07	0.2457			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-08	0.25736			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-09	0.26165			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
1701970-10	0.25889			1000	28-Dec-17 10:00	KC			Aqueous	537M PFAS DOD (LOQ as
B7L0188-BLK1	0.25			1000	28-Dec-17 10:00	KC				QC
B7L0188-BS1	0.25			1000	28-Dec-17 10:00	KC	17L2103	10		QC
B7L0188-MS1	0.24896			1000	28-Dec-17 10:00	KC	17L2103	10		QC
B7L0188-MSD1	0.23749			1000	28-Dec-17 10:00	KC	17L2103	10		QC

GRB 12/29/17

SAMPLE DATA – MODIFIED EPA METHOD 537

Vista Analytical Laboratory

Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180110M2\180110M2-5.qld

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Printed: Tuesday, January 16, 2018 11:32:56 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_5, Date: 10-Jan-2018, Time: 16:09:04, ID: B7L0188-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.40e2	0.250		2.66				
2	4	PFHxA	313.2 > 268.9		1.40e3	0.250		3.15				
3	5	PFHpA	363.0 > 318.9		3.48e3	0.250		3.78				
4	6	L-PFHxS	398.9 > 79.6		4.45e2	0.250		3.94				
5	9	L-PFOA	413 > 368.7		5.27e3	0.250		4.31				
6	12	PFNA	463.0 > 418.8		4.28e3	0.250		4.81				
7	14	L-PFOS	499 > 79.9		1.15e3	0.250		4.89				
8	16	PFDA	513 > 468.8		4.01e3	0.250		5.18				
9	18	N-MeFOSAA	570.1 > 419		1.25e3	0.250		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.30e3	0.250		5.48				
11	20	PFUdA	563.0 > 518.9		4.26e3	0.250		5.50				
12	22	PFDoA	612.9 > 569.0		3.05e3	0.250		5.77				

AC 1/16/2018

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Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180110M2\180110M2-5.qld

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_5, Date: 10-Jan-2018, Time: 16:09:04, ID: B7L0188-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.05e3	0.250		6.00				
2	25	PFTeDA	712.9 > 668.8		1.80e3	0.250		6.22				
3	33	13C3-PFBS	302. > 98.8	6.40e2	5.69e3	0.250	0.116	2.77	2.61	1.40	48.3231	96.6
4	34	13C2-PFHxA	315 > 269.8	1.40e3	5.69e3	0.250	0.655	3.15	3.10	3.07	18.7193	93.6
5	35	13C4-PFHpA	367.2 > 321.8	3.48e3	5.69e3	0.250	0.722	3.78	3.72	7.63	42.2600	84.5
6	36	18O2-PFHxS	403.0 > 102.6	4.45e2	1.55e3	0.250	0.348	3.94	3.87	3.59	41.2586	82.5
7	37	13C2-6:2 FTS	429.1 > 408.9	1.23e3	5.23e3	0.250	0.222	4.25	4.19	2.94	53.0729	106.1
8	38	13C2-PFOA	414.9 > 369.7	5.27e3	5.23e3	0.250	1.023	4.31	4.24	12.6	49.2168	98.4
9	39	13C5-PFNA	468.2 > 422.9	4.28e3	4.73e3	0.250	0.916	4.81	4.67	11.3	49.4613	98.9
10	40	13C8-PFOSA	506.1 > 77.7	5.97e2	4.49e3	0.250	0.210	4.87	4.74	1.66	31.6087	63.2
11	41	13C8-PFOS	507.0 > 79.9	1.15e3	1.32e3	0.250	1.035	4.89	4.76	10.9	42.0530	84.1
12	42	13C2-PFDA	515.1 > 469.9	4.01e3	4.52e3	0.250	1.142	5.18	5.05	11.1	38.9064	77.8
13	43	13C2-8:2 FTS	529.1 > 508.7	4.56e2	5.69e3	0.250	0.157	5.15	5.01	1.00	25.5831	51.2
14	44	d3-N-MeFOSAA	573.3 > 419	1.25e3	4.49e3	0.250	0.299	5.32	5.19	3.49	46.7005	93.4
15	45	d5-N-EtFOSAA	589.3 > 419	1.30e3	4.49e3	0.250	0.369	5.47	5.35	3.63	39.3823	78.8
16	46	13C2-PFUdA	565 > 519.8	4.26e3	4.49e3	0.250	1.012	5.49	5.37	11.9	46.9462	93.9
17	47	13C2-PFDoA	615.0 > 569.7	3.05e3	4.49e3	0.250	0.647	5.77	5.65	8.50	52.5236	105.0
18	49	13C2-PFTeDA	714.8 > 669.6	1.80e3	4.49e3	0.250	0.294	6.22	6.11	5.01	68.1788	136.4
19	55	13C5-PFHxA	318 > 272.9	5.69e3	5.69e3	0.250	1.000	3.15	3.10	12.5	50.0000	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.55e3	1.55e3	0.250	1.000	4.02	3.87	12.5	50.0000	100.0
21	57	13C8-PFOA	421.3 > 376	5.23e3	5.23e3	0.250	1.000	4.38	4.24	12.5	50.0000	100.0
22	58	13C9-PFNA	472.2 > 426.9	4.73e3	4.73e3	0.250	1.000	4.81	4.67	12.5	50.0000	100.0
23	59	13C4-PFOS	503 > 79.9	1.32e3	1.32e3	0.250	1.000	4.89	4.76	12.5	50.0000	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.52e3	4.52e3	0.250	1.000	5.18	5.05	12.5	50.0000	100.0
25	61	13C7-PFUdA	570.1 > 524.8	4.49e3	4.49e3	0.250	1.000	5.49	5.37	12.5	50.0000	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	4.45e2	0.250		4.14		0.000		
27	63	Total PFOA	413 > 368.7	0.00e0	5.27e3	0.250		4.51		0.000		
28	64	Total PFOS	499 > 79.9	0.00e0	1.15e3	0.250		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.25e3	0.250		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.30e3	0.250		5.61		0.000		

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Rev'd: MM 1/17/18

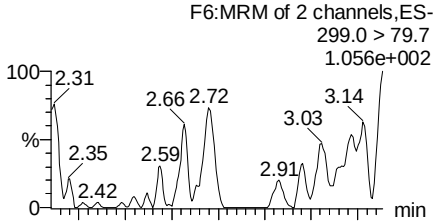
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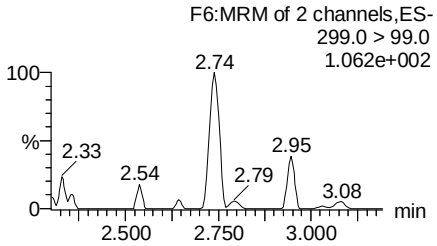
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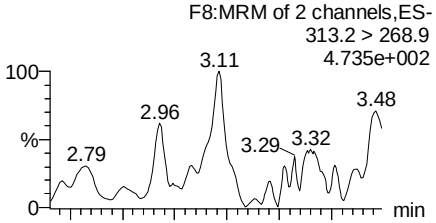
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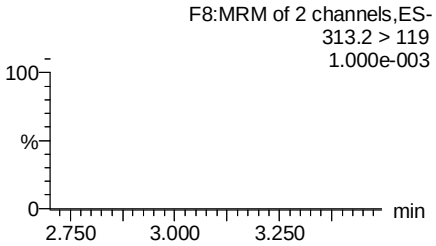
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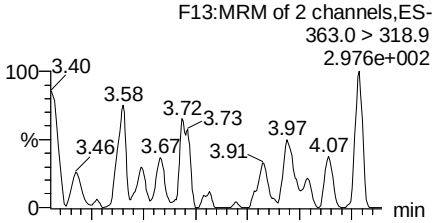


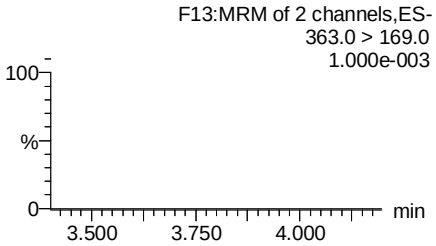
PFHxA



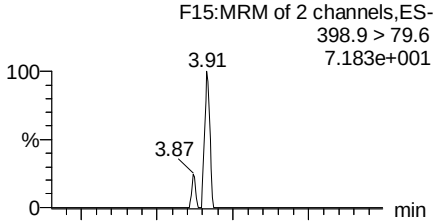


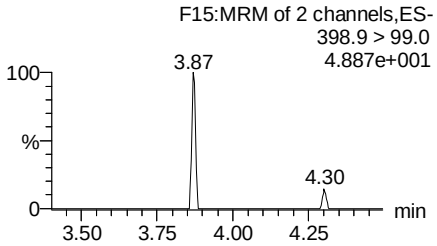
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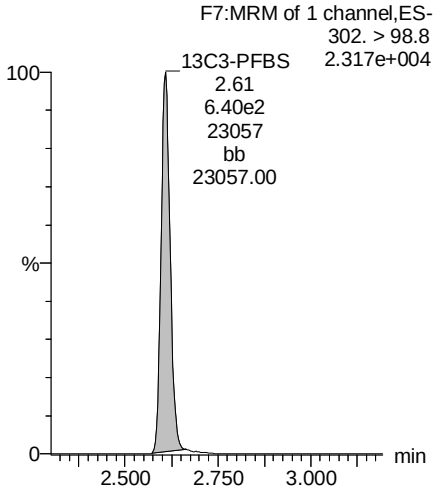


Total PFHxS

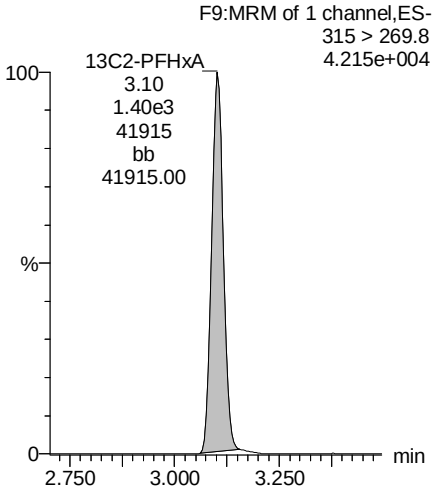




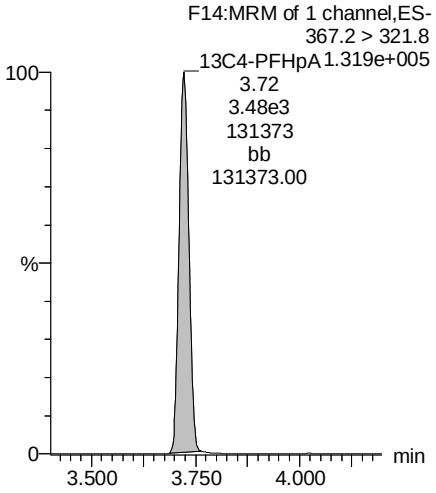
13C3-PFBS



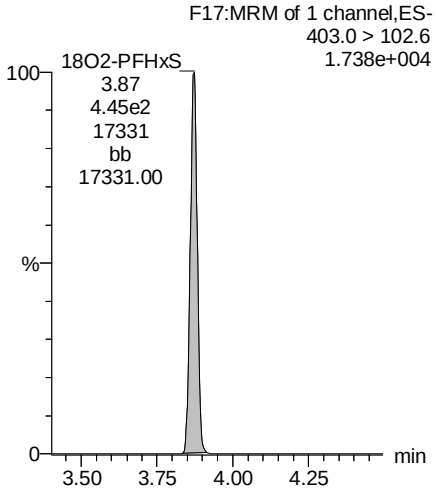
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13C4-PFHpA



18O2-PFHxS



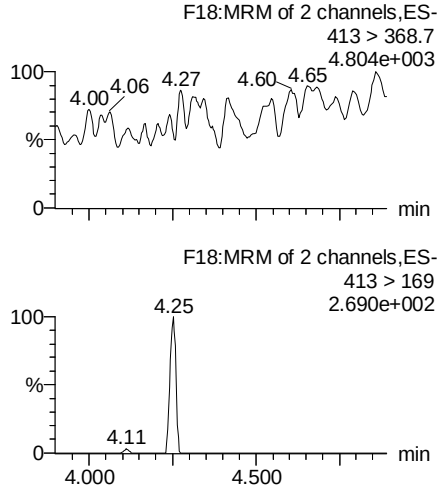
AC 1/16/2018

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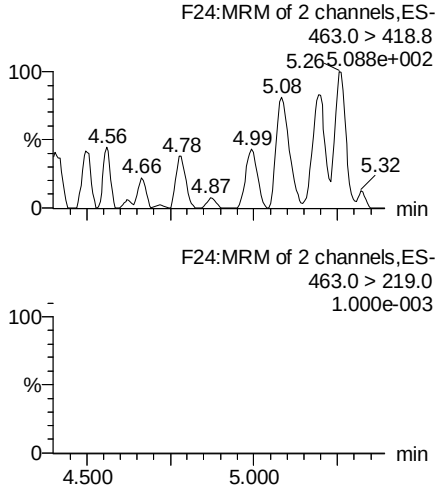
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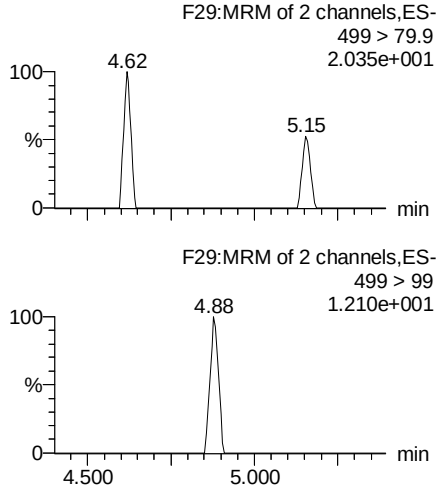
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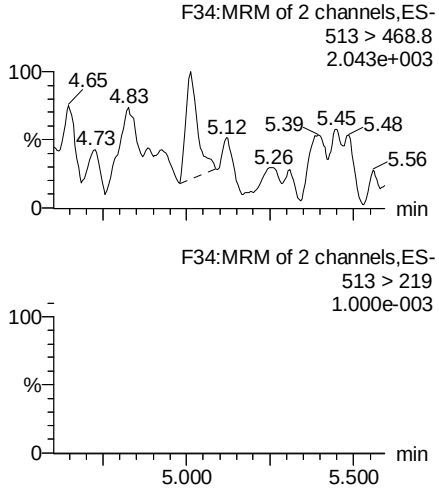
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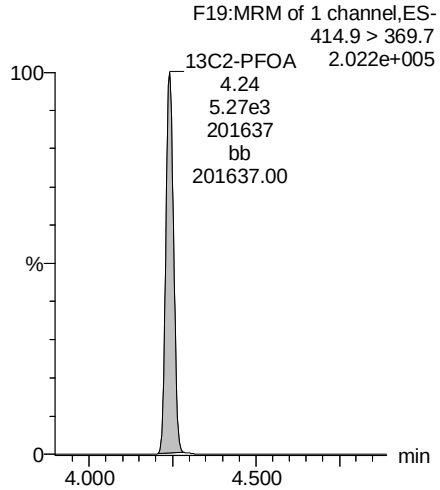
Total PFOS



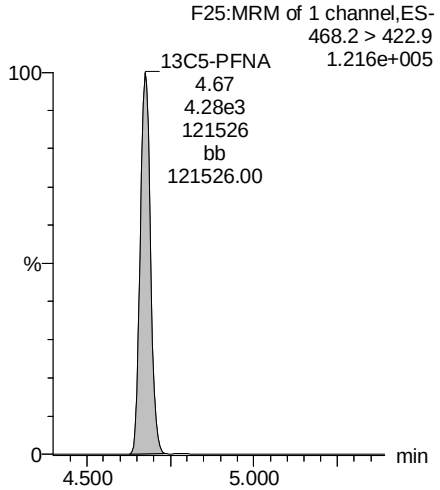
PFDA



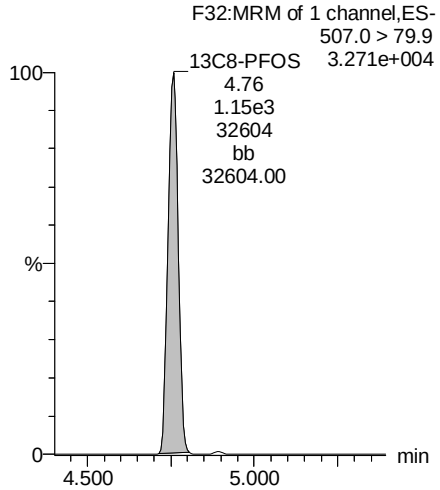
13C2-PFOA



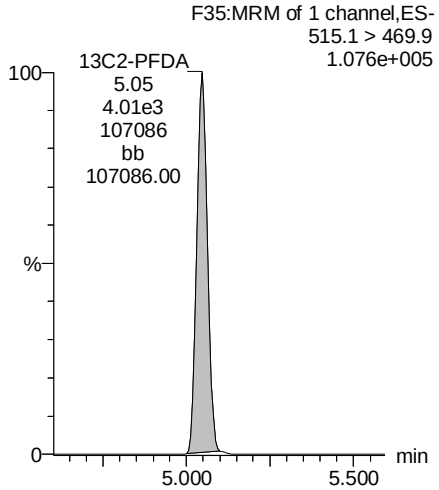
13C5-PFNA



13C8-PFOS



13C2-PFDA



AC 1/16/2018

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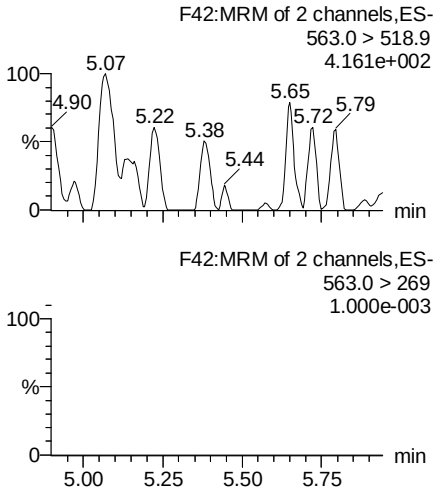
Rev'd: MM 1/17/18

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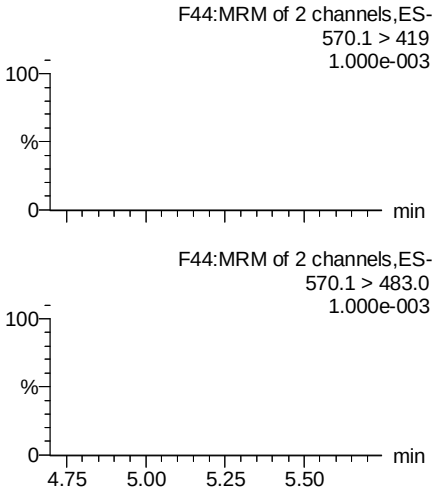
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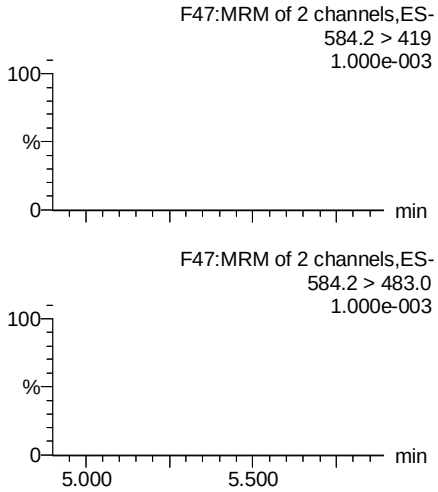
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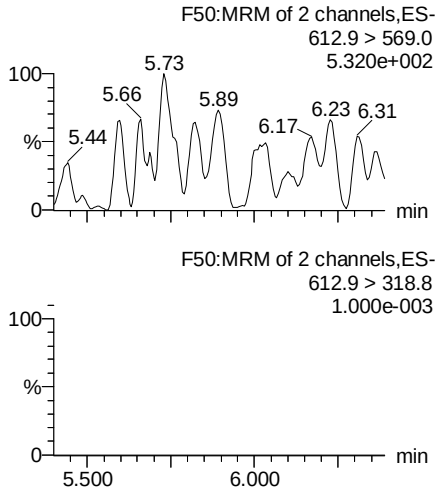
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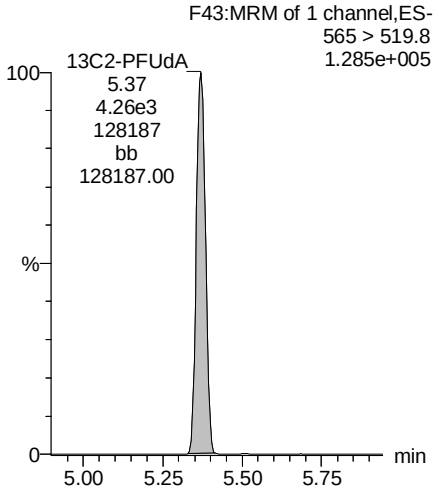
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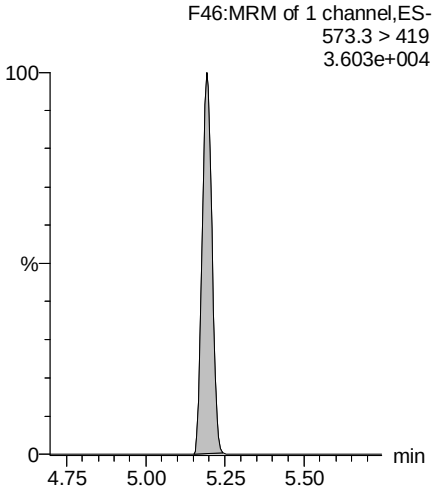
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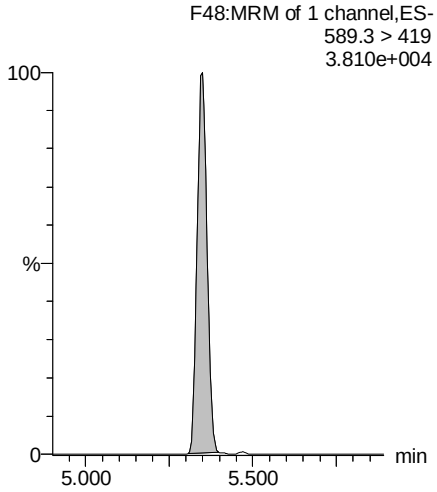
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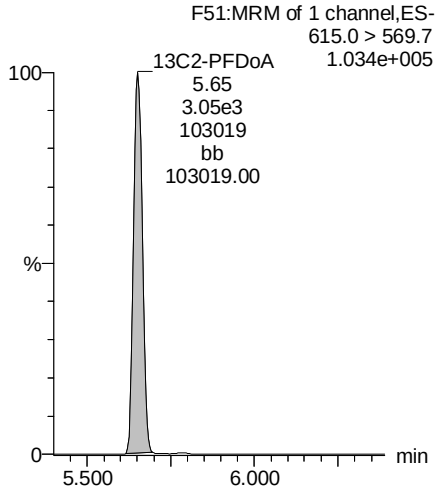
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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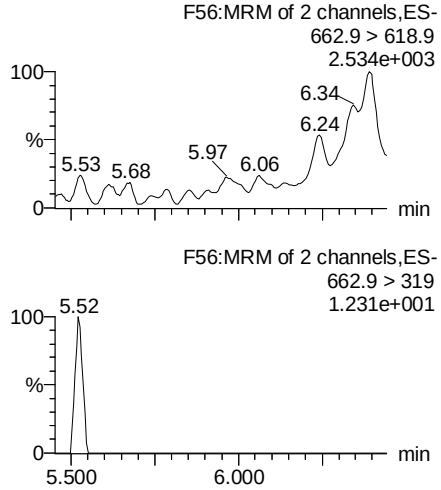
Rev'd: MM 1/17/18

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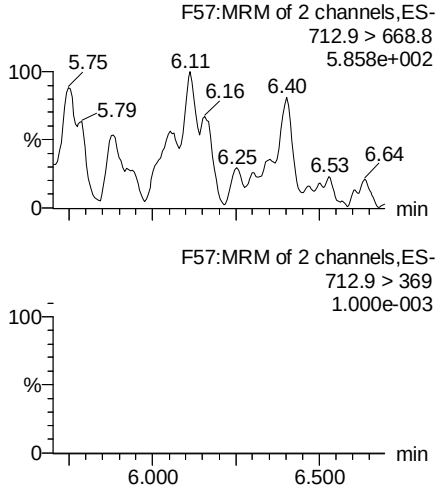
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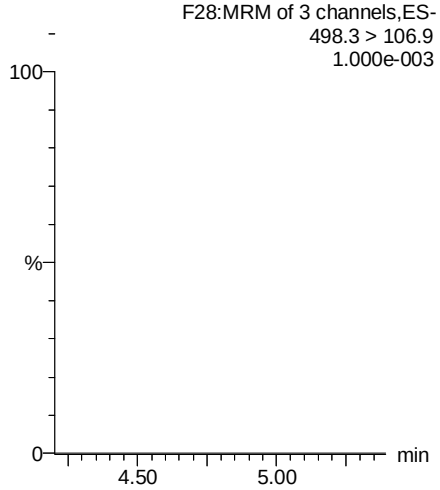
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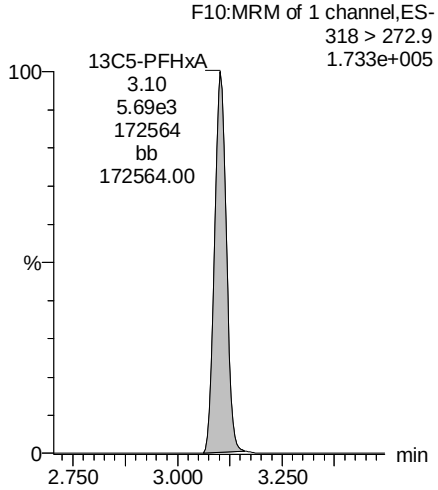
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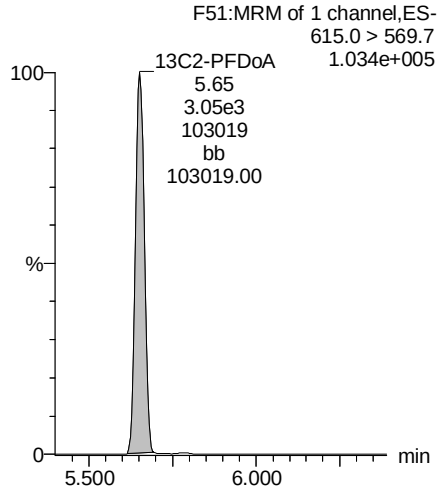
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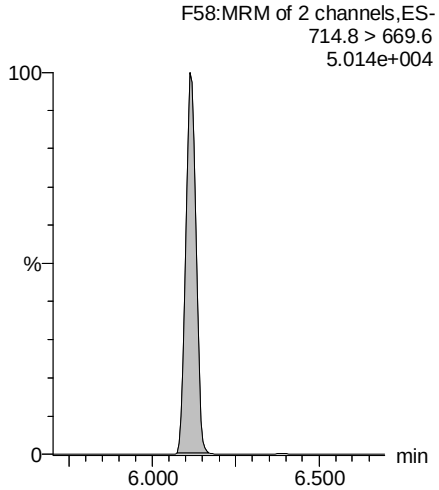
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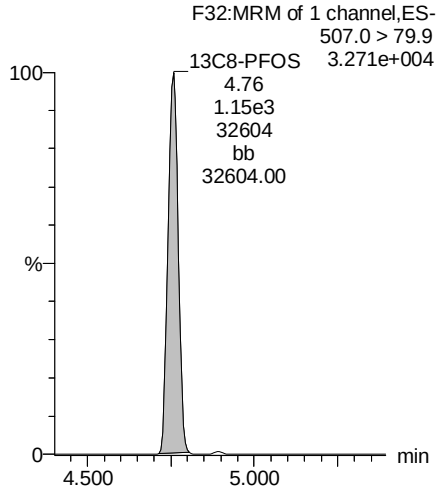
13C2-PFDoA



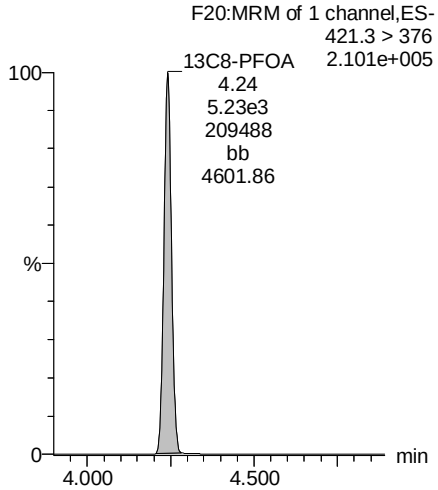
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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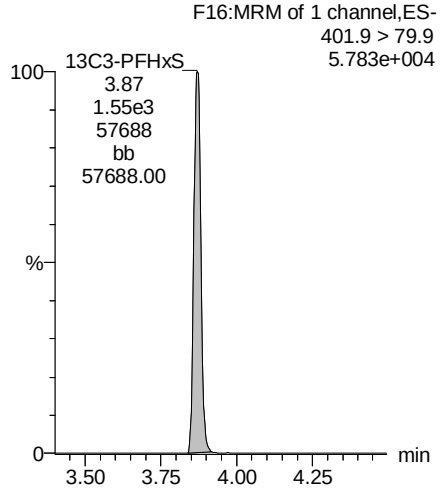
Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180110M2\180110M2-5.qld

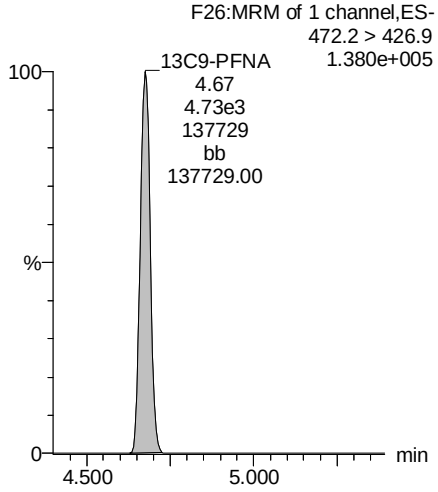
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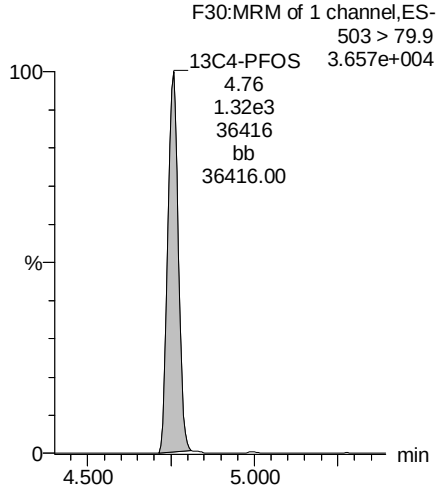
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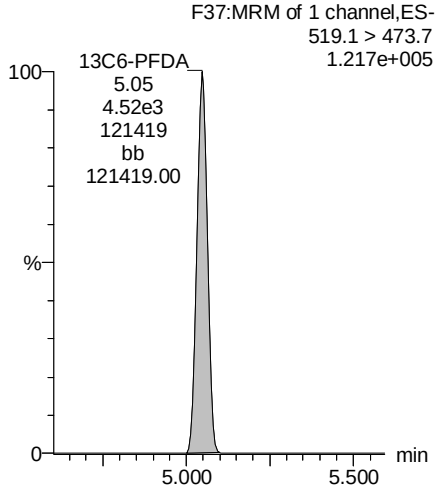
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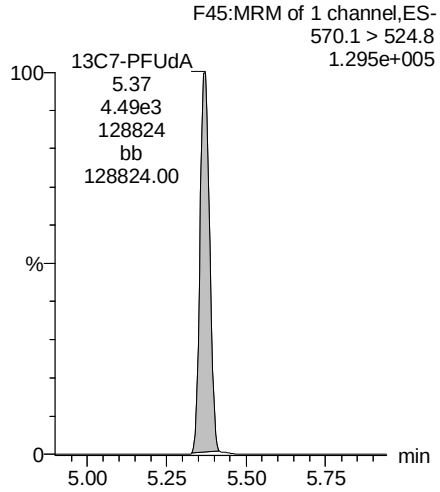
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180110M2\180110M2-3.qld

Last Altered: Tuesday, January 16, 2018 11:22:38 Pacific Standard Time
Printed: Tuesday, January 16, 2018 11:23:32 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_3, Date: 10-Jan-2018, Time: 15:46:43, ID: B7L0188-BS1 OPR 0.25, Description: OPR

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	9.30e2	6.68e2	0.250		2.66	2.66	17.4	38.5165	96.3
2	4	PFHxA	313.2 > 268.9	4.85e3	1.35e3	0.250		3.15	3.16	18.0	40.1170	100.3
3	5	PFHpA	363.0 > 318.9	4.12e3	4.09e3	0.250		3.78	3.78	12.6	38.1665	95.4
4	6	L-PFHxS	398.9 > 79.6	7.57e2	4.79e2	0.250		3.94	3.92	19.7	42.2271	105.6
5	9	L-PFOA	413 > 368.7	4.30e3	5.08e3	0.250		4.31	4.28	10.6	38.4618	96.2
6	12	PFNA	463.0 > 418.8	4.46e3	5.51e3	0.250		4.81	4.71	10.1	32.0300	80.1
7	14	L-PFOS	499 > 79.9	1.17e3	1.45e3	0.250		4.89	4.79	10.1	42.3880	106.0
8	16	PFDA	513 > 468.8	4.45e3	4.45e3	0.250		5.18	5.08	12.5	34.6080	86.5
9	18	N-MeFOSAA	570.1 > 419	1.61e3	1.05e3	0.250		5.32	5.23	19.2	50.7453	126.9
10	19	N-EtFOSAA	584.2 > 419	1.17e3	1.46e3	0.250		5.48	5.38	9.96	35.8055	89.5
11	20	PFUdA	563.0 > 518.9	4.07e3	3.70e3	0.250		5.50	5.40	13.8	48.1496	120.4
12	22	PFDoA	612.9 > 569.0	4.24e3	2.87e3	0.250		5.77	5.67	18.4	33.2697	83.2

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Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180110M2\180110M2-3.qld

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Name: 180110M2_3, Date: 10-Jan-2018, Time: 15:46:43, ID: B7L0188-BS1 OPR 0.25, Description: OPR

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9	3.87e3	2.87e3	0.250		6.00	5.92	16.8	28.1735	70.4
2	25	PFTeDA	712.9 > 668.8	2.28e3	1.42e3	0.250		6.22	6.13	20.1	28.5920	71.5
3	33	13C3-PFBS	302. > 98.8	6.68e2	5.03e3	0.250	0.116	2.77	2.66	1.66	57.0948	114.2
4	34	13C2-PFHxA	315 > 269.8	1.35e3	5.03e3	0.250	0.655	3.15	3.16	3.35	20.4745	102.4
5	35	13C4-PFHpA	367.2 > 321.8	4.09e3	5.03e3	0.250	0.722	3.78	3.78	10.2	56.2923	112.6
6	36	18O2-PFHxS	403.0 > 102.6	4.79e2	1.48e3	0.250	0.348	3.94	3.92	4.06	46.6073	93.2
7	37	13C2-6:2 FTS	429.1 > 408.9	1.41e3	4.85e3	0.250	0.222	4.25	4.23	3.63	65.4595	130.9
8	38	13C2-PFOA	414.9 > 369.7	5.08e3	4.85e3	0.250	1.023	4.31	4.28	13.1	51.1987	102.4
9	39	13C5-PFNA	468.2 > 422.9	5.51e3	6.51e3	0.250	0.916	4.81	4.71	10.6	46.2443	92.5
10	40	13C8-PFOSA	506.1 > 77.7	4.48e2	5.47e3	0.250	0.210	4.87	4.78	1.02	19.4810	39.0
11	41	13C8-PFOS	507.0 > 79.9	1.45e3	1.70e3	0.250	1.035	4.89	4.79	10.7	41.1668	82.3
12	42	13C2-PFDA	515.1 > 469.9	4.45e3	4.33e3	0.250	1.142	5.18	5.08	12.8	44.9711	89.9
13	43	13C2-8:2 FTS	529.1 > 508.7	5.95e2	5.03e3	0.250	0.157	5.15	5.05	1.48	37.7574	75.5
14	44	d3-N-MeFOSAA	573.3 > 419	1.05e3	5.47e3	0.250	0.299	5.32	5.22	2.40	32.1088	64.2
15	45	d5-N-EtFOSAA	589.3 > 419	1.46e3	5.47e3	0.250	0.369	5.47	5.38	3.35	36.2864	72.6
16	46	13C2-PFUdA	565 > 519.8	3.70e3	5.47e3	0.250	1.012	5.49	5.39	8.46	33.4570	66.9
17	47	13C2-PFDoA	615.0 > 569.7	2.87e3	5.47e3	0.250	0.647	5.77	5.67	6.56	40.5743	81.1
18	49	13C2-PFTeDA	714.8 > 669.6	1.42e3	5.47e3	0.250	0.294	6.22	6.13	3.24	44.1658	88.3
19	55	13C5-PFHxA	318 > 272.9	5.03e3	5.03e3	0.250	1.000	3.15	3.16	12.5	50.0000	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.48e3	1.48e3	0.250	1.000	4.02	3.92	12.5	50.0000	100.0
21	57	13C8-PFOA	421.3 > 376	4.85e3	4.85e3	0.250	1.000	4.38	4.28	12.5	50.0000	100.0
22	58	13C9-PFNA	472.2 > 426.9	6.51e3	6.51e3	0.250	1.000	4.81	4.71	12.5	50.0000	100.0
23	59	13C4-PFOS	503 > 79.9	1.70e3	1.70e3	0.250	1.000	4.89	4.79	12.5	50.0000	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.33e3	4.33e3	0.250	1.000	5.18	5.08	12.5	50.0000	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.47e3	5.47e3	0.250	1.000	5.49	5.40	12.5	50.0000	100.0
26	62	Total PFHxS	398.9 > 79.6	7.57e2	4.79e2	0.250		4.14		19.7	42.2271	
27	63	Total PFOA	413 > 368.7	4.30e3	5.08e3	0.250		4.51		10.6	38.4618	
28	64	Total PFOS	499 > 79.9	1.17e3	1.45e3	0.250		5.02		10.1	42.3880	
29	65	Total N-MeFOSAA	570.1 > 419	1.61e3	1.05e3	0.250		5.45		19.2	50.7453	
30	66	Total N-EtFOSAA	584.2 > 419	1.17e3	1.46e3	0.250		5.61		9.96	35.8055	

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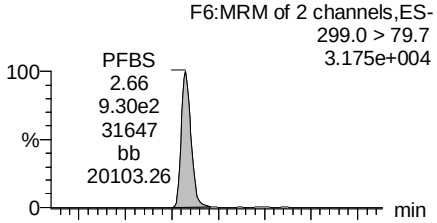
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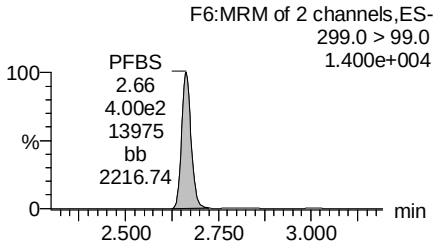
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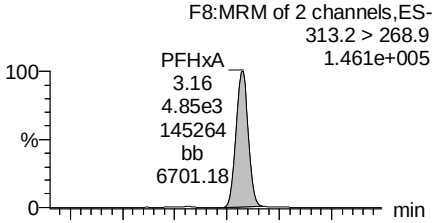
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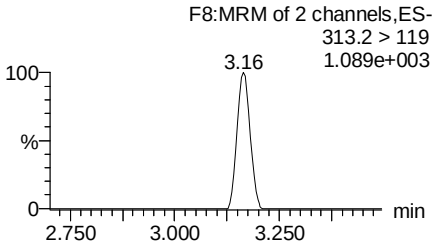
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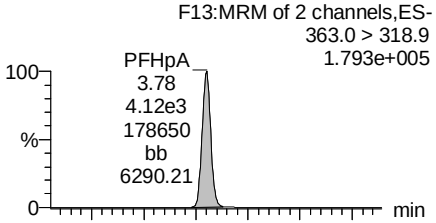


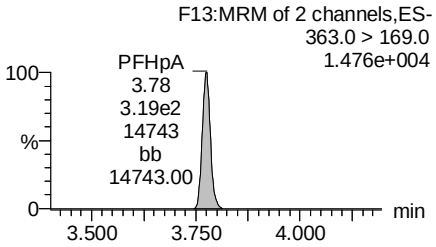
PFHxA



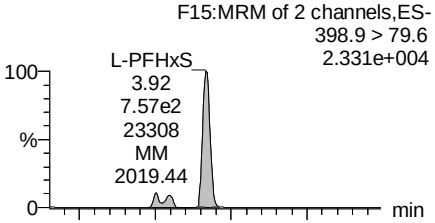


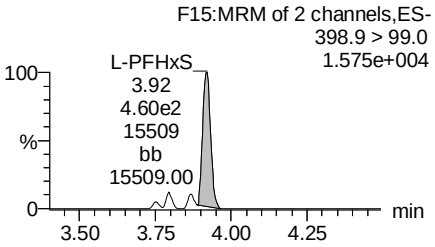
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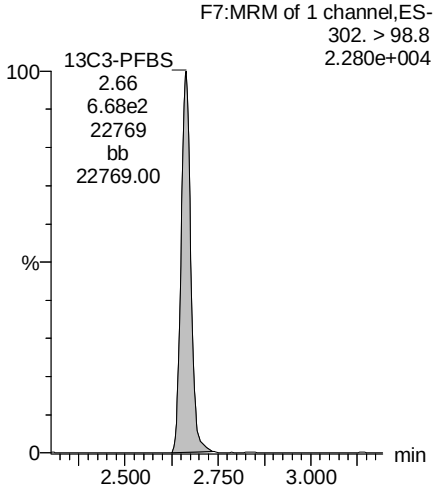


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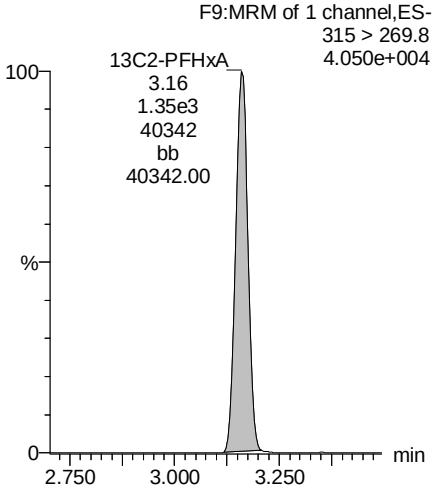




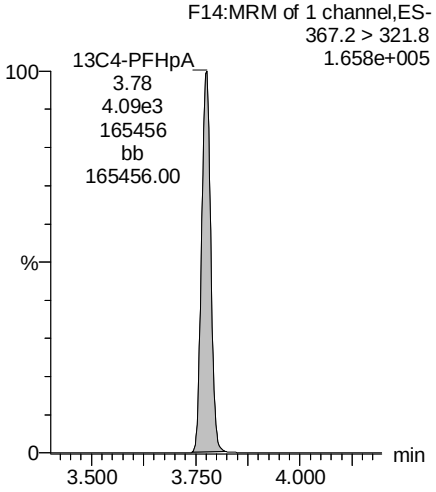
13C3-PFBS



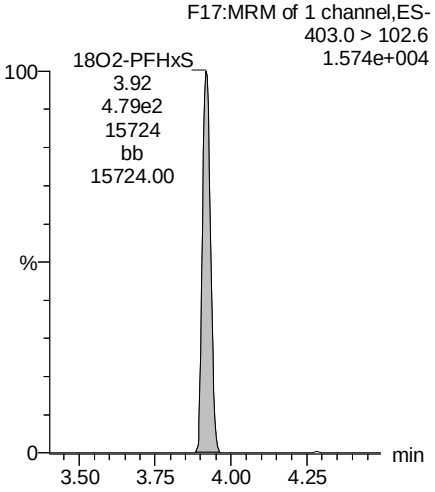
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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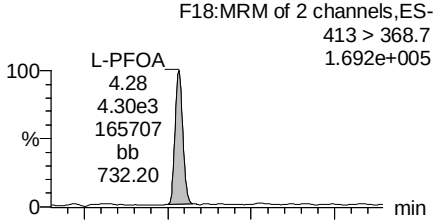
Rev'd: MM 1/17/18

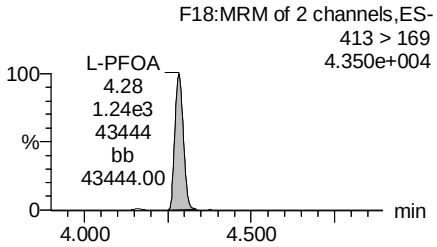
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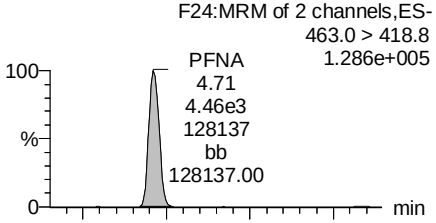
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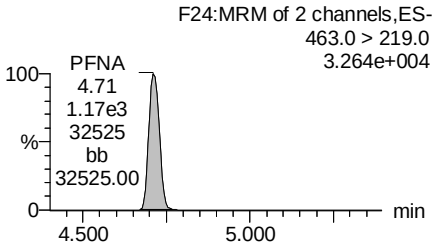
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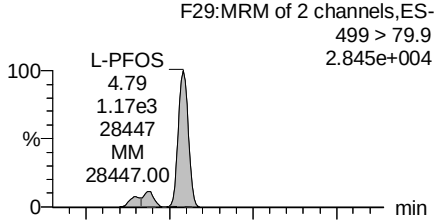


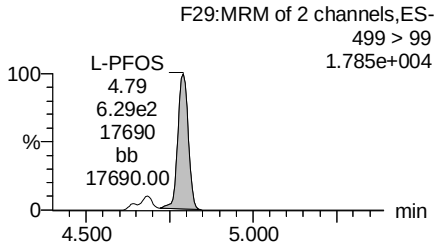
PFNA



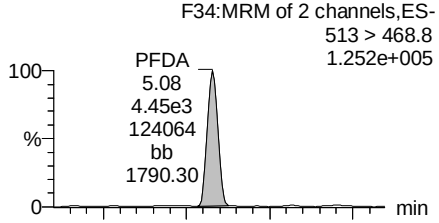


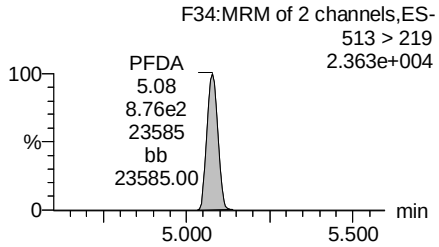
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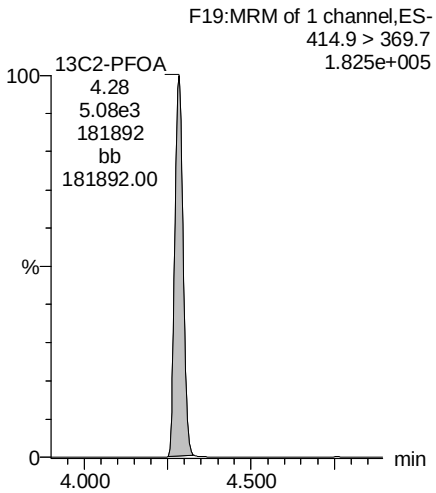


PFDA

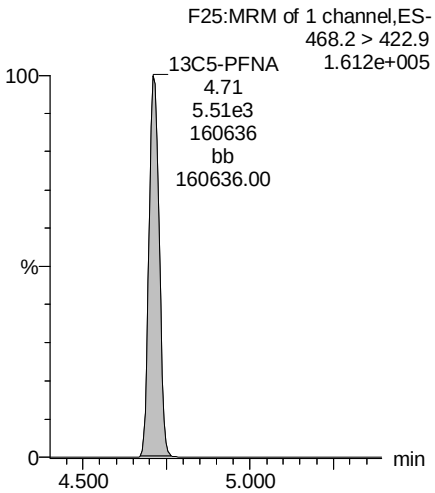




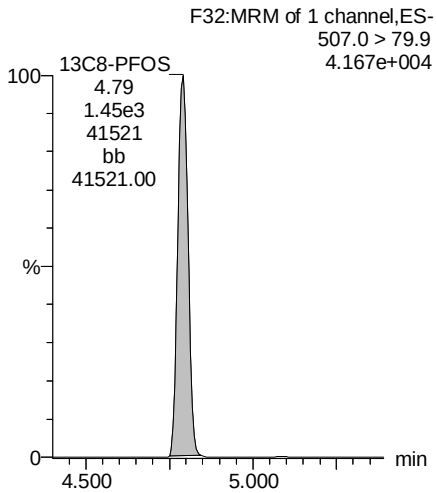
13C2-PFOA



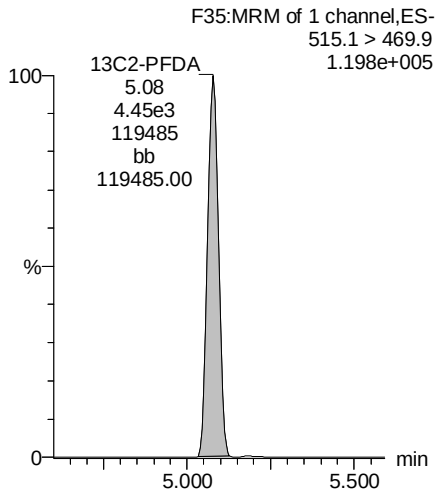
13C5-PFNA



13C8-PFOS



13C2-PFDA



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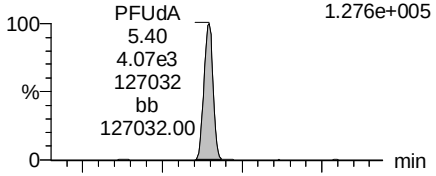
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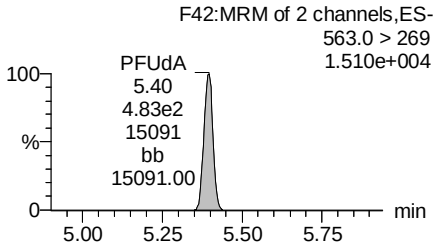
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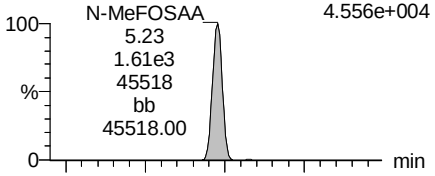
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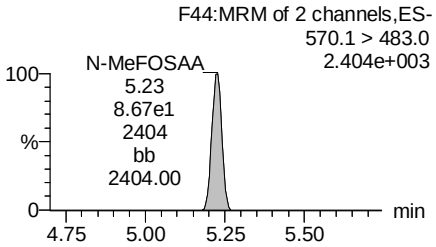
PFUdA



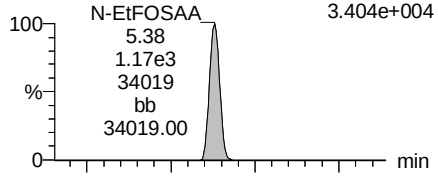


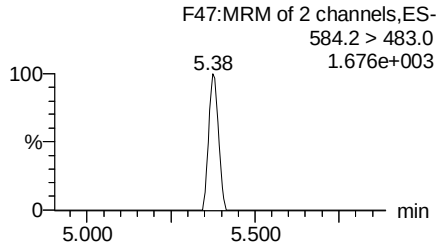
N-MeFOSAA



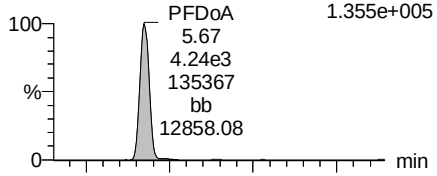


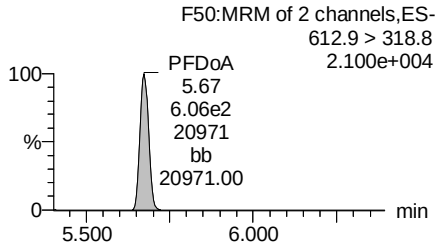
N-EtFOSAA



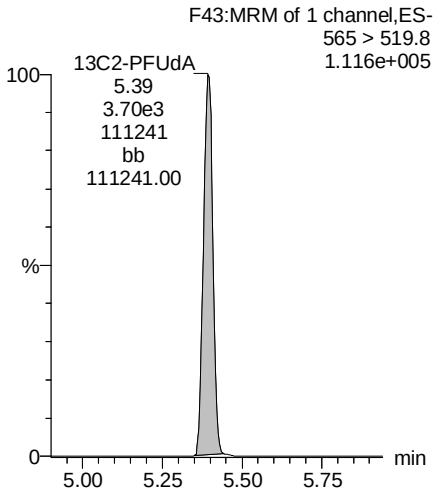


PFDoA

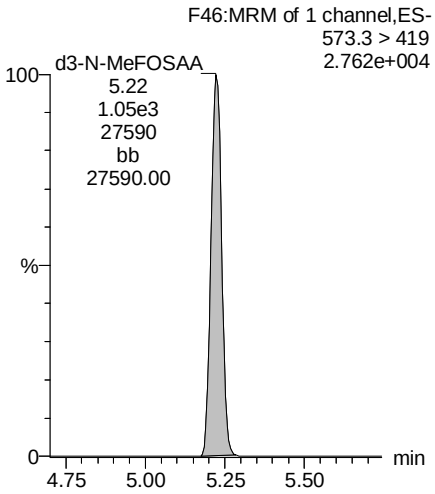




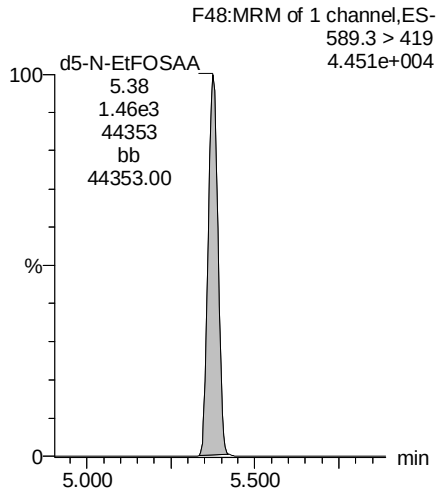
13C2-PFUdA



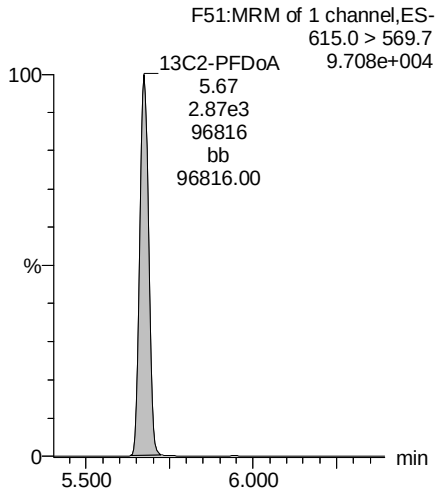
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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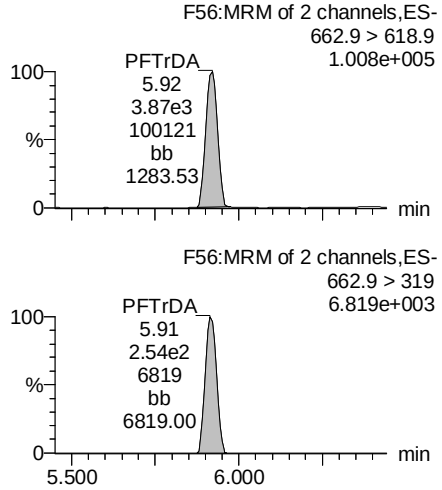
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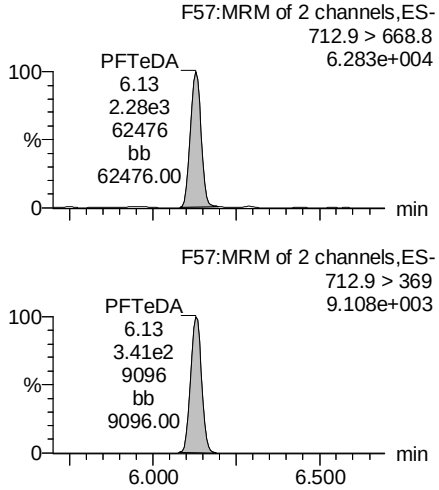
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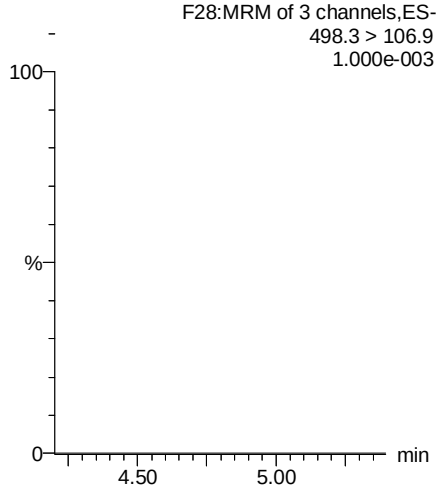
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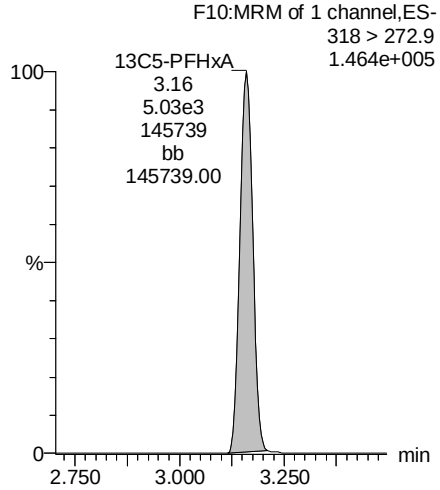
PFTeDA



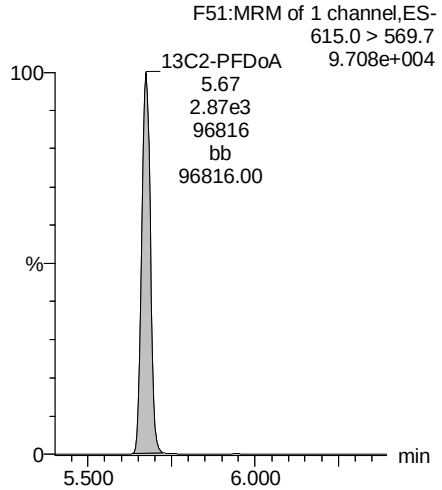
TCDA



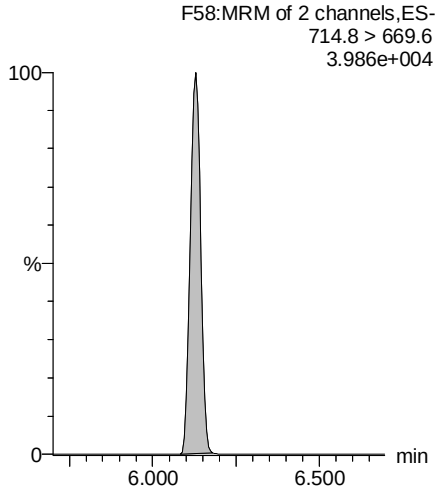
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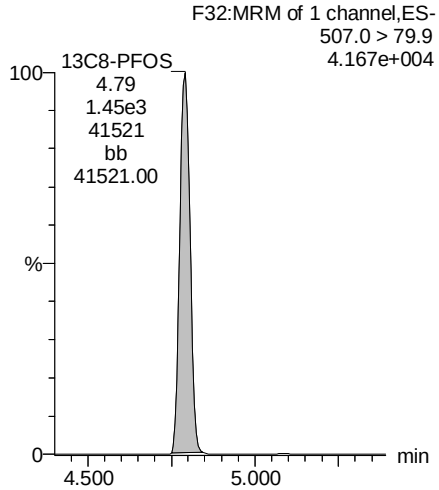
13C2-PFDoA



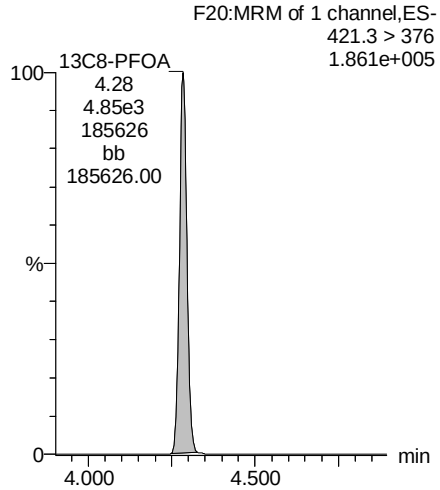
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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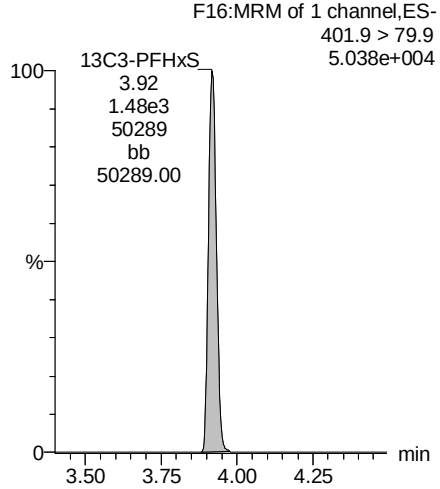
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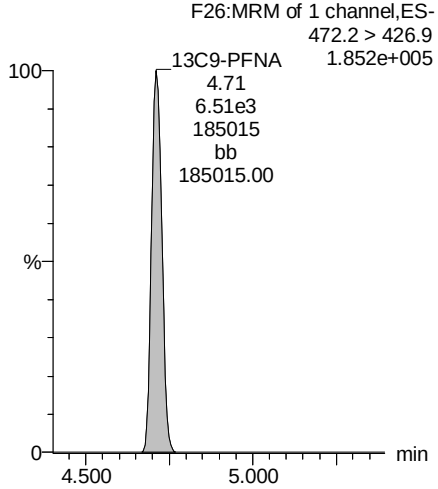
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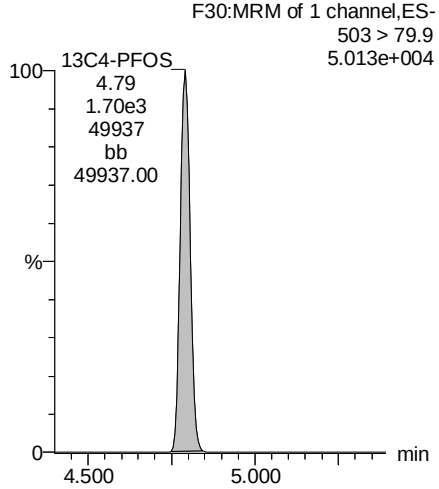
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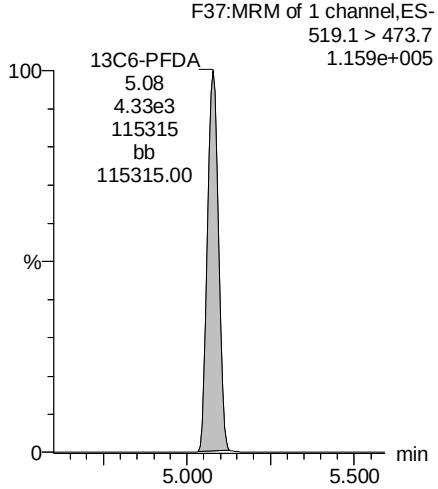
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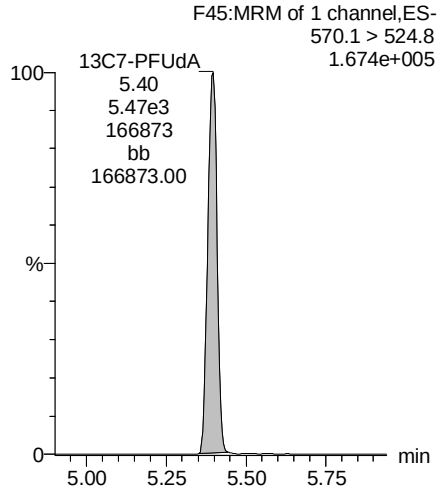
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/15/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_19.qld

Last Altered: Monday, January 15, 2018 10:22:08 Pacific Standard Time
Printed: Monday, January 15, 2018 10:25:37 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_19, Date: 12-Jan-2018, Time: 17:03:12, ID: 1701970-01 FT-PZ458S-20171214 0.25998, Description: FT-PZ458S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	5.98e1	1.16e3	0.260		2.66	2.59	0.642	1.3303	
2	4	PFHxA	313.2 > 268.9	4.98e2	2.72e3	0.260		3.15	3.09	0.915	1.8985	
3	5	PFHpA	363.0 > 318.9	5.00e2	6.99e3	0.260		3.78	3.71	0.895	2.5825	
4	6	L-PFHxS	398.9 > 79.6	3.56e2	9.88e2	0.260		3.94	3.86	4.51	9.7217	
5	9	L-PFOA	413 > 368.7	1.87e3	8.36e3	0.260		4.31	4.23	2.79	9.5457	
6	12	PFNA	463.0 > 418.8	9.95e3	8.36e3	0.260		4.81	4.66	14.9	44.7338	
7	14	L-PFOS	499 > 79.9	2.77e2	2.65e3	0.260		4.75	4.74	1.31	4.5305	
8	16	PFDA	513 > 468.8		7.76e3	0.260		5.18				
9	18	N-MeFOSAA	570.1 > 419		3.36e3	0.260		5.32				
10	19	N-EtFOSAA	584.2 > 419		3.57e3	0.260		5.48				
11	20	PFUdA	563.0 > 518.9		7.11e3	0.260		5.50				
12	22	PFDoA	612.9 > 569.0		3.62e3	0.260		5.77				

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Rev'd: MM 1/15/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_19.qld

Last Altered: Monday, January 15, 2018 10:22:08 Pacific Standard Time
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Name: 180112M3_19, Date: 12-Jan-2018, Time: 17:03:12, ID: 1701970-01 FT-PZ458S-20171214 0.25998, Description: FT-PZ458S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.62e3	0.260		6.00				
2	25	PFTeDA	712.9 > 668.8		1.70e3	0.260		6.22				
3	33	13C3-PFBS	302. > 98.8	1.16e3	1.22e4	0.260	0.112	2.77	2.59	1.19	41.0722	85.4
4	34	13C2-PFHxA	315 > 269.8	2.72e3	1.22e4	0.260	0.691	3.15	3.09	2.79	15.5225	80.7
5	35	13C4-PFHpA	367.2 > 321.8	6.99e3	1.22e4	0.260	0.708	3.78	3.71	7.16	38.8786	80.9
6	36	18O2-PFHxS	403.0 > 102.6	9.88e2	3.44e3	0.260	0.353	3.94	3.86	3.60	39.2032	81.5
7	37	13C2-6:2 FTS	429.1 > 408.9	2.19e3	1.02e4	0.260	0.285	4.25	4.17	2.69	36.3302	75.6
8	38	13C2-PFOA	414.9 > 369.7	8.36e3	1.02e4	0.260	1.049	4.31	4.22	10.3	37.6666	78.3
9	39	13C5-PFNA	468.2 > 422.9	8.36e3	1.04e4	0.260	0.910	4.81	4.66	10.1	42.5923	88.6
10	40	13C8-PFOSA	506.1 > 77.7	1.91e3	9.49e3	0.260	0.252	4.87	4.72	2.52	38.4842	80.0
11	41	13C8-PFOS	507.0 > 79.9	2.65e3	3.45e3	0.260	0.987	4.89	4.74	9.61	37.4224	77.8
12	42	13C2-PFDA	515.1 > 469.9	7.76e3	8.12e3	0.260	1.311	5.18	5.03	11.9	35.0480	72.9
13	43	13C2-8:2 FTS	529.1 > 508.7	1.03e3	1.22e4	0.260	0.141	5.15	5.00	1.05	28.6931	59.7
14	44	d3-N-MeFOSAA	573.3 > 419	3.36e3	9.49e3	0.260	0.385	5.32	5.18	4.43	44.2419	92.0
15	45	d5-N-EtFOSAA	589.3 > 419	3.57e3	9.49e3	0.260	0.445	5.47	5.33	4.71	40.6769	84.6
16	46	13C2-PFUdA	565 > 519.8	7.11e3	9.49e3	0.260	1.014	5.49	5.36	9.36	35.5033	73.8
17	47	13C2-PFDoA	615.0 > 569.7	3.62e3	9.49e3	0.260	0.575	5.77	5.64	4.76	31.8482	66.2
18	49	13C2-PFTeDA	714.8 > 669.6	1.70e3	9.49e3	0.260	0.305	6.22	6.10	2.24	28.2066	58.7
19	55	13C5-PFHxA	318 > 272.9	1.22e4	1.22e4	0.260	1.000	3.15	3.09	12.5	48.0806	100.0
20	56	13C3-PFHxS	401.9 > 79.9	3.44e3	3.44e3	0.260	1.000	4.02	3.86	12.5	48.0806	100.0
21	57	13C8-PFOA	421.3 > 376	1.02e4	1.02e4	0.260	1.000	4.38	4.23	12.5	48.0806	100.0
22	58	13C9-PFNA	472.2 > 426.9	1.04e4	1.04e4	0.260	1.000	4.81	4.66	12.5	48.0806	100.0
23	59	13C4-PFOS	503 > 79.9	3.45e3	3.45e3	0.260	1.000	4.89	4.74	12.5	48.0806	100.0
24	60	13C6-PFDA	519.1 > 473.7	8.12e3	8.12e3	0.260	1.000	5.18	5.03	12.5	48.0806	100.0
25	61	13C7-PFUdA	570.1 > 524.8	9.49e3	9.49e3	0.260	1.000	5.49	5.36	12.5	48.0806	100.0
26	62	Total PFHxS	398.9 > 79.6	3.56e2	9.88e2	0.260		4.14		4.51	9.7217	
27	63	Total PFOA	413 > 368.7	2.07e3	8.36e3	0.260		4.51		3.09	10.3903	
28	64	Total PFOS	499 > 79.9	2.77e2	2.65e3	0.260		4.75		1.31	4.5305	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.36e3	0.260		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	3.57e3	0.260		5.61		0.000		

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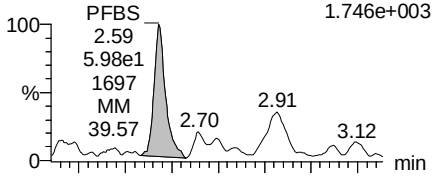
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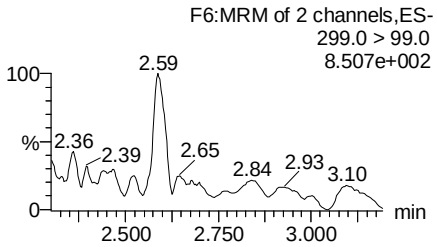
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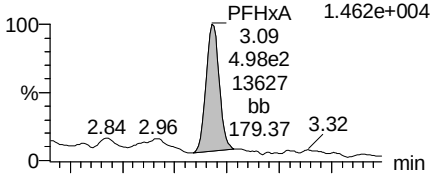
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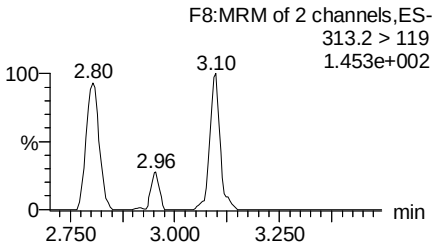
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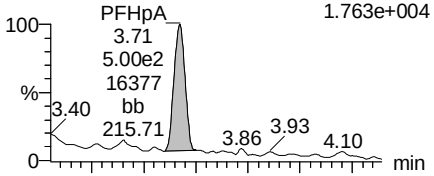


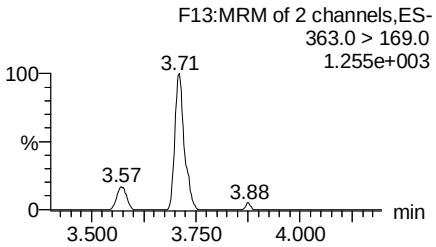
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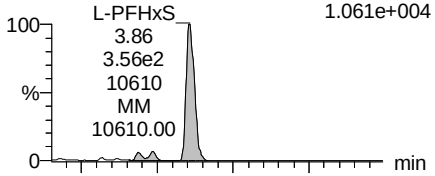


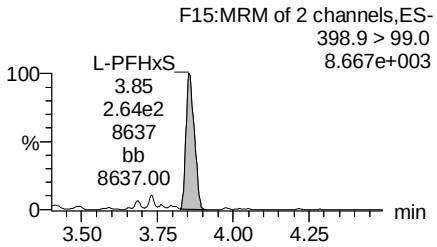
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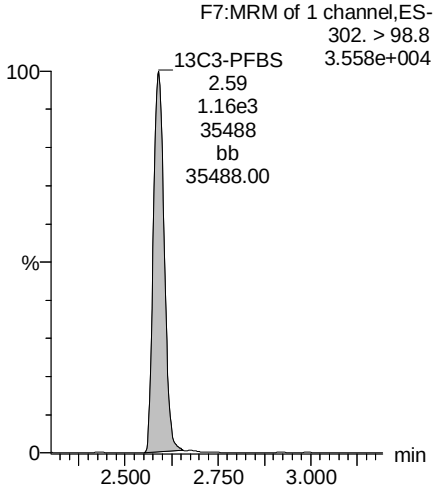


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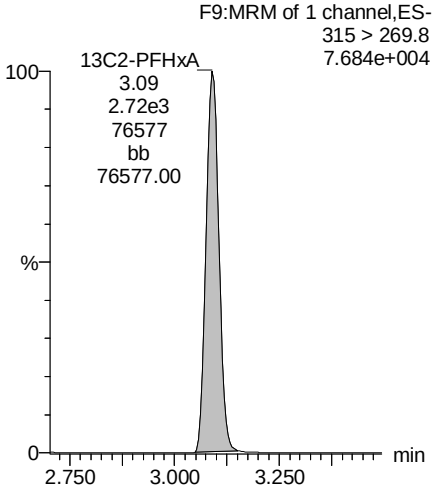




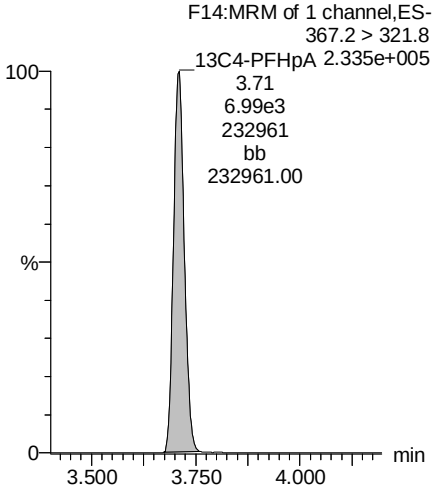
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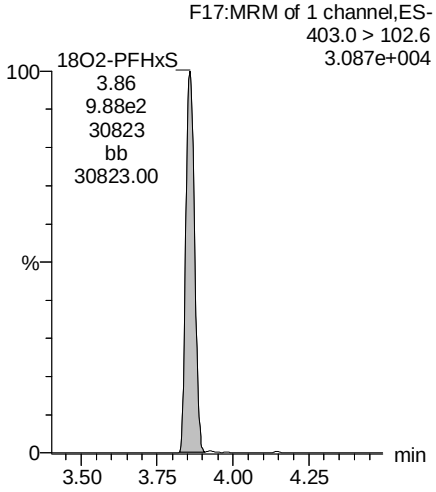
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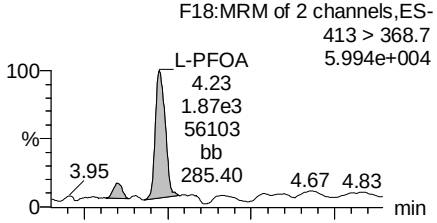
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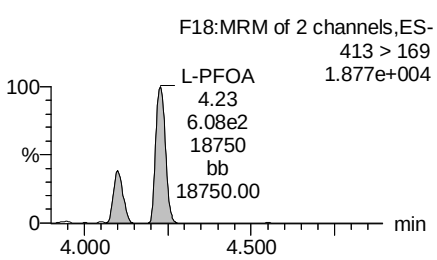
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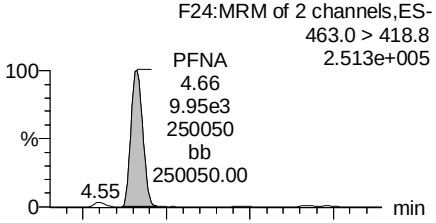
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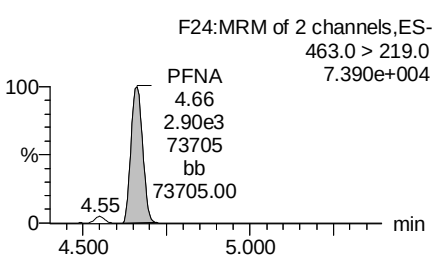
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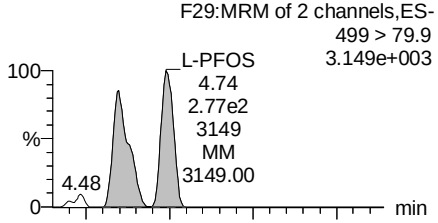


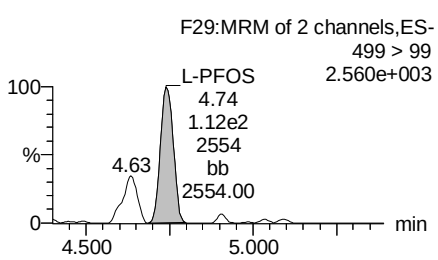
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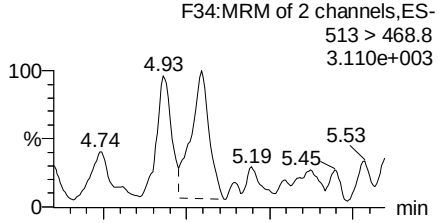


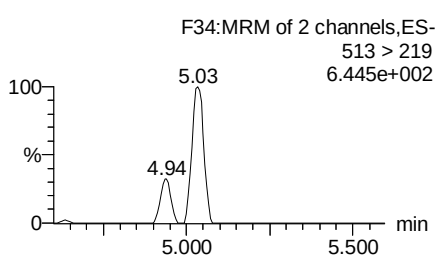
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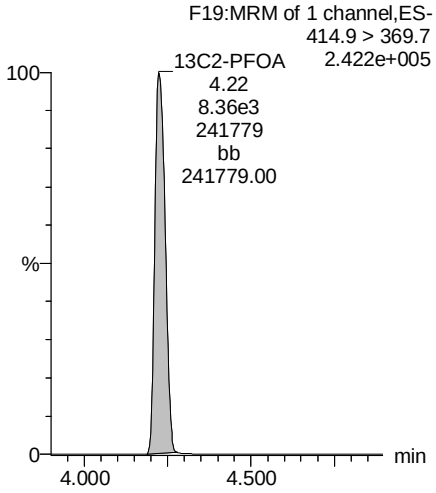


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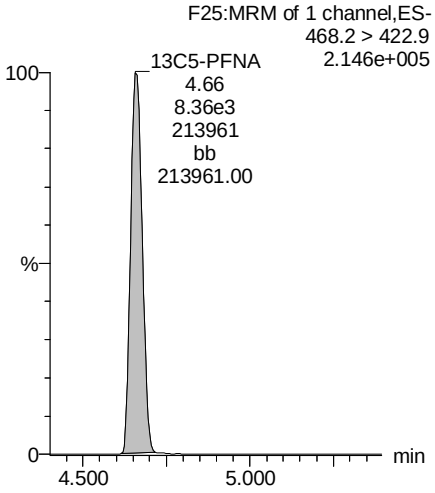




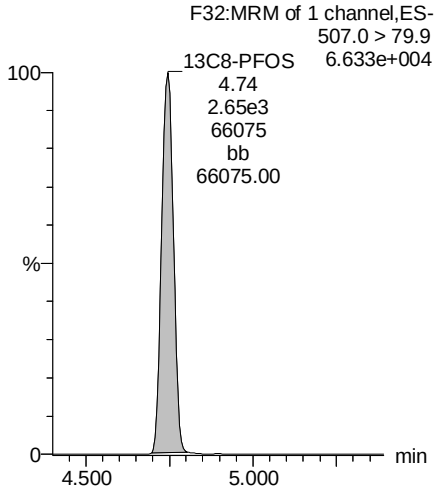
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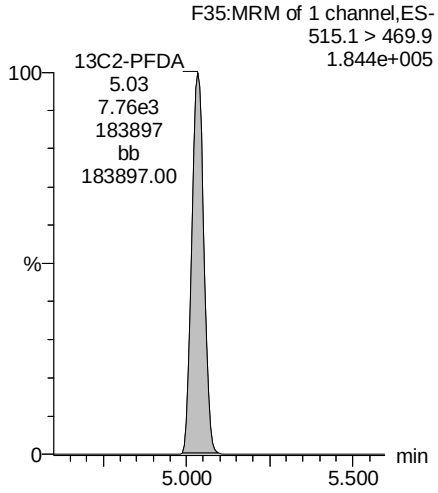
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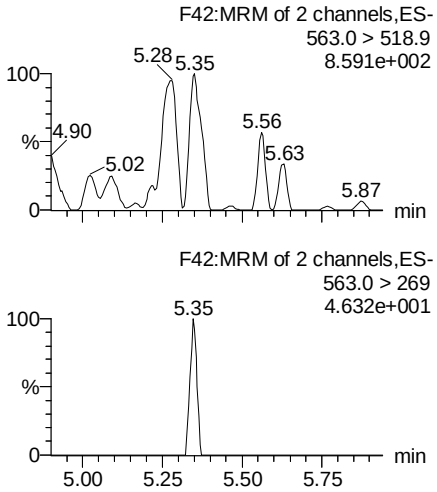
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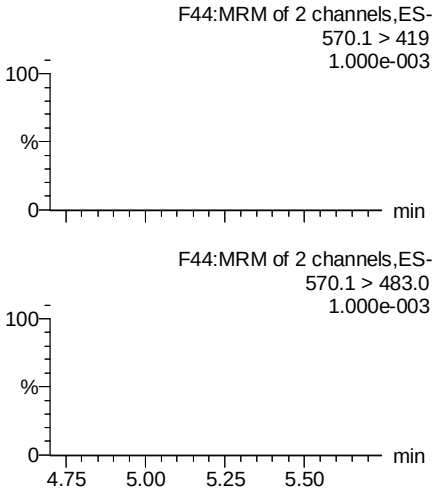
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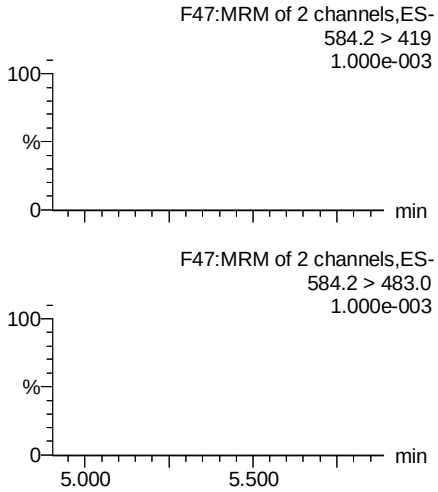
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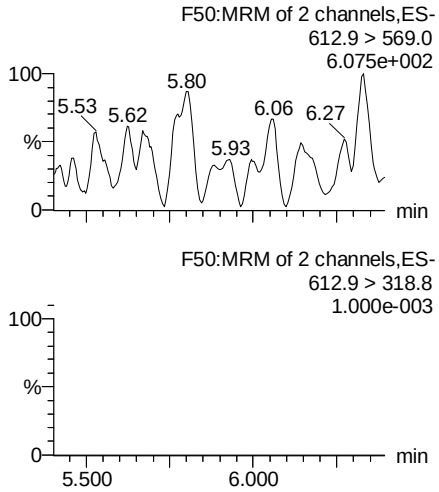
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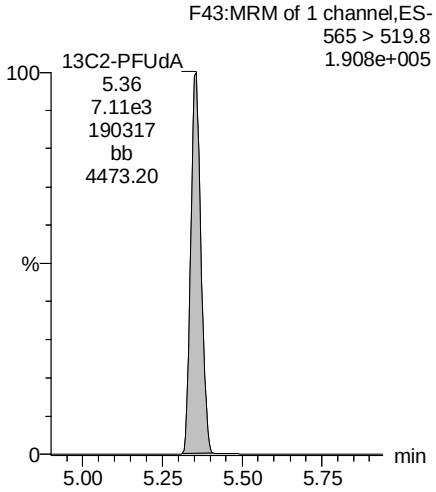
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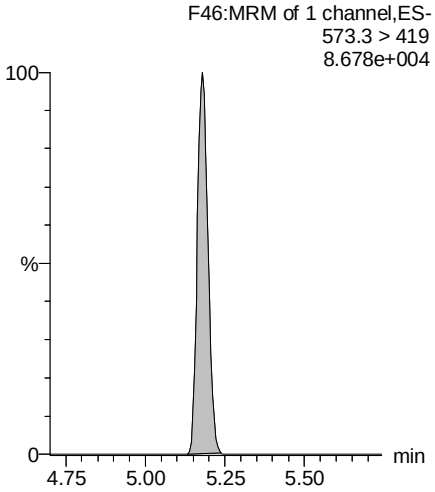
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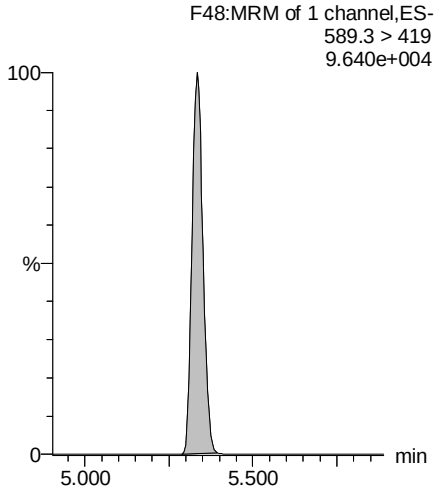
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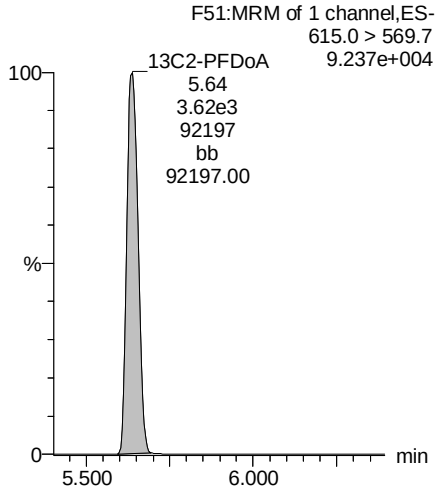
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d5-N-EtFOSAA



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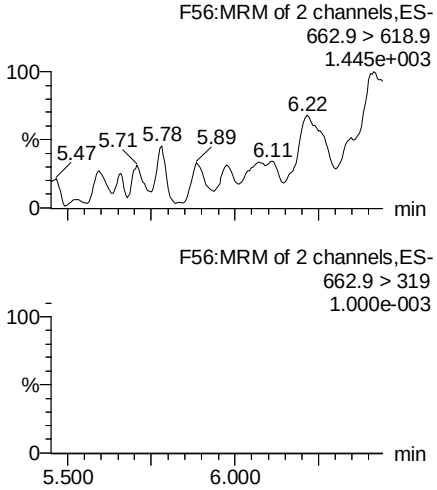
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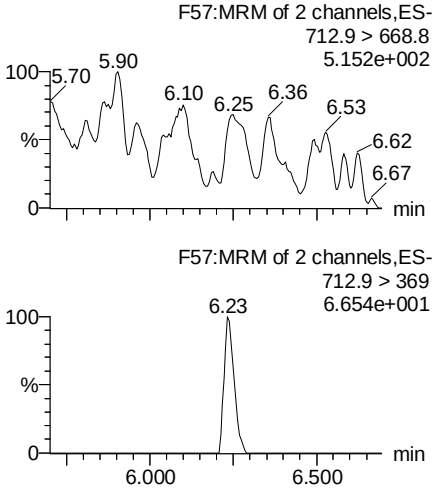
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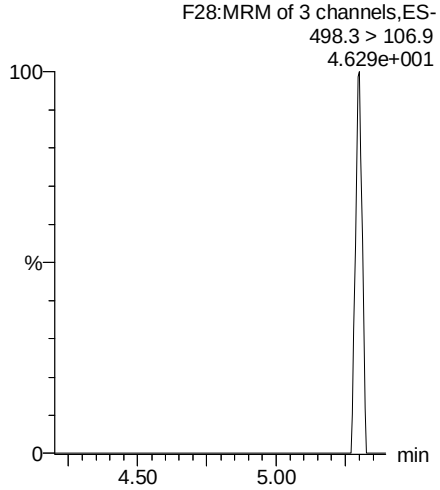
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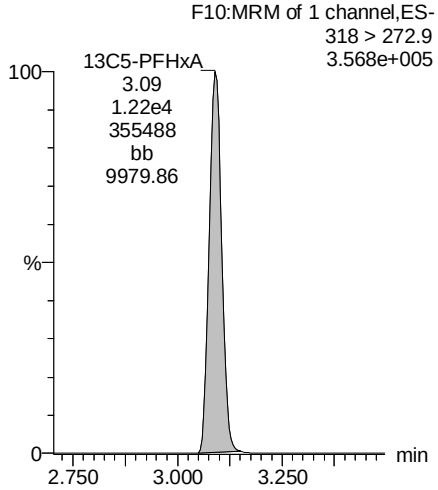
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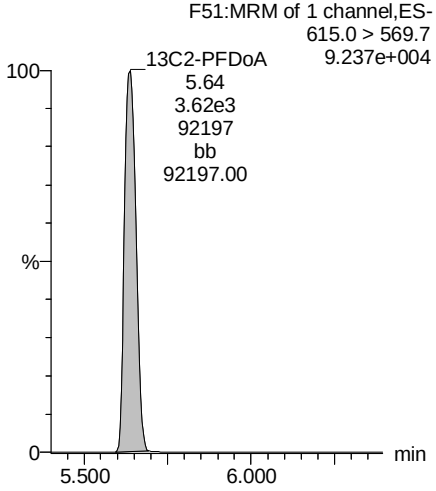
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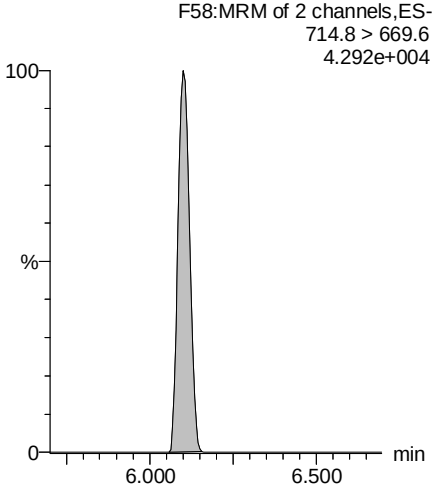
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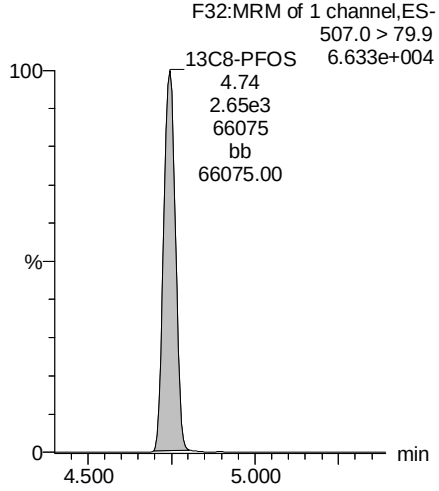
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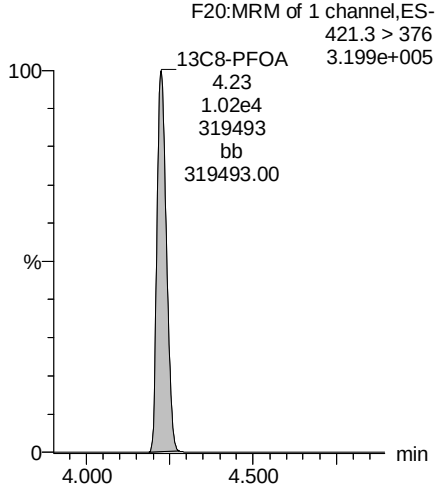
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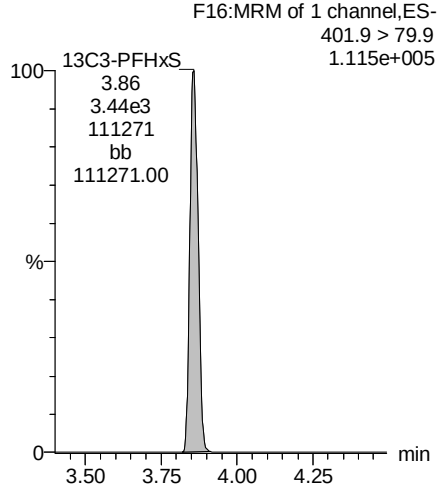
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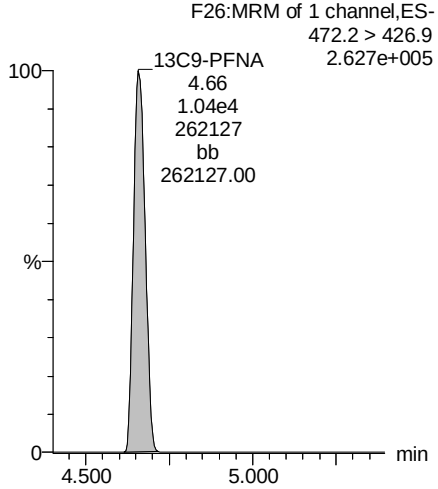
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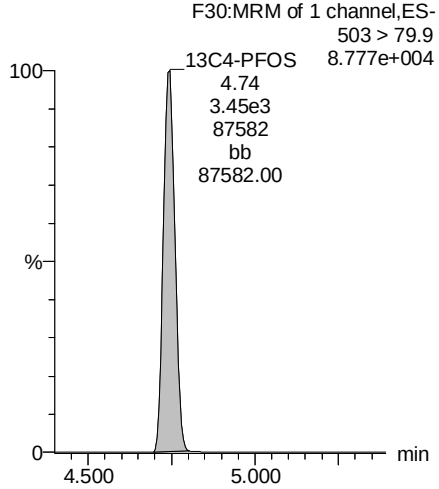
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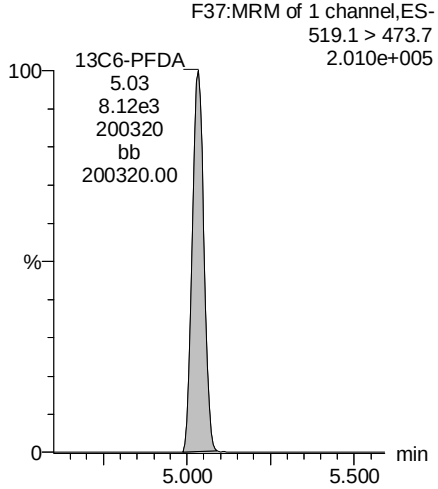
13C9-PFNA



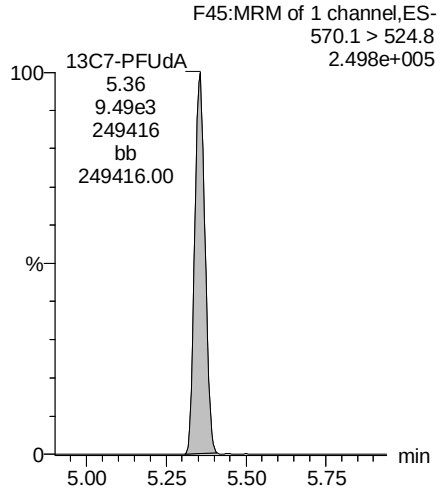
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/15/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_20.qld

Last Altered: Monday, January 15, 2018 10:39:11 Pacific Standard Time
Printed: Monday, January 15, 2018 10:41:52 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_20, Date: 12-Jan-2018, Time: 17:15:53, ID: 1701970-02 FT-PZ458I-20171214 0.25291, Description: FT-PZ458I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	6.53e1	1.21e3	0.253		2.66	2.59	0.677	1.4422	
2	4	PFHxA	313.2 > 268.9	1.10e4	2.45e3	0.253		3.15	3.09	22.6	53.8704	
3	5	PFHpA	363.0 > 318.9	4.86e3	6.69e3	0.253		3.78	3.71	9.08	28.0077	
4	6	L-PFHxS	398.9 > 79.6	4.09e2	9.95e2	0.253		3.94	3.86	5.13	11.3853	
5	9	L-PFOA	413 > 368.7	6.65e3	8.79e3	0.253		4.31	4.22	9.46	33.8395	
6	12	PFNA	463.0 > 418.8	1.11e5	7.79e3	0.253		4.81	4.66	178	569.0518	
7	14	L-PFOS	499 > 79.9	1.09e3	2.75e3	0.253		4.75	4.60	4.97	16.7752	
8	16	PFDA	513 > 468.8	2.25e3	7.67e3	0.253		5.18	5.04	3.67	10.0496	
9	18	N-MeFOSAA	570.1 > 419		2.97e3	0.253		5.32				
10	19	N-EtFOSAA	584.2 > 419		4.03e3	0.253		5.48				
11	20	PFUdA	563.0 > 518.9		7.35e3	0.253		5.50				
12	22	PFDoA	612.9 > 569.0		4.49e3	0.253		5.77				

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Rev'd: MM 1/15/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_20.qld

Last Altered: Monday, January 15, 2018 10:39:11 Pacific Standard Time
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Name: 180112M3_20, Date: 12-Jan-2018, Time: 17:15:53, ID: 1701970-02 FT-PZ458I-20171214 0.25291, Description: FT-PZ458I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		4.49e3	0.253		6.00				
2	25	PFTeDA	712.9 > 668.8		2.08e3	0.253		6.22				
3	33	13C3-PFBS	302. > 98.8	1.21e3	1.01e4	0.253	0.112	2.77	2.59	1.49	52.7936	106.8
4	34	13C2-PFHxA	315 > 269.8	2.45e3	1.01e4	0.253	0.691	3.15	3.09	3.03	17.3220	87.6
5	35	13C4-PFHpA	367.2 > 321.8	6.69e3	1.01e4	0.253	0.708	3.78	3.70	8.28	46.2005	93.5
6	36	18O2-PFHxS	403.0 > 102.6	9.95e2	2.99e3	0.253	0.353	3.94	3.86	4.16	46.6077	94.3
7	37	13C2-6:2 FTS	429.1 > 408.9	2.16e3	1.14e4	0.253	0.285	4.25	4.17	2.36	32.8217	66.4
8	38	13C2-PFOA	414.9 > 369.7	8.79e3	1.14e4	0.253	1.049	4.31	4.23	9.62	36.2537	73.4
9	39	13C5-PFNA	468.2 > 422.9	7.79e3	8.86e3	0.253	0.910	4.81	4.66	11.0	47.7867	96.7
10	40	13C8-PFOSA	506.1 > 77.7	1.56e3	7.69e3	0.253	0.252	4.87	4.72	2.54	39.9307	80.8
11	41	13C8-PFOS	507.0 > 79.9	2.75e3	3.08e3	0.253	0.987	4.89	4.74	11.2	44.6909	90.4
12	42	13C2-PFDA	515.1 > 469.9	7.67e3	6.93e3	0.253	1.311	5.18	5.03	13.8	41.7655	84.5
13	43	13C2-8:2 FTS	529.1 > 508.7	8.28e2	1.01e4	0.253	0.141	5.15	5.00	1.02	28.6316	57.9
14	44	d3-N-MeFOSAA	573.3 > 419	2.97e3	7.69e3	0.253	0.385	5.32	5.18	4.83	49.6681	100.5
15	45	d5-N-EtFOSAA	589.3 > 419	4.03e3	7.69e3	0.253	0.445	5.47	5.34	6.55	58.1620	117.7
16	46	13C2-PFUdA	565 > 519.8	7.35e3	7.69e3	0.253	1.014	5.49	5.36	11.9	46.5555	94.2
17	47	13C2-PFDoA	615.0 > 569.7	4.49e3	7.69e3	0.253	0.575	5.77	5.64	7.30	50.1676	101.5
18	49	13C2-PFTeDA	714.8 > 669.6	2.08e3	7.69e3	0.253	0.305	6.22	6.10	3.37	43.6951	88.4
19	55	13C5-PFHxA	318 > 272.9	1.01e4	1.01e4	0.253	1.000	3.15	3.09	12.5	49.4247	100.0
20	56	13C3-PFHxS	401.9 > 79.9	2.99e3	2.99e3	0.253	1.000	4.02	3.85	12.5	49.4247	100.0
21	57	13C8-PFOA	421.3 > 376	1.14e4	1.14e4	0.253	1.000	4.38	4.23	12.5	49.4247	100.0
22	58	13C9-PFNA	472.2 > 426.9	8.86e3	8.86e3	0.253	1.000	4.81	4.66	12.5	49.4247	100.0
23	59	13C4-PFOS	503 > 79.9	3.08e3	3.08e3	0.253	1.000	4.89	4.75	12.5	49.4247	100.0
24	60	13C6-PFDA	519.1 > 473.7	6.93e3	6.93e3	0.253	1.000	5.18	5.04	12.5	49.4247	100.0
25	61	13C7-PFUdA	570.1 > 524.8	7.69e3	7.69e3	0.253	1.000	5.49	5.36	12.5	49.4247	100.0
26	62	Total PFHxS	398.9 > 79.6	4.09e2	9.95e2	0.253		4.14		5.13	11.3853	
27	63	Total PFOA	413 > 368.7	6.90e3	8.79e3	0.253		4.51		9.82	34.9265	
28	64	Total PFOS	499 > 79.9	1.09e3	2.75e3	0.253		4.75		4.97	16.7752	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	2.97e3	0.253		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	4.03e3	0.253		5.61		0.000		

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Rev'd: MM 1/15/18

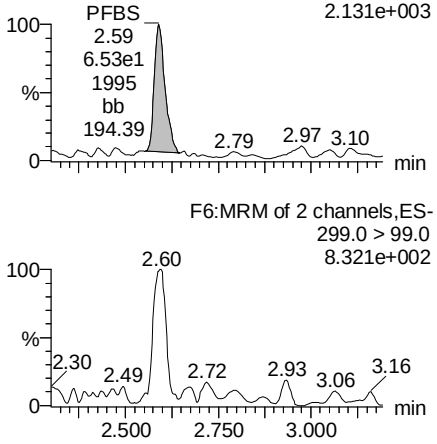
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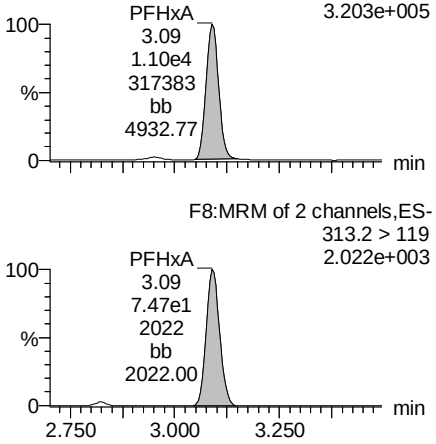
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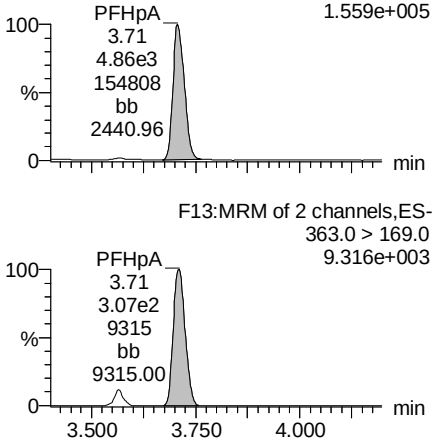
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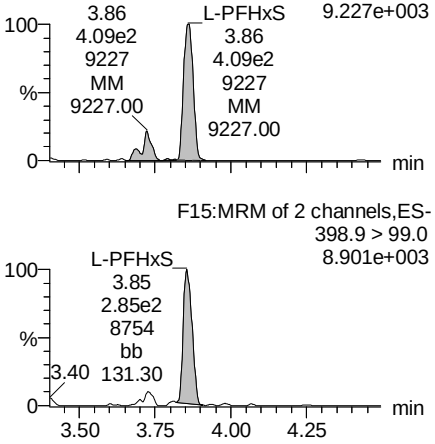
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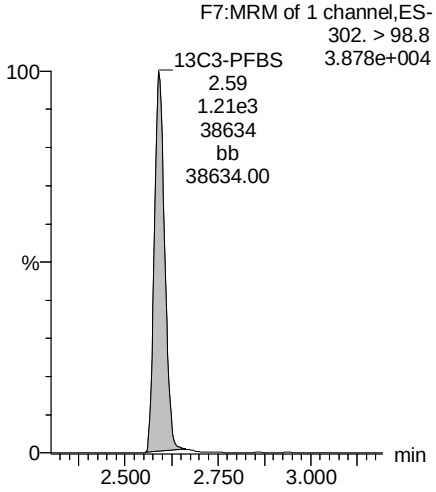
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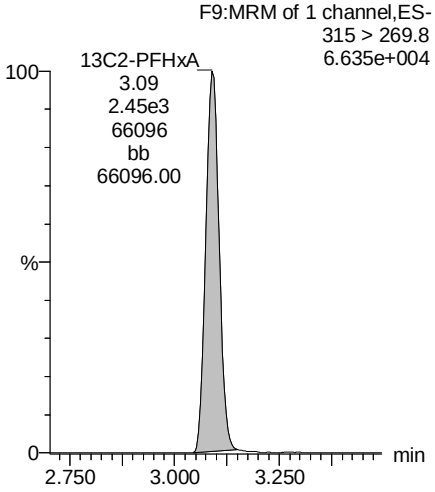
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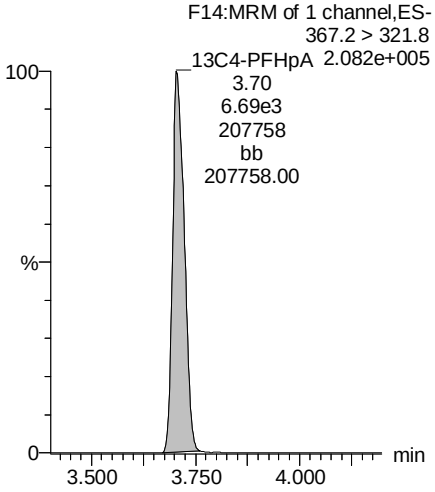
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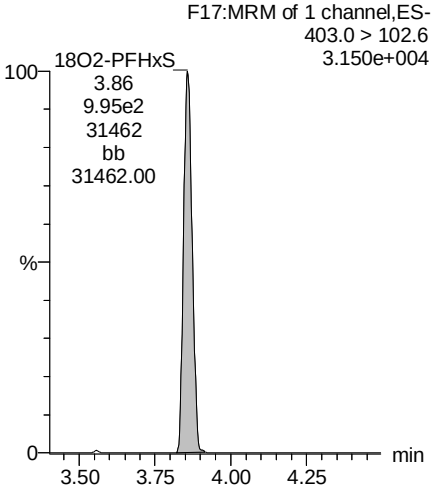
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13C4-PFHpA



18O2-PFHxS



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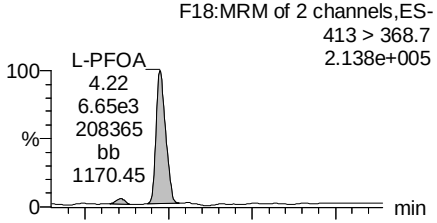
Rev'd: MM 1/15/18

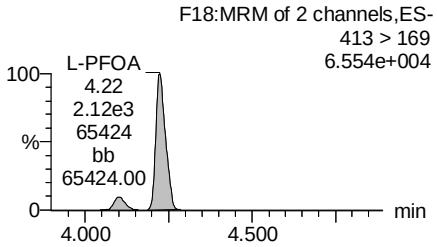
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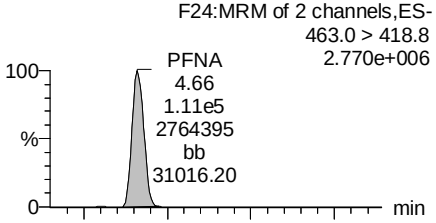
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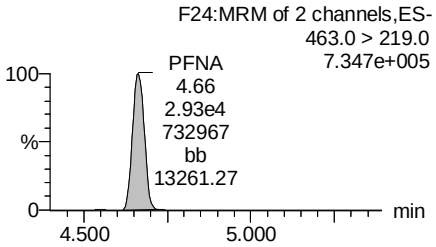
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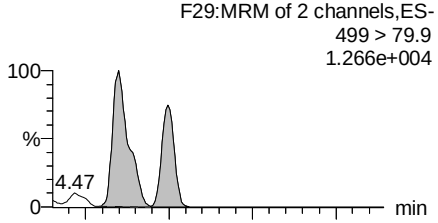


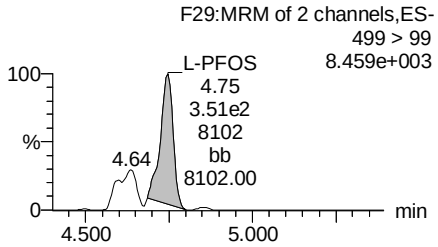
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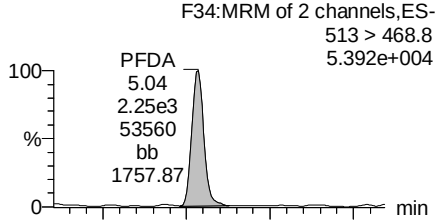


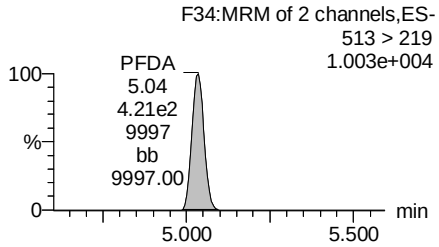
Total PFOS



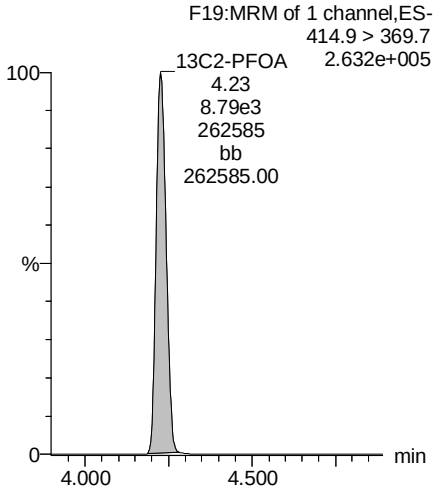


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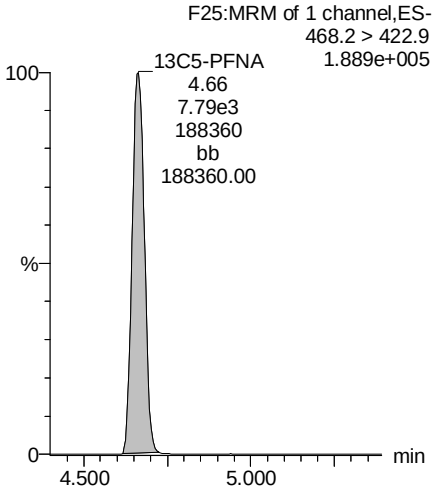




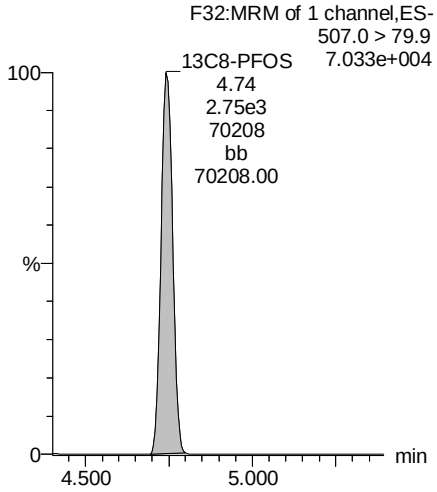
13C2-PFOA



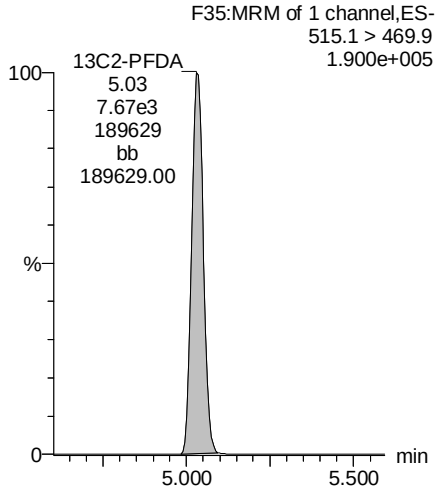
13C5-PFNA



13C8-PFOS



13C2-PFDA



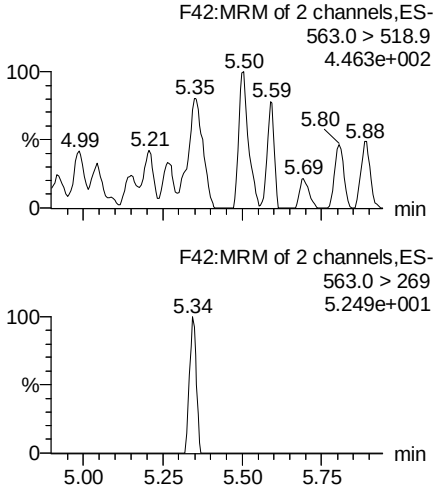
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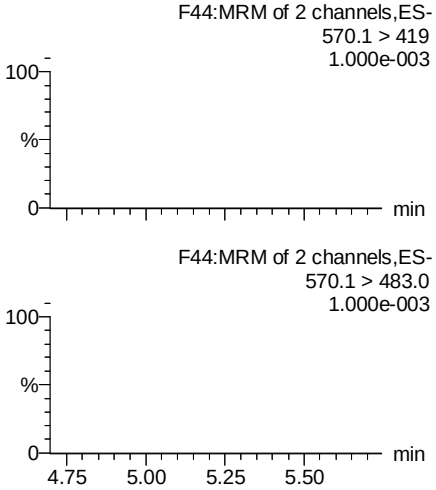
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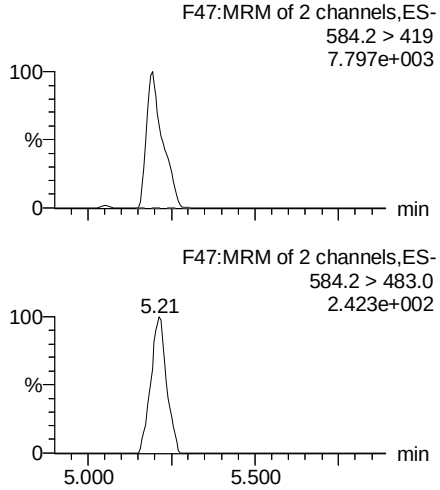
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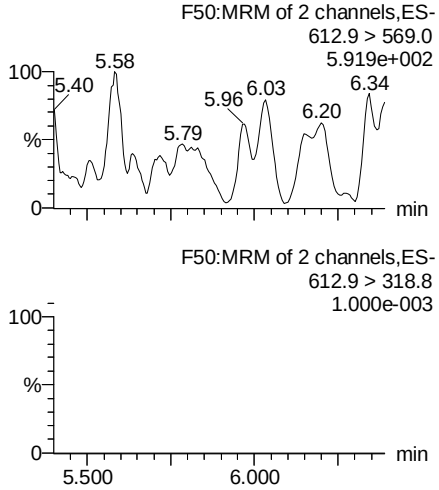
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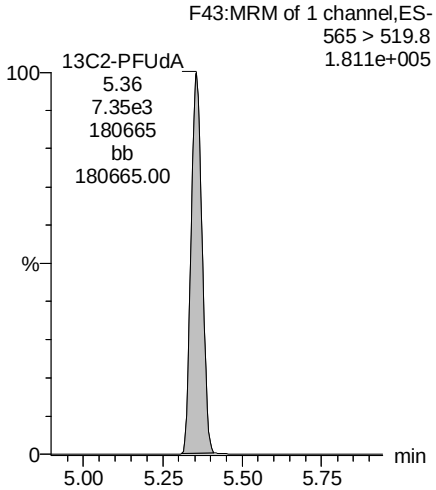
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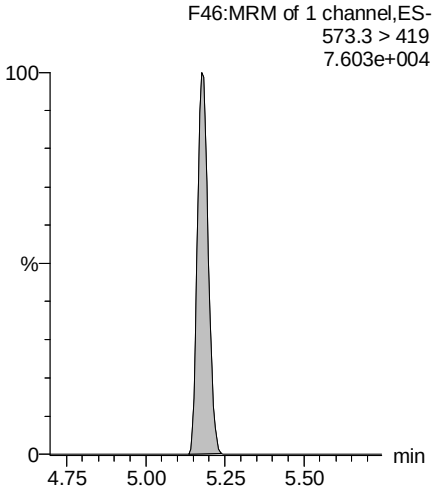
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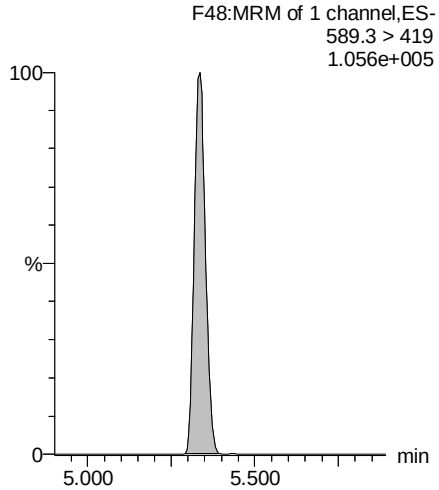
13C2-PFUdA



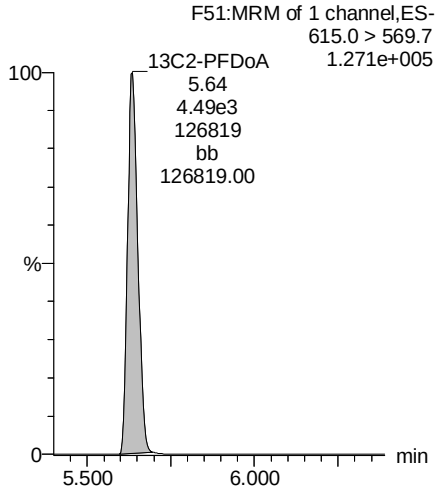
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d5-N-EtFOSAA



13C2-PFDoA



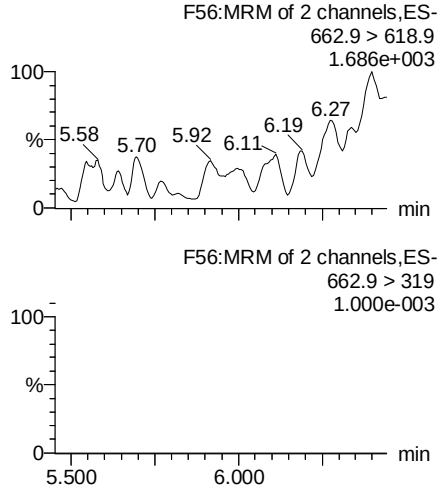
ANP 1/15/2018

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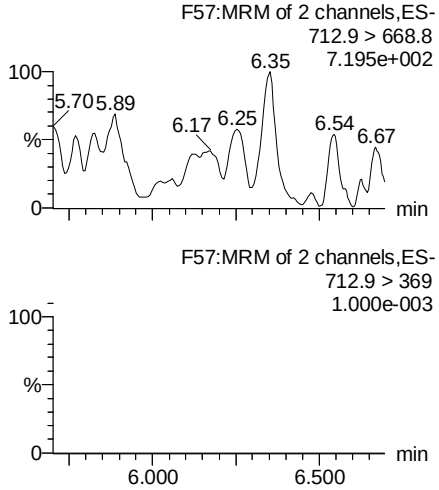
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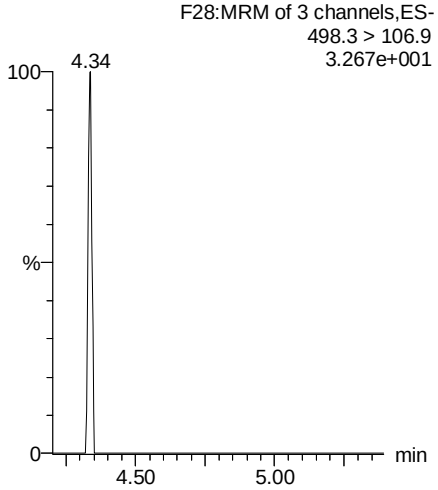
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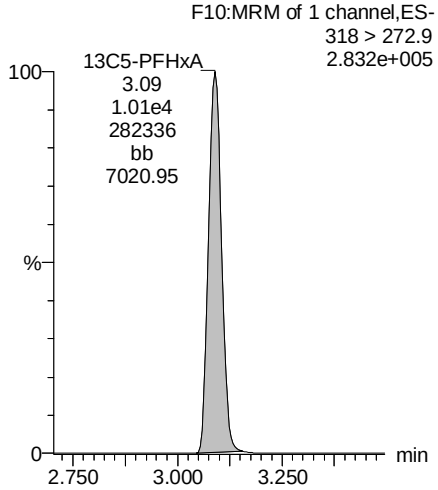
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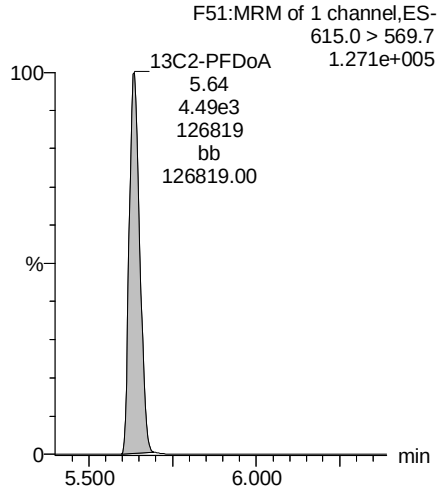
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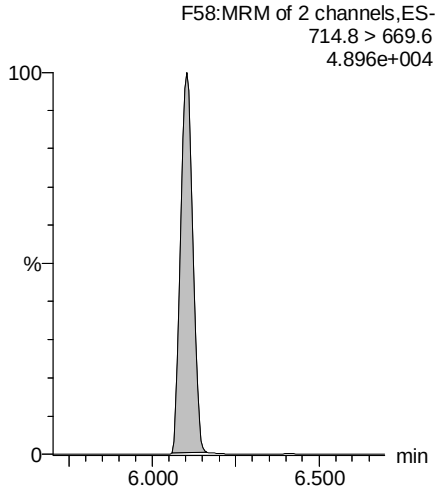
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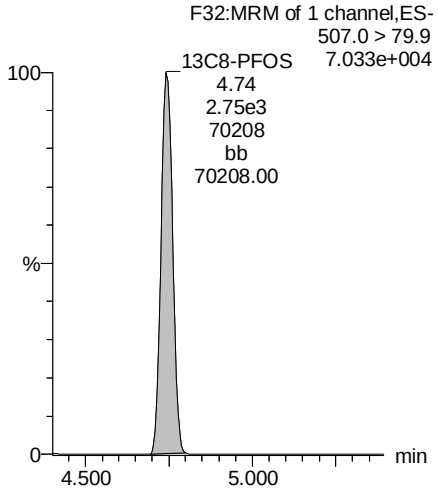
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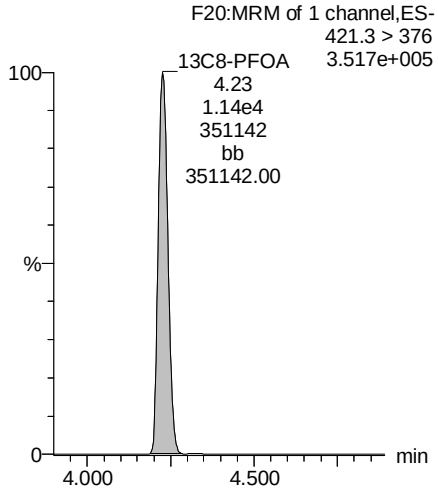
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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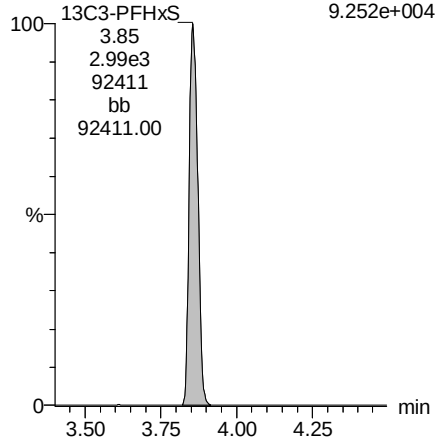
Rev'd: MM 1/15/18

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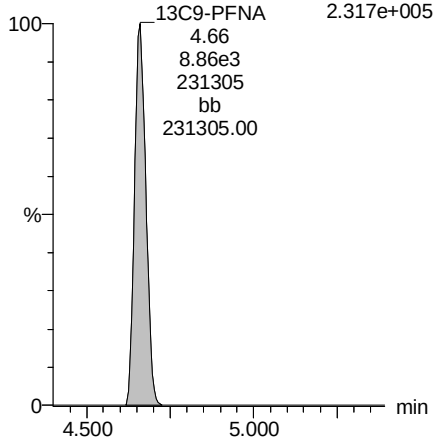
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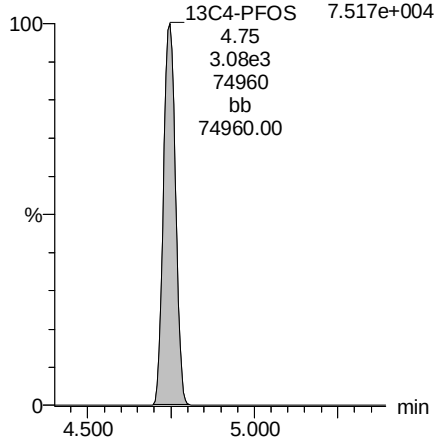
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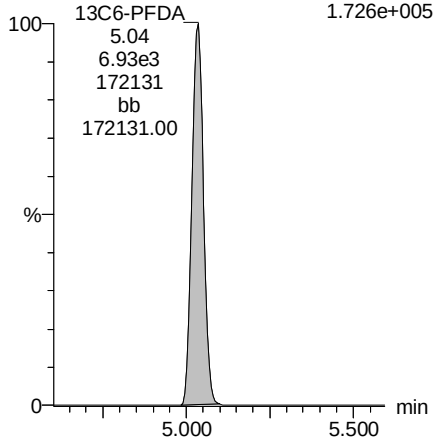
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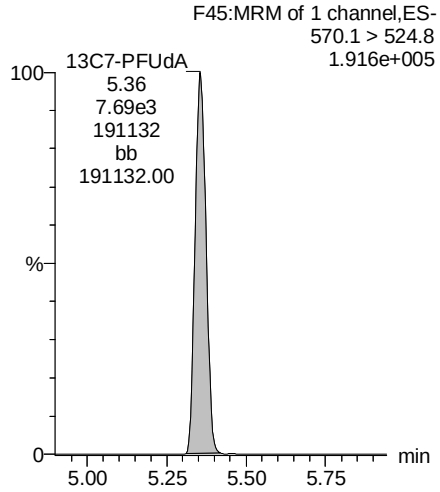
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_21.qld

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_21, Date: 12-Jan-2018, Time: 17:27:26, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	6.51e1	1.33e3	0.258		2.66	2.60	0.610	1.2740	
2	4	PFHxA	313.2 > 268.9	1.54e4	2.87e3	0.258		3.15	3.09	26.9	63.0378	
3	5	PFHpA	363.0 > 318.9	7.90e3	7.14e3	0.258		3.78	3.71	13.8	41.9638	
4	6	L-PFHxS	398.9 > 79.6	2.66e2	9.76e2	0.258		3.94	3.86	3.40	7.4157	
5	9	L-PFOA	413 > 368.7	1.31e4	1.01e4	0.258		4.31	4.23	16.3	57.4037	
6	12	PFNA	463.0 > 418.8	2.68e5	9.36e3	0.258		4.81	4.66	358	1175.5560E	
7	14	L-PFOS	499 > 79.9	3.39e2	2.99e3	0.258		4.75	4.75	1.42	4.9295	
8	16	PFDA	513 > 468.8	1.54e3	7.82e3	0.258		5.18	5.03	2.46	6.5874	
9	18	N-MeFOSAA	570.1 > 419		3.41e3	0.258		5.32				
10	19	N-EtFOSAA	584.2 > 419		3.93e3	0.258		5.48				
11	20	PFUdA	563.0 > 518.9	9.10e3	7.71e3	0.258		5.50	5.36	14.7	49.8068	
12	22	PFDoA	612.9 > 569.0		4.26e3	0.258		5.77				

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_21.qld

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Name: 180112M3_21, Date: 12-Jan-2018, Time: 17:27:26, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		4.26e3	0.258		6.00				
2	25	PFTeDA	712.9 > 668.8		2.45e3	0.258		6.22				
3	33	13C3-PFBS	302. > 98.8	1.33e3	1.12e4	0.258	0.112	2.77	2.59	1.49	51.9212	107.0
4	34	13C2-PFHxA	315 > 269.8	2.87e3	1.12e4	0.258	0.691	3.15	3.09	3.21	18.0580	93.0
5	35	13C4-PFHpA	367.2 > 321.8	7.14e3	1.12e4	0.258	0.708	3.78	3.71	7.99	43.8056	90.3
6	36	18O2-PFHxS	403.0 > 102.6	9.76e2	2.98e3	0.258	0.353	3.94	3.86	4.10	45.1086	93.0
7	37	13C2-6:2 FTS	429.1 > 408.9	2.39e3	1.06e4	0.258	0.285	4.25	4.17	2.83	38.5139	79.4
8	38	13C2-PFOA	414.9 > 369.7	1.01e4	1.06e4	0.258	1.049	4.31	4.23	11.9	44.0562	90.8
9	39	13C5-PFNA	468.2 > 422.9	9.36e3	8.95e3	0.258	0.910	4.81	4.66	13.1	55.7147	114.8
10	40	13C8-PFOSA	506.1 > 77.7	1.54e3	8.29e3	0.258	0.252	4.87	4.72	2.31	35.6892	73.6
11	41	13C8-PFOS	507.0 > 79.9	2.99e3	3.12e3	0.258	0.987	4.89	4.74	12.0	47.0937	97.1
12	42	13C2-PFDA	515.1 > 469.9	7.82e3	6.42e3	0.258	1.311	5.18	5.03	15.2	45.1168	93.0
13	43	13C2-8:2 FTS	529.1 > 508.7	8.52e2	1.12e4	0.258	0.141	5.15	5.01	0.953	26.1680	53.9
14	44	d3-N-MeFOSAA	573.3 > 419	3.41e3	8.29e3	0.258	0.385	5.32	5.18	5.14	51.8485	106.9
15	45	d5-N-EtFOSAA	589.3 > 419	3.93e3	8.29e3	0.258	0.445	5.47	5.33	5.92	51.5787	106.3
16	46	13C2-PFUdA	565 > 519.8	7.71e3	8.29e3	0.258	1.014	5.49	5.36	11.6	44.4780	91.7
17	47	13C2-PFDoA	615.0 > 569.7	4.26e3	8.29e3	0.258	0.575	5.77	5.63	6.41	43.2933	89.2
18	49	13C2-PFTeDA	714.8 > 669.6	2.45e3	8.29e3	0.258	0.305	6.22	6.10	3.70	46.9724	96.8
19	55	13C5-PFHxA	318 > 272.9	1.12e4	1.12e4	0.258	1.000	3.15	3.09	12.5	48.5173	100.0
20	56	13C3-PFHxS	401.9 > 79.9	2.98e3	2.98e3	0.258	1.000	4.02	3.86	12.5	48.5173	100.0
21	57	13C8-PFOA	421.3 > 376	1.06e4	1.06e4	0.258	1.000	4.38	4.23	12.5	48.5173	100.0
22	58	13C9-PFNA	472.2 > 426.9	8.95e3	8.95e3	0.258	1.000	4.81	4.66	12.5	48.5173	100.0
23	59	13C4-PFOS	503 > 79.9	3.12e3	3.12e3	0.258	1.000	4.89	4.74	12.5	48.5173	100.0
24	60	13C6-PFDA	519.1 > 473.7	6.42e3	6.42e3	0.258	1.000	5.18	5.03	12.5	48.5173	100.0
25	61	13C7-PFUdA	570.1 > 524.8	8.29e3	8.29e3	0.258	1.000	5.49	5.35	12.5	48.5173	100.0
26	62	Total PFHxS	398.9 > 79.6	2.66e2	9.76e2	0.258		4.14		3.40	7.4157	
27	63	Total PFOA	413 > 368.7	1.37e4	1.01e4	0.258		4.51		17.0	59.7584	
28	64	Total PFOS	499 > 79.9	3.39e2	2.99e3	0.258		4.75		1.42	4.9295	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.41e3	0.258		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	3.93e3	0.258		5.61		0.000		

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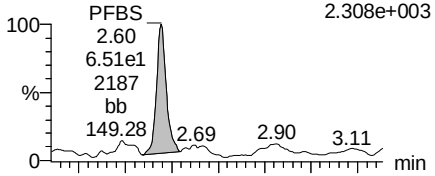
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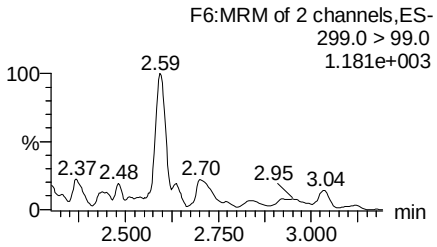
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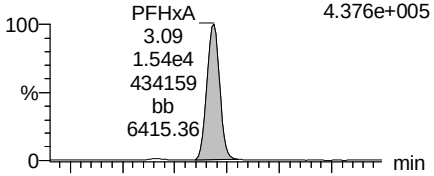
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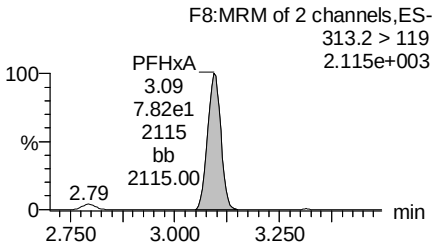
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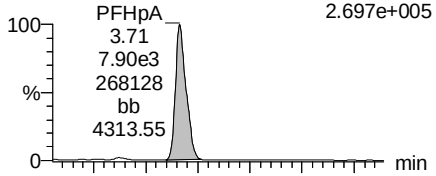


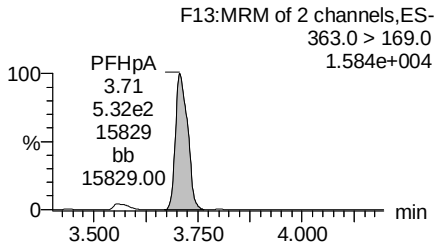
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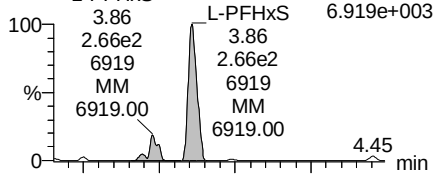


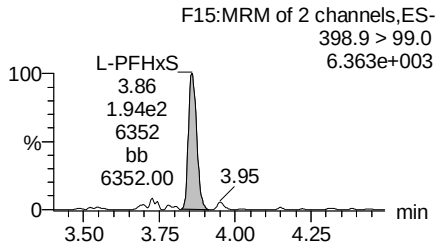
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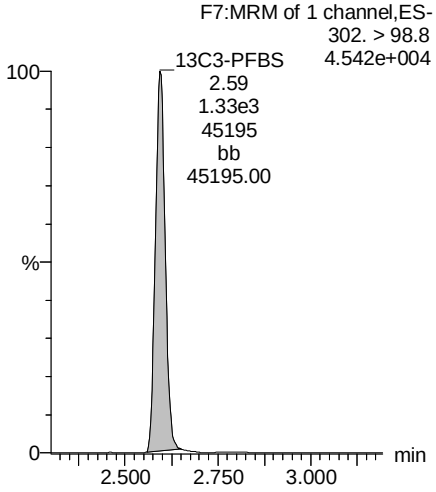


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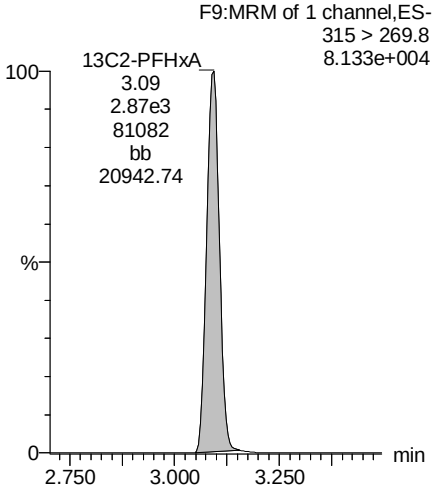




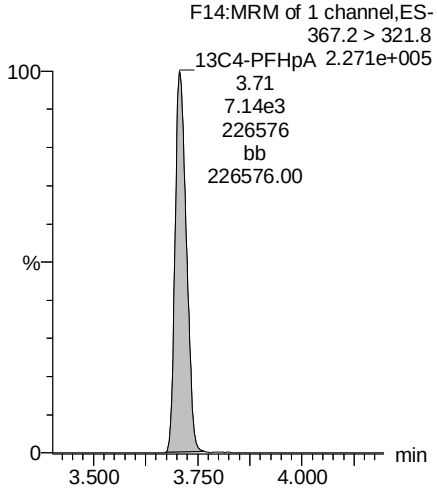
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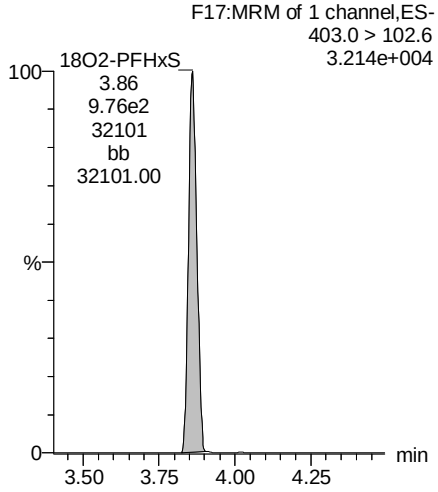
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



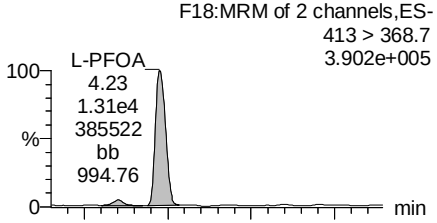
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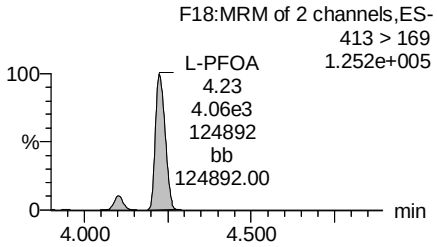
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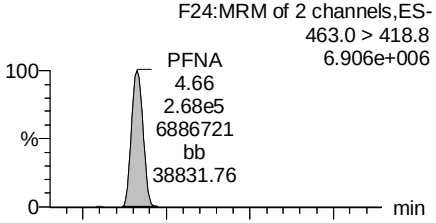
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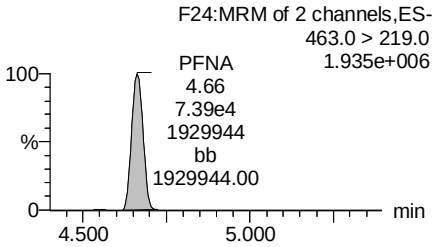
Total PFOA



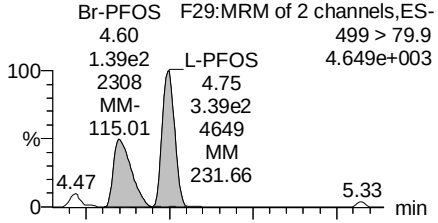


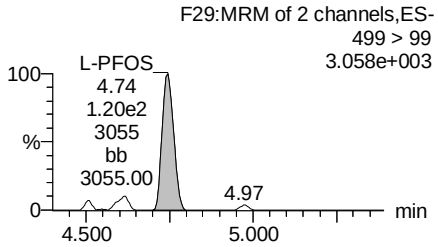
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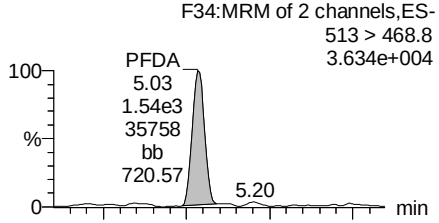


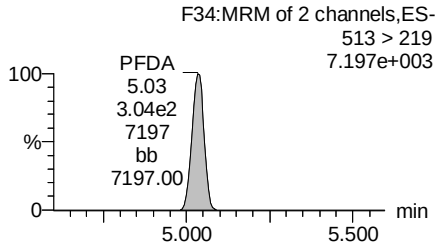
Total PFOS



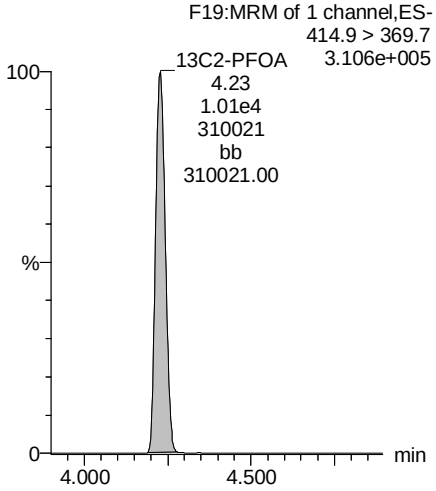


PFDA

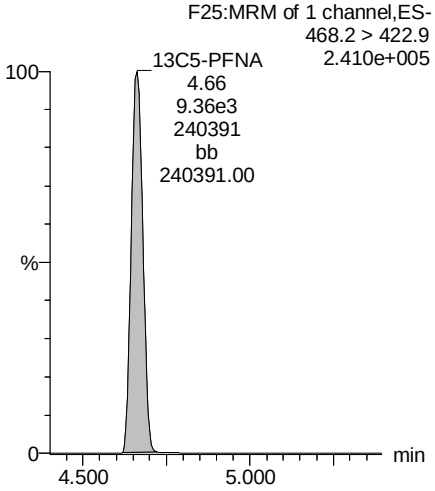




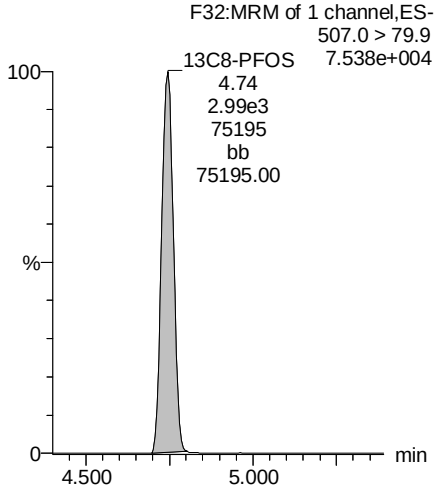
13C2-PFOA



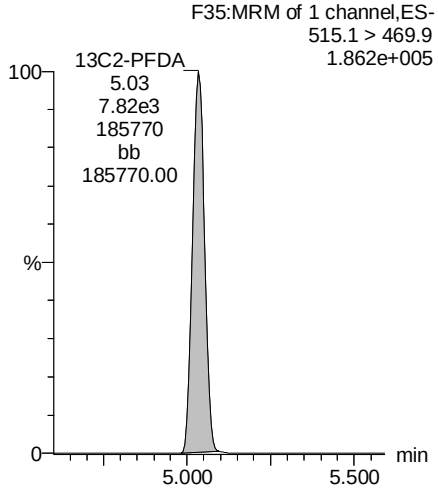
13C5-PFNA



13C8-PFOS



13C2-PFDA



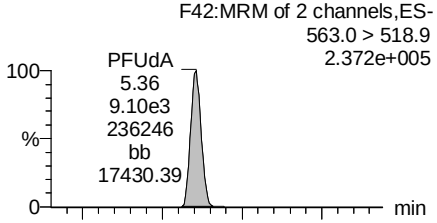
ANP 1/15/2018

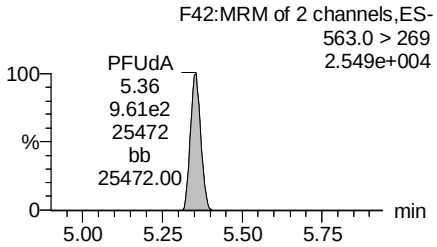
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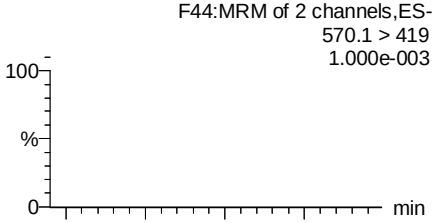
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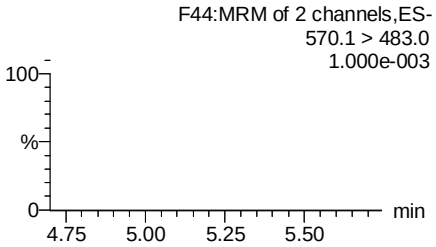
PFUdA



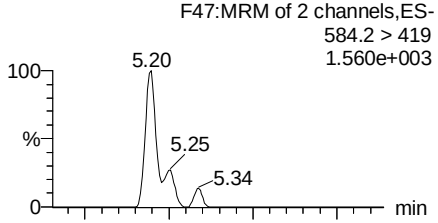


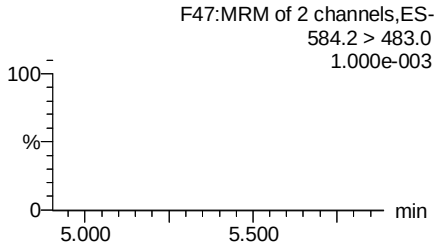
N-MeFOSAA



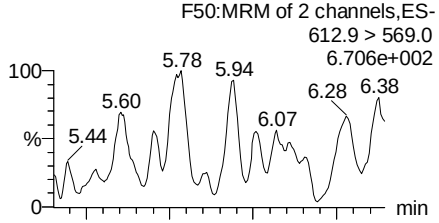


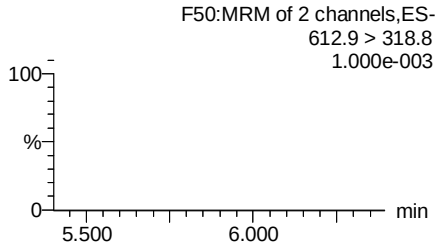
N-EtFOSAA



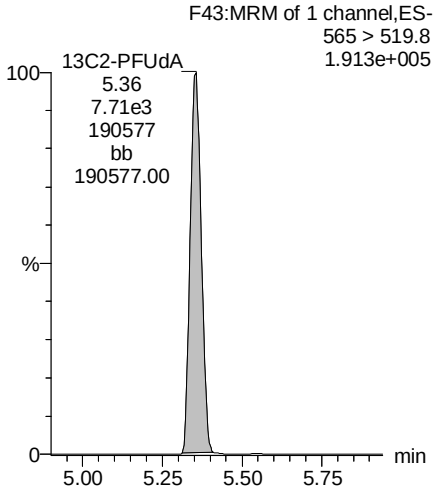


PFDoA

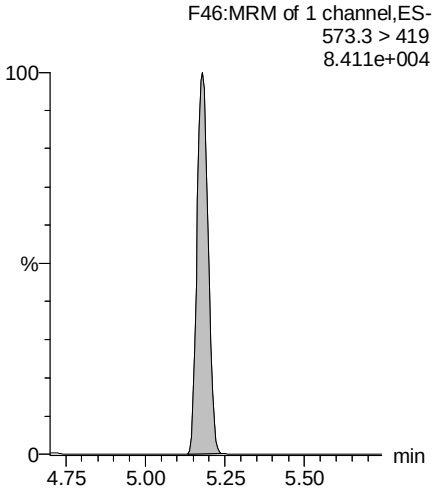




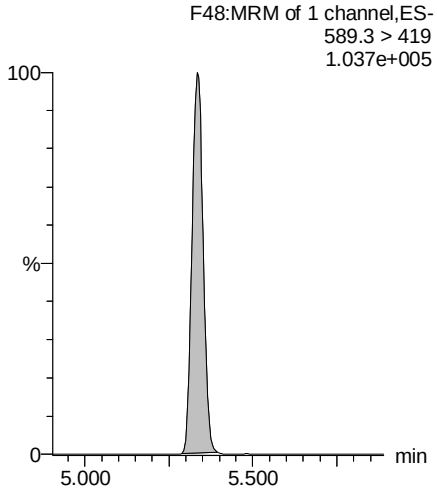
13C2-PFUdA



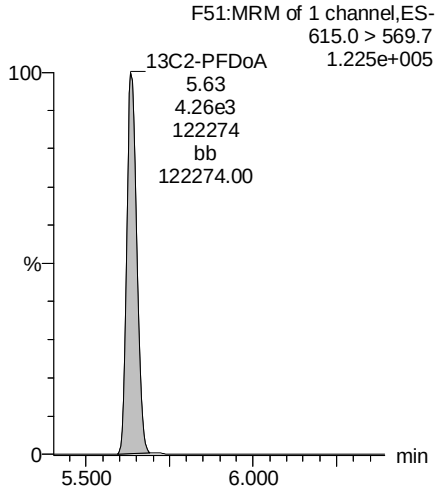
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



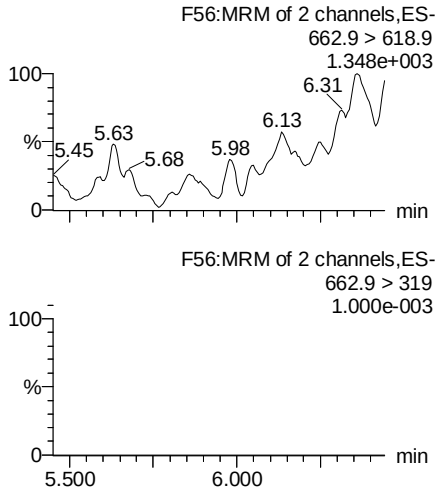
ANP 1/15/2018

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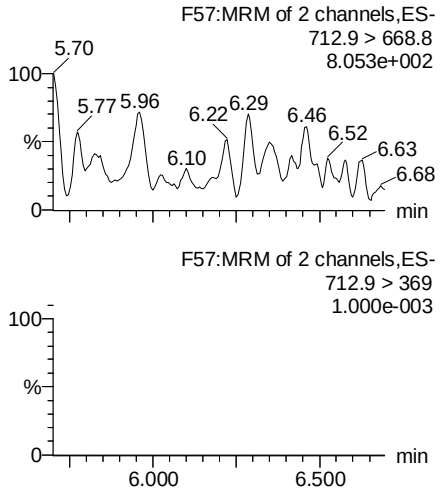
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Printed: Monday, January 15, 2018 10:33:31 Pacific Standard Time

Name: 180112M3_21, Date: 12-Jan-2018, Time: 17:27:26, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

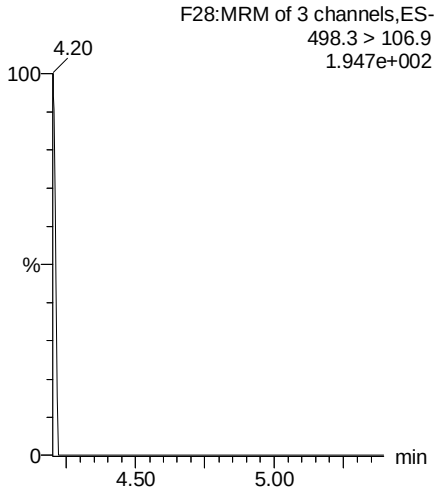
PFTrDA



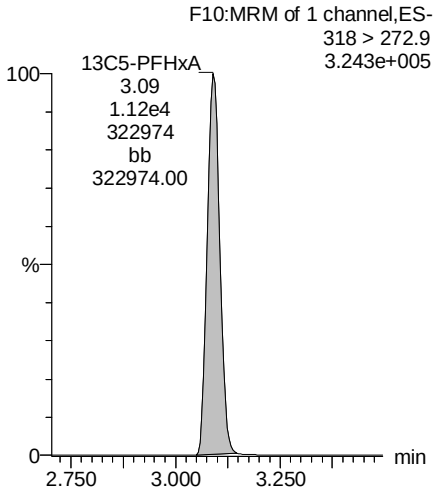
PFTeDA



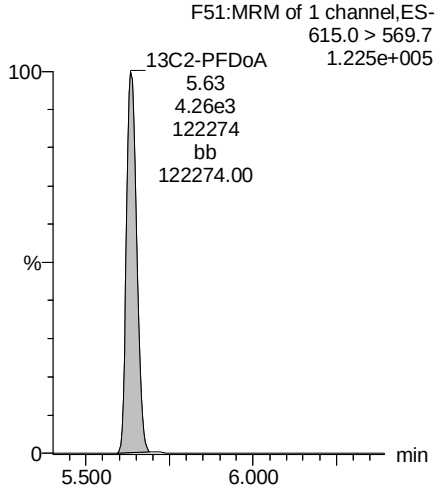
TCDA



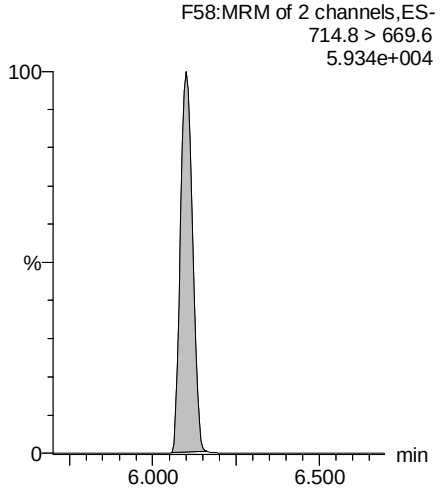
13C5-PFHxA



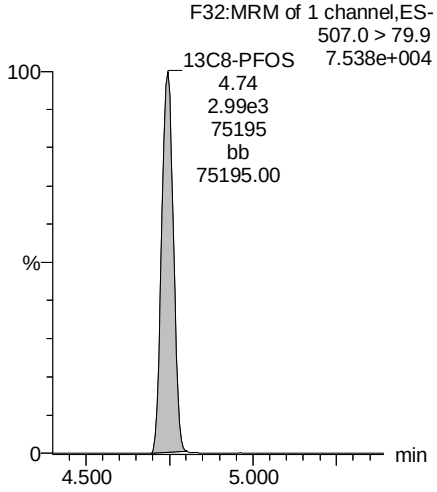
13C2-PFDoA



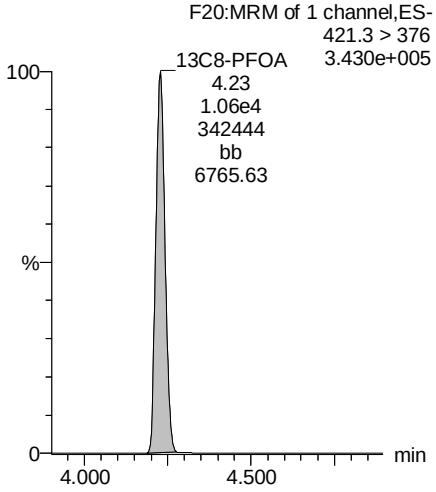
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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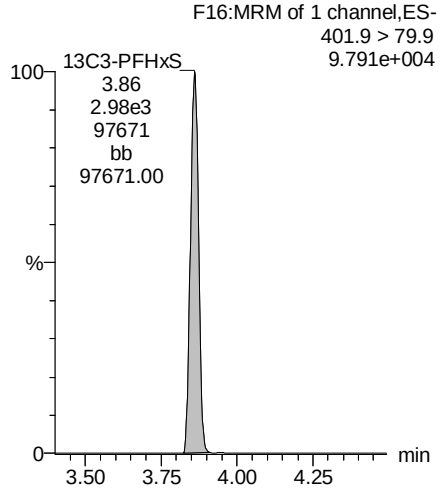
Rev'd: MM 1/16/18

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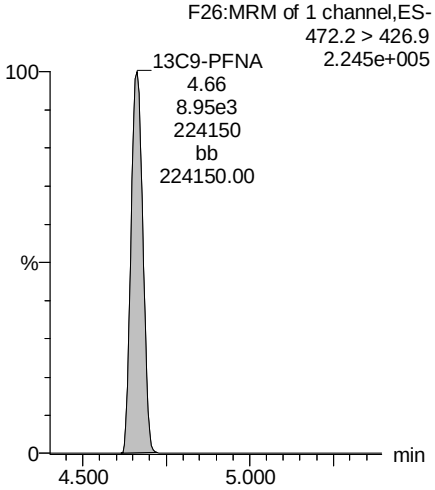
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Name: 180112M3_21, Date: 12-Jan-2018, Time: 17:27:26, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

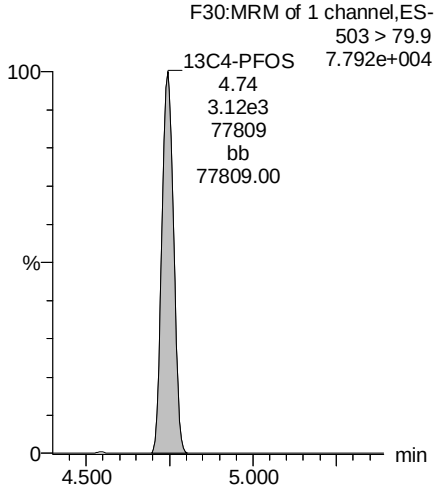
13C3-PFHxS



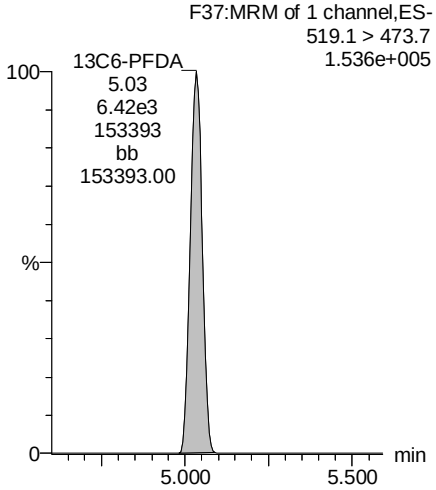
13C9-PFNA



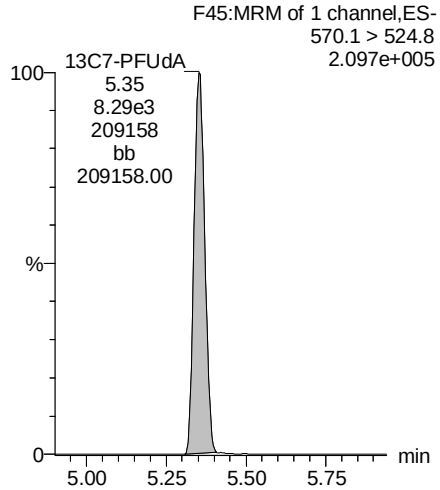
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180115M1\180115M1-10.qld

Last Altered: Monday, January 15, 2018 12:51:48 Pacific Standard Time
Printed: Monday, January 15, 2018 12:52:09 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_011518.mdb 15 Jan 2018 11:38:30
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_10, Date: 15-Jan-2018, Time: 12:17:55, ID: 1701970-03@10X SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	12	PFNA	463.0 > 418.8	2.45e3	7.98e1		0.2576	4.94	4.91	385	1270	
2	39	13C5-PFNA	468.2 > 422.9	7.98e1	1.18e2	0.910	0.2576	4.94	4.91	8.46	36.1	74.3
3	58	13C9-PFNA	472.2 > 426.9	1.18e2	1.18e2	1.000	0.2576	4.94	4.91	12.5	48.5	100.0

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Rev'd: MM 1/16/18

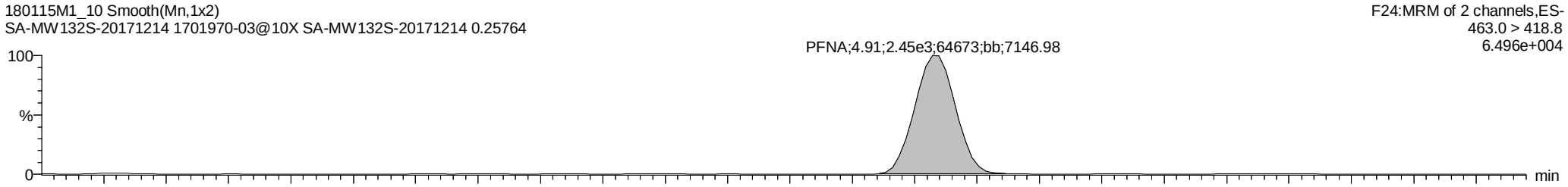
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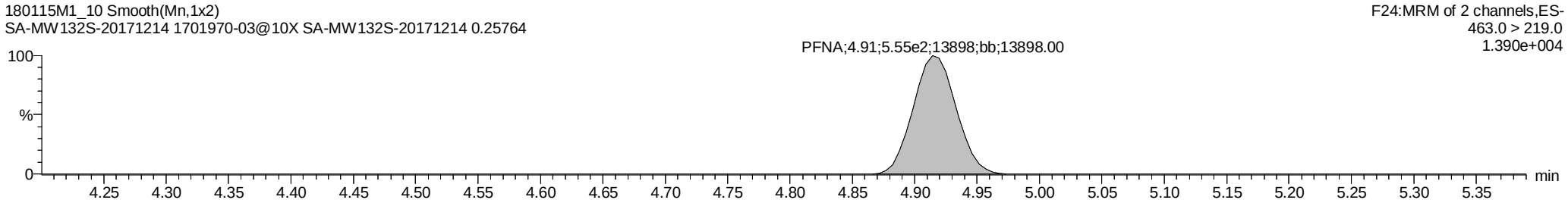
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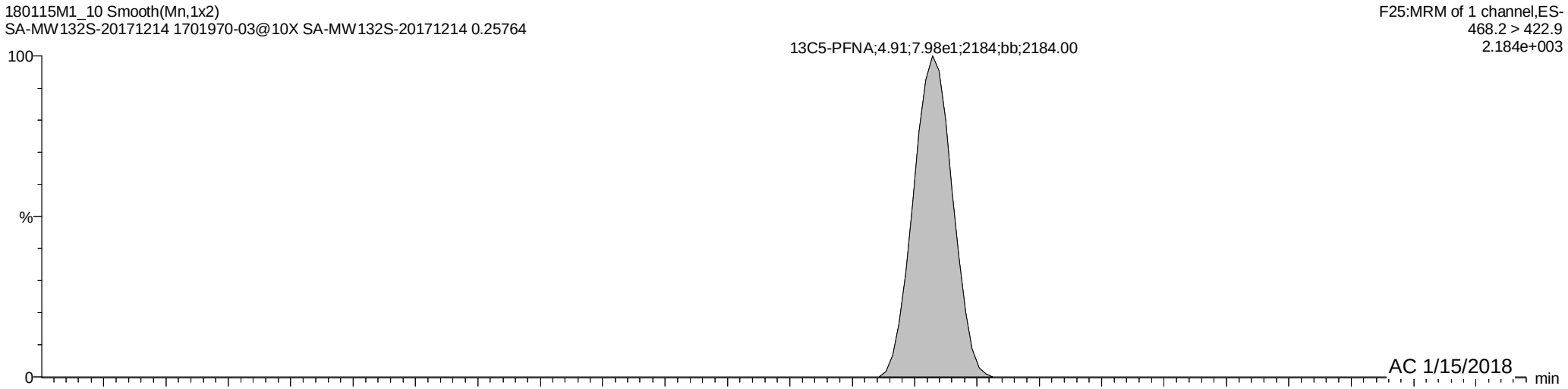
Name: 180115M1_10, Date: 15-Jan-2018, Time: 12:17:55, ID: 1701970-03@10X SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

PFNA





13C5-PFNA



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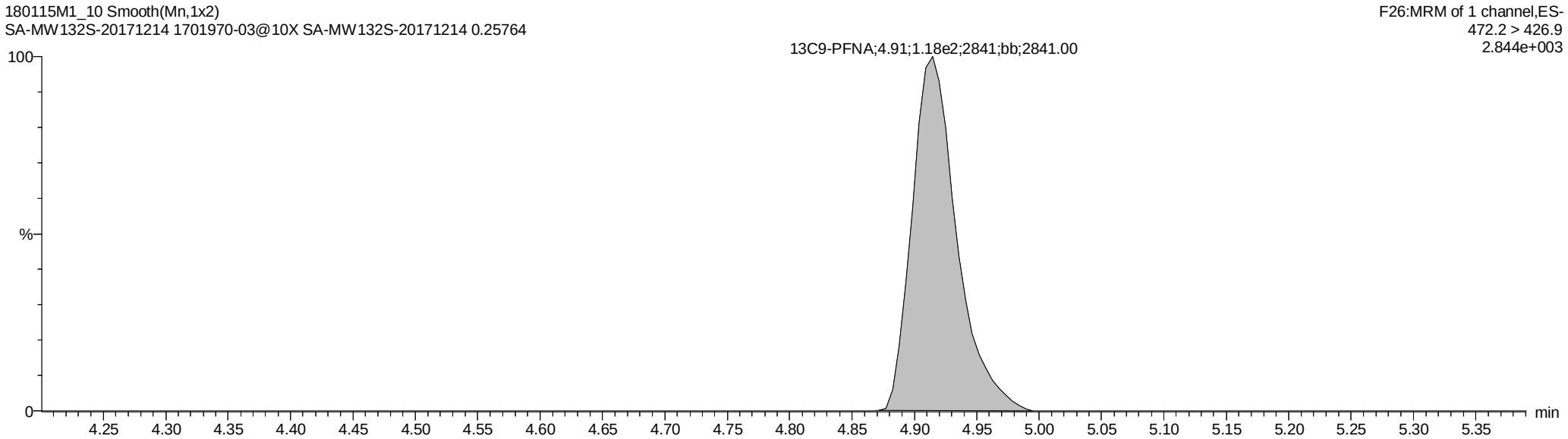
Rev'd: MM 1/16/18

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Last Altered: Monday, January 15, 2018 12:51:48 Pacific Standard Time
Printed: Monday, January 15, 2018 12:52:09 Pacific Standard Time

Name: 180115M1_10, Date: 15-Jan-2018, Time: 12:17:55, ID: 1701970-03@10X SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

13C9-PFNA



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Vista Analytical Laboratory

Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_22.qld

Last Altered: Monday, January 15, 2018 10:46:16 Pacific Standard Time
Printed: Monday, January 15, 2018 10:47:24 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_22, Date: 12-Jan-2018, Time: 17:39:06, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.30e3	0.234		2.66				
2	4	PFHxA	313.2 > 268.9		3.35e3	0.234		3.15				
3	5	PFHpA	363.0 > 318.9		7.62e3	0.234		3.78				
4	6	L-PFHxS	398.9 > 79.6	9.64e0	1.09e3	0.234		3.94	3.86	0.111	0.2869	
5	9	L-PFOA	413 > 368.7		9.91e3	0.234		4.31				
6	12	PFNA	463.0 > 418.8		8.09e3	0.234		4.81				
7	14	L-PFOS	499 > 79.9		2.86e3	0.234		4.75				
8	16	PFDA	513 > 468.8		6.93e3	0.234		5.18				
9	18	N-MeFOSAA	570.1 > 419		3.65e3	0.234		5.32				
10	19	N-EtFOSAA	584.2 > 419		4.35e3	0.234		5.48				
11	20	PFUdA	563.0 > 518.9		8.29e3	0.234		5.50				
12	22	PFDoA	612.9 > 569.0		4.21e3	0.234		5.77				

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_22.qld

Last Altered: Monday, January 15, 2018 10:46:16 Pacific Standard Time
Printed: Monday, January 15, 2018 10:47:34 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_22, Date: 12-Jan-2018, Time: 17:39:06, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		4.21e3	0.234		6.00				
2	25	PFTeDA	712.9 > 668.8		2.25e3	0.234		6.22				
3	33	13C3-PFBS	302. > 98.8	1.30e3	1.14e4	0.234	0.112	2.77	2.59	1.42	54.5910	102.1
4	34	13C2-PFHxA	315 > 269.8	3.35e3	1.14e4	0.234	0.691	3.15	3.09	3.67	22.7178	106.2
5	35	13C4-PFHpA	367.2 > 321.8	7.62e3	1.14e4	0.234	0.708	3.78	3.71	8.35	50.4724	94.4
6	36	18O2-PFHxS	403.0 > 102.6	1.09e3	3.18e3	0.234	0.353	3.94	3.85	4.28	51.9202	97.1
7	37	13C2-6:2 FTS	429.1 > 408.9	2.14e3	1.09e4	0.234	0.285	4.25	4.17	2.46	36.8952	69.0
8	38	13C2-PFOA	414.9 > 369.7	9.91e3	1.09e4	0.234	1.049	4.31	4.23	11.3	46.2652	86.5
9	39	13C5-PFNA	468.2 > 422.9	8.09e3	1.06e4	0.234	0.910	4.81	4.66	9.52	44.7735	83.7
10	40	13C8-PFOSA	506.1 > 77.7	1.51e3	1.05e4	0.234	0.252	4.87	4.72	1.79	30.4349	56.9
11	41	13C8-PFOS	507.0 > 79.9	2.86e3	3.06e3	0.234	0.987	4.89	4.74	11.7	50.5518	94.5
12	42	13C2-PFDA	515.1 > 469.9	6.93e3	5.40e3	0.234	1.311	5.18	5.03	16.0	52.3555	97.9
13	43	13C2-8:2 FTS	529.1 > 508.7	8.66e2	1.14e4	0.234	0.141	5.15	5.01	0.949	28.7211	53.7
14	44	d3-N-MeFOSAA	573.3 > 419	3.65e3	1.05e4	0.234	0.385	5.32	5.18	4.33	48.1161	89.9
15	45	d5-N-EtFOSAA	589.3 > 419	4.35e3	1.05e4	0.234	0.445	5.47	5.33	5.17	49.6476	92.8
16	46	13C2-PFUdA	565 > 519.8	8.29e3	1.05e4	0.234	1.014	5.49	5.35	9.84	41.5004	77.6
17	47	13C2-PFDoA	615.0 > 569.7	4.21e3	1.05e4	0.234	0.575	5.77	5.63	4.99	37.1616	69.5
18	49	13C2-PFTeDA	714.8 > 669.6	2.25e3	1.05e4	0.234	0.305	6.22	6.10	2.67	37.4534	70.0
19	55	13C5-PFHxA	318 > 272.9	1.14e4	1.14e4	0.234	1.000	3.15	3.09	12.5	53.4942	100.0
20	56	13C3-PFHxS	401.9 > 79.9	3.18e3	3.18e3	0.234	1.000	4.02	3.86	12.5	53.4942	100.0
21	57	13C8-PFOA	421.3 > 376	1.09e4	1.09e4	0.234	1.000	4.38	4.22	12.5	53.4942	100.0
22	58	13C9-PFNA	472.2 > 426.9	1.06e4	1.06e4	0.234	1.000	4.81	4.66	12.5	53.4942	100.0
23	59	13C4-PFOS	503 > 79.9	3.06e3	3.06e3	0.234	1.000	4.89	4.74	12.5	53.4942	100.0
24	60	13C6-PFDA	519.1 > 473.7	5.40e3	5.40e3	0.234	1.000	5.18	5.03	12.5	53.4942	100.0
25	61	13C7-PFUdA	570.1 > 524.8	1.05e4	1.05e4	0.234	1.000	5.49	5.36	12.5	53.4942	100.0
26	62	Total PFHxS	398.9 > 79.6	9.64e0	1.09e3	0.234		4.14		0.111	0.2869	
27	63	Total PFOA	413 > 368.7	0.00e0	9.91e3	0.234		4.51		0.000		
28	64	Total PFOS	499 > 79.9	0.00e0	2.86e3	0.234		4.75		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.65e3	0.234		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	4.35e3	0.234		5.61		0.000		

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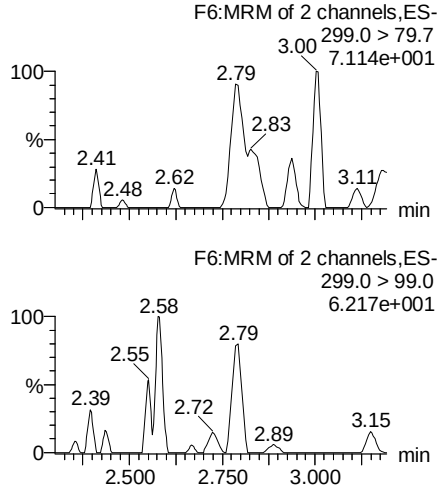
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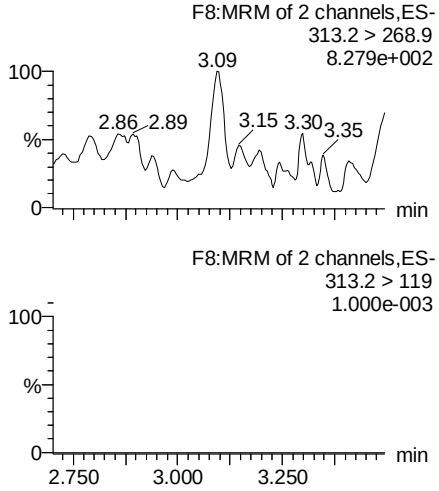
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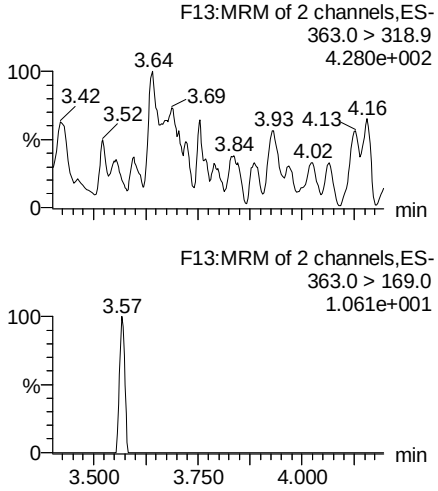
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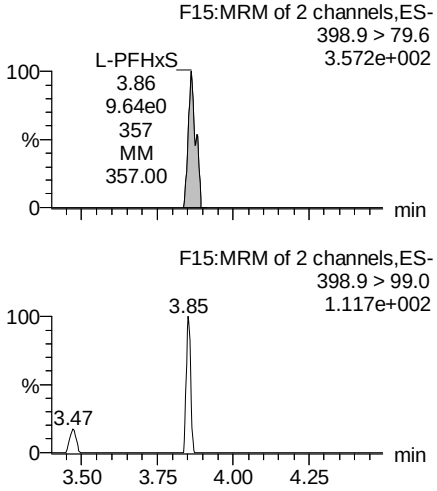
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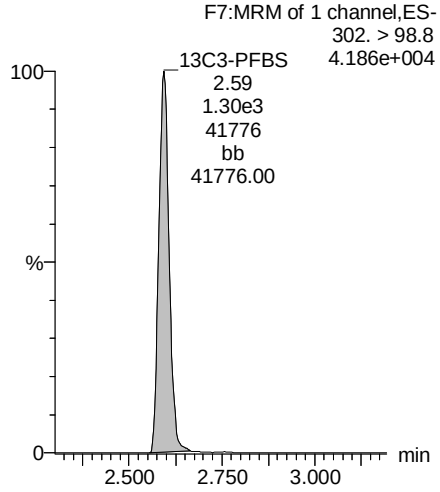
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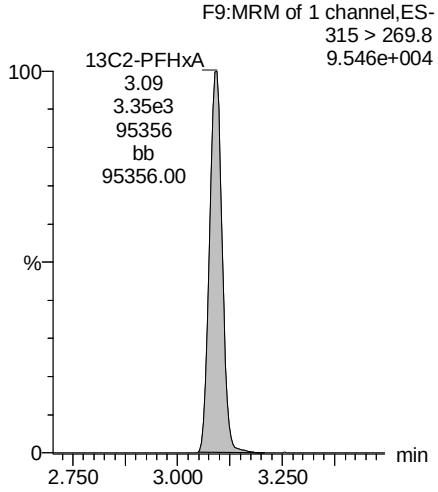
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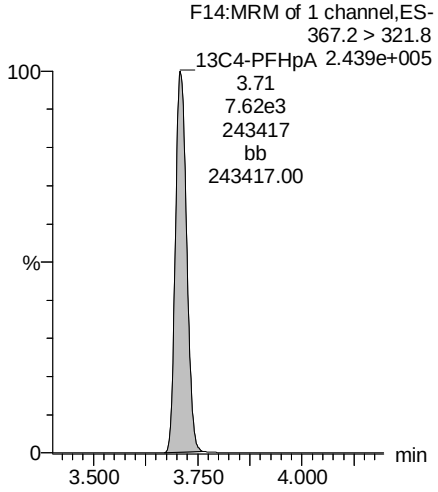
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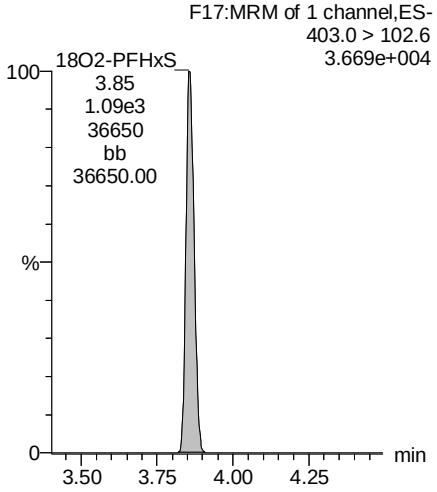
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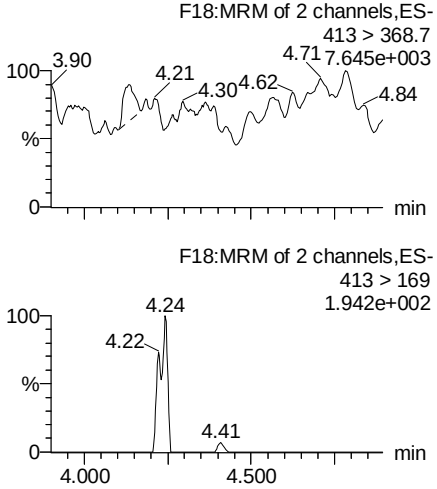
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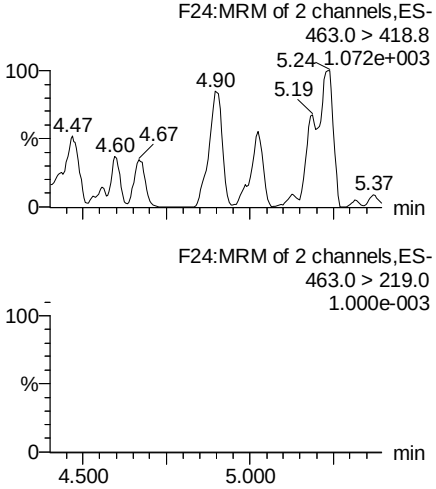
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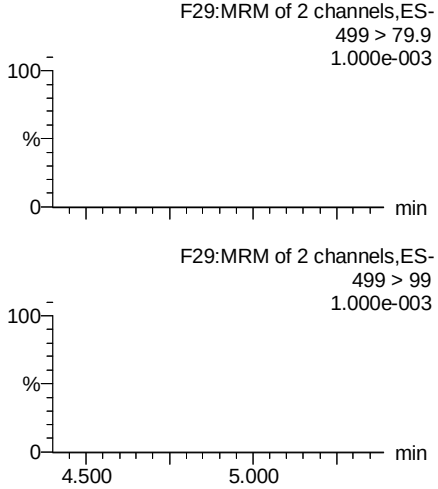
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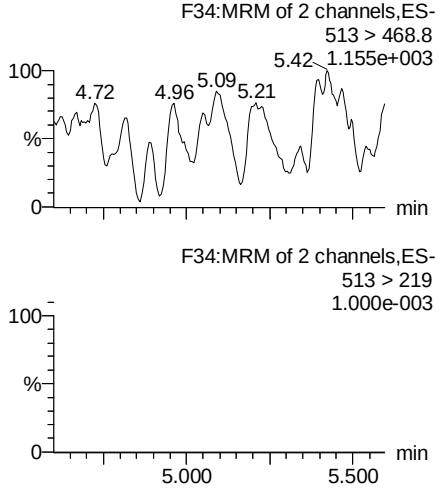
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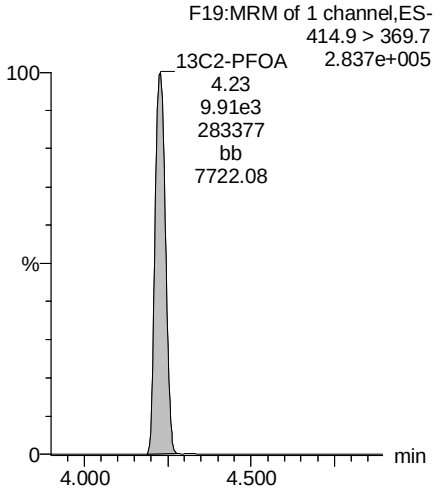
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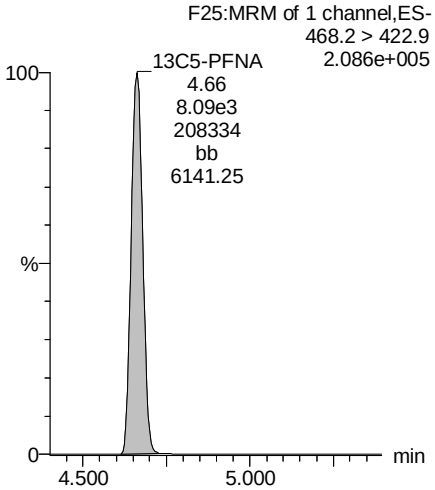
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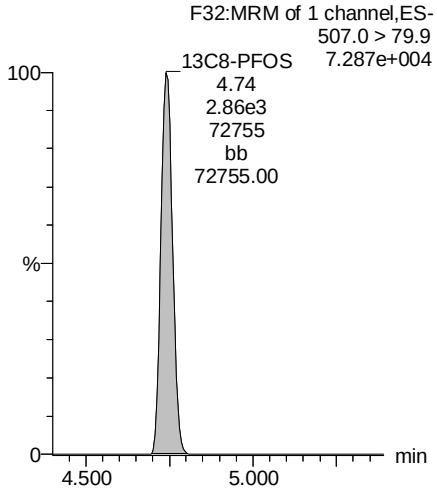
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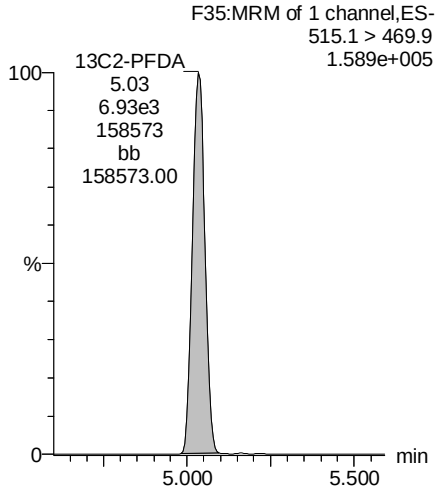
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13C8-PFOS



13C2-PFDA



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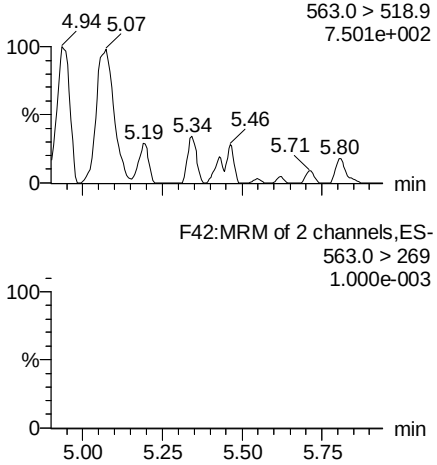
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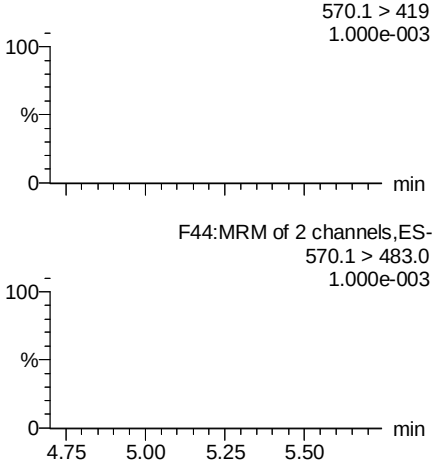
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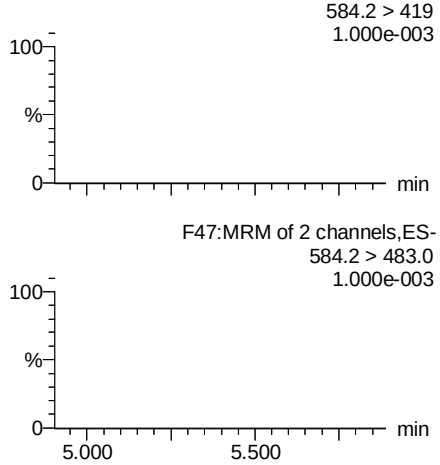
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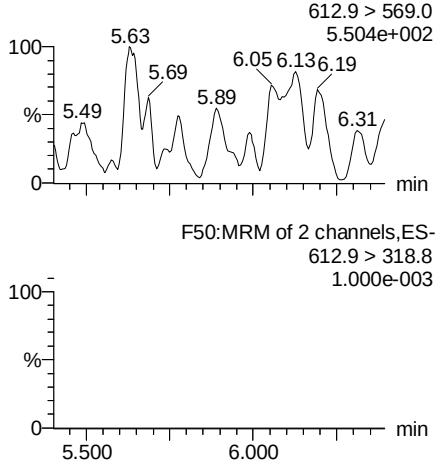
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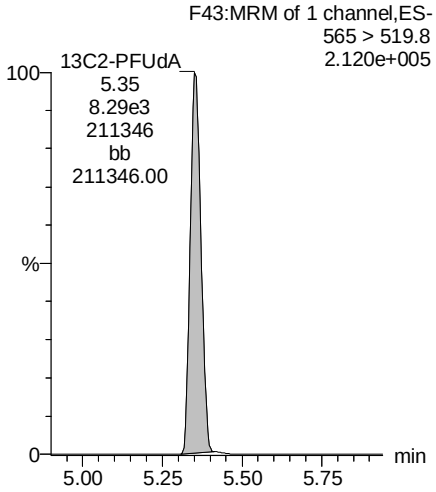
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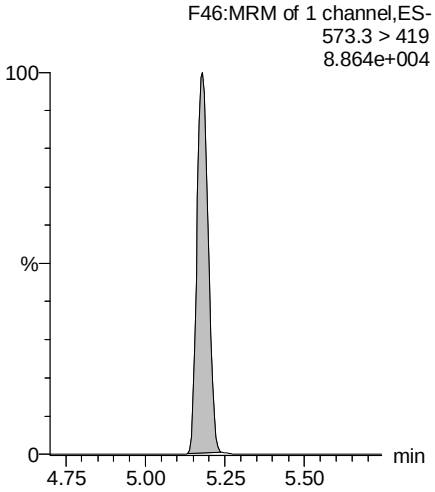
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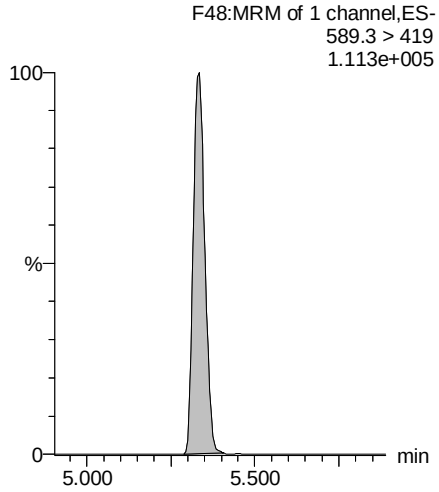
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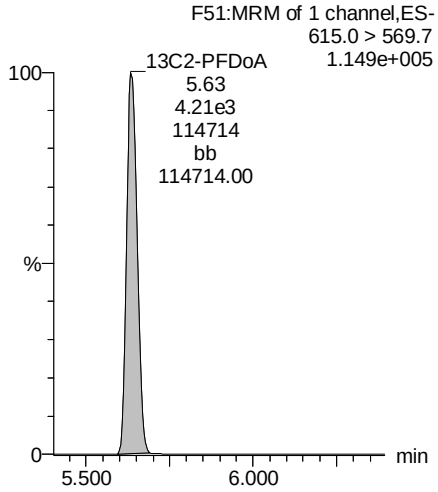
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d5-N-EtFOSAA



13C2-PFDoA



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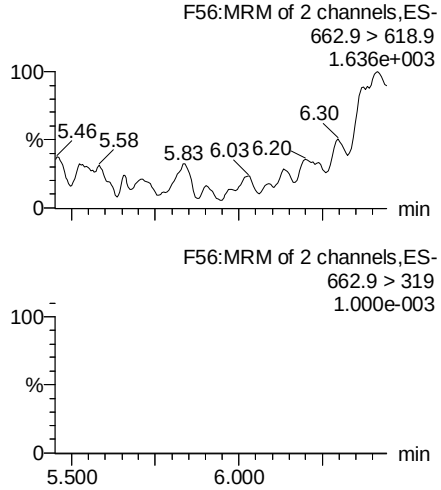
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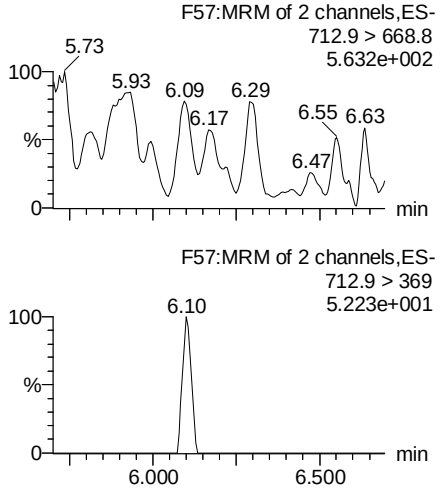
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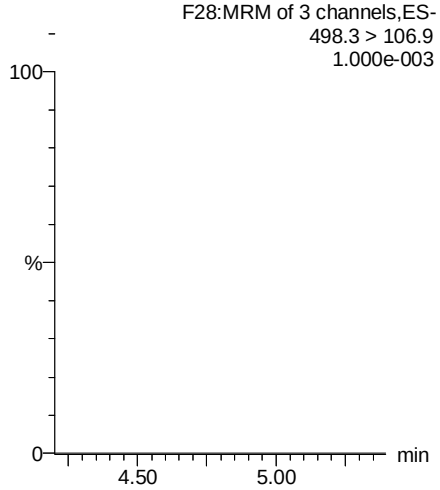
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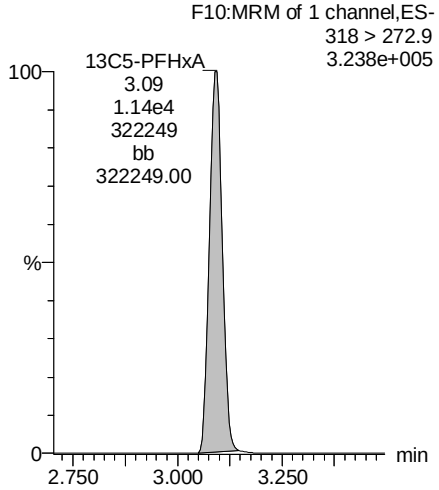
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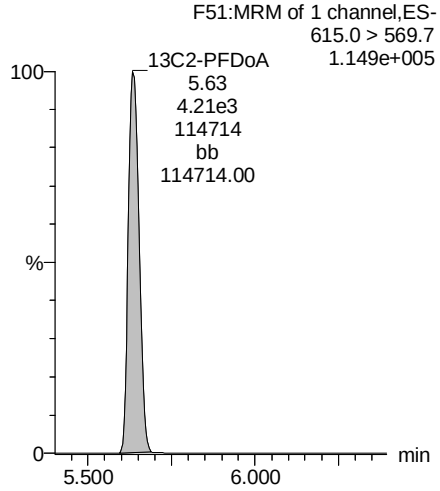
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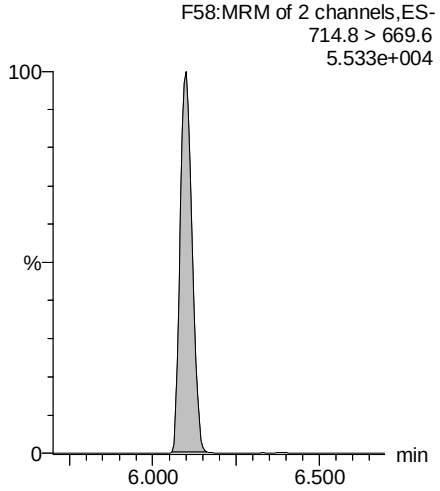
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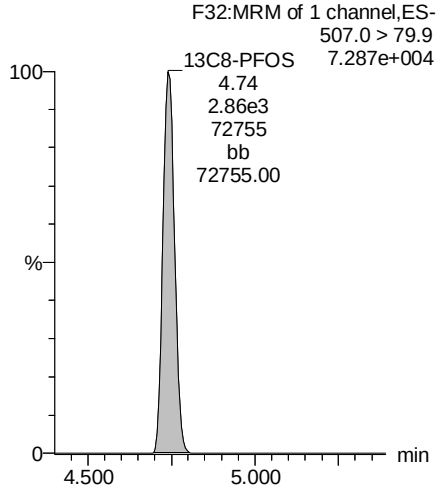
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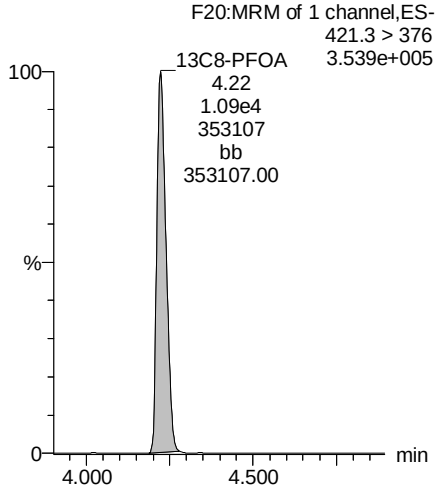
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13C8-PFOS



13C8-PFOA



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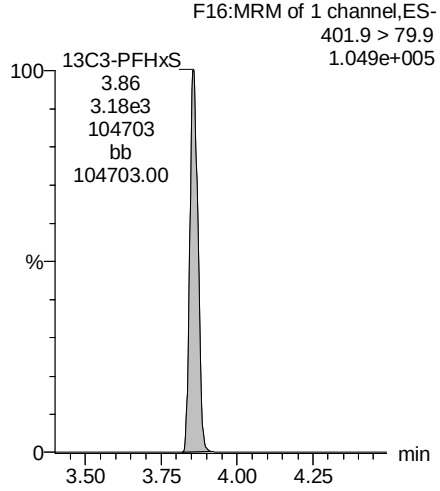
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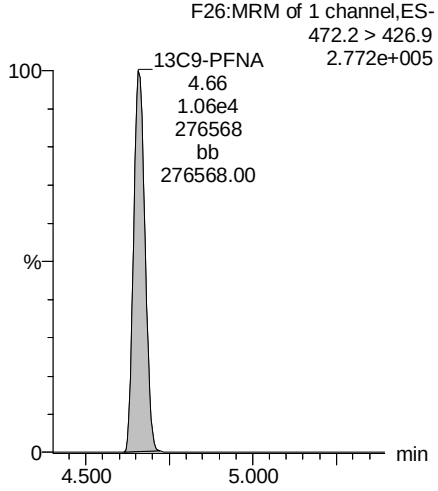
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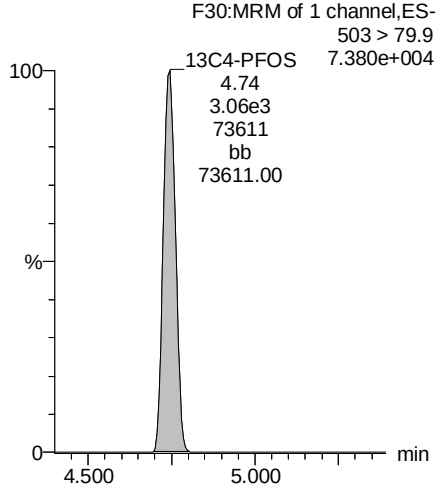
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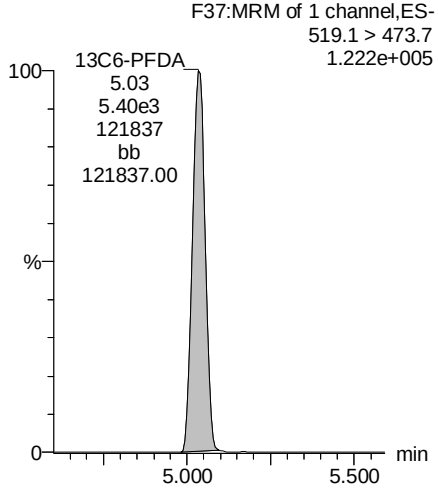
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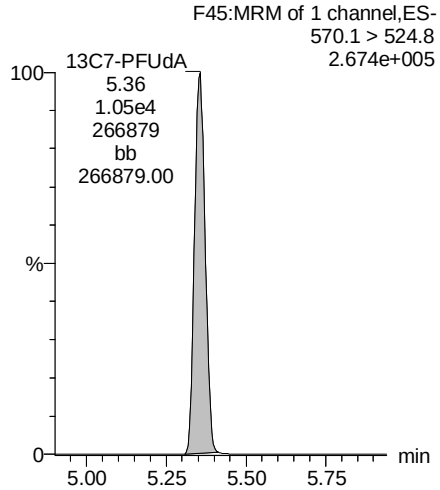
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2	4	PFHxA	313.2 > 268.9	1.69e4	2.60e3	0.234		3.15	3.09	32.5	83.6910	
3	5	PFHpA	363.0 > 318.9	1.25e4	6.43e3	0.234		3.78	3.71	24.3	81.2315	
4	6	L-PFHxS	398.9 > 79.6	6.26e1	9.96e2	0.234		3.94	3.86	0.785	1.8967	
5	9	L-PFOA	413 > 368.7	2.34e4	8.94e3	0.234		4.31	4.22	32.7	127.6708	
6	12	PFNA	463.0 > 418.8	4.61e5	7.06e3	0.234		4.81	4.66	815	3419.1970	E
7	14	L-PFOS	499 > 79.9	4.75e2	2.54e3	0.234		4.75	4.75	2.33	8.6911	
8	16	PFDA	513 > 468.8	1.18e3	7.45e3	0.234		5.18	5.03	1.98	5.8158	
9	18	N-MeFOSAA	570.1 > 419		3.34e3	0.234		5.32				
10	19	N-EtFOSAA	584.2 > 419		4.01e3	0.234		5.48				
11	20	PFUdA	563.0 > 518.9	1.31e3	8.77e3	0.234		5.50	5.35	1.87	6.4747	
12	22	PFDoA	612.9 > 569.0		3.70e3	0.234		5.77				

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_23, Date: 12-Jan-2018, Time: 17:52:40, ID: 1701970-05 SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.70e3	0.234		6.00				
2	25	PFTeDA	712.9 > 668.8		1.84e3	0.234		6.22				
3	33	13C3-PFBS	302. > 98.8	1.12e3	9.02e3	0.234	0.112	2.77	2.59	1.55	59.0444	110.7
4	34	13C2-PFHxA	315 > 269.8	2.60e3	9.02e3	0.234	0.691	3.15	3.09	3.60	22.2239	104.2
5	35	13C4-PFHpA	367.2 > 321.8	6.43e3	9.02e3	0.234	0.708	3.78	3.71	8.91	53.6400	100.6
6	36	18O2-PFHxS	403.0 > 102.6	9.96e2	2.80e3	0.234	0.353	3.94	3.86	4.44	53.7152	100.7
7	37	13C2-6:2 FTS	429.1 > 408.9	2.44e3	8.85e3	0.234	0.285	4.25	4.17	3.44	51.5647	96.7
8	38	13C2-PFOA	414.9 > 369.7	8.94e3	8.85e3	0.234	1.049	4.31	4.23	12.6	51.3561	96.3
9	39	13C5-PFNA	468.2 > 422.9	7.06e3	7.66e3	0.234	0.910	4.81	4.66	11.5	54.0427	101.3
10	40	13C8-PFOSA	506.1 > 77.7	1.88e3	9.01e3	0.234	0.252	4.87	4.73	2.61	44.2394	83.0
11	41	13C8-PFOS	507.0 > 79.9	2.54e3	3.04e3	0.234	0.987	4.89	4.74	10.4	45.1379	84.6
12	42	13C2-PFDA	515.1 > 469.9	7.45e3	6.55e3	0.234	1.311	5.18	5.03	14.2	46.2960	86.8
13	43	13C2-8:2 FTS	529.1 > 508.7	1.02e3	9.02e3	0.234	0.141	5.15	5.00	1.42	42.7619	80.2
14	44	d3-N-MeFOSAA	573.3 > 419	3.34e3	9.01e3	0.234	0.385	5.32	5.18	4.63	51.3326	96.3
15	45	d5-N-EtFOSAA	589.3 > 419	4.01e3	9.01e3	0.234	0.445	5.47	5.34	5.57	53.3474	100.0
16	46	13C2-PFUdA	565 > 519.8	8.77e3	9.01e3	0.234	1.014	5.49	5.35	12.2	51.1929	96.0
17	47	13C2-PFDoA	615.0 > 569.7	3.70e3	9.01e3	0.234	0.575	5.77	5.64	5.14	38.0967	71.4
18	49	13C2-PFTeDA	714.8 > 669.6	1.84e3	9.01e3	0.234	0.305	6.22	6.10	2.56	35.7402	67.0
19	55	13C5-PFHxA	318 > 272.9	9.02e3	9.02e3	0.234	1.000	3.15	3.09	12.5	53.3254	100.0
20	56	13C3-PFHxS	401.9 > 79.9	2.80e3	2.80e3	0.234	1.000	4.02	3.86	12.5	53.3254	100.0
21	57	13C8-PFOA	421.3 > 376	8.85e3	8.85e3	0.234	1.000	4.38	4.23	12.5	53.3254	100.0
22	58	13C9-PFNA	472.2 > 426.9	7.66e3	7.66e3	0.234	1.000	4.81	4.66	12.5	53.3254	100.0
23	59	13C4-PFOS	503 > 79.9	3.04e3	3.04e3	0.234	1.000	4.89	4.74	12.5	53.3254	100.0
24	60	13C6-PFDA	519.1 > 473.7	6.55e3	6.55e3	0.234	1.000	5.18	5.03	12.5	53.3254	100.0
25	61	13C7-PFUdA	570.1 > 524.8	9.01e3	9.01e3	0.234	1.000	5.49	5.35	12.5	53.3254	100.0
26	62	Total PFHxS	398.9 > 79.6	6.26e1	9.96e2	0.234		4.14		0.785	1.8967	
27	63	Total PFOA	413 > 368.7	2.34e4	8.94e3	0.234		4.51		32.7	127.6708	
28	64	Total PFOS	499 > 79.9	4.75e2	2.54e3	0.234		4.75		2.33	8.6911	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.34e3	0.234		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	4.01e3	0.234		5.61		0.000		

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Rev'd: MM 1/17/18

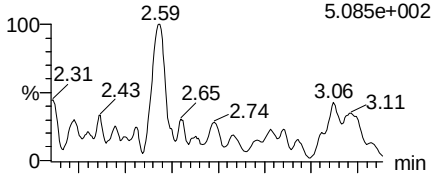
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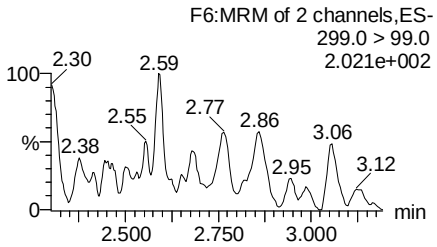
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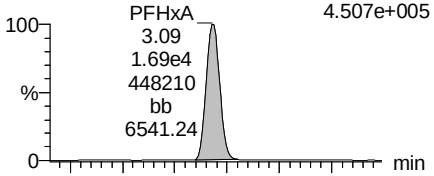
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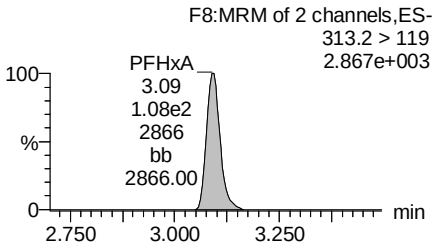
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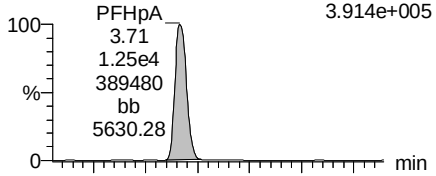


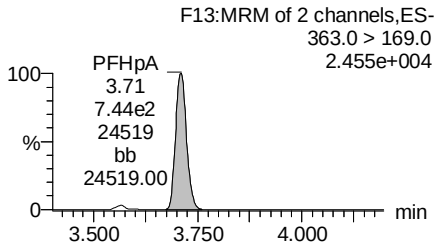
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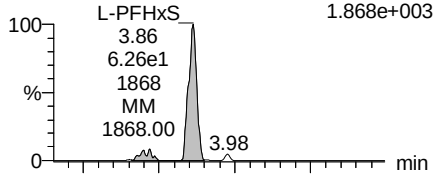


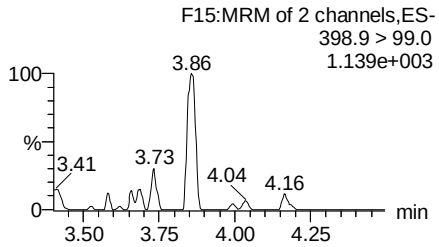
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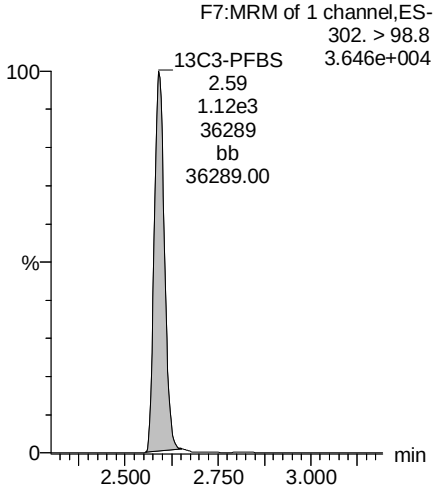


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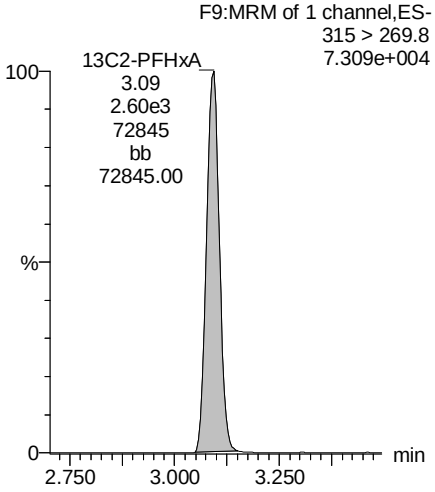




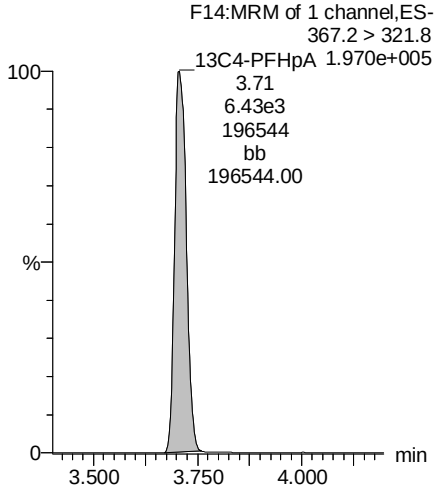
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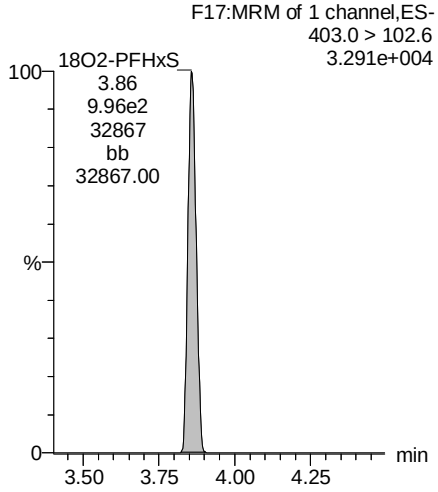
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13C4-PFHpA



18O2-PFHxS



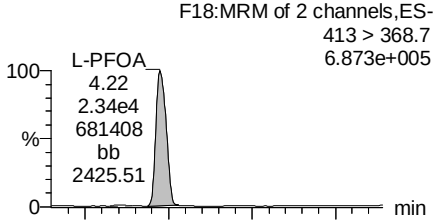
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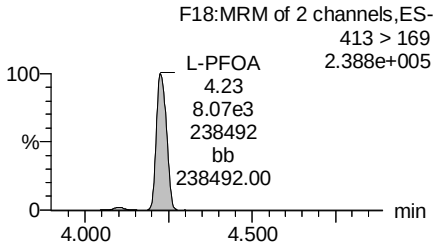
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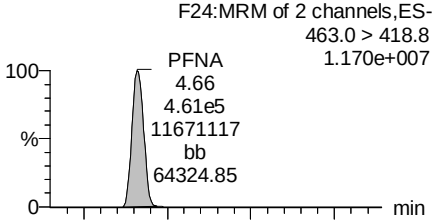
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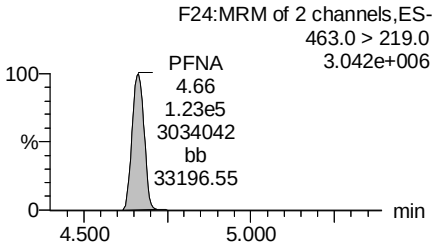
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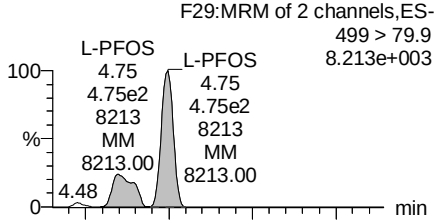


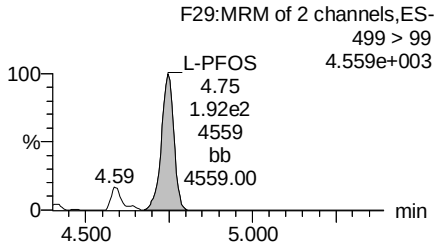
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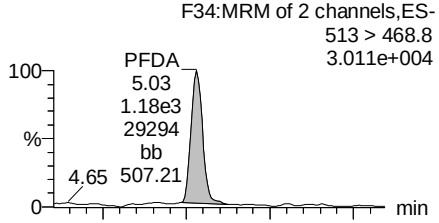


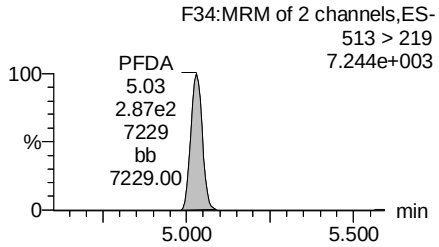
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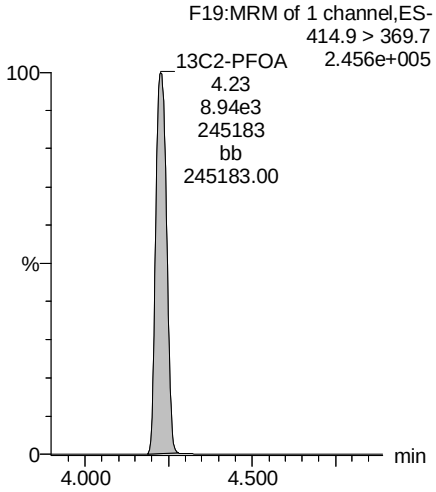


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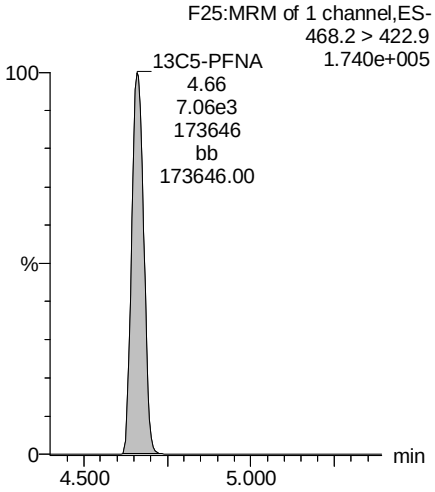




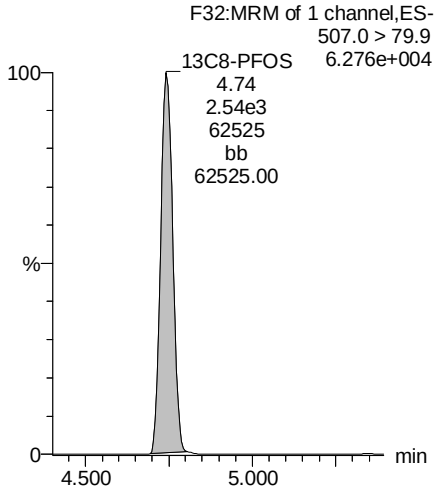
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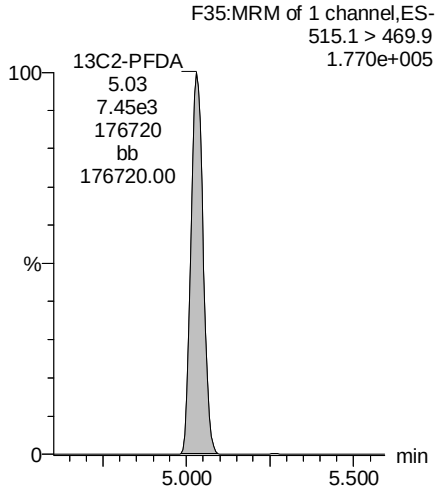
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13C8-PFOS



13C2-PFDA



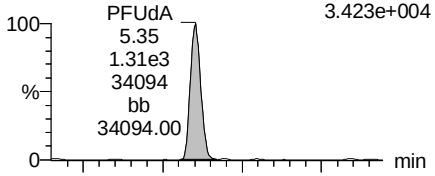
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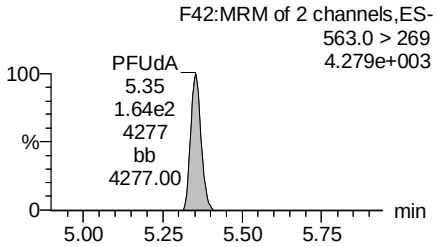
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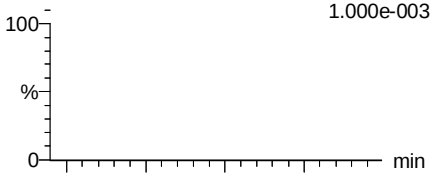
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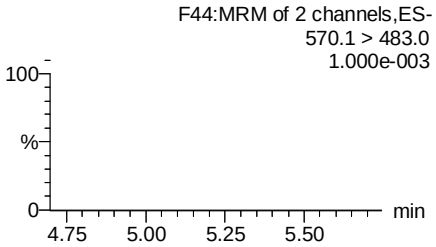
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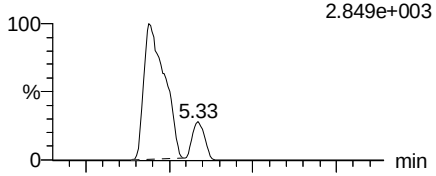


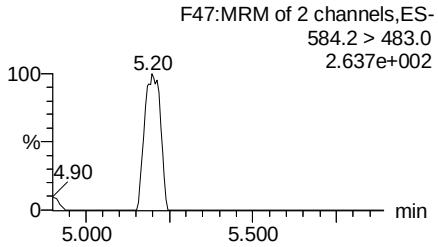
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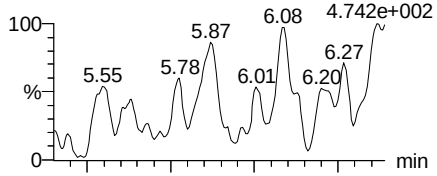


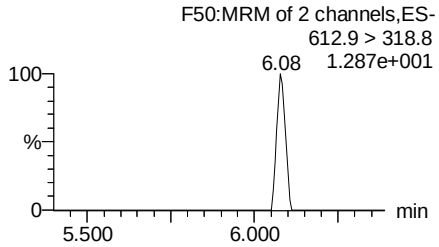
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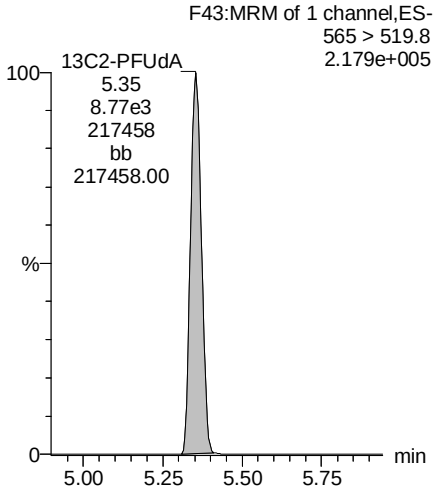


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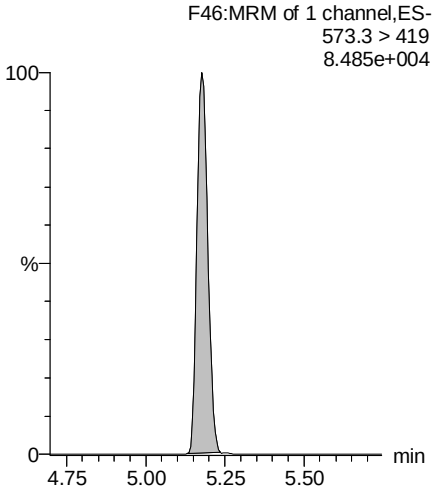




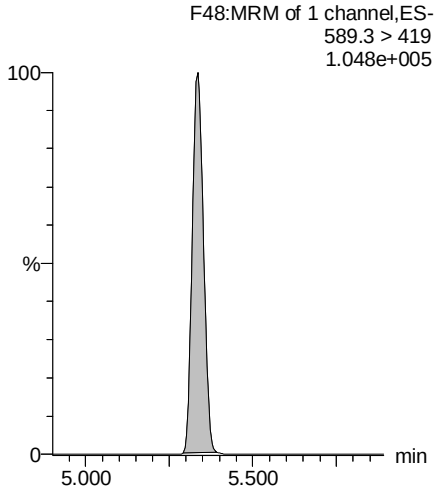
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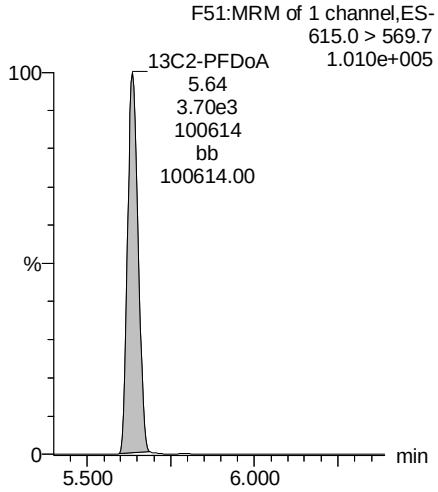
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



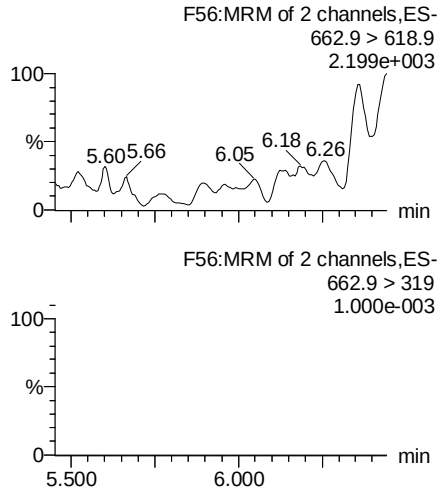
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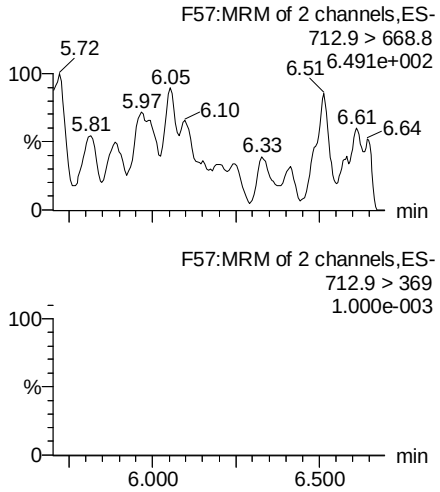
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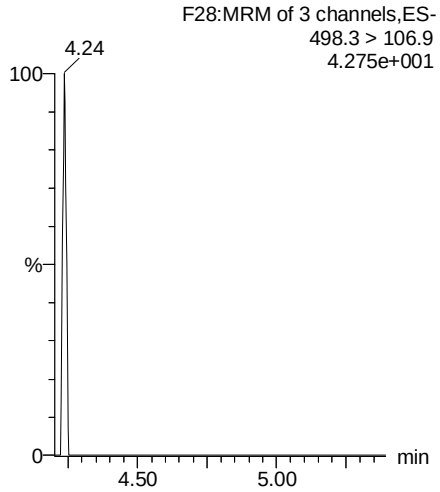
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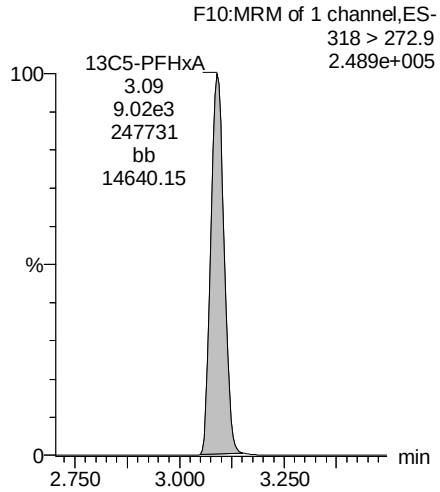
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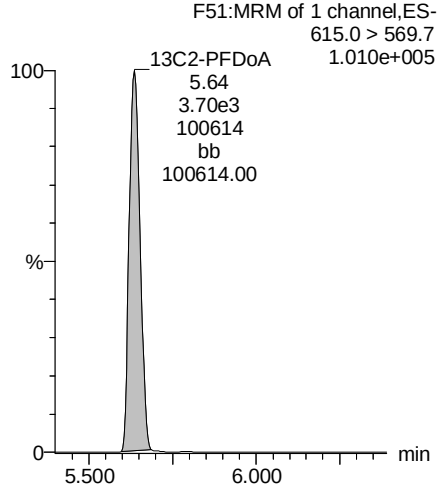
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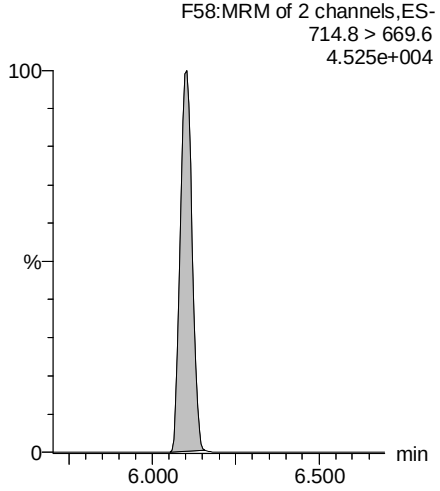
13C5-PFHxA



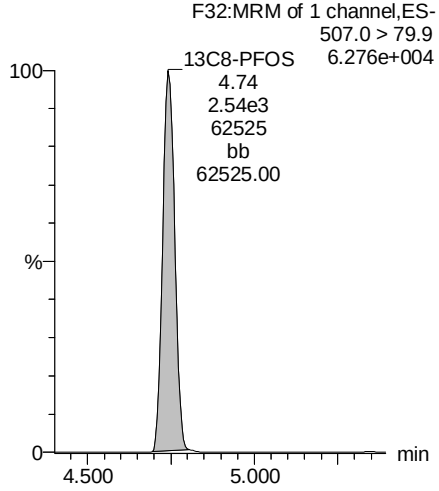
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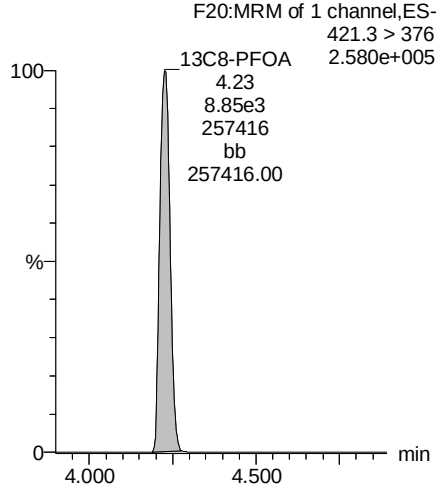
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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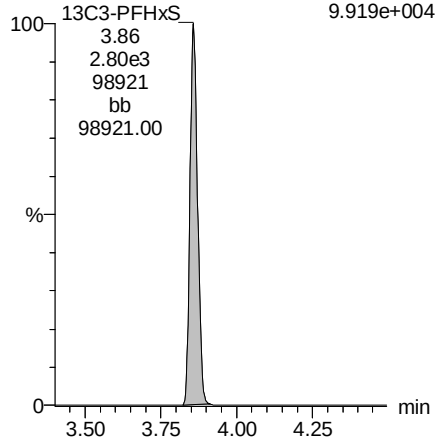
Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_23.qld

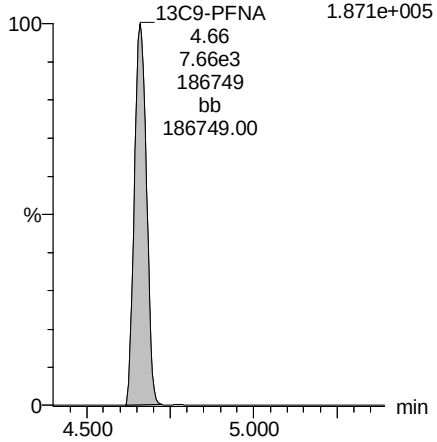
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Name: 180112M3_23, Date: 12-Jan-2018, Time: 17:52:40, ID: 1701970-05 SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

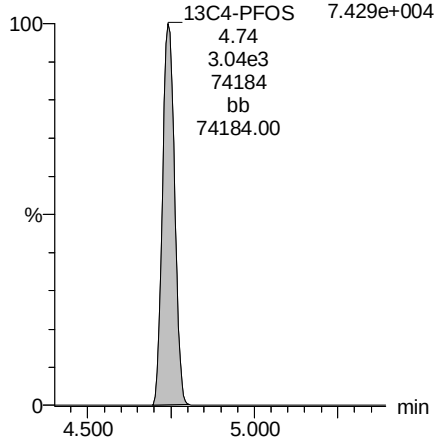
13C3-PFHxS



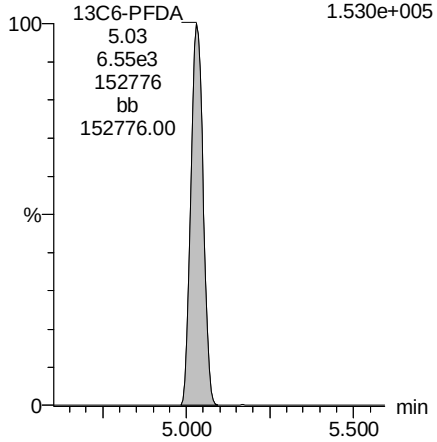
13C9-PFNA



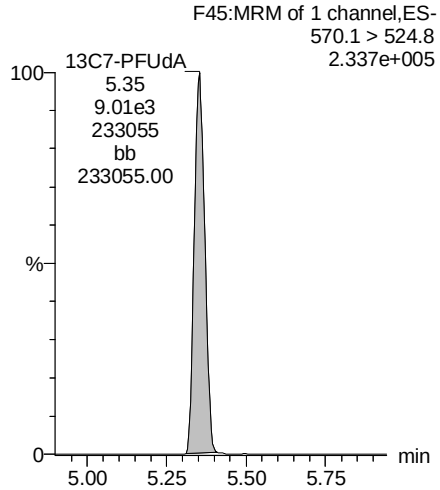
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/17/18

Dataset: U:\Q4.PRO\results\180115M1\180115M1-11.qld

Last Altered: Monday, January 15, 2018 12:53:04 Pacific Standard Time
Printed: Monday, January 15, 2018 12:53:19 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_011518.mdb 15 Jan 2018 11:38:30
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_11, Date: 15-Jan-2018, Time: 12:29:46, ID: 1701970-05@10X SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	12	PFNA	463.0 > 418.8	1.51e4	2.63e2		0.2344	4.94	4.91	719	2900	
2	39	13C5-PFNA	468.2 > 422.9	2.63e2	3.18e2	0.910	0.2344	4.94	4.91	10.3	48.5	90.9
3	58	13C9-PFNA	472.2 > 426.9	3.18e2	3.18e2	1.000	0.2344	4.94	4.91	12.5	53.3	100.0

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Rev'd: MM 1/17/18

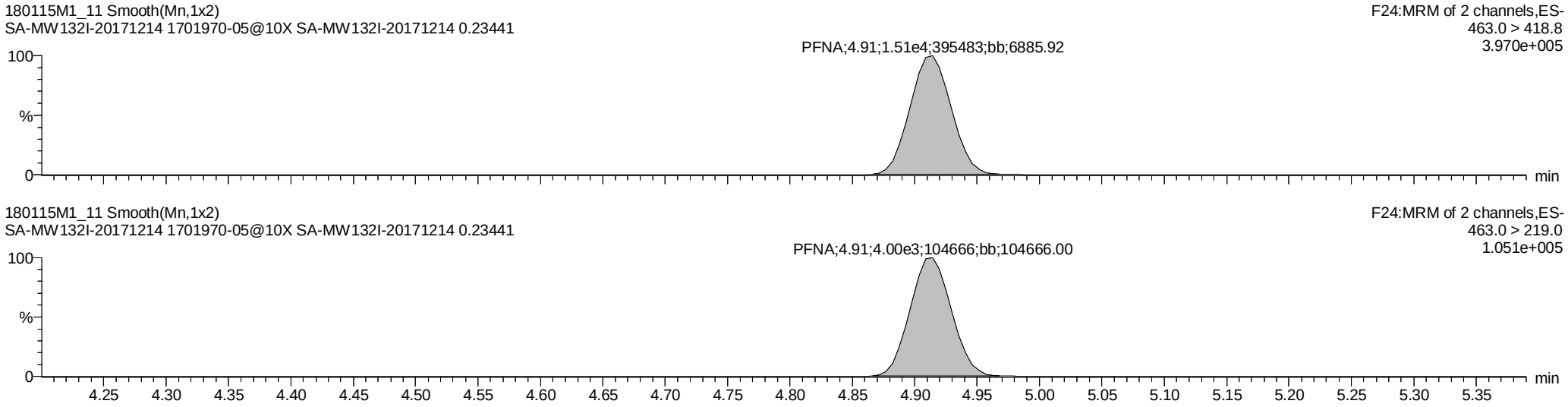
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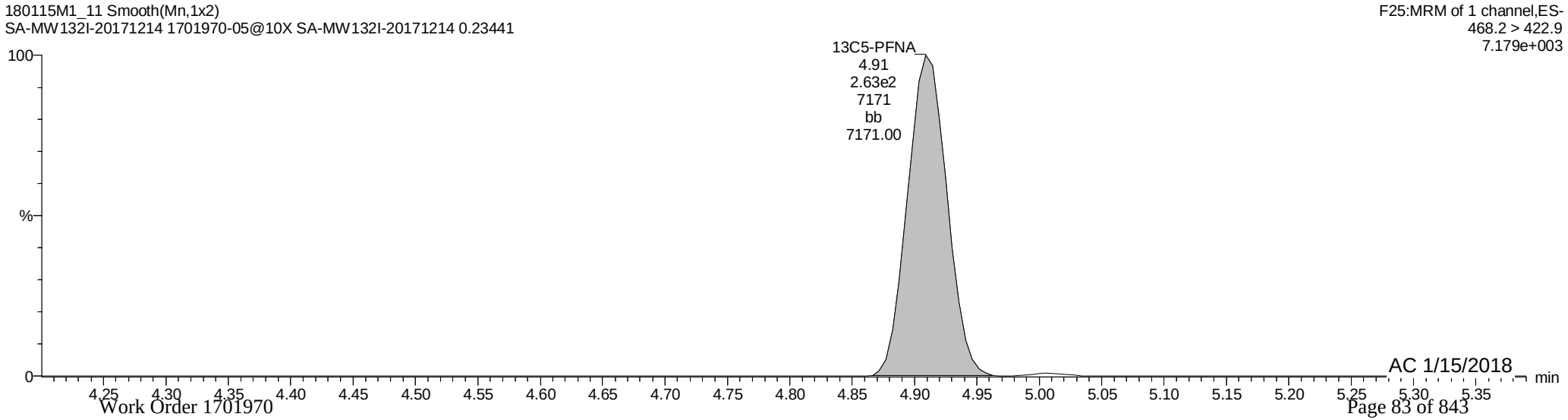
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Name: 180115M1_11, Date: 15-Jan-2018, Time: 12:29:46, ID: 1701970-05@10X SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

PFNA



13C5-PFNA



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Vista Analytical Laboratory

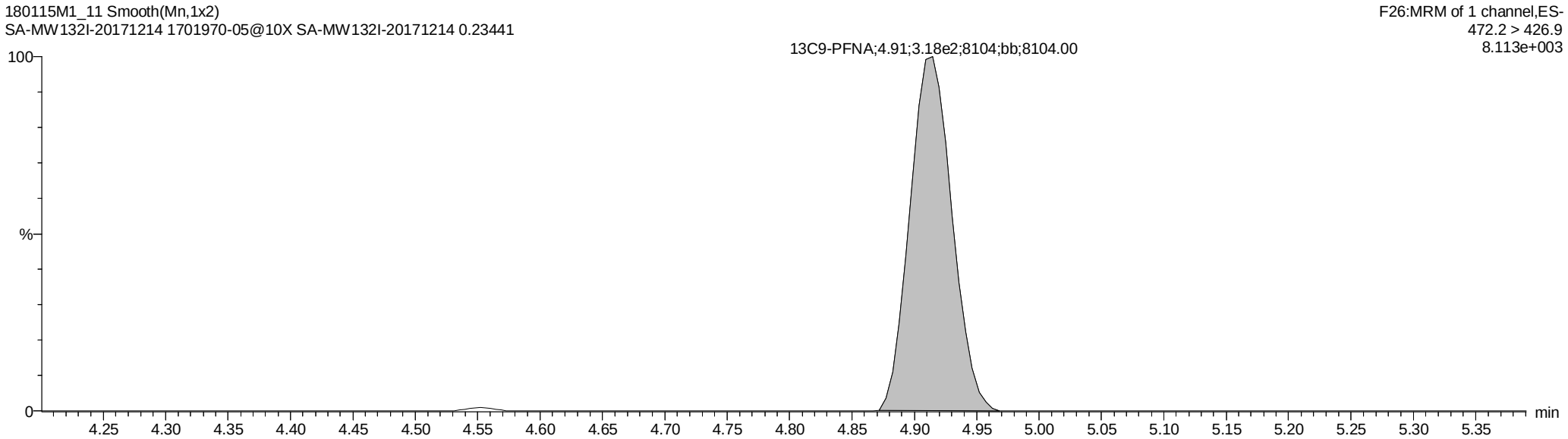
Rev'd: MM 1/17/18

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Printed: Monday, January 15, 2018 12:53:19 Pacific Standard Time

Name: 180115M1_11, Date: 15-Jan-2018, Time: 12:29:46, ID: 1701970-05@10X SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

13C9-PFNA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_17.qld

Last Altered: Monday, January 15, 2018 10:04:32 Pacific Standard Time
Printed: Monday, January 15, 2018 10:05:14 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_17, Date: 12-Jan-2018, Time: 16:40:14, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	1.61e3	1.19e3	0.249		2.66	2.59	16.9	37.0835	
2	4	PFHxA	313.2 > 268.9	3.19e4	2.69e3	0.249		3.15	3.09	59.5	144.5830	
3	5	PFHpA	363.0 > 318.9	2.19e4	7.75e3	0.249		3.78	3.71	35.3	110.8489	
4	6	L-PFHxS	398.9 > 79.6	1.38e3	9.82e2	0.249		3.94	3.85	17.6	39.6503	
5	9	L-PFOA	413 > 368.7	2.93e4	8.67e3	0.249		4.31	4.22	42.3	155.9352	
6	12	PFNA	463.0 > 418.8	4.92e5	8.04e3	0.249		4.81	4.66	766	2960.2484	E
7	14	L-PFOS	499 > 79.9	2.56e3	2.49e3	0.249		4.75	4.74	12.9	43.7309	
8	16	PFDA	513 > 468.8	8.50e3	7.30e3	0.249		5.18	5.03	14.6	41.3012	
9	18	N-MeFOSAA	570.1 > 419	3.83e3	3.59e3	0.249		5.32	5.18	13.3	31.1890	
10	19	N-EtFOSAA	584.2 > 419	3.41e3	4.17e3	0.249		5.48	5.33	10.2	38.4413	
11	20	PFUdA	563.0 > 518.9	8.66e3	8.13e3	0.249		5.50	5.35	13.3	46.4706	
12	22	PFDoA	612.9 > 569.0	8.61e3	3.90e3	0.249		5.77	5.63	27.6	45.6694	

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_17.qld

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_17, Date: 12-Jan-2018, Time: 16:40:14, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9	7.52e3	3.90e3	0.249		6.00	5.88	24.1	45.4629	
2	25	PFTeDA	712.9 > 668.8	3.01e3	1.96e3	0.249		6.22	6.10	19.2	35.6030	
3	33	13C3-PFBS	302. > 98.8	1.19e3	1.10e4	0.249	0.112	2.77	2.59	1.35	48.7334	97.1
4	34	13C2-PFHxA	315 > 269.8	2.69e3	1.10e4	0.249	0.691	3.15	3.09	3.05	17.7557	88.4
5	35	13C4-PFHpA	367.2 > 321.8	7.75e3	1.10e4	0.249	0.708	3.78	3.71	8.81	49.9710	99.5
6	36	18O2-PFHxS	403.0 > 102.6	9.82e2	2.70e3	0.249	0.353	3.94	3.85	4.55	51.7600	103.1
7	37	13C2-6:2 FTS	429.1 > 408.9	2.54e3	9.62e3	0.249	0.285	4.25	4.17	3.31	46.6497	92.9
8	38	13C2-PFOA	414.9 > 369.7	8.67e3	9.62e3	0.249	1.049	4.31	4.22	11.3	43.1386	85.9
9	39	13C5-PFNA	468.2 > 422.9	8.04e3	8.62e3	0.249	0.910	4.81	4.66	11.7	51.4354	102.4
10	40	13C8-PFOSA	506.1 > 77.7	2.00e3	9.26e3	0.249	0.252	4.87	4.72	2.71	43.1853	86.0
11	41	13C8-PFOS	507.0 > 79.9	2.49e3	2.64e3	0.249	0.987	4.89	4.74	11.8	48.0539	95.7
12	42	13C2-PFDA	515.1 > 469.9	7.30e3	6.42e3	0.249	1.311	5.18	5.03	14.2	43.5379	86.7
13	43	13C2-8:2 FTS	529.1 > 508.7	8.84e2	1.10e4	0.249	0.141	5.15	5.00	1.01	28.5524	56.9
14	44	d3-N-MeFOSAA	573.3 > 419	3.59e3	9.26e3	0.249	0.385	5.32	5.18	4.85	50.6656	100.9
15	45	d5-N-EtFOSAA	589.3 > 419	4.17e3	9.26e3	0.249	0.445	5.47	5.33	5.64	50.8547	101.3
16	46	13C2-PFUdA	565 > 519.8	8.13e3	9.26e3	0.249	1.014	5.49	5.35	11.0	43.5024	86.6
17	47	13C2-PFDoA	615.0 > 569.7	3.90e3	9.26e3	0.249	0.575	5.77	5.64	5.26	36.7645	73.2
18	49	13C2-PFTeDA	714.8 > 669.6	1.96e3	9.26e3	0.249	0.305	6.22	6.10	2.65	34.8201	69.4
19	55	13C5-PFHxA	318 > 272.9	1.10e4	1.10e4	0.249	1.000	3.15	3.09	12.5	50.2089	100.0
20	56	13C3-PFHxS	401.9 > 79.9	2.70e3	2.70e3	0.249	1.000	4.02	3.85	12.5	50.2089	100.0
21	57	13C8-PFOA	421.3 > 376	9.62e3	9.62e3	0.249	1.000	4.38	4.22	12.5	50.2089	100.0
22	58	13C9-PFNA	472.2 > 426.9	8.62e3	8.62e3	0.249	1.000	4.81	4.65	12.5	50.2089	100.0
23	59	13C4-PFOS	503 > 79.9	2.64e3	2.64e3	0.249	1.000	4.89	4.75	12.5	50.2089	100.0
24	60	13C6-PFDA	519.1 > 473.7	6.42e3	6.42e3	0.249	1.000	5.18	5.03	12.5	50.2089	100.0
25	61	13C7-PFUdA	570.1 > 524.8	9.26e3	9.26e3	0.249	1.000	5.49	5.35	12.5	50.2089	100.0
26	62	Total PFHxS	398.9 > 79.6	1.38e3	9.82e2	0.249		4.14		17.6	39.6503	
27	63	Total PFOA	413 > 368.7	2.95e4	8.67e3	0.249		4.51		42.6	156.7608	
28	64	Total PFOS	499 > 79.9	2.56e3	2.49e3	0.249		4.75		12.9	43.7309	
29	65	Total N-MeFOSAA	570.1 > 419	3.83e3	3.59e3	0.249		5.45		13.3	31.1890	
30	66	Total N-EtFOSAA	584.2 > 419	3.41e3	4.17e3	0.249		5.61		10.2	38.4413	

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Rev'd: MM 1/16/18

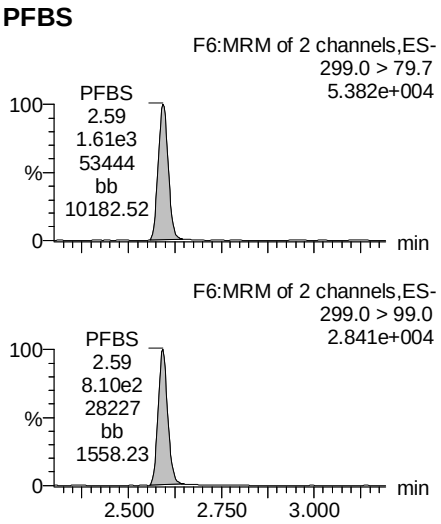
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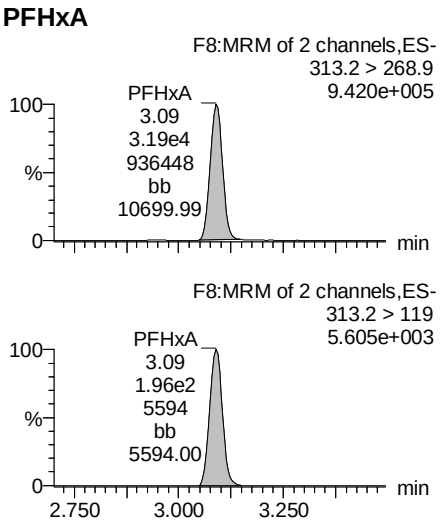
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Name: 180112M3_17, Date: 12-Jan-2018, Time: 16:40:14, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

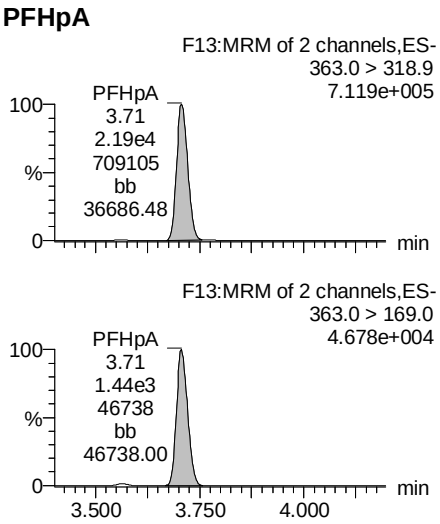
PFBS



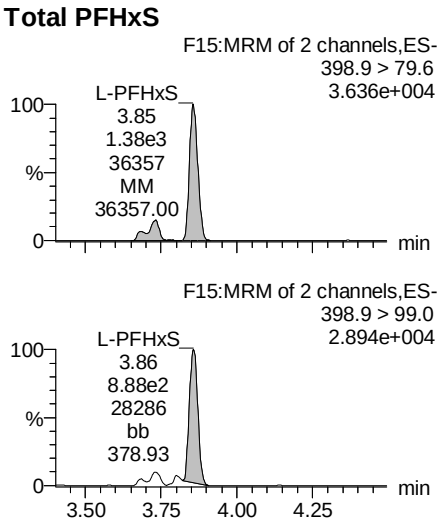
PFHxA



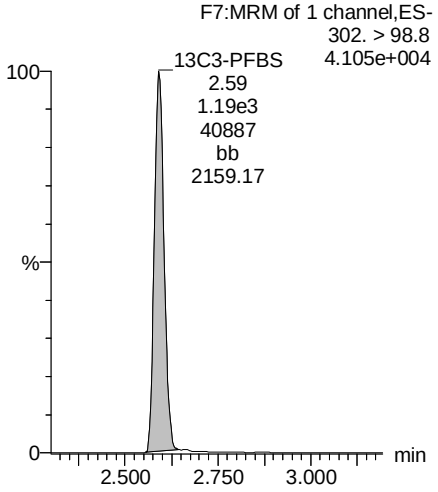
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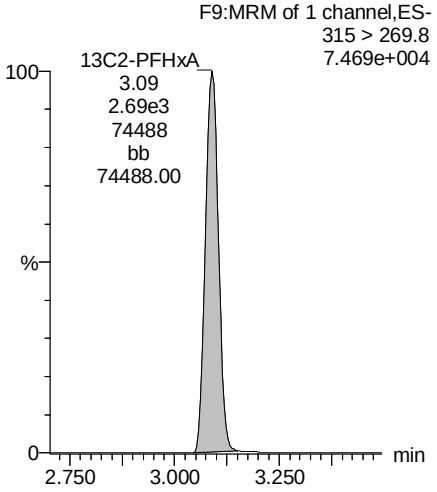
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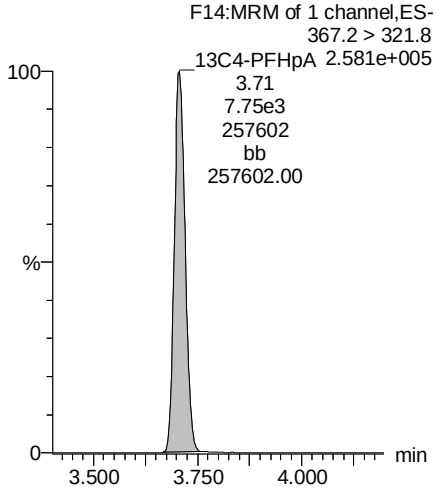
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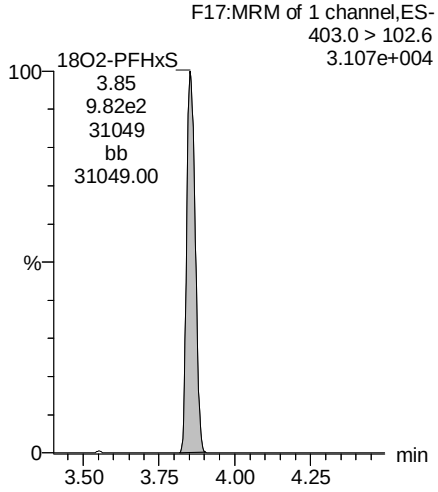
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



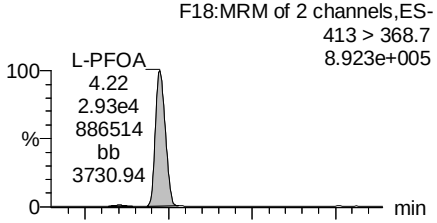
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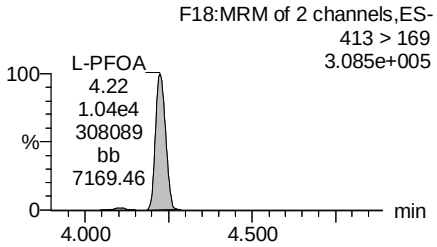
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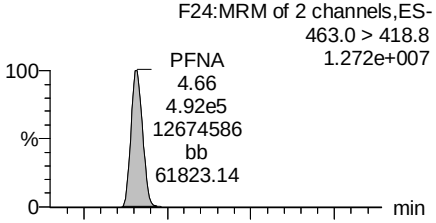
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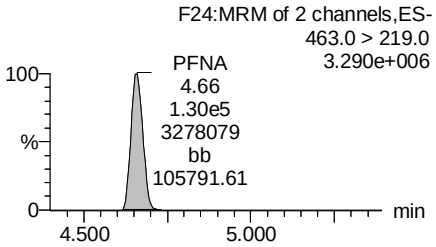
Total PFOA



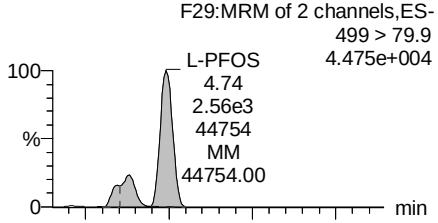


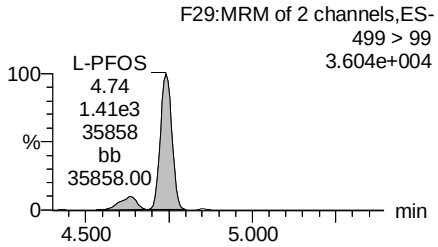
PFNA



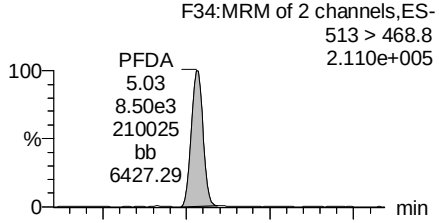


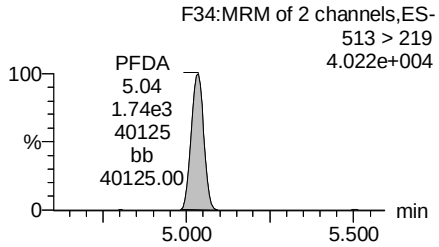
Total PFOS



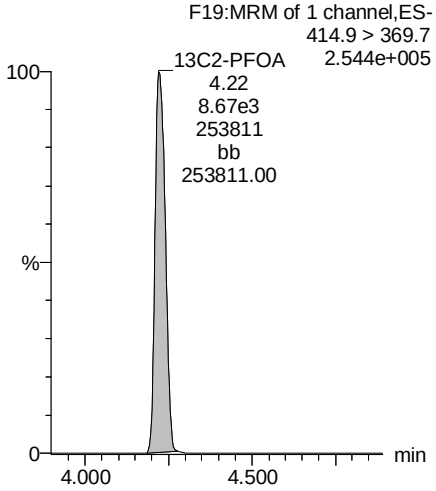


PFDA

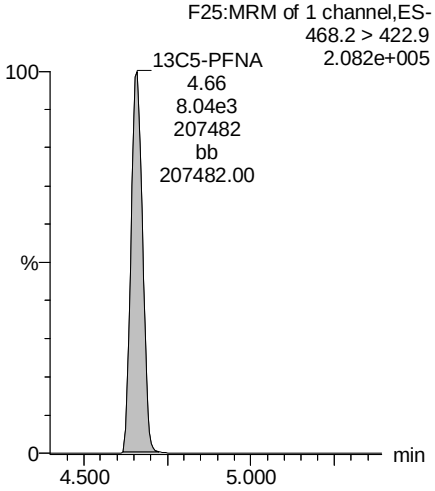




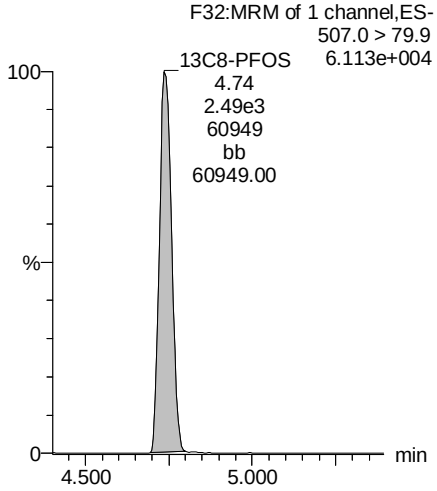
13C2-PFOA



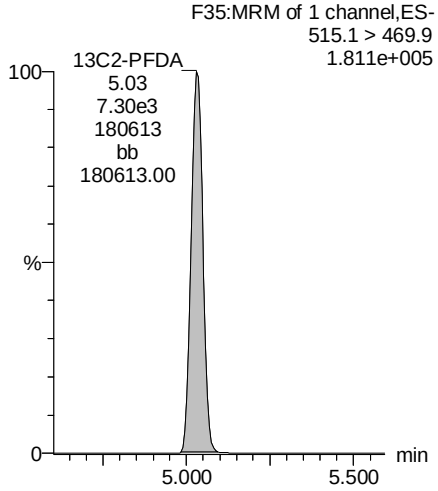
13C5-PFNA



13C8-PFOS



13C2-PFDA



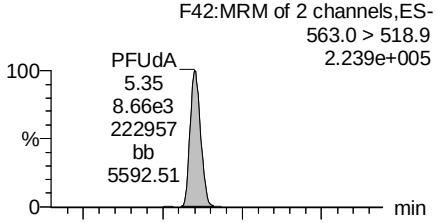
ANP 1/15/2018

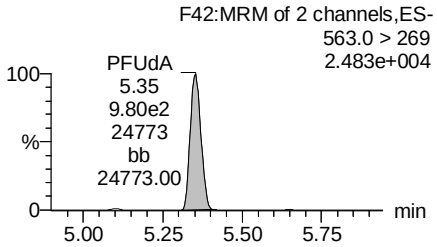
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Last Altered: Monday, January 15, 2018 10:04:32 Pacific Standard Time
Printed: Monday, January 15, 2018 10:08:43 Pacific Standard Time

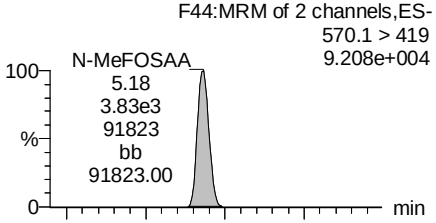
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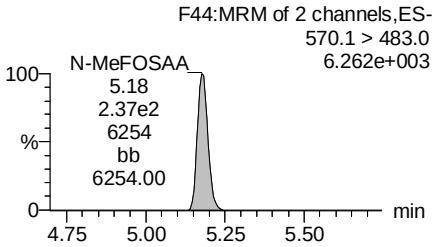
PFUdA



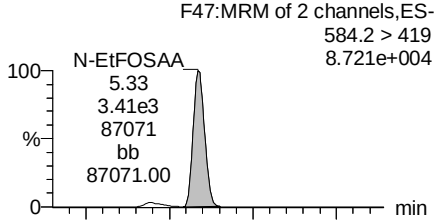


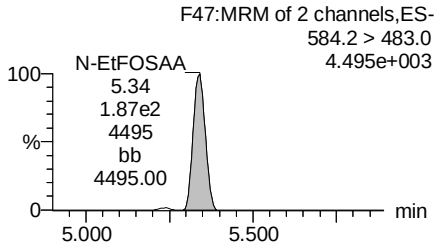
N-MeFOSAA



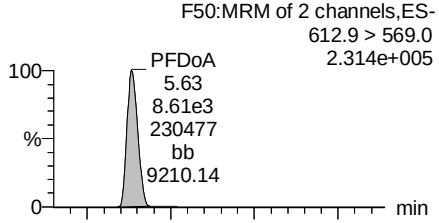


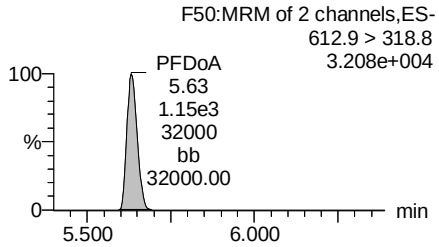
N-EtFOSAA



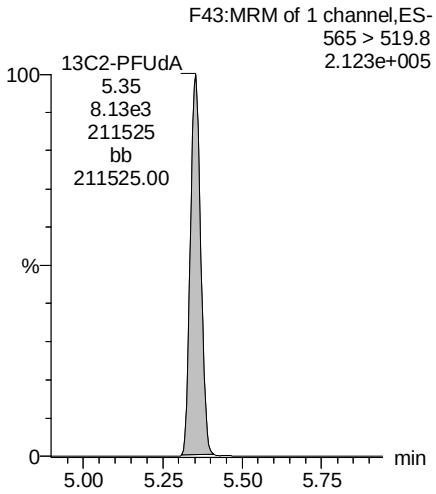


PFDoA

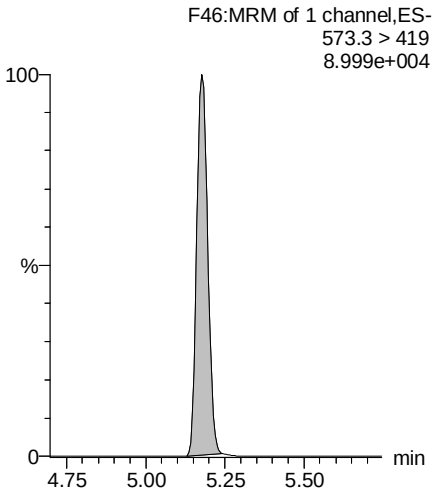




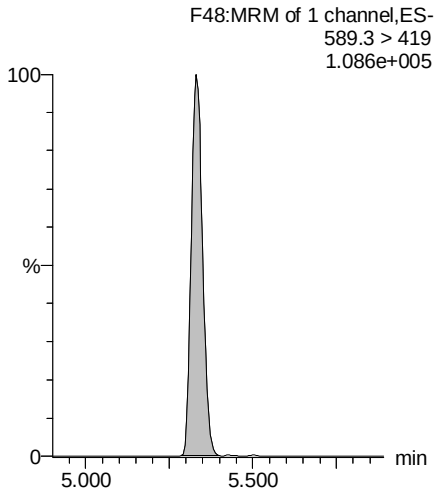
13C2-PFUdA



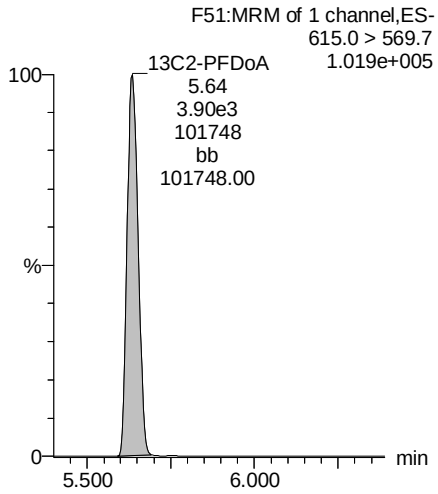
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



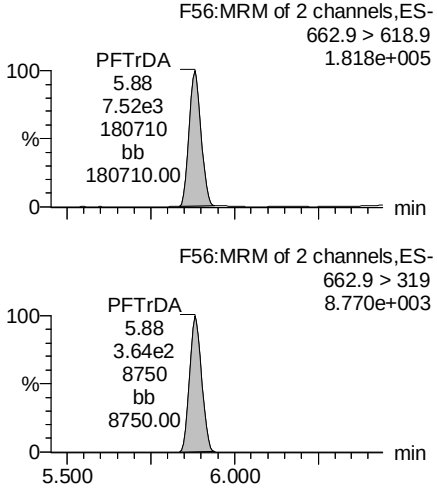
ANP 1/15/2018

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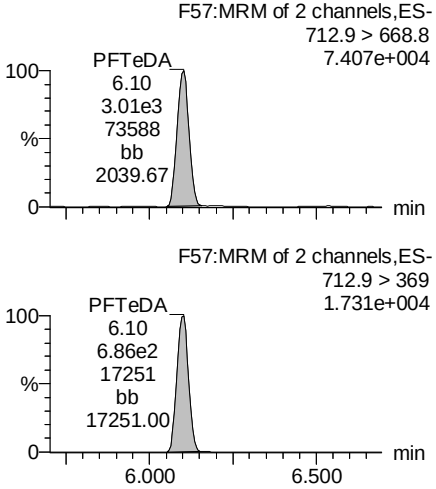
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Printed: Monday, January 15, 2018 10:08:43 Pacific Standard Time

Name: 180112M3_17, Date: 12-Jan-2018, Time: 16:40:14, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

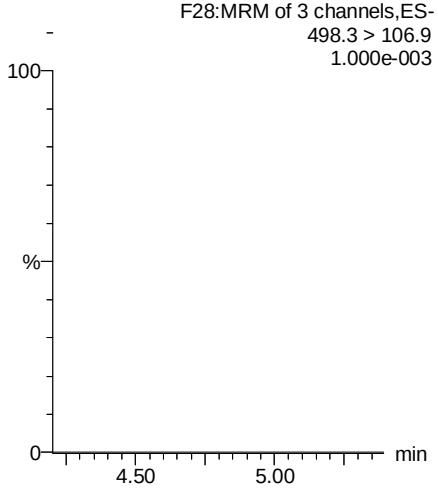
PFTrDA



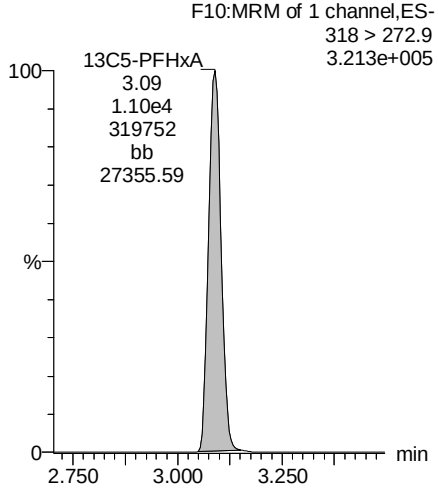
PFTeDA



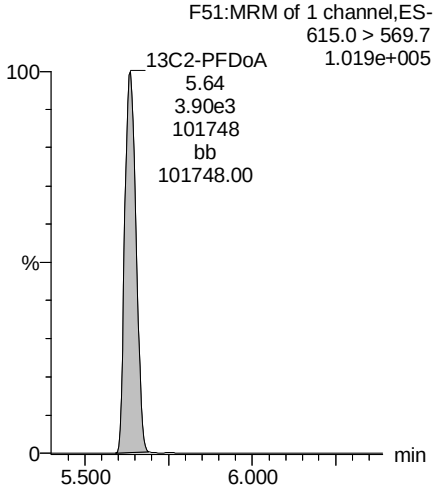
TCDA



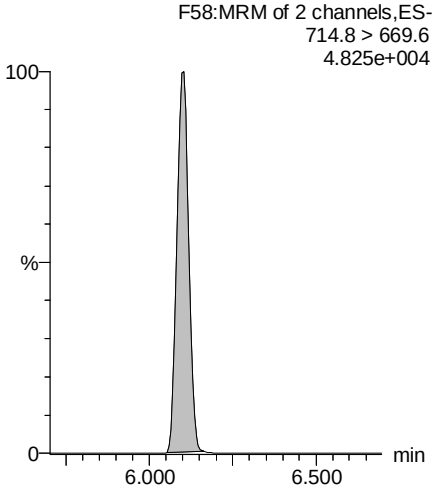
13C5-PFHxA



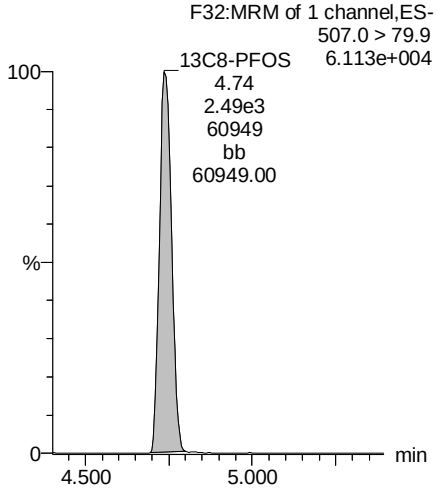
13C2-PFDoA



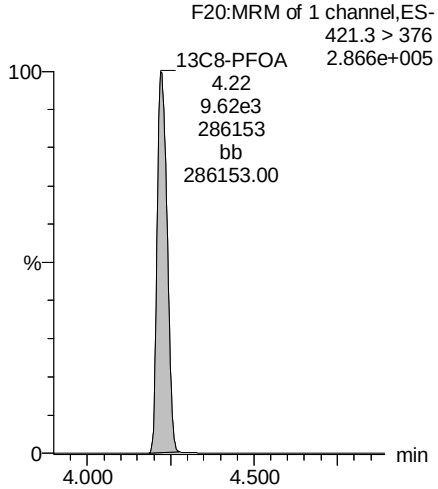
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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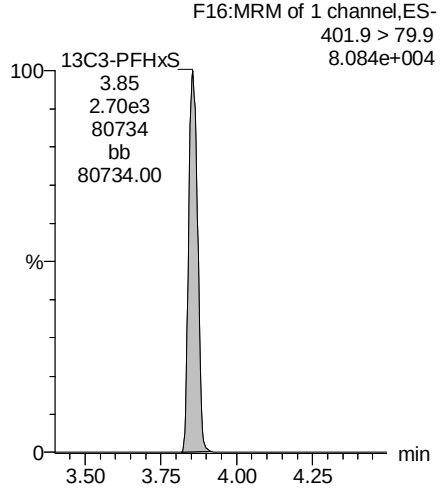
Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_17.qld

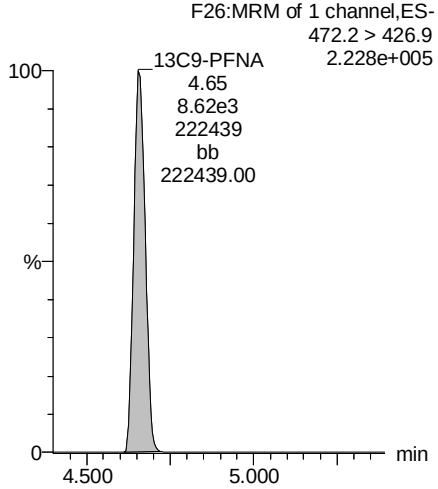
Last Altered: Monday, January 15, 2018 10:04:32 Pacific Standard Time
Printed: Monday, January 15, 2018 10:08:43 Pacific Standard Time

Name: 180112M3_17, Date: 12-Jan-2018, Time: 16:40:14, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

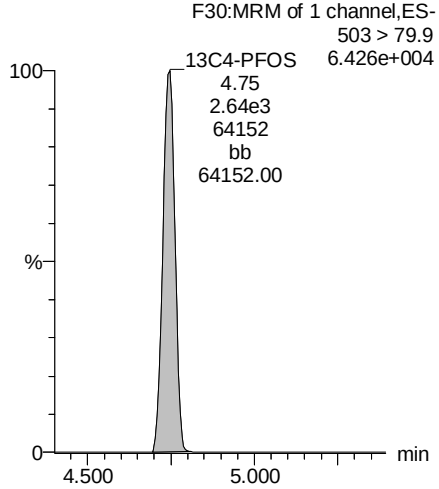
13C3-PFHxS



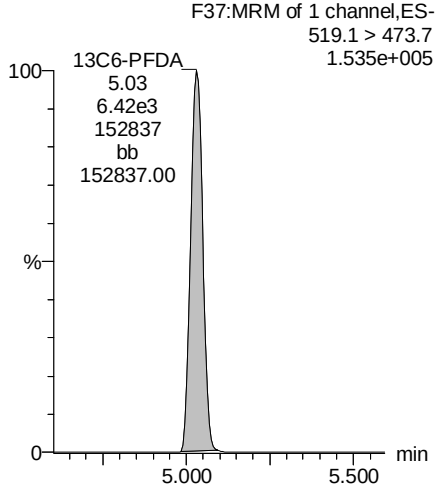
13C9-PFNA



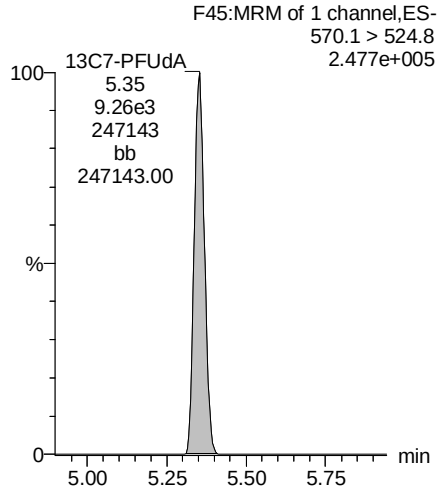
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/15/18

Dataset: U:\Q4.PRO\results\180115M1\180115M1-8.qld

Last Altered: Monday, January 15, 2018 12:06:31 Pacific Standard Time
Printed: Monday, January 15, 2018 12:09:02 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_011518.mdb 15 Jan 2018 11:38:30
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_8, Date: 15-Jan-2018, Time: 11:54:15, ID: B7L0188-MS1@10X Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	RRF	Divisor1	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	12	PFNA	463.0 > 418.8	6.45e3	1.04e2		0.2490	4.94	4.92	772	2990	
2	39	13C5-PFNA	468.2 > 422.9	1.04e2	1.22e2	0.910	0.2490	4.94	4.92	10.7	47.1	93.8
3	58	13C9-PFNA	472.2 > 426.9	1.22e2	1.22e2	1.000	0.2490	4.94	4.92	12.5	50.2	100.0

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Rev'd: MM 1/15/18

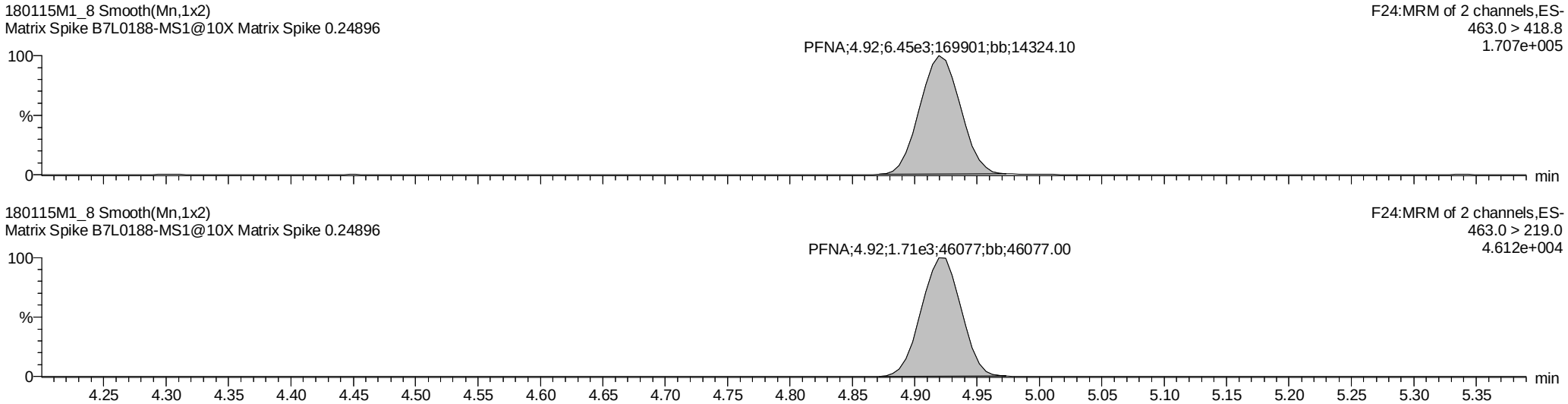
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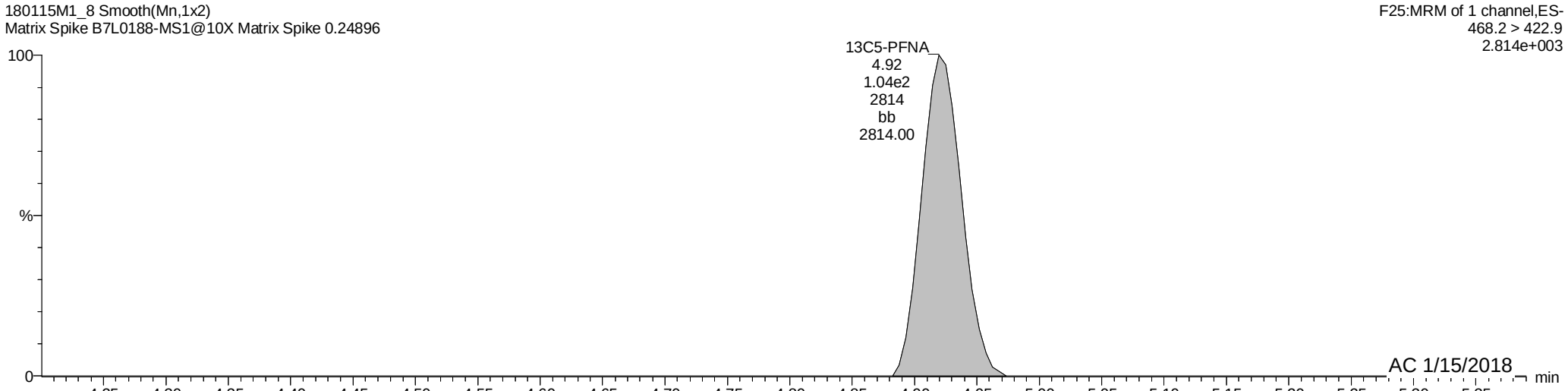
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_8, Date: 15-Jan-2018, Time: 11:54:15, ID: B7L0188-MS1@10X Matrix Spike 0.24896, Description: Matrix Spike

PFNA



13C5-PFNA



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Vista Analytical Laboratory

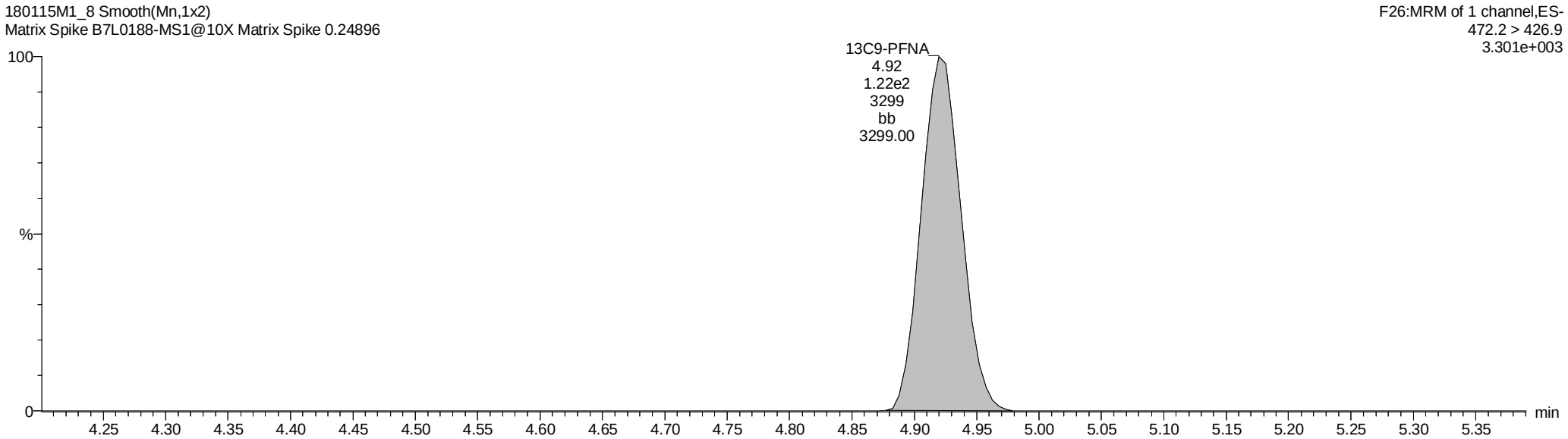
Rev'd: MM 1/15/18

Dataset: U:\Q4.PRO\results\180115M1\180115M1-8.qld

Last Altered: Monday, January 15, 2018 12:06:31 Pacific Standard Time
Printed: Monday, January 15, 2018 12:09:02 Pacific Standard Time

Name: 180115M1_8, Date: 15-Jan-2018, Time: 11:54:15, ID: B7L0188-MS1@10X Matrix Spike 0.24896, Description: Matrix Spike

13C9-PFNA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_18.qld

Last Altered: Monday, January 15, 2018 10:12:17 Pacific Standard Time
Printed: Monday, January 15, 2018 10:13:01 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_18, Date: 12-Jan-2018, Time: 16:51:42, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	1.74e3	1.27e3	0.237		2.66	2.59	17.1	39.4431	
2	4	PFHxA	313.2 > 268.9	2.69e4	2.53e3	0.237		3.15	3.09	53.2	135.6255	
3	5	PFHpA	363.0 > 318.9	1.94e4	7.37e3	0.237		3.78	3.71	32.9	108.4878	
4	6	L-PFHxS	398.9 > 79.6	1.50e3	9.96e2	0.237		3.94	3.85	18.8	44.4090	
5	9	L-PFOA	413 > 368.7	2.58e4	7.64e3	0.237		4.31	4.23	42.2	162.9695	
6	12	PFNA	463.0 > 418.8	3.98e5	6.55e3	0.237		4.81	4.66	760	3072.6180	E
7	14	L-PFOS	499 > 79.9	2.17e3	2.06e3	0.237		4.75	4.75	13.2	46.9149	
8	16	PFDA	513 > 468.8	7.14e3	6.95e3	0.237		5.18	5.03	12.9	38.1373	
9	18	N-MeFOSAA	570.1 > 419	4.14e3	3.30e3	0.237		5.32	5.18	15.7	38.4117	
10	19	N-EtFOSAA	584.2 > 419	2.79e3	3.43e3	0.237		5.48	5.34	10.2	40.0777	
11	20	PFUdA	563.0 > 518.9	8.58e3	7.79e3	0.237		5.50	5.35	13.8	50.4393	
12	22	PFDoA	612.9 > 569.0	7.44e3	4.09e3	0.237		5.77	5.63	22.7	39.5351	

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_18.qld

Last Altered: Monday, January 15, 2018 10:12:17 Pacific Standard Time
Printed: Monday, January 15, 2018 10:19:24 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_18, Date: 12-Jan-2018, Time: 16:51:42, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9	8.39e3	4.09e3	0.237		6.00	5.88	25.6	50.7204	
2	25	PFTeDA	712.9 > 668.8	3.68e3	2.10e3	0.237		6.22	6.10	21.9	42.7660	
3	33	13C3-PFBS	302. > 98.8	1.27e3	9.88e3	0.237	0.112	2.77	2.59	1.61	60.6871	115.3
4	34	13C2-PFHxA	315 > 269.8	2.53e3	9.88e3	0.237	0.691	3.15	3.09	3.20	19.4853	92.6
5	35	13C4-PFHpA	367.2 > 321.8	7.37e3	9.88e3	0.237	0.708	3.78	3.70	9.33	55.4946	105.4
6	36	18O2-PFHxS	403.0 > 102.6	9.96e2	2.75e3	0.237	0.353	3.94	3.85	4.52	53.9394	102.5
7	37	13C2-6:2 FTS	429.1 > 408.9	2.19e3	8.40e3	0.237	0.285	4.25	4.17	3.26	48.1646	91.5
8	38	13C2-PFOA	414.9 > 369.7	7.64e3	8.40e3	0.237	1.049	4.31	4.23	11.4	45.6145	86.7
9	39	13C5-PFNA	468.2 > 422.9	6.55e3	7.88e3	0.237	0.910	4.81	4.66	10.4	48.0590	91.3
10	40	13C8-PFOSA	506.1 > 77.7	1.66e3	6.74e3	0.237	0.252	4.87	4.72	3.08	51.5361	97.9
11	41	13C8-PFOS	507.0 > 79.9	2.06e3	2.39e3	0.237	0.987	4.89	4.74	10.8	45.9838	87.4
12	42	13C2-PFDA	515.1 > 469.9	6.95e3	5.77e3	0.237	1.311	5.18	5.03	15.1	48.3729	91.9
13	43	13C2-8:2 FTS	529.1 > 508.7	9.14e2	9.88e3	0.237	0.141	5.15	5.00	1.16	34.4588	65.5
14	44	d3-N-MeFOSAA	573.3 > 419	3.30e3	6.74e3	0.237	0.385	5.32	5.18	6.13	67.0458	127.4
15	45	d5-N-EtFOSAA	589.3 > 419	3.43e3	6.74e3	0.237	0.445	5.47	5.34	6.35	60.0824	114.2
16	46	13C2-PFUdA	565 > 519.8	7.79e3	6.74e3	0.237	1.014	5.49	5.35	14.5	59.9941	114.0
17	47	13C2-PFDoA	615.0 > 569.7	4.09e3	6.74e3	0.237	0.575	5.77	5.64	7.59	55.5515	105.5
18	49	13C2-PFTeDA	714.8 > 669.6	2.10e3	6.74e3	0.237	0.305	6.22	6.10	3.89	53.6407	101.9
19	55	13C5-PFHxA	318 > 272.9	9.88e3	9.88e3	0.237	1.000	3.15	3.09	12.5	52.6338	100.0
20	56	13C3-PFHxS	401.9 > 79.9	2.75e3	2.75e3	0.237	1.000	4.02	3.86	12.5	52.6338	100.0
21	57	13C8-PFOA	421.3 > 376	8.40e3	8.40e3	0.237	1.000	4.38	4.22	12.5	52.6338	100.0
22	58	13C9-PFNA	472.2 > 426.9	7.88e3	7.88e3	0.237	1.000	4.81	4.66	12.5	52.6338	100.0
23	59	13C4-PFOS	503 > 79.9	2.39e3	2.39e3	0.237	1.000	4.89	4.74	12.5	52.6338	100.0
24	60	13C6-PFDA	519.1 > 473.7	5.77e3	5.77e3	0.237	1.000	5.18	5.03	12.5	52.6338	100.0
25	61	13C7-PFUdA	570.1 > 524.8	6.74e3	6.74e3	0.237	1.000	5.49	5.35	12.5	52.6338	100.0
26	62	Total PFHxS	398.9 > 79.6	1.50e3	9.96e2	0.237		4.14		18.8	44.4090	
27	63	Total PFOA	413 > 368.7	2.60e4	7.64e3	0.237		4.51		42.6	164.3442	
28	64	Total PFOS	499 > 79.9	2.17e3	2.06e3	0.237		4.75		13.2	46.9149	
29	65	Total N-MeFOSAA	570.1 > 419	4.14e3	3.30e3	0.237		5.45		15.7	38.4117	
30	66	Total N-EtFOSAA	584.2 > 419	2.79e3	3.43e3	0.237		5.61		10.2	40.0777	

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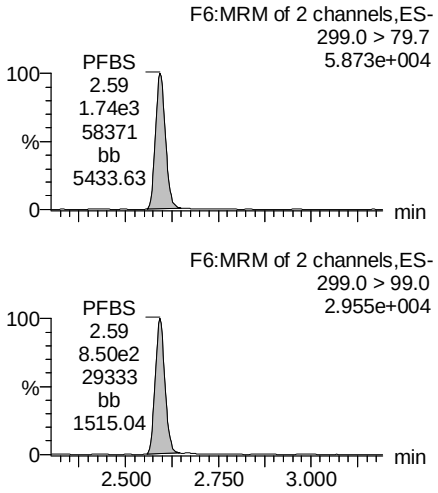
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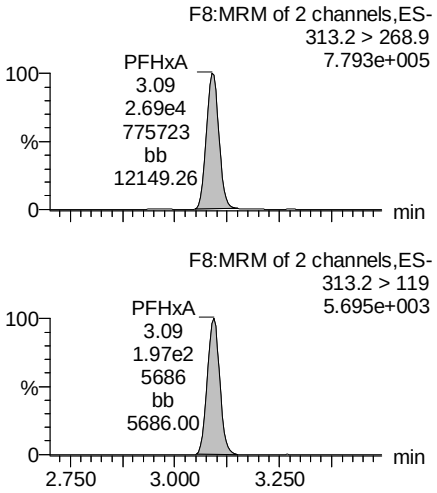
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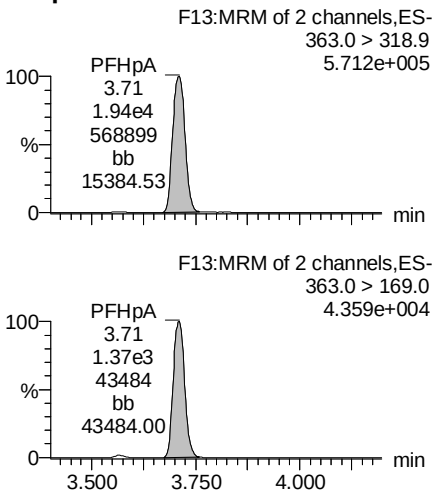
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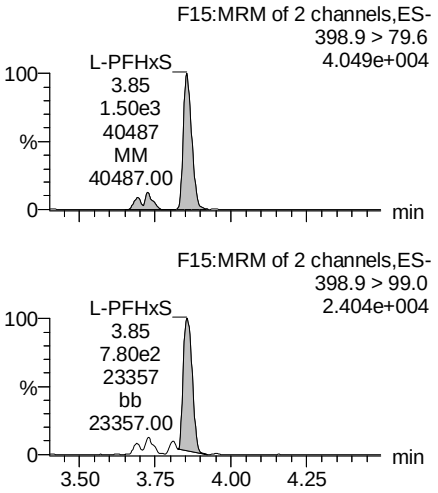
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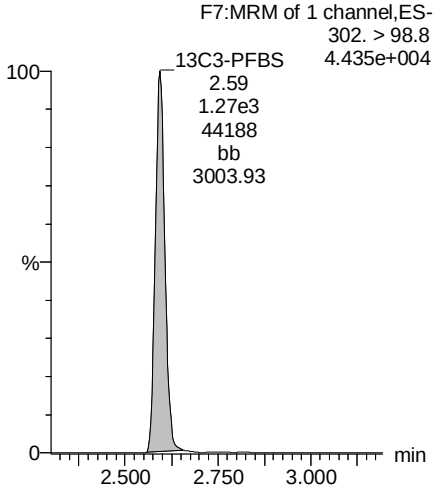
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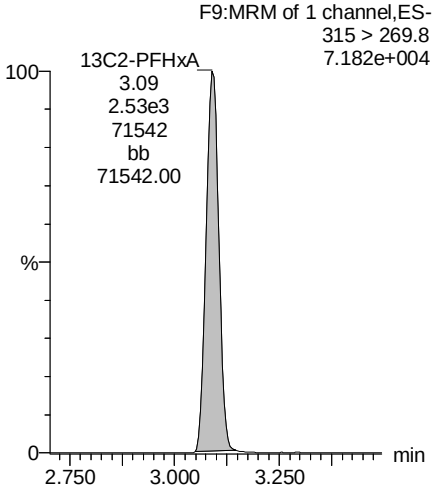
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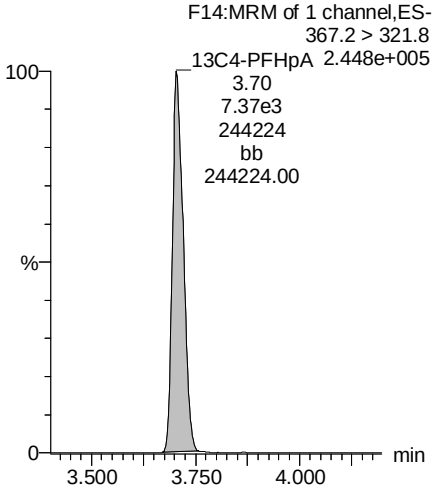
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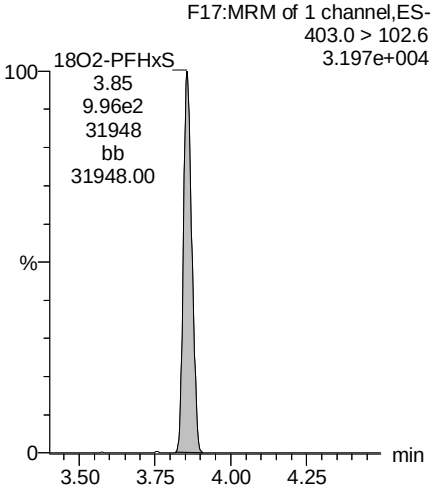
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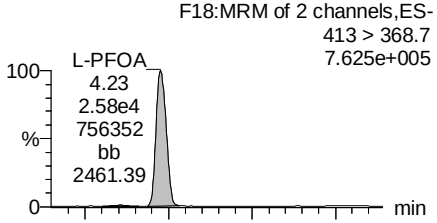
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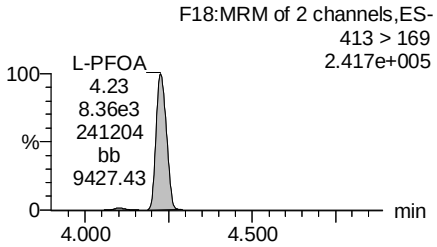
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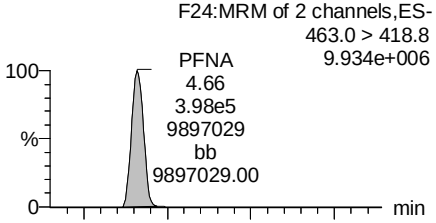
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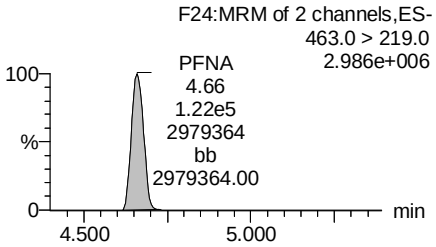
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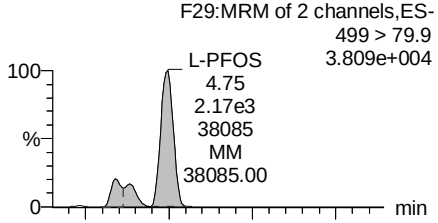


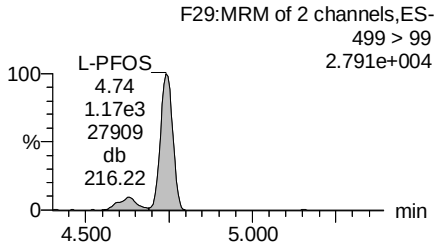
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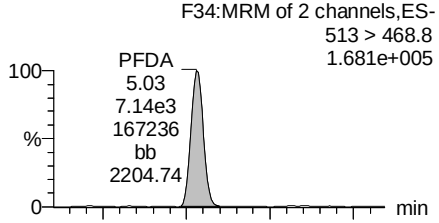


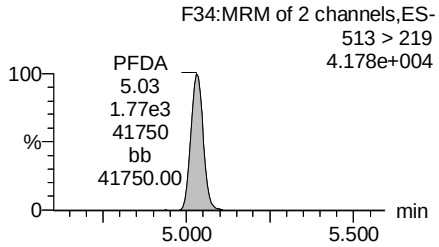
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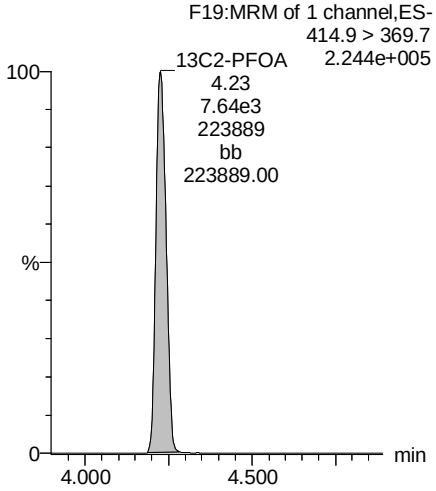


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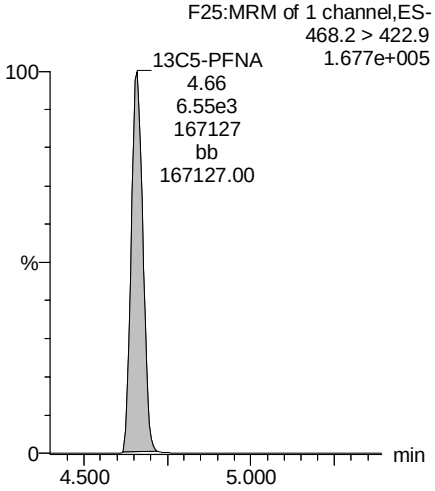




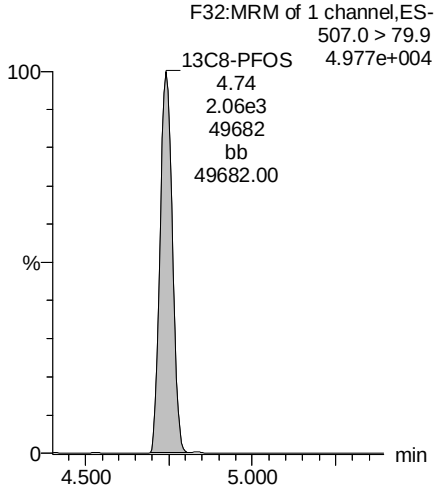
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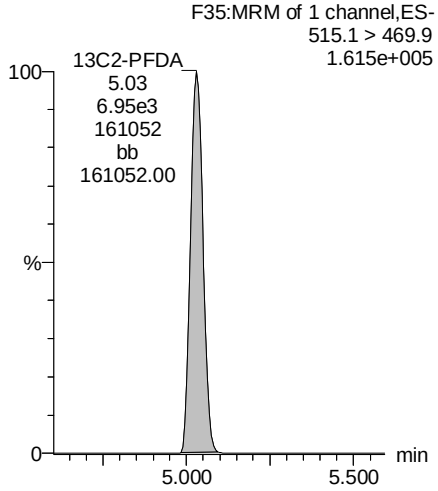
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13C8-PFOS



13C2-PFDA



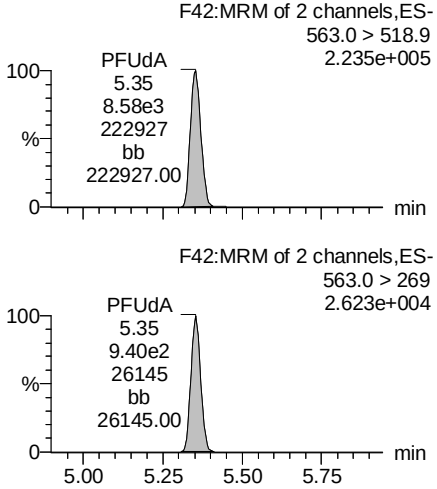
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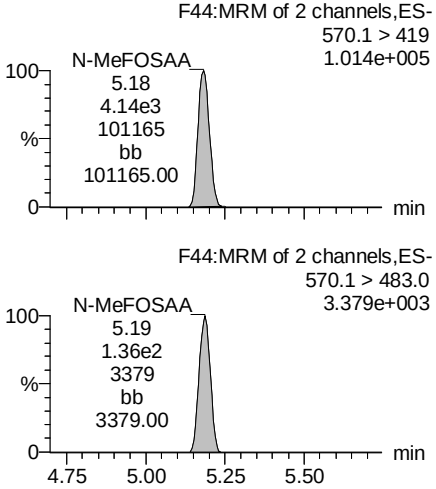
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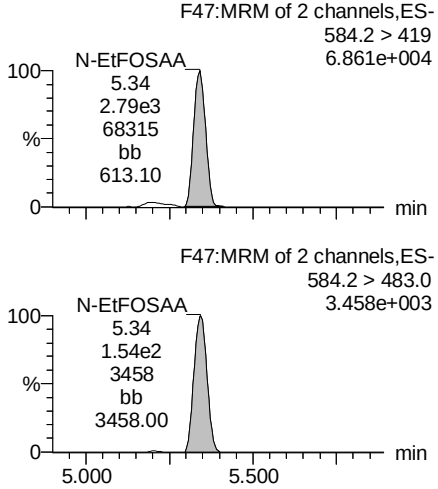
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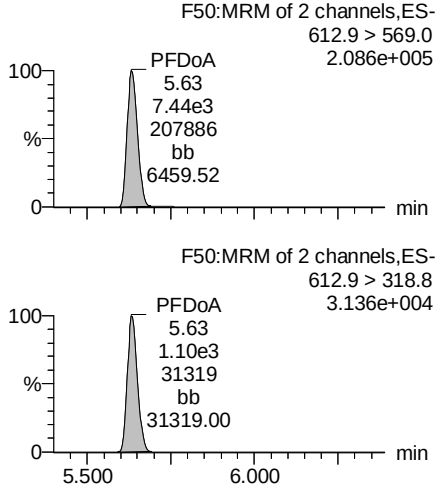
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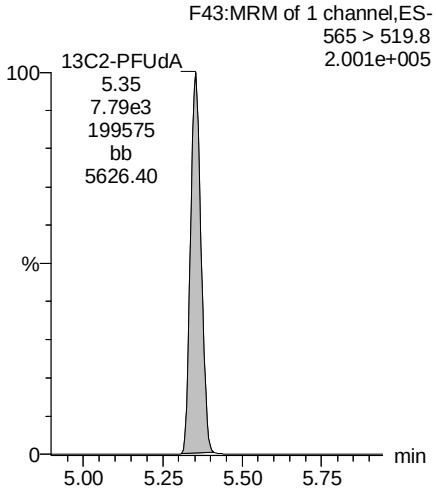
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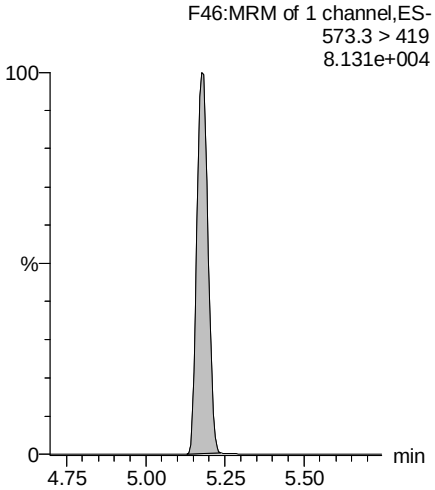
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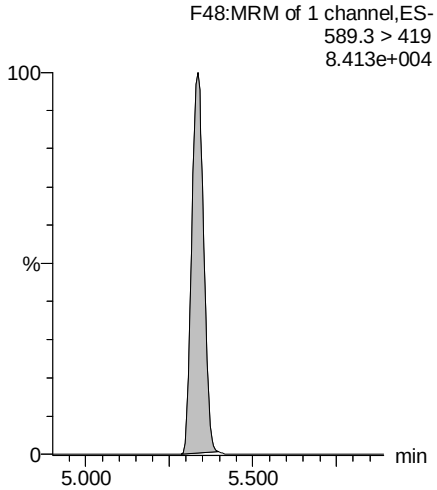
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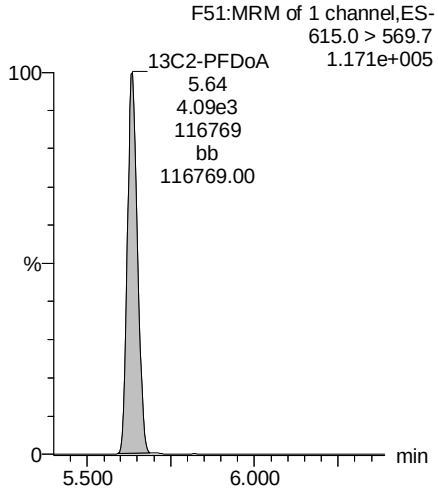
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d5-N-EtFOSAA



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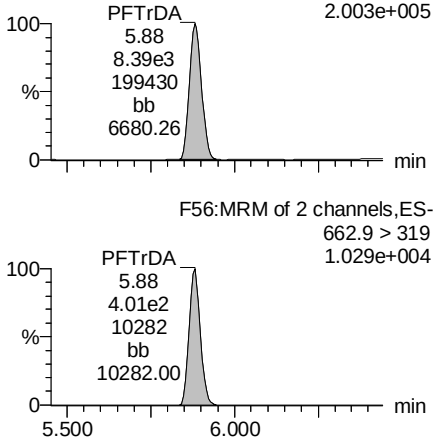
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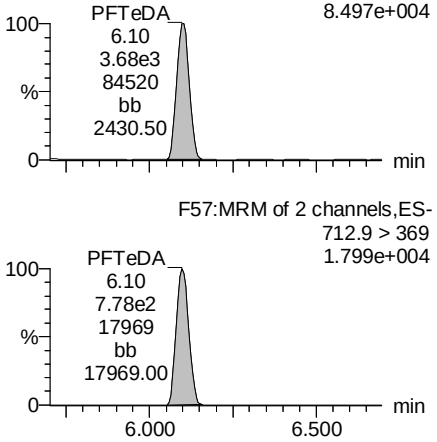
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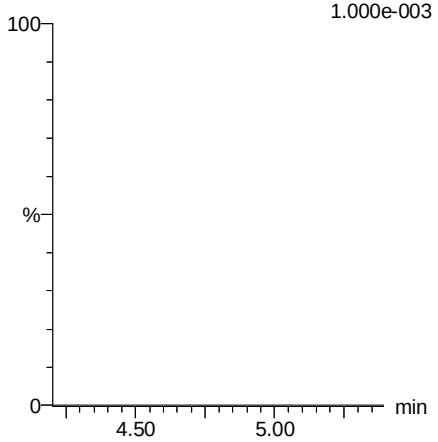
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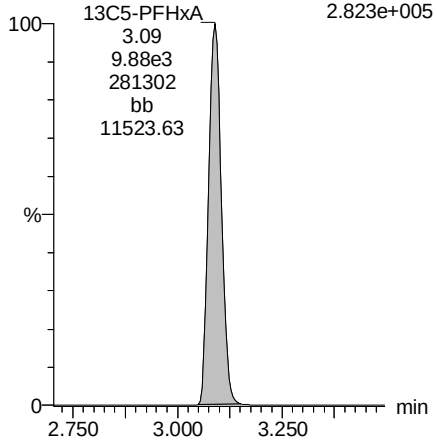
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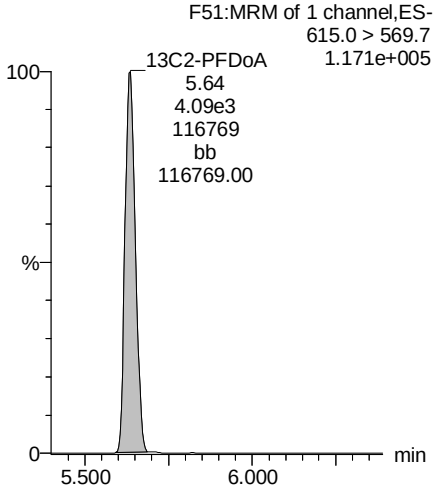
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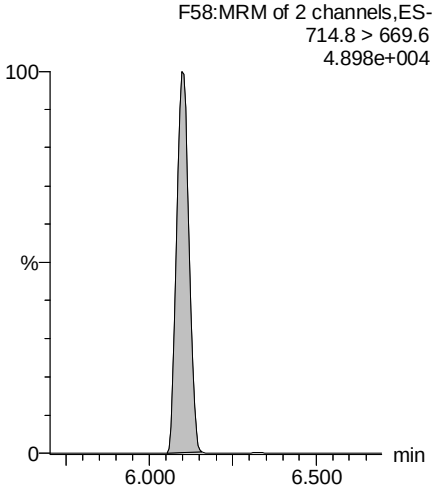
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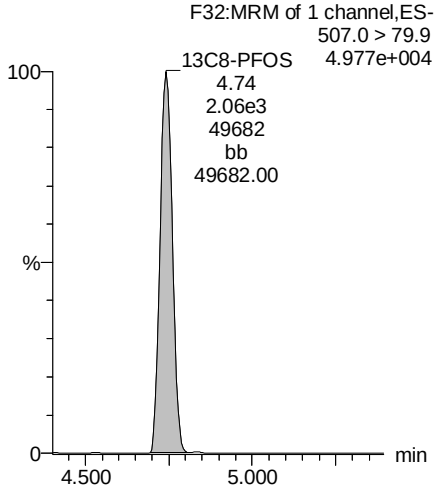
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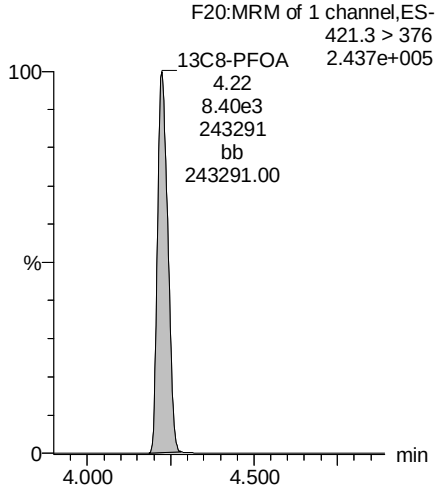
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13C8-PFOS



13C8-PFOA



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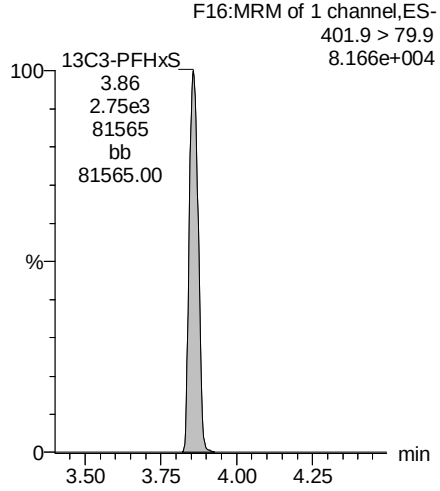
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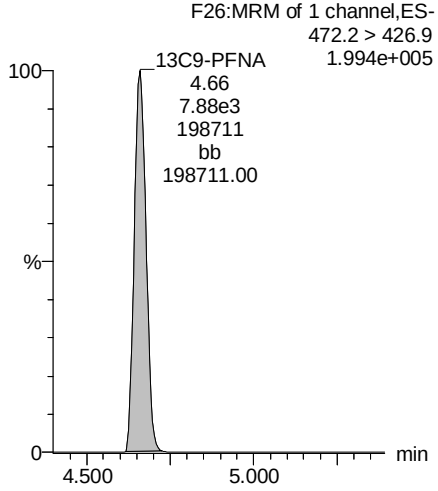
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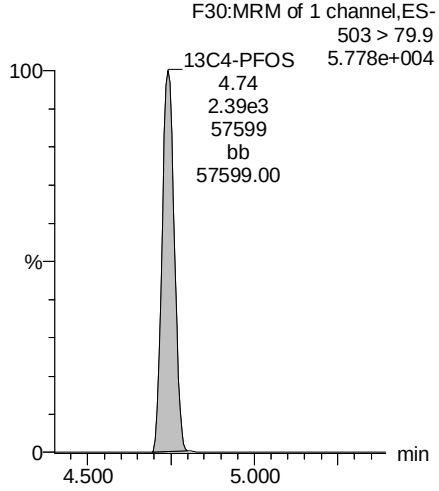
13C3-PFHxS



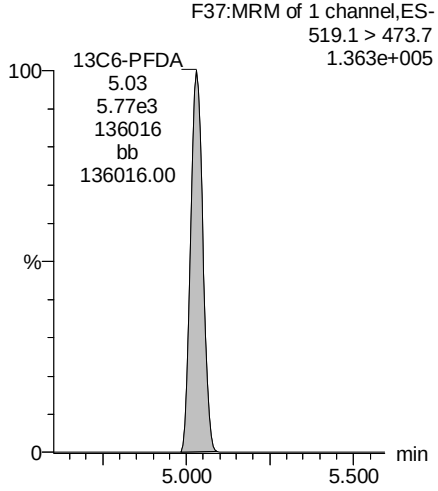
13C9-PFNA



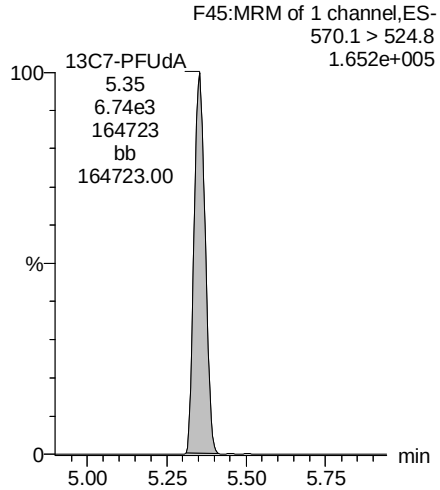
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180115M1\180115M1-9.qld

Last Altered: Monday, January 15, 2018 12:43:09 Pacific Standard Time
Printed: Monday, January 15, 2018 12:49:54 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_9, Date: 15-Jan-2018, Time: 12:06:04, ID: B7L0188-MSD1@10X Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

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1	12	PFNA	463.0 > 418.8	9.31e3	1.58e2		0.2375	4.94	4.91	737	2950	
2	39	13C5-PFNA	468.2 > 422.9	1.58e2	1.43e2	0.910	0.2375	4.94	4.91	13.8	63.8	121.1
3	58	13C9-PFNA	472.2 > 426.9	1.43e2	1.43e2	1.000	0.2375	4.94	4.92	12.5	52.6	100.0

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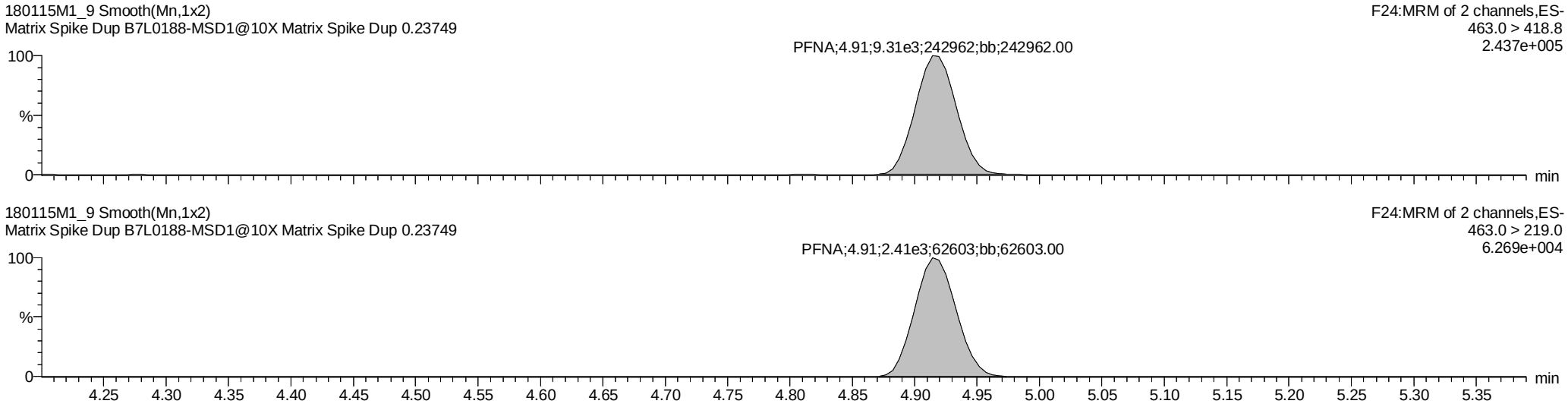
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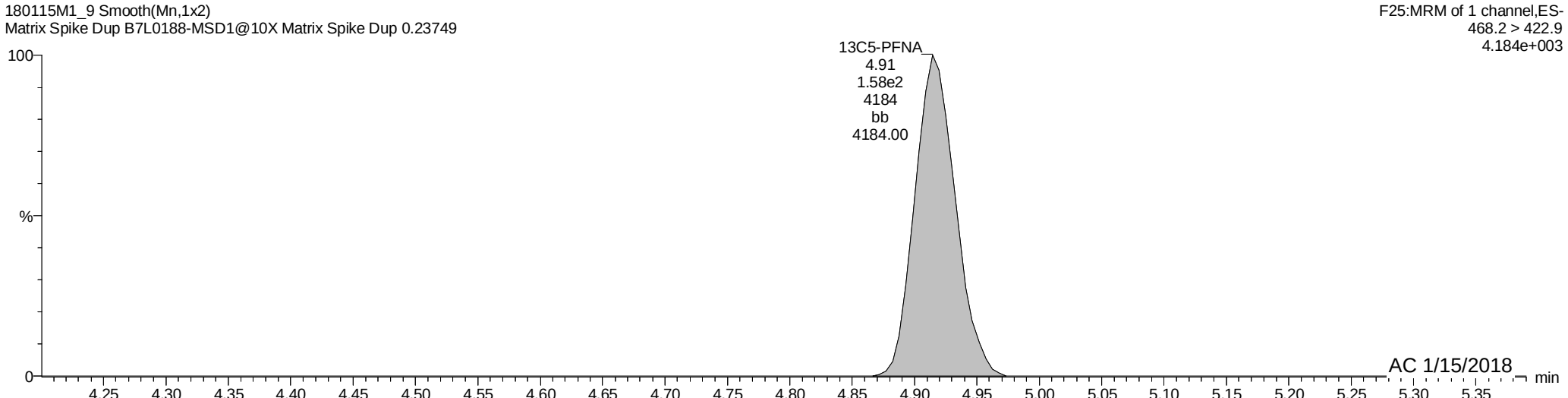
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Name: 180115M1_9, Date: 15-Jan-2018, Time: 12:06:04, ID: B7L0188-MSD1@10X Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

PFNA



13C5-PFNA



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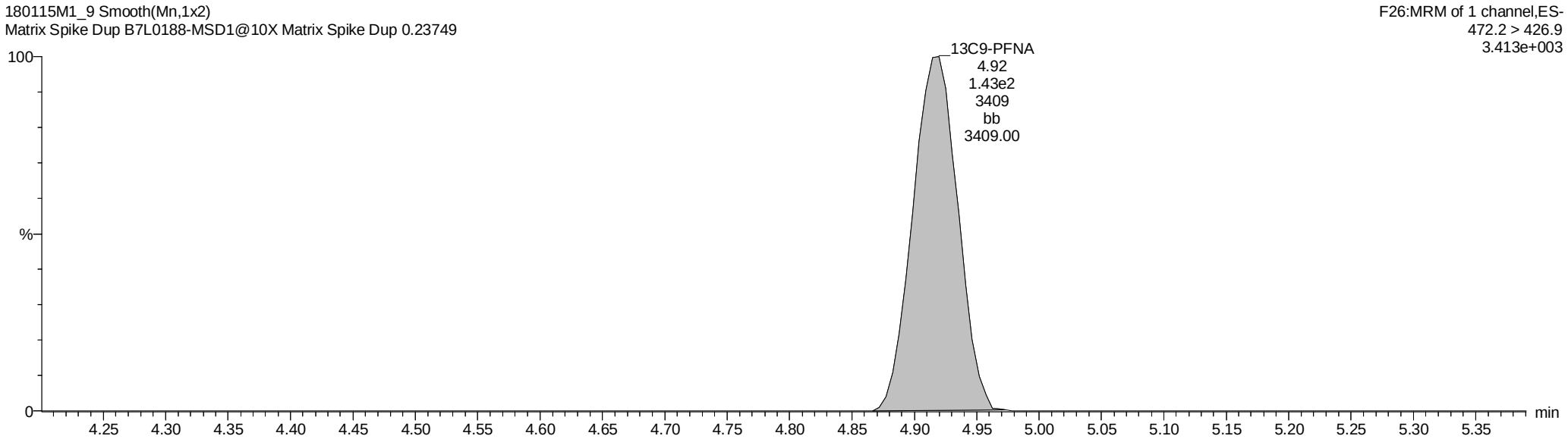
Rev'd: MM 1/16/18

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Name: 180115M1_9, Date: 15-Jan-2018, Time: 12:06:04, ID: B7L0188-MSD1@10X Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

13C9-PFNA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180115M1\180115M1-13.qld

Last Altered: Tuesday, January 16, 2018 08:16:21 Pacific Standard Time
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_13, Date: 15-Jan-2018, Time: 12:53:04, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.72e3	0.253		2.87				
2	4	PFHxA	313.2 > 268.9		3.77e3	0.253		3.36				
3	5	PFHpA	363.0 > 318.9	1.33e2	9.37e3	0.253		4.00	3.97	0.177	0.4303	
4	6	L-PFHxS	398.9 > 79.6	8.27e0	1.40e3	0.253		4.14	4.11	0.0740	0.1836	
5	9	L-PFOA	413 > 368.7	4.03e2	1.31e4	0.253		4.50	4.48	0.384	1.1705	
6	12	PFNA	463.0 > 418.8	1.35e2	1.18e4	0.253		4.94	4.91	0.143	0.3821	
7	14	L-PFOS	499 > 79.9		3.12e3	0.253		5.02				
8	16	PFDA	513 > 468.8		8.93e3	0.253		5.31				
9	18	N-MeFOSAA	570.1 > 419		4.00e3	0.253		5.45				
10	19	N-EtFOSAA	584.2 > 419		4.60e3	0.253		5.60				
11	20	PFUdA	563.0 > 518.9		1.09e4	0.253		5.62				
12	22	PFDoA	612.9 > 569.0		1.06e4	0.253		5.91				

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Dataset: U:\Q4.PRO\results\180115M1\180115M1-13.qld

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Name: 180115M1_13, Date: 15-Jan-2018, Time: 12:53:04, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		1.06e4	0.253		6.15				
2	25	PFTeDA	712.9 > 668.8		4.83e3	0.253		6.35				
3	33	13C3-PFBS	302. > 98.8	1.72e3	1.42e4	0.253	0.112	2.87	2.84	1.52	53.6775	108.7
4	34	13C2-PFHxA	315 > 269.8	3.77e3	1.42e4	0.253	0.691	3.36	3.34	3.32	18.9882	96.1
5	35	13C4-PFHpA	367.2 > 321.8	9.37e3	1.42e4	0.253	0.708	4.00	3.97	8.25	46.0309	93.2
6	36	18O2-PFHxS	403.0 > 102.6	1.40e3	3.71e3	0.253	0.353	4.14	4.11	4.70	52.6150	106.6
7	37	13C2-6:2 FTS	429.1 > 408.9	2.27e3	1.32e4	0.253	0.285	4.46	4.42	2.16	29.9230	60.6
8	38	13C2-PFOA	414.9 > 369.7	1.31e4	1.32e4	0.253	1.049	4.50	4.48	12.4	46.8344	94.9
9	39	13C5-PFNA	468.2 > 422.9	1.18e4	1.25e4	0.253	0.910	4.94	4.91	11.8	51.1493	103.6
10	40	13C8-PFOSA	506.1 > 77.7	2.34e3	1.33e4	0.253	0.252	5.00	4.96	2.21	34.6137	70.1
11	41	13C8-PFOS	507.0 > 79.9	3.12e3	3.43e3	0.253	0.987	5.02	4.99	11.4	45.4492	92.1
12	42	13C2-PFDA	515.1 > 469.9	8.93e3	8.72e3	0.253	1.311	5.31	5.28	12.8	38.5773	78.1
13	43	13C2-8:2 FTS	529.1 > 508.7	1.64e3	1.42e4	0.253	0.141	5.28	5.25	1.45	40.4377	81.9
14	44	d3-N-MeFOSAA	573.3 > 419	4.00e3	1.33e4	0.253	0.385	5.45	5.42	3.77	38.6575	78.3
15	45	d5-N-EtFOSAA	589.3 > 419	4.60e3	1.33e4	0.253	0.445	5.60	5.57	4.33	38.3716	77.7
16	46	13C2-PFUdA	565 > 519.8	1.09e4	1.33e4	0.253	1.014	5.62	5.60	10.2	39.8105	80.6
17	47	13C2-PFDoA	615.0 > 569.7	1.06e4	1.33e4	0.253	0.575	5.91	5.87	9.93	68.2115	138.2
18	49	13C2-PFTeDA	714.8 > 669.6	4.83e3	1.33e4	0.253	0.305	6.35	6.31	4.54	58.7312	119.0
19	55	13C5-PFHxA	318 > 272.9	1.42e4	1.42e4	0.253	1.000	3.36	3.34	12.5	49.3720	100.0
20	56	13C3-PFHxS	401.9 > 79.9	3.71e3	3.71e3	0.253	1.000	4.14	4.11	12.5	49.3720	100.0
21	57	13C8-PFOA	421.3 > 376	1.32e4	1.32e4	0.253	1.000	4.50	4.48	12.5	49.3720	100.0
22	58	13C9-PFNA	472.2 > 426.9	1.25e4	1.25e4	0.253	1.000	4.94	4.91	12.5	49.3720	100.0
23	59	13C4-PFOS	503 > 79.9	3.43e3	3.43e3	0.253	1.000	5.02	4.99	12.5	49.3720	100.0
24	60	13C6-PFDA	519.1 > 473.7	8.72e3	8.72e3	0.253	1.000	5.31	5.28	12.5	49.3720	100.0
25	61	13C7-PFUdA	570.1 > 524.8	1.33e4	1.33e4	0.253	1.000	5.62	5.59	12.5	49.3720	100.0
26	62	Total PFHxS	398.9 > 79.6	8.27e0	1.40e3	0.253		4.14		0.0740	0.1836	
27	63	Total PFOA	413 > 368.7	4.03e2	1.31e4	0.253		4.51		0.384	1.1705	
28	64	Total PFOS	499 > 79.9	0.00e0	3.12e3	0.253		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	4.00e3	0.253		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	4.60e3	0.253		5.61		0.000		

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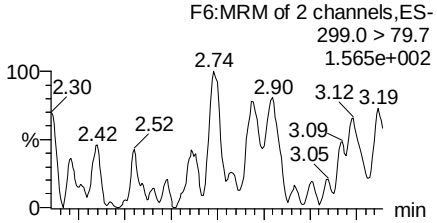
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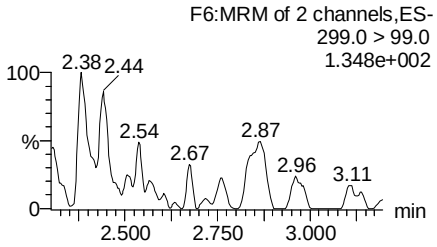
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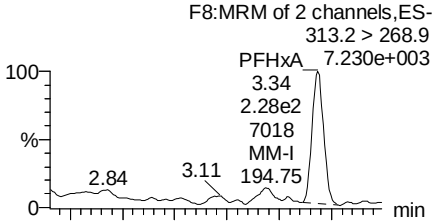
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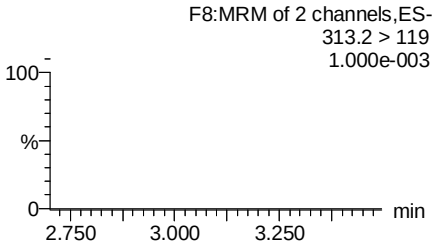
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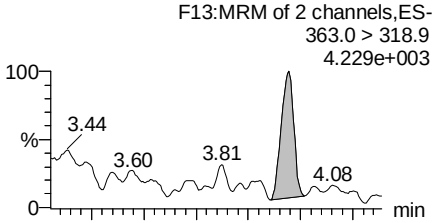


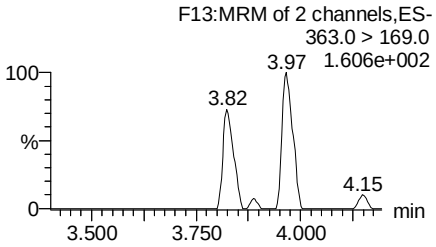
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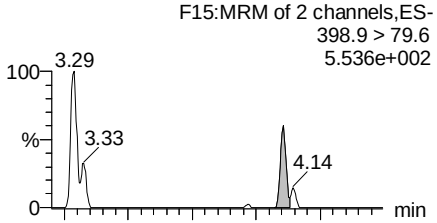


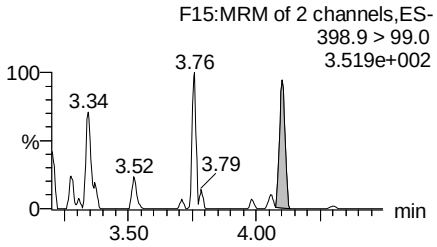
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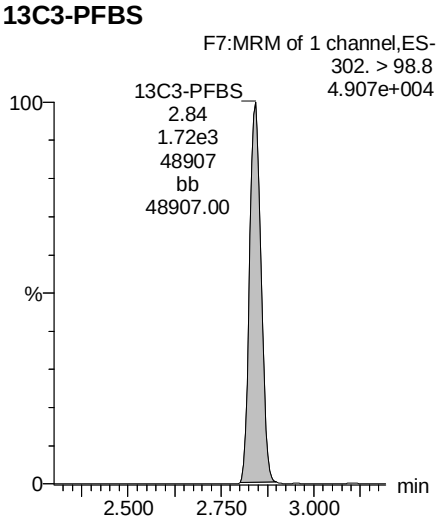


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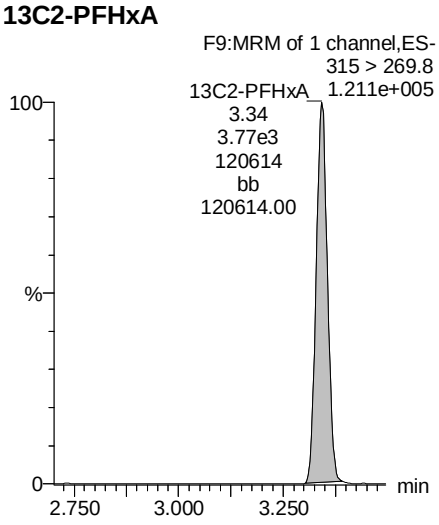




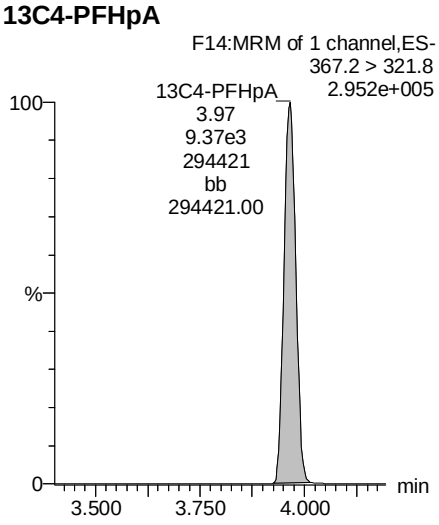
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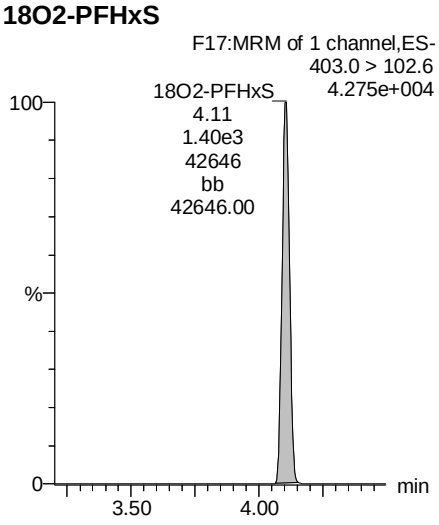
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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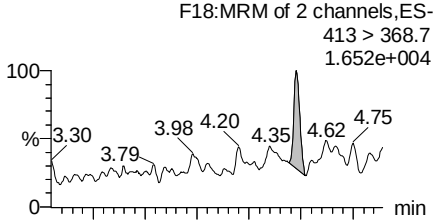
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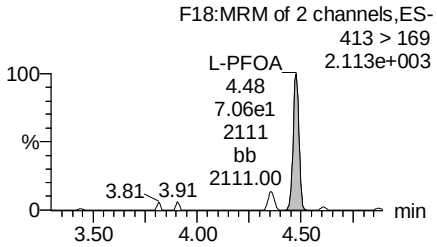
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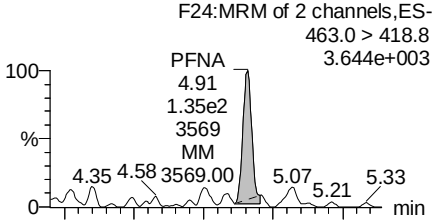
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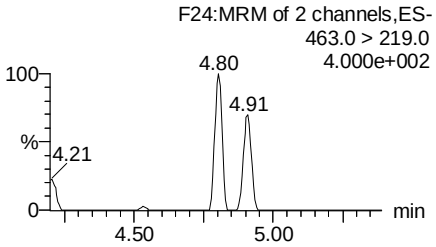
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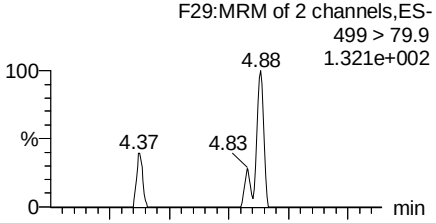


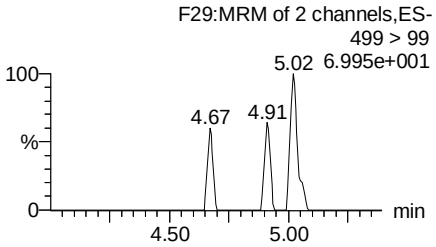
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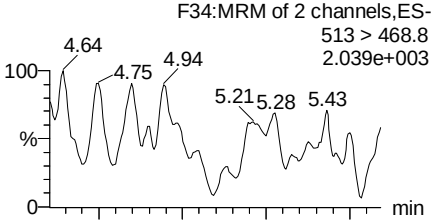


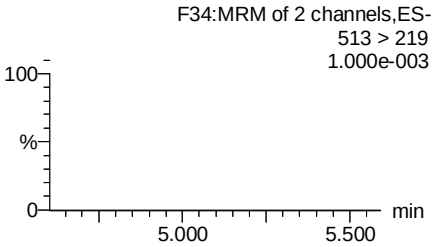
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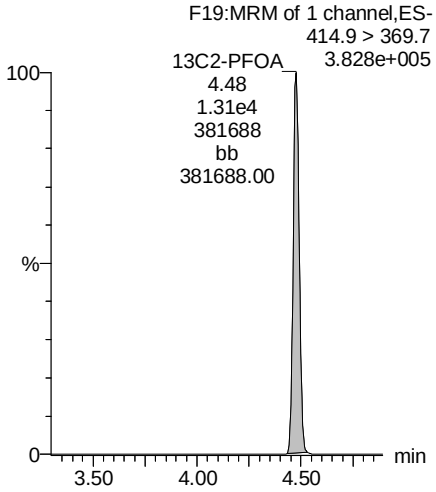


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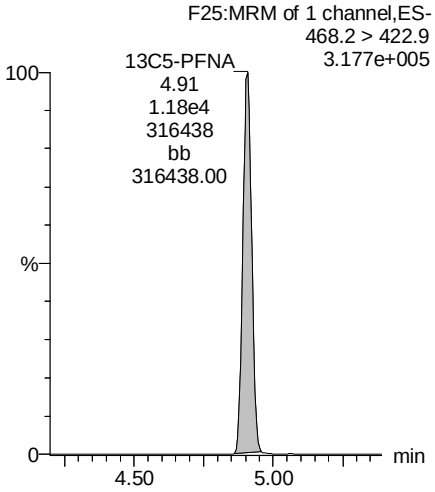




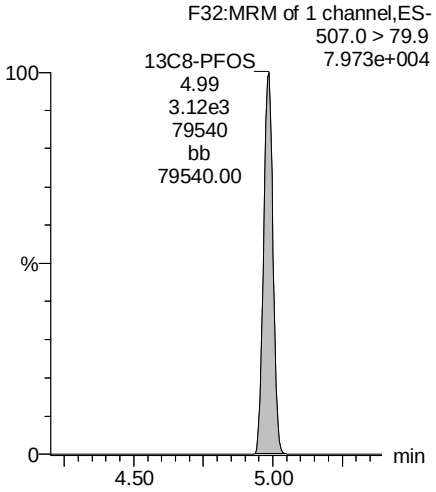
13C2-PFOA



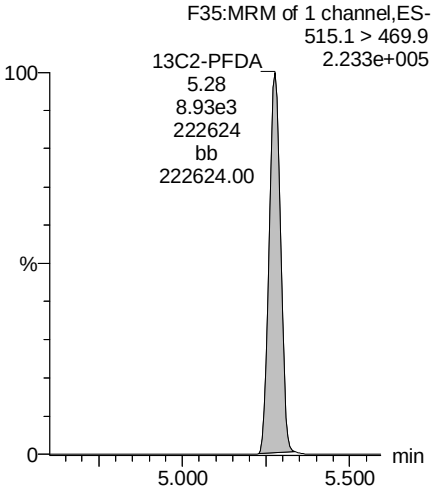
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13C8-PFOS



13C2-PFDA



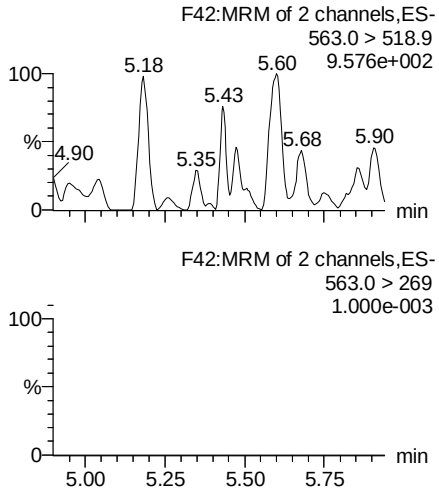
AC 1/16/2018

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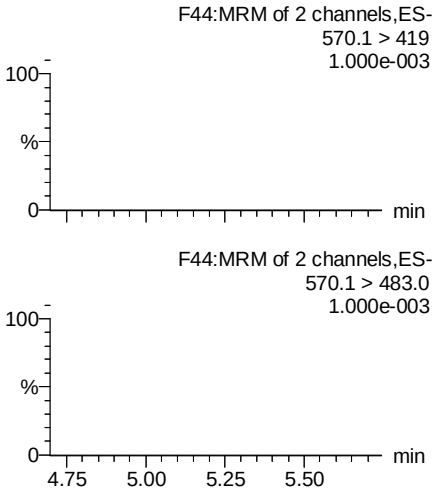
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Name: 180115M1_13, Date: 15-Jan-2018, Time: 12:53:04, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

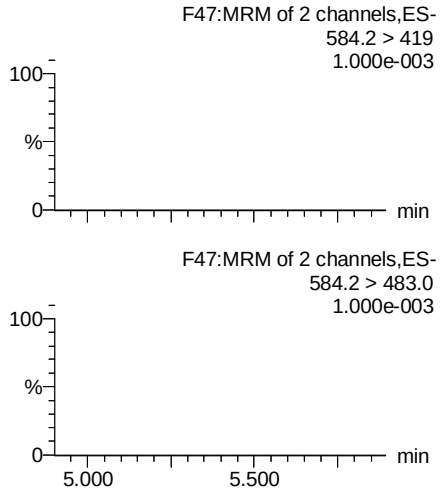
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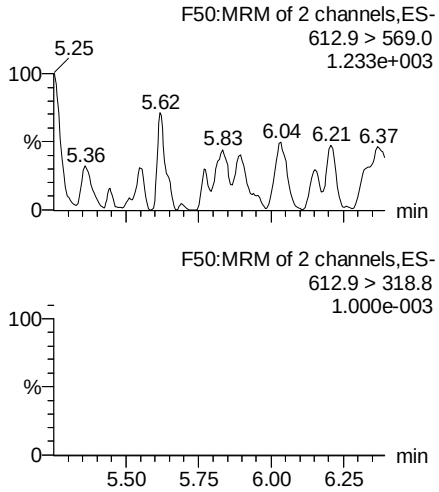
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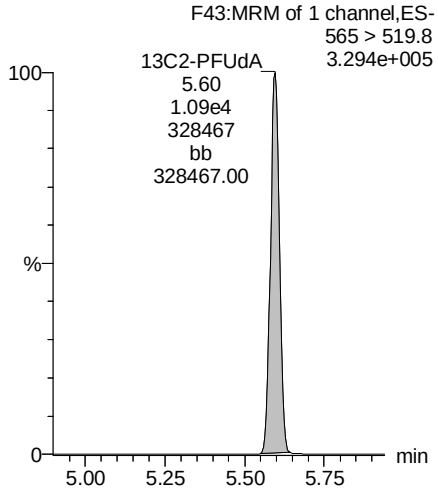
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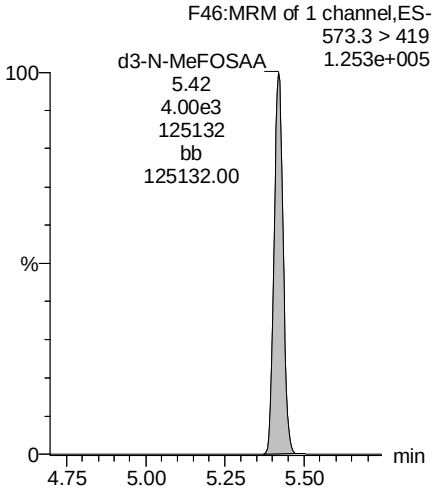
PFDoA



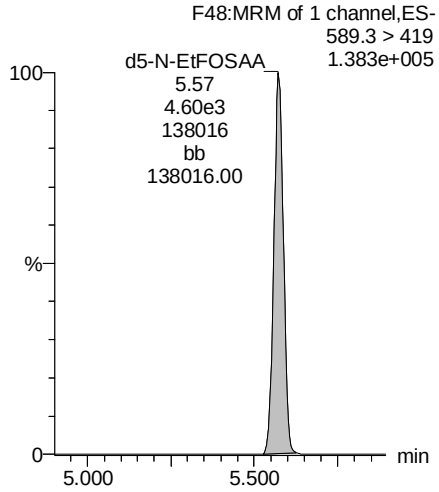
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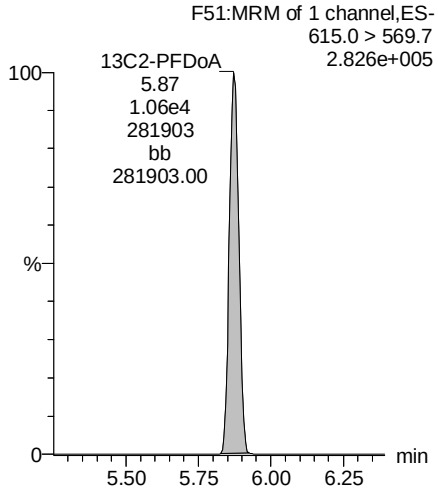
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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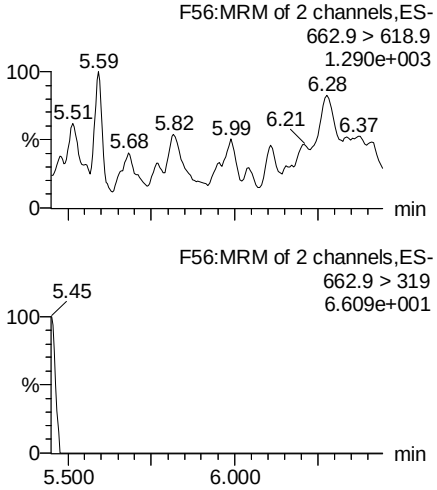
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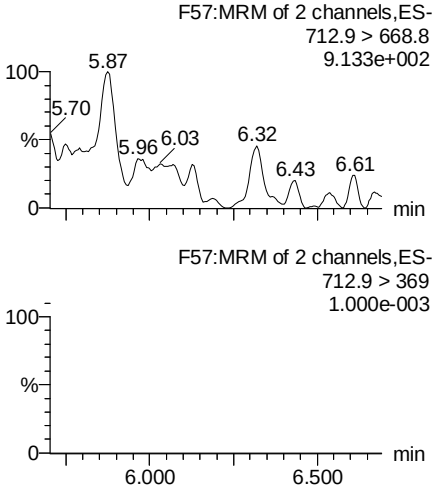
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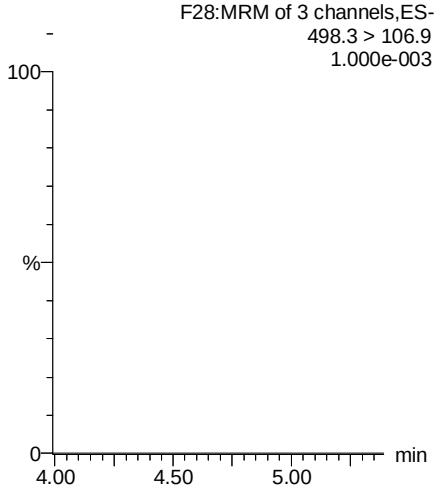
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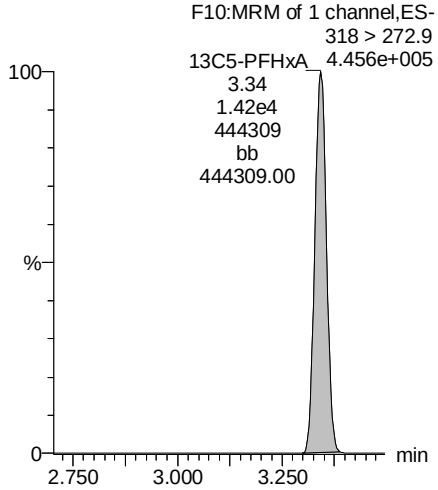
PFTeDA



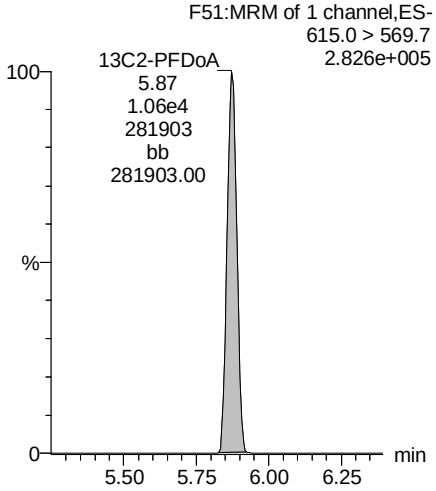
TCDA



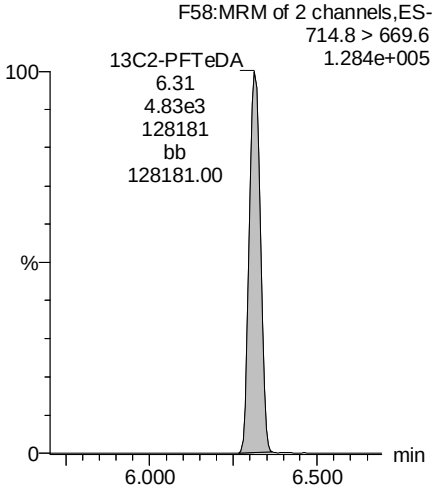
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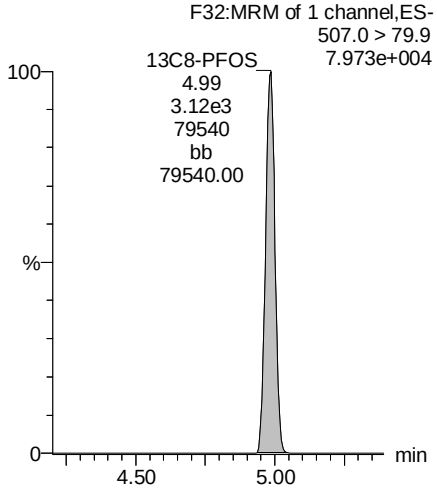
13C2-PFDoA



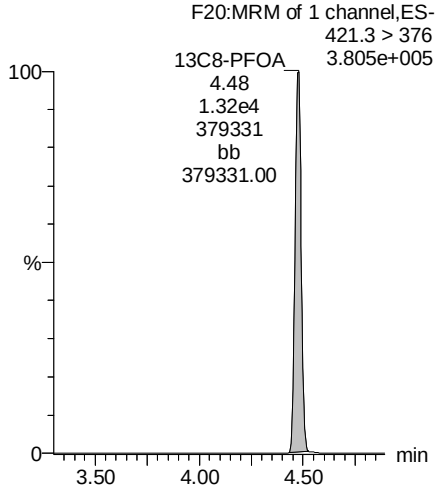
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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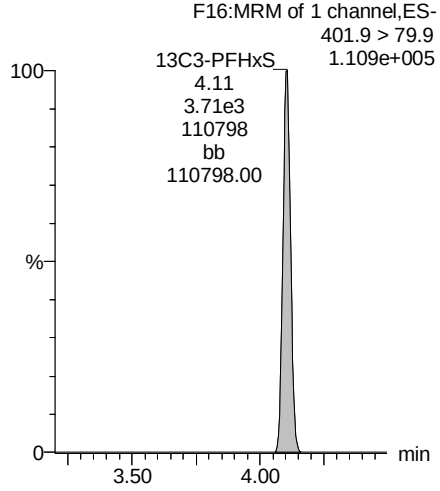
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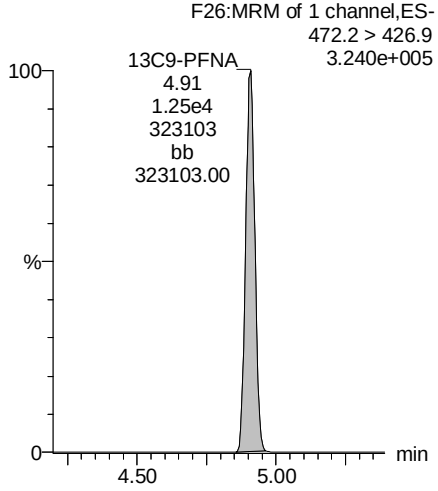
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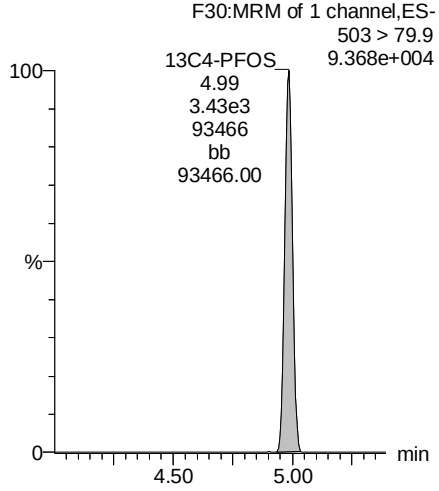
13C3-PFHxS



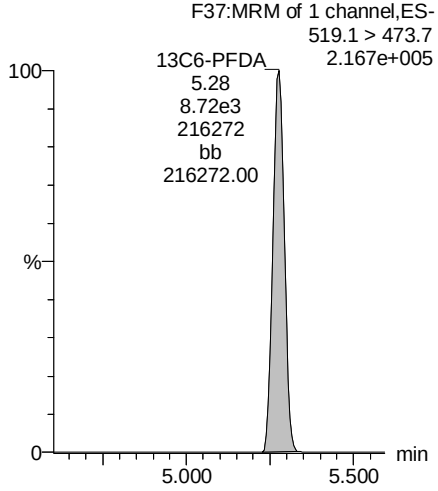
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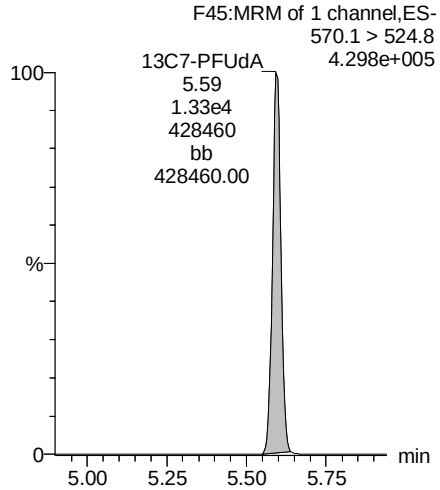
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_25.qld

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Printed: Monday, January 15, 2018 11:06:24 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_25, Date: 12-Jan-2018, Time: 18:15:15, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.40e3	0.246		2.66				
2	4	PFHxA	313.2 > 268.9	6.36e2	2.93e3	0.246		3.15	3.10	1.09	2.4326	
3	5	PFHpA	363.0 > 318.9	4.62e2	7.08e3	0.246		3.78	3.71	0.816	2.4797	
4	6	L-PFHxS	398.9 > 79.6	8.81e1	1.07e3	0.246		3.94	3.86	1.02	2.3554	
5	9	L-PFOA	413 > 368.7	1.44e3	9.33e3	0.246		4.31	4.23	1.93	6.9324	
6	12	PFNA	463.0 > 418.8	7.28e3	8.75e3	0.246		4.81	4.66	10.4	33.0065	
7	14	L-PFOS	499 > 79.9	7.70e2	3.03e3	0.246		4.75	4.75	3.18	11.1794	
8	16	PFDA	513 > 468.8	2.30e2	7.39e3	0.246		5.18	5.04	0.390	1.0537	
9	18	N-MeFOSAA	570.1 > 419		3.04e3	0.246		5.32				
10	19	N-EtFOSAA	584.2 > 419	1.12e3	4.08e3	0.246		5.48	5.34	3.42	13.0748	
11	20	PFUdA	563.0 > 518.9	4.80e3	8.97e3	0.246		5.50	5.36	6.69	23.3930	
12	22	PFDoA	612.9 > 569.0		3.76e3	0.246		5.77				

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_25.qld

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Name: 180112M3_25, Date: 12-Jan-2018, Time: 18:15:15, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.76e3	0.246		6.00				
2	25	PFTeDA	712.9 > 668.8		2.01e3	0.246		6.22				
3	33	13C3-PFBS	302. > 98.8	1.40e3	1.07e4	0.246	0.112	2.77	2.60	1.65	60.0403	118.0
4	34	13C2-PFHxA	315 > 269.8	2.93e3	1.07e4	0.246	0.691	3.15	3.09	3.43	20.2286	99.4
5	35	13C4-PFHpA	367.2 > 321.8	7.08e3	1.07e4	0.246	0.708	3.78	3.71	8.30	47.7163	93.8
6	36	18O2-PFHxS	403.0 > 102.6	1.07e3	2.94e3	0.246	0.353	3.94	3.86	4.57	52.7429	103.7
7	37	13C2-6:2 FTS	429.1 > 408.9	1.67e3	1.07e4	0.246	0.285	4.25	4.18	1.96	27.9697	55.0
8	38	13C2-PFOA	414.9 > 369.7	9.33e3	1.07e4	0.246	1.049	4.31	4.23	10.9	42.3306	83.2
9	39	13C5-PFNA	468.2 > 422.9	8.75e3	1.04e4	0.246	0.910	4.81	4.66	10.6	47.2019	92.8
10	40	13C8-PFOSA	506.1 > 77.7	1.89e3	8.75e3	0.246	0.252	4.87	4.73	2.71	43.7672	86.0
11	41	13C8-PFOS	507.0 > 79.9	3.03e3	2.76e3	0.246	0.987	4.89	4.75	13.7	56.4830	111.0
12	42	13C2-PFDA	515.1 > 469.9	7.39e3	5.15e3	0.246	1.311	5.18	5.04	17.9	55.6826	109.4
13	43	13C2-8:2 FTS	529.1 > 508.7	9.97e2	1.07e4	0.246	0.141	5.15	5.00	1.17	33.6783	66.2
14	44	d3-N-MeFOSAA	573.3 > 419	3.04e3	8.75e3	0.246	0.385	5.32	5.18	4.34	45.8837	90.2
15	45	d5-N-EtFOSAA	589.3 > 419	4.08e3	8.75e3	0.246	0.445	5.47	5.34	5.83	53.2777	104.7
16	46	13C2-PFUdA	565 > 519.8	8.97e3	8.75e3	0.246	1.014	5.49	5.36	12.8	51.4059	101.0
17	47	13C2-PFDoA	615.0 > 569.7	3.76e3	8.75e3	0.246	0.575	5.77	5.64	5.37	38.0150	74.7
18	49	13C2-PFTeDA	714.8 > 669.6	2.01e3	8.75e3	0.246	0.305	6.22	6.10	2.88	38.3300	75.3
19	55	13C5-PFHxA	318 > 272.9	1.07e4	1.07e4	0.246	1.000	3.15	3.09	12.5	50.8751	100.0
20	56	13C3-PFHxS	401.9 > 79.9	2.94e3	2.94e3	0.246	1.000	4.02	3.86	12.5	50.8751	100.0
21	57	13C8-PFOA	421.3 > 376	1.07e4	1.07e4	0.246	1.000	4.38	4.23	12.5	50.8751	100.0
22	58	13C9-PFNA	472.2 > 426.9	1.04e4	1.04e4	0.246	1.000	4.81	4.66	12.5	50.8751	100.0
23	59	13C4-PFOS	503 > 79.9	2.76e3	2.76e3	0.246	1.000	4.89	4.75	12.5	50.8751	100.0
24	60	13C6-PFDA	519.1 > 473.7	5.15e3	5.15e3	0.246	1.000	5.18	5.04	12.5	50.8751	100.0
25	61	13C7-PFUdA	570.1 > 524.8	8.75e3	8.75e3	0.246	1.000	5.49	5.36	12.5	50.8751	100.0
26	62	Total PFHxS	398.9 > 79.6	8.81e1	1.07e3	0.246		4.14		1.02	2.3554	
27	63	Total PFOA	413 > 368.7	1.71e3	9.33e3	0.246		4.51		2.30	8.0588	
28	64	Total PFOS	499 > 79.9	7.70e2	3.03e3	0.246		4.75		3.18	11.1794	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.04e3	0.246		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	1.12e3	4.08e3	0.246		5.61		3.42	13.0748	

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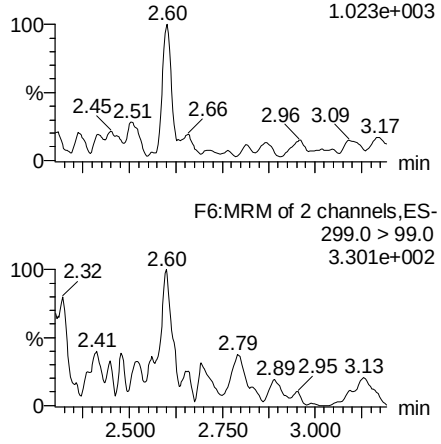
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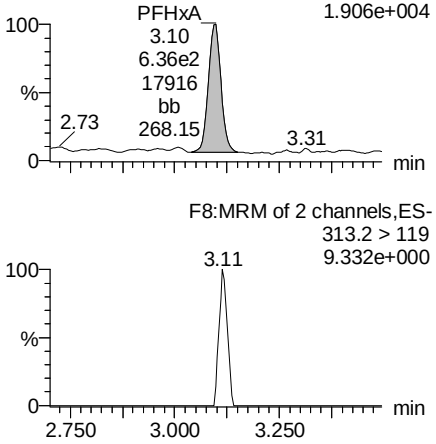
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Name: 180112M3_25, Date: 12-Jan-2018, Time: 18:15:15, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

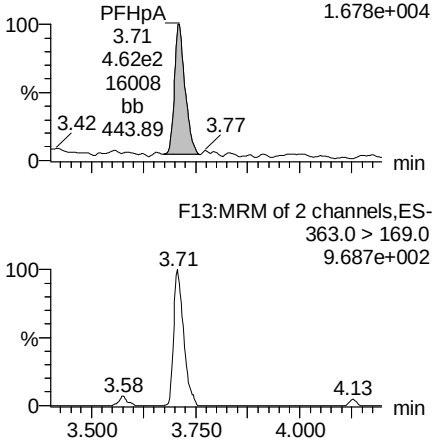
PFBS



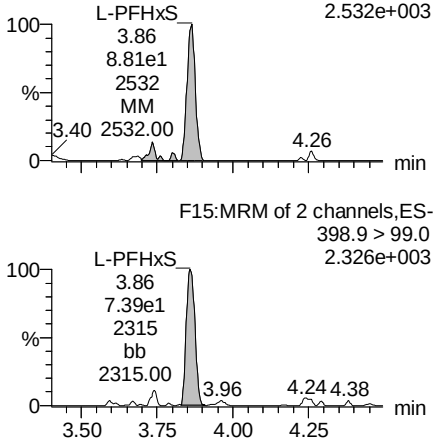
PFHxA



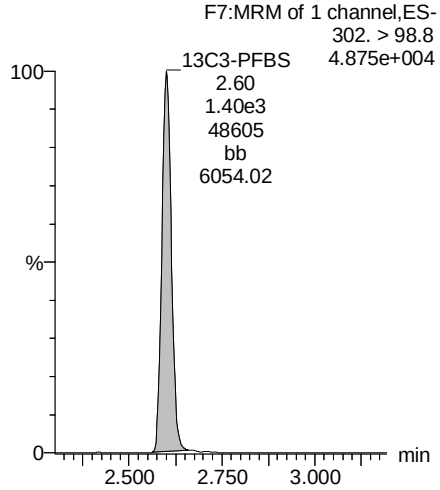
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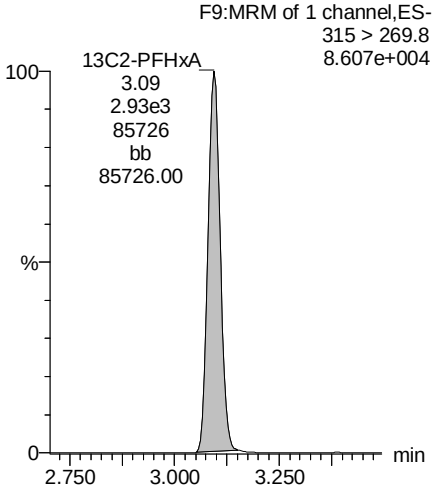
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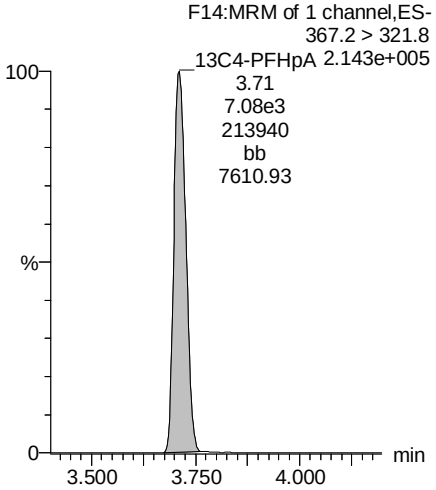
13C3-PFBS



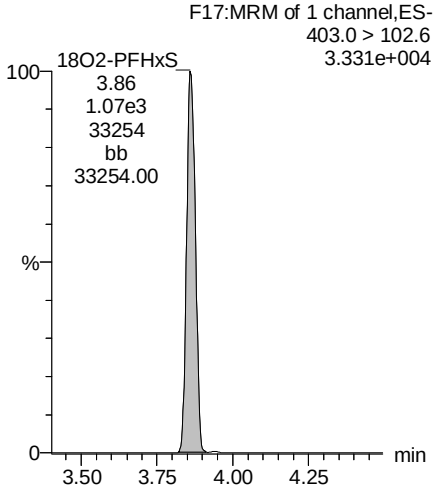
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



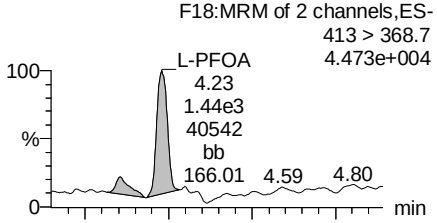
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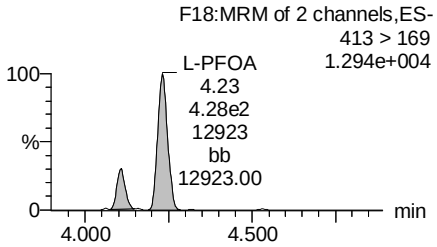
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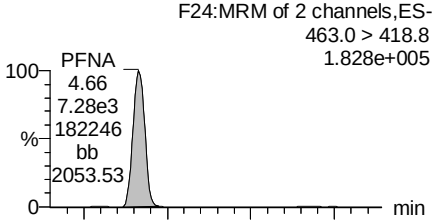
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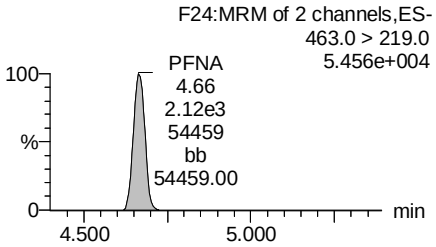
Total PFOA



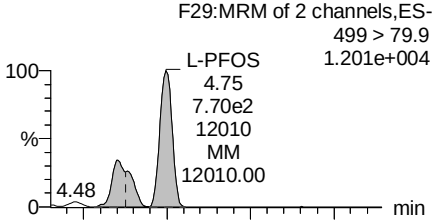


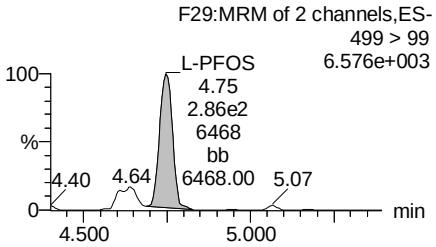
PFNA



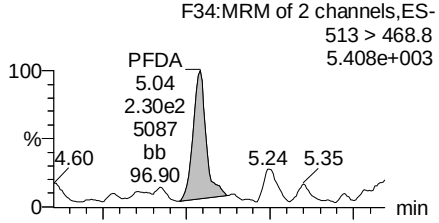


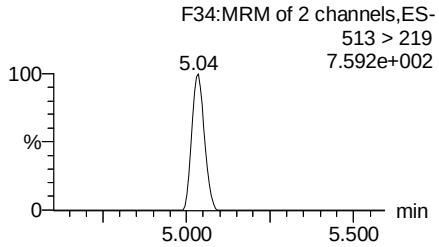
Total PFOS



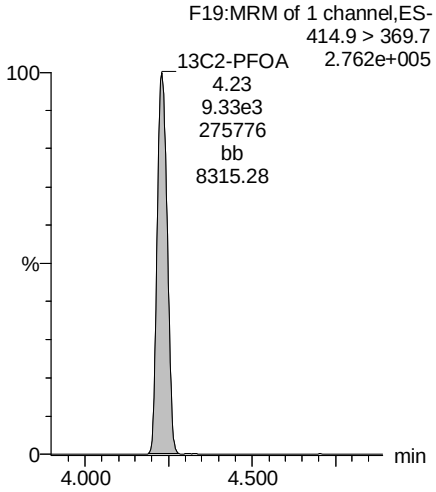


PFDA

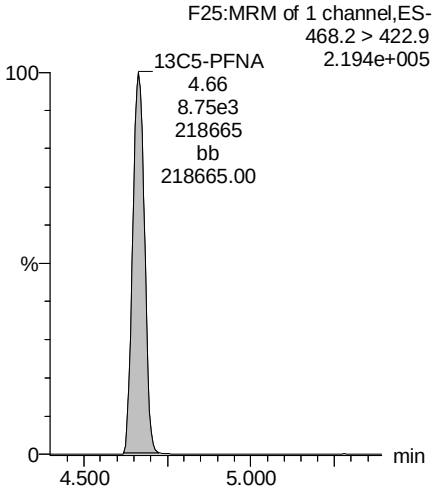




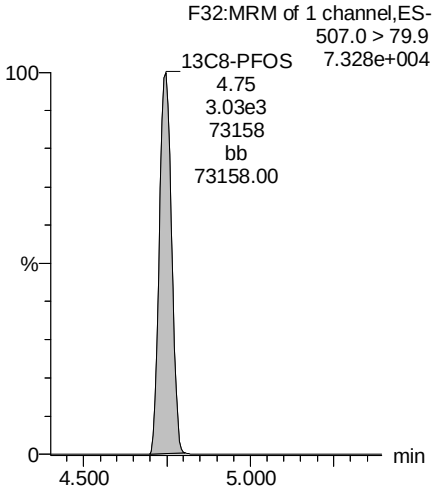
13C2-PFOA



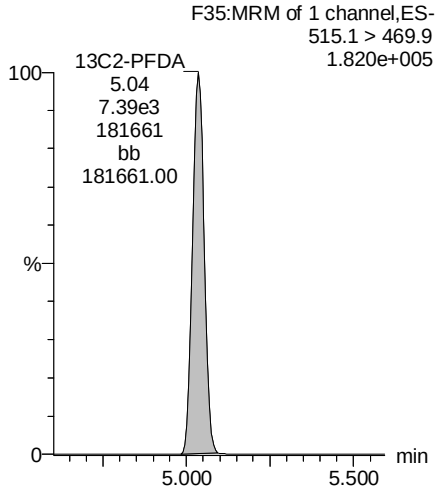
13C5-PFNA



13C8-PFOS



13C2-PFDA



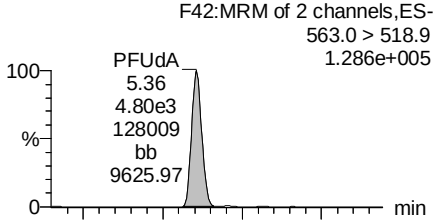
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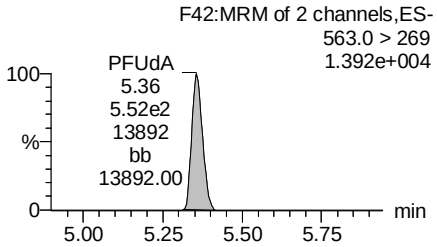
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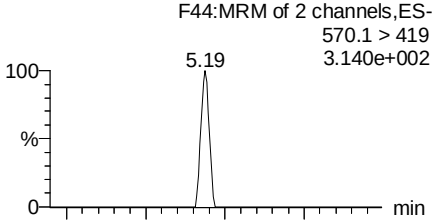
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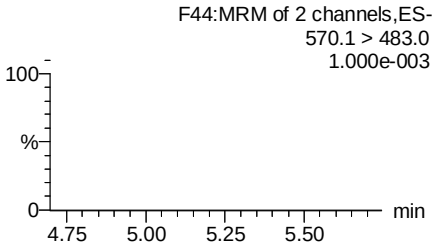
PFUdA



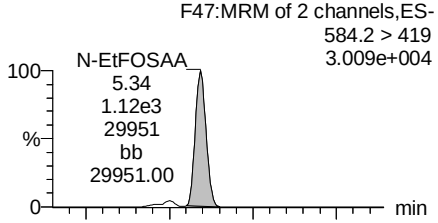


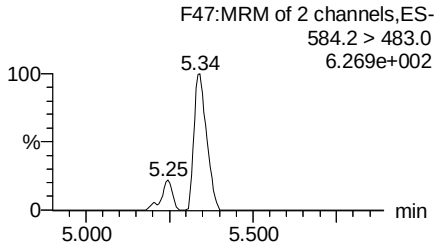
N-MeFOSAA



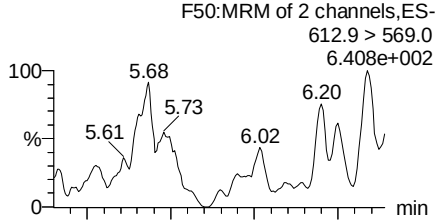


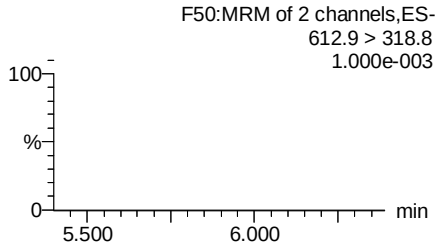
N-EtFOSAA



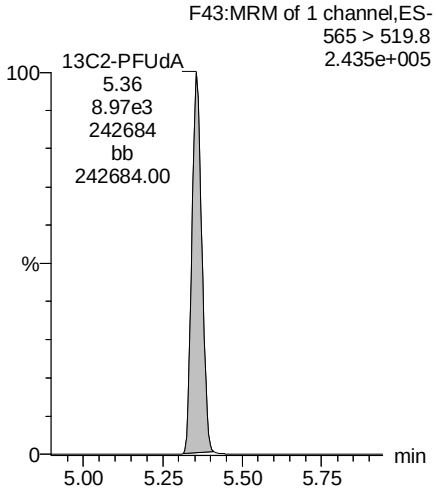


PFDoA

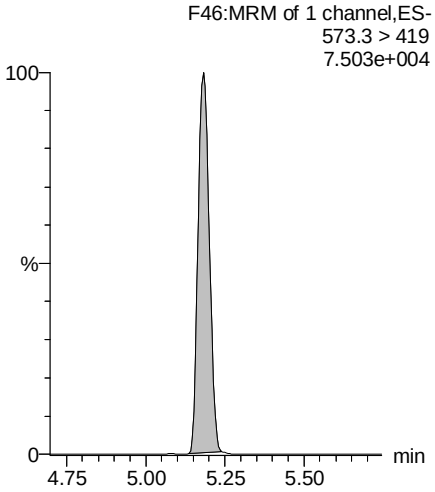




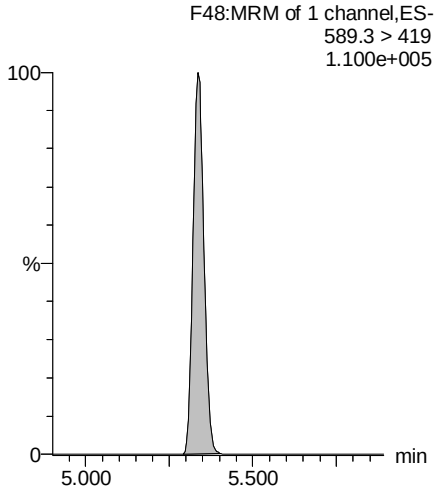
13C2-PFUdA



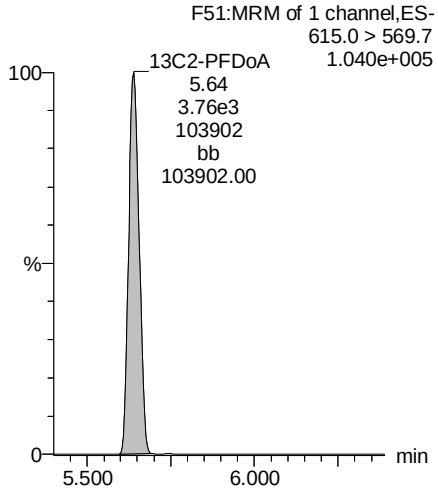
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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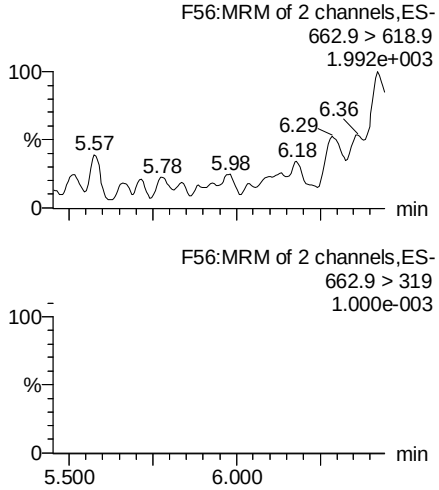
Rev'd: MM 1/16/18

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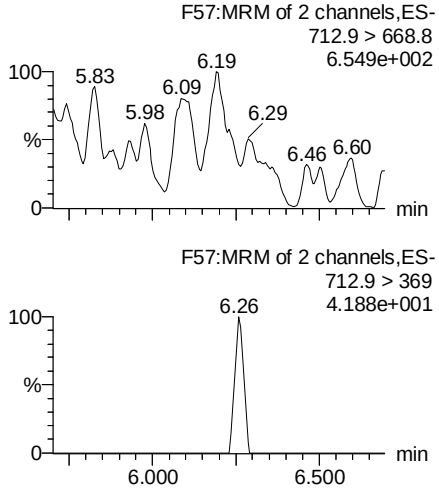
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Name: 180112M3_25, Date: 12-Jan-2018, Time: 18:15:15, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

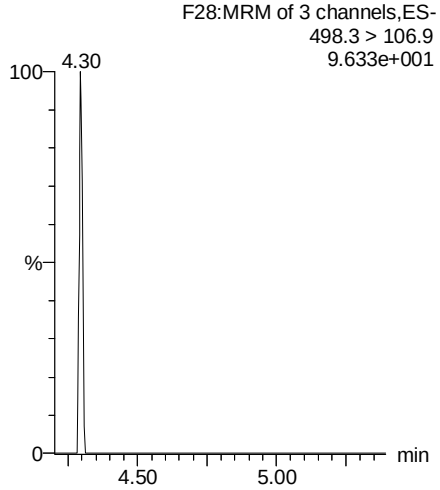
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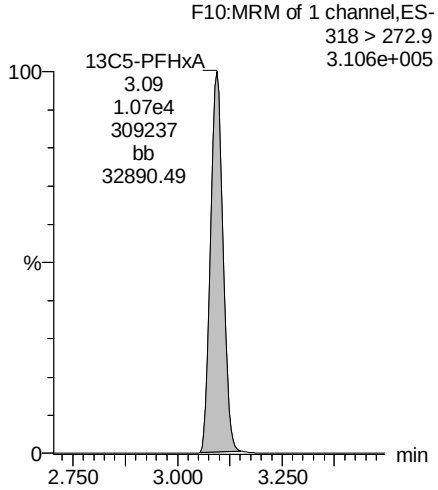
PFTeDA



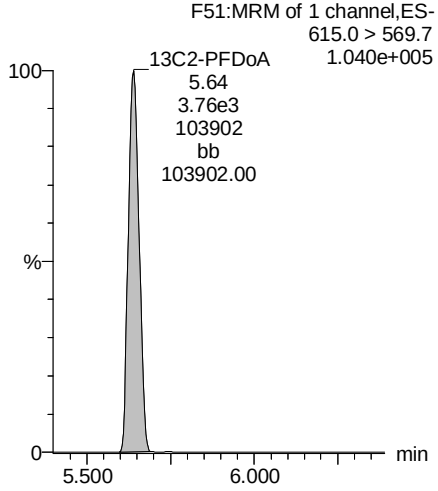
TCDA



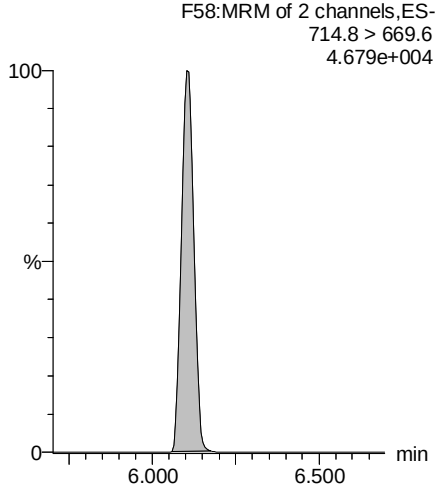
13C5-PFHxA



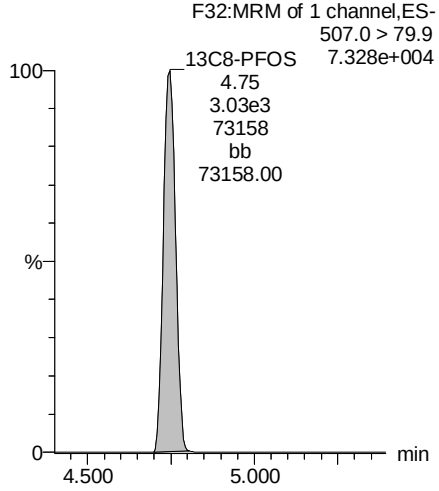
13C2-PFDoA



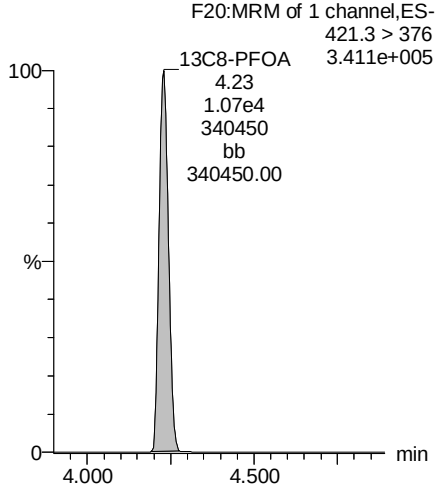
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



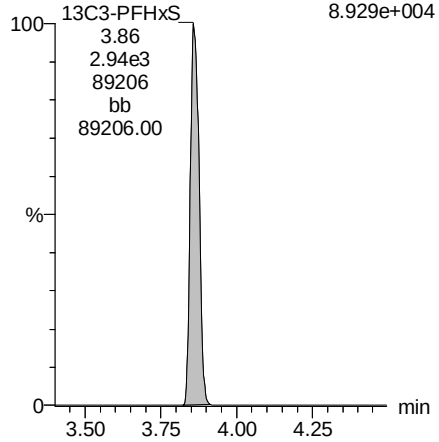
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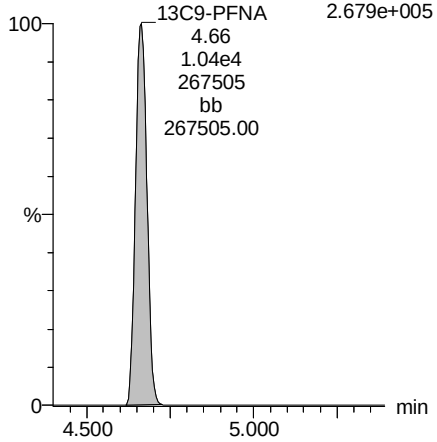
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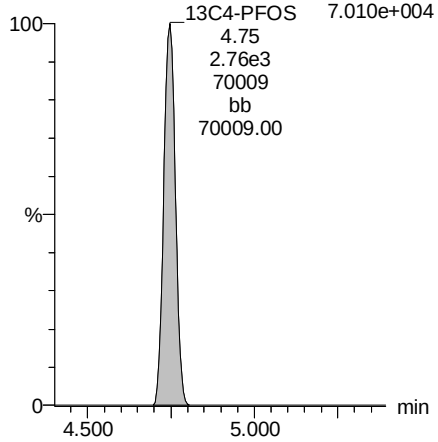
13C3-PFHxS



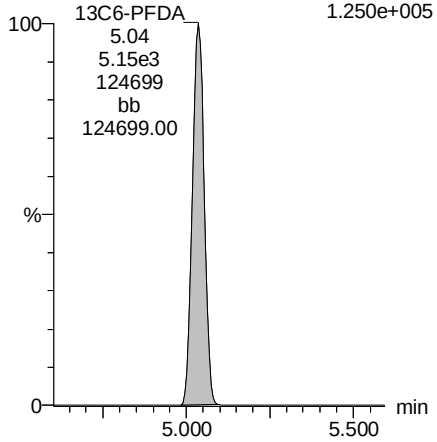
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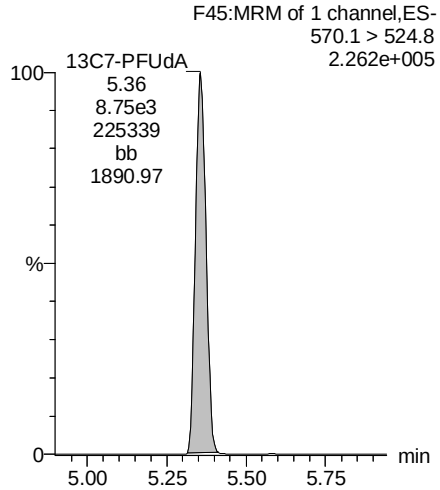
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_26.qld

Last Altered: Monday, January 15, 2018 11:27:25 Pacific Standard Time
Printed: Monday, January 15, 2018 11:28:34 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_26, Date: 12-Jan-2018, Time: 18:26:25, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.17e3	0.257		2.66				
2	4	PFHxA	313.2 > 268.9		2.95e3	0.257		3.15				
3	5	PFHpA	363.0 > 318.9		7.98e3	0.257		3.78				
4	6	L-PFHxS	398.9 > 79.6	1.42e1	9.65e2	0.257		3.94	3.87	0.185	0.4211	
5	9	L-PFOA	413 > 368.7	3.65e2	8.34e3	0.257		4.31	4.23	0.547	1.7275	
6	12	PFNA	463.0 > 418.8	6.11e2	8.90e3	0.257		4.81	4.66	0.858	2.5411	
7	14	L-PFOS	499 > 79.9		2.68e3	0.257		4.75				
8	16	PFDA	513 > 468.8		6.37e3	0.257		5.18				
9	18	N-MeFOSAA	570.1 > 419		2.98e3	0.257		5.32				
10	19	N-EtFOSAA	584.2 > 419		3.96e3	0.257		5.48				
11	20	PFUdA	563.0 > 518.9		9.89e3	0.257		5.50				
12	22	PFDoA	612.9 > 569.0		3.79e3	0.257		5.77				

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_26.qld

Last Altered: Monday, January 15, 2018 11:27:25 Pacific Standard Time
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_26, Date: 12-Jan-2018, Time: 18:26:25, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.79e3	0.257		6.00				
2	25	PFTeDA	712.9 > 668.8		1.53e3	0.257		6.22				
3	33	13C3-PFBS	302. > 98.8	1.17e3	1.11e4	0.257	0.112	2.77	2.60	1.31	45.7566	94.2
4	34	13C2-PFHxA	315 > 269.8	2.95e3	1.11e4	0.257	0.691	3.15	3.09	3.32	18.6989	96.2
5	35	13C4-PFHpA	367.2 > 321.8	7.98e3	1.11e4	0.257	0.708	3.78	3.71	8.98	49.2750	101.5
6	36	18O2-PFHxS	403.0 > 102.6	9.65e2	3.11e3	0.257	0.353	3.94	3.86	3.88	42.6805	87.9
7	37	13C2-6:2 FTS	429.1 > 408.9	2.07e3	1.00e4	0.257	0.285	4.25	4.18	2.58	35.1796	72.4
8	38	13C2-PFOA	414.9 > 369.7	8.34e3	1.00e4	0.257	1.049	4.31	4.23	10.4	38.5242	79.3
9	39	13C5-PFNA	468.2 > 422.9	8.90e3	9.66e3	0.257	0.910	4.81	4.66	11.5	49.1767	101.2
10	40	13C8-PFOSA	506.1 > 77.7	1.80e3	9.69e3	0.257	0.252	4.87	4.73	2.32	35.7553	73.6
11	41	13C8-PFOS	507.0 > 79.9	2.68e3	2.92e3	0.257	0.987	4.89	4.75	11.5	45.0820	92.8
12	42	13C2-PFDA	515.1 > 469.9	6.37e3	5.62e3	0.257	1.311	5.18	5.04	14.2	42.0531	86.6
13	43	13C2-8:2 FTS	529.1 > 508.7	1.09e3	1.11e4	0.257	0.141	5.15	5.01	1.22	33.6527	69.3
14	44	d3-N-MeFOSAA	573.3 > 419	2.98e3	9.69e3	0.257	0.385	5.32	5.18	3.85	38.8587	80.0
15	45	d5-N-EtFOSAA	589.3 > 419	3.96e3	9.69e3	0.257	0.445	5.47	5.34	5.10	44.5183	91.7
16	46	13C2-PFUdA	565 > 519.8	9.89e3	9.69e3	0.257	1.014	5.49	5.36	12.7	48.8291	100.5
17	47	13C2-PFDoA	615.0 > 569.7	3.79e3	9.69e3	0.257	0.575	5.77	5.64	4.88	32.9837	67.9
18	49	13C2-PFTeDA	714.8 > 669.6	1.53e3	9.69e3	0.257	0.305	6.22	6.11	1.98	25.1670	51.8
19	55	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	0.257	1.000	3.15	3.09	12.5	48.5701	100.0
20	56	13C3-PFHxS	401.9 > 79.9	3.11e3	3.11e3	0.257	1.000	4.02	3.86	12.5	48.5701	100.0
21	57	13C8-PFOA	421.3 > 376	1.00e4	1.00e4	0.257	1.000	4.38	4.23	12.5	48.5701	100.0
22	58	13C9-PFNA	472.2 > 426.9	9.66e3	9.66e3	0.257	1.000	4.81	4.66	12.5	48.5701	100.0
23	59	13C4-PFOS	503 > 79.9	2.92e3	2.92e3	0.257	1.000	4.89	4.75	12.5	48.5701	100.0
24	60	13C6-PFDA	519.1 > 473.7	5.62e3	5.62e3	0.257	1.000	5.18	5.04	12.5	48.5701	100.0
25	61	13C7-PFUdA	570.1 > 524.8	9.69e3	9.69e3	0.257	1.000	5.49	5.36	12.5	48.5701	100.0
26	62	Total PFHxS	398.9 > 79.6	1.42e1	9.65e2	0.257		4.14		0.185	0.4211	
27	63	Total PFOA	413 > 368.7	3.65e2	8.34e3	0.257		4.51		0.547	1.7275	
28	64	Total PFOS	499 > 79.9	0.00e0	2.68e3	0.257		4.75		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	2.98e3	0.257		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	3.96e3	0.257		5.61		0.000		

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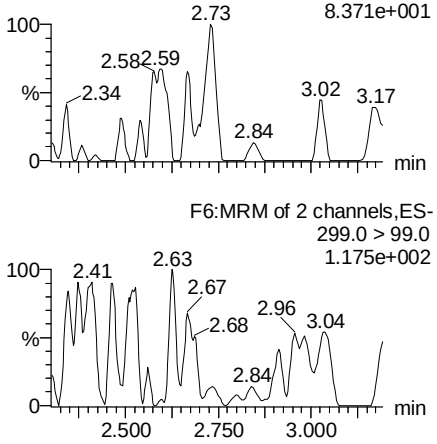
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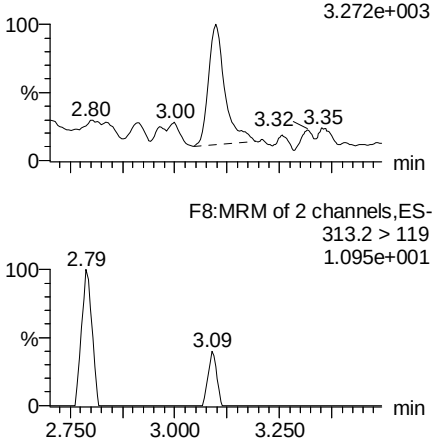
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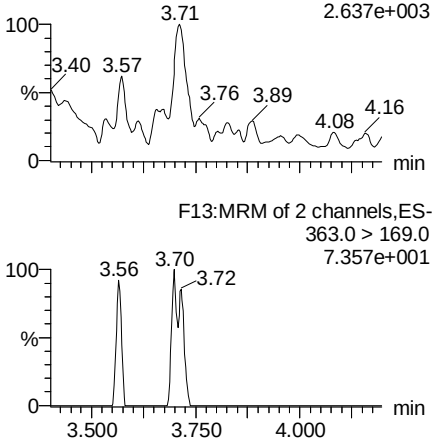
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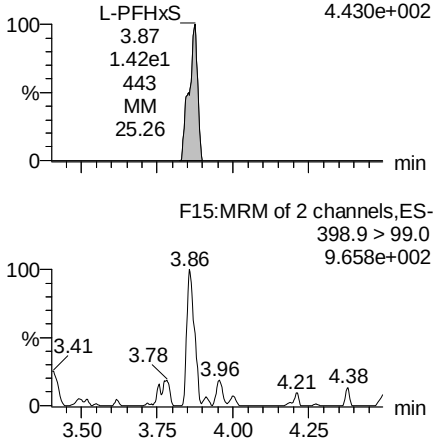
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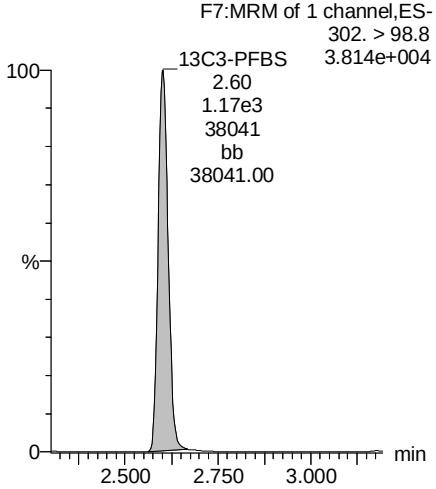
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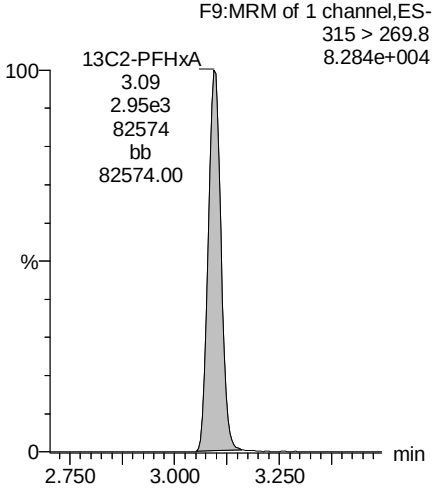
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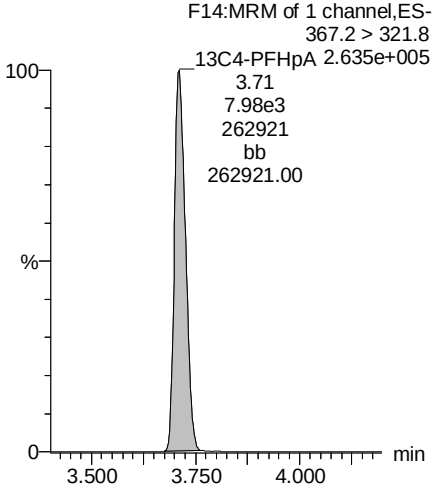
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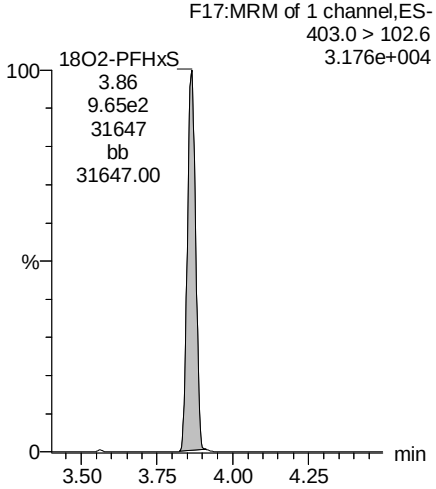
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13C4-PFHpA



18O2-PFHxS



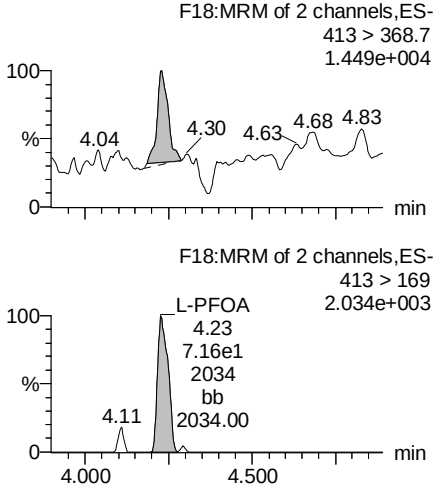
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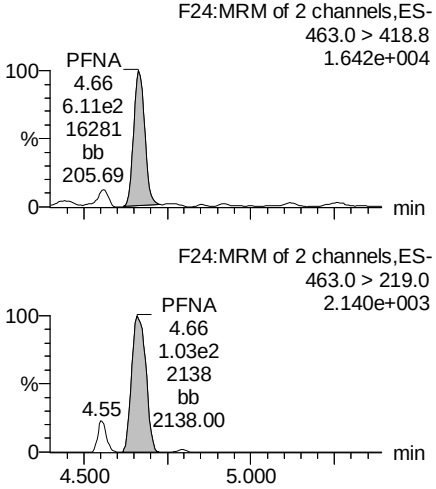
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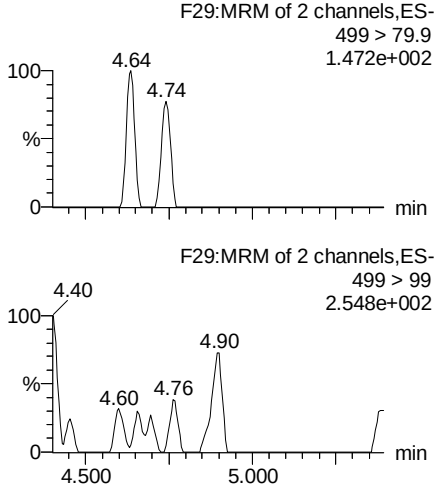
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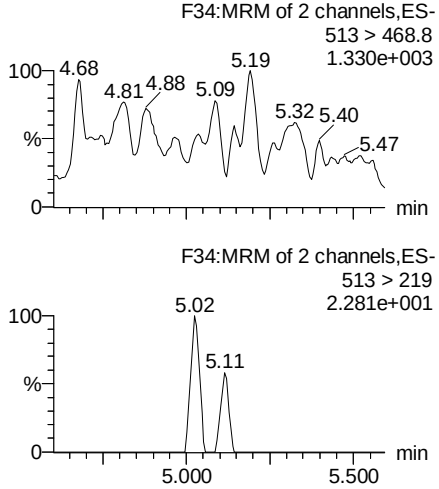
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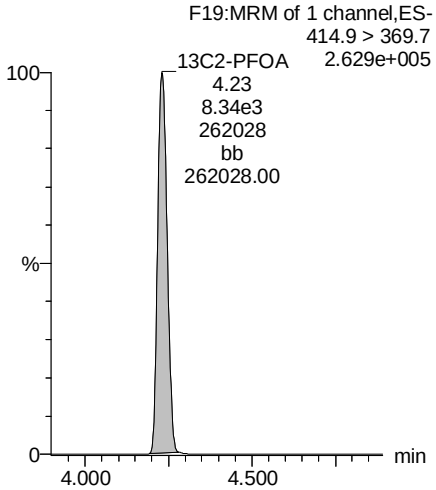
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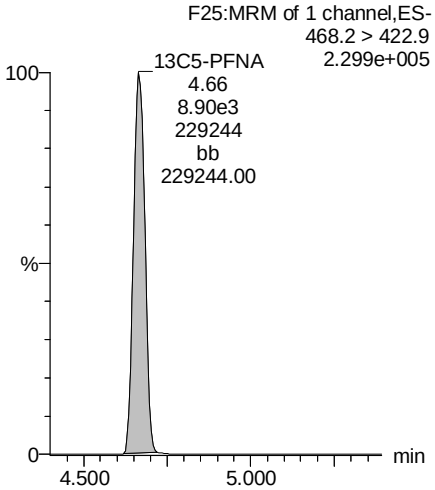
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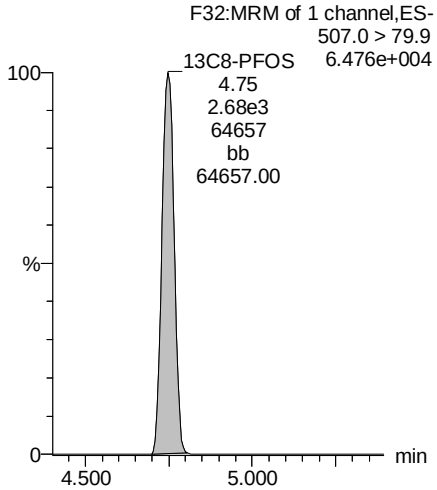
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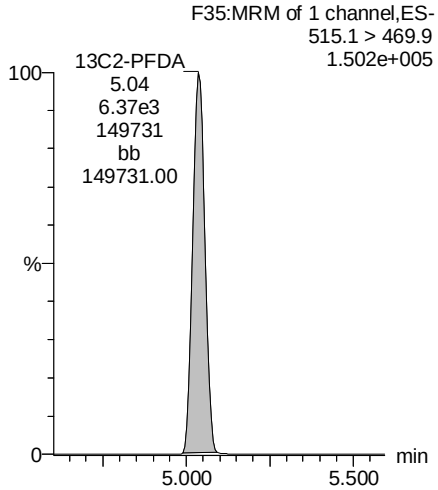
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13C8-PFOS



13C2-PFDA



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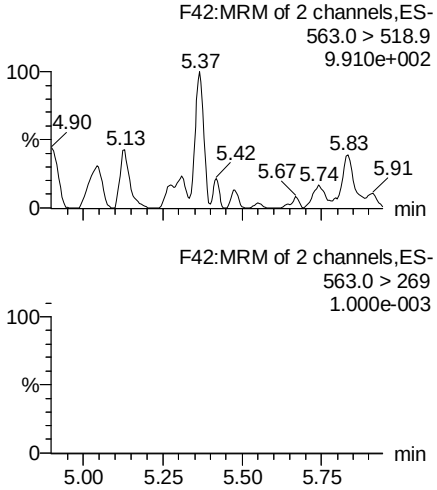
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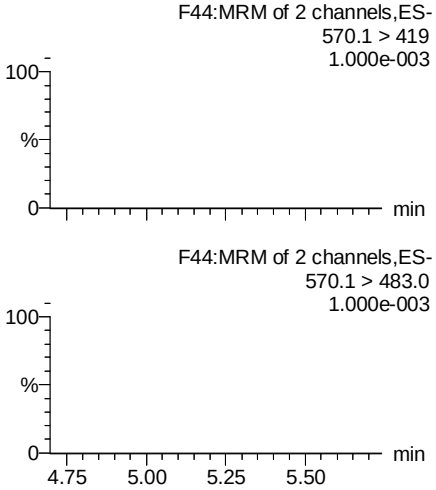
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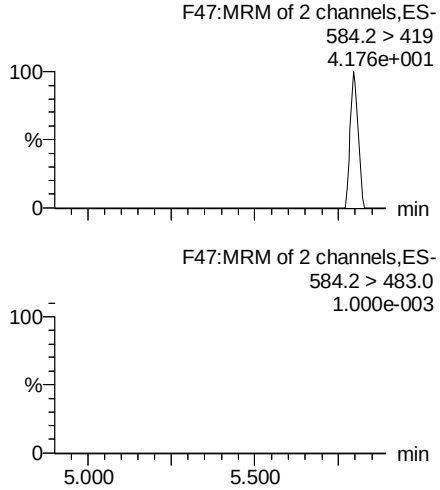
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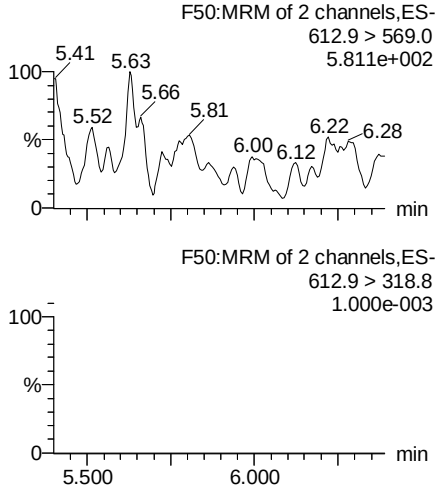
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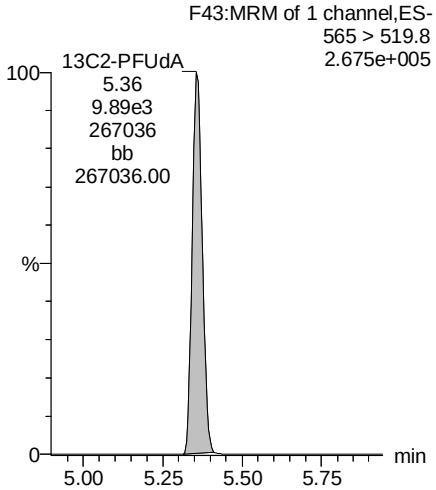
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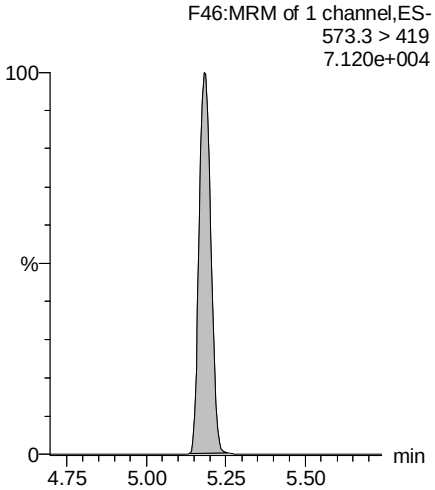
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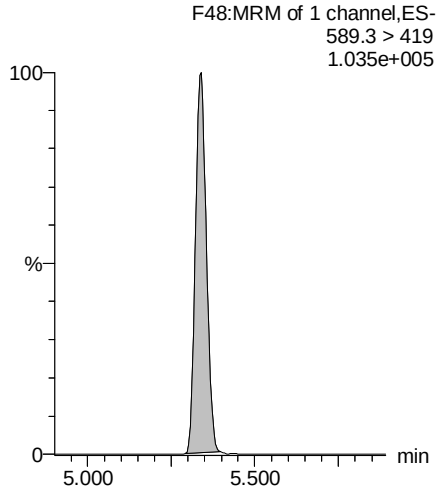
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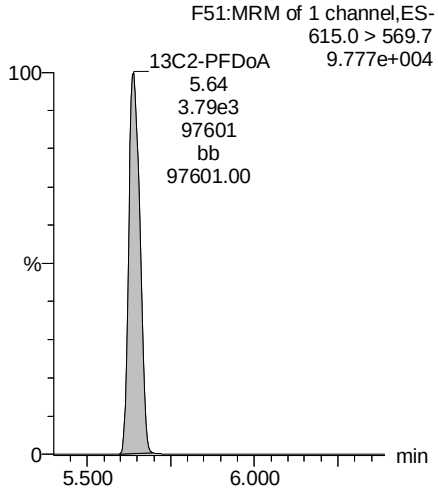
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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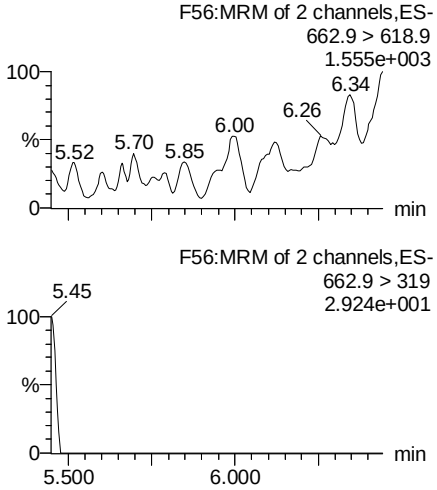
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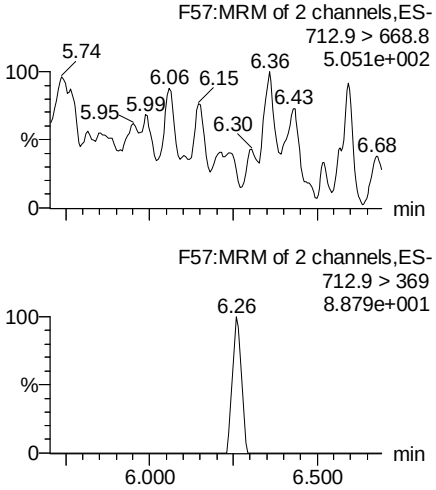
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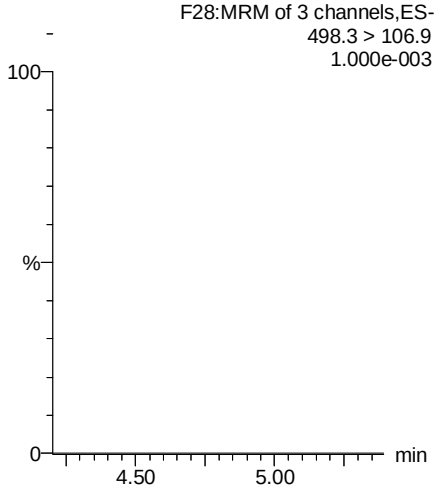
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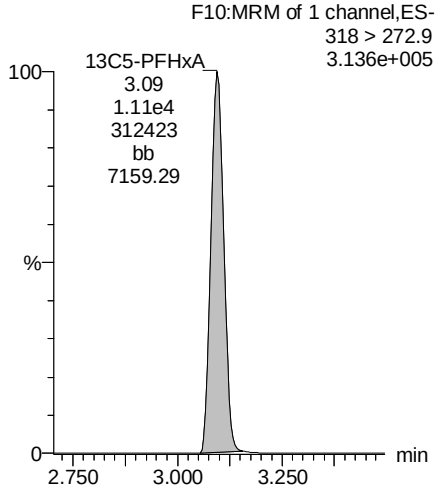
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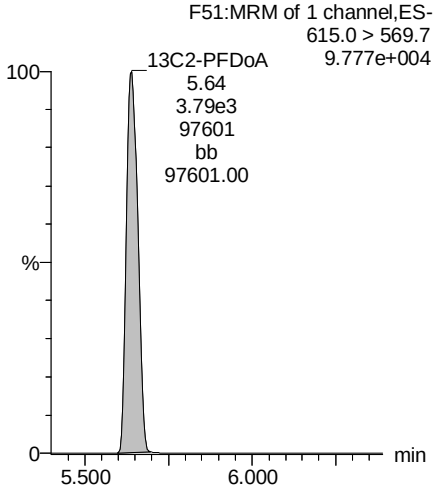
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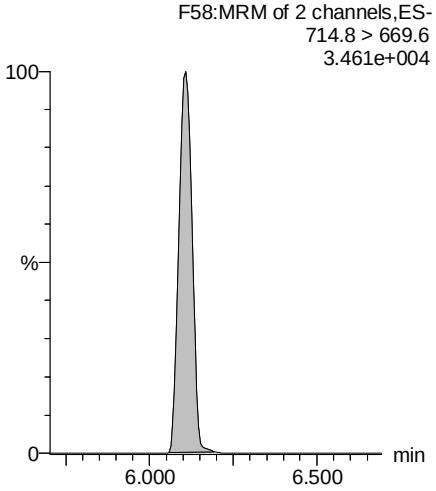
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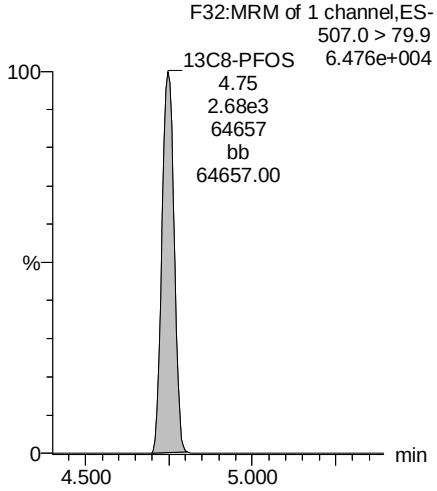
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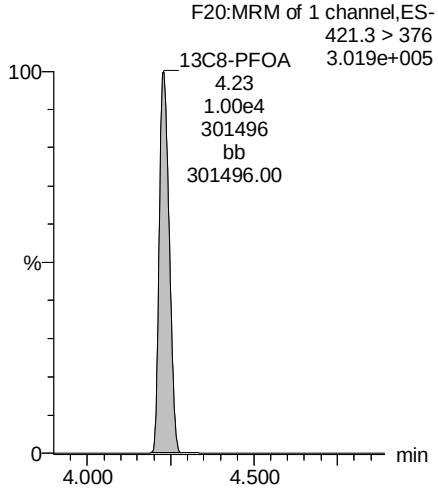
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13C8-PFOS



13C8-PFOA



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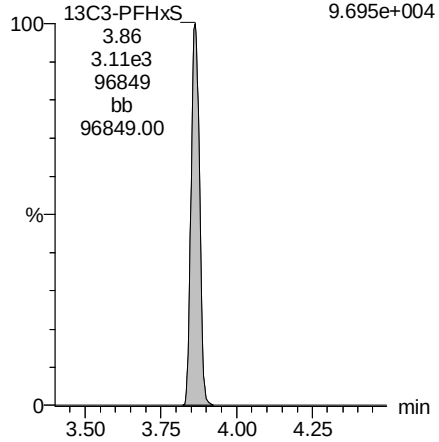
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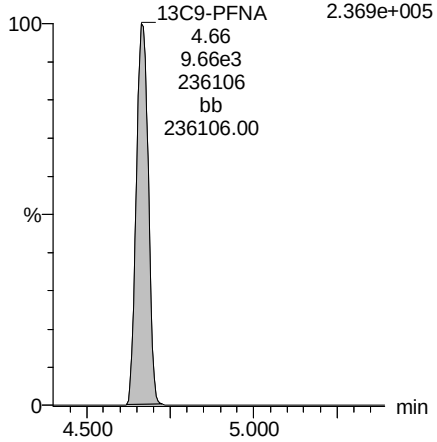
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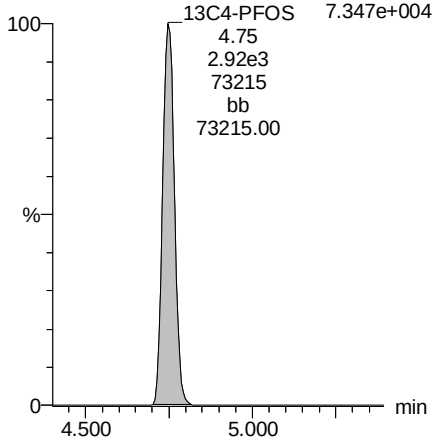
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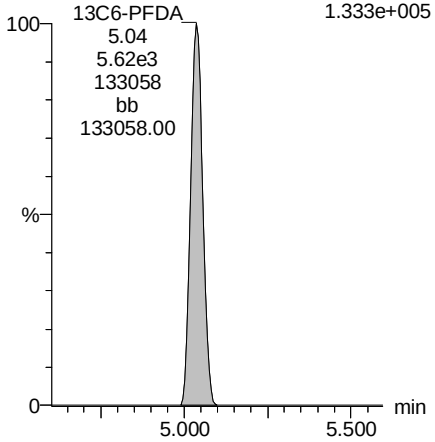
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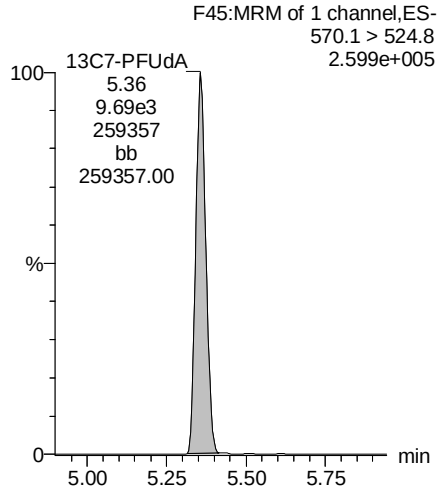
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13C6-PFDA



13C7-PFUdA



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2	4	PFHxA	313.2 > 268.9	3.35e3	2.73e3	0.262		3.15	3.09	6.13	13.9805	
3	5	PFHpA	363.0 > 318.9	2.56e3	7.55e3	0.262		3.78	3.71	4.23	12.5563	
4	6	L-PFHxS	398.9 > 79.6	8.92e2	8.84e2	0.262		3.94	3.86	12.6	27.0079	
5	9	L-PFOA	413 > 368.7	6.70e3	9.99e3	0.262		4.31	4.23	8.38	28.9285	
6	12	PFNA	463.0 > 418.8	1.38e4	8.25e3	0.262		4.81	4.66	20.8	62.2764	
7	14	L-PFOS	499 > 79.9	9.91e2	2.45e3	0.262		4.75	4.75	5.05	16.4884	
8	16	PFDA	513 > 468.8	4.68e2	7.07e3	0.262		5.18	5.03	0.828	2.1519	
9	18	N-MeFOSAA	570.1 > 419		3.02e3	0.262		5.32				
10	19	N-EtFOSAA	584.2 > 419		3.25e3	0.262		5.48				
11	20	PFUdA	563.0 > 518.9	8.66e2	7.98e3	0.262		5.50	5.35	1.36	4.0935	
12	22	PFDoA	612.9 > 569.0		4.85e3	0.262		5.77				

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_27.qld

Last Altered: Tuesday, January 16, 2018 08:21:19 Pacific Standard Time
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_27, Date: 12-Jan-2018, Time: 18:37:36, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		4.85e3	0.262		6.00				
2	25	PFTeDA	712.9 > 668.8		2.22e3	0.262		6.22				
3	33	13C3-PFBS	302. > 98.8	1.29e3	1.17e4	0.262	0.112	2.77	2.60	1.38	47.0924	98.6
4	34	13C2-PFHxA	315 > 269.8	2.73e3	1.17e4	0.262	0.691	3.15	3.09	2.92	16.1343	84.4
5	35	13C4-PFHpA	367.2 > 321.8	7.55e3	1.17e4	0.262	0.708	3.78	3.71	8.06	43.4736	91.0
6	36	18O2-PFHxS	403.0 > 102.6	8.84e2	3.02e3	0.262	0.353	3.94	3.86	3.66	39.5962	82.9
7	37	13C2-6:2 FTS	429.1 > 408.9	2.20e3	1.05e4	0.262	0.285	4.25	4.17	2.62	35.1534	73.6
8	38	13C2-PFOA	414.9 > 369.7	9.99e3	1.05e4	0.262	1.049	4.31	4.23	11.9	43.4371	90.9
9	39	13C5-PFNA	468.2 > 422.9	8.25e3	1.08e4	0.262	0.910	4.81	4.66	9.54	40.0786	83.9
10	40	13C8-PFOSA	506.1 > 77.7	2.09e3	1.03e4	0.262	0.252	4.87	4.73	2.55	38.6667	80.9
11	41	13C8-PFOS	507.0 > 79.9	2.45e3	3.13e3	0.262	0.987	4.89	4.74	9.78	37.8599	79.2
12	42	13C2-PFDA	515.1 > 469.9	7.07e3	7.19e3	0.262	1.311	5.18	5.03	12.3	35.8546	75.1
13	43	13C2-8:2 FTS	529.1 > 508.7	9.75e2	1.17e4	0.262	0.141	5.15	5.00	1.04	28.1260	58.9
14	44	d3-N-MeFOSAA	573.3 > 419	3.02e3	1.03e4	0.262	0.385	5.32	5.18	3.68	36.5611	76.5
15	45	d5-N-EtFOSAA	589.3 > 419	3.25e3	1.03e4	0.262	0.445	5.47	5.34	3.96	34.0010	71.2
16	46	13C2-PFUdA	565 > 519.8	7.98e3	1.03e4	0.262	1.014	5.49	5.36	9.72	36.6299	76.7
17	47	13C2-PFDoA	615.0 > 569.7	4.85e3	1.03e4	0.262	0.575	5.77	5.64	5.91	39.2678	82.2
18	49	13C2-PFTeDA	714.8 > 669.6	2.22e3	1.03e4	0.262	0.305	6.22	6.10	2.71	33.9221	71.0
19	55	13C5-PFHxA	318 > 272.9	1.17e4	1.17e4	0.262	1.000	3.15	3.09	12.5	47.7737	100.0
20	56	13C3-PFHxS	401.9 > 79.9	3.02e3	3.02e3	0.262	1.000	4.02	3.86	12.5	47.7737	100.0
21	57	13C8-PFOA	421.3 > 376	1.05e4	1.05e4	0.262	1.000	4.38	4.23	12.5	47.7737	100.0
22	58	13C9-PFNA	472.2 > 426.9	1.08e4	1.08e4	0.262	1.000	4.81	4.66	12.5	47.7737	100.0
23	59	13C4-PFOS	503 > 79.9	3.13e3	3.13e3	0.262	1.000	4.89	4.75	12.5	47.7737	100.0
24	60	13C6-PFDA	519.1 > 473.7	7.19e3	7.19e3	0.262	1.000	5.18	5.04	12.5	47.7737	100.0
25	61	13C7-PFUdA	570.1 > 524.8	1.03e4	1.03e4	0.262	1.000	5.49	5.36	12.5	47.7737	100.0
26	62	Total PFHxS	398.9 > 79.6	8.92e2	8.84e2	0.262		4.14		12.6	27.0079	
27	63	Total PFOA	413 > 368.7	7.42e3	9.99e3	0.262		4.51		9.28	31.8749	
28	64	Total PFOS	499 > 79.9	9.91e2	2.45e3	0.262		4.75		5.05	16.4884	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.02e3	0.262		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	3.25e3	0.262		5.61		0.000		

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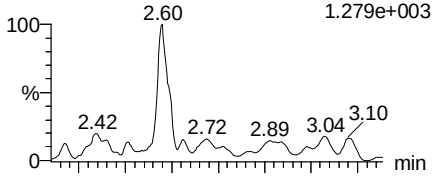
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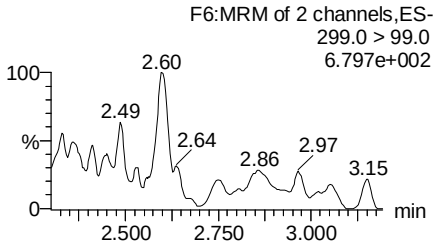
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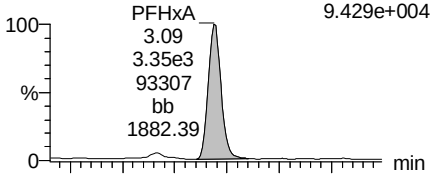
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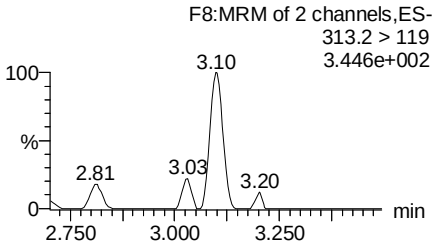
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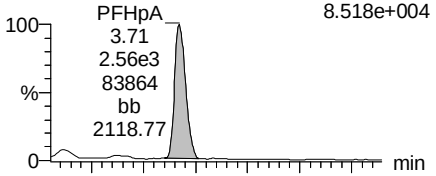


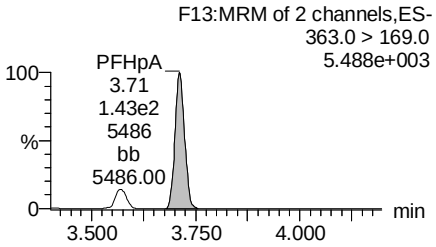
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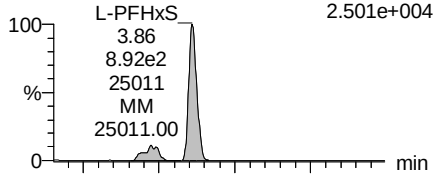


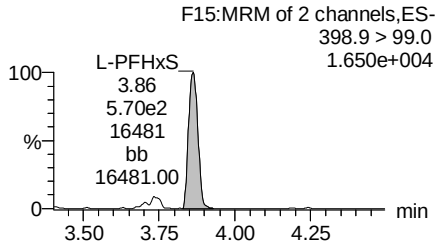
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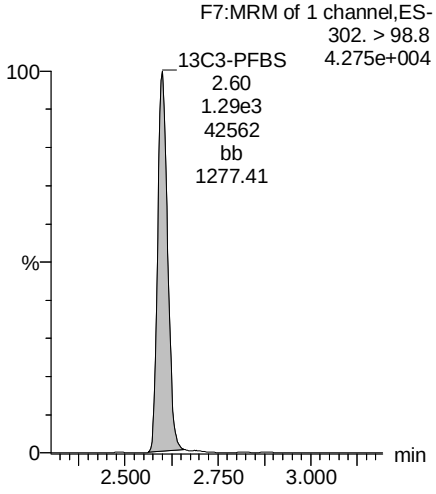


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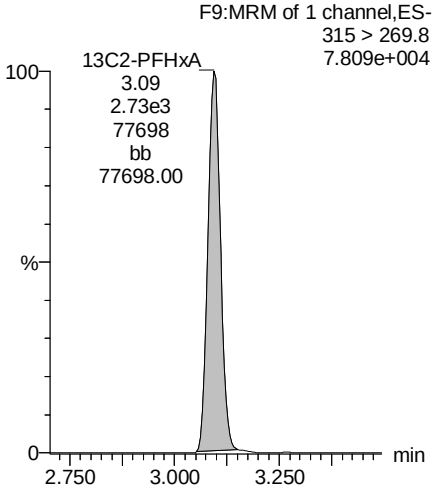




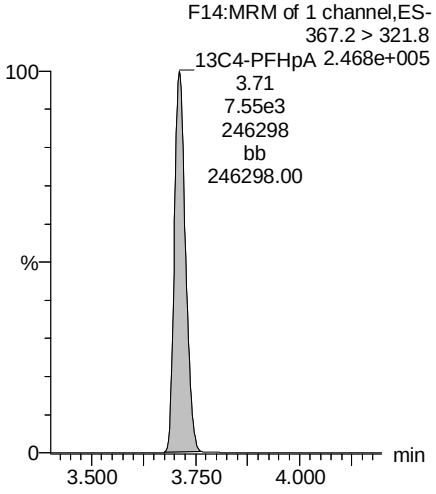
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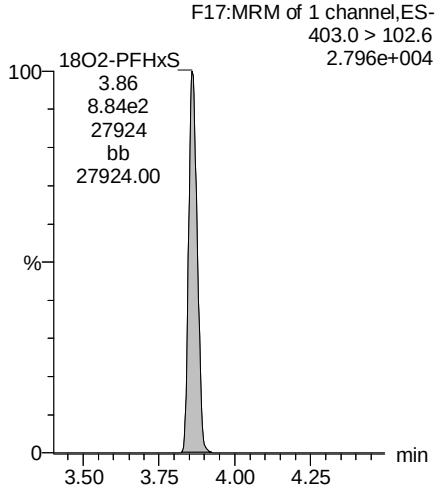
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13C4-PFHpA



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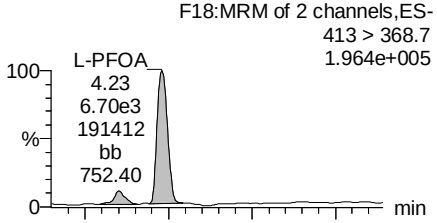
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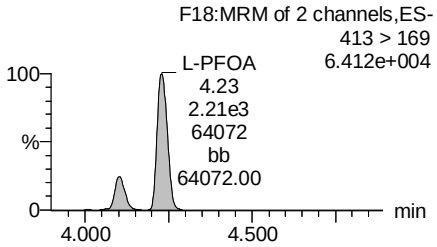
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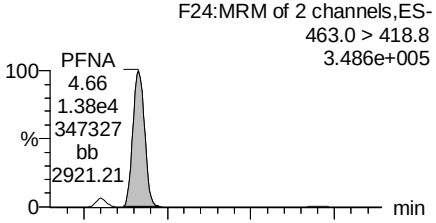
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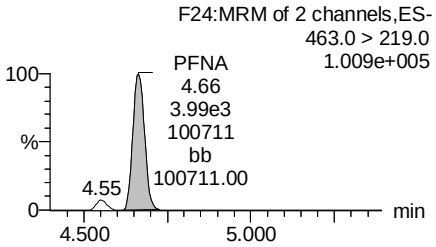
Total PFOA



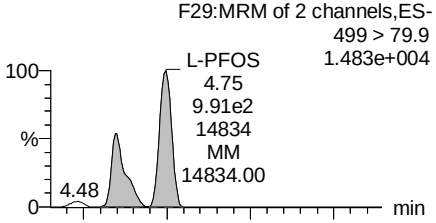


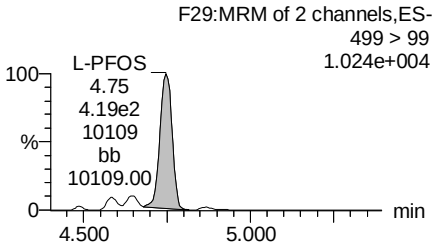
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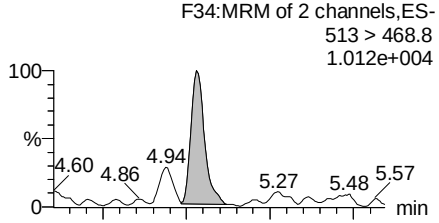


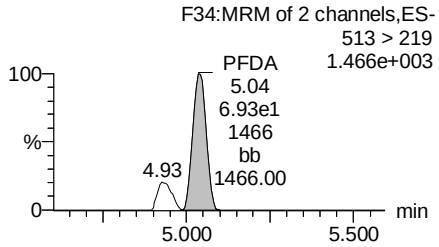
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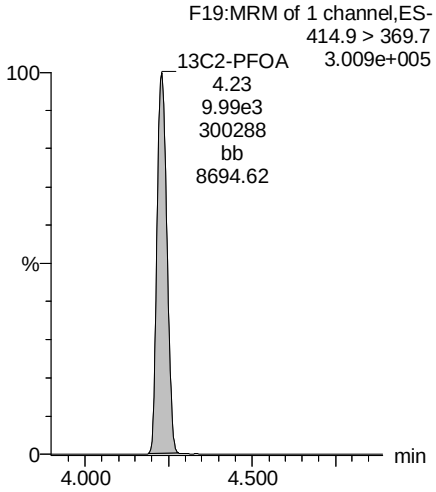


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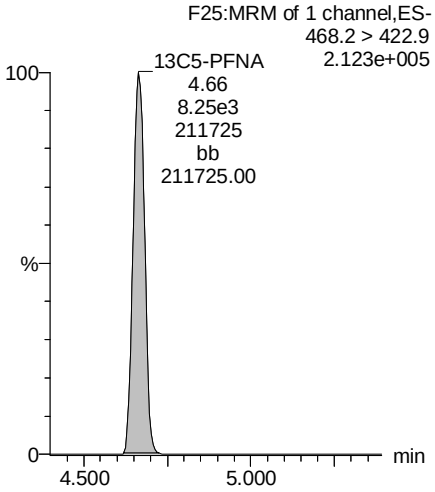




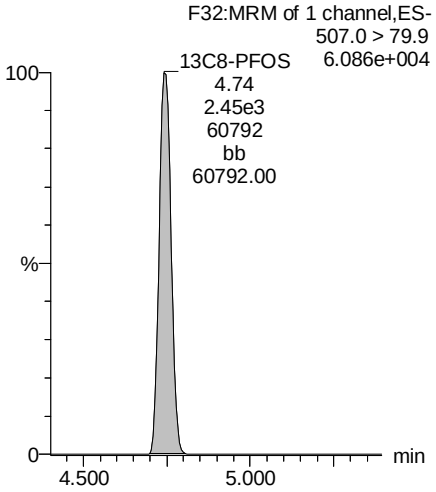
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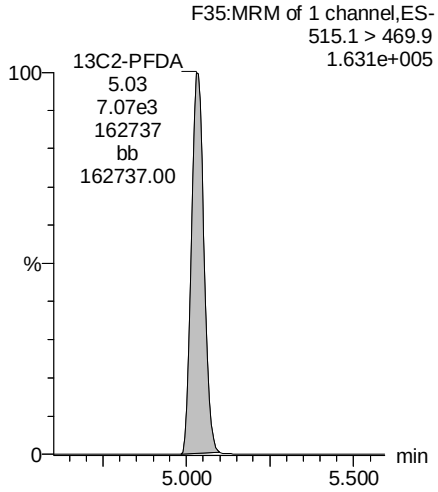
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13C8-PFOS



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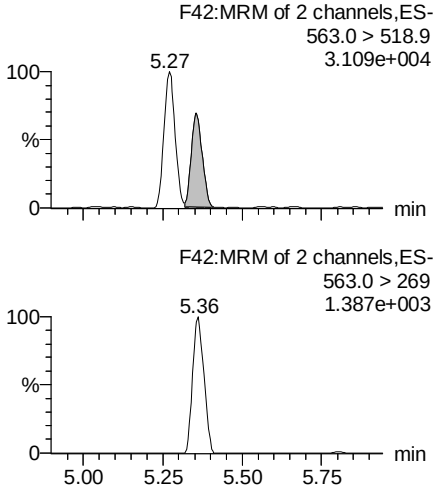
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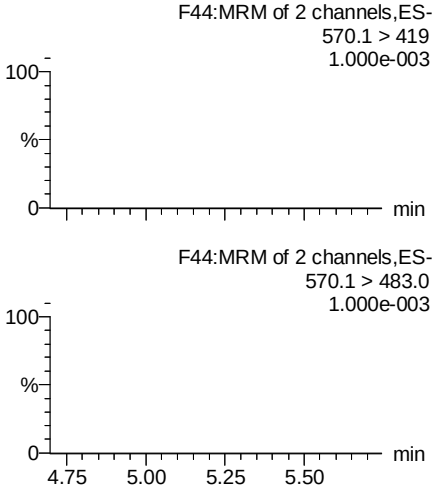
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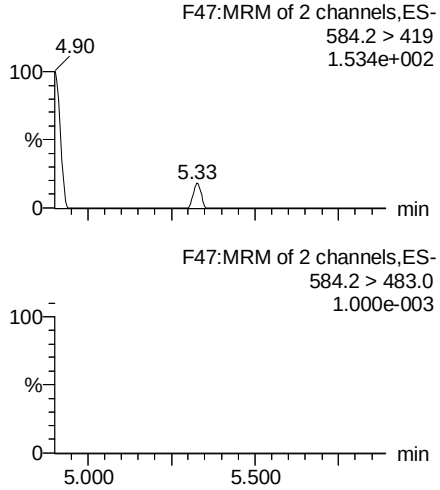
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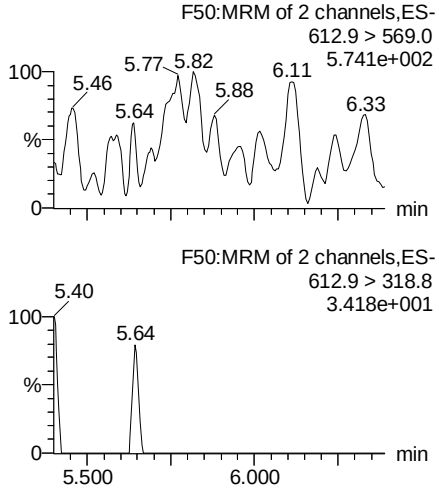
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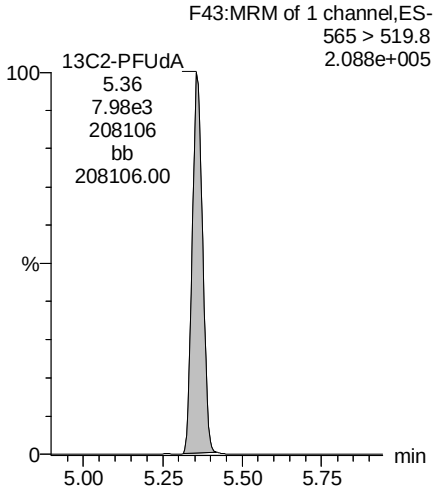
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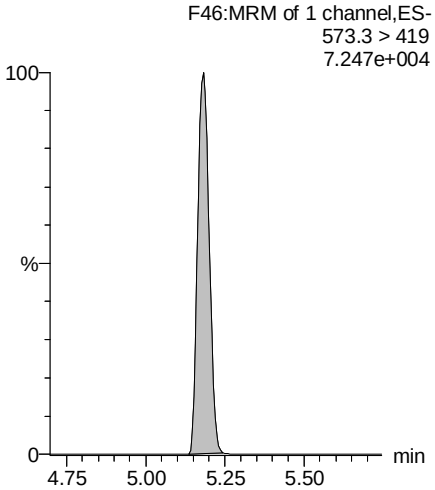
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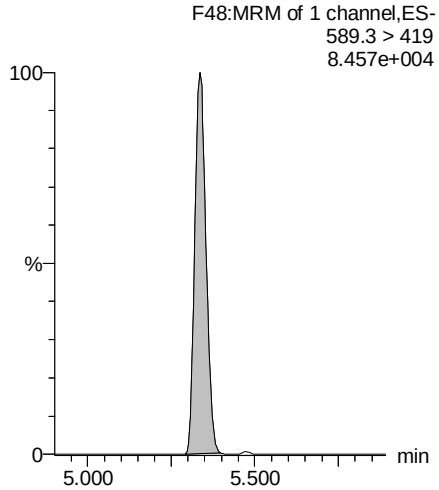
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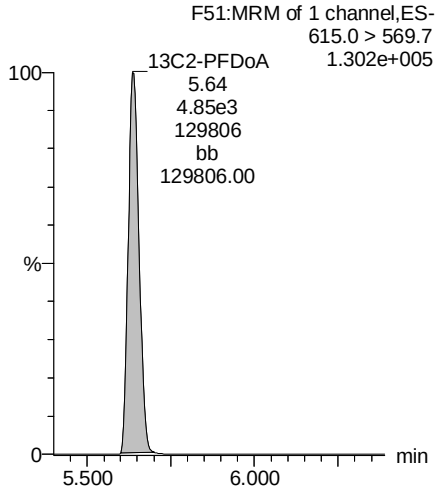
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d5-N-EtFOSAA



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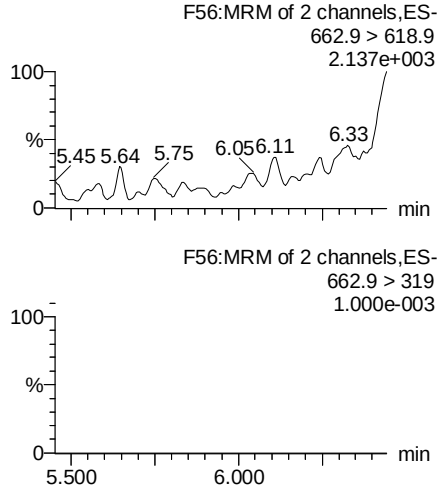
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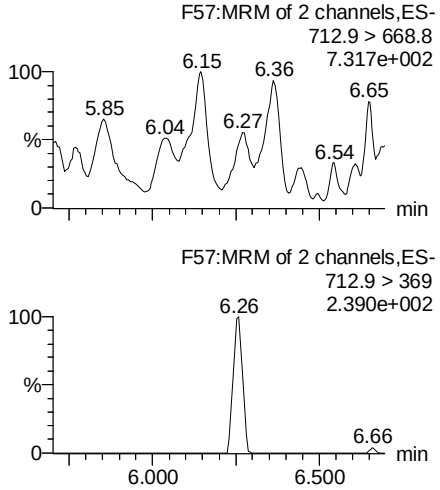
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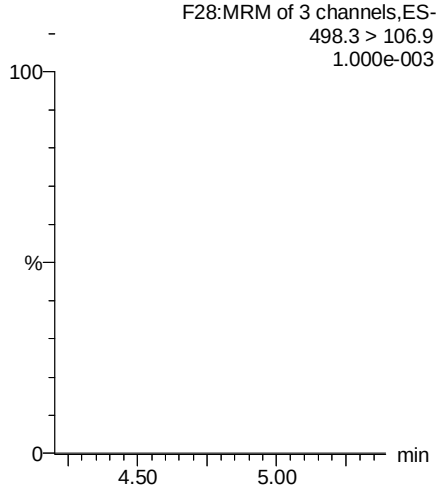
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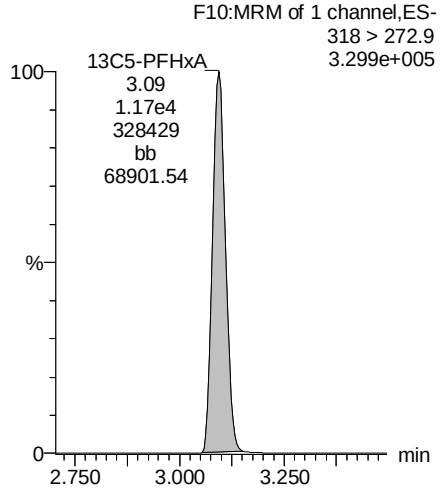
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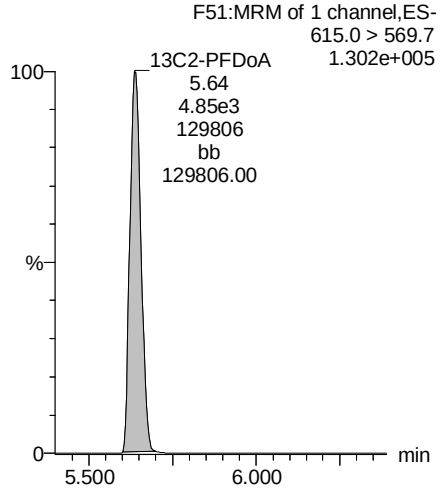
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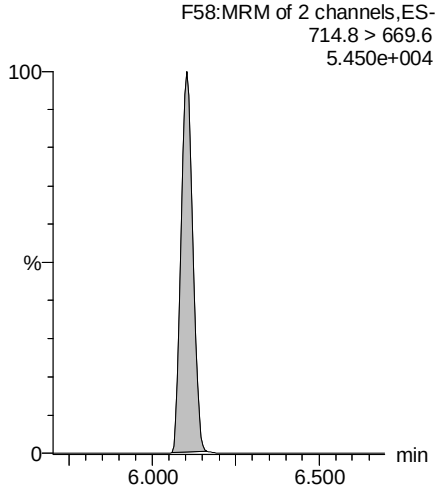
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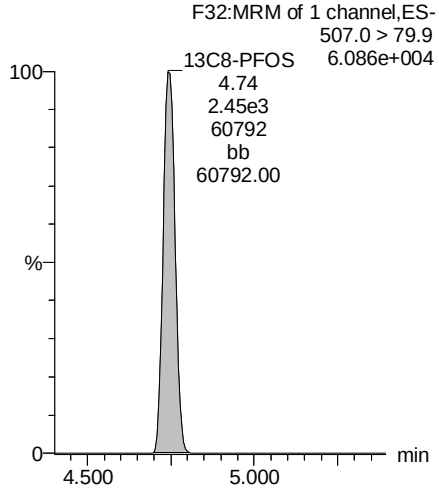
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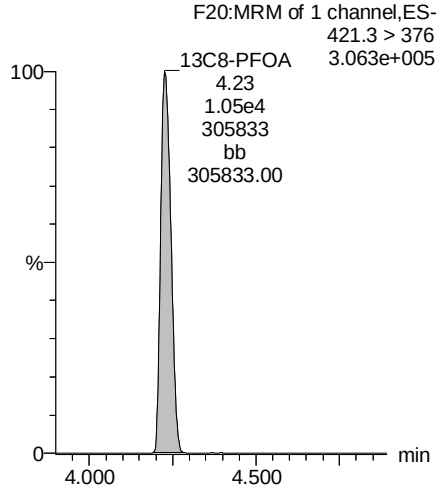
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13C8-PFOS



13C8-PFOA



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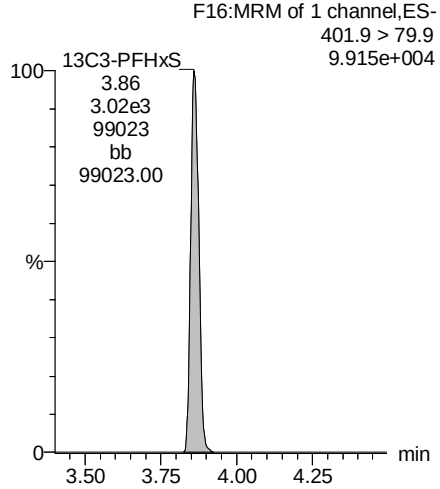
Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_27.qld

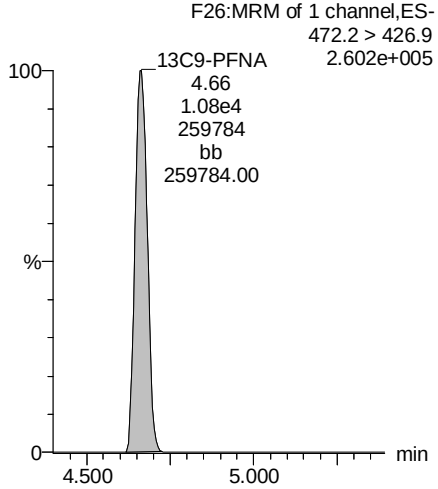
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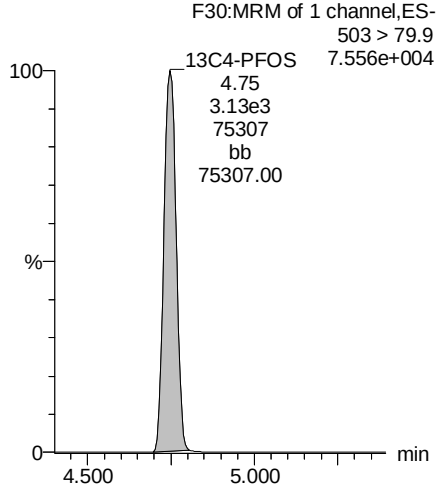
13C3-PFHxS



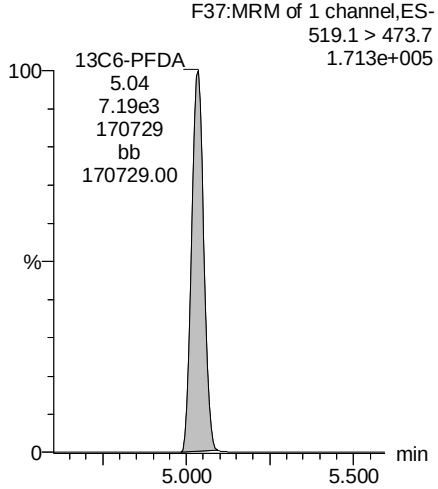
13C9-PFNA



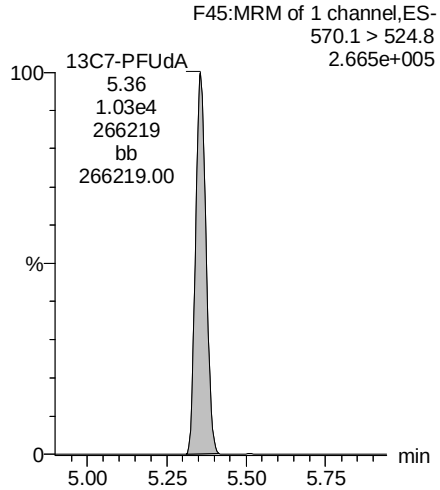
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_28.qld

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_28, Date: 12-Jan-2018, Time: 18:48:47, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		1.33e3	0.259		2.66				
2	4	PFHxA	313.2 > 268.9		2.88e3	0.259		3.15				
3	5	PFHpA	363.0 > 318.9		7.36e3	0.259		3.78				
4	6	L-PFHxS	398.9 > 79.6	6.59e0	9.79e2	0.259		3.94	3.86	0.0842	0.2015	
5	9	L-PFOA	413 > 368.7		1.03e4	0.259		4.31				
6	12	PFNA	463.0 > 418.8	7.55e1	8.44e3	0.259		4.81	4.67	0.112	0.2790	
7	14	L-PFOS	499 > 79.9		2.62e3	0.259		4.75				
8	16	PFDA	513 > 468.8		6.95e3	0.259		5.18				
9	18	N-MeFOSAA	570.1 > 419		3.18e3	0.259		5.32				
10	19	N-EtFOSAA	584.2 > 419		3.53e3	0.259		5.48				
11	20	PFUdA	563.0 > 518.9	8.30e2	7.74e3	0.259		5.50	5.35	1.34	4.0872	
12	22	PFDoA	612.9 > 569.0		4.71e3	0.259		5.77				

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Rev'd: MM 1/16/18

Dataset: U:\Q4.PRO\results\180112M3\180112M3_28.qld

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Name: 180112M3_28, Date: 12-Jan-2018, Time: 18:48:47, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		4.71e3	0.259		6.00				
2	25	PFTeDA	712.9 > 668.8		1.87e3	0.259		6.22				
3	33	13C3-PFBS	302. > 98.8	1.33e3	1.11e4	0.259	0.112	2.77	2.60	1.50	51.8651	107.4
4	34	13C2-PFHxA	315 > 269.8	2.88e3	1.11e4	0.259	0.691	3.15	3.09	3.24	18.1427	93.9
5	35	13C4-PFHpA	367.2 > 321.8	7.36e3	1.11e4	0.259	0.708	3.78	3.71	8.29	45.2375	93.7
6	36	18O2-PFHxS	403.0 > 102.6	9.79e2	3.16e3	0.259	0.353	3.94	3.86	3.88	42.4329	87.9
7	37	13C2-6:2 FTS	429.1 > 408.9	2.15e3	9.86e3	0.259	0.285	4.25	4.18	2.73	36.9786	76.6
8	38	13C2-PFOA	414.9 > 369.7	1.03e4	9.86e3	0.259	1.049	4.31	4.23	13.0	47.9555	99.3
9	39	13C5-PFNA	468.2 > 422.9	8.44e3	9.91e3	0.259	0.910	4.81	4.66	10.6	45.1674	93.5
10	40	13C8-PFOSA	506.1 > 77.7	1.74e3	1.06e4	0.259	0.252	4.87	4.73	2.06	31.5603	65.4
11	41	13C8-PFOS	507.0 > 79.9	2.62e3	2.43e3	0.259	0.987	4.89	4.75	13.5	52.6994	109.1
12	42	13C2-PFDA	515.1 > 469.9	6.95e3	7.11e3	0.259	1.311	5.18	5.03	12.2	36.0550	74.7
13	43	13C2-8:2 FTS	529.1 > 508.7	1.07e3	1.11e4	0.259	0.141	5.15	5.00	1.21	32.9359	68.2
14	44	d3-N-MeFOSAA	573.3 > 419	3.18e3	1.06e4	0.259	0.385	5.32	5.18	3.76	37.7305	78.1
15	45	d5-N-EtFOSAA	589.3 > 419	3.53e3	1.06e4	0.259	0.445	5.47	5.34	4.17	36.1376	74.8
16	46	13C2-PFUdA	565 > 519.8	7.74e3	1.06e4	0.259	1.014	5.49	5.36	9.13	34.7724	72.0
17	47	13C2-PFDoA	615.0 > 569.7	4.71e3	1.06e4	0.259	0.575	5.77	5.64	5.55	37.2987	77.2
18	49	13C2-PFTeDA	714.8 > 669.6	1.87e3	1.06e4	0.259	0.305	6.22	6.10	2.20	27.8801	57.7
19	55	13C5-PFHxA	318 > 272.9	1.11e4	1.11e4	0.259	1.000	3.15	3.09	12.5	48.2831	100.0
20	56	13C3-PFHxS	401.9 > 79.9	3.16e3	3.16e3	0.259	1.000	4.02	3.86	12.5	48.2831	100.0
21	57	13C8-PFOA	421.3 > 376	9.86e3	9.86e3	0.259	1.000	4.38	4.23	12.5	48.2831	100.0
22	58	13C9-PFNA	472.2 > 426.9	9.91e3	9.91e3	0.259	1.000	4.81	4.66	12.5	48.2831	100.0
23	59	13C4-PFOS	503 > 79.9	2.43e3	2.43e3	0.259	1.000	4.89	4.75	12.5	48.2831	100.0
24	60	13C6-PFDA	519.1 > 473.7	7.11e3	7.11e3	0.259	1.000	5.18	5.04	12.5	48.2831	100.0
25	61	13C7-PFUdA	570.1 > 524.8	1.06e4	1.06e4	0.259	1.000	5.49	5.35	12.5	48.2831	100.0
26	62	Total PFHxS	398.9 > 79.6	6.59e0	9.79e2	0.259		3.80		0.0842	0.2015	
27	63	Total PFOA	413 > 368.7	0.00e0	1.03e4	0.259		4.51		0.000		
28	64	Total PFOS	499 > 79.9	0.00e0	2.62e3	0.259		4.75		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	3.18e3	0.259		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	3.53e3	0.259		5.61		0.000		

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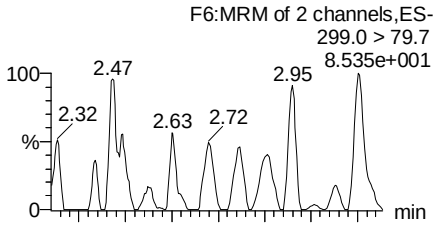
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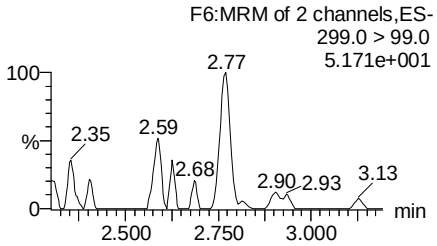
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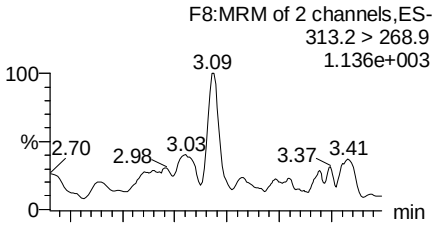
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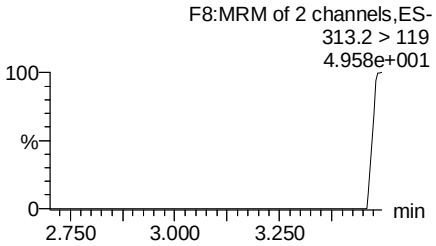
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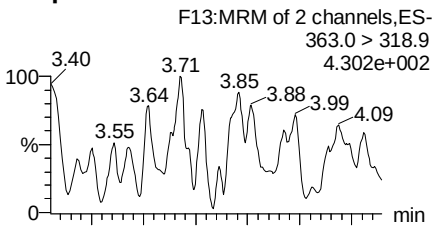


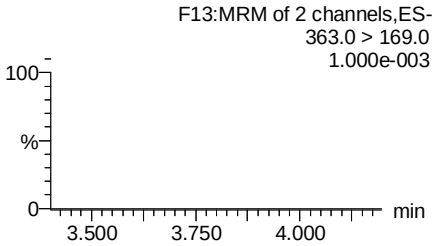
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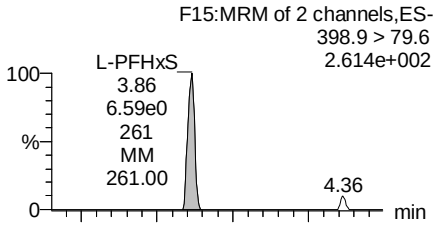


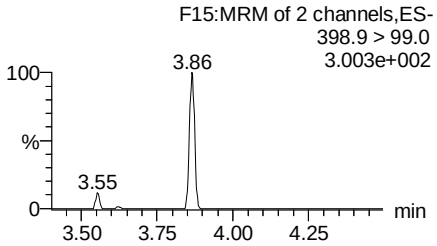
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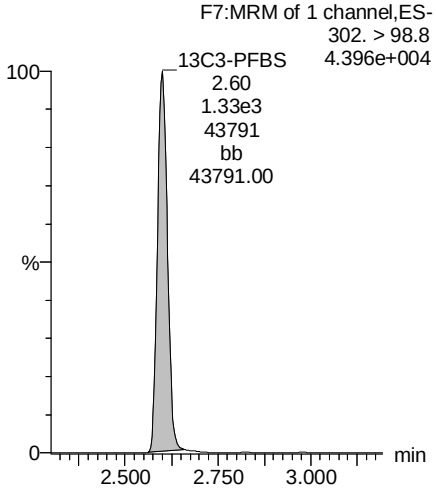


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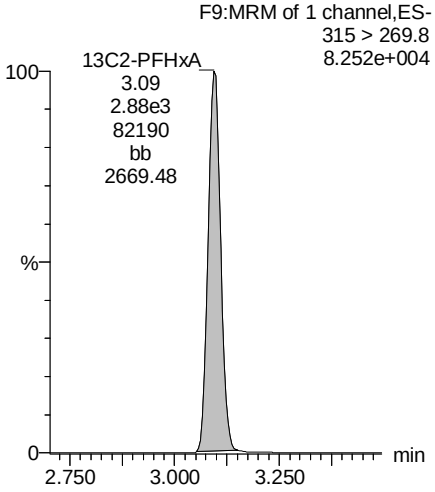




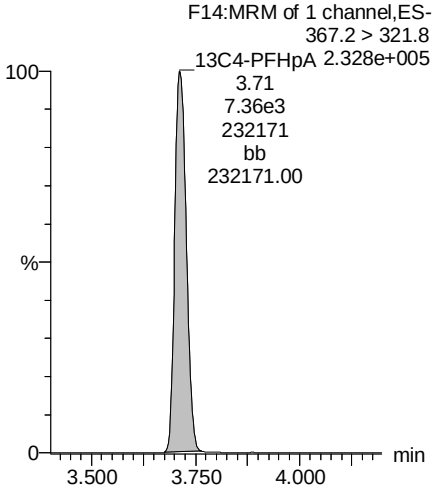
13C3-PFBS



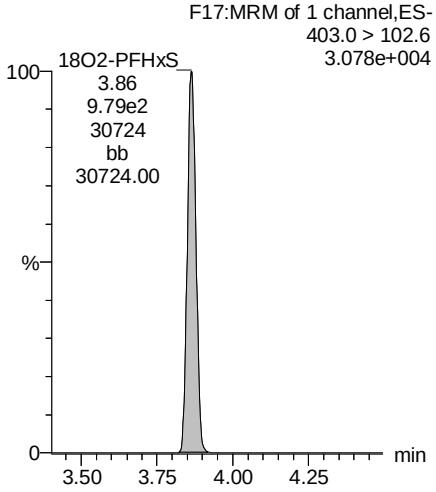
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



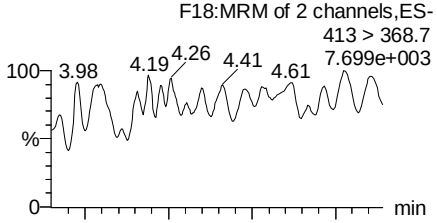
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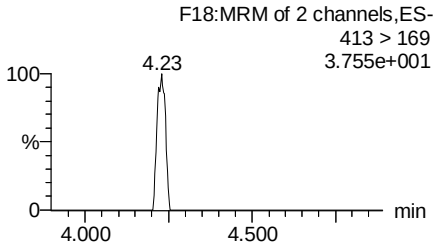
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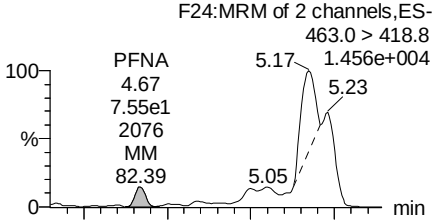
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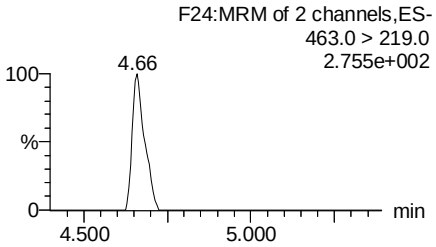
Total PFOA



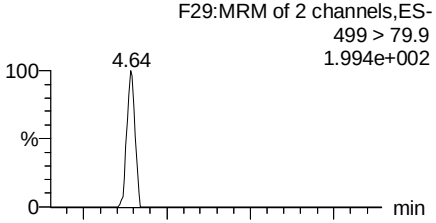


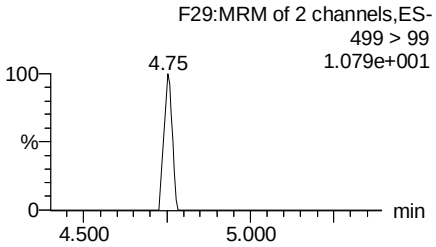
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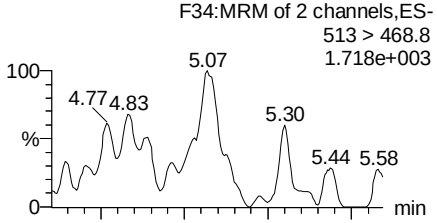


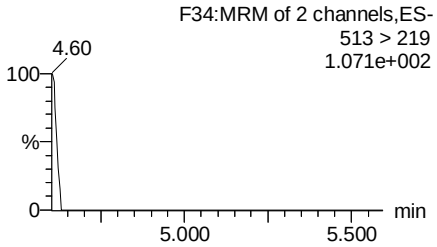
Total PFOS



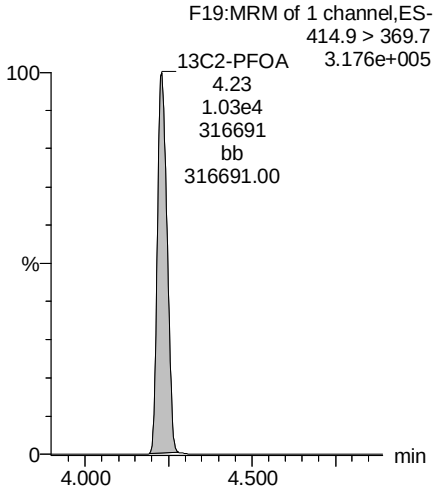


PFDA

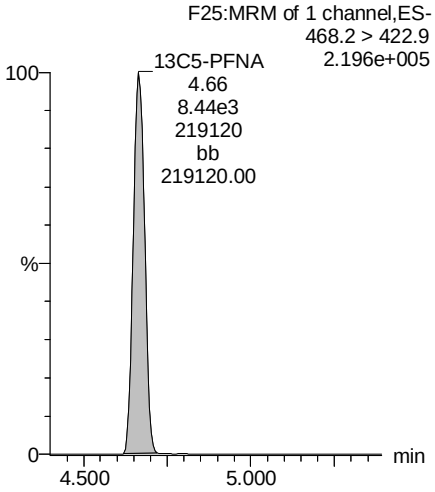




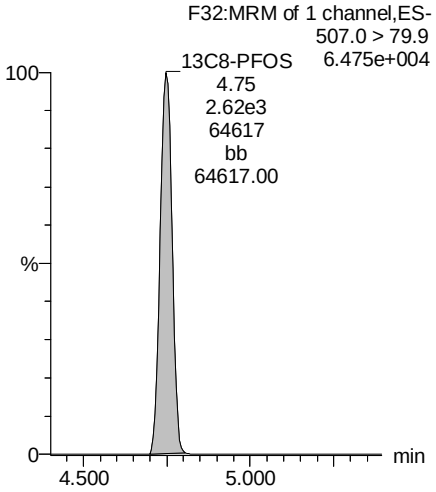
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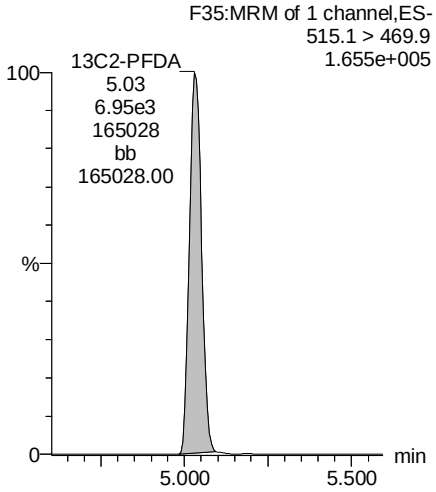
13C5-PFNA



13C8-PFOS



13C2-PFDA



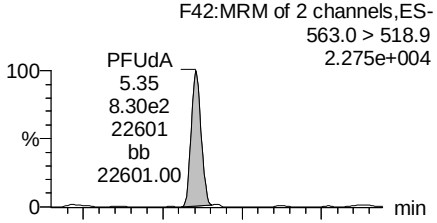
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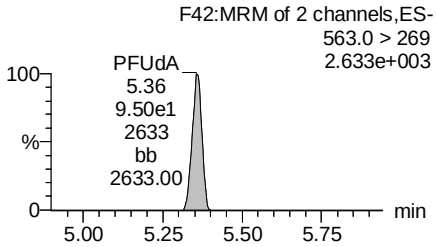
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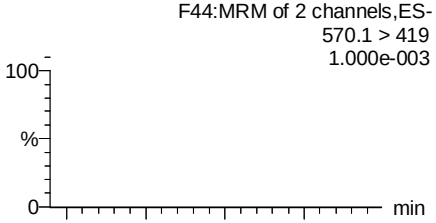
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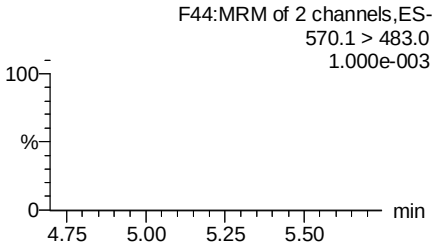
PFUdA



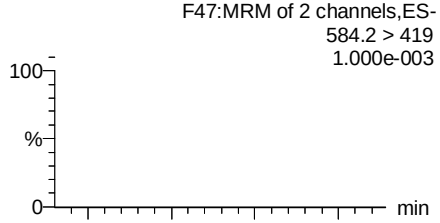


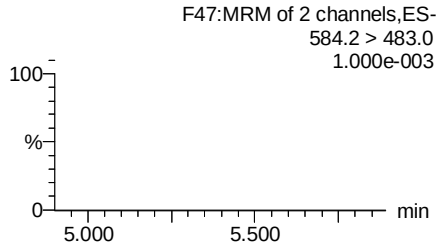
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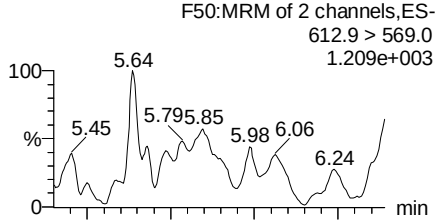


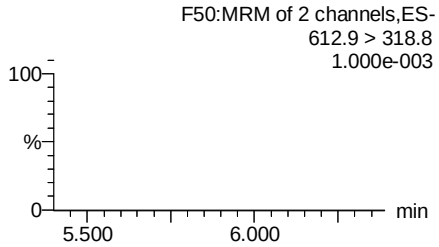
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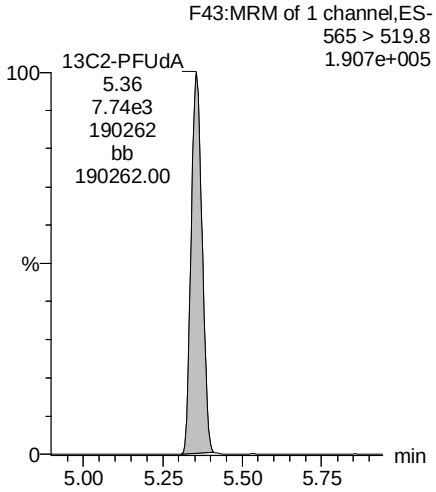


PFDoA

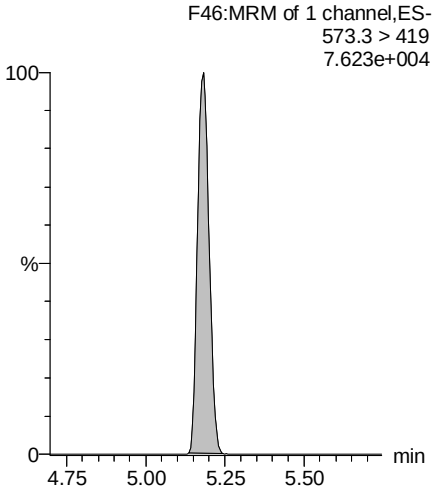




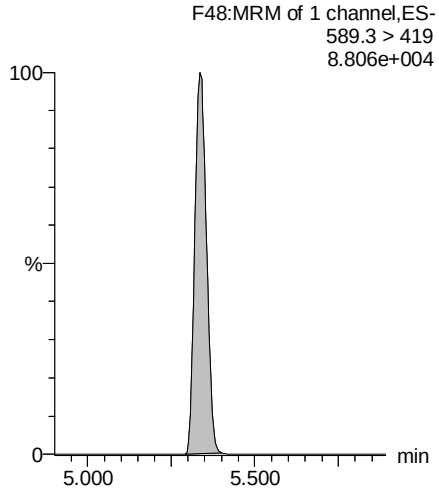
13C2-PFUdA



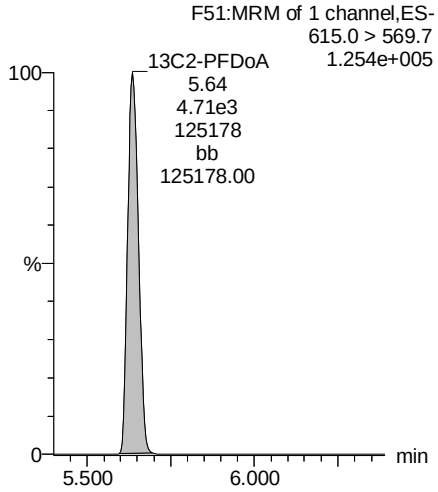
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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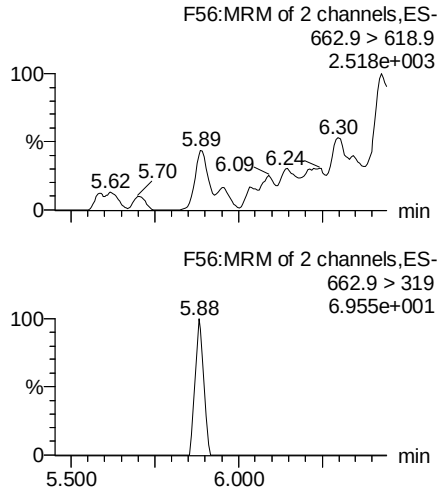
Rev'd: MM 1/16/18

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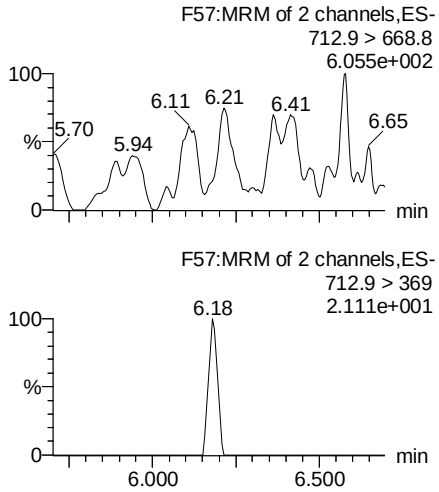
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Name: 180112M3_28, Date: 12-Jan-2018, Time: 18:48:47, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

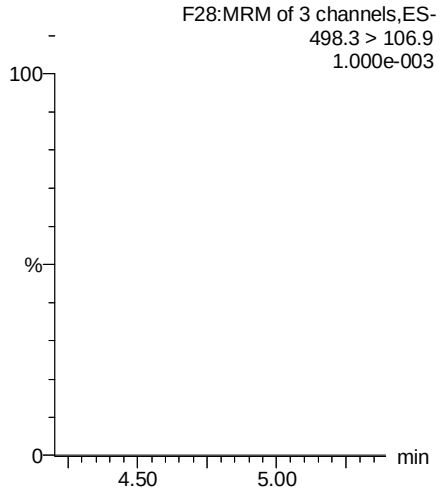
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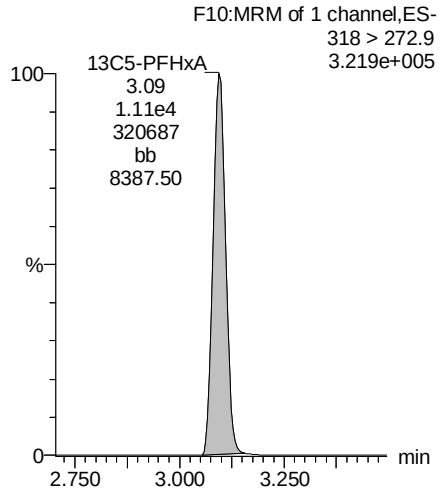
PFTeDA



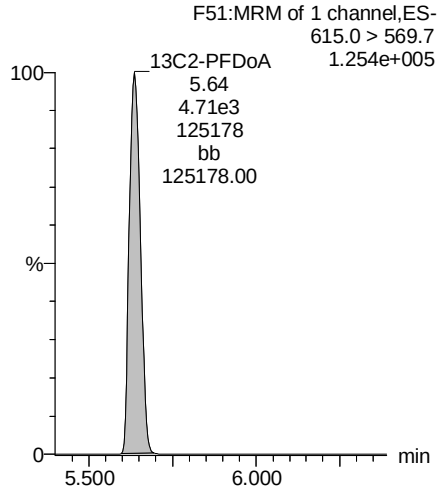
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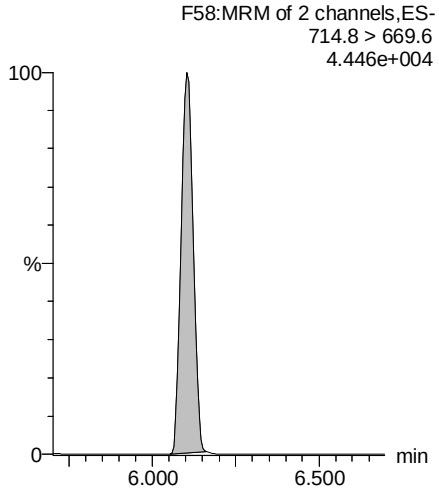
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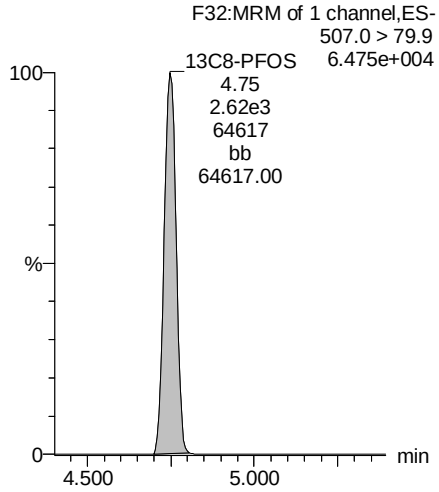
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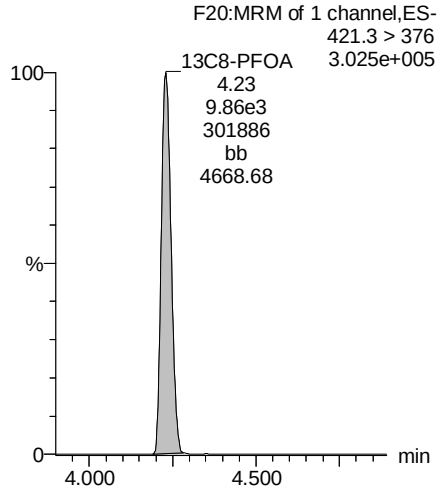
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13C8-PFOS



13C8-PFOA



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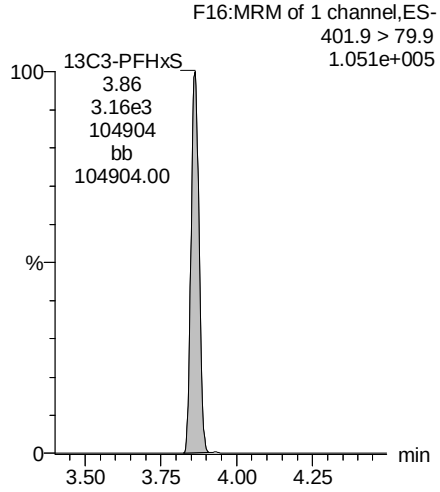
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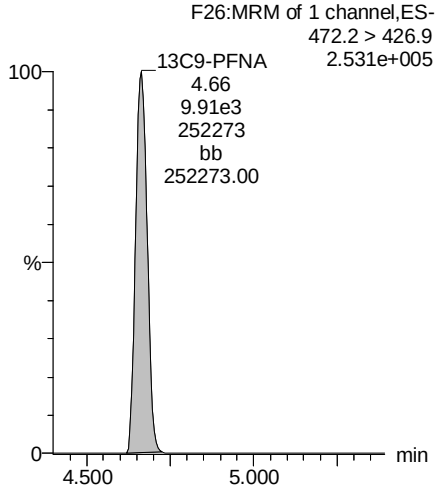
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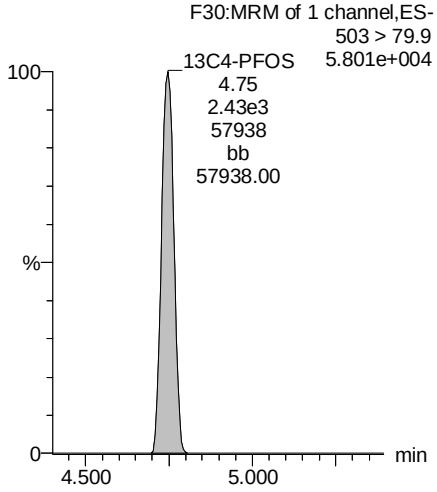
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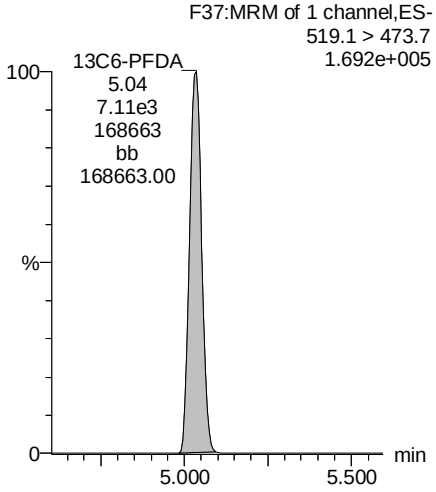
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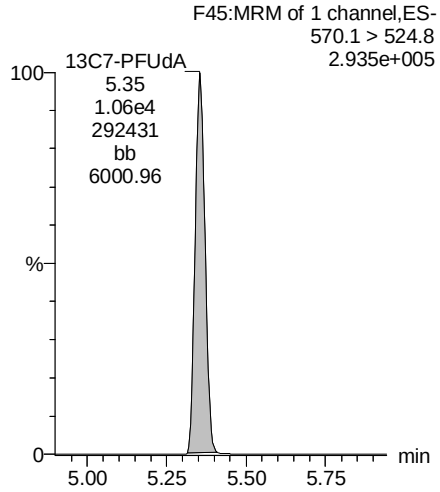
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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UNREPORTED RUNS

Vista Analytical Laboratory

Rev'd: MM 1/15/18

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:19:06 Pacific Standard Time
Printed: Monday, January 15, 2018 14:19:15 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_5, Date: 10-Jan-2018, Time: 16:09:04, ID: B7L0188-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.40e2	0.250		2.66				
2	4	PFHxA	313.2 > 268.9		1.40e3	0.250		3.15				
3	5	PFHpA	363.0 > 318.9		3.48e3	0.250		3.78				
4	6	L-PFHxS	398.9 > 79.6		4.45e2	0.250		3.94				
5	9	L-PFOA	413 > 368.7		5.27e3	0.250		4.31				
6	12	PFNA	463.0 > 418.8		4.28e3	0.250		4.81				
7	14	L-PFOS	499 > 79.9		1.15e3	0.250		4.89				
8	16	PFDA	513 > 468.8	6.56e1	4.01e3	0.250		5.18	5.01	0.204		
9	18	N-MeFOSAA	570.1 > 419		1.25e3	0.250		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.30e3	0.250		5.48				
11	20	PFUdA	563.0 > 518.9		4.26e3	0.250		5.50				
12	22	PFDoA	612.9 > 569.0		3.05e3	0.250		5.77				

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Rev'd: MM 1/15/18

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:19:06 Pacific Standard Time
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Name: 180110M2_5, Date: 10-Jan-2018, Time: 16:09:04, ID: B7L0188-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.05e3	0.250		6.00				
2	25	PFTeDA	712.9 > 668.8		1.80e3	0.250		6.22				
3	33	13C3-PFBS	302. > 98.8	6.40e2	5.69e3	0.250	0.116	2.77	2.61	1.40	48.3231	96.6
4	34	13C2-PFHxA	315 > 269.8	1.40e3	5.69e3	0.250	0.655	3.15	3.10	3.07	18.7193	93.6
5	35	13C4-PFHpA	367.2 > 321.8	3.48e3	5.69e3	0.250	0.722	3.78	3.72	7.63	42.2600	84.5
6	36	18O2-PFHxS	403.0 > 102.6	4.45e2	1.55e3	0.250	0.348	3.94	3.87	3.59	41.2586	82.5
7	37	13C2-6:2 FTS	429.1 > 408.9	1.23e3	5.23e3	0.250	0.222	4.25	4.19	2.94	53.0729	106.1
8	38	13C2-PFOA	414.9 > 369.7	5.27e3	5.23e3	0.250	1.023	4.31	4.24	12.6	49.2168	98.4
9	39	13C5-PFNA	468.2 > 422.9	4.28e3	4.73e3	0.250	0.916	4.81	4.67	11.3	49.4613	98.9
10	40	13C8-PFOSA	506.1 > 77.7	5.97e2	4.49e3	0.250	0.210	4.87	4.74	1.66	31.6087	63.2
11	41	13C8-PFOS	507.0 > 79.9	1.15e3	1.32e3	0.250	1.035	4.89	4.76	10.9	42.0530	84.1
12	42	13C2-PFDA	515.1 > 469.9	4.01e3	4.52e3	0.250	1.142	5.18	5.05	11.1	38.9064	77.8
13	43	13C2-8:2 FTS	529.1 > 508.7	4.56e2	5.69e3	0.250	0.157	5.15	5.01	1.00	25.5831	51.2
14	44	d3-N-MeFOSAA	573.3 > 419	1.25e3	4.49e3	0.250	0.299	5.32	5.19	3.49	46.7005	93.4
15	45	d5-N-EtFOSAA	589.3 > 419	1.30e3	4.49e3	0.250	0.369	5.47	5.35	3.63	39.3823	78.8
16	46	13C2-PFUdA	565 > 519.8	4.26e3	4.49e3	0.250	1.012	5.49	5.37	11.9	46.9462	93.9
17	47	13C2-PFDoA	615.0 > 569.7	3.05e3	4.49e3	0.250	0.647	5.77	5.65	8.50	52.5236	105.0
18	49	13C2-PFTeDA	714.8 > 669.6	1.80e3	4.49e3	0.250	0.294	6.22	6.11	5.01	68.1788	136.4
19	55	13C5-PFHxA	318 > 272.9	5.69e3	5.69e3	0.250	1.000	3.15	3.10	12.5	50.0000	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.55e3	1.55e3	0.250	1.000	4.02	3.87	12.5	50.0000	100.0
21	57	13C8-PFOA	421.3 > 376	5.23e3	5.23e3	0.250	1.000	4.38	4.24	12.5	50.0000	100.0
22	58	13C9-PFNA	472.2 > 426.9	4.73e3	4.73e3	0.250	1.000	4.81	4.67	12.5	50.0000	100.0
23	59	13C4-PFOS	503 > 79.9	1.32e3	1.32e3	0.250	1.000	4.89	4.76	12.5	50.0000	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.52e3	4.52e3	0.250	1.000	5.18	5.05	12.5	50.0000	100.0
25	61	13C7-PFUdA	570.1 > 524.8	4.49e3	4.49e3	0.250	1.000	5.49	5.37	12.5	50.0000	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	4.45e2	0.250		4.14		0.000		
27	63	Total PFOA	413 > 368.7	0.00e0	5.27e3	0.250		4.51		0.000		
28	64	Total PFOS	499 > 79.9	0.00e0	1.15e3	0.250		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.25e3	0.250		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.30e3	0.250		5.61		0.000		

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Rev'd: MM 1/15/18

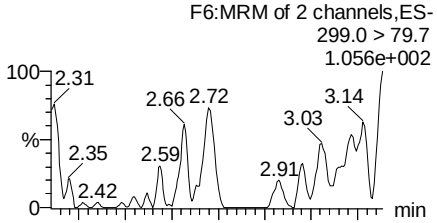
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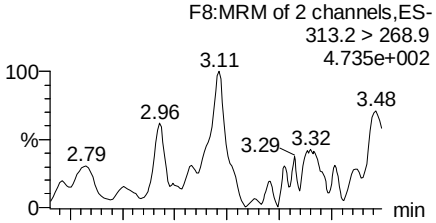
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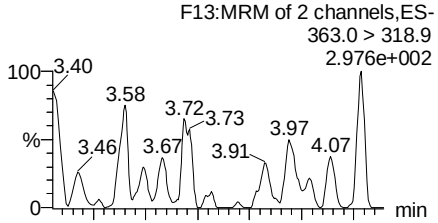
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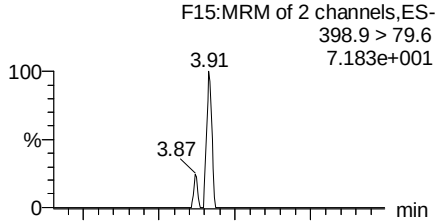
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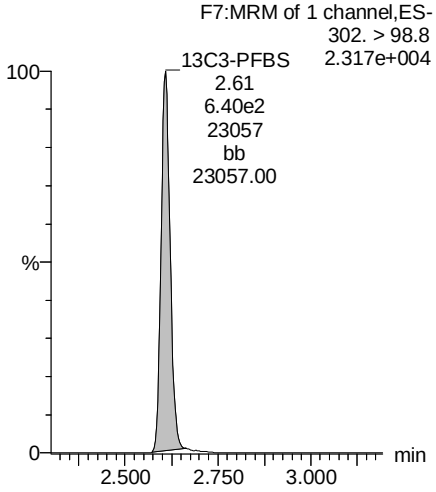
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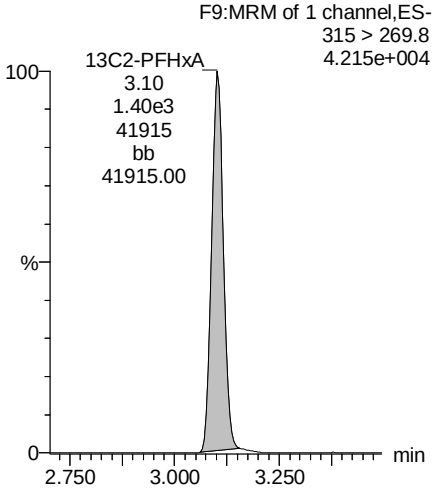
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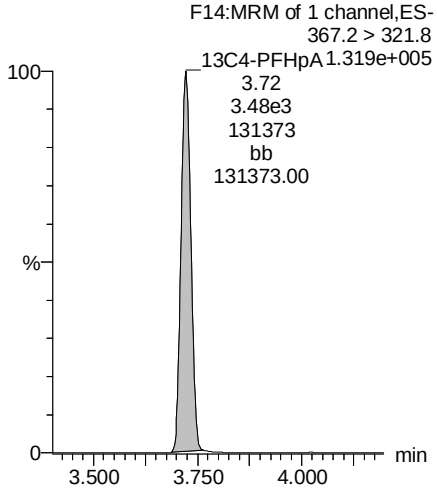
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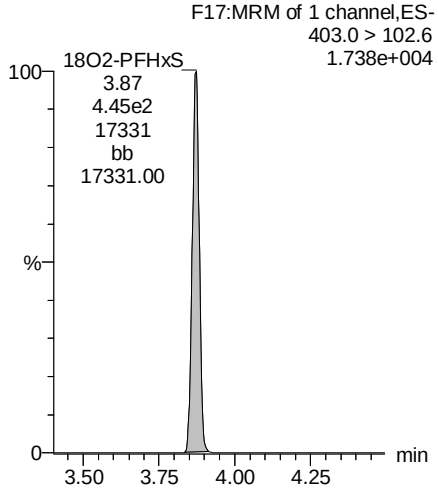
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



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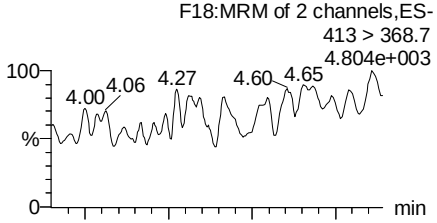
Rev'd: MM 1/15/18

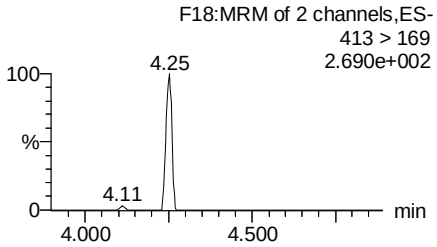
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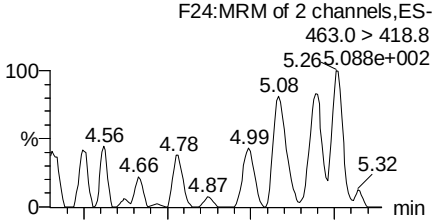
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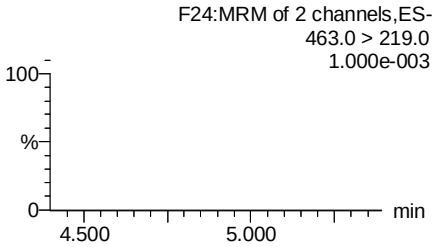
Total PFOA



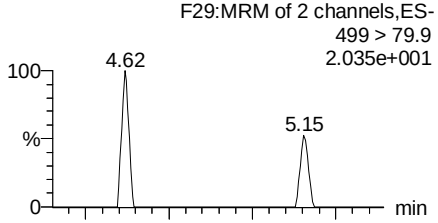


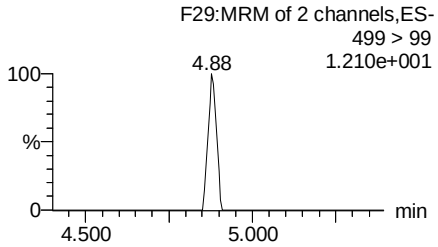
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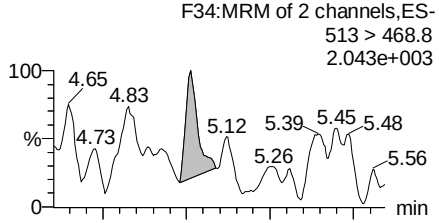


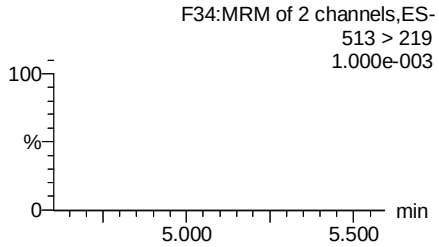
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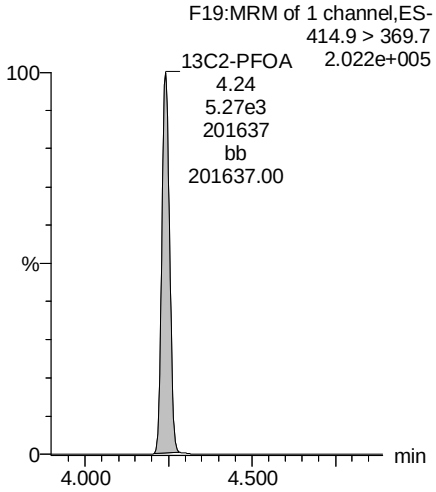


PFDA

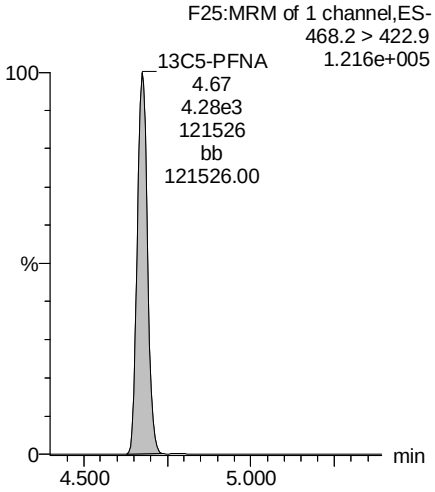




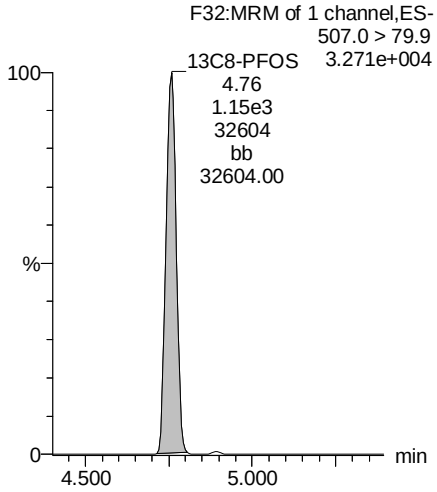
13C2-PFOA



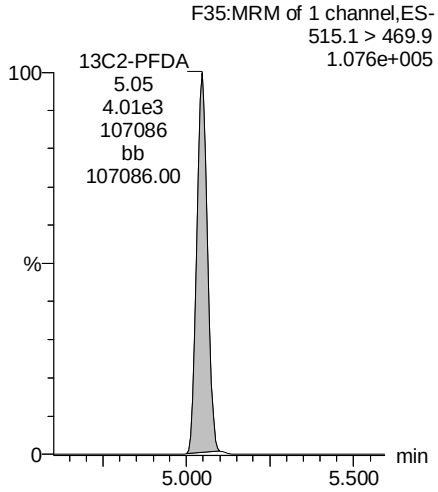
13C5-PFNA



13C8-PFOS



13C2-PFDA



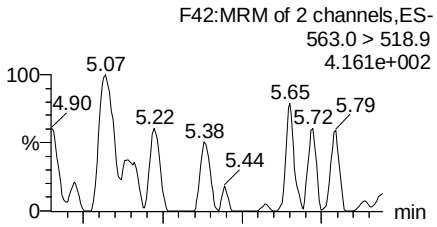
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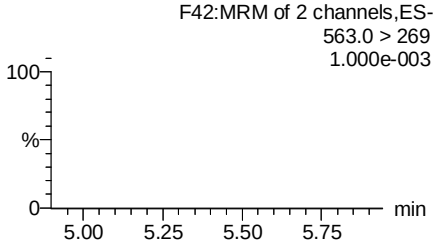
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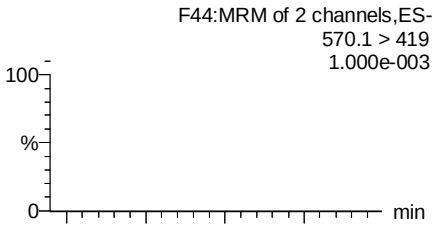
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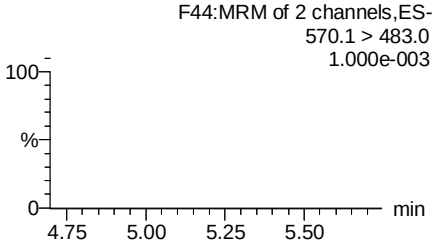
PFUdA



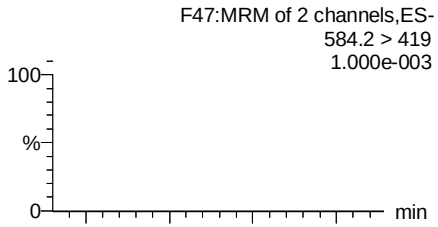


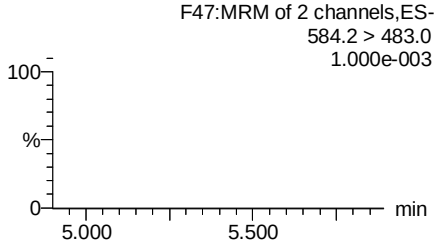
N-MeFOSAA



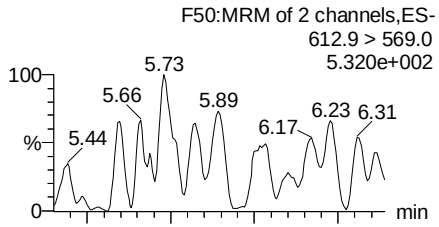


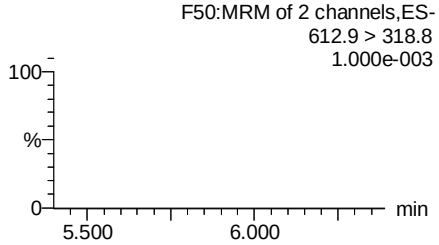
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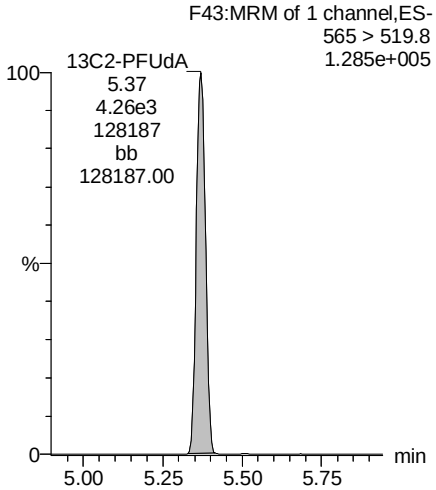


PFDoA

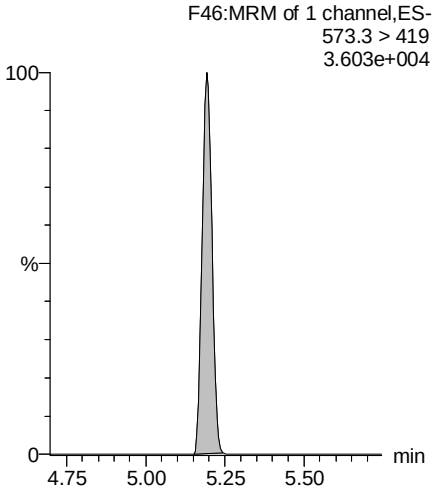




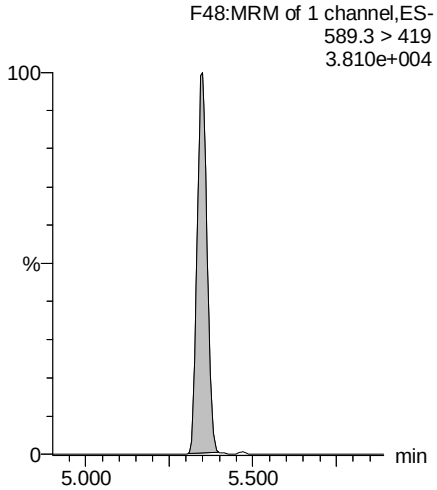
13C2-PFUdA



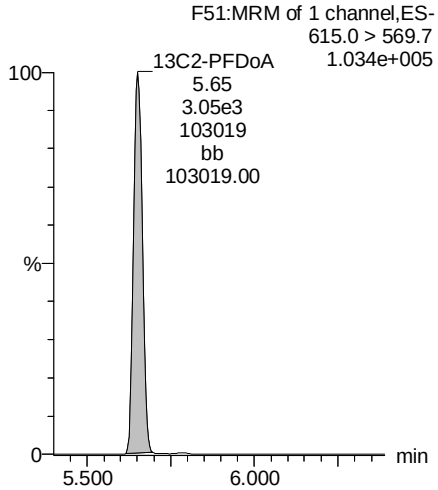
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



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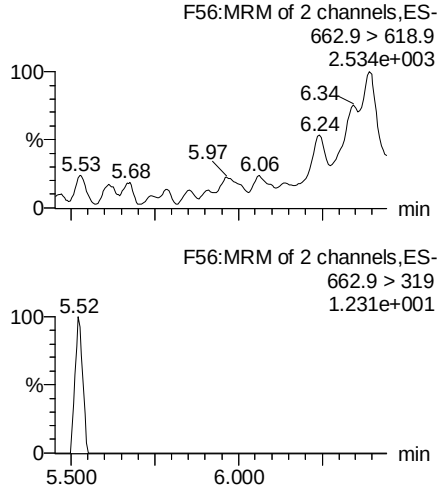
Rev'd: MM 1/15/18

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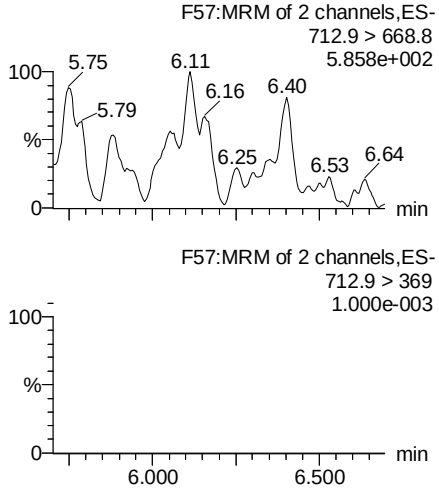
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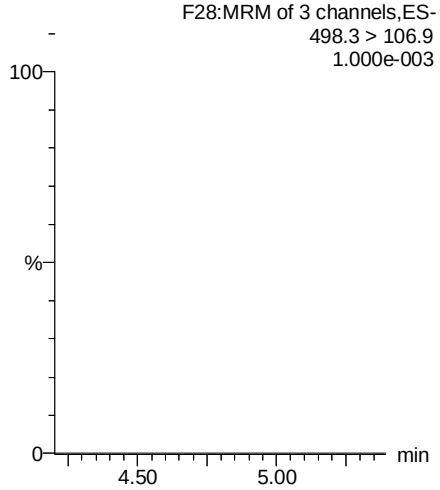
PFTrDA



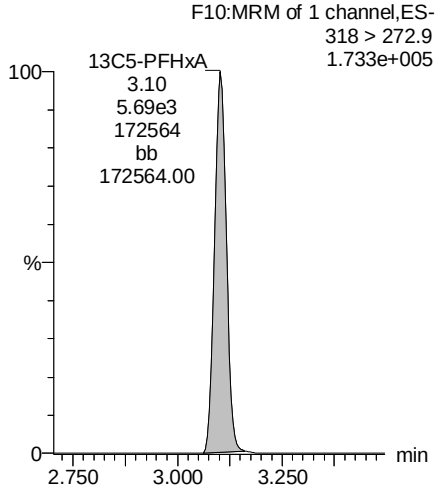
PFTeDA



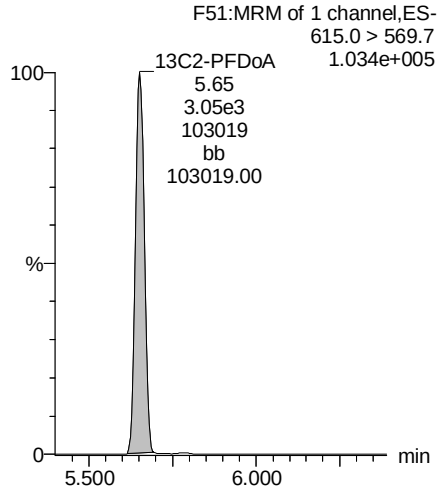
TCDA



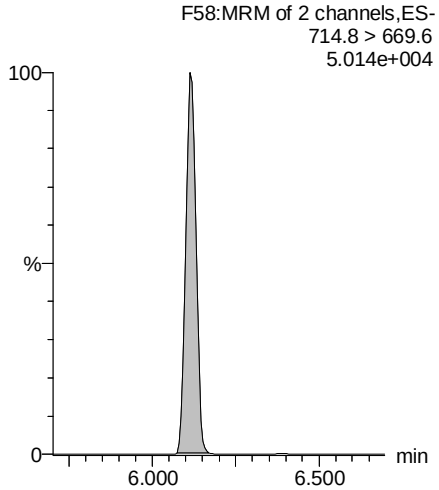
13C5-PFHxA



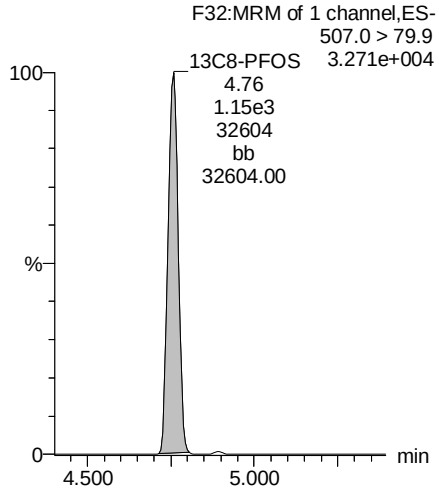
13C2-PFDoA



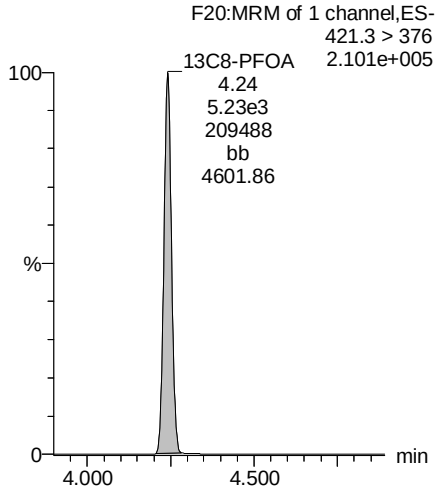
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



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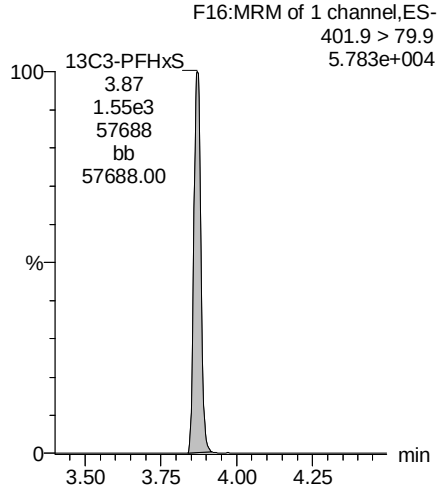
Rev'd: MM 1/15/18

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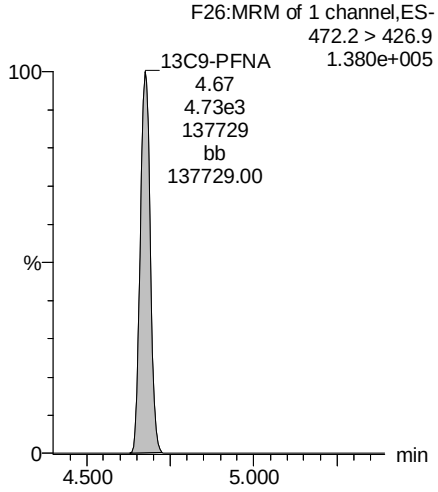
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Printed: Monday, January 15, 2018 14:19:30 Pacific Standard Time

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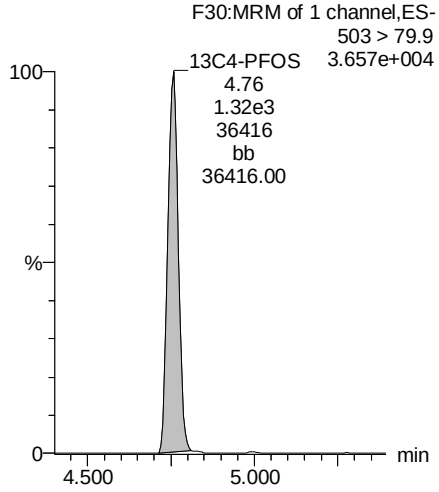
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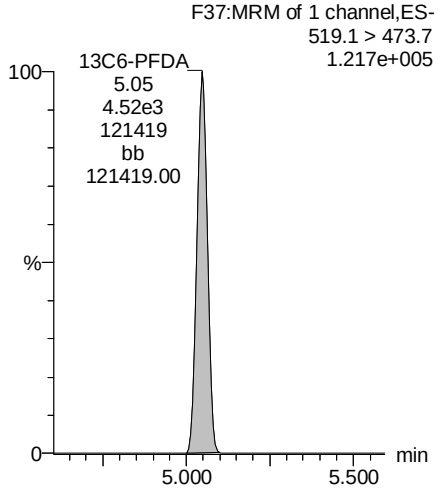
13C9-PFNA



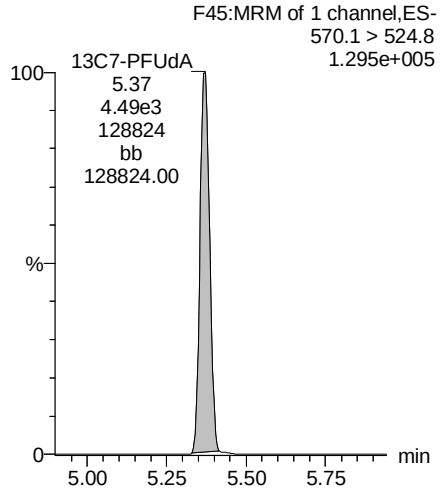
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:08:39 Pacific Standard Time
Printed: Monday, January 15, 2018 14:08:46 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_29, Date: 10-Jan-2018, Time: 20:37:21, ID: 1701970-01 FT-PZ458S-20171214 0.25998, Description: FT-PZ458S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		5.82e2	0.260		2.66				
2	4	PFHxA	313.2 > 268.9	2.83e2	1.32e3	0.260		3.15	3.10	1.07	2.1306	
3	5	PFHpA	363.0 > 318.9	2.37e2	3.30e3	0.260		3.78	3.72	0.900	2.4830	
4	6	L-PFHxS	398.9 > 79.6	1.63e2	4.36e2	0.260		3.94	3.87	4.68	9.6903	
5	9	L-PFOA	413 > 368.7	8.77e2	4.82e3	0.260		4.31	4.24	2.27	8.0181	
6	12	PFNA	463.0 > 418.8	5.38e3	4.05e3	0.260		4.81	4.67	16.6	50.6968	
7	14	L-PFOS	499 > 79.9	9.07e1	1.20e3	0.260		4.89	4.76	0.947	3.7744	
8	16	PFDA	513 > 468.8		3.79e3	0.260		5.18				
9	18	N-MeFOSAA	570.1 > 419		1.16e3	0.260		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.52e3	0.260		5.48				
11	20	PFUdA	563.0 > 518.9		4.42e3	0.260		5.50				
12	22	PFDoA	612.9 > 569.0		2.24e3	0.260		5.77				

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:08:39 Pacific Standard Time
Printed: Monday, January 15, 2018 14:09:05 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_29, Date: 10-Jan-2018, Time: 20:37:21, ID: 1701970-01 FT-PZ458S-20171214 0.25998, Description: FT-PZ458S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		2.24e3	0.260		6.00				
2	25	PFTeDA	712.9 > 668.8		9.45e2	0.260		6.22				
3	33	13C3-PFBS	302. > 98.8	5.82e2	5.76e3	0.260	0.116	2.77	2.61	1.26	41.7905	86.9
4	34	13C2-PFHxA	315 > 269.8	1.32e3	5.76e3	0.260	0.655	3.15	3.10	2.86	16.8181	87.4
5	35	13C4-PFHpA	367.2 > 321.8	3.30e3	5.76e3	0.260	0.722	3.78	3.72	7.16	38.1299	79.3
6	36	18O2-PFHxS	403.0 > 102.6	4.36e2	1.56e3	0.260	0.348	3.94	3.87	3.50	38.6796	80.4
7	37	13C2-6:2 FTS	429.1 > 408.9	9.77e2	5.00e3	0.260	0.222	4.25	4.18	2.44	42.3950	88.2
8	38	13C2-PFOA	414.9 > 369.7	4.82e3	5.00e3	0.260	1.023	4.31	4.24	12.1	45.3525	94.3
9	39	13C5-PFNA	468.2 > 422.9	4.05e3	5.30e3	0.260	0.916	4.81	4.67	9.55	40.1424	83.5
10	40	13C8-PFOSA	506.1 > 77.7	8.89e2	5.13e3	0.260	0.210	4.87	4.73	2.16	39.5541	82.3
11	41	13C8-PFOS	507.0 > 79.9	1.20e3	1.44e3	0.260	1.035	4.89	4.76	10.4	38.5165	80.1
12	42	13C2-PFDA	515.1 > 469.9	3.79e3	3.71e3	0.260	1.142	5.18	5.04	12.8	43.0736	89.6
13	43	13C2-8:2 FTS	529.1 > 508.7	4.91e2	5.76e3	0.260	0.157	5.15	5.02	1.07	26.1840	54.5
14	44	d3-N-MeFOSAA	573.3 > 419	1.16e3	5.13e3	0.260	0.299	5.32	5.19	2.82	36.3260	75.6
15	45	d5-N-EtFOSAA	589.3 > 419	1.52e3	5.13e3	0.260	0.369	5.47	5.35	3.71	38.6698	80.4
16	46	13C2-PFUdA	565 > 519.8	4.42e3	5.13e3	0.260	1.012	5.49	5.37	10.8	40.9435	85.2
17	47	13C2-PFDoA	615.0 > 569.7	2.24e3	5.13e3	0.260	0.647	5.77	5.65	5.44	32.3708	67.3
18	49	13C2-PFTeDA	714.8 > 669.6	9.45e2	5.13e3	0.260	0.294	6.22	6.11	2.30	30.1414	62.7
19	55	13C5-PFHxA	318 > 272.9	5.76e3	5.76e3	0.260	1.000	3.15	3.10	12.5	48.0806	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.56e3	1.56e3	0.260	1.000	4.02	3.87	12.5	48.0806	100.0
21	57	13C8-PFOA	421.3 > 376	5.00e3	5.00e3	0.260	1.000	4.38	4.24	12.5	48.0806	100.0
22	58	13C9-PFNA	472.2 > 426.9	5.30e3	5.30e3	0.260	1.000	4.81	4.67	12.5	48.0806	100.0
23	59	13C4-PFOS	503 > 79.9	1.44e3	1.44e3	0.260	1.000	4.89	4.75	12.5	48.0806	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.71e3	3.71e3	0.260	1.000	5.18	5.04	12.5	48.0806	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.13e3	5.13e3	0.260	1.000	5.49	5.37	12.5	48.0806	100.0
26	62	Total PFHxS	398.9 > 79.6	1.63e2	4.36e2	0.260		4.14		4.68	9.6903	
27	63	Total PFOA	413 > 368.7	8.77e2	4.82e3	0.260		4.51		2.27	8.0181	
28	64	Total PFOS	499 > 79.9	9.07e1	1.20e3	0.260		5.02		0.947	3.7744	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.16e3	0.260		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.52e3	0.260		5.61		0.000		

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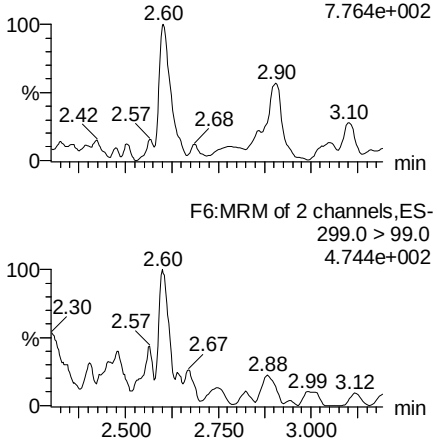
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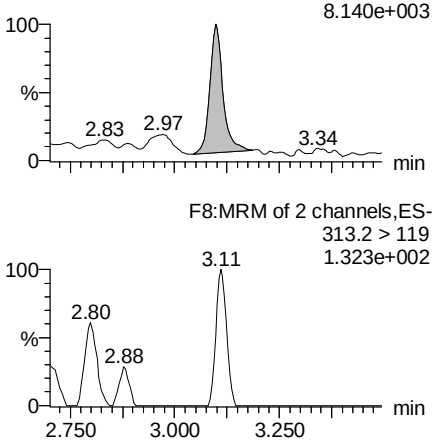
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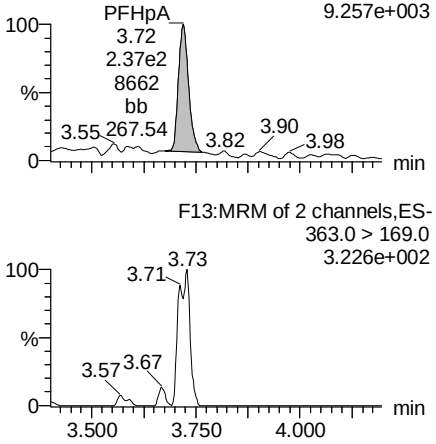
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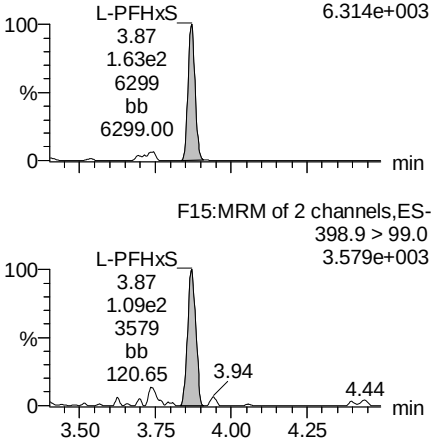
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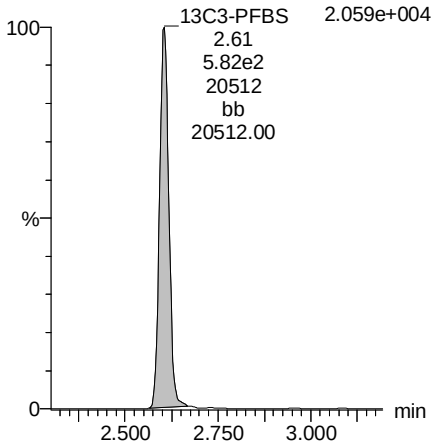
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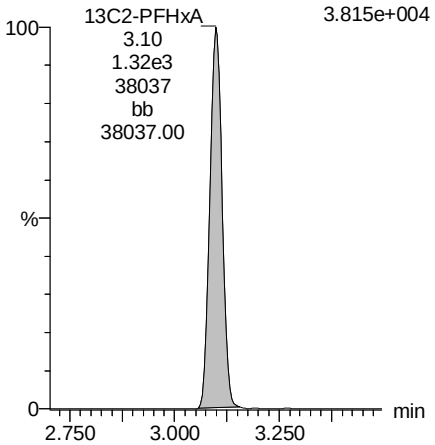
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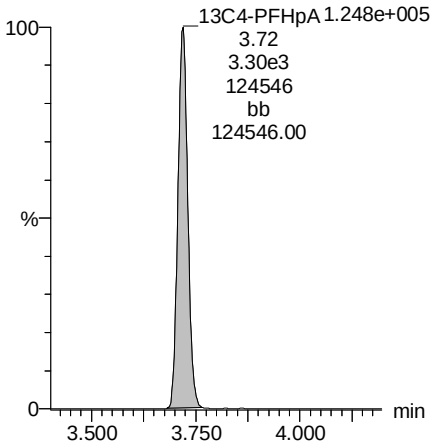
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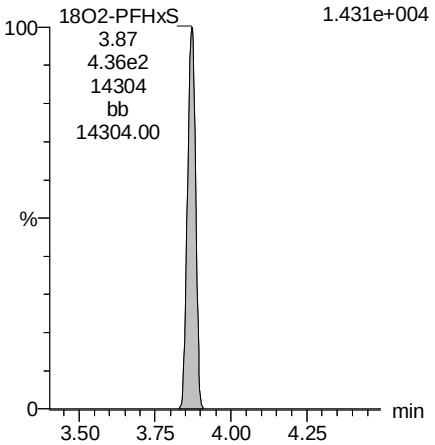
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13C4-PFHpA



18O2-PFHxS

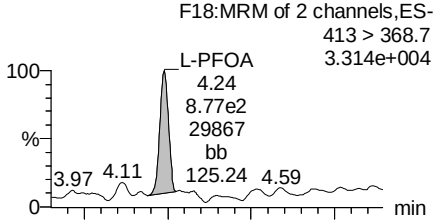


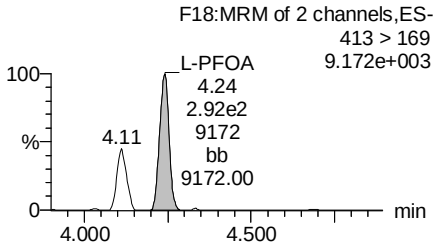
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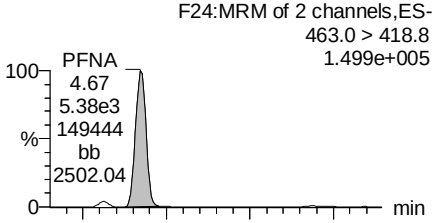
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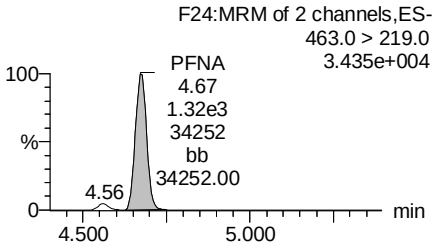
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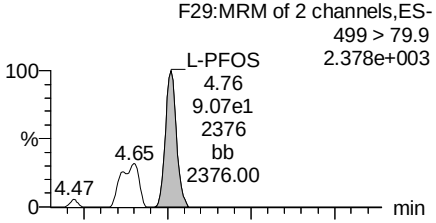


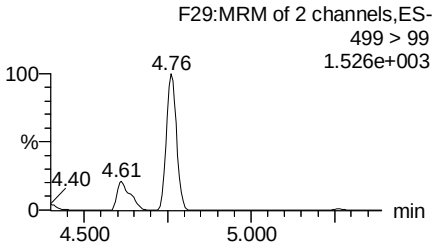
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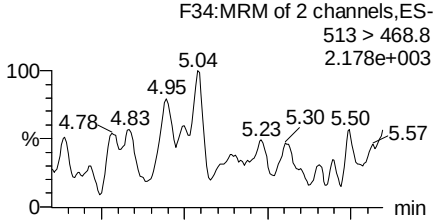


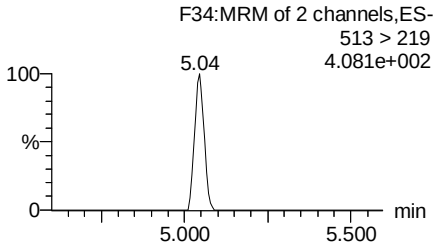
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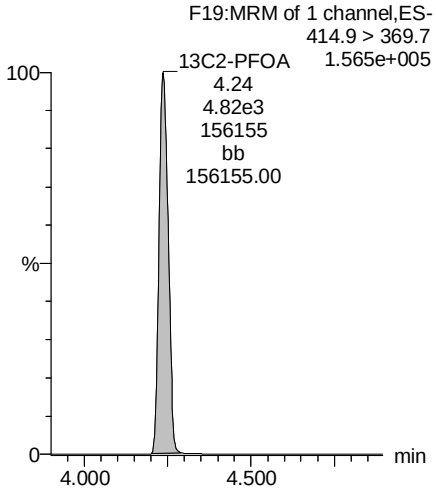


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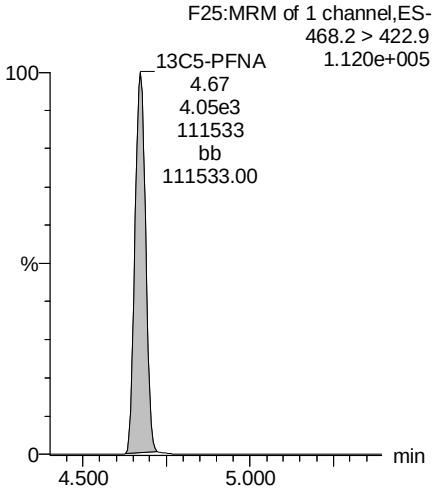




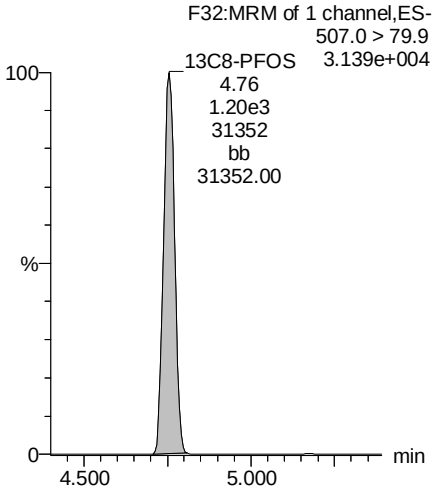
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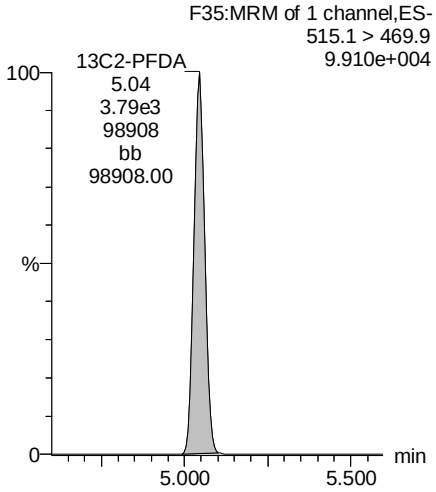
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13C8-PFOS



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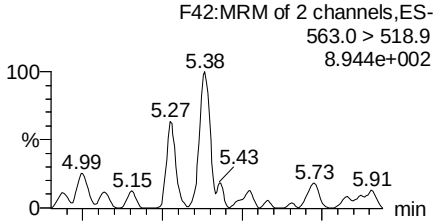


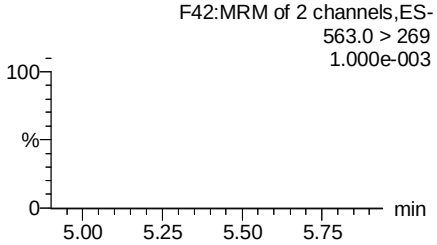
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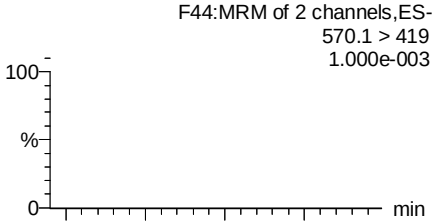
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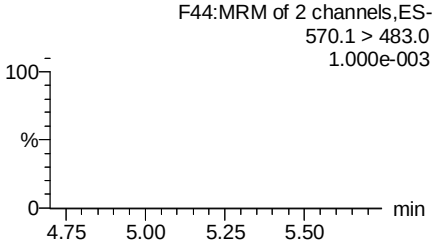
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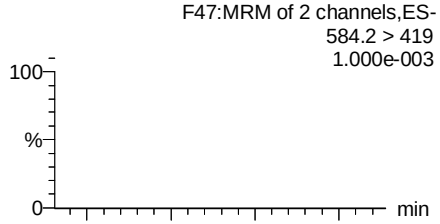


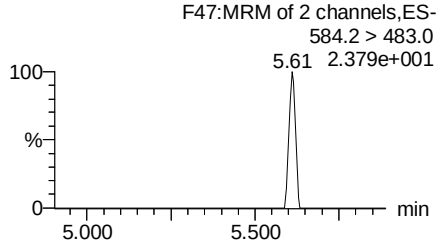
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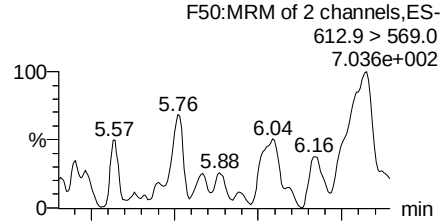


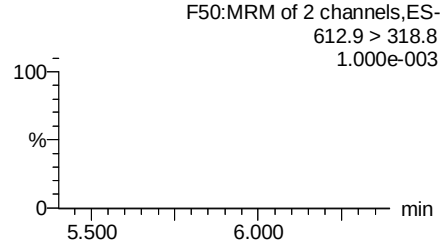
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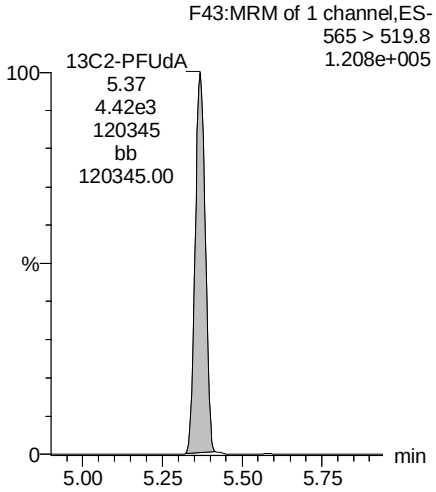


PFDoA

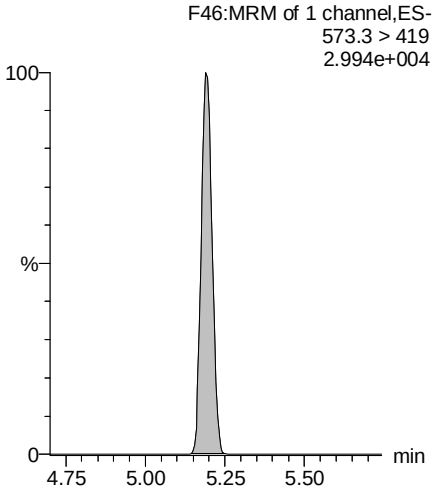




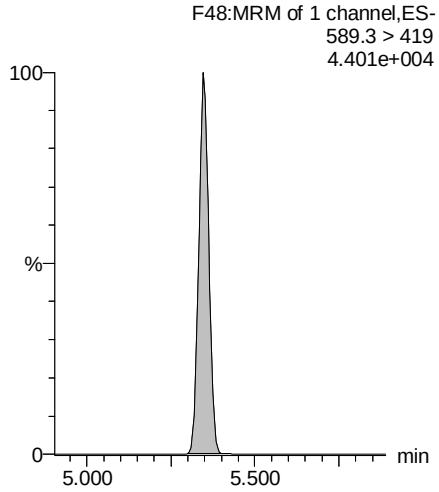
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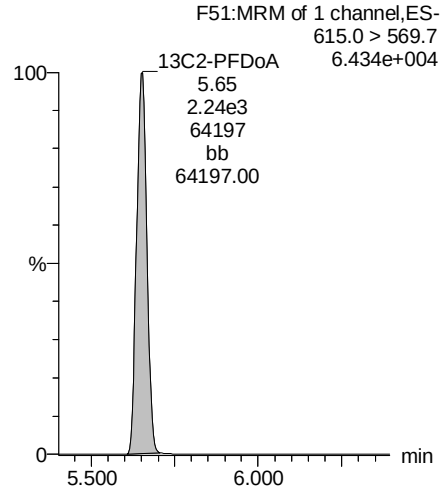
d3-N-MeFOSAA



d5-N-EtFOSAA



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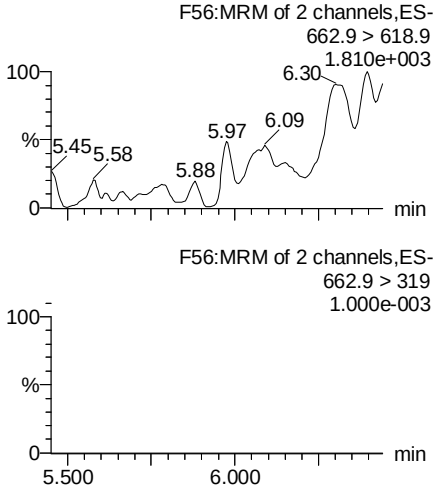
Vista Analytical Laboratory

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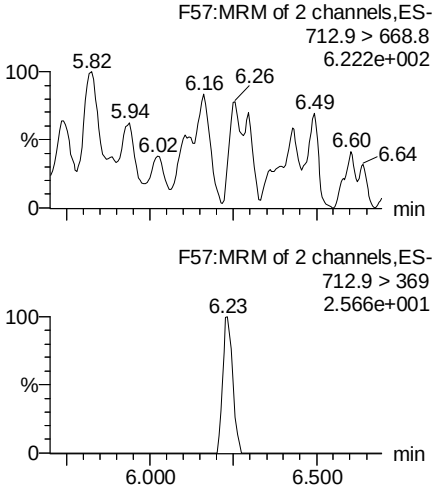
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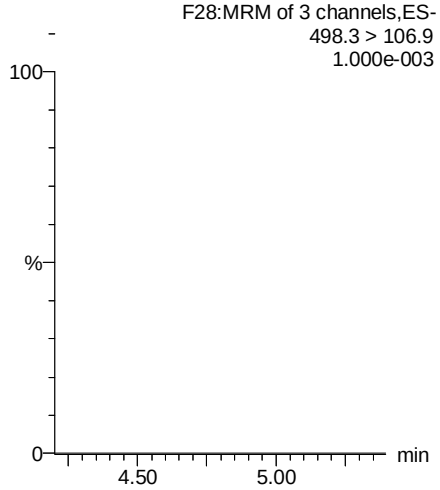
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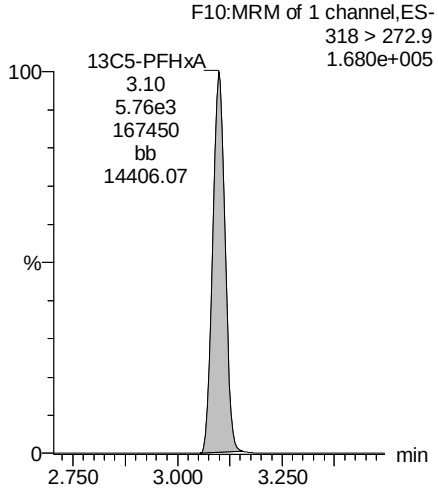
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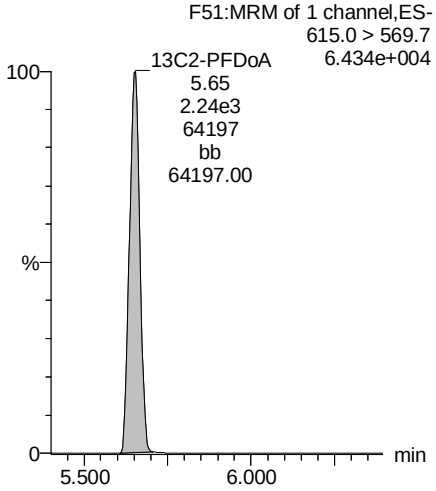
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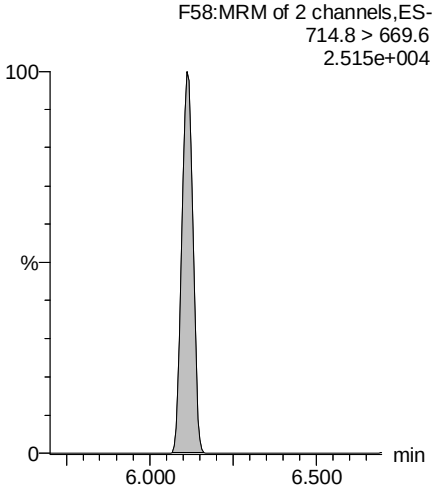
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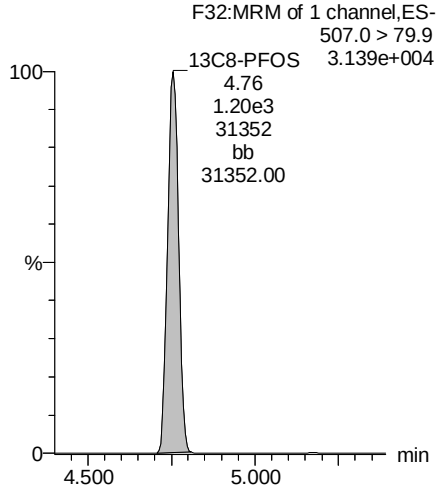
13C2-PFDoA



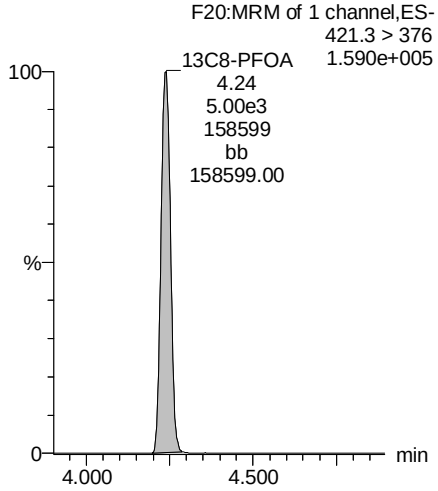
13C2-PFTeDA



13C8-PFOS



13C8-PFOA

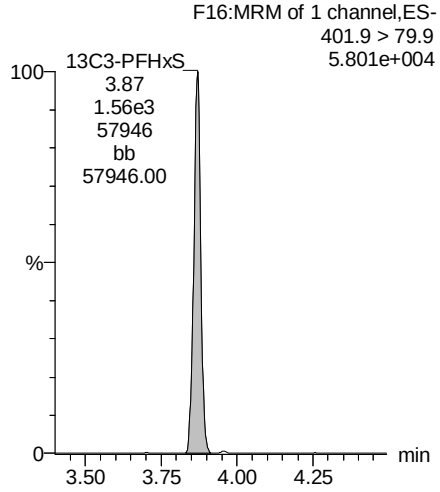


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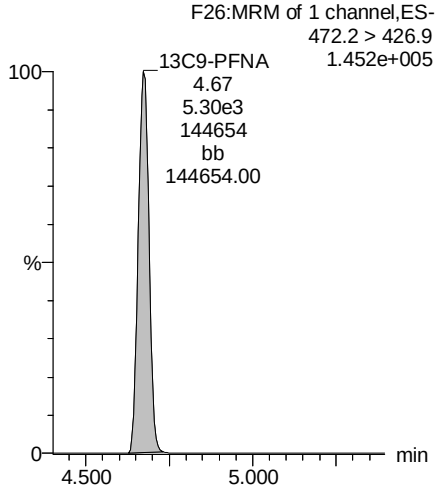
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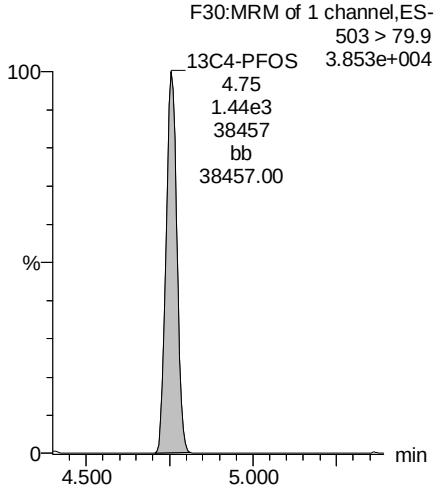
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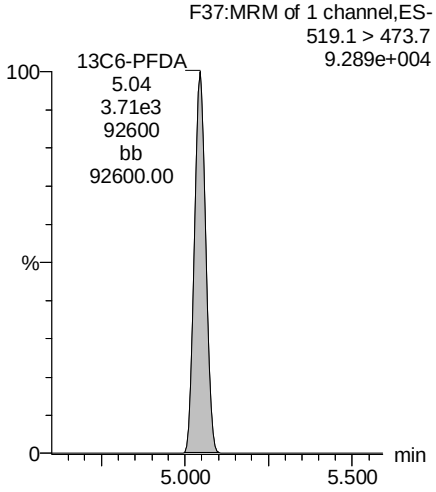
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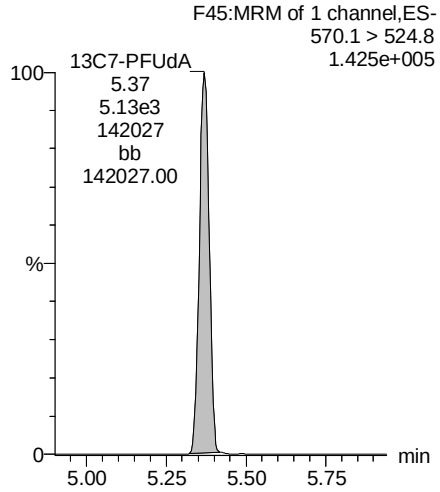
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

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Last Altered: Monday, January 15, 2018 14:10:06 Pacific Standard Time
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Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

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2	4	PFHxA	313.2 > 268.9	5.33e3	1.23e3	0.253		3.15	3.10	21.7	47.8031	
3	5	PFHpA	363.0 > 318.9	2.25e3	3.49e3	0.253		3.78	3.72	8.04	24.0214	
4	6	L-PFHxS	398.9 > 79.6	1.43e2	4.68e2	0.253		3.94	3.87	3.82	8.1412	
5	9	L-PFOA	413 > 368.7	3.52e3	4.67e3	0.253		4.31	4.24	9.42	33.8905	
6	12	PFNA	463.0 > 418.8	5.04e4	3.89e3	0.253		4.81	4.68	162	516.6287	
7	14	L-PFOS	499 > 79.9	2.71e2	1.05e3	0.253		4.89	4.76	3.22	13.4346	
8	16	PFDA	513 > 468.8	9.78e2	3.35e3	0.253		5.18	5.05	3.65	9.8296	
9	18	N-MeFOSAA	570.1 > 419		1.32e3	0.253		5.32				
10	19	N-EtFOSAA	584.2 > 419	1.88e2	1.28e3	0.253		5.48	5.21	1.83	6.7755	
11	20	PFUdA	563.0 > 518.9		3.88e3	0.253		5.50				
12	22	PFDoA	612.9 > 569.0		3.27e3	0.253		5.77				

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Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:10:06 Pacific Standard Time
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Name: 180110M2_30, Date: 10-Jan-2018, Time: 20:48:32, ID: 1701970-02 FT-PZ458I-20171214 0.25291, Description: FT-PZ458I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.27e3	0.253		6.00				
2	25	PFTeDA	712.9 > 668.8		1.37e3	0.253		6.22				
3	33	13C3-PFBS	302. > 98.8	5.64e2	5.17e3	0.253	0.116	2.77	2.61	1.36	46.3562	93.8
4	34	13C2-PFHxA	315 > 269.8	1.23e3	5.17e3	0.253	0.655	3.15	3.10	2.98	17.9677	90.9
5	35	13C4-PFHpA	367.2 > 321.8	3.49e3	5.17e3	0.253	0.722	3.78	3.72	8.45	46.2555	93.6
6	36	18O2-PFHxS	403.0 > 102.6	4.68e2	1.49e3	0.253	0.348	3.94	3.87	3.94	44.6775	90.4
7	37	13C2-6:2 FTS	429.1 > 408.9	9.94e2	4.48e3	0.253	0.222	4.25	4.19	2.77	49.4200	100.0
8	38	13C2-PFOA	414.9 > 369.7	4.67e3	4.48e3	0.253	1.023	4.31	4.24	13.0	50.3383	101.8
9	39	13C5-PFNA	468.2 > 422.9	3.89e3	3.88e3	0.253	0.916	4.81	4.67	12.5	54.1289	109.5
10	40	13C8-PFOSA	506.1 > 77.7	8.06e2	5.56e3	0.253	0.210	4.87	4.74	1.81	34.0082	68.8
11	41	13C8-PFOS	507.0 > 79.9	1.05e3	1.46e3	0.253	1.035	4.89	4.76	9.00	34.3766	69.6
12	42	13C2-PFDA	515.1 > 469.9	3.35e3	3.89e3	0.253	1.142	5.18	5.05	10.8	37.2716	75.4
13	43	13C2-8:2 FTS	529.1 > 508.7	5.62e2	5.17e3	0.253	0.157	5.15	5.02	1.36	34.3362	69.5
14	44	d3-N-MeFOSAA	573.3 > 419	1.32e3	5.56e3	0.253	0.299	5.32	5.19	2.98	39.3631	79.6
15	45	d5-N-EtFOSAA	589.3 > 419	1.28e3	5.56e3	0.253	0.369	5.47	5.35	2.87	30.7772	62.3
16	46	13C2-PFUdA	565 > 519.8	3.88e3	5.56e3	0.253	1.012	5.49	5.37	8.71	34.0434	68.9
17	47	13C2-PFDoA	615.0 > 569.7	3.27e3	5.56e3	0.253	0.647	5.77	5.65	7.35	44.9330	90.9
18	49	13C2-PFTeDA	714.8 > 669.6	1.37e3	5.56e3	0.253	0.294	6.22	6.11	3.09	41.5524	84.1
19	55	13C5-PFHxA	318 > 272.9	5.17e3	5.17e3	0.253	1.000	3.15	3.10	12.5	49.4247	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.49e3	1.49e3	0.253	1.000	4.02	3.87	12.5	49.4247	100.0
21	57	13C8-PFOA	421.3 > 376	4.48e3	4.48e3	0.253	1.000	4.38	4.24	12.5	49.4247	100.0
22	58	13C9-PFNA	472.2 > 426.9	3.88e3	3.88e3	0.253	1.000	4.81	4.68	12.5	49.4247	100.0
23	59	13C4-PFOS	503 > 79.9	1.46e3	1.46e3	0.253	1.000	4.89	4.76	12.5	49.4247	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.89e3	3.89e3	0.253	1.000	5.18	5.05	12.5	49.4247	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.56e3	5.56e3	0.253	1.000	5.49	5.37	12.5	49.4247	100.0
26	62	Total PFHxS	398.9 > 79.6	1.43e2	4.68e2	0.253		4.14		3.82	8.1412	
27	63	Total PFOA	413 > 368.7	3.52e3	4.67e3	0.253		4.51		9.42	33.8905	
28	64	Total PFOS	499 > 79.9	4.19e2	1.05e3	0.253		5.02		4.99	20.7321	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.32e3	0.253		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.28e3	0.253		5.61		0.000		

Vista Analytical Laboratory

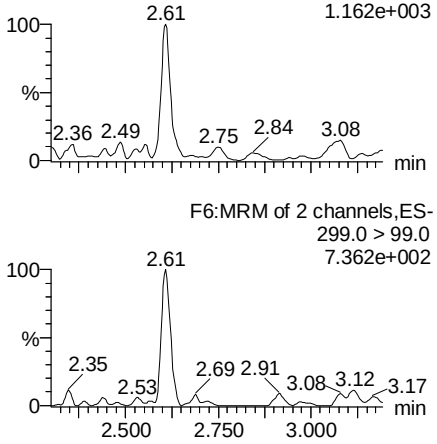
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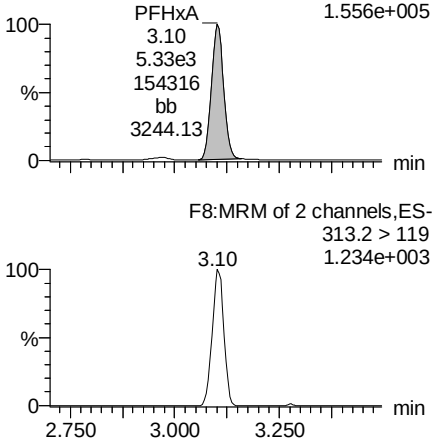
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Name: 180110M2_30, Date: 10-Jan-2018, Time: 20:48:32, ID: 1701970-02 FT-PZ458I-20171214 0.25291, Description: FT-PZ458I-20171214

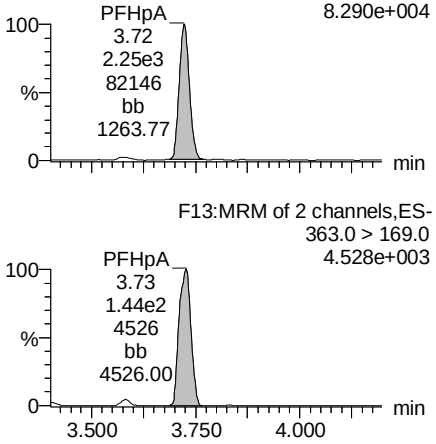
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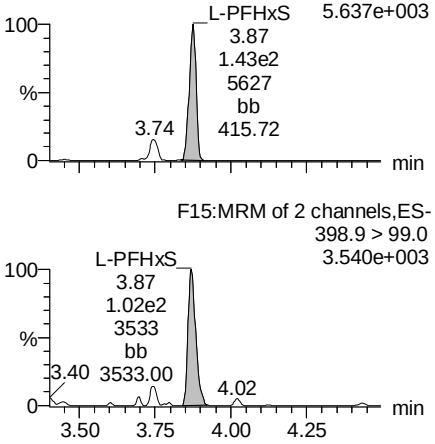
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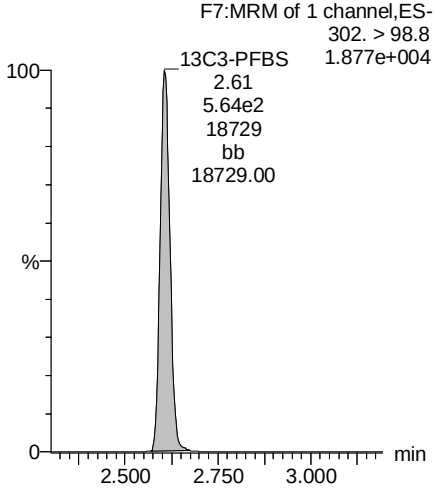
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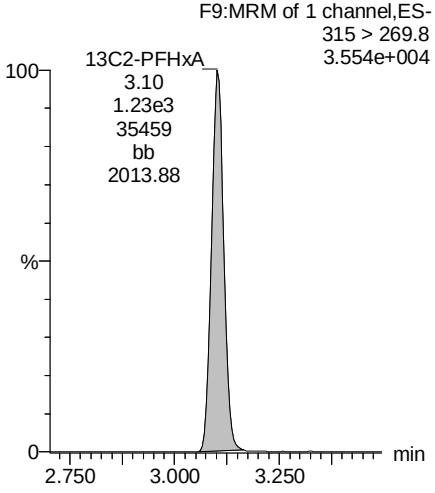
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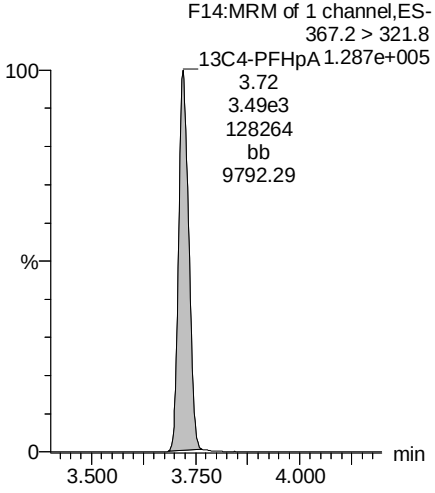
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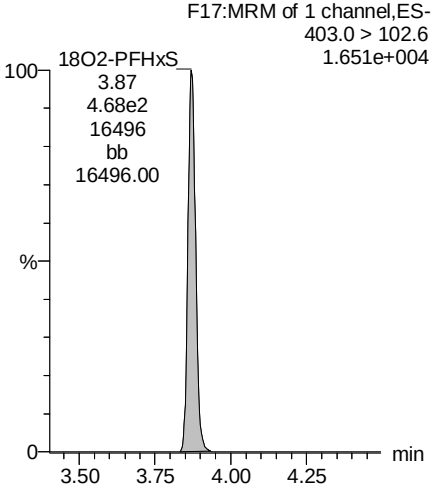
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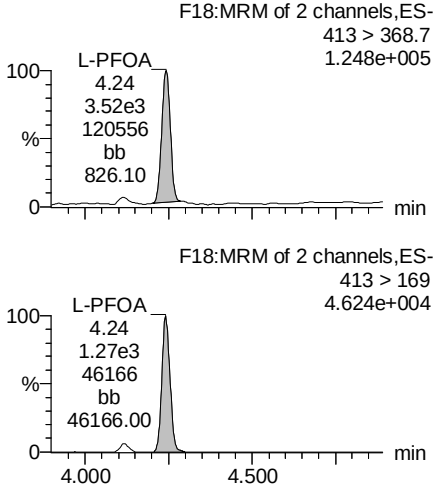


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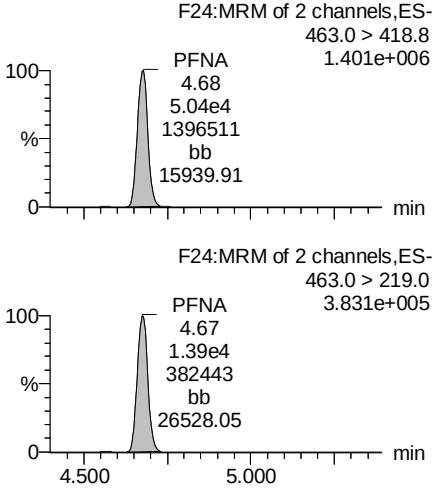
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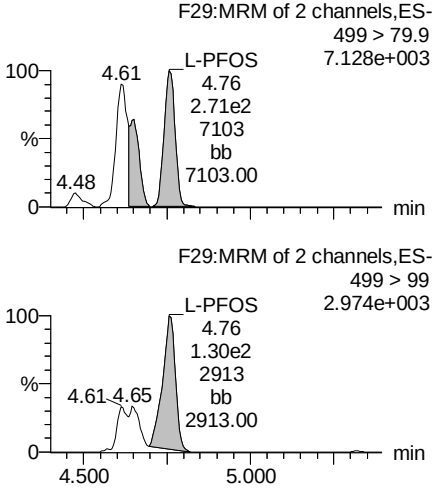
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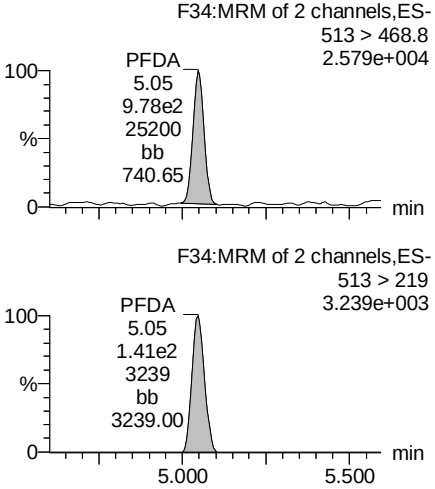
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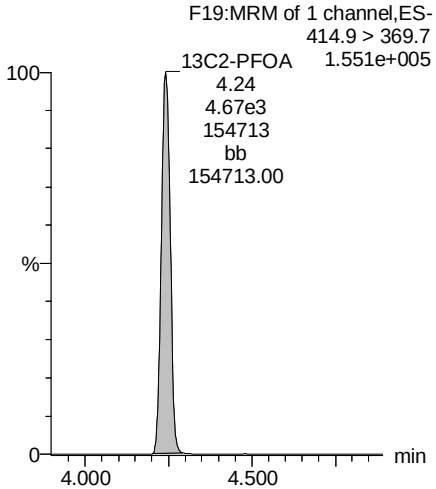
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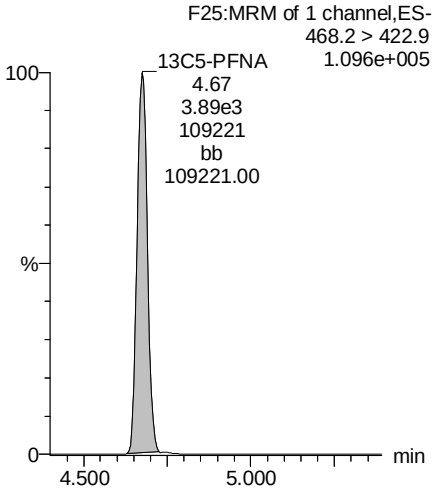
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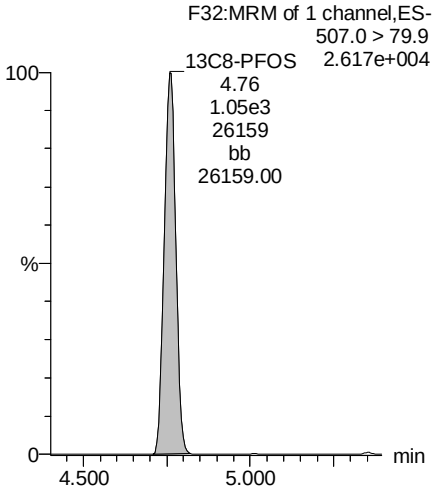
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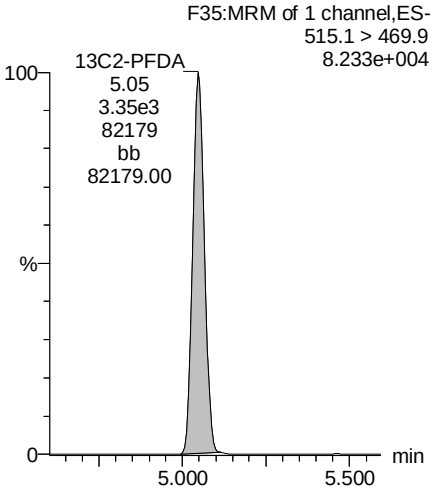
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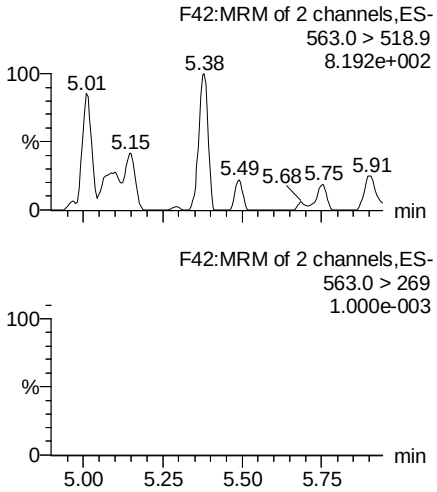


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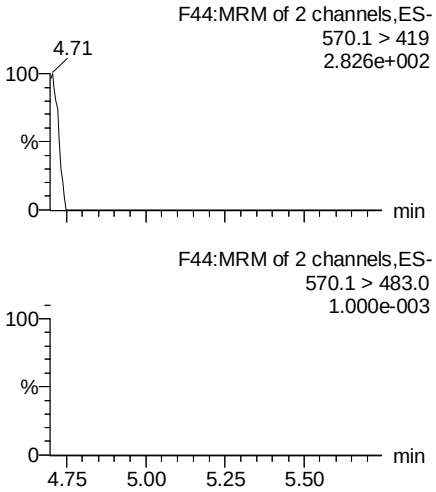
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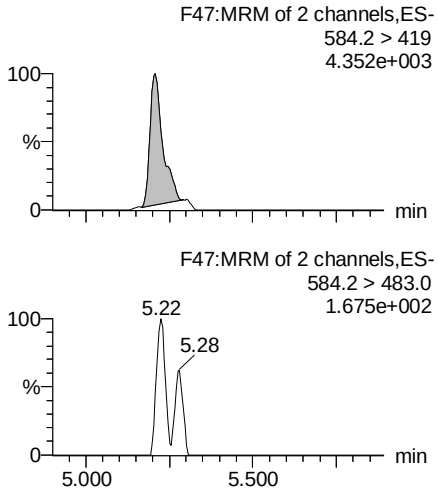
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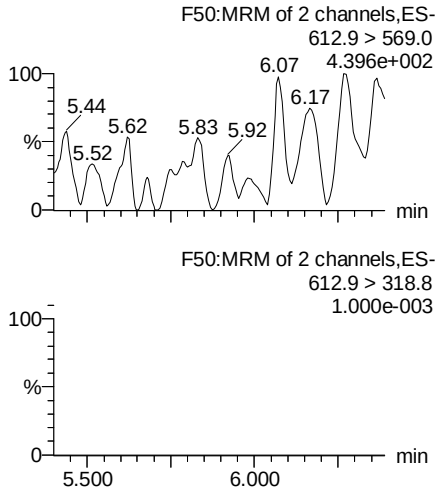
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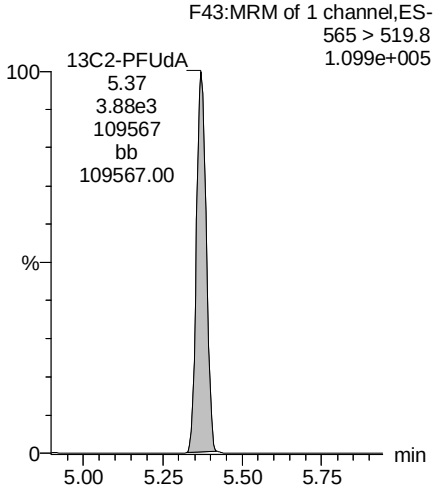
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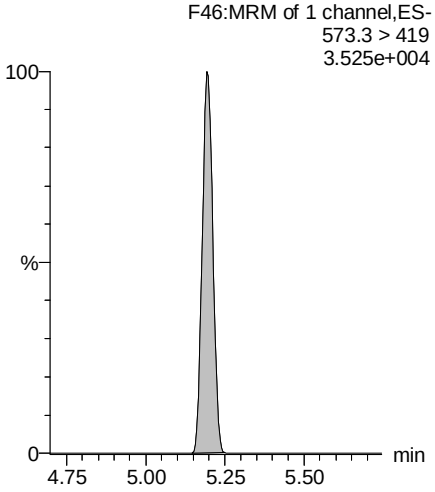
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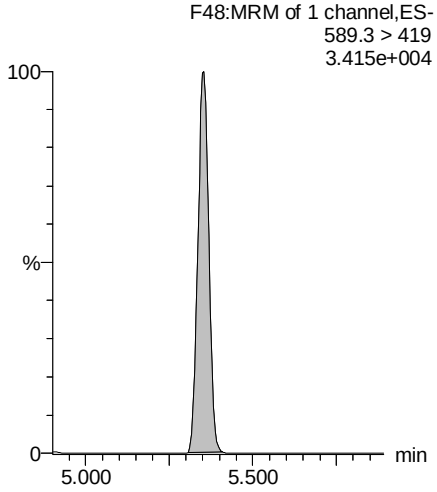
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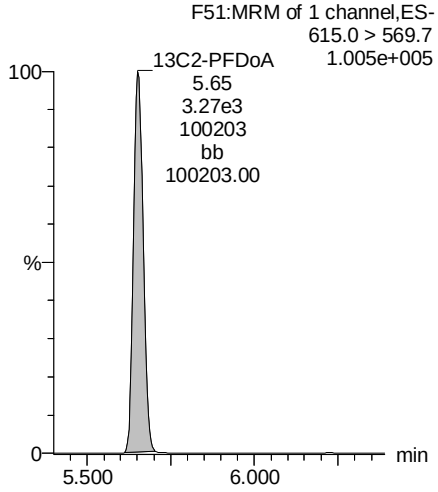
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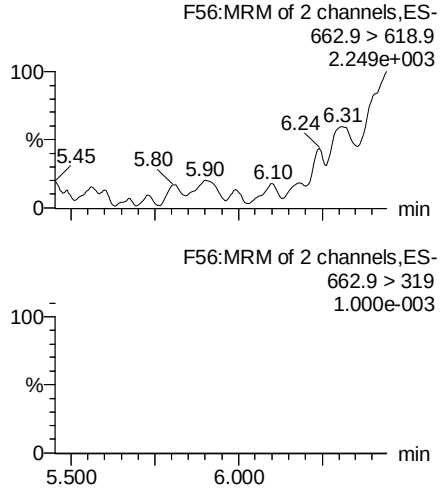


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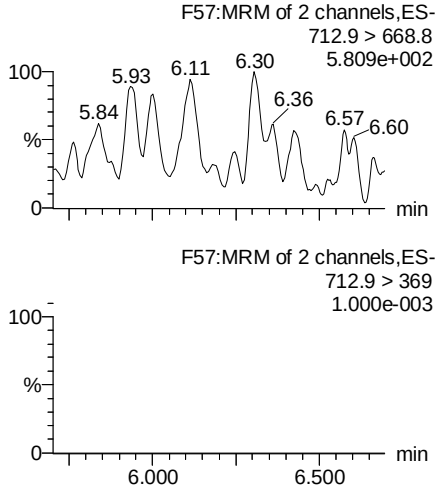
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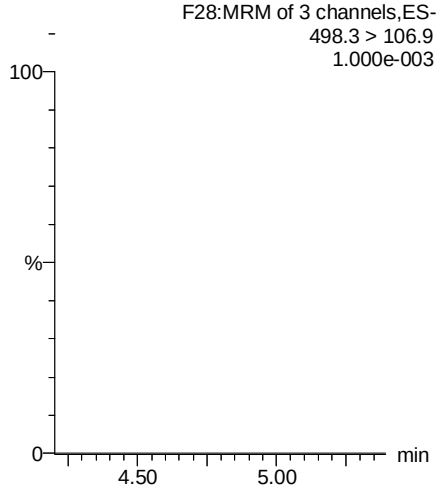
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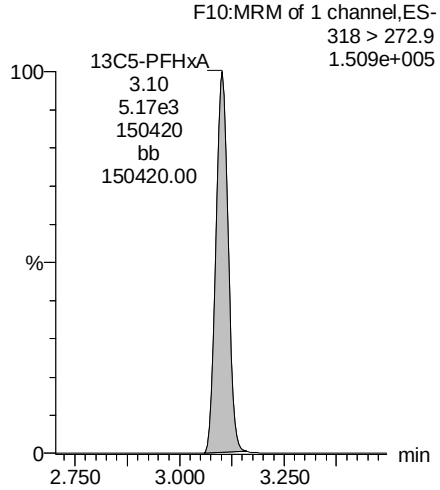
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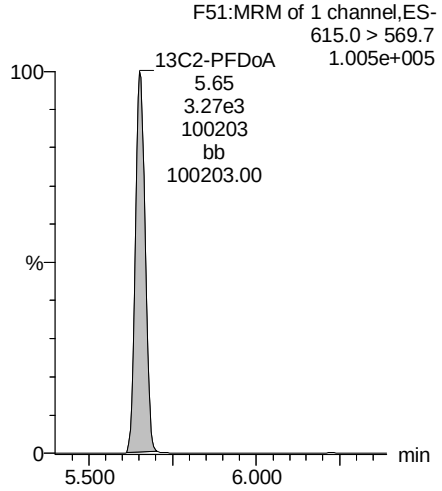
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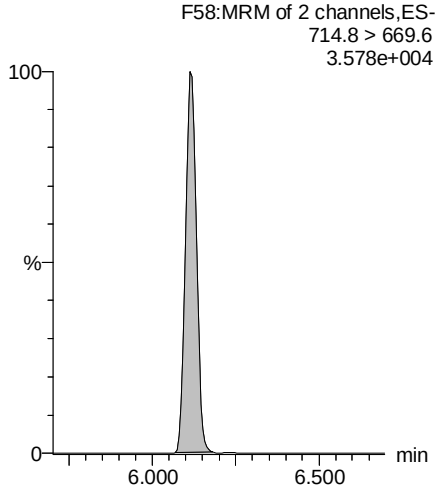
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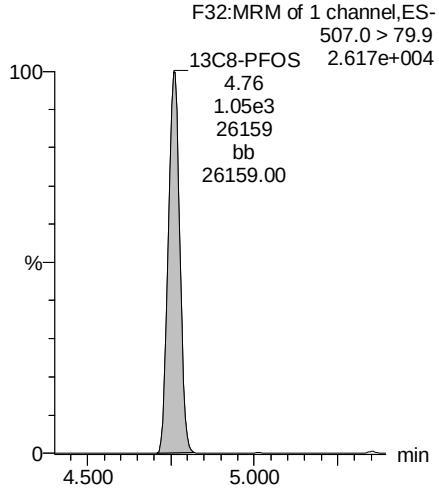
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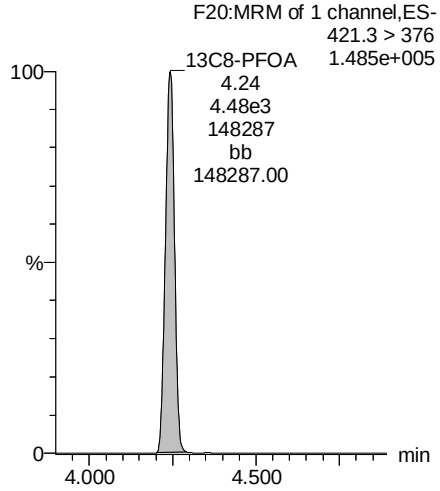
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13C8-PFOA



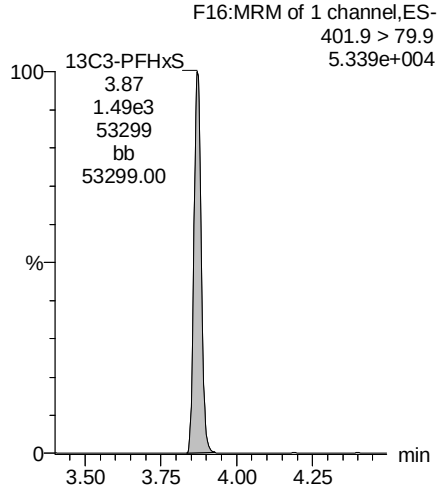
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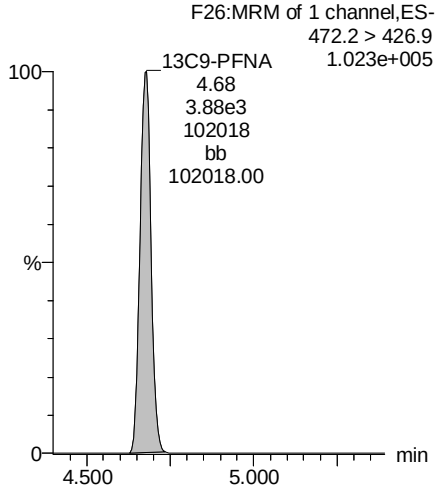
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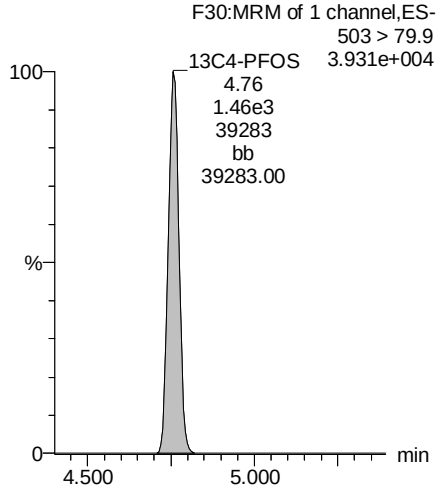
13C3-PFHxS



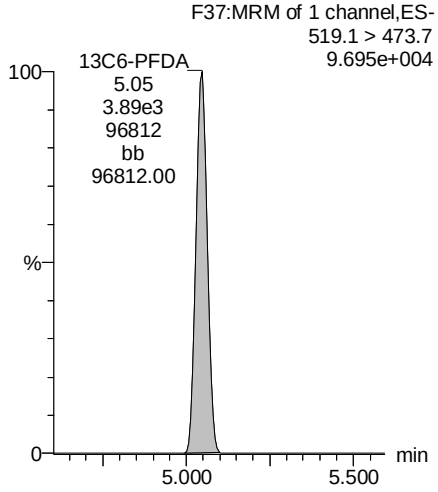
13C9-PFNA



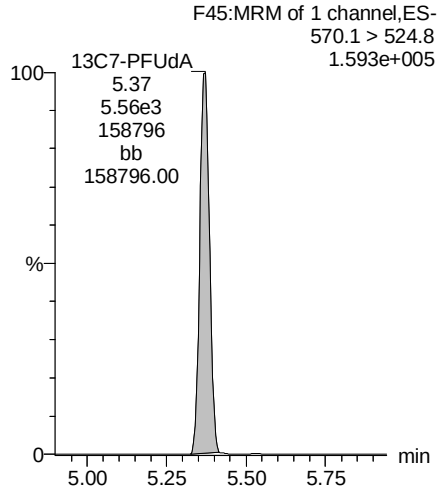
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:11:59 Pacific Standard Time
Printed: Monday, January 15, 2018 14:12:05 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_31, Date: 10-Jan-2018, Time: 20:59:43, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		7.13e2	0.258		2.66				
2	4	PFHxA	313.2 > 268.9	7.83e3	1.54e3	0.258		3.15	3.10	25.5	55.3025	
3	5	PFHpA	363.0 > 318.9	3.76e3	3.54e3	0.258		3.78	3.73	13.3	39.0246	
4	6	L-PFHxS	398.9 > 79.6	9.80e1	4.77e2	0.258		3.94	3.88	2.57	5.4037	
5	9	L-PFOA	413 > 368.7	6.66e3	5.15e3	0.258		4.31	4.24	16.2	57.1830	
6	12	PFNA	463.0 > 418.8	1.26e5	4.86e3	0.258		4.81	4.68	323	1030.6759	
7	14	L-PFOS	499 > 79.9	8.70e1	1.34e3	0.258		4.89	4.76	0.809	3.2362	
8	16	PFDA	513 > 468.8	9.11e2	3.72e3	0.258		5.18	5.05	3.06	8.0154	
9	18	N-MeFOSAA	570.1 > 419		1.21e3	0.258		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.48e3	0.258		5.48				
11	20	PFUdA	563.0 > 518.9	4.22e3	4.51e3	0.258		5.50	5.37	11.7	39.6409	
12	22	PFDoA	612.9 > 569.0		3.33e3	0.258		5.77				

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Last Altered: Monday, January 15, 2018 14:11:59 Pacific Standard Time
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Name: 180110M2_31, Date: 10-Jan-2018, Time: 20:59:43, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9	7.30e1	3.33e3	0.258		6.00	6.26	0.274	0.6245	
2	25	PFTeDA	712.9 > 668.8		1.40e3	0.258		6.22				
3	33	13C3-PFBS	302. > 98.8	7.13e2	5.48e3	0.258	0.116	2.77	2.61	1.63	54.2784	111.9
4	34	13C2-PFHxA	315 > 269.8	1.54e3	5.48e3	0.258	0.655	3.15	3.10	3.50	20.7416	106.9
5	35	13C4-PFHpA	367.2 > 321.8	3.54e3	5.48e3	0.258	0.722	3.78	3.73	8.07	43.3608	89.4
6	36	18O2-PFHxS	403.0 > 102.6	4.77e2	1.38e3	0.258	0.348	3.94	3.87	4.31	48.0523	99.0
7	37	13C2-6:2 FTS	429.1 > 408.9	1.05e3	5.04e3	0.258	0.222	4.25	4.19	2.61	45.6194	94.0
8	38	13C2-PFOA	414.9 > 369.7	5.15e3	5.04e3	0.258	1.023	4.31	4.24	12.8	48.5223	100.0
9	39	13C5-PFNA	468.2 > 422.9	4.86e3	5.51e3	0.258	0.916	4.81	4.67	11.0	46.7665	96.4
10	40	13C8-PFOSA	506.1 > 77.7	7.24e2	6.04e3	0.258	0.210	4.87	4.74	1.50	27.6123	56.9
11	41	13C8-PFOS	507.0 > 79.9	1.34e3	1.30e3	0.258	1.035	4.89	4.76	13.0	48.5974	100.2
12	42	13C2-PFDA	515.1 > 469.9	3.72e3	4.88e3	0.258	1.142	5.18	5.05	9.52	32.3456	66.7
13	43	13C2-8:2 FTS	529.1 > 508.7	6.77e2	5.48e3	0.258	0.157	5.15	5.02	1.54	38.2636	78.9
14	44	d3-N-MeFOSAA	573.3 > 419	1.21e3	6.04e3	0.258	0.299	5.32	5.20	2.51	32.5381	67.1
15	45	d5-N-EtFOSAA	589.3 > 419	1.48e3	6.04e3	0.258	0.369	5.47	5.35	3.06	32.2079	66.4
16	46	13C2-PFUdA	565 > 519.8	4.51e3	6.04e3	0.258	1.012	5.49	5.37	9.34	35.8304	73.9
17	47	13C2-PFDoA	615.0 > 569.7	3.33e3	6.04e3	0.258	0.647	5.77	5.65	6.89	41.3279	85.2
18	49	13C2-PFTeDA	714.8 > 669.6	1.40e3	6.04e3	0.258	0.294	6.22	6.11	2.89	38.2263	78.8
19	55	13C5-PFHxA	318 > 272.9	5.48e3	5.48e3	0.258	1.000	3.15	3.10	12.5	48.5173	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.38e3	1.38e3	0.258	1.000	4.02	3.87	12.5	48.5173	100.0
21	57	13C8-PFOA	421.3 > 376	5.04e3	5.04e3	0.258	1.000	4.38	4.24	12.5	48.5173	100.0
22	58	13C9-PFNA	472.2 > 426.9	5.51e3	5.51e3	0.258	1.000	4.81	4.68	12.5	48.5173	100.0
23	59	13C4-PFOS	503 > 79.9	1.30e3	1.30e3	0.258	1.000	4.89	4.76	12.5	48.5173	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.88e3	4.88e3	0.258	1.000	5.18	5.05	12.5	48.5173	100.0
25	61	13C7-PFUdA	570.1 > 524.8	6.04e3	6.04e3	0.258	1.000	5.49	5.37	12.5	48.5173	100.0
26	62	Total PFHxS	398.9 > 79.6	9.80e1	4.77e2	0.258		4.14		2.57	5.4037	
27	63	Total PFOA	413 > 368.7	6.80e3	5.15e3	0.258		4.51		16.5	58.5003	
28	64	Total PFOS	499 > 79.9	8.70e1	1.34e3	0.258		5.02		0.809	3.2362	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.21e3	0.258		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.48e3	0.258		5.61		0.000		

Vista Analytical Laboratory

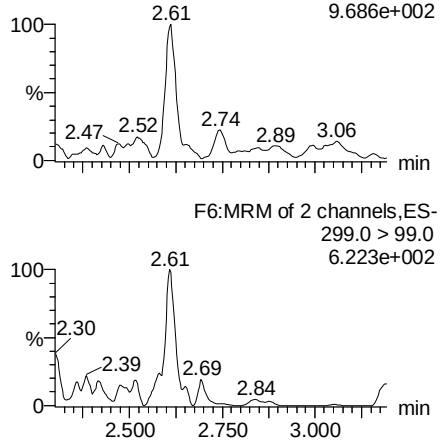
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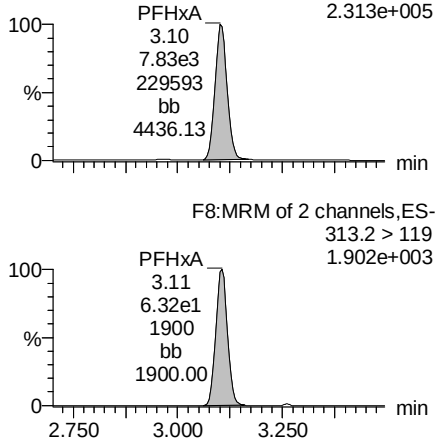
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Name: 180110M2_31, Date: 10-Jan-2018, Time: 20:59:43, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

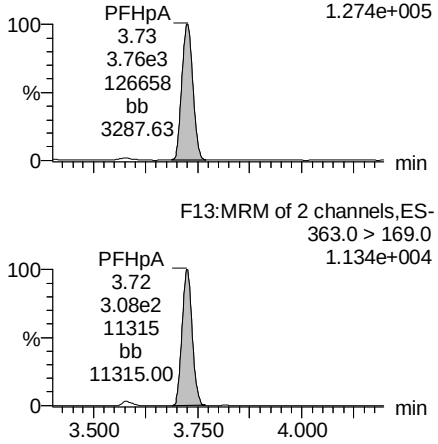
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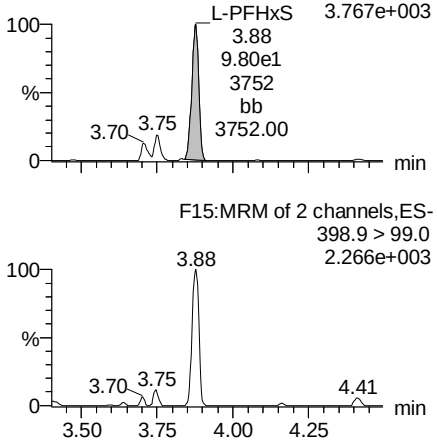
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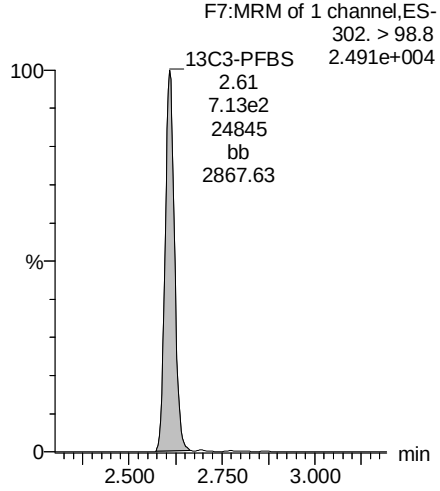
PFHpA



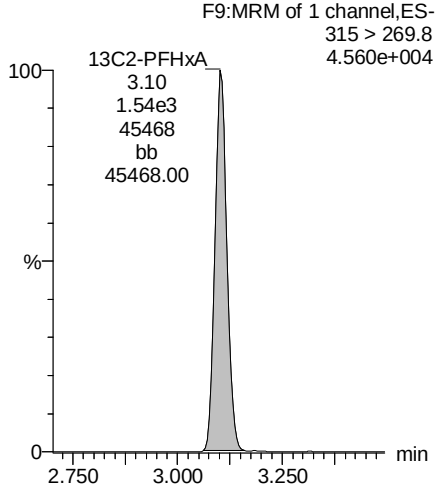
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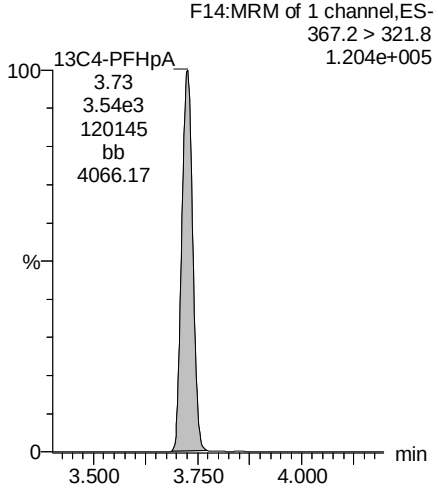
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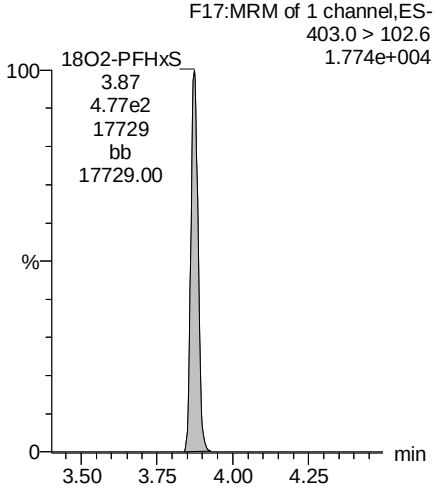
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13C4-PFHpA



18O2-PFHxS

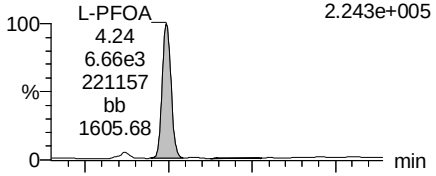


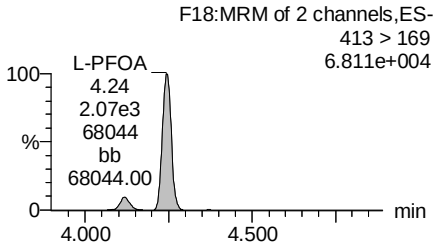
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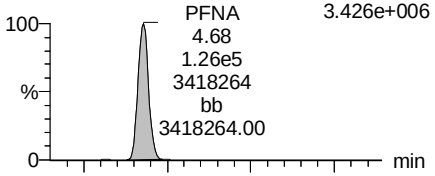
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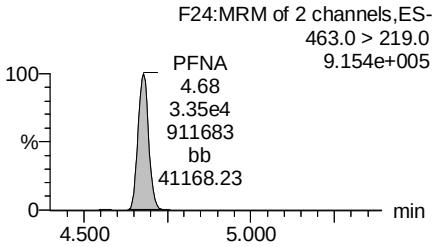
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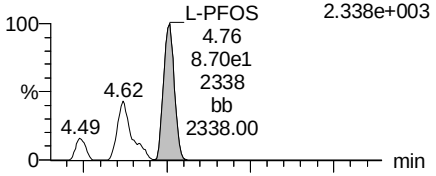


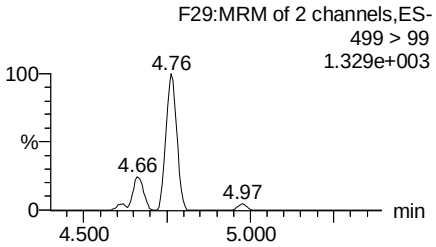
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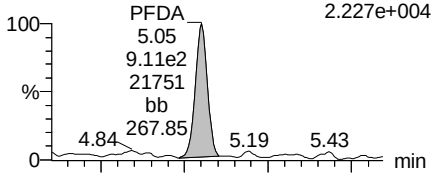


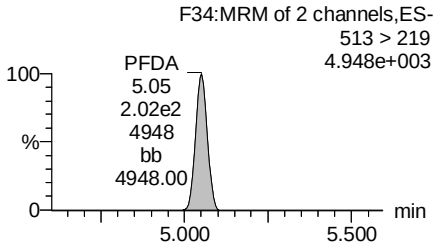
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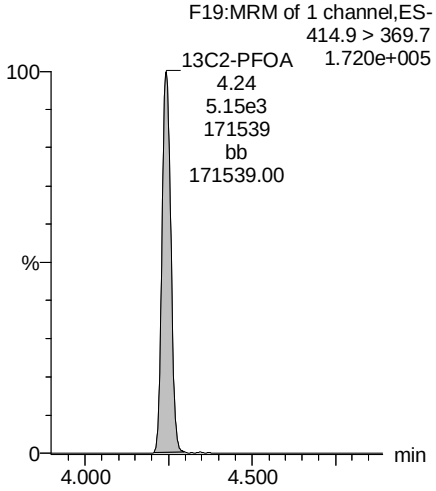


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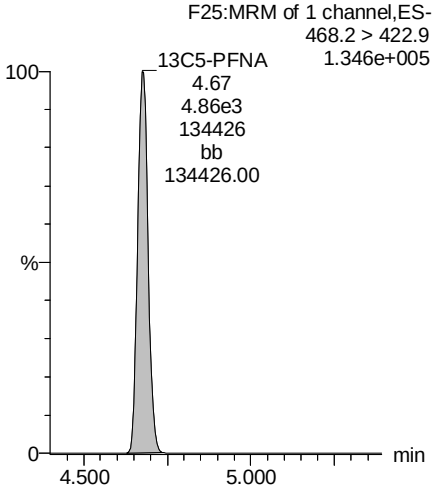




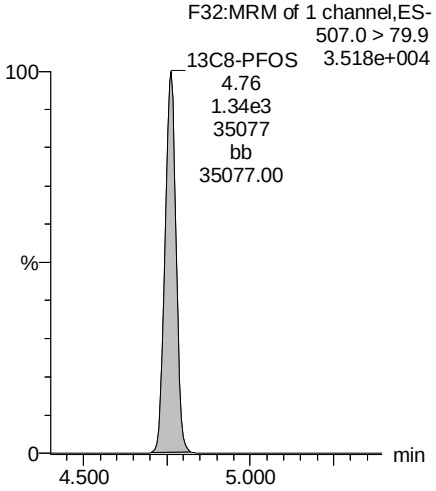
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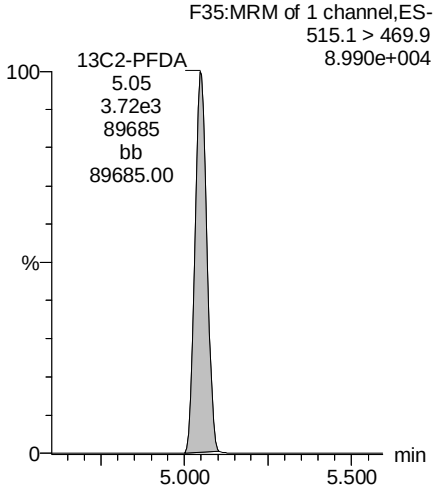
13C5-PFNA



13C8-PFOS



13C2-PFDA

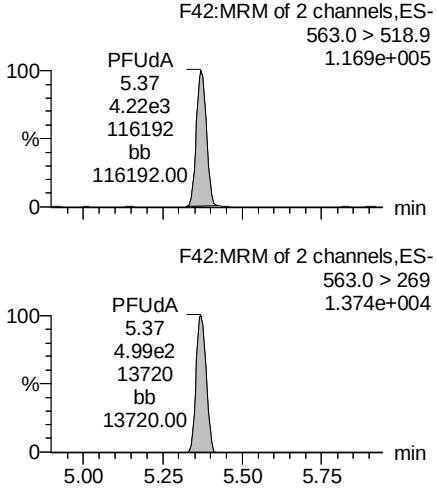


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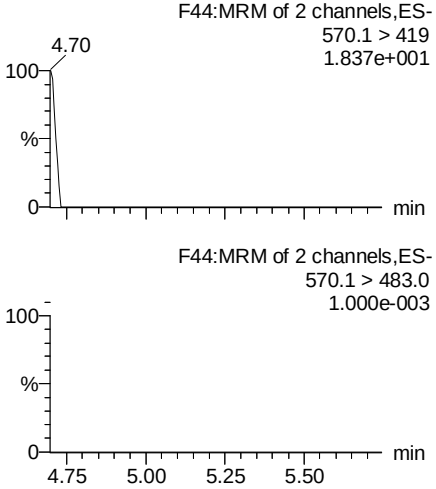
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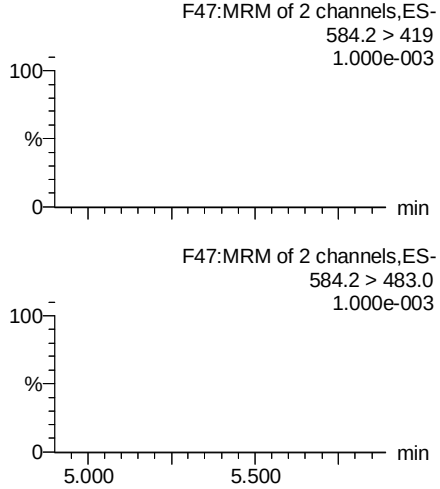
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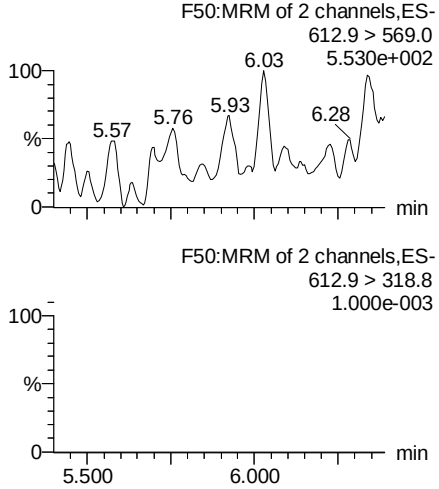
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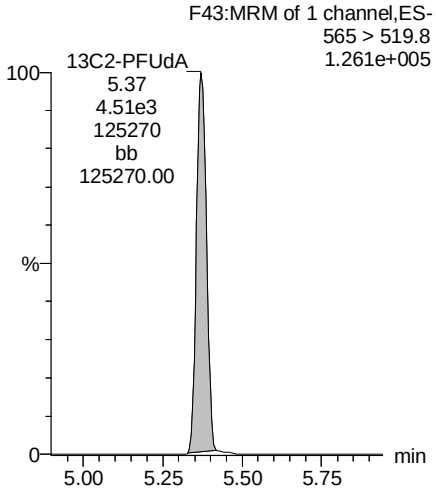
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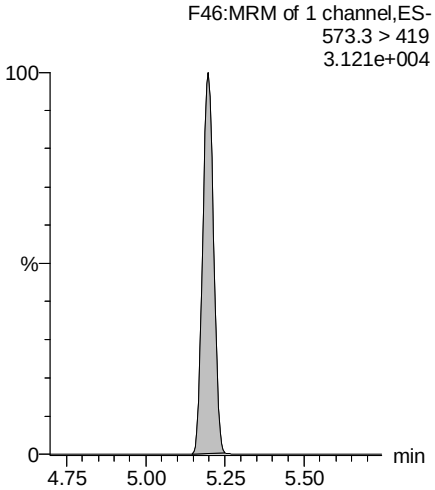
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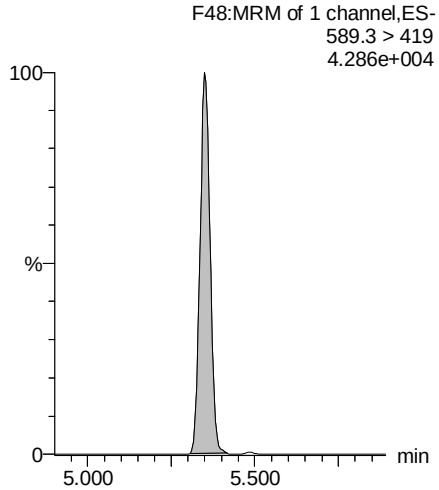
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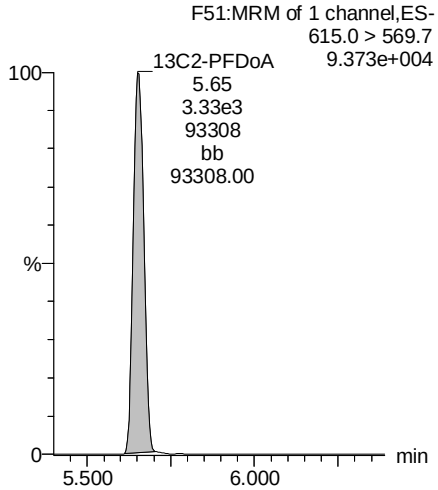
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d5-N-EtFOSAA



13C2-PFDoA



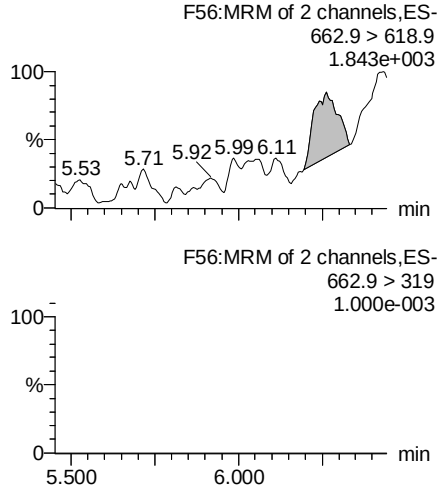
Vista Analytical Laboratory

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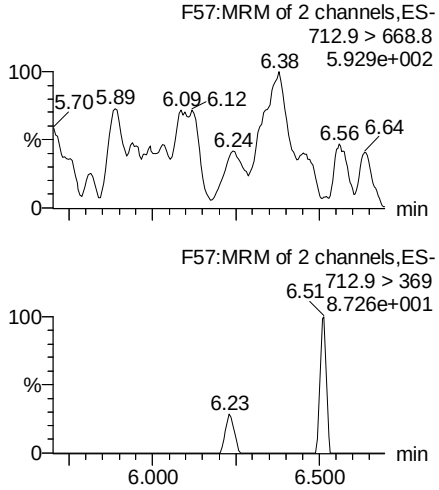
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Printed: Monday, January 15, 2018 14:12:20 Pacific Standard Time

Name: 180110M2_31, Date: 10-Jan-2018, Time: 20:59:43, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

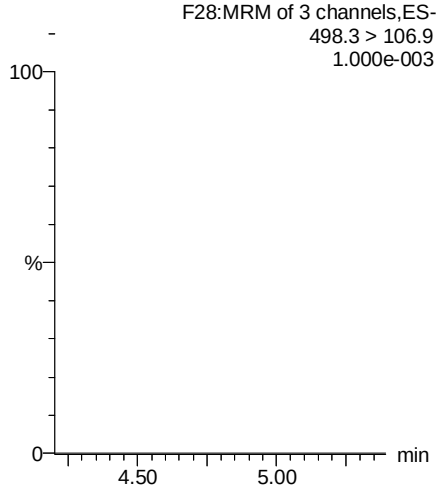
PFTrDA



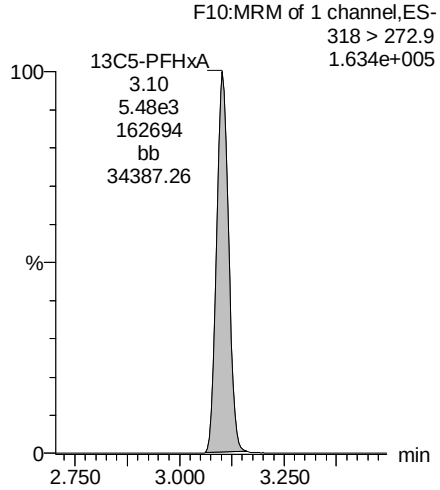
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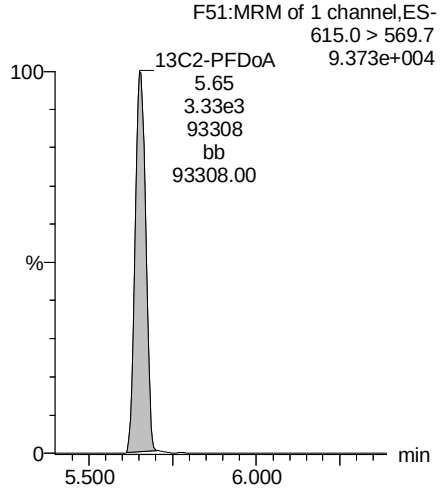
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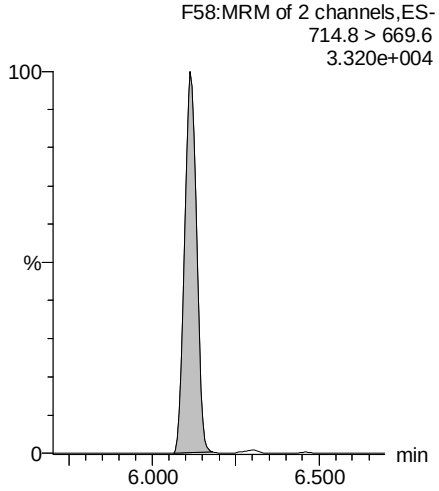
13C5-PFHxA



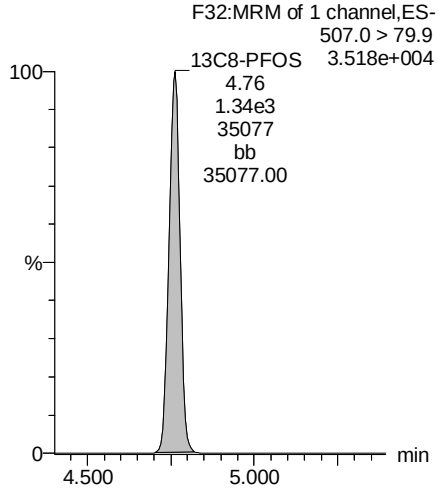
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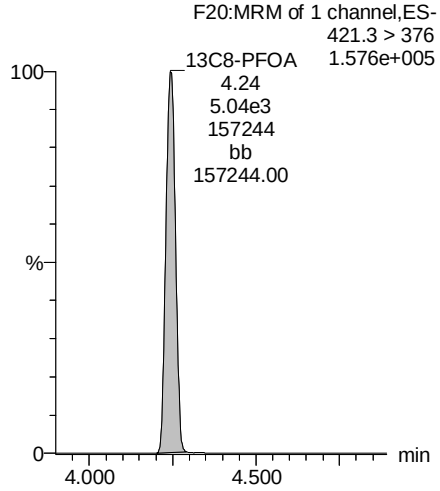
13C2-PFTeDA



13C8-PFOS



13C8-PFOA

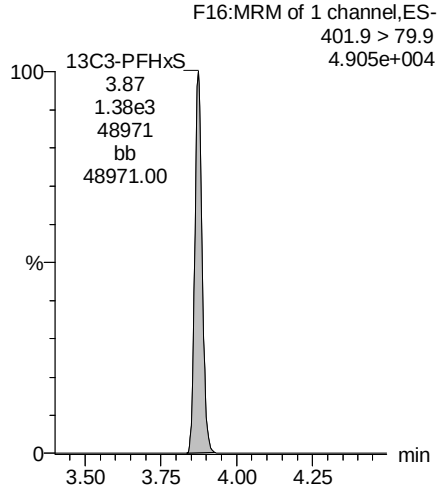


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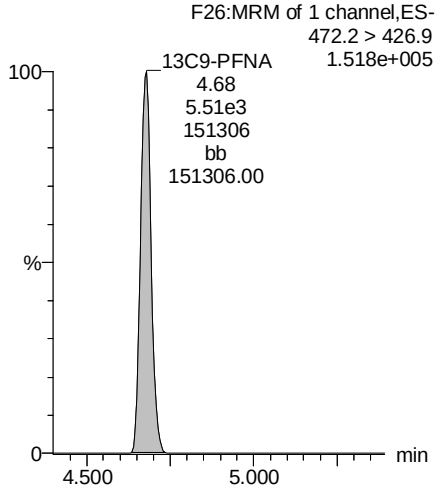
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Name: 180110M2_31, Date: 10-Jan-2018, Time: 20:59:43, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

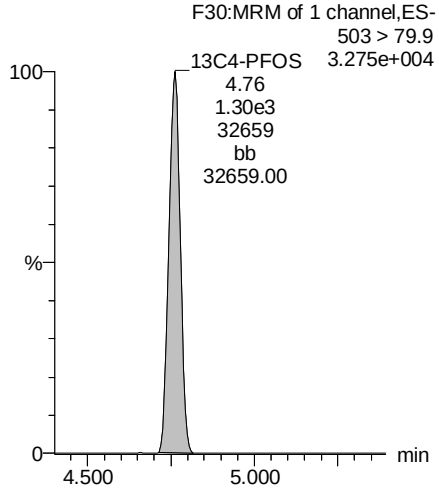
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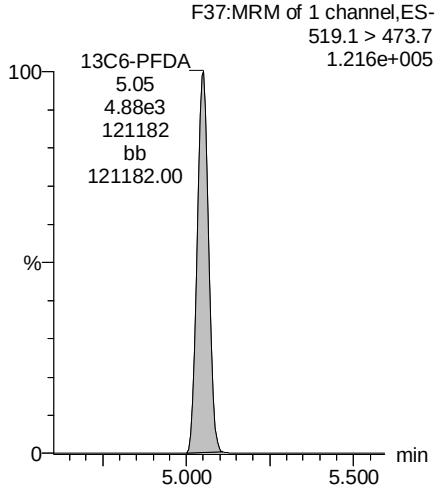
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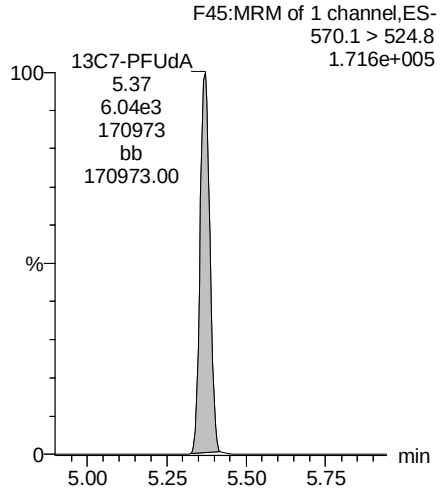
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

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Last Altered: Monday, January 15, 2018 14:13:13 Pacific Standard Time
Printed: Monday, January 15, 2018 14:13:20 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_32, Date: 10-Jan-2018, Time: 21:10:53, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.32e2	0.234		2.66				
2	4	PFHxA	313.2 > 268.9		1.70e3	0.234		3.15				
3	5	PFHpA	363.0 > 318.9		3.91e3	0.234		3.78				
4	6	L-PFHxS	398.9 > 79.6		4.66e2	0.234		3.94				
5	9	L-PFOA	413 > 368.7		5.30e3	0.234		4.31				
6	12	PFNA	463.0 > 418.8		4.67e3	0.234		4.81				
7	14	L-PFOS	499 > 79.9		1.29e3	0.234		4.89				
8	16	PFDA	513 > 468.8		4.80e3	0.234		5.18				
9	18	N-MeFOSAA	570.1 > 419		1.23e3	0.234		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.40e3	0.234		5.48				
11	20	PFUdA	563.0 > 518.9		4.87e3	0.234		5.50				
12	22	PFDoA	612.9 > 569.0		3.40e3	0.234		5.77				

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Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:13:13 Pacific Standard Time
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Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_32, Date: 10-Jan-2018, Time: 21:10:53, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.40e3	0.234		6.00				
2	25	PFTeDA	712.9 > 668.8		1.71e3	0.234		6.22				
3	33	13C3-PFBS	302. > 98.8	6.32e2	5.99e3	0.234	0.116	2.77	2.61	1.32	48.5416	90.7
4	34	13C2-PFHxA	315 > 269.8	1.70e3	5.99e3	0.234	0.655	3.15	3.10	3.55	23.1596	108.2
5	35	13C4-PFHpA	367.2 > 321.8	3.91e3	5.99e3	0.234	0.722	3.78	3.72	8.17	48.3974	90.5
6	36	18O2-PFHxS	403.0 > 102.6	4.66e2	1.46e3	0.234	0.348	3.94	3.87	3.99	49.0116	91.6
7	37	13C2-6:2 FTS	429.1 > 408.9	1.34e3	5.19e3	0.234	0.222	4.25	4.19	3.23	62.2804	116.4
8	38	13C2-PFOA	414.9 > 369.7	5.30e3	5.19e3	0.234	1.023	4.31	4.24	12.8	53.3804	99.8
9	39	13C5-PFNA	468.2 > 422.9	4.67e3	6.00e3	0.234	0.916	4.81	4.67	9.73	45.5026	85.1
10	40	13C8-PFOSA	506.1 > 77.7	5.63e2	6.53e3	0.234	0.210	4.87	4.73	1.08	21.9110	41.0
11	41	13C8-PFOS	507.0 > 79.9	1.29e3	1.21e3	0.234	1.035	4.89	4.75	13.4	55.2258	103.2
12	42	13C2-PFDA	515.1 > 469.9	4.80e3	3.45e3	0.234	1.142	5.18	5.05	17.4	65.1390	121.8
13	43	13C2-8:2 FTS	529.1 > 508.7	4.39e2	5.99e3	0.234	0.157	5.15	5.02	0.916	25.0400	46.8
14	44	d3-N-MeFOSAA	573.3 > 419	1.23e3	6.53e3	0.234	0.299	5.32	5.19	2.36	33.7161	63.0
15	45	d5-N-EtFOSAA	589.3 > 419	1.40e3	6.53e3	0.234	0.369	5.47	5.34	2.68	31.0934	58.1
16	46	13C2-PFUdA	565 > 519.8	4.87e3	6.53e3	0.234	1.012	5.49	5.37	9.32	39.4246	73.7
17	47	13C2-PFDoA	615.0 > 569.7	3.40e3	6.53e3	0.234	0.647	5.77	5.65	6.50	42.9647	80.3
18	49	13C2-PFTeDA	714.8 > 669.6	1.71e3	6.53e3	0.234	0.294	6.22	6.11	3.27	47.6224	89.0
19	55	13C5-PFHxA	318 > 272.9	5.99e3	5.99e3	0.234	1.000	3.15	3.10	12.5	53.4942	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.46e3	1.46e3	0.234	1.000	4.02	3.87	12.5	53.4942	100.0
21	57	13C8-PFOA	421.3 > 376	5.19e3	5.19e3	0.234	1.000	4.38	4.24	12.5	53.4942	100.0
22	58	13C9-PFNA	472.2 > 426.9	6.00e3	6.00e3	0.234	1.000	4.81	4.67	12.5	53.4942	100.0
23	59	13C4-PFOS	503 > 79.9	1.21e3	1.21e3	0.234	1.000	4.89	4.76	12.5	53.4942	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.45e3	3.45e3	0.234	1.000	5.18	5.05	12.5	53.4942	100.0
25	61	13C7-PFUdA	570.1 > 524.8	6.53e3	6.53e3	0.234	1.000	5.49	5.37	12.5	53.4942	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	4.66e2	0.234		4.14		0.000		
27	63	Total PFOA	413 > 368.7	0.00e0	5.30e3	0.234		4.51		0.000		
28	64	Total PFOS	499 > 79.9	0.00e0	1.29e3	0.234		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.23e3	0.234		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.40e3	0.234		5.61		0.000		

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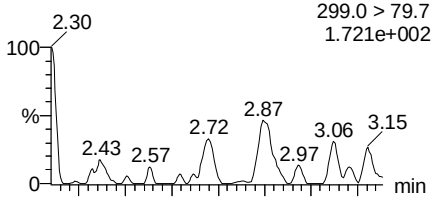
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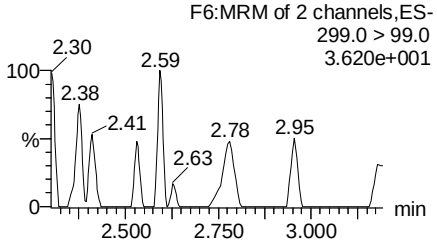
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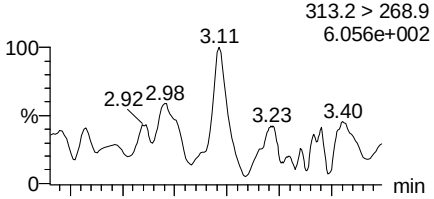
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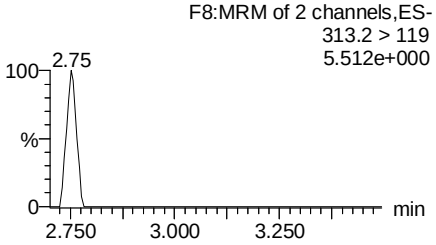
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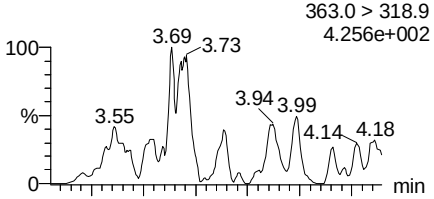


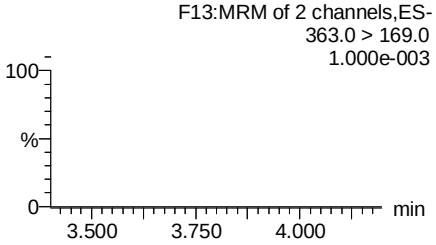
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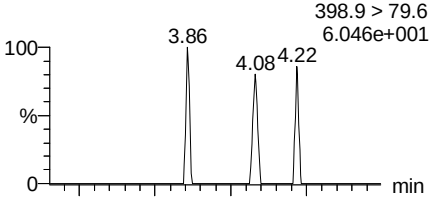


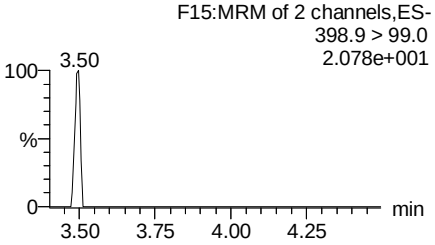
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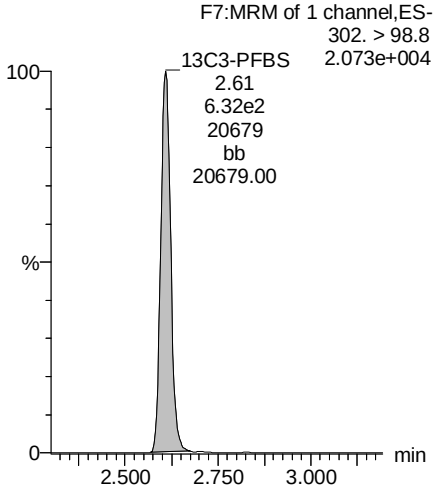


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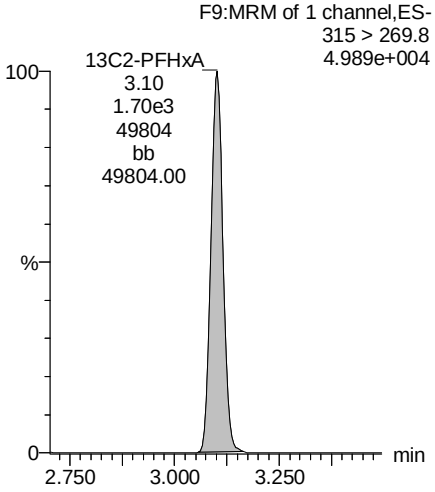




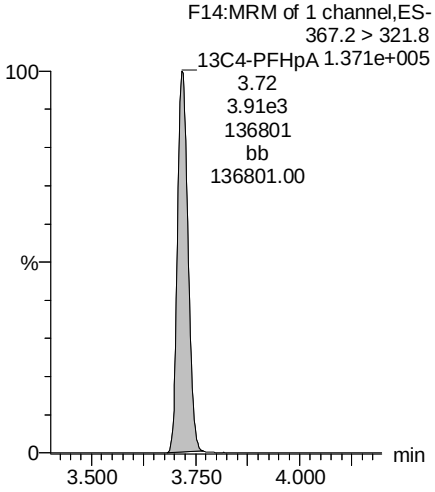
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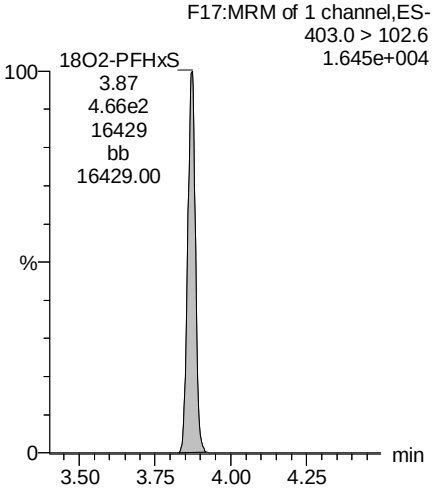
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

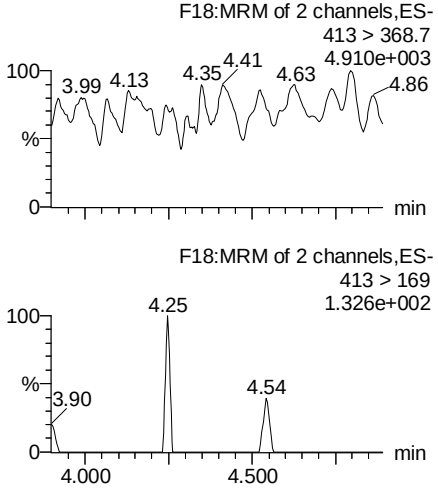


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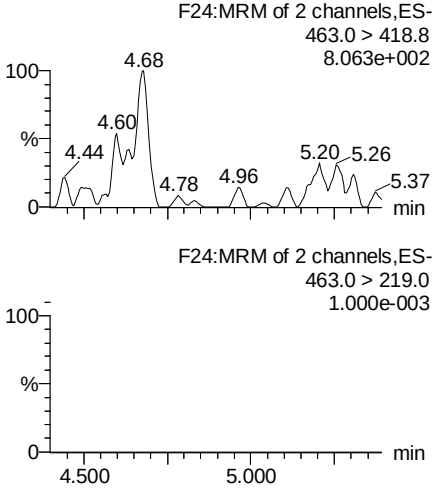
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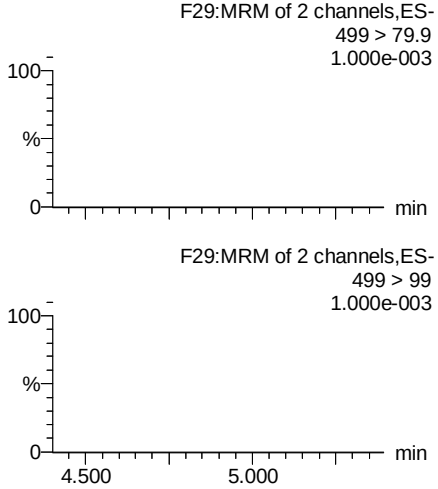
Total PFOA



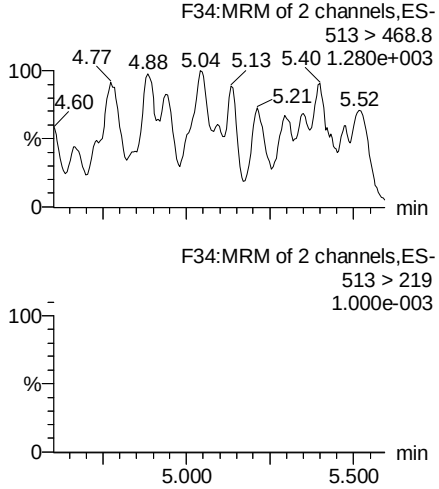
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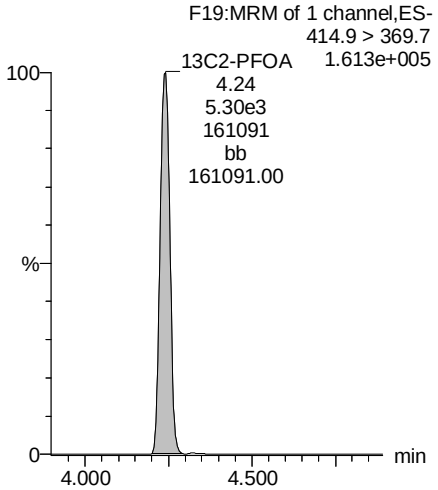
Total PFOS



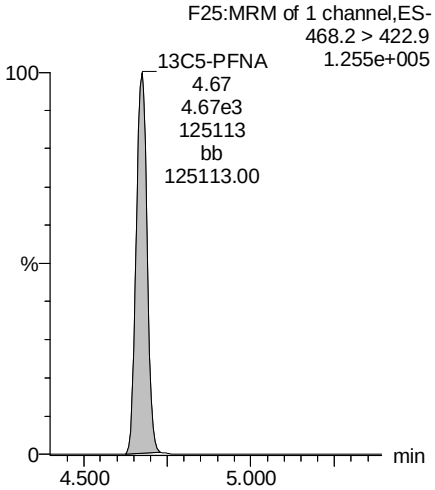
PFDA



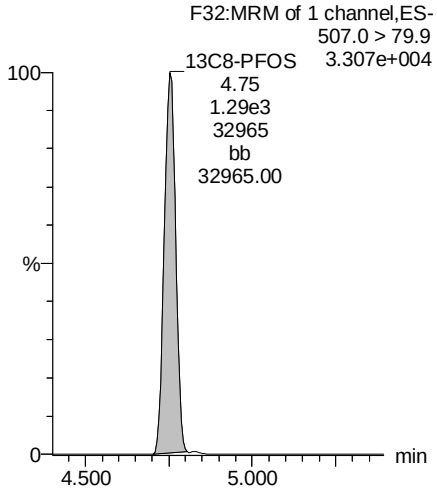
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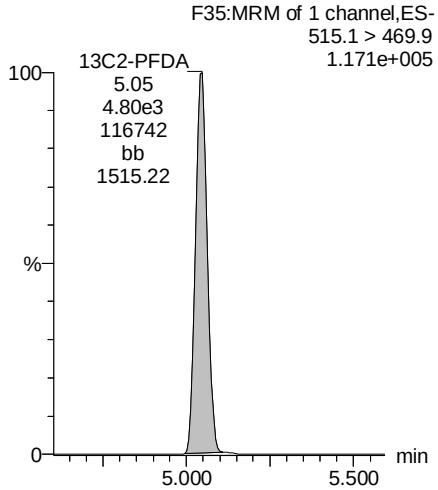
13C5-PFNA



13C8-PFOS



13C2-PFDA

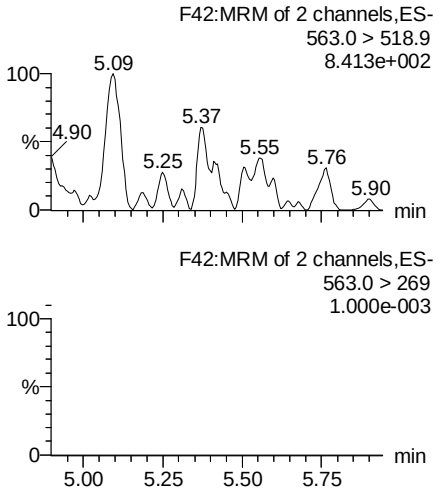


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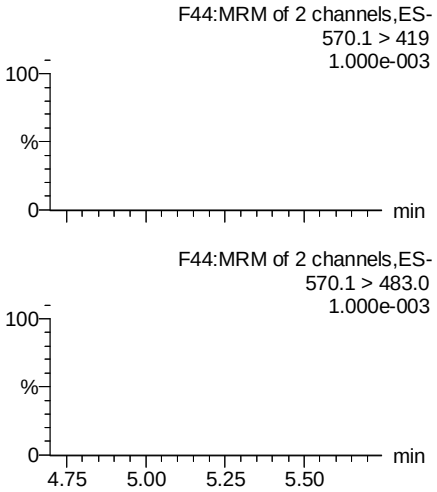
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Name: 180110M2_32, Date: 10-Jan-2018, Time: 21:10:53, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

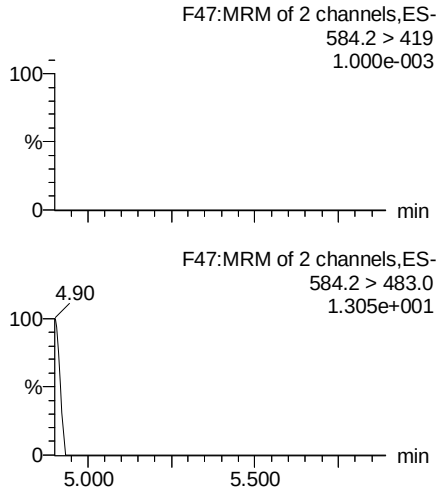
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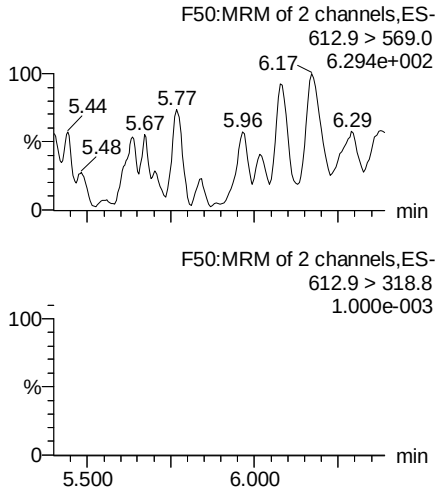
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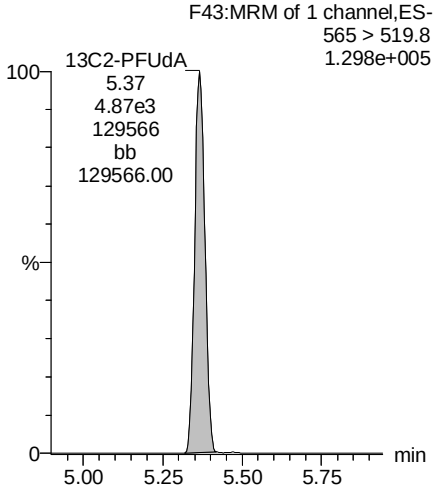
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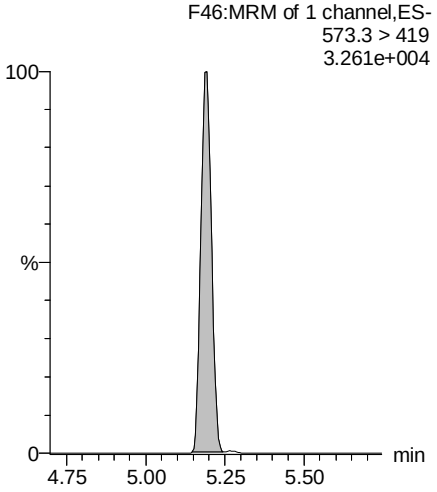
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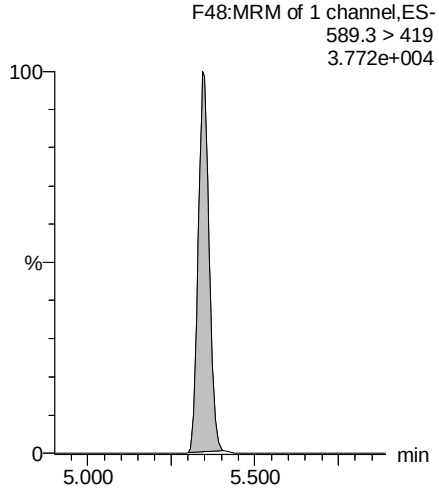
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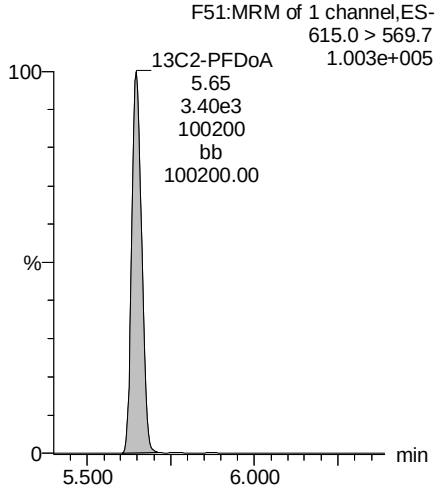
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d5-N-EtFOSAA



13C2-PFDoA

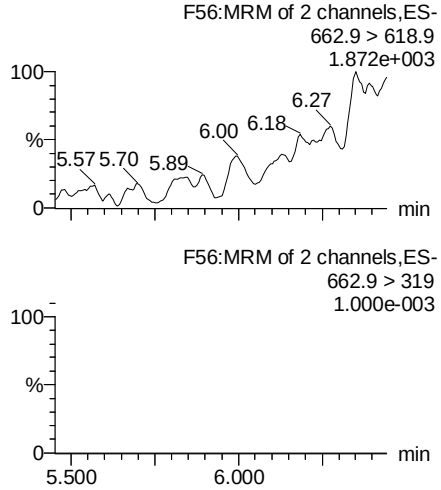


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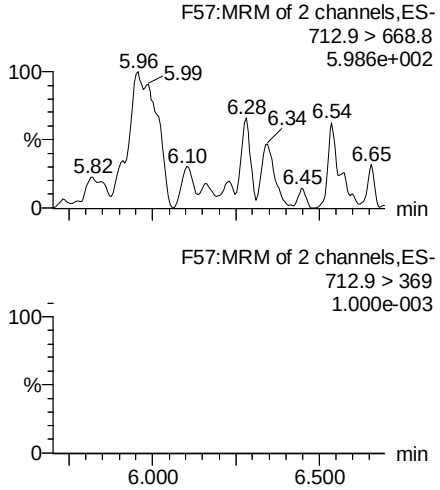
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Name: 180110M2_32, Date: 10-Jan-2018, Time: 21:10:53, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

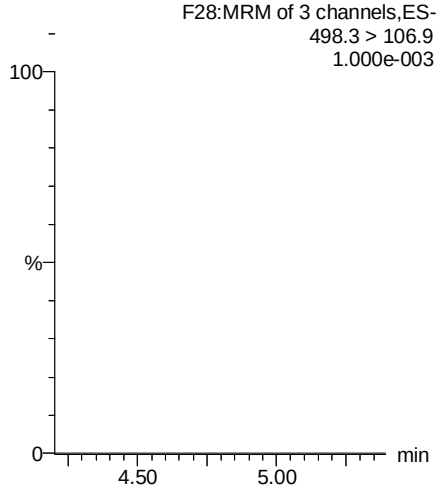
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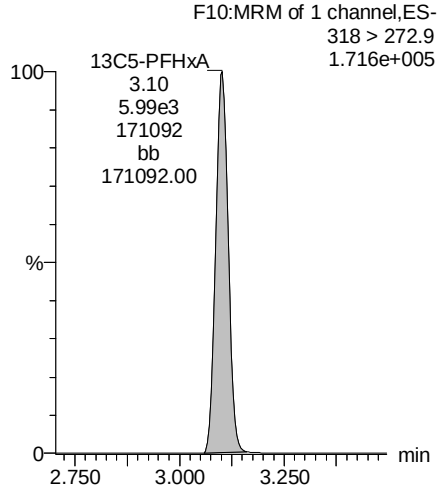
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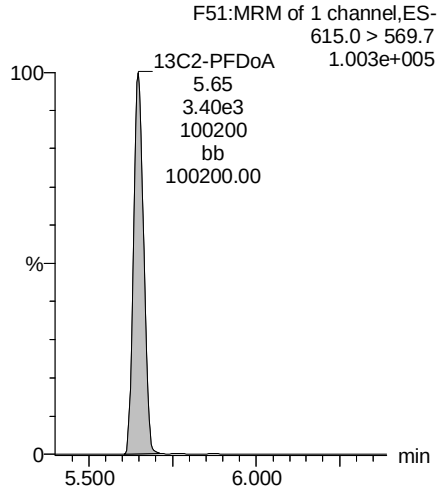
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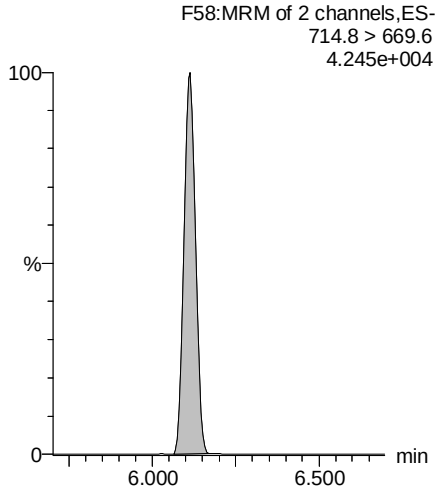
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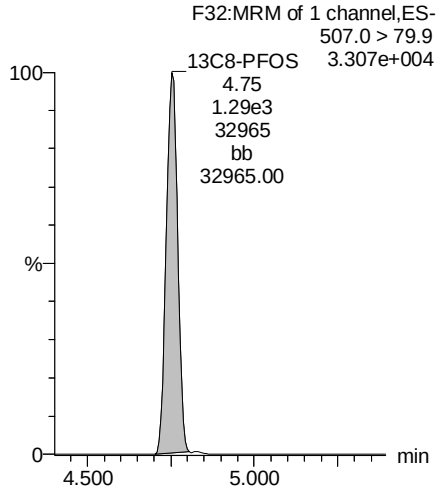
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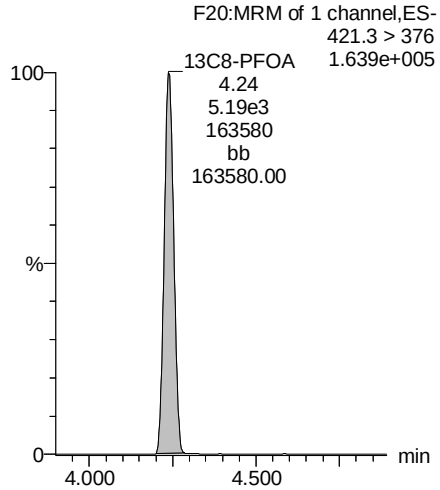
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13C8-PFOS



13C8-PFOA



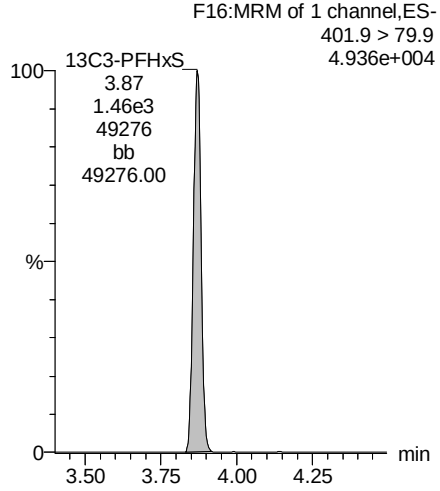
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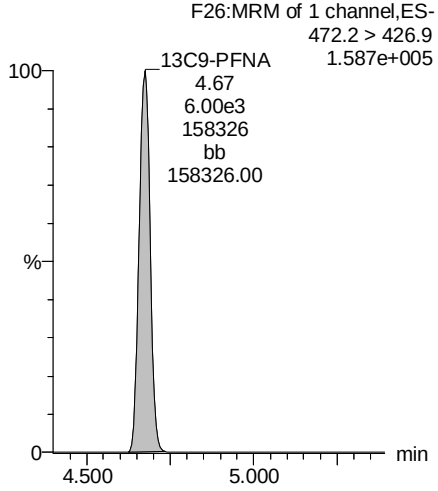
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Name: 180110M2_32, Date: 10-Jan-2018, Time: 21:10:53, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

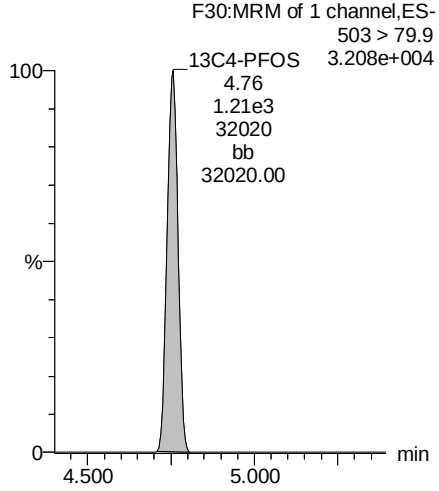
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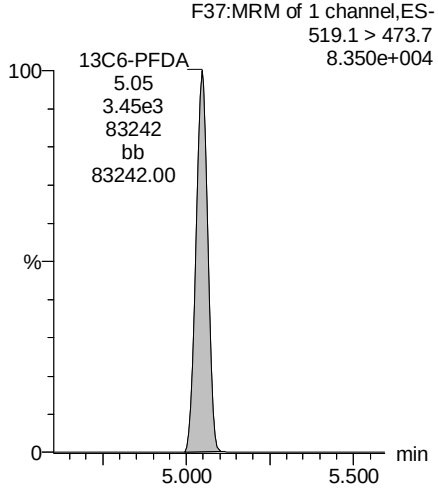
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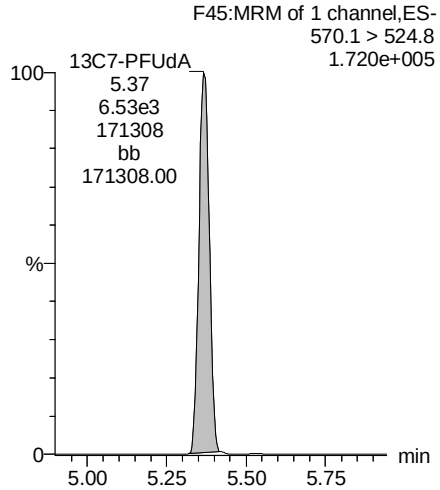
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

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Last Altered: Monday, January 15, 2018 14:14:35 Pacific Standard Time
Printed: Monday, January 15, 2018 14:14:44 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_33, Date: 10-Jan-2018, Time: 21:22:04, ID: 1701970-05 SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.00e2	0.234		2.66				
2	4	PFHxA	313.2 > 268.9	1.03e4	1.46e3	0.234		3.15	3.10	35.1	83.7428	
3	5	PFHpA	363.0 > 318.9	6.72e3	3.53e3	0.234		3.78	3.72	23.8	77.1329	
4	6	L-PFHxS	398.9 > 79.6		5.03e2	0.234		3.94				
5	9	L-PFOA	413 > 368.7	1.28e4	4.15e3	0.234		4.31	4.24	38.5	151.2948	
6	12	PFNA	463.0 > 418.8	2.49e5	3.53e3	0.234		4.81	4.67	880	3286.6797	
7	14	L-PFOS	499 > 79.9	1.86e2	1.30e3	0.234		4.89	4.76	1.78	7.9596	
8	16	PFDA	513 > 468.8	6.30e2	3.42e3	0.234		5.18	5.05	2.30	6.4596	
9	18	N-MeFOSAA	570.1 > 419		1.44e3	0.234		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.55e3	0.234		5.48				
11	20	PFUdA	563.0 > 518.9	7.72e2	5.05e3	0.234		5.50	5.37	1.91	7.0191	
12	22	PFDoA	612.9 > 569.0		3.51e3	0.234		5.77				

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:14:35 Pacific Standard Time
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	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.51e3	0.234		6.00				
2	25	PFTeDA	712.9 > 668.8		1.39e3	0.234		6.22				
3	33	13C3-PFBS	302. > 98.8	6.00e2	5.41e3	0.234	0.116	2.77	2.61	1.39	50.8524	95.4
4	34	13C2-PFHxA	315 > 269.8	1.46e3	5.41e3	0.234	0.655	3.15	3.10	3.38	22.0203	103.2
5	35	13C4-PFHpA	367.2 > 321.8	3.53e3	5.41e3	0.234	0.722	3.78	3.72	8.15	48.1466	90.3
6	36	18O2-PFHxS	403.0 > 102.6	5.03e2	1.53e3	0.234	0.348	3.94	3.87	4.10	50.2266	94.2
7	37	13C2-6:2 FTS	429.1 > 408.9	1.13e3	4.75e3	0.234	0.222	4.25	4.19	2.96	57.0171	106.9
8	38	13C2-PFOA	414.9 > 369.7	4.15e3	4.75e3	0.234	1.023	4.31	4.24	10.9	45.5430	85.4
9	39	13C5-PFNA	468.2 > 422.9	3.53e3	4.59e3	0.234	0.916	4.81	4.67	9.61	44.7810	84.0
10	40	13C8-PFOSA	506.1 > 77.7	9.62e2	5.91e3	0.234	0.210	4.87	4.74	2.04	41.2629	77.4
11	41	13C8-PFOS	507.0 > 79.9	1.30e3	1.34e3	0.234	1.035	4.89	4.76	12.2	50.2279	94.2
12	42	13C2-PFDA	515.1 > 469.9	3.42e3	2.83e3	0.234	1.142	5.18	5.05	15.1	56.4741	105.9
13	43	13C2-8:2 FTS	529.1 > 508.7	4.80e2	5.41e3	0.234	0.157	5.15	5.02	1.11	30.2586	56.7
14	44	d3-N-MeFOSAA	573.3 > 419	1.44e3	5.91e3	0.234	0.299	5.32	5.19	3.05	43.4794	81.5
15	45	d5-N-EtFOSAA	589.3 > 419	1.55e3	5.91e3	0.234	0.369	5.47	5.35	3.27	37.7993	70.9
16	46	13C2-PFUdA	565 > 519.8	5.05e3	5.91e3	0.234	1.012	5.49	5.37	10.7	45.1074	84.6
17	47	13C2-PFDoA	615.0 > 569.7	3.51e3	5.91e3	0.234	0.647	5.77	5.65	7.44	49.0461	92.0
18	49	13C2-PFTeDA	714.8 > 669.6	1.39e3	5.91e3	0.234	0.294	6.22	6.11	2.95	42.8275	80.3
19	55	13C5-PFHxA	318 > 272.9	5.41e3	5.41e3	0.234	1.000	3.15	3.10	12.5	53.3254	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.53e3	1.53e3	0.234	1.000	4.02	3.87	12.5	53.3254	100.0
21	57	13C8-PFOA	421.3 > 376	4.75e3	4.75e3	0.234	1.000	4.38	4.24	12.5	53.3254	100.0
22	58	13C9-PFNA	472.2 > 426.9	4.59e3	4.59e3	0.234	1.000	4.81	4.68	12.5	53.3254	100.0
23	59	13C4-PFOS	503 > 79.9	1.34e3	1.34e3	0.234	1.000	4.89	4.76	12.5	53.3254	100.0
24	60	13C6-PFDA	519.1 > 473.7	2.83e3	2.83e3	0.234	1.000	5.18	5.05	12.5	53.3254	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.91e3	5.91e3	0.234	1.000	5.49	5.37	12.5	53.3254	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	5.03e2	0.234		4.14		0.000		
27	63	Total PFOA	413 > 368.7	1.28e4	4.15e3	0.234		4.51		38.5	151.2948	
28	64	Total PFOS	499 > 79.9	1.86e2	1.30e3	0.234		5.02		1.78	7.9596	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.44e3	0.234		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.55e3	0.234		5.61		0.000		

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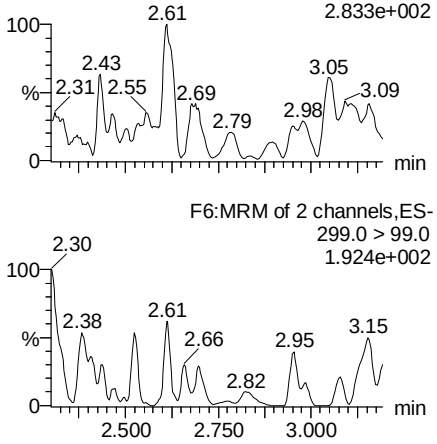
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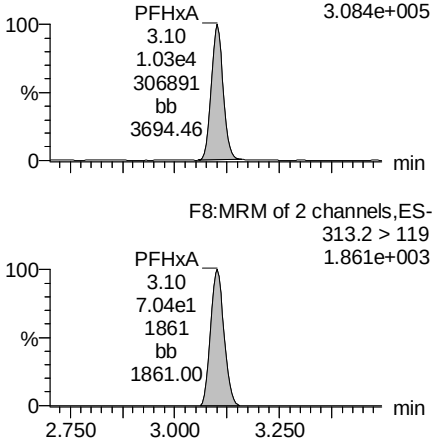
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Name: 180110M2_33, Date: 10-Jan-2018, Time: 21:22:04, ID: 1701970-05 SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

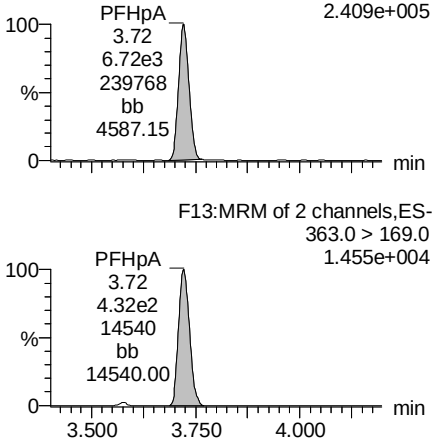
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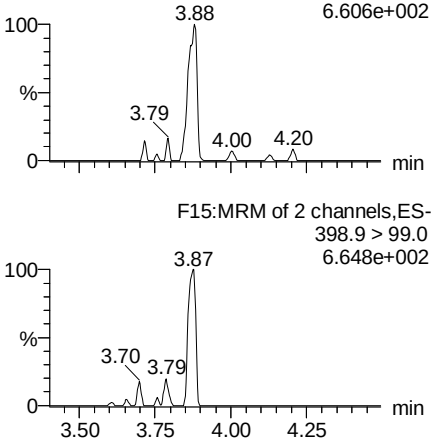
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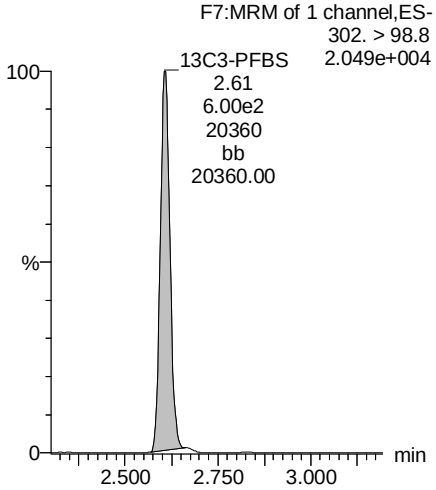
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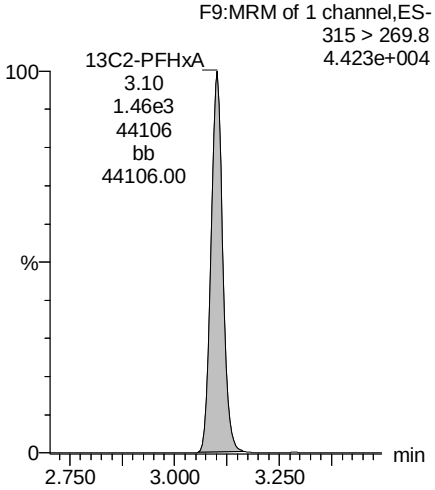
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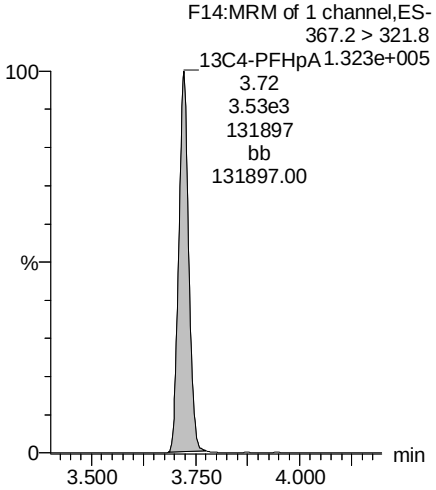
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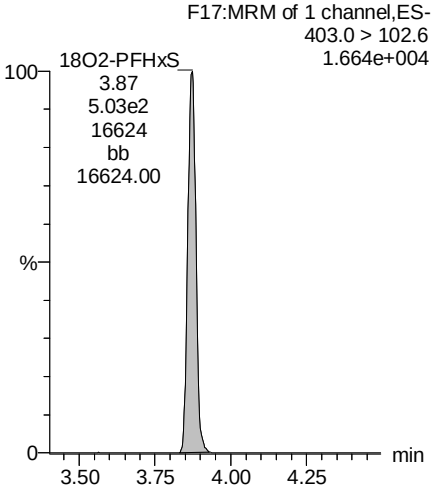
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

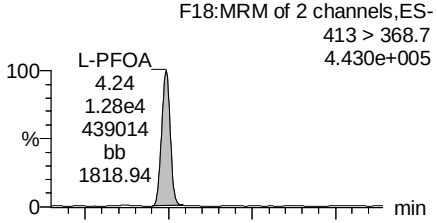


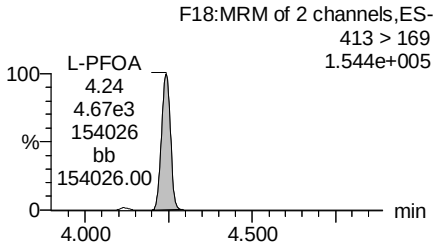
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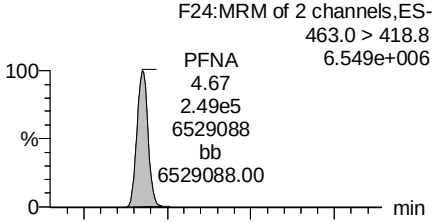
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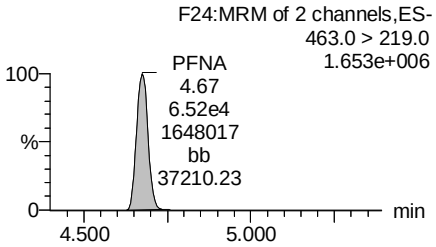
Total PFOA



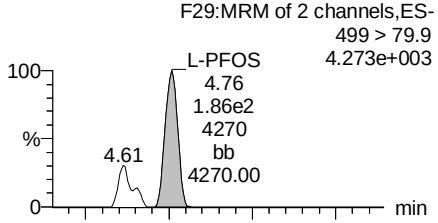


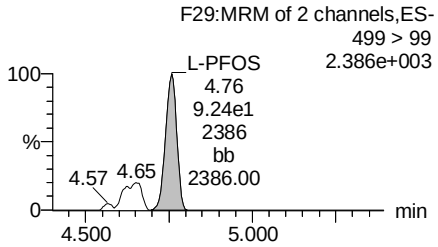
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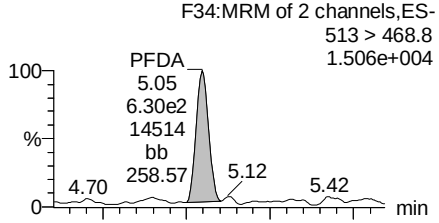


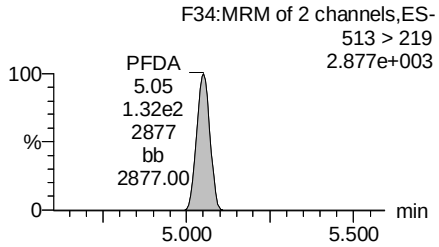
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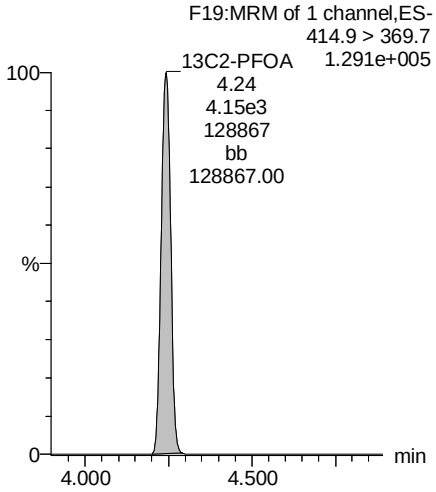


PFDA

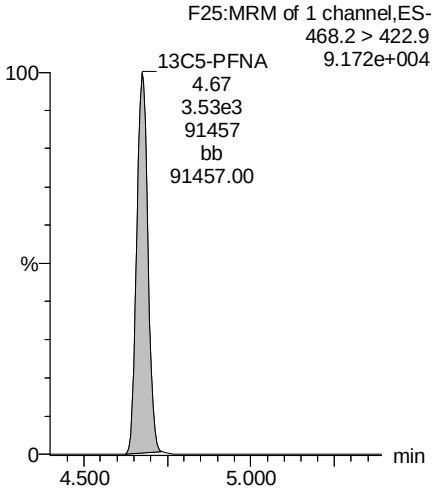




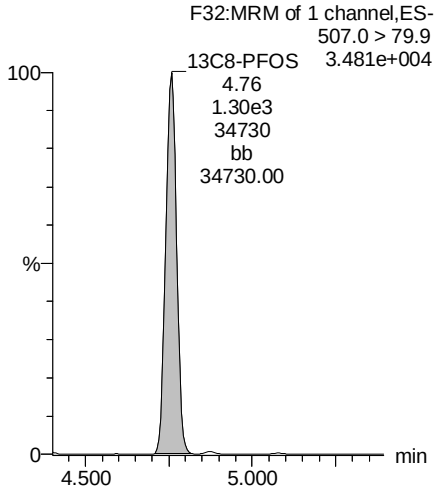
13C2-PFOA



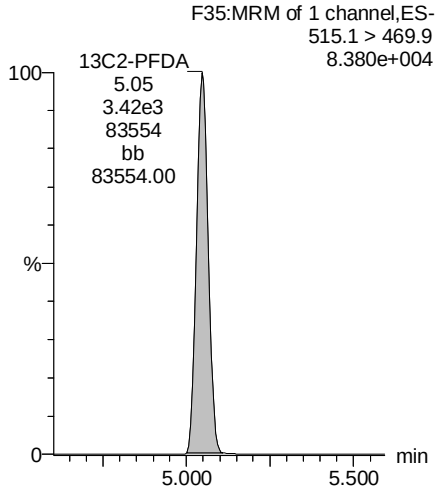
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13C8-PFOS



13C2-PFDA

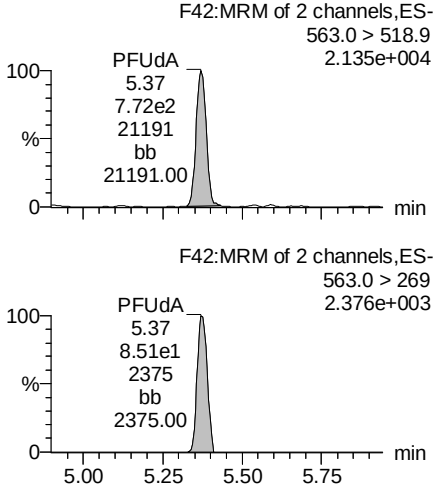


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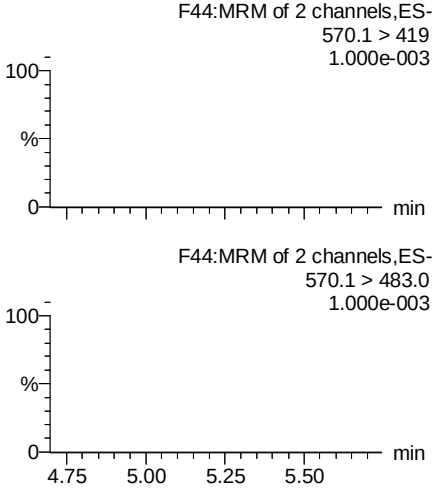
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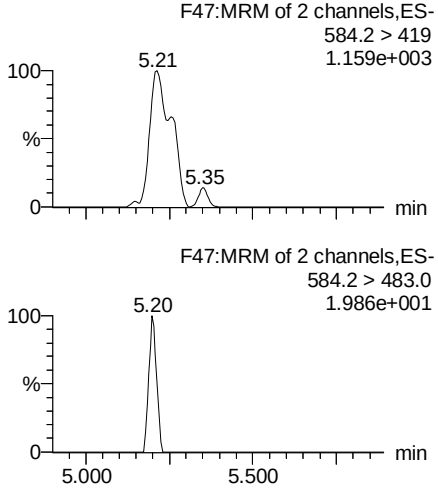
PFUdA



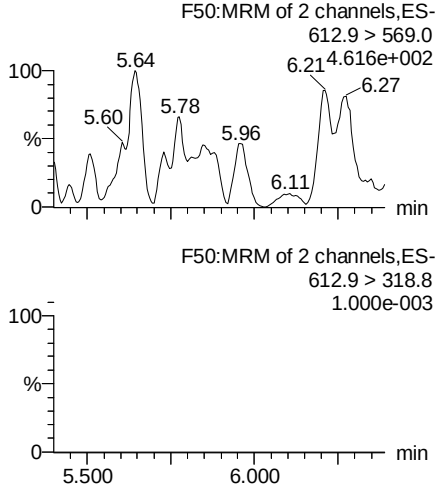
N-MeFOSAA



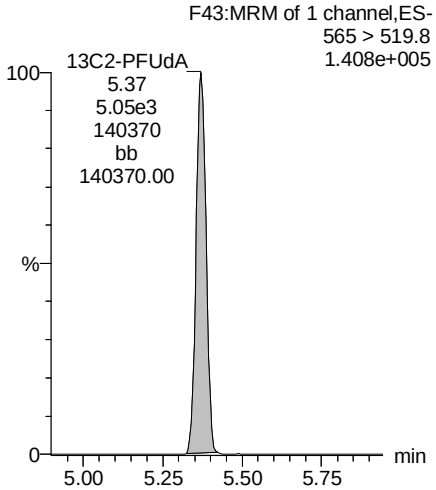
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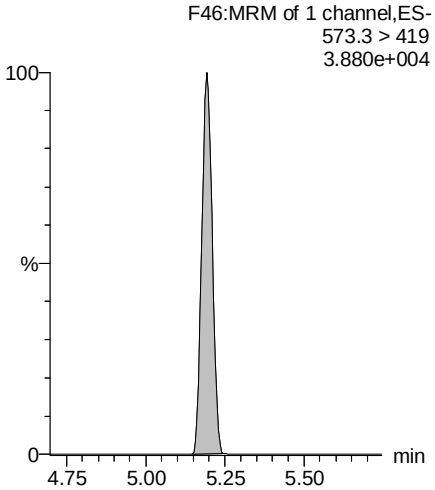
PFDoA



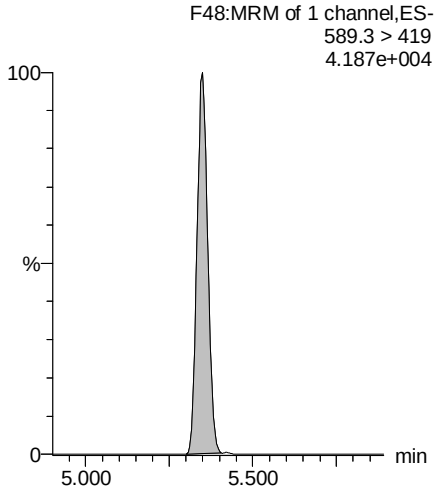
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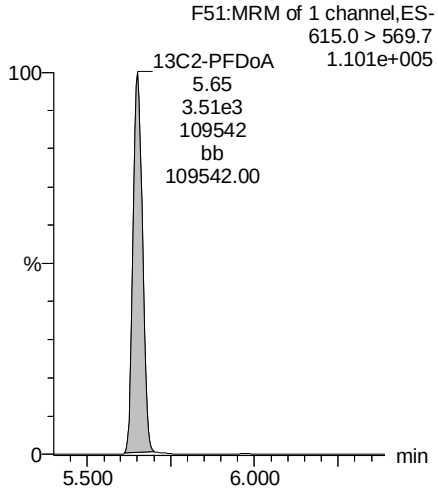
d3-N-MeFOSAA



d5-N-EtFOSAA



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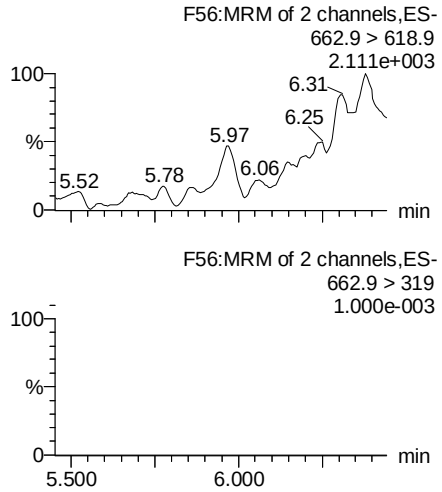


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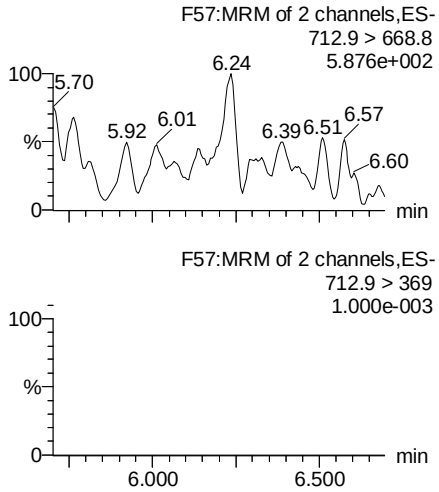
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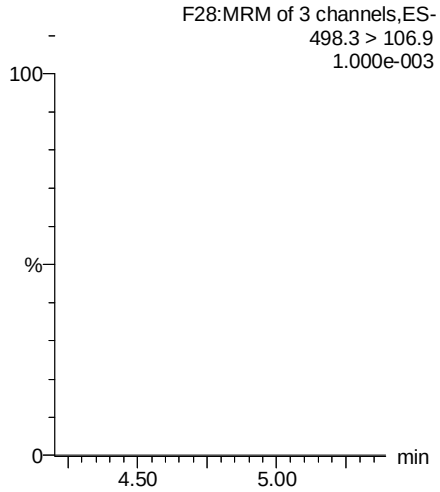
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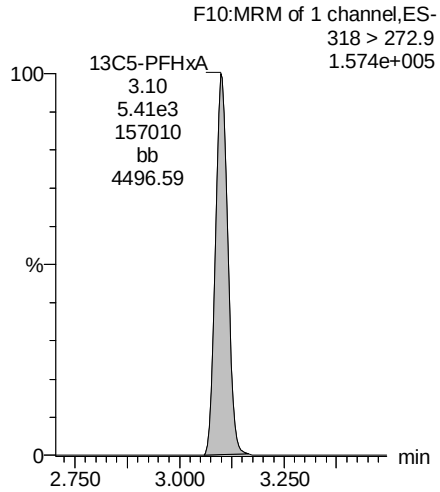
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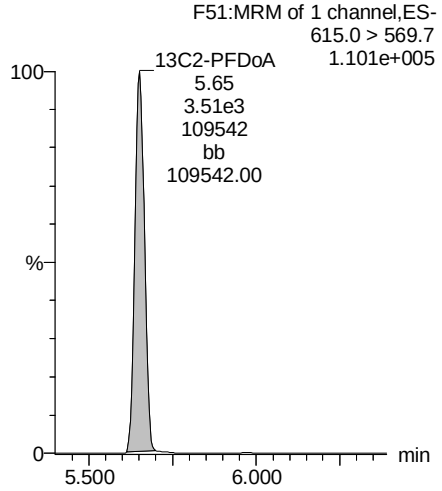
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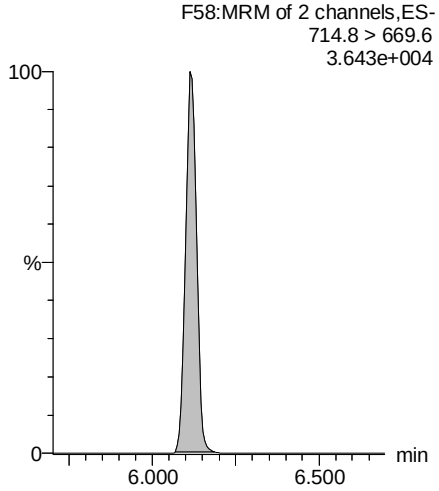
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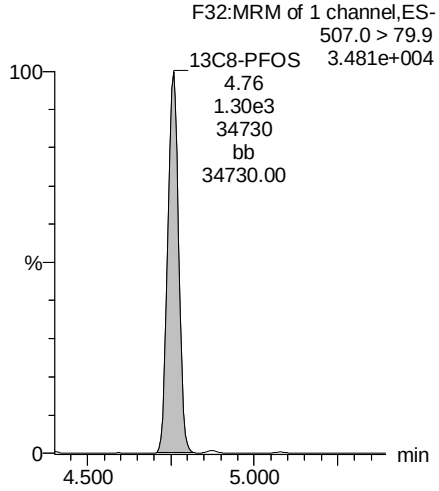
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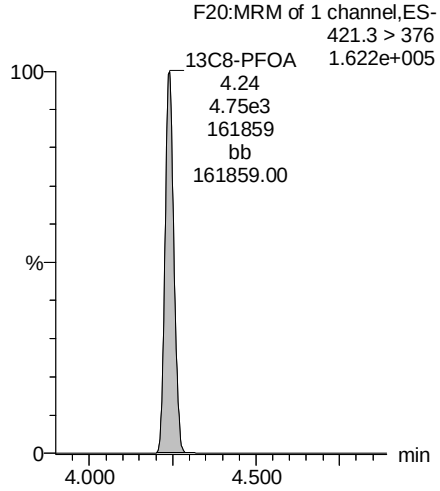
13C2-PFTeDA



13C8-PFOS



13C8-PFOA

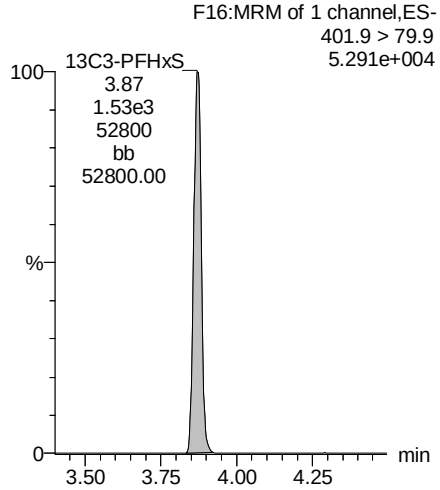


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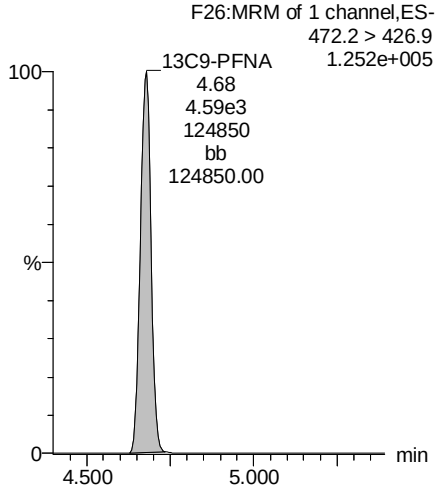
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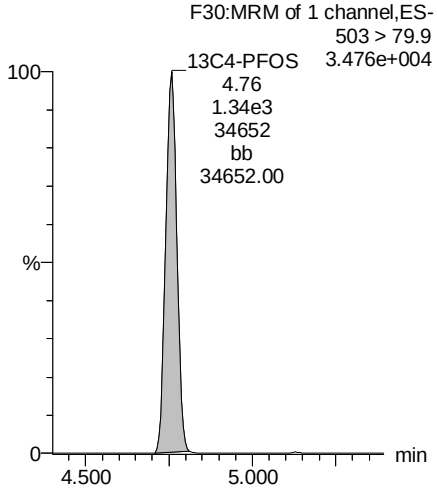
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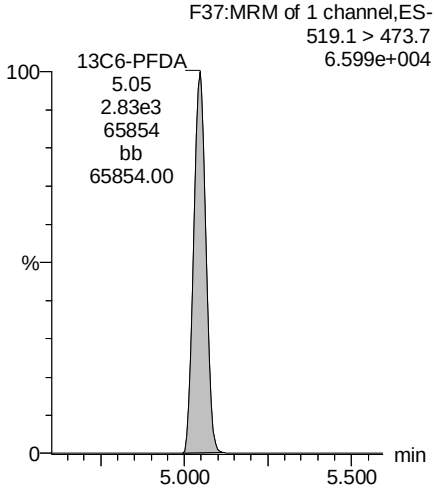
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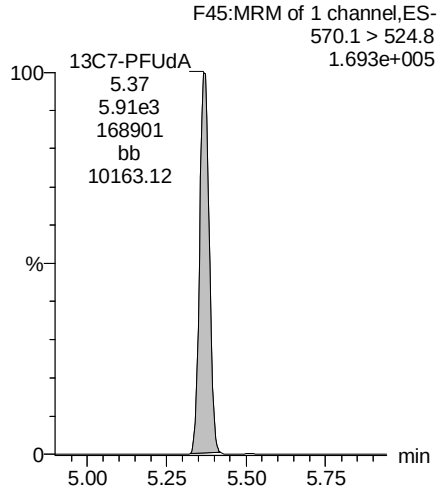
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 13:58:39 Pacific Standard Time
Printed: Monday, January 15, 2018 14:02:04 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_27, Date: 10-Jan-2018, Time: 20:15:00, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	8.13e2	5.92e2	0.249		2.66	2.61	17.2	38.1507	
2	4	PFHxA	313.2 > 268.9	1.50e4	1.54e3	0.249		3.15	3.10	49.0	110.0892	
3	5	PFHpA	363.0 > 318.9	1.16e4	3.58e3	0.249		3.78	3.72	40.6	123.8064	
4	6	L-PFHxS	398.9 > 79.6	6.08e2	4.75e2	0.249		3.94	3.87	16.0	34.4082	
5	9	L-PFOA	413 > 368.7	1.67e4	5.13e3	0.249		4.31	4.24	40.8	150.7740	
6	12	PFNA	463.0 > 418.8	2.57e5	4.20e3	0.249		4.81	4.68	766	2655.2580	
7	14	L-PFOS	499 > 79.9	9.10e2	1.16e3	0.249		4.89	4.75	9.83	41.4951	
8	16	PFDA	513 > 468.8	5.19e3	3.54e3	0.249		5.18	5.05	18.3	50.1771	
9	18	N-MeFOSAA	570.1 > 419	1.73e3	1.15e3	0.249		5.32	5.20	18.8	49.8267	
10	19	N-EtFOSAA	584.2 > 419	1.57e3	1.51e3	0.249		5.48	5.36	12.9	46.6236	
11	20	PFUdA	563.0 > 518.9	5.33e3	4.45e3	0.249		5.50	5.37	15.0	52.6913	
12	22	PFDoA	612.9 > 569.0	4.58e3	3.45e3	0.249		5.77	5.65	16.6	30.0556	

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Vista Analytical Laboratory

Dataset: Untitled

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Name: 180110M2_27, Date: 10-Jan-2018, Time: 20:15:00, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9	4.84e3	3.45e3	0.249		6.00	5.90	17.5	29.4419	
2	25	PFTeDA	712.9 > 668.8	3.39e3	1.55e3	0.249		6.22	6.12	27.2	39.0366	
3	33	13C3-PFBS	302. > 98.8	5.92e2	5.70e3	0.249	0.116	2.77	2.61	1.30	44.8547	89.3
4	34	13C2-PFHxA	315 > 269.8	1.54e3	5.70e3	0.249	0.655	3.15	3.10	3.37	20.6401	102.8
5	35	13C4-PFHpA	367.2 > 321.8	3.58e3	5.70e3	0.249	0.722	3.78	3.72	7.84	43.6001	86.8
6	36	18O2-PFHxS	403.0 > 102.6	4.75e2	1.23e3	0.249	0.348	3.94	3.87	4.82	55.6306	110.8
7	37	13C2-6:2 FTS	429.1 > 408.9	1.13e3	4.79e3	0.249	0.222	4.25	4.18	2.94	53.3526	106.3
8	38	13C2-PFOA	414.9 > 369.7	5.13e3	4.79e3	0.249	1.023	4.31	4.24	13.4	52.5314	104.6
9	39	13C5-PFNA	468.2 > 422.9	4.20e3	3.81e3	0.249	0.916	4.81	4.68	13.8	60.4236	120.3
10	40	13C8-PFOSA	506.1 > 77.7	9.75e2	5.32e3	0.249	0.210	4.87	4.73	2.29	43.7298	87.1
11	41	13C8-PFOS	507.0 > 79.9	1.16e3	1.34e3	0.249	1.035	4.89	4.76	10.8	41.7407	83.1
12	42	13C2-PFDA	515.1 > 469.9	3.54e3	3.25e3	0.249	1.142	5.18	5.05	13.6	47.9719	95.5
13	43	13C2-8:2 FTS	529.1 > 508.7	6.57e2	5.70e3	0.249	0.157	5.15	5.02	1.44	36.9692	73.6
14	44	d3-N-MeFOSAA	573.3 > 419	1.15e3	5.32e3	0.249	0.299	5.32	5.20	2.71	36.3697	72.4
15	45	d5-N-EtFOSAA	589.3 > 419	1.51e3	5.32e3	0.249	0.369	5.47	5.35	3.55	38.6631	77.0
16	46	13C2-PFUdA	565 > 519.8	4.45e3	5.32e3	0.249	1.012	5.49	5.37	10.4	41.4927	82.6
17	47	13C2-PFDoA	615.0 > 569.7	3.45e3	5.32e3	0.249	0.647	5.77	5.65	8.11	50.3398	100.3
18	49	13C2-PFTeDA	714.8 > 669.6	1.55e3	5.32e3	0.249	0.294	6.22	6.12	3.65	49.9363	99.5
19	55	13C5-PFHxA	318 > 272.9	5.70e3	5.70e3	0.249	1.000	3.15	3.10	12.5	50.2089	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.23e3	1.23e3	0.249	1.000	4.02	3.87	12.5	50.2089	100.0
21	57	13C8-PFOA	421.3 > 376	4.79e3	4.79e3	0.249	1.000	4.38	4.24	12.5	50.2089	100.0
22	58	13C9-PFNA	472.2 > 426.9	3.81e3	3.81e3	0.249	1.000	4.81	4.68	12.5	50.2089	100.0
23	59	13C4-PFOS	503 > 79.9	1.34e3	1.34e3	0.249	1.000	4.89	4.76	12.5	50.2089	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.25e3	3.25e3	0.249	1.000	5.18	5.05	12.5	50.2089	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.32e3	5.32e3	0.249	1.000	5.49	5.37	12.5	50.2089	100.0
26	62	Total PFHxS	398.9 > 79.6	6.08e2	4.75e2	0.249		4.14		16.0	34.4082	
27	63	Total PFOA	413 > 368.7	1.68e4	5.13e3	0.249		4.51		41.0	151.6082	
28	64	Total PFOS	499 > 79.9	9.10e2	1.16e3	0.249		5.02		9.83	41.4951	
29	65	Total N-MeFOSAA	570.1 > 419	1.73e3	1.15e3	0.249		5.45		18.8	49.8267	
30	66	Total N-EtFOSAA	584.2 > 419	1.57e3	1.51e3	0.249		5.61		12.9	46.6236	

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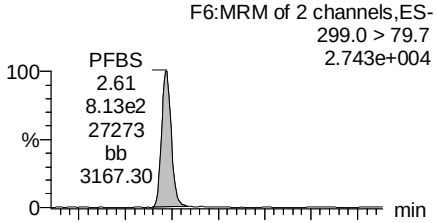
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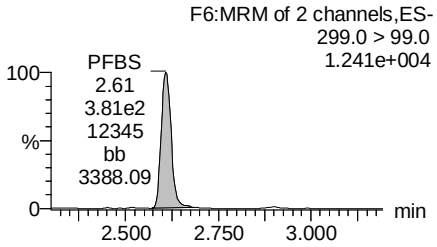
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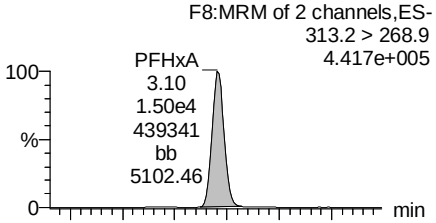
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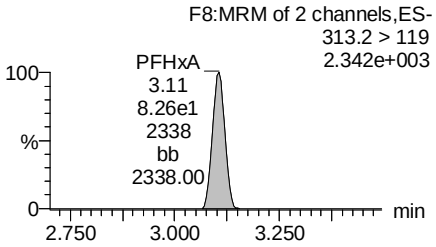
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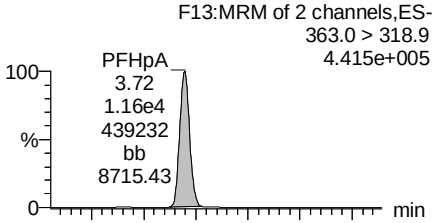


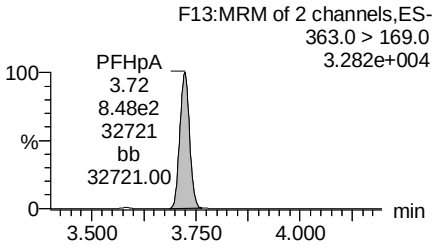
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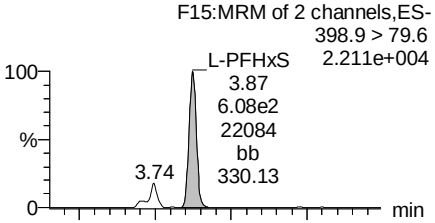


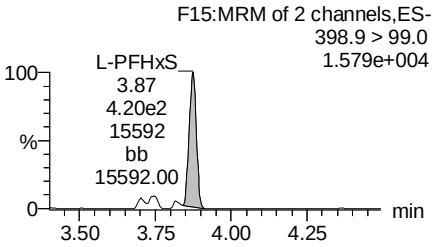
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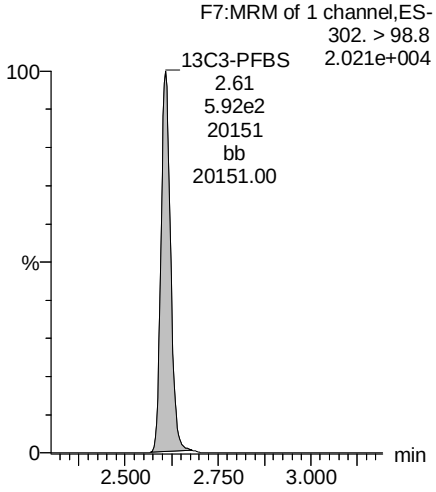


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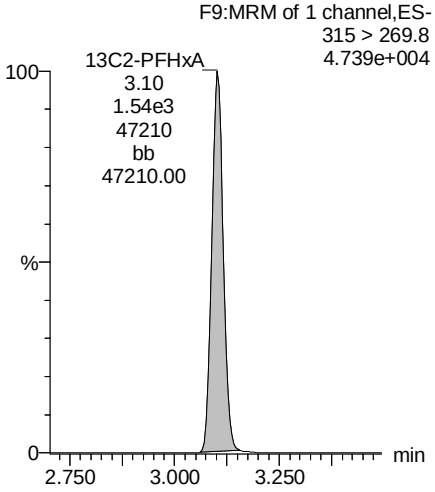




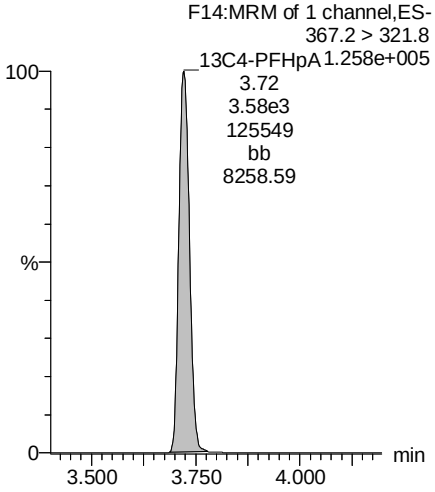
13C3-PFBS



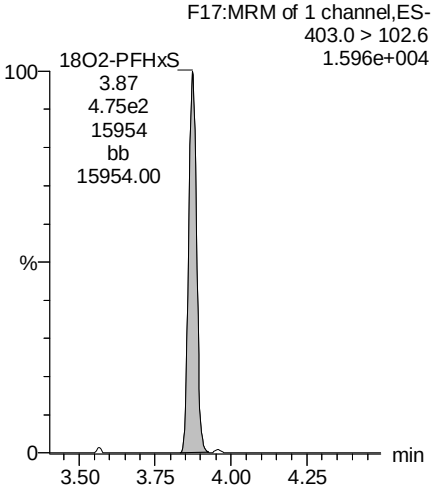
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



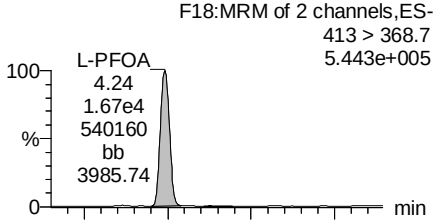
MSF 1/7/18

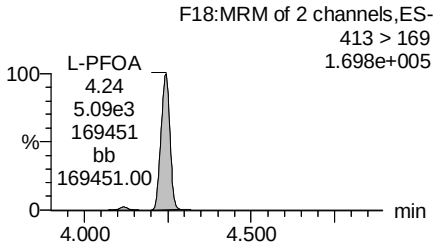
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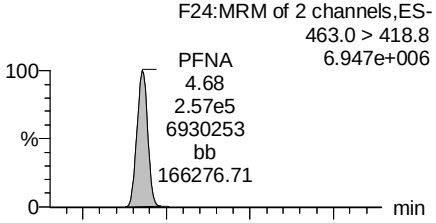
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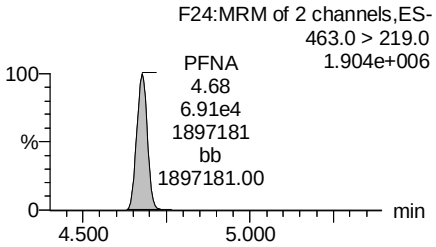
Total PFOA



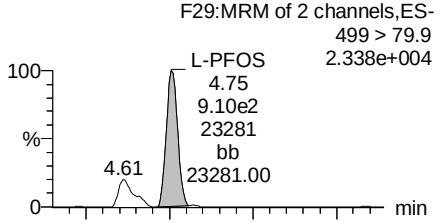


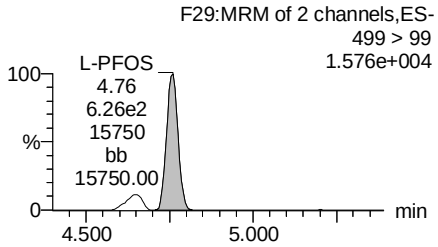
PFNA



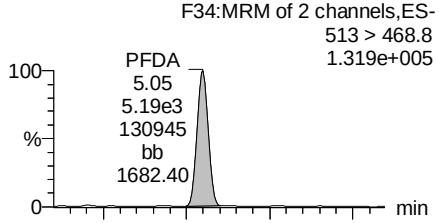


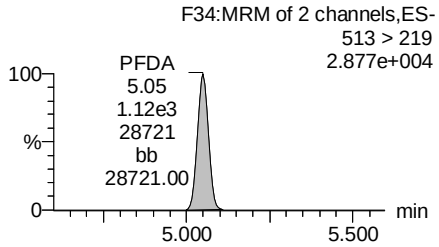
Total PFOS



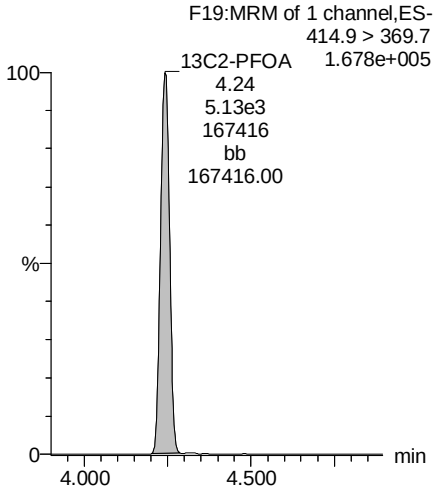


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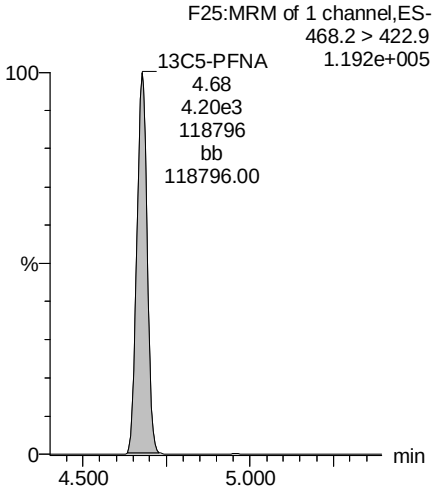




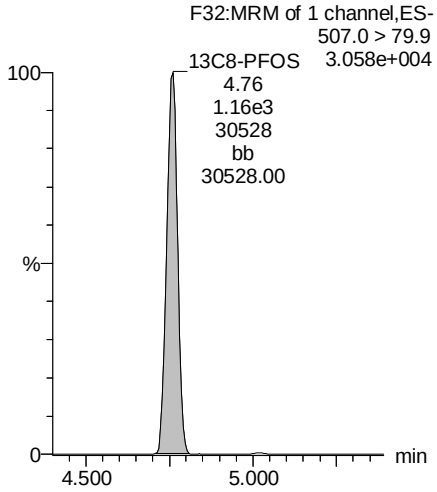
13C2-PFOA



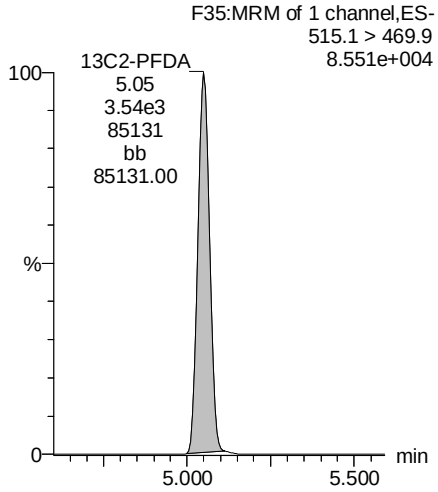
13C5-PFNA



13C8-PFOS



13C2-PFDA



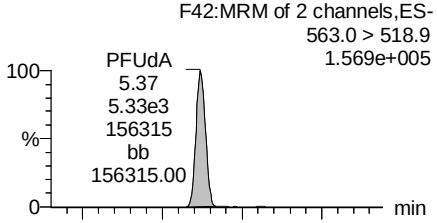
MSF 1/7/18

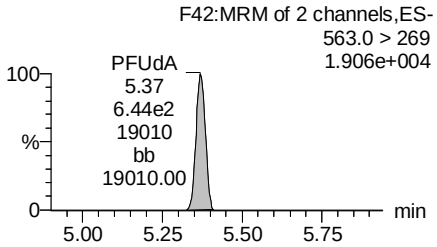
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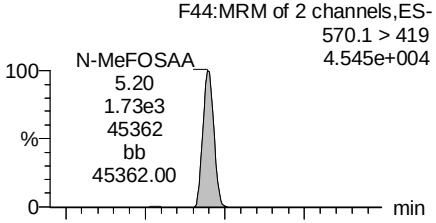
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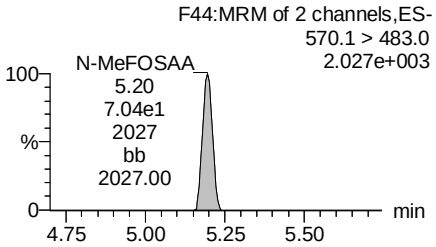
PFUdA



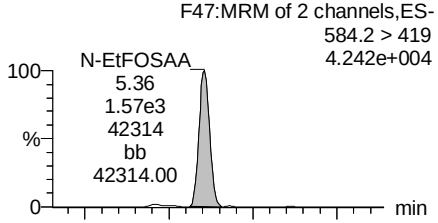


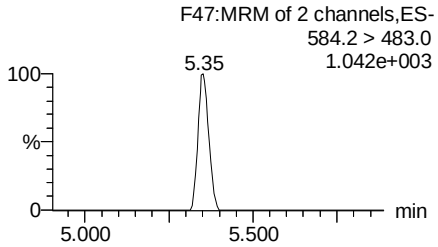
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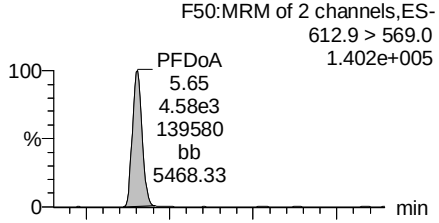


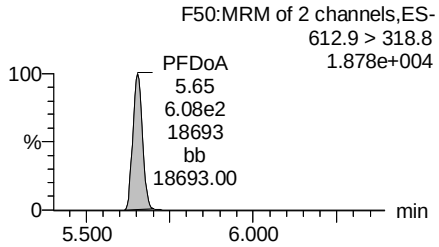
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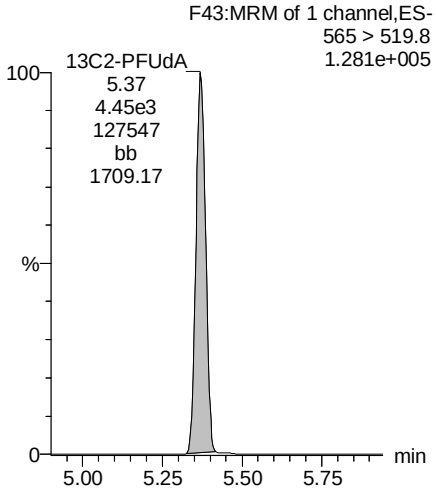


PFDoA

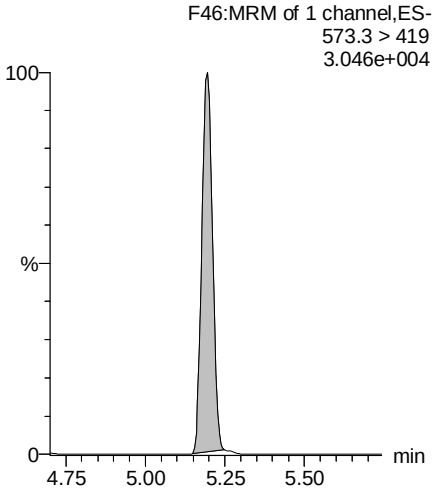




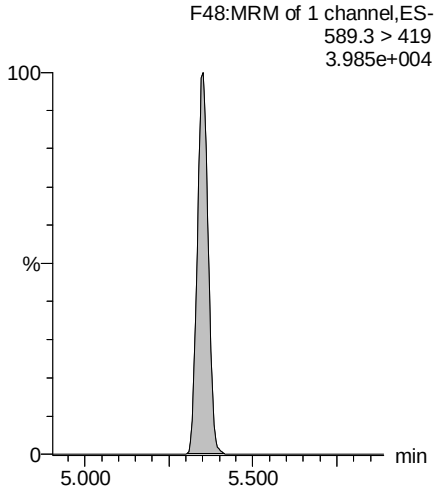
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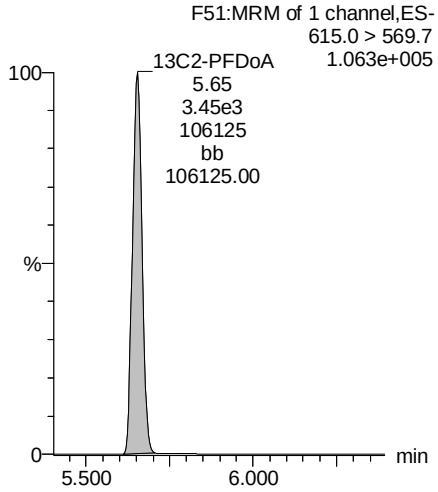
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



MSF 1/7/18

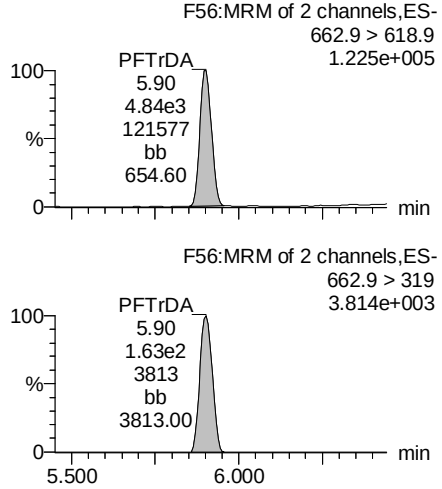
Vista Analytical Laboratory

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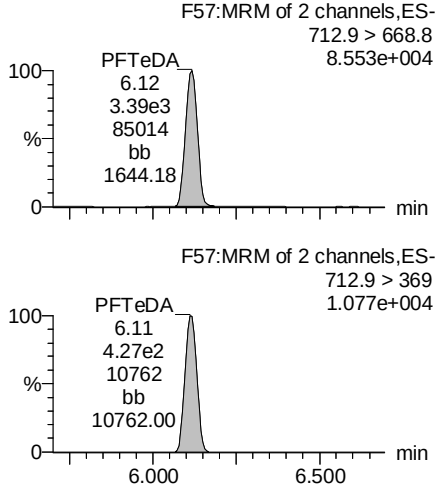
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Printed: Monday, January 15, 2018 14:02:20 Pacific Standard Time

Name: 180110M2_27, Date: 10-Jan-2018, Time: 20:15:00, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

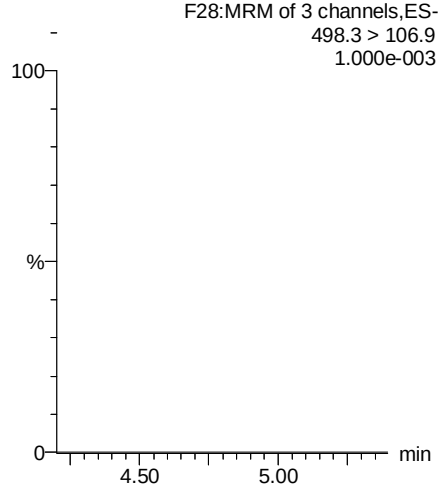
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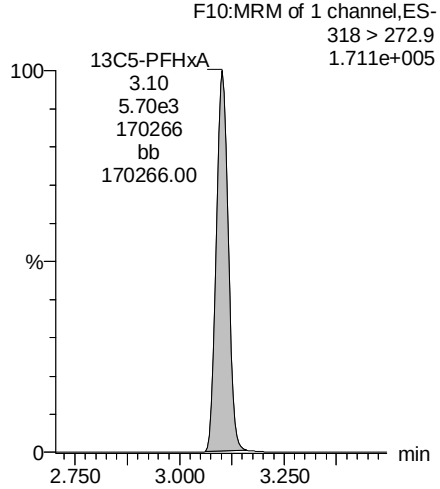
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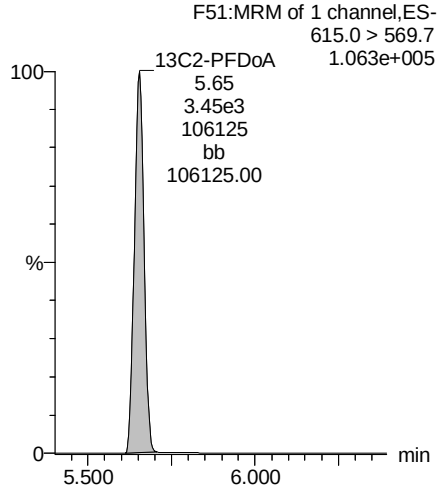
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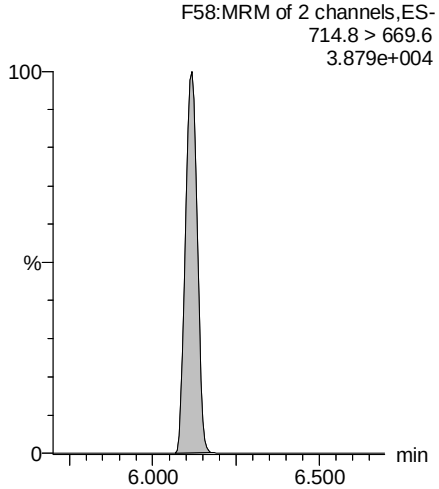
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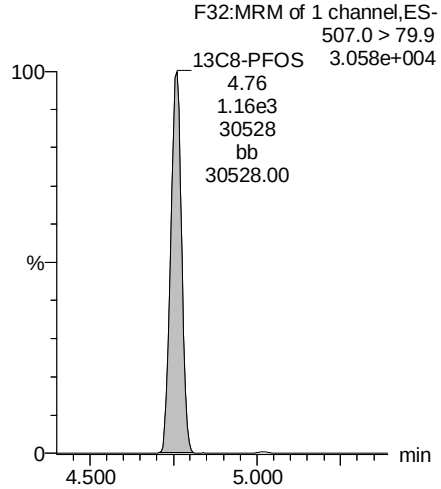
13C2-PFDoA



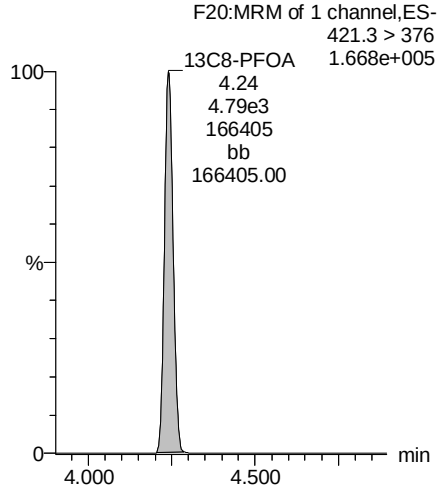
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



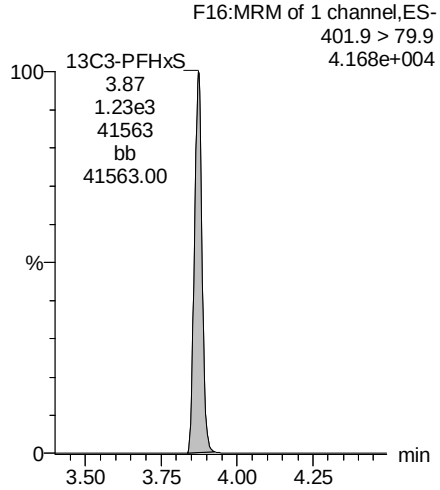
MSF 1/7/18

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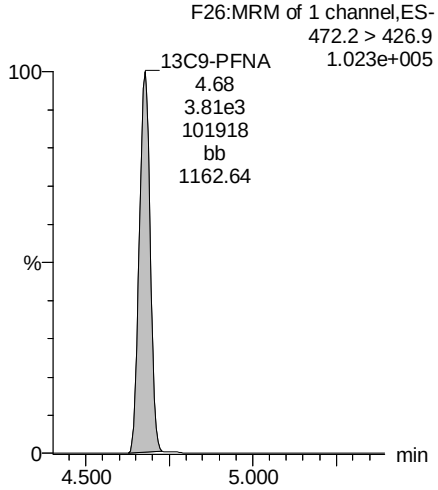
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Printed: Monday, January 15, 2018 14:02:20 Pacific Standard Time

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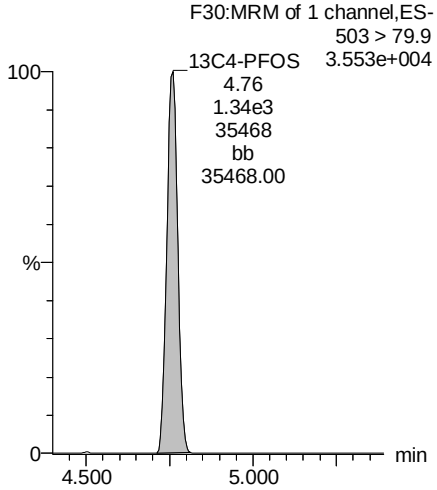
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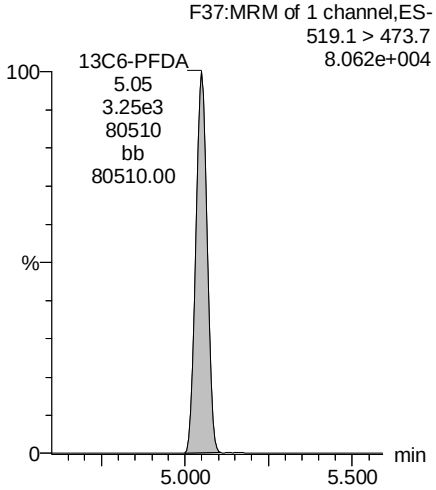
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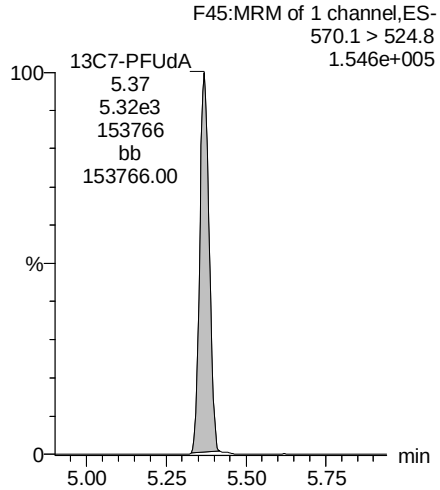
13C4-PFOS



13C6-PFDA



13C7-PFUdA



MSF 1/7/18

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Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:03:47 Pacific Standard Time
Printed: Monday, January 15, 2018 14:04:06 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7	7.80e2	6.50e2	0.237		2.66	2.61	15.0	34.9375	
2	4	PFHxA	313.2 > 268.9	1.38e4	1.25e3	0.237		3.15	3.10	55.0	129.6565	
3	5	PFHpA	363.0 > 318.9	9.31e3	3.17e3	0.237		3.78	3.72	36.6	117.1802	
4	6	L-PFHxS	398.9 > 79.6	5.06e2	4.42e2	0.237		3.94	3.87	14.3	32.2563	
5	9	L-PFOA	413 > 368.7	1.62e4	5.23e3	0.237		4.31	4.24	38.7	149.9504	
6	12	PFNA	463.0 > 418.8	1.84e5	3.49e3	0.237		4.81	4.67	661	2371.5807	
7	14	L-PFOS	499 > 79.9	1.08e3	9.95e2	0.237		4.89	4.76	13.6	59.9602	
8	16	PFDA	513 > 468.8	4.43e3	3.39e3	0.237		5.18	5.05	16.3	47.0936	
9	18	N-MeFOSAA	570.1 > 419	1.54e3	1.40e3	0.237		5.32	5.20	13.8	38.6021	
10	19	N-EtFOSAA	584.2 > 419	1.42e3	1.56e3	0.237		5.48	5.35	11.4	43.1492	
11	20	PFUdA	563.0 > 518.9	4.71e3	4.42e3	0.237		5.50	5.37	13.3	49.0607	
12	22	PFDoA	612.9 > 569.0	4.15e3	3.28e3	0.237		5.77	5.65	15.8	29.9961	

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Vista Analytical Laboratory

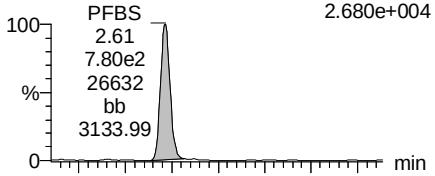
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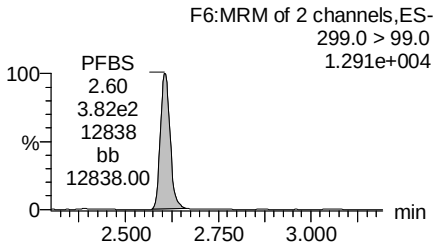
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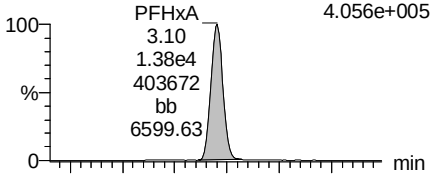
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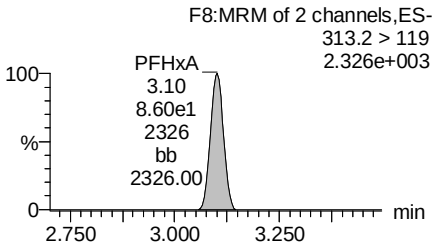
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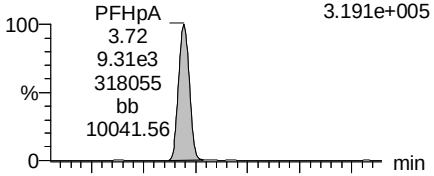


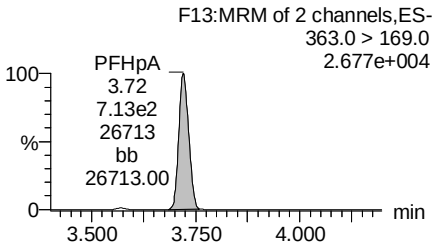
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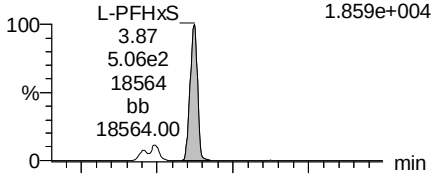


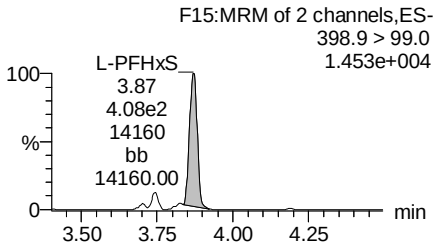
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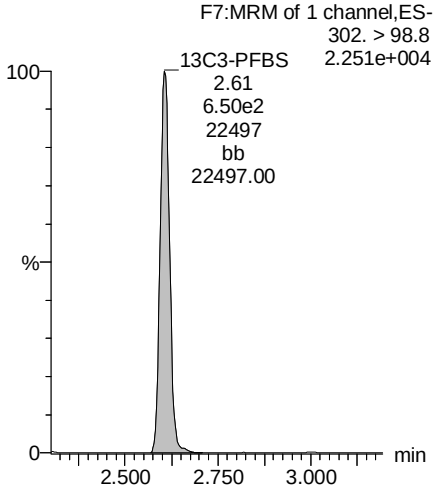


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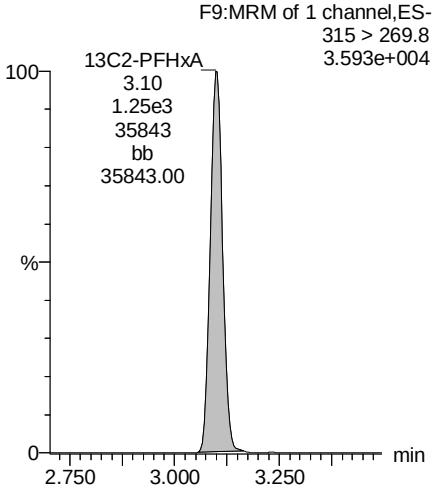




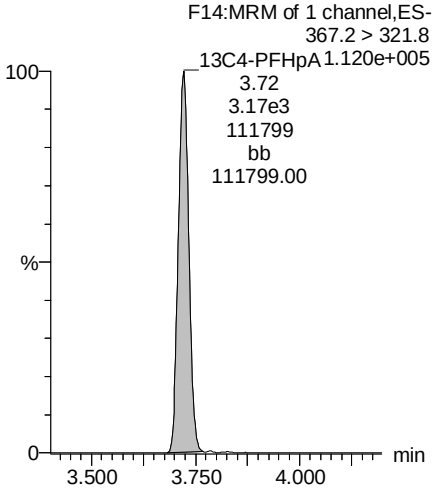
13C3-PFBS



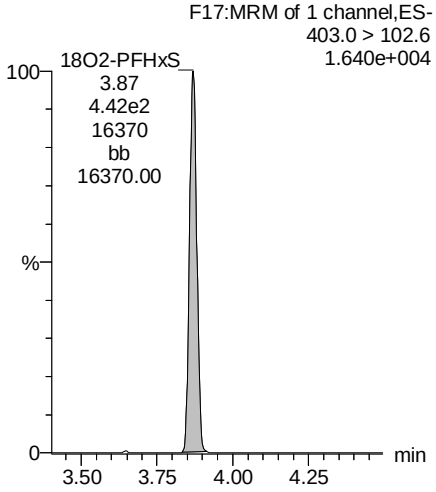
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13C4-PFHpA



18O2-PFHxS



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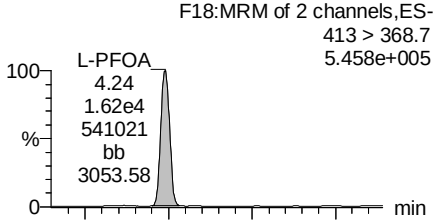
Vista Analytical Laboratory

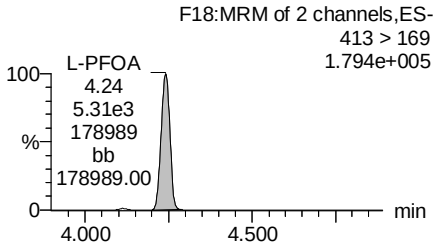
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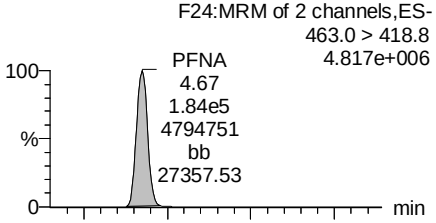
Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

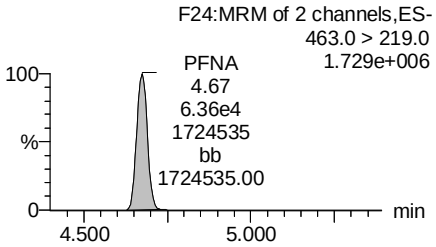
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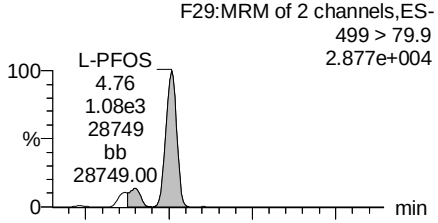


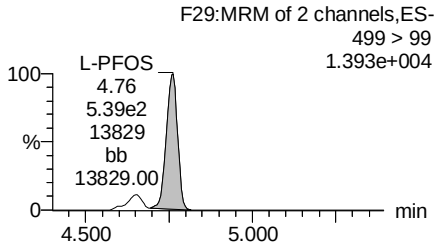
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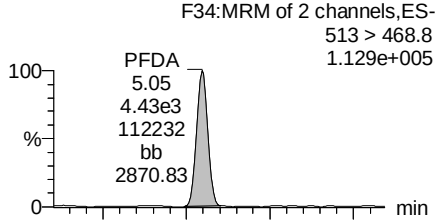


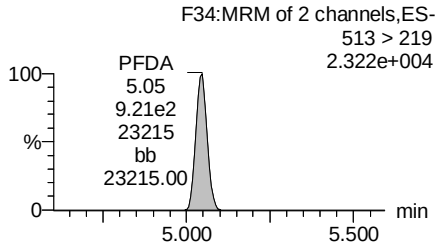
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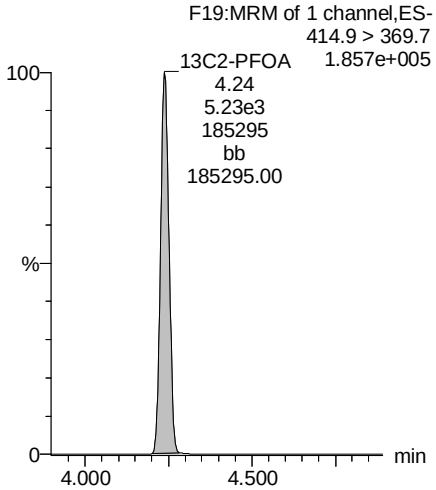


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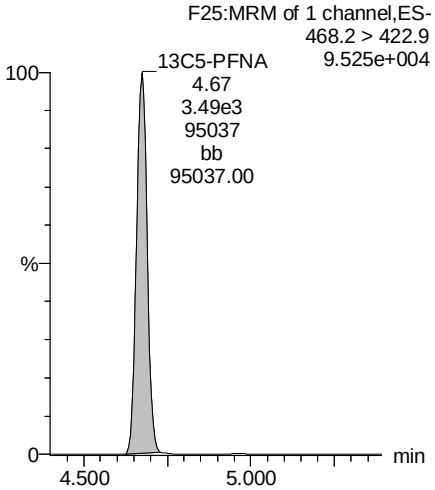




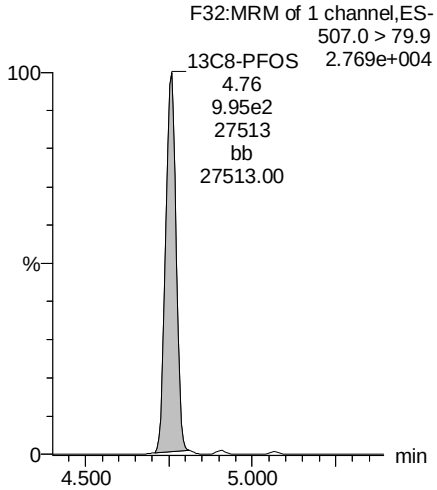
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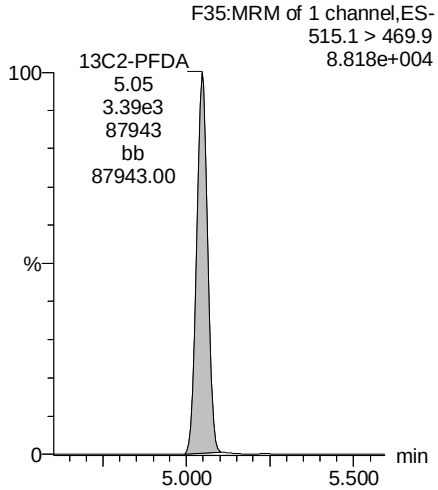
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13C8-PFOS



13C2-PFDA



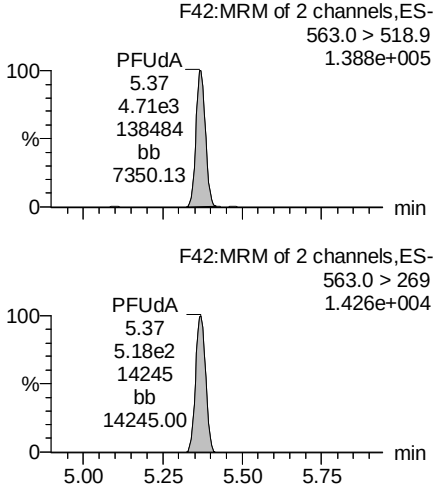
MSF 1/7/18

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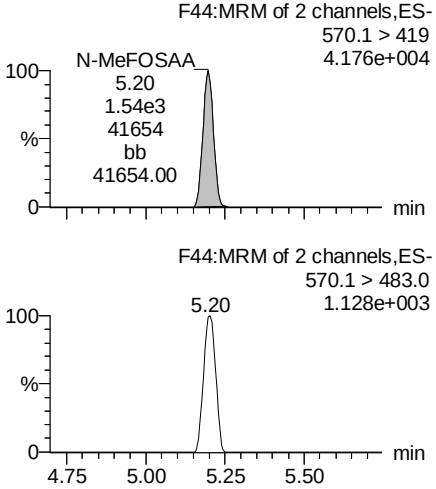
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Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

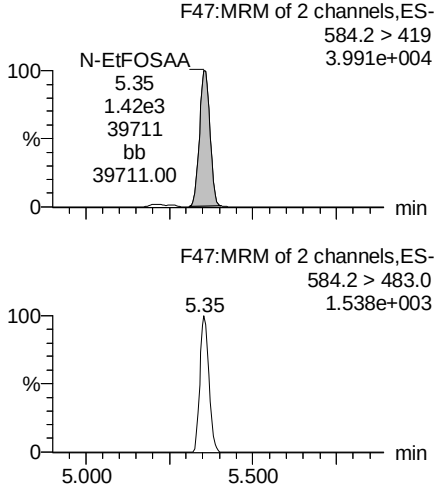
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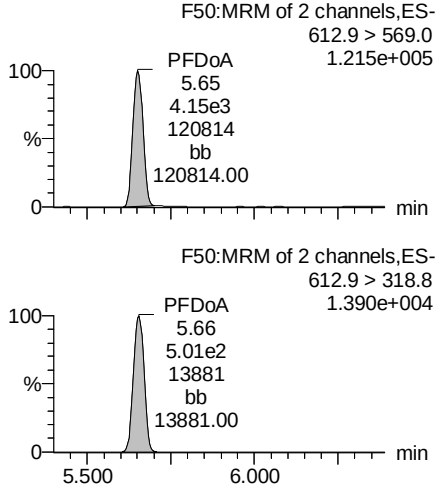
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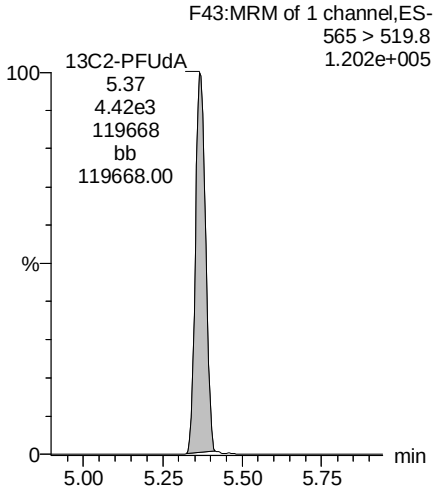
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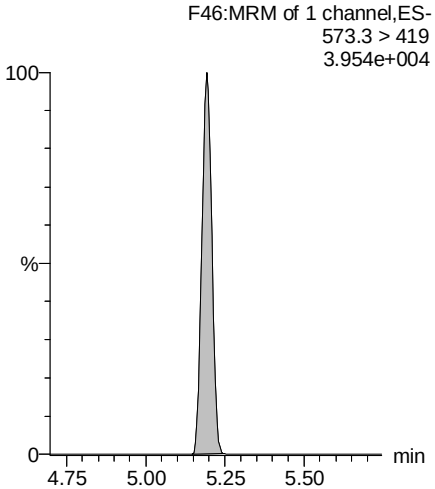
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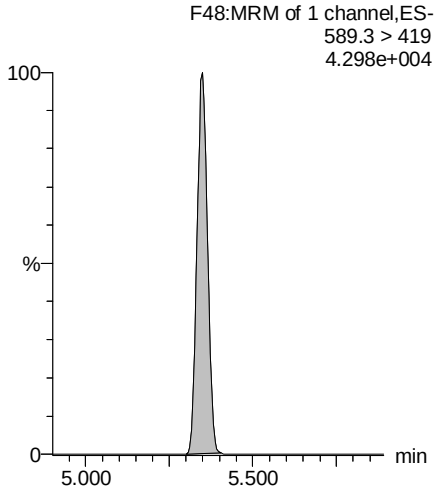
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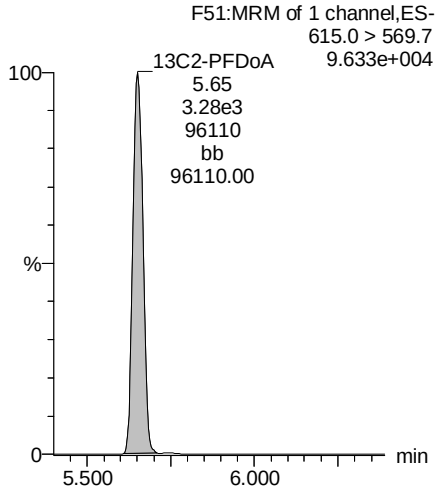
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



MSF 1/7/18

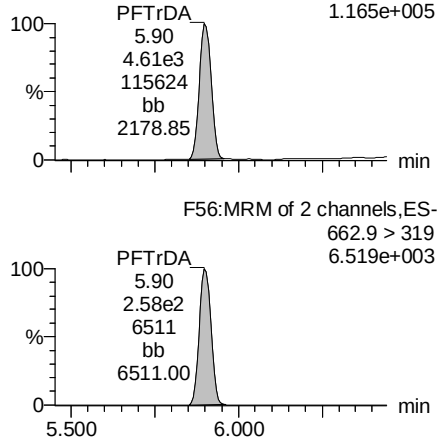
Vista Analytical Laboratory

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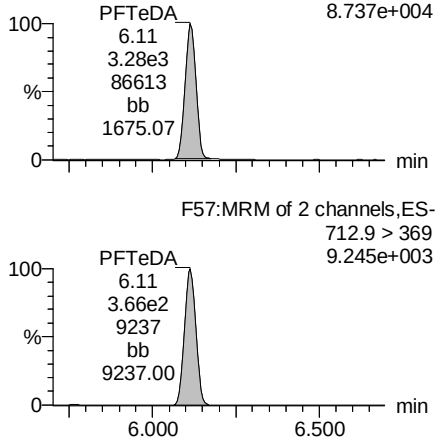
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Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

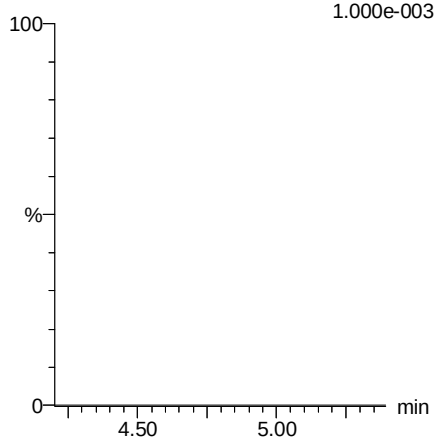
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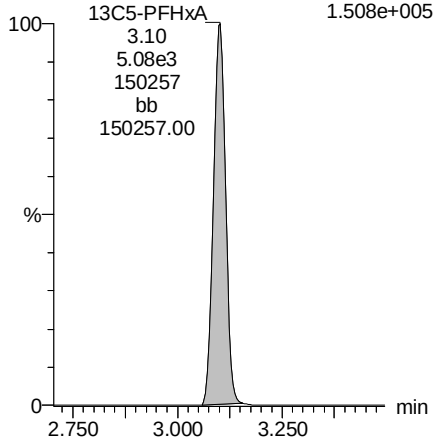
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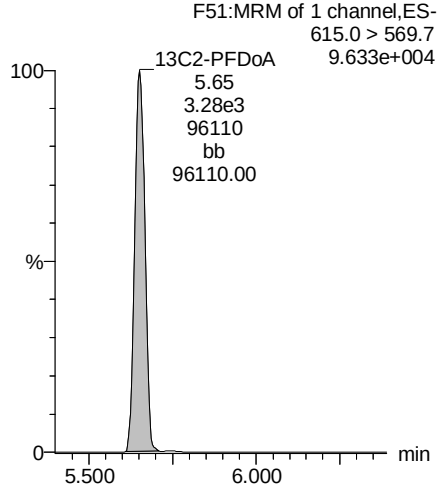
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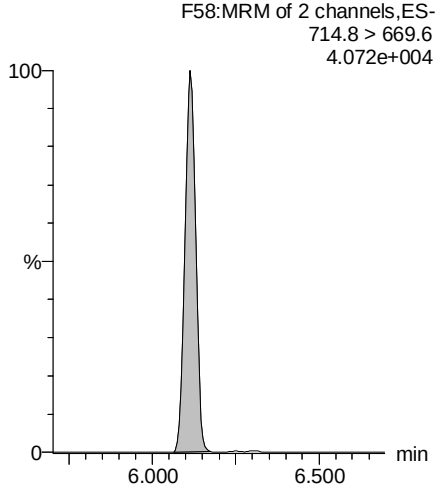
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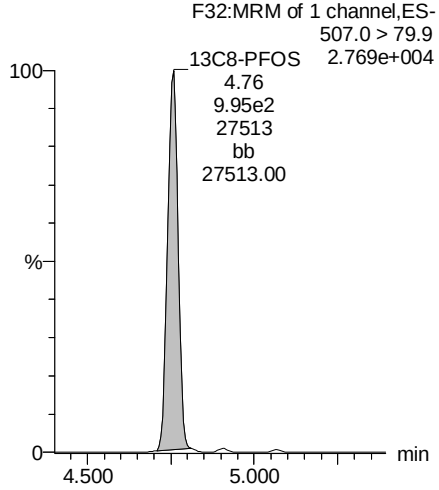
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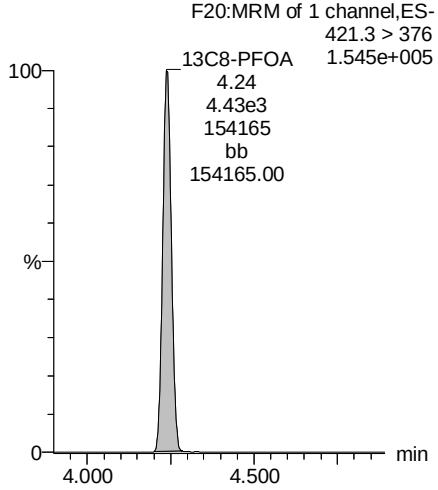
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



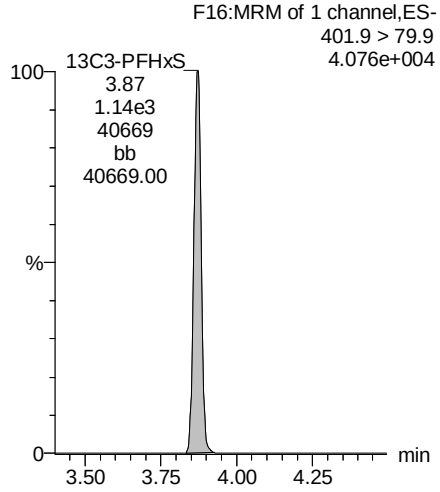
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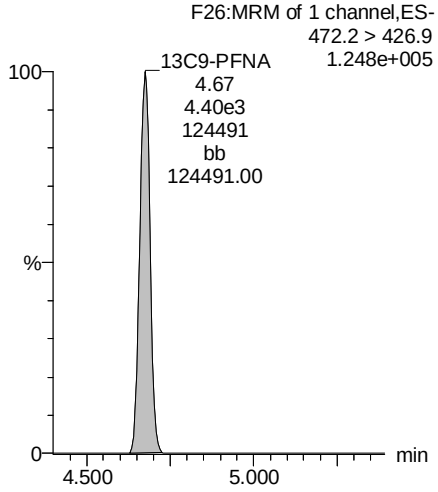
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Printed: Monday, January 15, 2018 14:04:06 Pacific Standard Time

Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

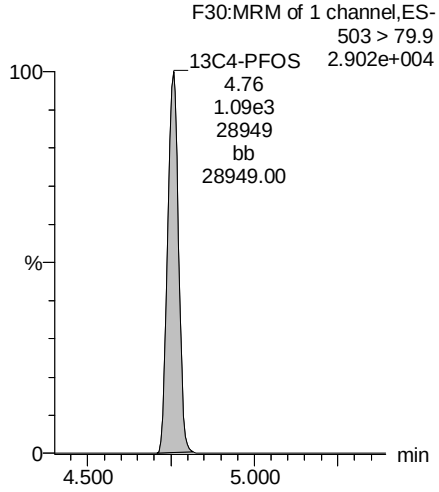
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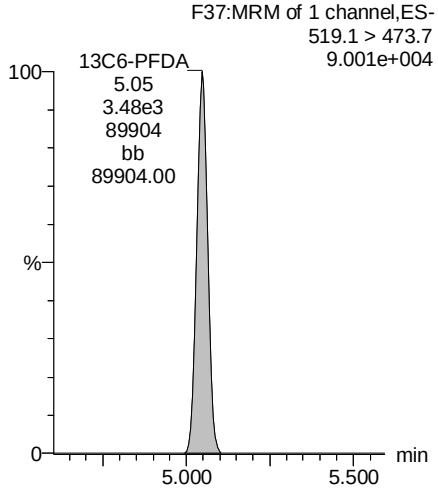
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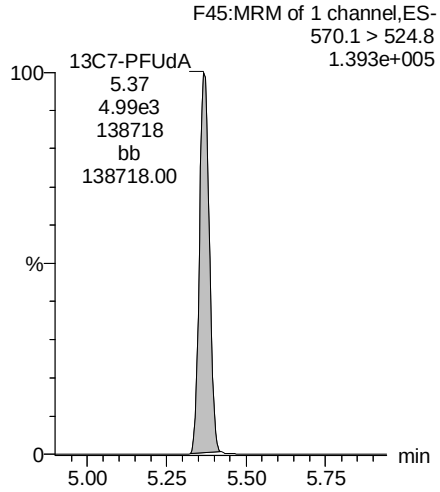
13C4-PFOS



13C6-PFDA



13C7-PFUdA



MSF 1/7/18

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:03:47 Pacific Standard Time
Printed: Monday, January 15, 2018 14:04:18 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9	4.61e3	3.28e3	0.237		6.00	5.90	17.5	30.8934	
2	25	PFTeDA	712.9 > 668.8	3.28e3	1.53e3	0.237		6.22	6.11	26.7	40.1062	
3	33	13C3-PFBS	302. > 98.8	6.50e2	5.08e3	0.237	0.116	2.77	2.61	1.60	58.0063	110.2
4	34	13C2-PFHxA	315 > 269.8	1.25e3	5.08e3	0.237	0.655	3.15	3.10	3.08	19.8035	94.1
5	35	13C4-PFHpA	367.2 > 321.8	3.17e3	5.08e3	0.237	0.722	3.78	3.72	7.82	45.5797	86.6
6	36	18O2-PFHxS	403.0 > 102.6	4.42e2	1.14e3	0.237	0.348	3.94	3.87	4.83	58.4157	111.0
7	37	13C2-6:2 FTS	429.1 > 408.9	1.11e3	4.43e3	0.237	0.222	4.25	4.19	3.14	59.6240	113.3
8	38	13C2-PFOA	414.9 > 369.7	5.23e3	4.43e3	0.237	1.023	4.31	4.24	14.8	60.8567	115.6
9	39	13C5-PFNA	468.2 > 422.9	3.49e3	4.40e3	0.237	0.916	4.81	4.67	9.92	45.6308	86.7
10	40	13C8-PFOSA	506.1 > 77.7	7.93e2	4.99e3	0.237	0.210	4.87	4.73	1.99	39.7434	75.5
11	41	13C8-PFOS	507.0 > 79.9	9.95e2	1.09e3	0.237	1.035	4.89	4.76	11.4	46.4306	88.2
12	42	13C2-PFDA	515.1 > 469.9	3.39e3	3.48e3	0.237	1.142	5.18	5.05	12.2	44.9147	85.3
13	43	13C2-8:2 FTS	529.1 > 508.7	6.67e2	5.08e3	0.237	0.157	5.15	5.02	1.64	44.1854	83.9
14	44	d3-N-MeFOSAA	573.3 > 419	1.40e3	4.99e3	0.237	0.299	5.32	5.19	3.50	49.2769	93.6
15	45	d5-N-EtFOSAA	589.3 > 419	1.56e3	4.99e3	0.237	0.369	5.47	5.35	3.91	44.5607	84.7
16	46	13C2-PFUdA	565 > 519.8	4.42e3	4.99e3	0.237	1.012	5.49	5.37	11.1	46.0717	87.5
17	47	13C2-PFDoA	615.0 > 569.7	3.28e3	4.99e3	0.237	0.647	5.77	5.65	8.22	53.4808	101.6
18	49	13C2-PFTeDA	714.8 > 669.6	1.53e3	4.99e3	0.237	0.294	6.22	6.11	3.84	55.1017	104.7
19	55	13C5-PFHxA	318 > 272.9	5.08e3	5.08e3	0.237	1.000	3.15	3.10	12.5	52.6338	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.14e3	1.14e3	0.237	1.000	4.02	3.87	12.5	52.6338	100.0
21	57	13C8-PFOA	421.3 > 376	4.43e3	4.43e3	0.237	1.000	4.38	4.24	12.5	52.6338	100.0
22	58	13C9-PFNA	472.2 > 426.9	4.40e3	4.40e3	0.237	1.000	4.81	4.67	12.5	52.6338	100.0
23	59	13C4-PFOS	503 > 79.9	1.09e3	1.09e3	0.237	1.000	4.89	4.76	12.5	52.6338	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.48e3	3.48e3	0.237	1.000	5.18	5.05	12.5	52.6338	100.0
25	61	13C7-PFUdA	570.1 > 524.8	4.99e3	4.99e3	0.237	1.000	5.49	5.37	12.5	52.6338	100.0
26	62	Total PFHxS	398.9 > 79.6	5.06e2	4.42e2	0.237		4.14		14.3	32.2563	
27	63	Total PFOA	413 > 368.7	1.62e4	5.23e3	0.237		4.51		38.7	149.9504	
28	64	Total PFOS	499 > 79.9	1.22e3	9.95e2	0.237		5.02		15.4	67.8088	
29	65	Total N-MeFOSAA	570.1 > 419	1.54e3	1.40e3	0.237		5.45		13.8	38.6021	
30	66	Total N-EtFOSAA	584.2 > 419	1.42e3	1.56e3	0.237		5.61		11.4	43.1492	

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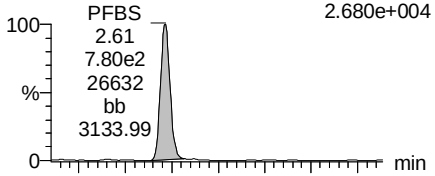
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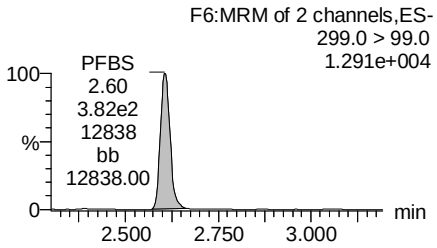
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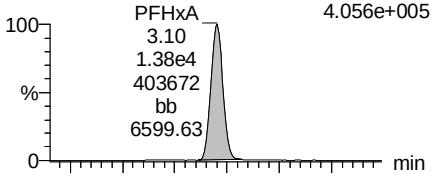
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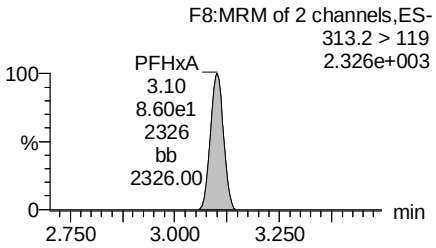
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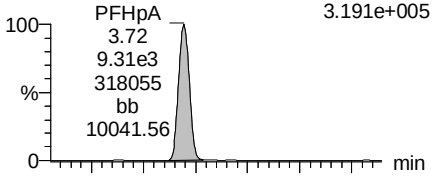


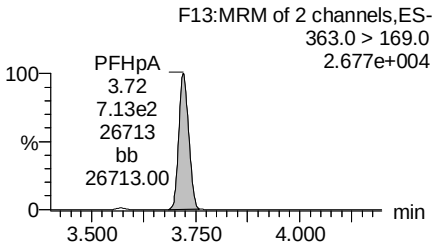
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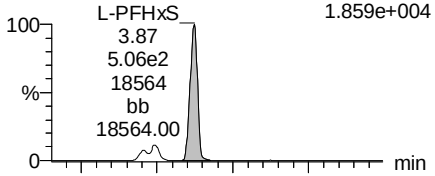


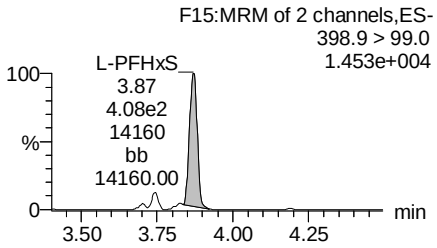
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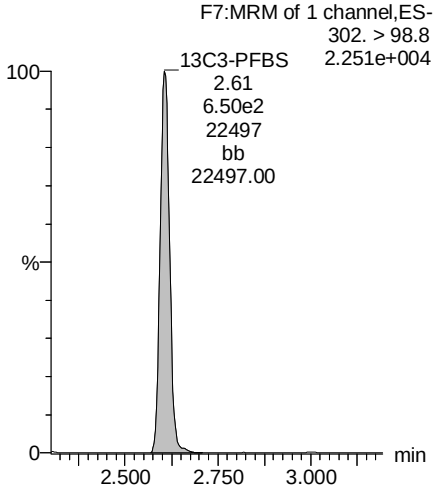


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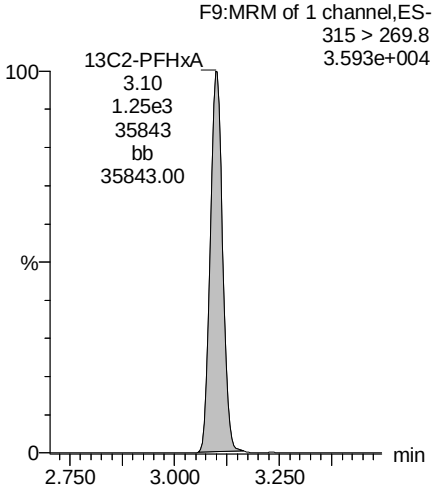




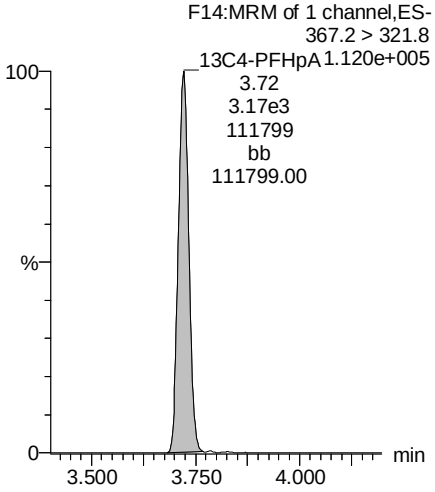
13C3-PFBS



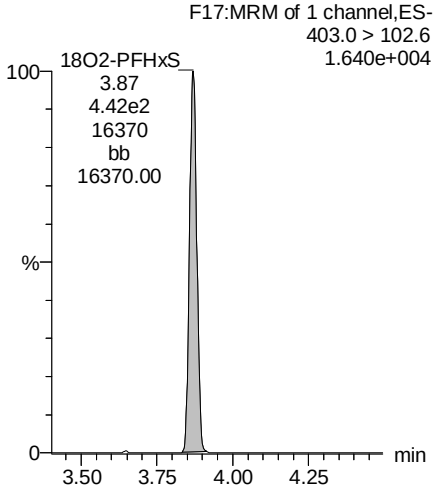
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13C4-PFHpA



18O2-PFHxS



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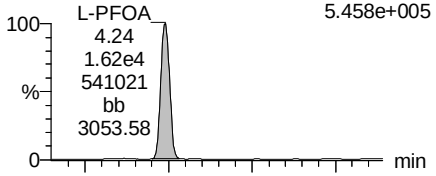
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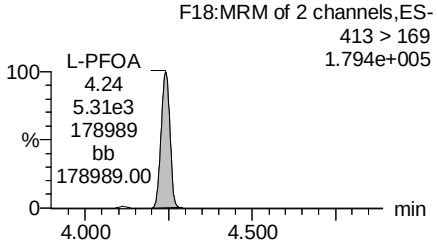
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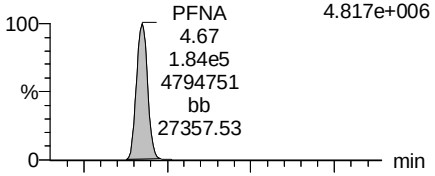
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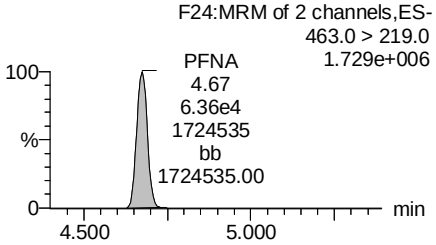
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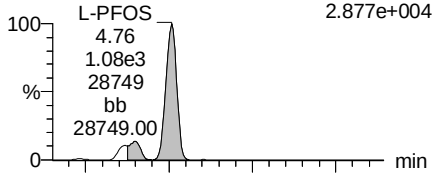


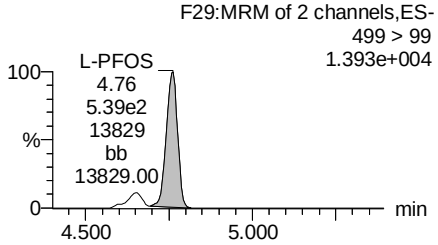
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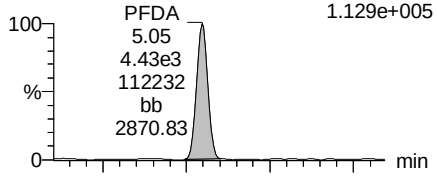


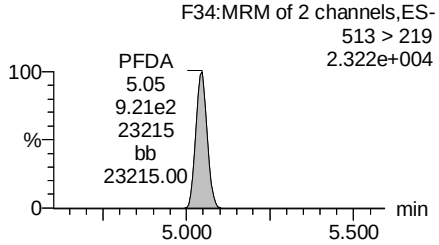
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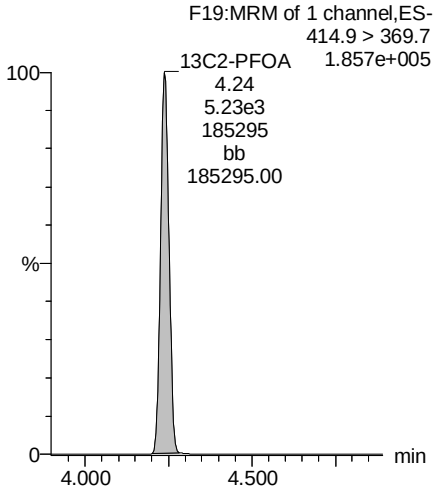


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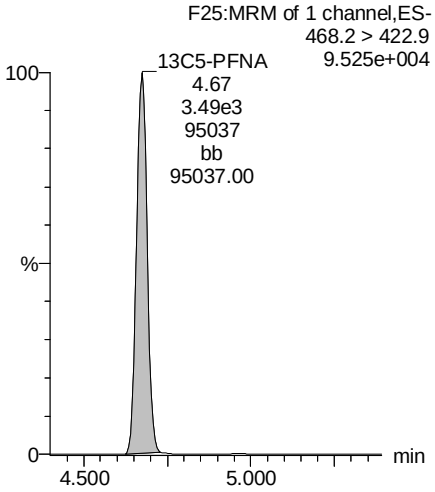




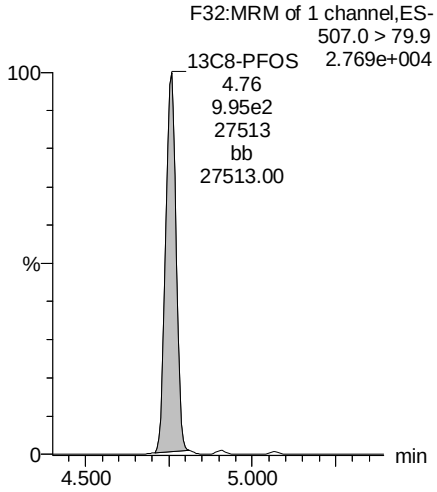
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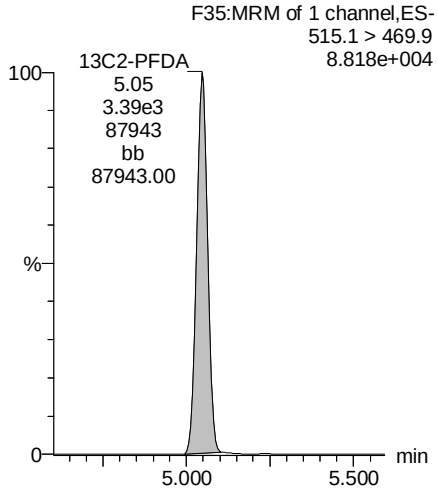
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13C8-PFOS



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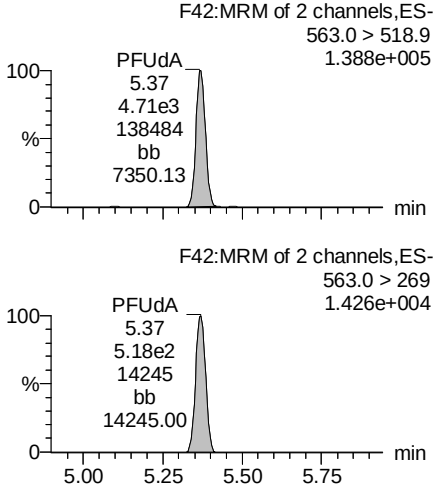
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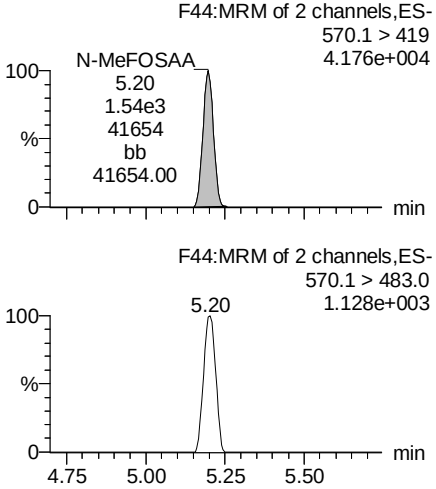
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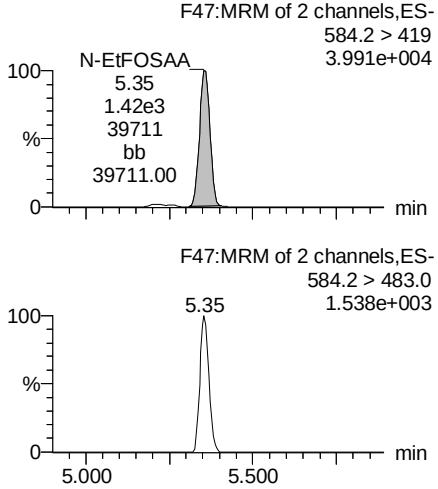
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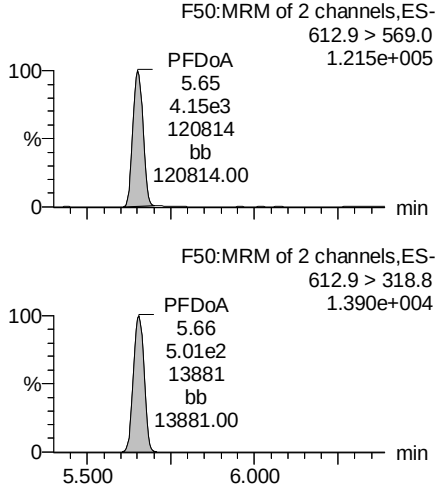
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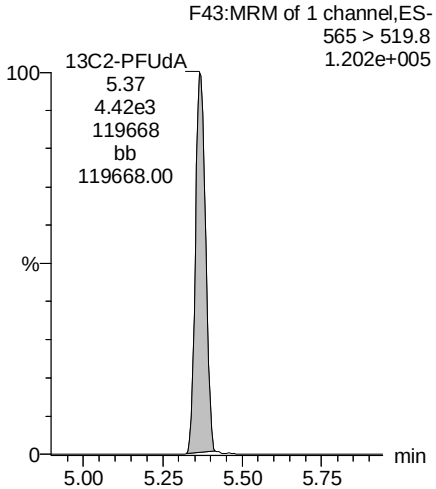
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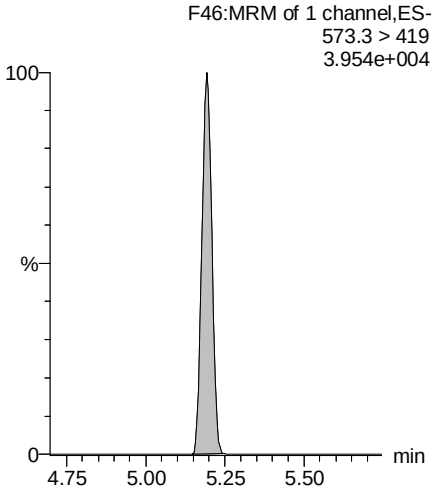
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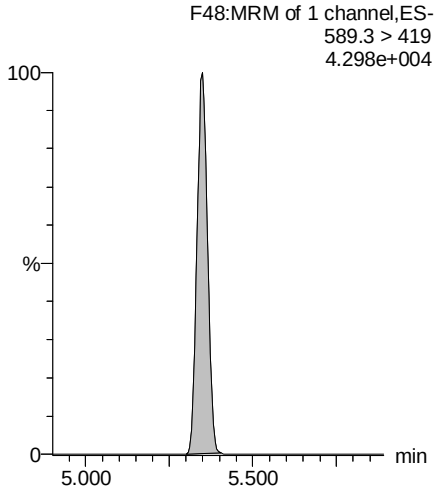
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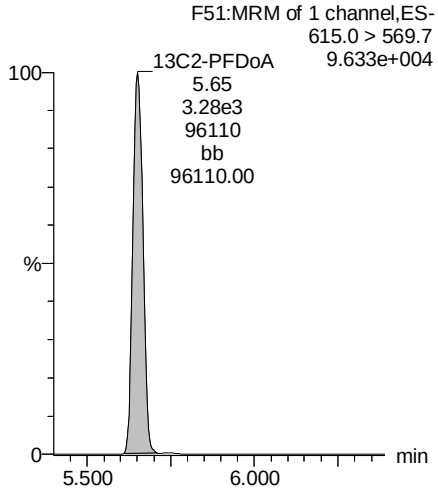
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d5-N-EtFOSAA



13C2-PFDoA



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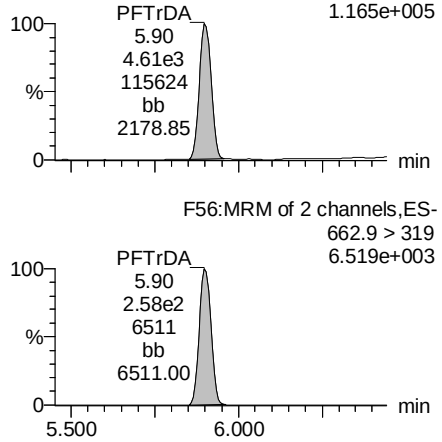
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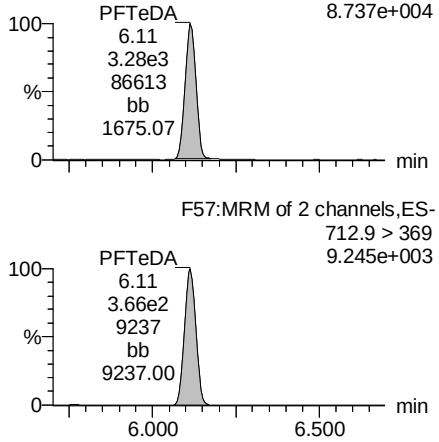
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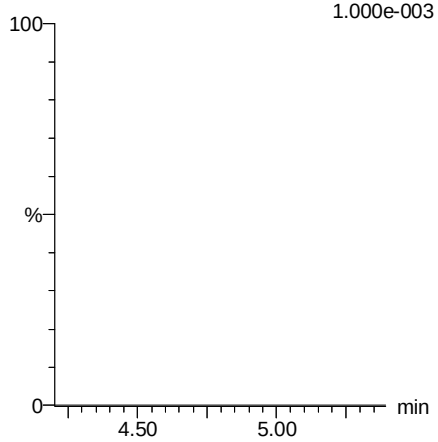
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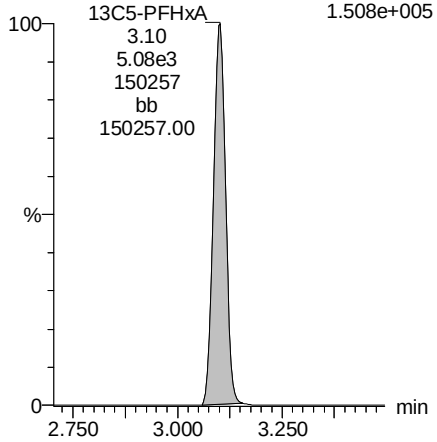
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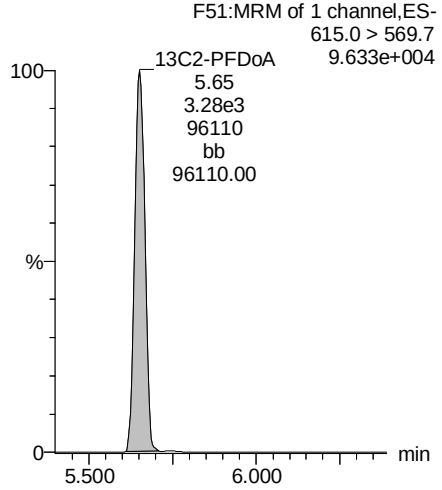
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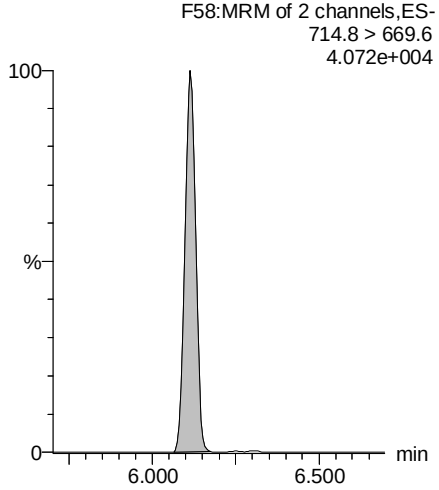
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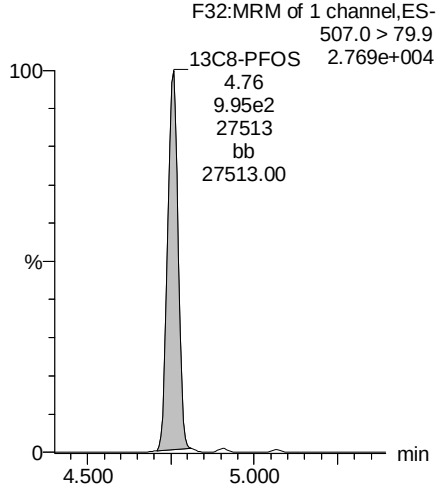
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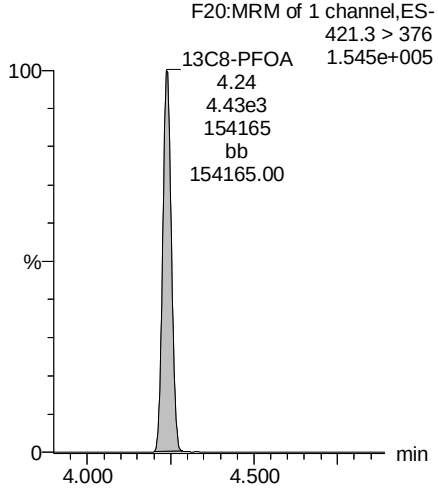
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13C8-PFOS



13C8-PFOA



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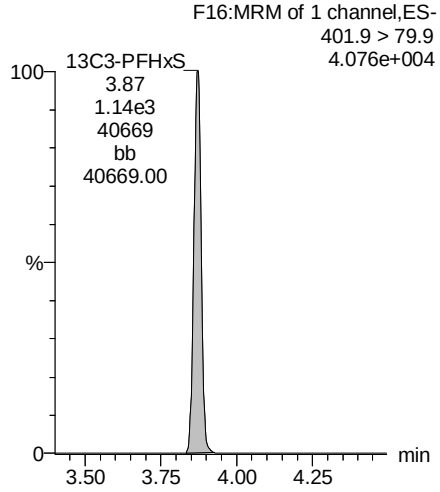
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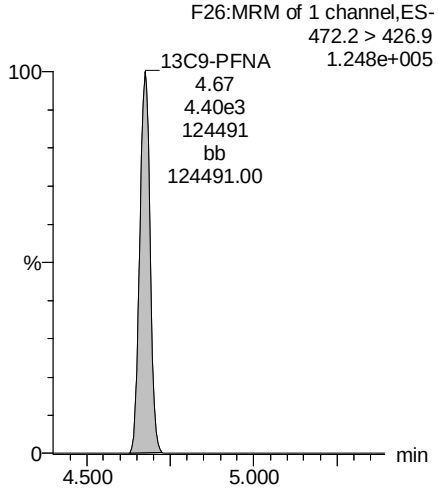
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Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

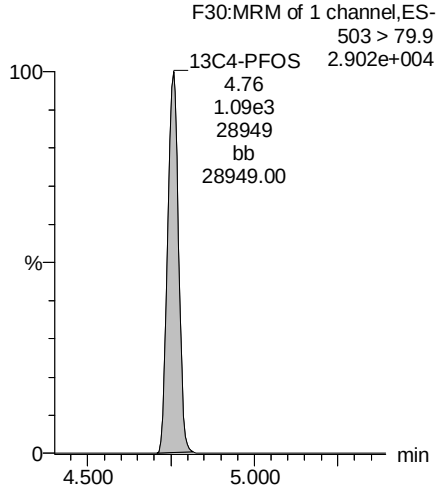
13C3-PFHxS



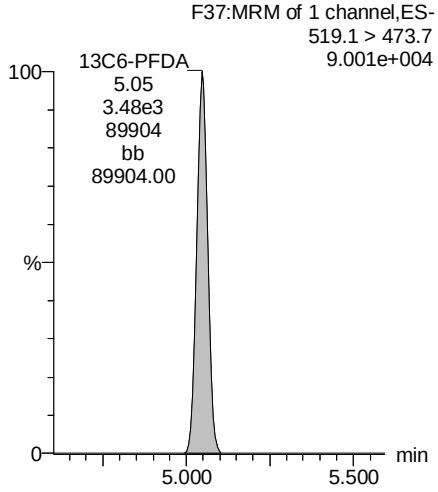
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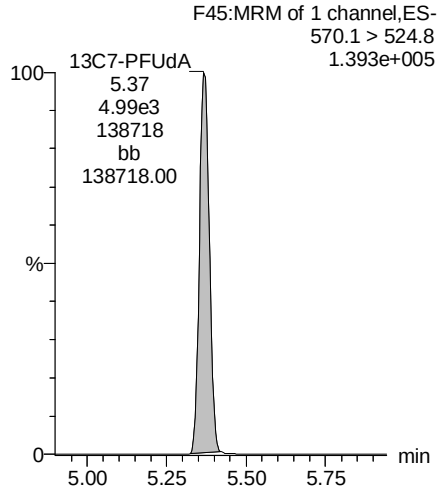
13C4-PFOS



13C6-PFDA



13C7-PFUdA



MSF 1/7/18

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:16:02 Pacific Standard Time
Printed: Monday, January 15, 2018 14:16:17 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_37, Date: 10-Jan-2018, Time: 22:06:47, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.97e2	0.253		2.66				
2	4	PFHxA	313.2 > 268.9	1.17e2	1.67e3	0.253		3.15	3.10	0.351	0.5933	
3	5	PFHpA	363.0 > 318.9	6.06e1	4.09e3	0.253		3.78	3.72	0.185	0.4018	
4	6	L-PFHxS	398.9 > 79.6		5.28e2	0.253		3.94				
5	9	L-PFOA	413 > 368.7	6.08e1	5.42e3	0.253		4.31	4.25	0.140	0.6129	
6	12	PFNA	463.0 > 418.8		4.86e3	0.253		4.81				
7	14	L-PFOS	499 > 79.9		1.42e3	0.253		4.89				
8	16	PFDA	513 > 468.8		4.33e3	0.253		5.18				
9	18	N-MeFOSAA	570.1 > 419		1.42e3	0.253		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.55e3	0.253		5.48				
11	20	PFUdA	563.0 > 518.9		4.70e3	0.253		5.50				
12	22	PFDoA	612.9 > 569.0		3.23e3	0.253		5.77				

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:16:02 Pacific Standard Time
Printed: Monday, January 15, 2018 14:16:32 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_37, Date: 10-Jan-2018, Time: 22:06:47, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.23e3	0.253		6.00				
2	25	PFTeDA	712.9 > 668.8		1.72e3	0.253		6.22				
3	33	13C3-PFBS	302. > 98.8	6.97e2	5.70e3	0.253	0.116	2.77	2.61	1.53	51.9199	105.2
4	34	13C2-PFHxA	315 > 269.8	1.67e3	5.70e3	0.253	0.655	3.15	3.10	3.66	22.0396	111.6
5	35	13C4-PFHpA	367.2 > 321.8	4.09e3	5.70e3	0.253	0.722	3.78	3.72	8.98	49.1251	99.5
6	36	18O2-PFHxS	403.0 > 102.6	5.28e2	1.41e3	0.253	0.348	3.94	3.87	4.69	53.2272	107.8
7	37	13C2-6:2 FTS	429.1 > 408.9	1.07e3	5.37e3	0.253	0.222	4.25	4.19	2.49	44.4600	90.1
8	38	13C2-PFOA	414.9 > 369.7	5.42e3	5.37e3	0.253	1.023	4.31	4.24	12.6	48.6734	98.6
9	39	13C5-PFNA	468.2 > 422.9	4.86e3	6.07e3	0.253	0.916	4.81	4.67	10.0	43.2429	87.6
10	40	13C8-PFOSA	506.1 > 77.7	1.00e3	5.66e3	0.253	0.210	4.87	4.73	2.21	41.5340	84.1
11	41	13C8-PFOS	507.0 > 79.9	1.42e3	1.43e3	0.253	1.035	4.89	4.76	12.4	47.4982	96.2
12	42	13C2-PFDA	515.1 > 469.9	4.33e3	3.92e3	0.253	1.142	5.18	5.05	13.8	47.8142	96.8
13	43	13C2-8:2 FTS	529.1 > 508.7	6.49e2	5.70e3	0.253	0.157	5.15	5.02	1.42	35.8935	72.7
14	44	d3-N-MeFOSAA	573.3 > 419	1.42e3	5.66e3	0.253	0.299	5.32	5.19	3.14	41.4242	83.9
15	45	d5-N-EtFOSAA	589.3 > 419	1.55e3	5.66e3	0.253	0.369	5.47	5.35	3.43	36.6779	74.3
16	46	13C2-PFUdA	565 > 519.8	4.70e3	5.66e3	0.253	1.012	5.49	5.37	10.4	40.4950	82.0
17	47	13C2-PFDoA	615.0 > 569.7	3.23e3	5.66e3	0.253	0.647	5.77	5.65	7.13	43.5234	88.2
18	49	13C2-PFTeDA	714.8 > 669.6	1.72e3	5.66e3	0.253	0.294	6.22	6.11	3.80	51.0569	103.4
19	55	13C5-PFHxA	318 > 272.9	5.70e3	5.70e3	0.253	1.000	3.15	3.10	12.5	49.3720	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.41e3	1.41e3	0.253	1.000	4.02	3.87	12.5	49.3720	100.0
21	57	13C8-PFOA	421.3 > 376	5.37e3	5.37e3	0.253	1.000	4.38	4.24	12.5	49.3720	100.0
22	58	13C9-PFNA	472.2 > 426.9	6.07e3	6.07e3	0.253	1.000	4.81	4.67	12.5	49.3720	100.0
23	59	13C4-PFOS	503 > 79.9	1.43e3	1.43e3	0.253	1.000	4.89	4.76	12.5	49.3720	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.92e3	3.92e3	0.253	1.000	5.18	5.05	12.5	49.3720	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.66e3	5.66e3	0.253	1.000	5.49	5.37	12.5	49.3720	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	5.28e2	0.253		4.14		0.000		
27	63	Total PFOA	413 > 368.7	6.08e1	5.42e3	0.253		4.51		0.140	0.6129	
28	64	Total PFOS	499 > 79.9	0.00e0	1.42e3	0.253		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.42e3	0.253		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.55e3	0.253		5.61		0.000		

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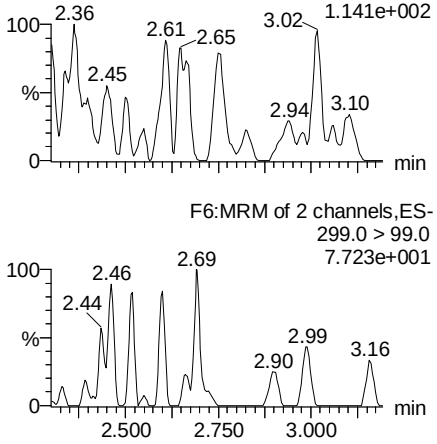
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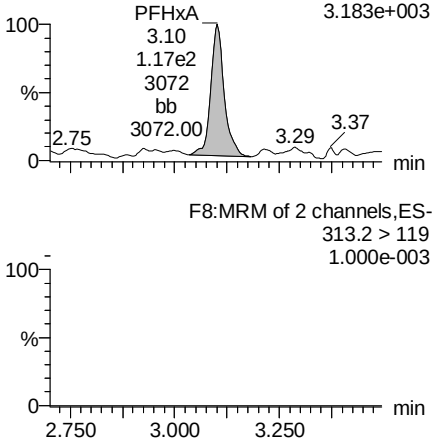
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Name: 180110M2_37, Date: 10-Jan-2018, Time: 22:06:47, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

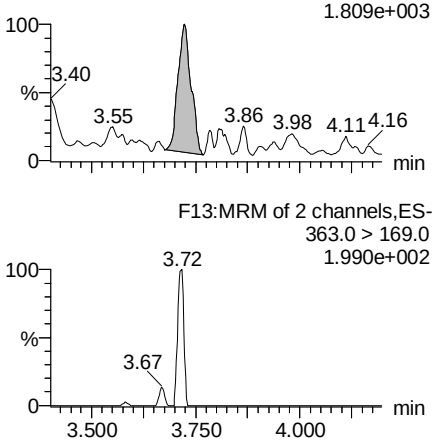
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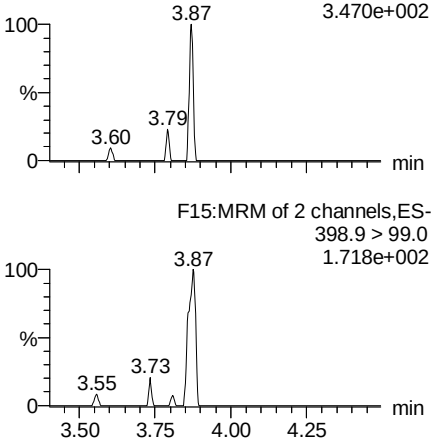
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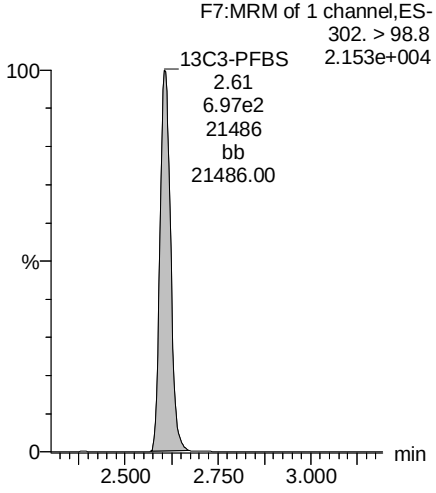
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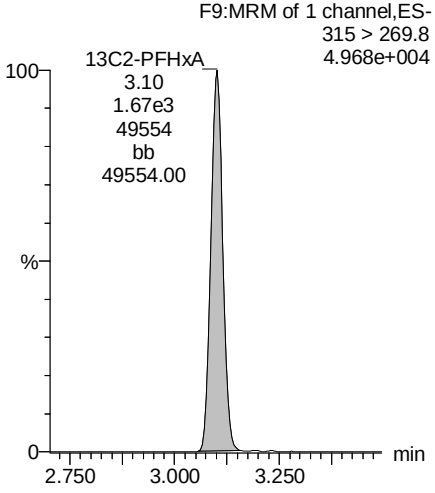
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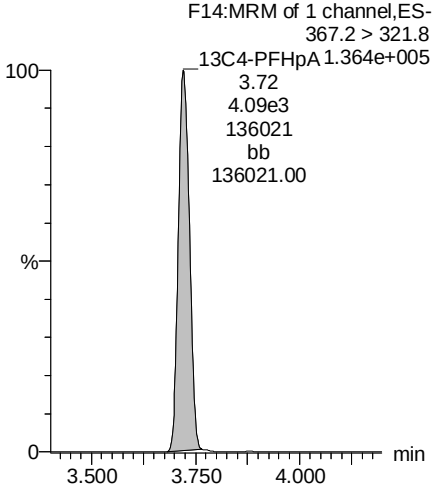
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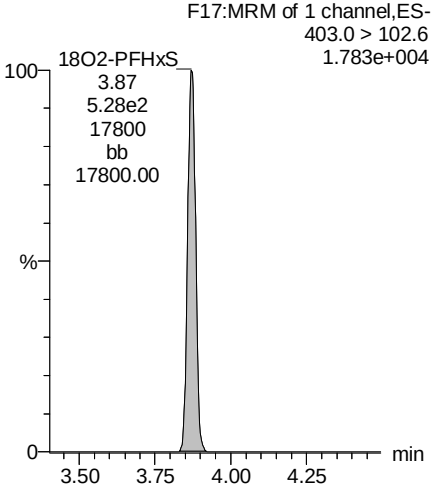
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



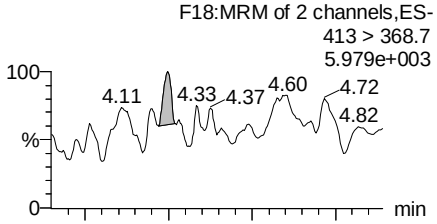
Vista Analytical Laboratory

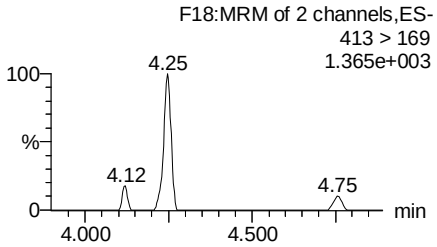
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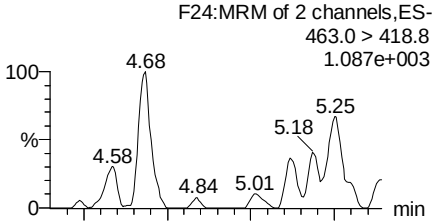
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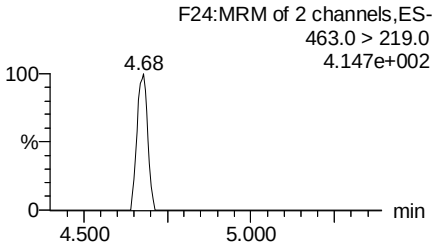
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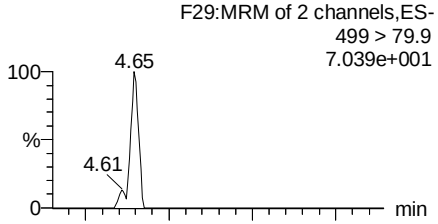


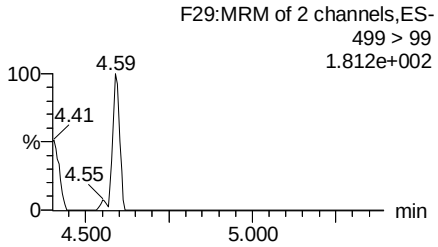
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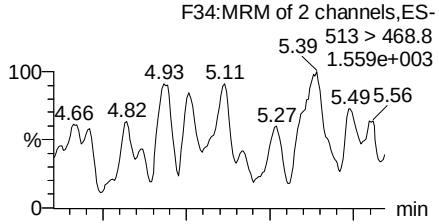


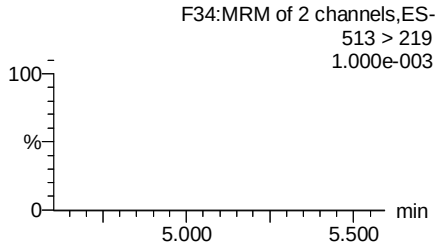
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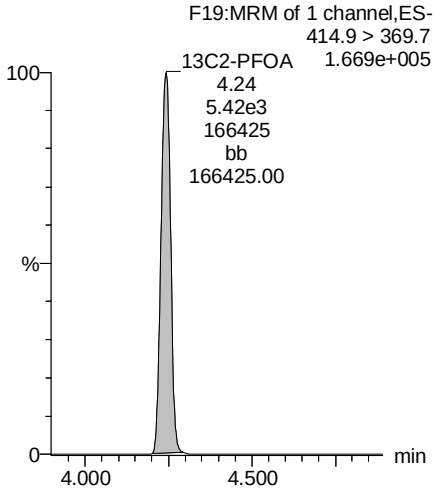


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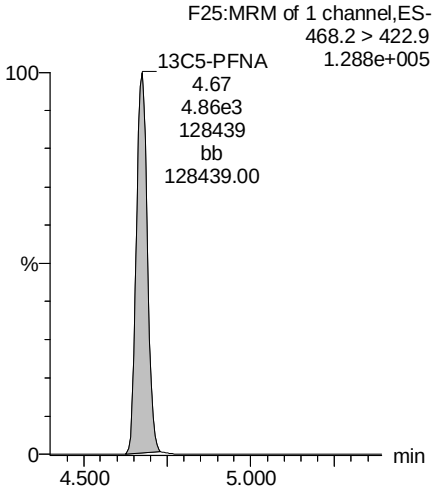




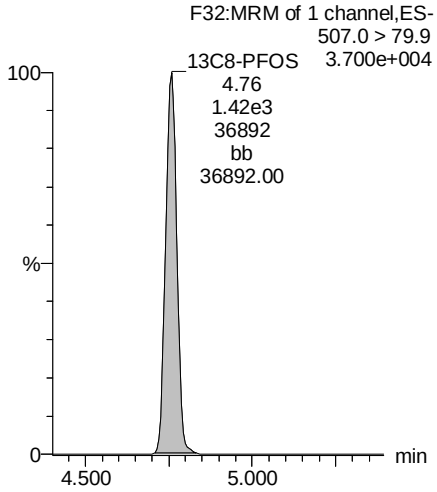
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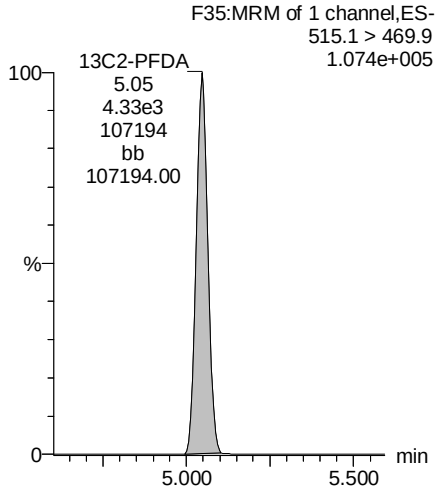
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13C8-PFOS



13C2-PFDA

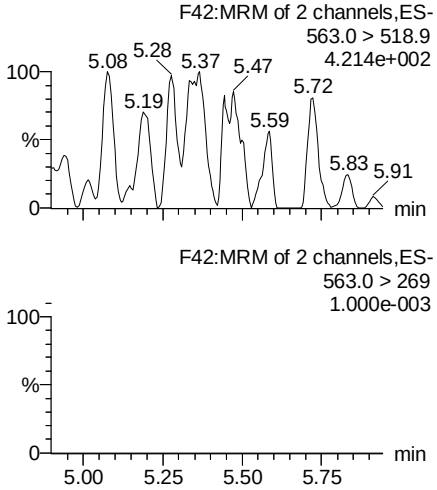


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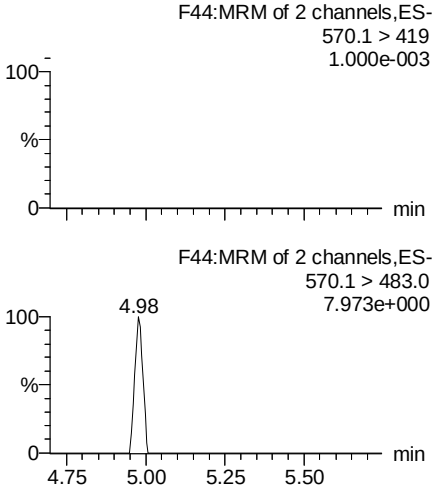
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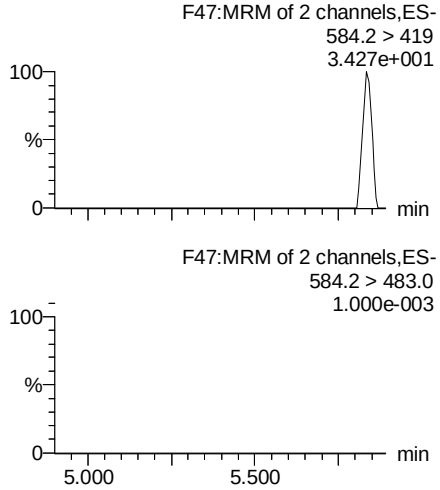
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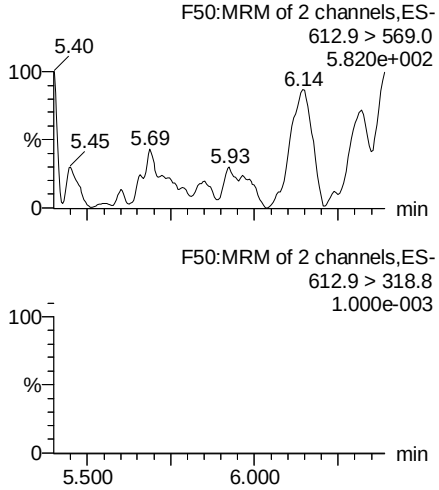
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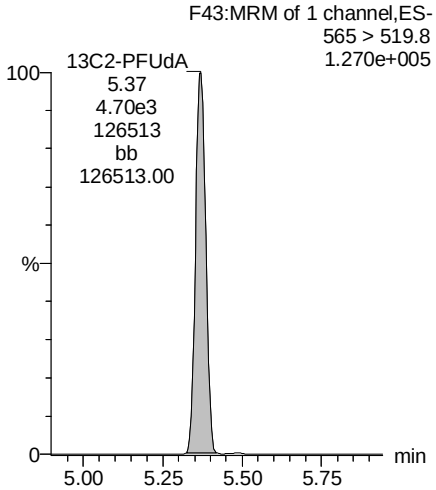
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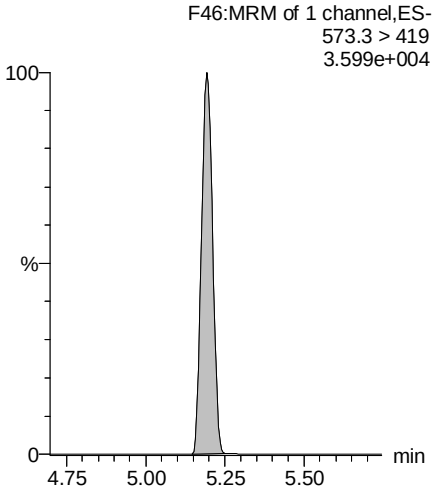
PFDoA



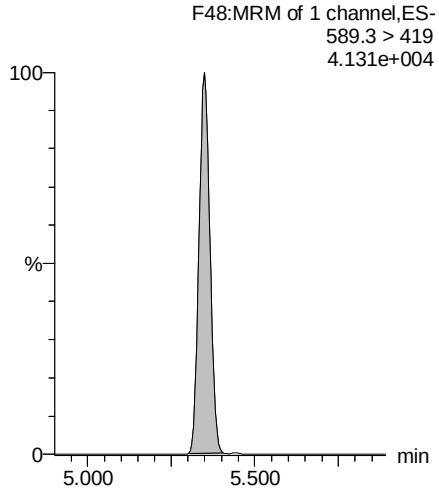
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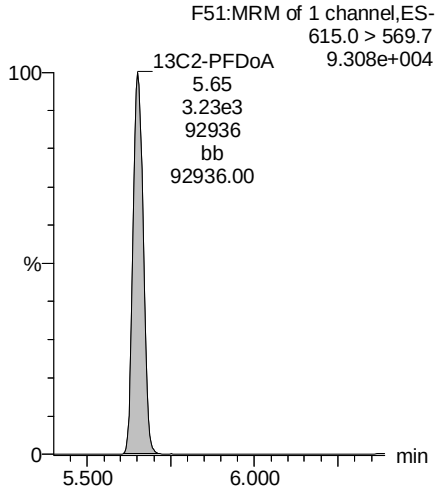
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d5-N-EtFOSAA



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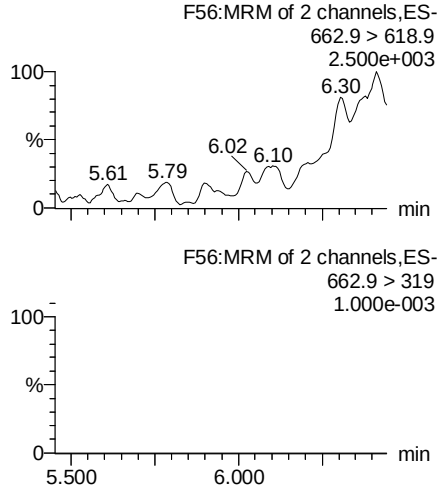


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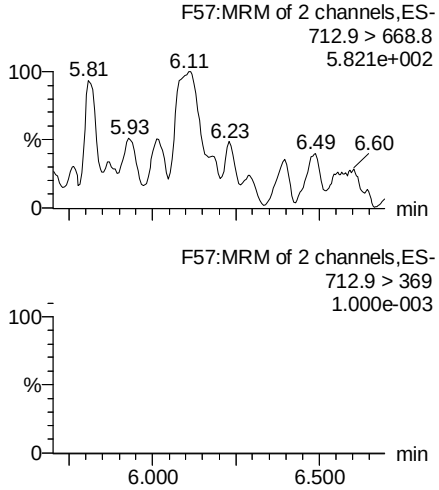
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Printed: Monday, January 15, 2018 14:16:32 Pacific Standard Time

Name: 180110M2_37, Date: 10-Jan-2018, Time: 22:06:47, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

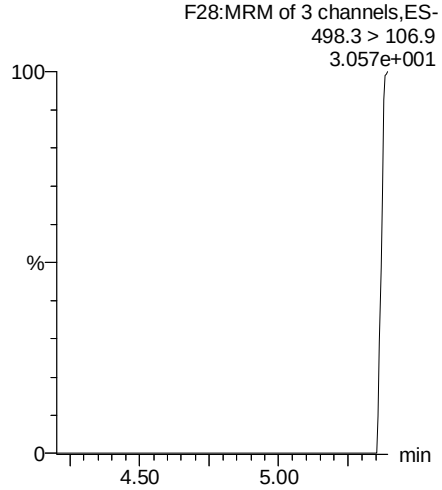
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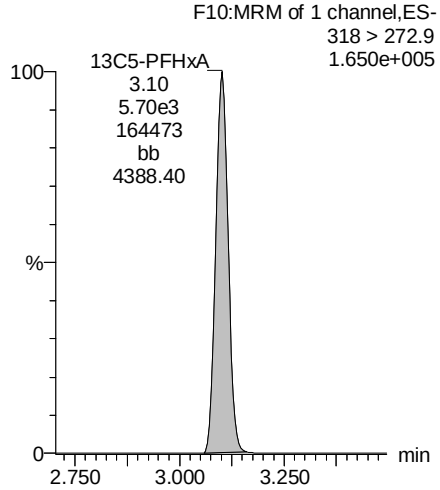
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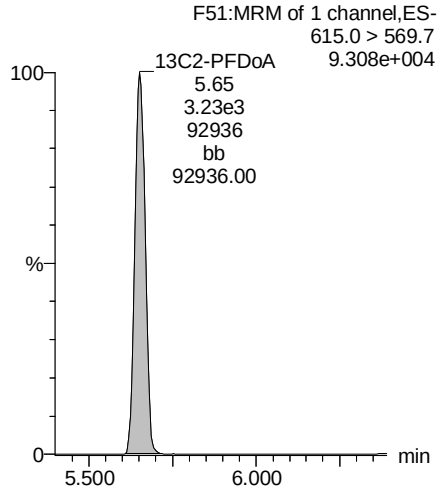
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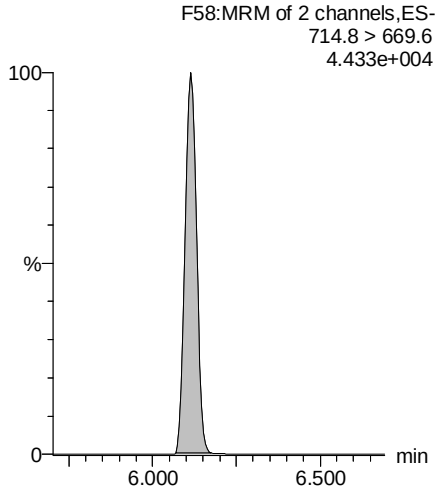
13C5-PFHxA



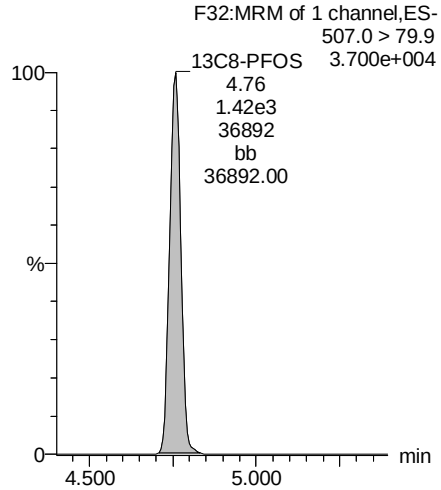
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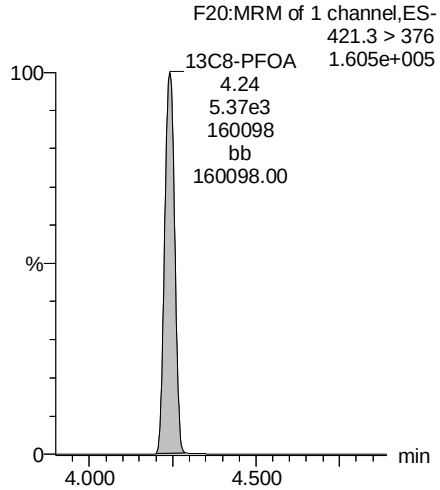
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13C8-PFOS



13C8-PFOA

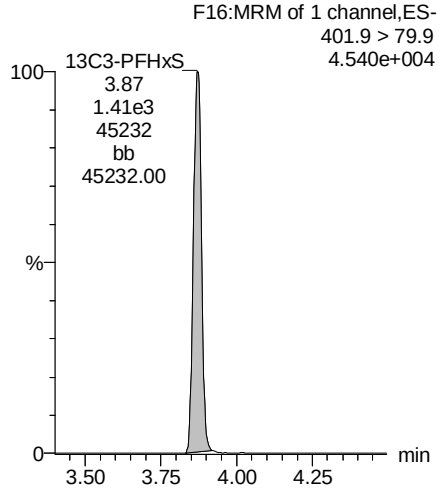


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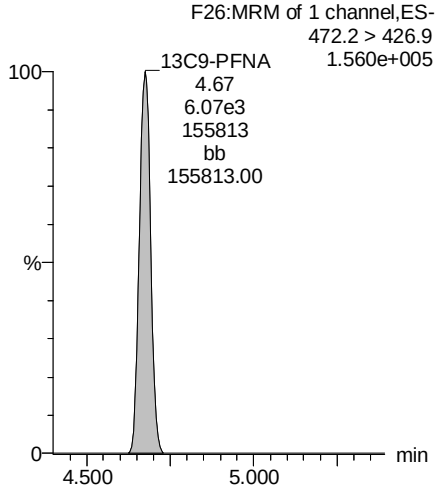
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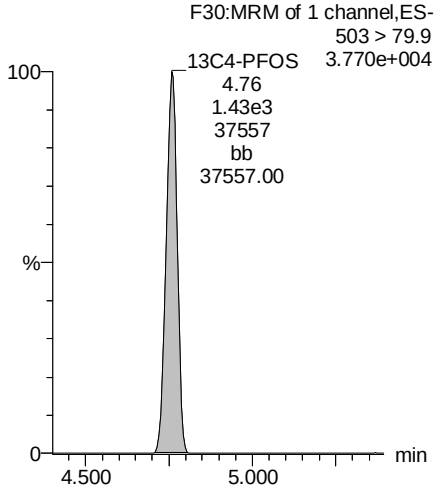
13C3-PFHxS



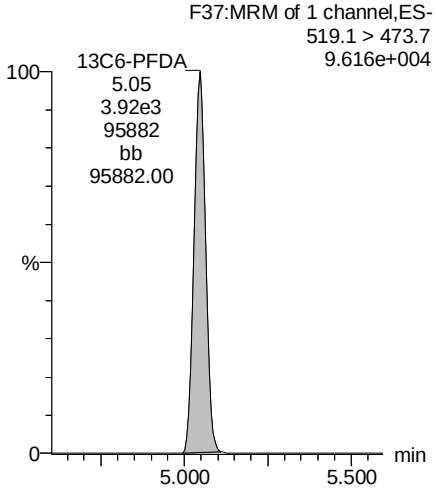
13C9-PFNA



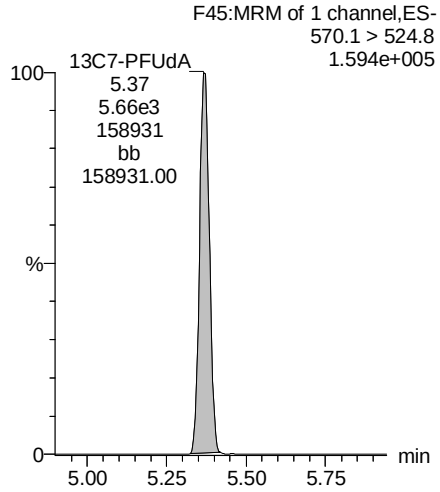
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Last Altered: Monday, January 15, 2018 14:17:32 Pacific Standard Time
Printed: Monday, January 15, 2018 14:17:41 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_38, Date: 10-Jan-2018, Time: 22:18:02, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.45e2	0.246		2.66				
2	4	PFHxA	313.2 > 268.9	3.88e2	1.50e3	0.246		3.15	3.10	1.30	2.7704	
3	5	PFHpA	363.0 > 318.9	2.36e2	3.73e3	0.246		3.78	3.72	0.793	2.2973	
4	6	L-PFHxS	398.9 > 79.6		4.73e2	0.246		3.94				
5	9	L-PFOA	413 > 368.7	7.42e2	5.32e3	0.246		4.31	4.24	1.74	6.5313	
6	12	PFNA	463.0 > 418.8	3.58e3	4.80e3	0.246		4.81	4.68	9.33	30.0511	
7	14	L-PFOS	499 > 79.9	1.56e2	1.13e3	0.246		4.89	4.76	1.73	7.3972	
8	16	PFDA	513 > 468.8	1.68e2	3.25e3	0.246		5.18	5.04	0.645	1.2399	
9	18	N-MeFOSAA	570.1 > 419		1.36e3	0.246		5.32				
10	19	N-EtFOSAA	584.2 > 419	4.54e2	1.45e3	0.246		5.48	5.36	3.91	14.5123	
11	20	PFUdA	563.0 > 518.9	2.38e3	4.11e3	0.246		5.50	5.37	7.25	25.7000	
12	22	PFDoA	612.9 > 569.0		3.19e3	0.246		5.77				

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Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:17:32 Pacific Standard Time
Printed: Monday, January 15, 2018 14:17:58 Pacific Standard Time

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Name: 180110M2_38, Date: 10-Jan-2018, Time: 22:18:02, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.19e3	0.246		6.00				
2	25	PFTeDA	712.9 > 668.8		1.58e3	0.246		6.22				
3	33	13C3-PFBS	302. > 98.8	6.45e2	5.33e3	0.246	0.116	2.77	2.61	1.51	53.0206	104.2
4	34	13C2-PFHxA	315 > 269.8	1.50e3	5.33e3	0.246	0.655	3.15	3.10	3.51	21.8044	107.1
5	35	13C4-PFHpA	367.2 > 321.8	3.73e3	5.33e3	0.246	0.722	3.78	3.72	8.74	49.2675	96.8
6	36	18O2-PFHxS	403.0 > 102.6	4.73e2	1.35e3	0.246	0.348	3.94	3.87	4.39	51.3162	100.9
7	37	13C2-6:2 FTS	429.1 > 408.9	7.63e2	5.08e3	0.246	0.222	4.25	4.18	1.88	34.4504	67.7
8	38	13C2-PFOA	414.9 > 369.7	5.32e3	5.08e3	0.246	1.023	4.31	4.24	13.1	52.0689	102.3
9	39	13C5-PFNA	468.2 > 422.9	4.80e3	5.29e3	0.246	0.916	4.81	4.68	11.3	50.3625	99.0
10	40	13C8-PFOSA	506.1 > 77.7	7.31e2	5.16e3	0.246	0.210	4.87	4.73	1.77	34.2291	67.3
11	41	13C8-PFOS	507.0 > 79.9	1.13e3	1.34e3	0.246	1.035	4.89	4.76	10.5	41.4119	81.4
12	42	13C2-PFDA	515.1 > 469.9	3.25e3	4.21e3	0.246	1.142	5.18	5.04	9.64	34.3606	67.5
13	43	13C2-8:2 FTS	529.1 > 508.7	4.58e2	5.33e3	0.246	0.157	5.15	5.02	1.08	27.9462	54.9
14	44	d3-N-MeFOSAA	573.3 > 419	1.36e3	5.16e3	0.246	0.299	5.32	5.20	3.30	44.9833	88.4
15	45	d5-N-EtFOSAA	589.3 > 419	1.45e3	5.16e3	0.246	0.369	5.47	5.35	3.52	38.7694	76.2
16	46	13C2-PFUdA	565 > 519.8	4.11e3	5.16e3	0.246	1.012	5.49	5.37	9.95	40.0552	78.7
17	47	13C2-PFDoA	615.0 > 569.7	3.19e3	5.16e3	0.246	0.647	5.77	5.65	7.74	48.6607	95.6
18	49	13C2-PFTeDA	714.8 > 669.6	1.58e3	5.16e3	0.246	0.294	6.22	6.12	3.82	52.9846	104.1
19	55	13C5-PFHxA	318 > 272.9	5.33e3	5.33e3	0.246	1.000	3.15	3.10	12.5	50.8751	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.35e3	1.35e3	0.246	1.000	4.02	3.87	12.5	50.8751	100.0
21	57	13C8-PFOA	421.3 > 376	5.08e3	5.08e3	0.246	1.000	4.38	4.24	12.5	50.8751	100.0
22	58	13C9-PFNA	472.2 > 426.9	5.29e3	5.29e3	0.246	1.000	4.81	4.68	12.5	50.8751	100.0
23	59	13C4-PFOS	503 > 79.9	1.34e3	1.34e3	0.246	1.000	4.89	4.76	12.5	50.8751	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.21e3	4.21e3	0.246	1.000	5.18	5.05	12.5	50.8751	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.16e3	5.16e3	0.246	1.000	5.49	5.37	12.5	50.8751	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	4.73e2	0.246		4.14		0.000		
27	63	Total PFOA	413 > 368.7	7.42e2	5.32e3	0.246		4.51		1.74	6.5313	
28	64	Total PFOS	499 > 79.9	1.56e2	1.13e3	0.246		5.02		1.73	7.3972	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.36e3	0.246		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	4.54e2	1.45e3	0.246		5.61		3.91	14.5123	

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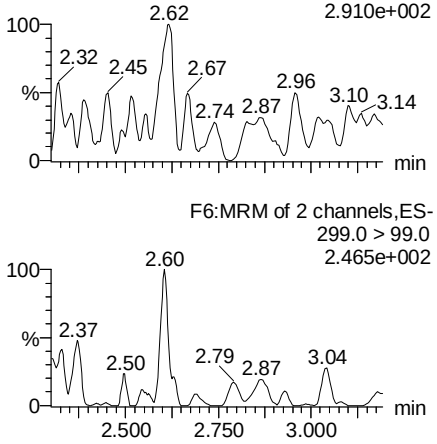
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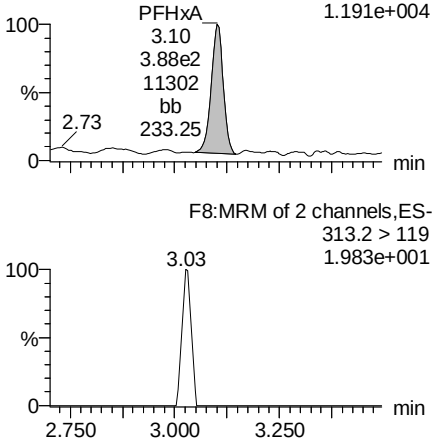
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Name: 180110M2_38, Date: 10-Jan-2018, Time: 22:18:02, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

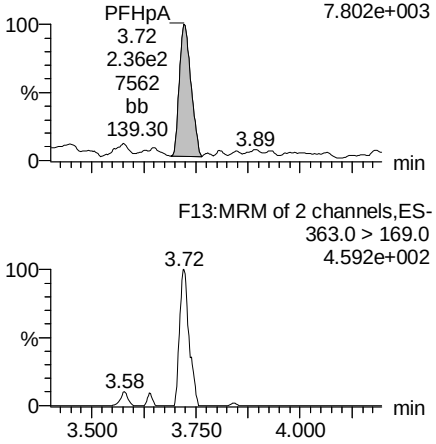
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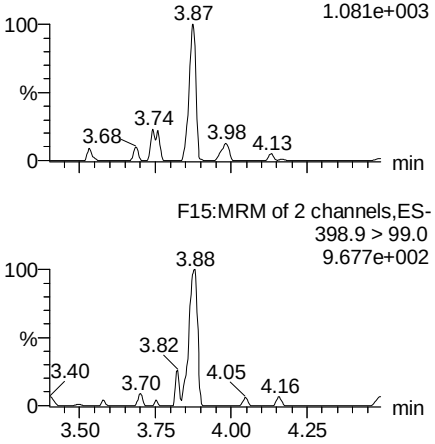
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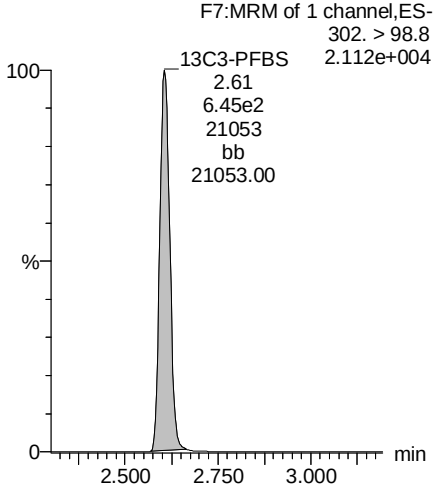
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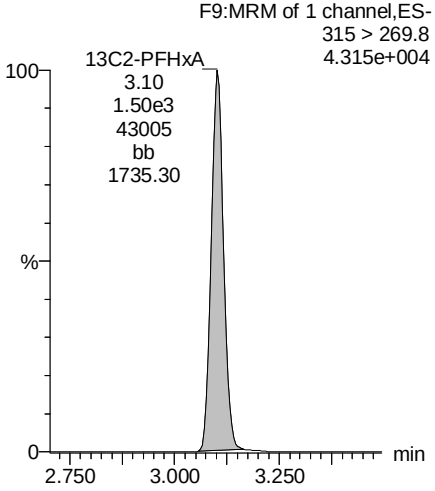
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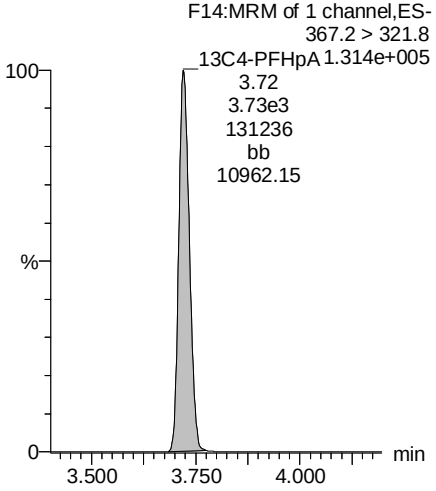
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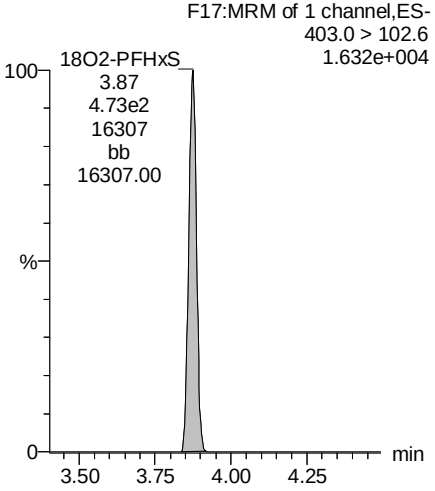
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



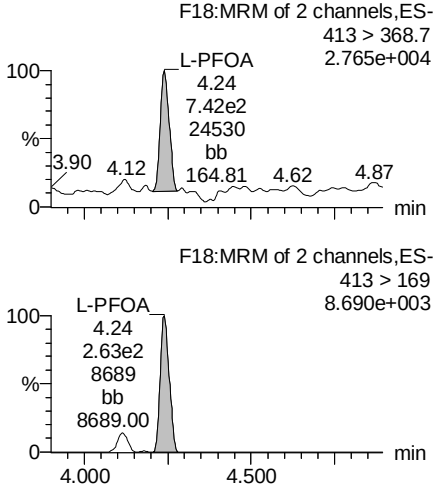
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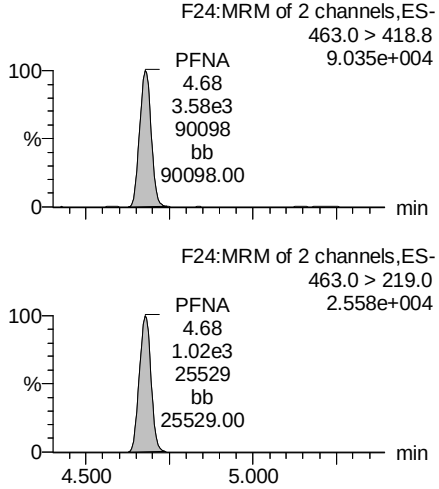
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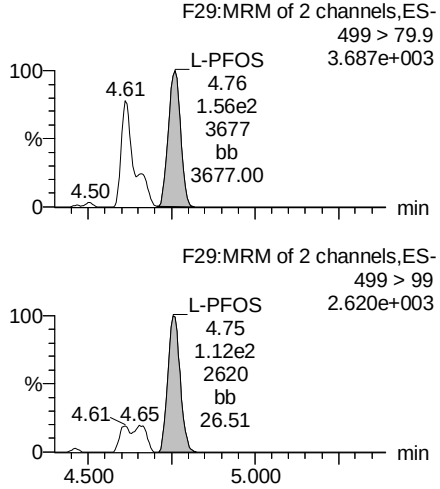
Total PFOA



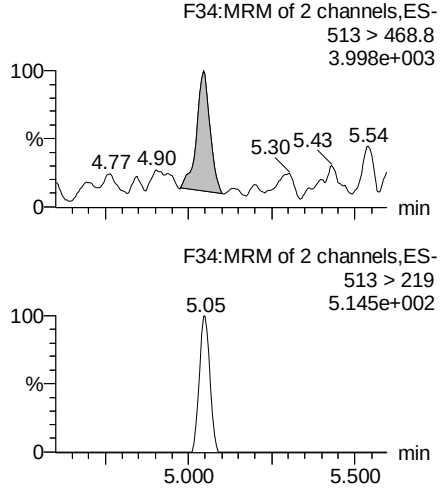
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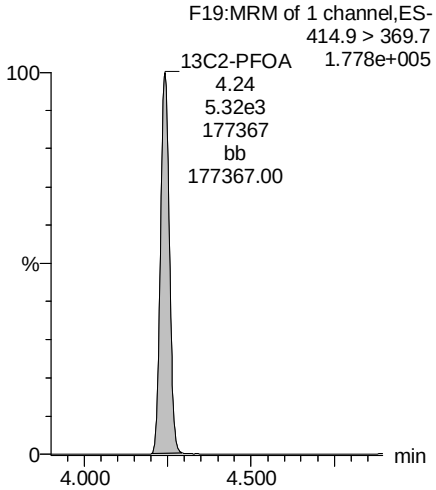
Total PFOS



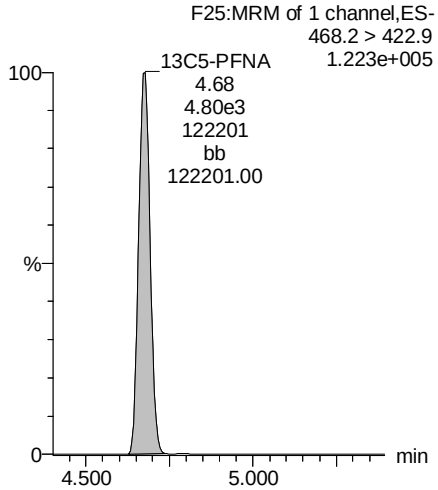
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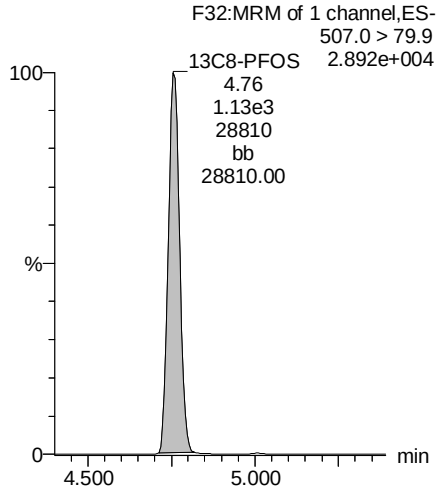
13C2-PFOA



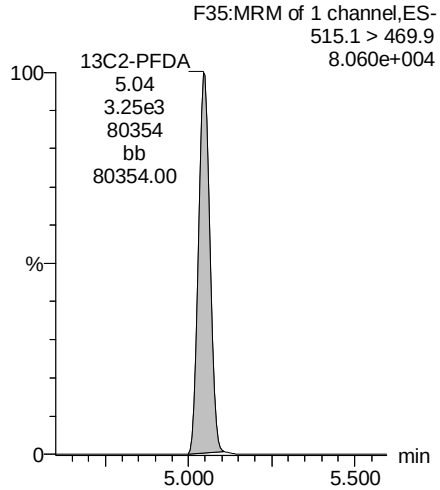
13C5-PFNA



13C8-PFOS



13C2-PFDA

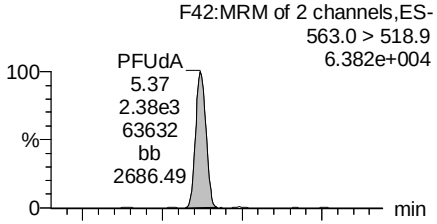


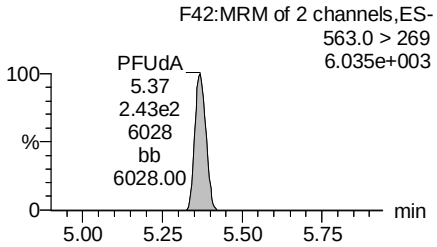
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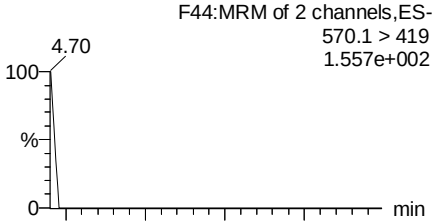
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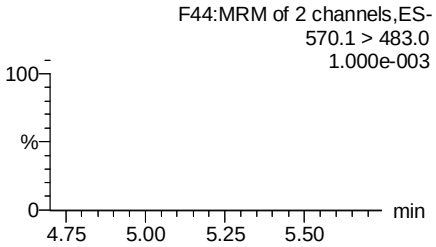
PFUdA



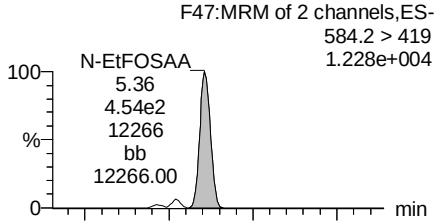


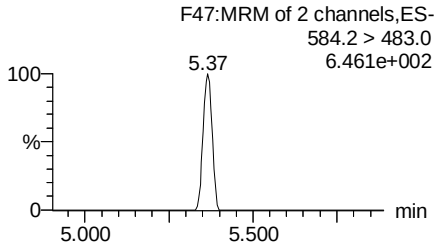
N-MeFOSAA



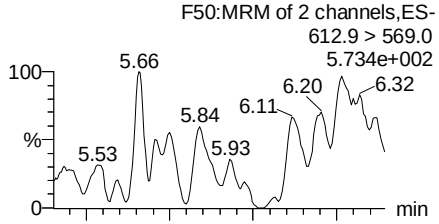


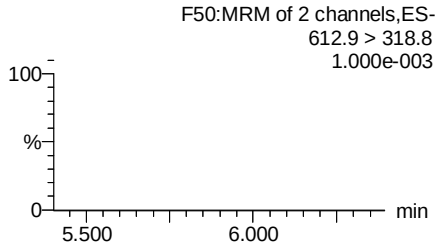
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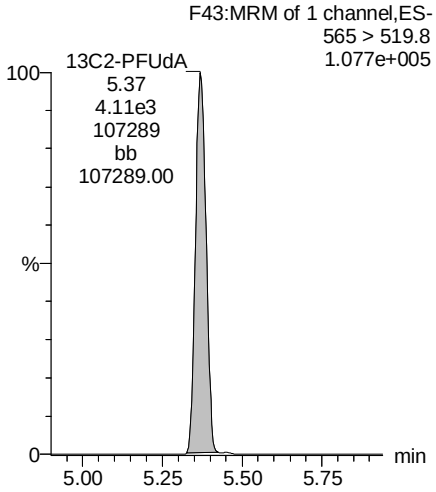


PFDoA

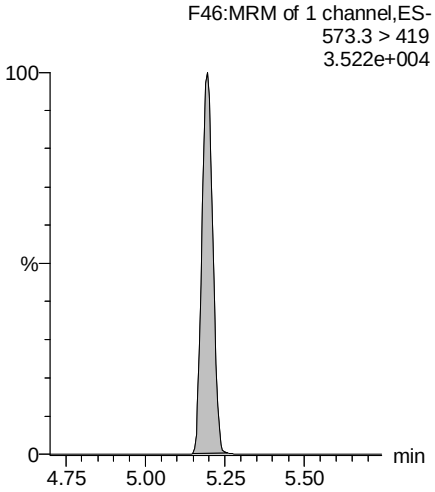




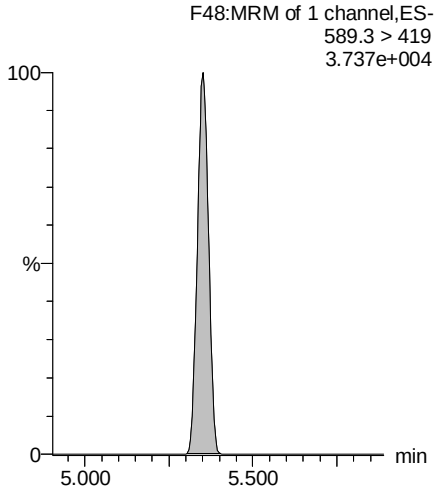
13C2-PFUdA



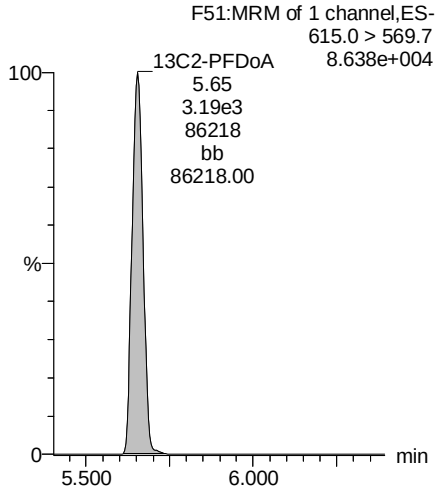
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



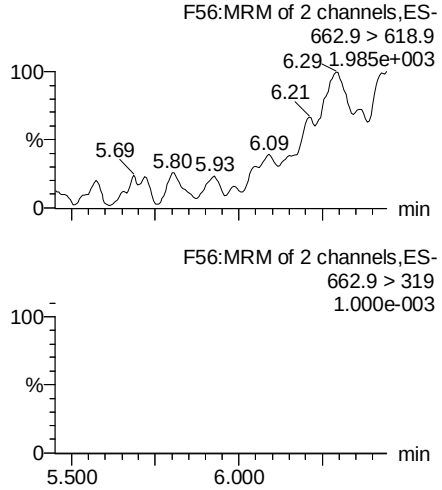
Vista Analytical Laboratory

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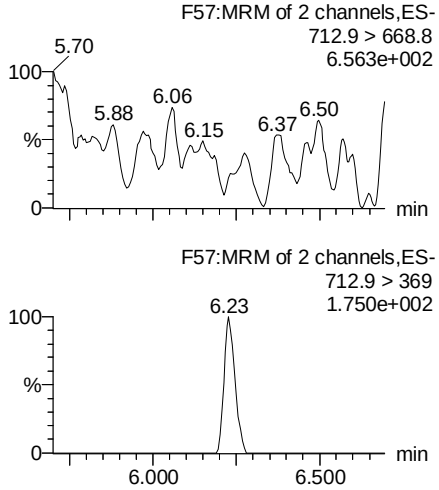
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Name: 180110M2_38, Date: 10-Jan-2018, Time: 22:18:02, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

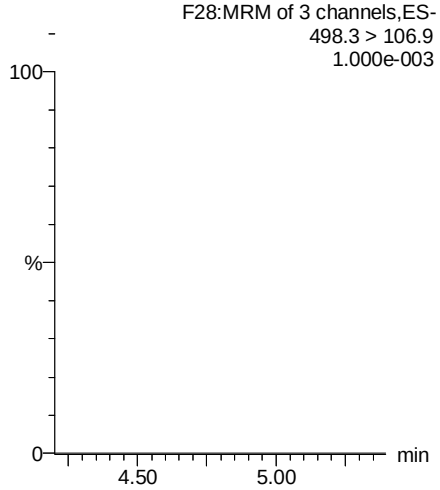
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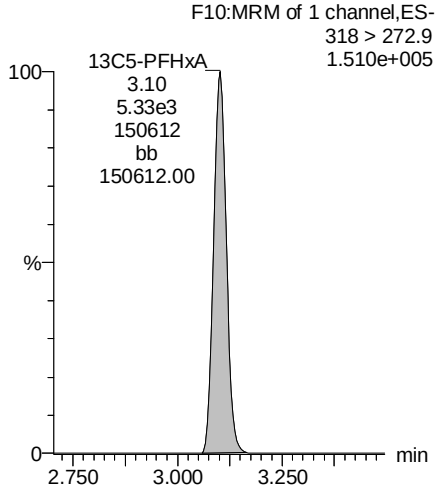
PFTeDA



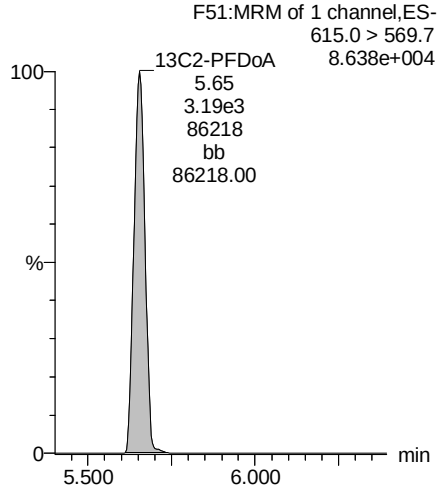
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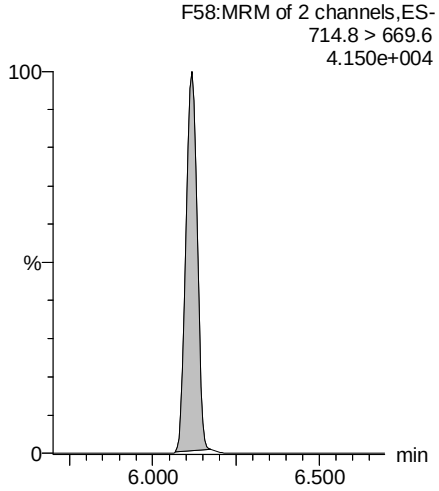
13C5-PFHxA



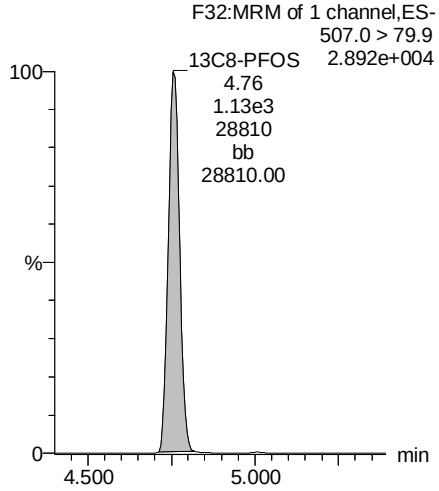
13C2-PFDoA



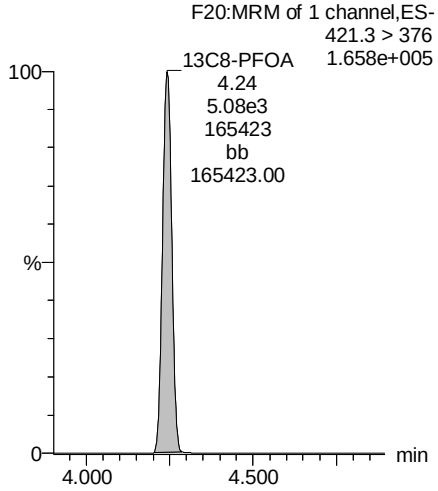
13C2-PFTeDA



13C8-PFOS



13C8-PFOA

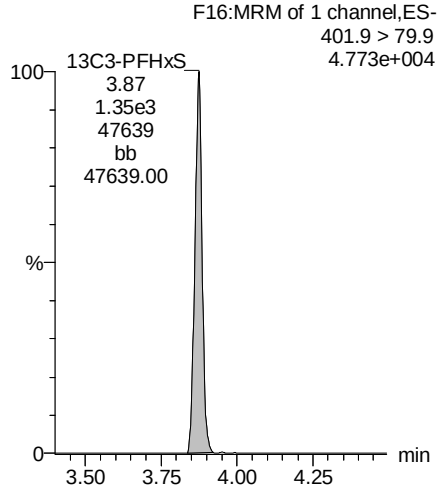


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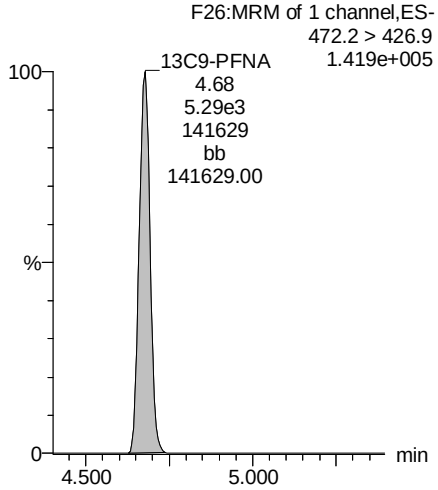
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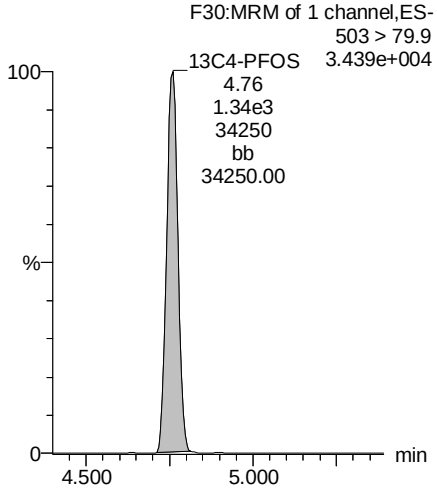
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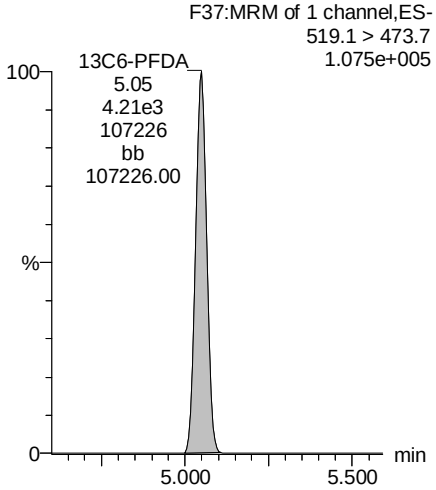
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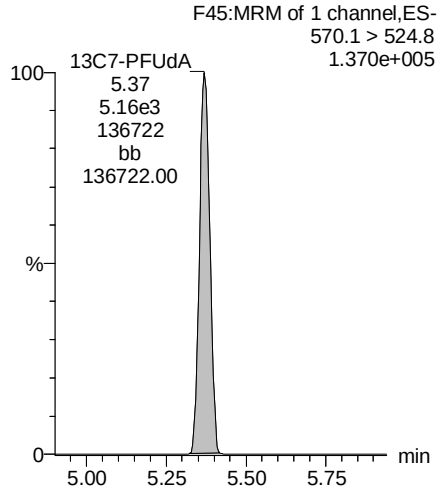
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Dataset: Untitled

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Printed: Monday, January 15, 2018 14:21:50 Pacific Standard Time

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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_39, Date: 10-Jan-2018, Time: 22:29:11, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		7.10e2	0.257		2.66				
2	4	PFHxA	313.2 > 268.9	6.99e1	1.59e3	0.257		3.15	3.10	0.220	0.2983	
3	5	PFHpA	363.0 > 318.9		3.70e3	0.257		3.78				
4	6	L-PFHxS	398.9 > 79.6		5.36e2	0.257		3.94				
5	9	L-PFOA	413 > 368.7	2.53e2	5.75e3	0.257		4.31	4.24	0.551	2.0446	
6	12	PFNA	463.0 > 418.8	3.18e2	4.88e3	0.257		4.81	4.67	0.815	2.3456	
7	14	L-PFOS	499 > 79.9		1.40e3	0.257		4.89				
8	16	PFDA	513 > 468.8		4.19e3	0.257		5.18				
9	18	N-MeFOSAA	570.1 > 419		1.37e3	0.257		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.82e3	0.257		5.48				
11	20	PFUdA	563.0 > 518.9		4.63e3	0.257		5.50				
12	22	PFDoA	612.9 > 569.0		3.33e3	0.257		5.77				

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:21:42 Pacific Standard Time
Printed: Monday, January 15, 2018 14:24:45 Pacific Standard Time

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Name: 180110M2_39, Date: 10-Jan-2018, Time: 22:29:11, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.33e3	0.257		6.00				
2	25	PFTeDA	712.9 > 668.8		1.66e3	0.257		6.22				
3	33	13C3-PFBS	302. > 98.8	7.10e2	6.88e3	0.257	0.116	2.77	2.61	1.29	43.0849	88.7
4	34	13C2-PFHxA	315 > 269.8	1.59e3	6.88e3	0.257	0.655	3.15	3.10	2.88	17.1035	88.0
5	35	13C4-PFHpA	367.2 > 321.8	3.70e3	6.88e3	0.257	0.722	3.78	3.72	6.72	36.1431	74.4
6	36	18O2-PFHxS	403.0 > 102.6	5.36e2	1.66e3	0.257	0.348	3.94	3.87	4.04	45.1143	92.9
7	37	13C2-6:2 FTS	429.1 > 408.9	9.03e2	4.98e3	0.257	0.222	4.25	4.19	2.27	39.7361	81.8
8	38	13C2-PFOA	414.9 > 369.7	5.75e3	4.98e3	0.257	1.023	4.31	4.24	14.4	54.8189	112.9
9	39	13C5-PFNA	468.2 > 422.9	4.88e3	5.39e3	0.257	0.916	4.81	4.67	11.3	48.0645	99.0
10	40	13C8-PFOSA	506.1 > 77.7	1.02e3	5.24e3	0.257	0.210	4.87	4.73	2.43	44.9429	92.5
11	41	13C8-PFOS	507.0 > 79.9	1.40e3	1.58e3	0.257	1.035	4.89	4.76	11.1	41.6132	85.7
12	42	13C2-PFDA	515.1 > 469.9	4.19e3	4.14e3	0.257	1.142	5.18	5.05	12.7	43.1263	88.8
13	43	13C2-8:2 FTS	529.1 > 508.7	4.91e2	6.88e3	0.257	0.157	5.15	5.01	0.893	22.1640	45.6
14	44	d3-N-MeFOSAA	573.3 > 419	1.37e3	5.24e3	0.257	0.299	5.32	5.19	3.27	42.5585	87.6
15	45	d5-N-EtFOSAA	589.3 > 419	1.82e3	5.24e3	0.257	0.369	5.47	5.34	4.35	45.8020	94.3
16	46	13C2-PFUdA	565 > 519.8	4.63e3	5.24e3	0.257	1.012	5.49	5.37	11.1	42.4718	87.4
17	47	13C2-PFDoA	615.0 > 569.7	3.33e3	5.24e3	0.257	0.647	5.77	5.65	7.96	47.8126	98.4
18	49	13C2-PFTeDA	714.8 > 669.6	1.66e3	5.24e3	0.257	0.294	6.22	6.11	3.95	52.3208	107.7
19	55	13C5-PFHxA	318 > 272.9	6.88e3	6.88e3	0.257	1.000	3.15	3.10	12.5	48.5701	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.66e3	1.66e3	0.257	1.000	4.02	3.87	12.5	48.5701	100.0
21	57	13C8-PFOA	421.3 > 376	4.98e3	4.98e3	0.257	1.000	4.38	4.24	12.5	48.5701	100.0
22	58	13C9-PFNA	472.2 > 426.9	5.39e3	5.39e3	0.257	1.000	4.81	4.67	12.5	48.5701	100.0
23	59	13C4-PFOS	503 > 79.9	1.58e3	1.58e3	0.257	1.000	4.89	4.76	12.5	48.5701	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.14e3	4.14e3	0.257	1.000	5.18	5.05	12.5	48.5701	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.24e3	5.24e3	0.257	1.000	5.49	5.37	12.5	48.5701	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	5.36e2	0.257		4.14		0.000		
27	63	Total PFOA	413 > 368.7	2.53e2	5.75e3	0.257		4.51		0.551	2.0446	
28	64	Total PFOS	499 > 79.9	0.00e0	1.40e3	0.257		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.37e3	0.257		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.82e3	0.257		5.61		0.000		

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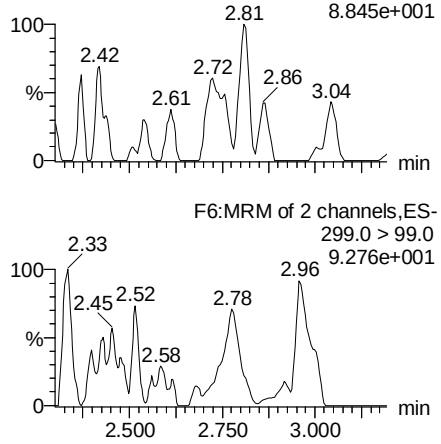
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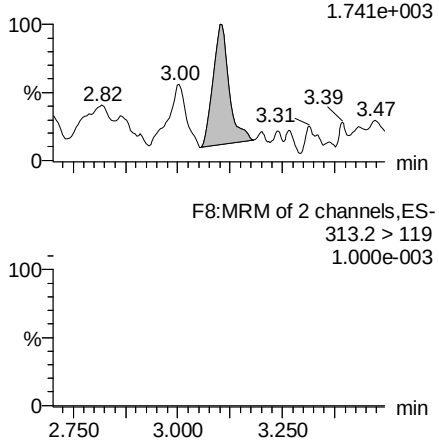
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Name: 180110M2_39, Date: 10-Jan-2018, Time: 22:29:11, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

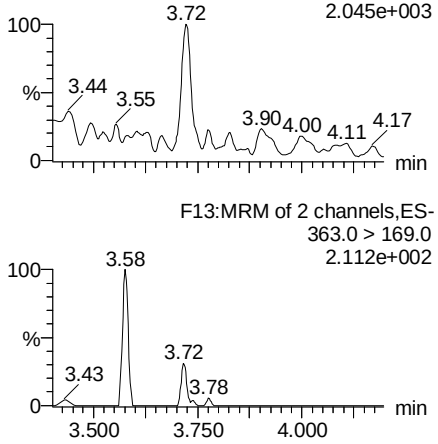
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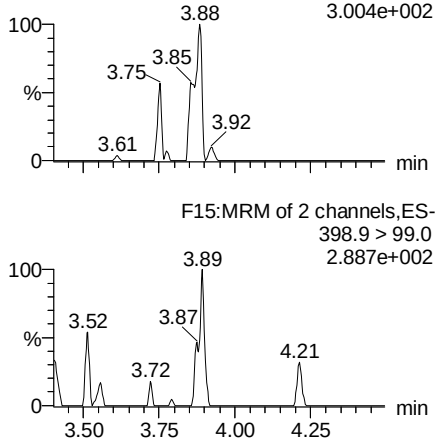
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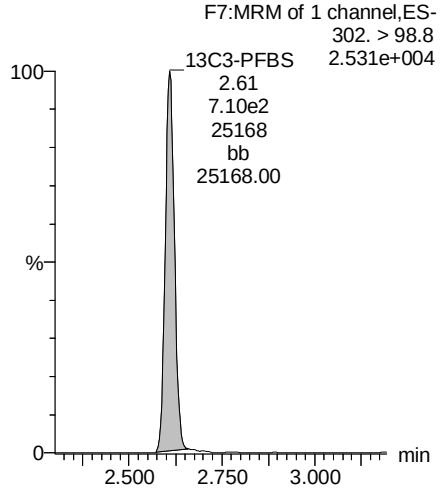
PFHpA



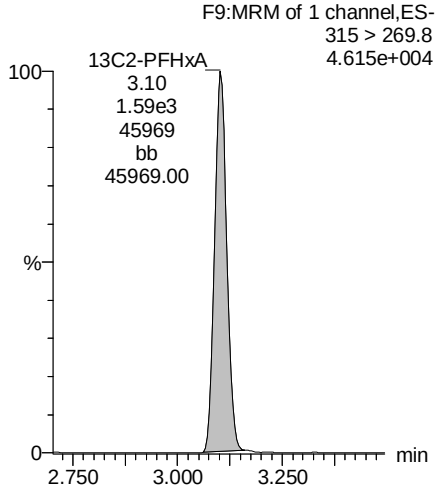
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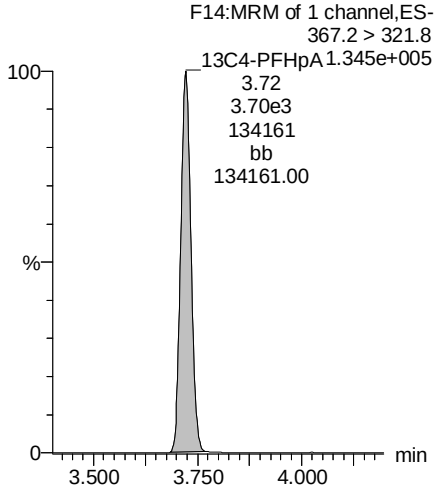
13C3-PFBS



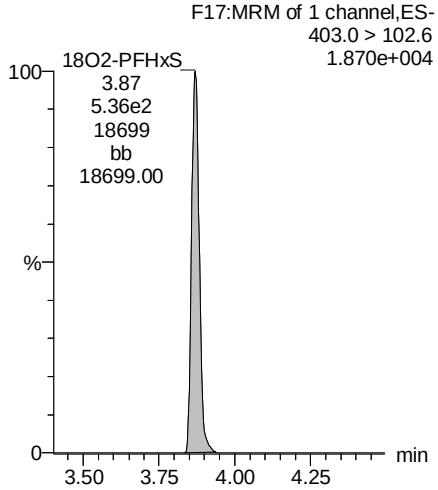
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

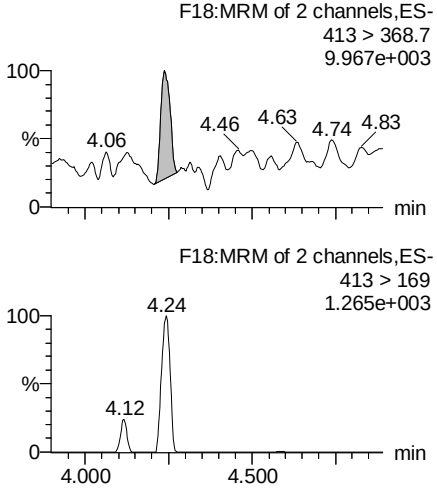


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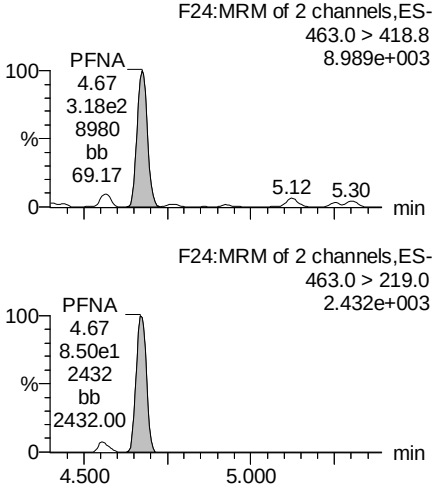
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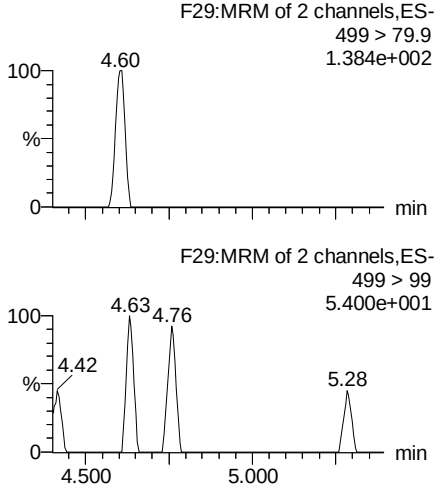
Total PFOA



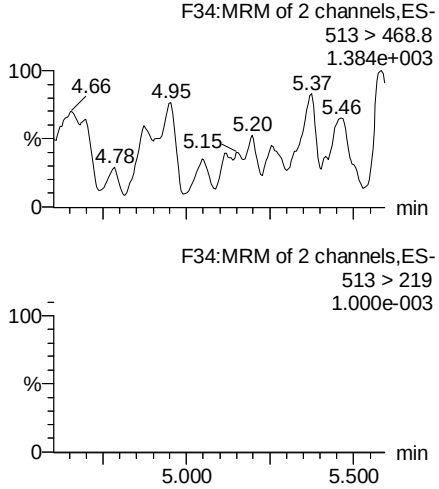
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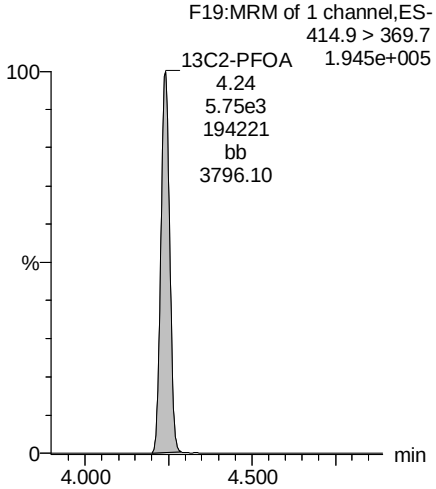
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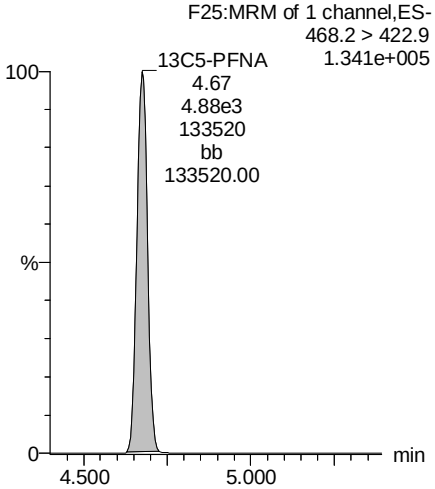
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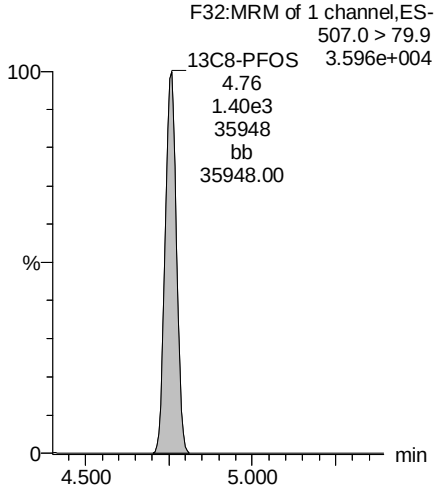
13C2-PFOA



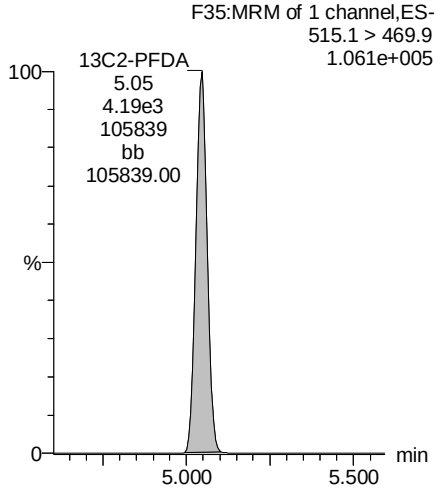
13C5-PFNA



13C8-PFOS



13C2-PFDA

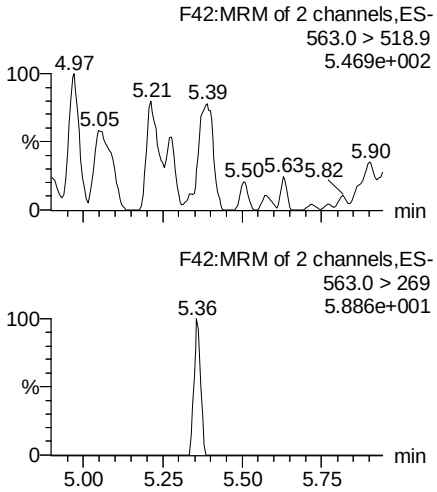


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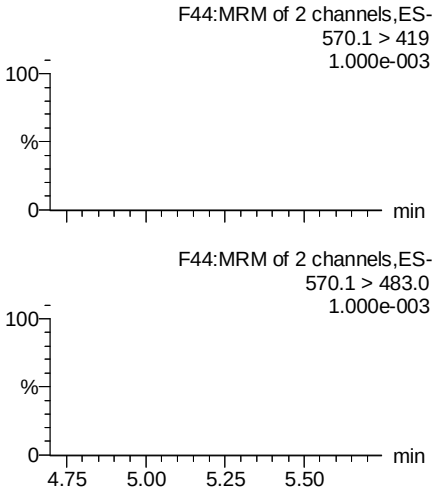
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Name: 180110M2_39, Date: 10-Jan-2018, Time: 22:29:11, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

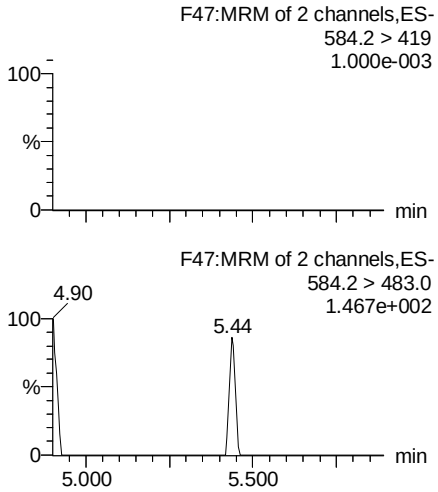
PFUdA



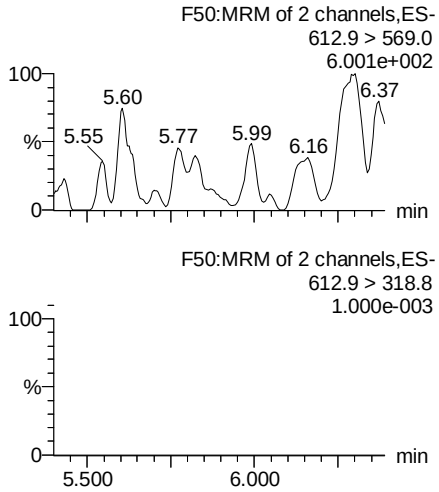
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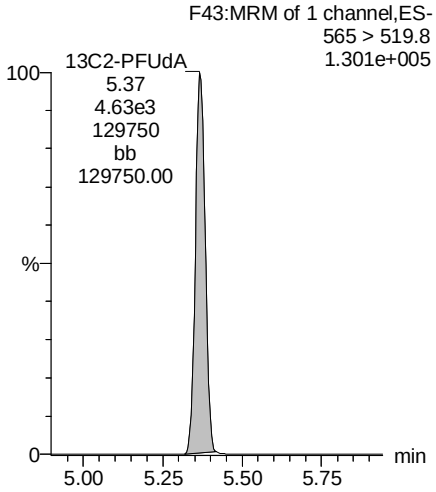
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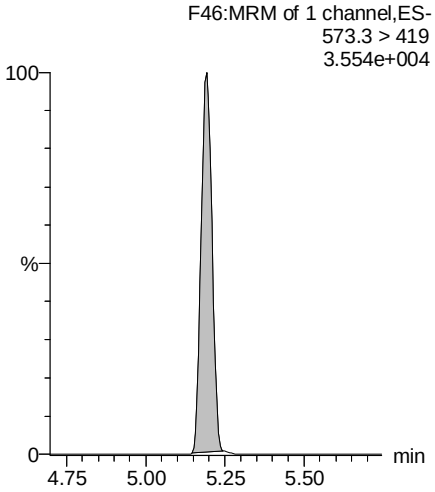
PFDoA



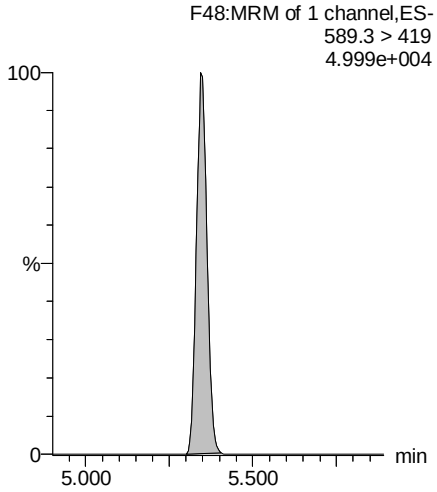
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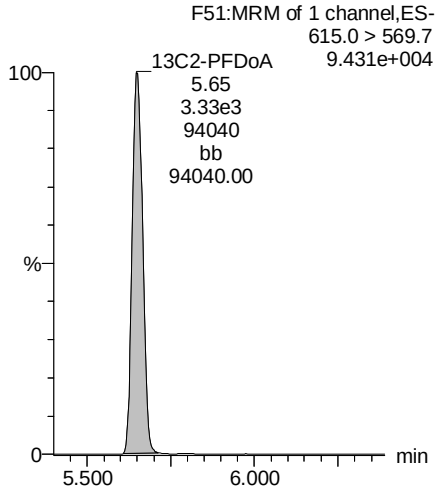
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA



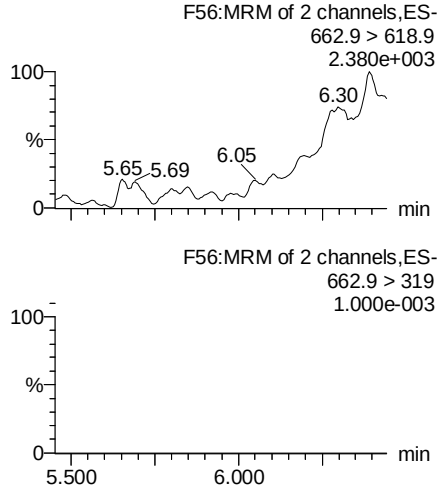
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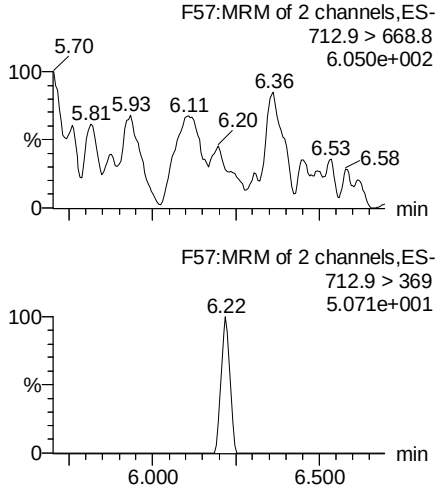
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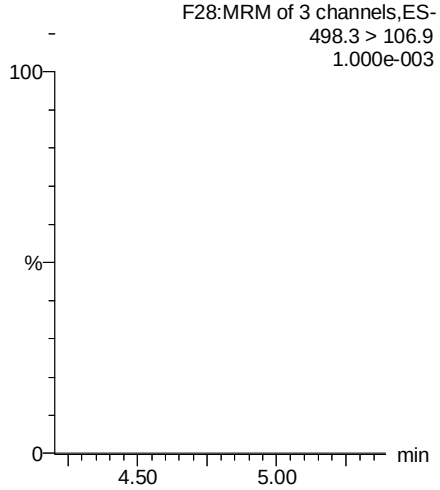
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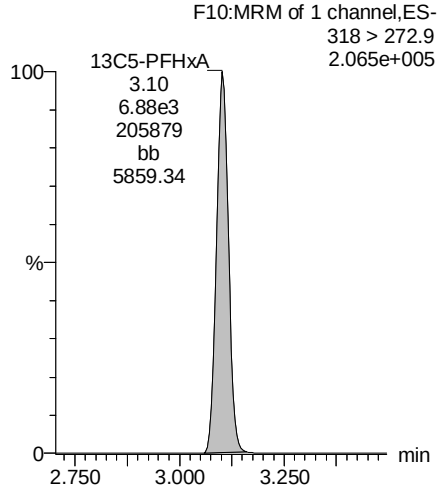
PFTeDA



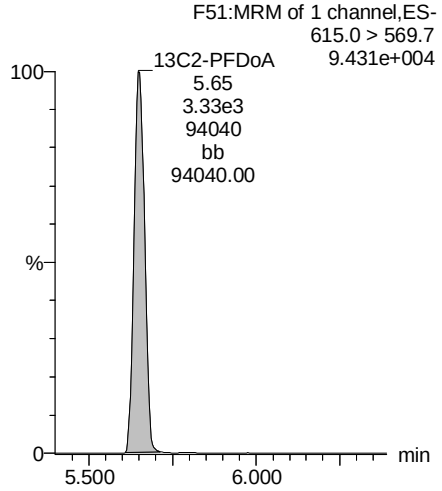
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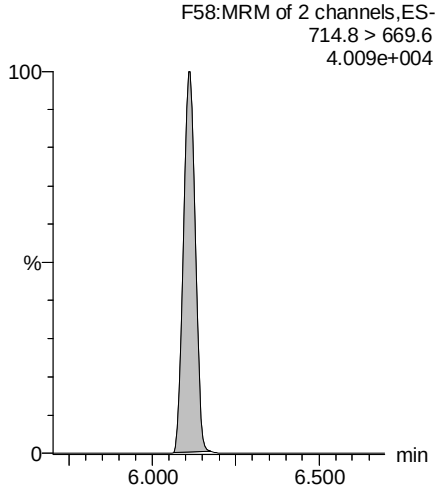
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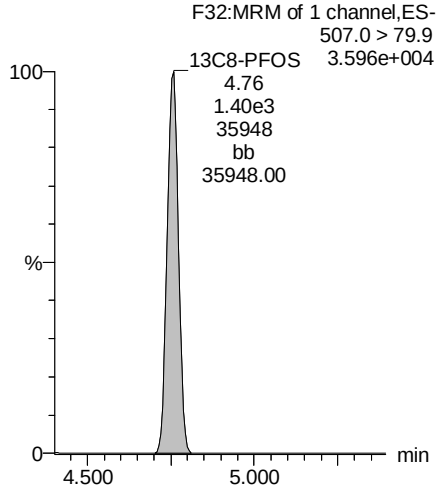
13C2-PFDoA



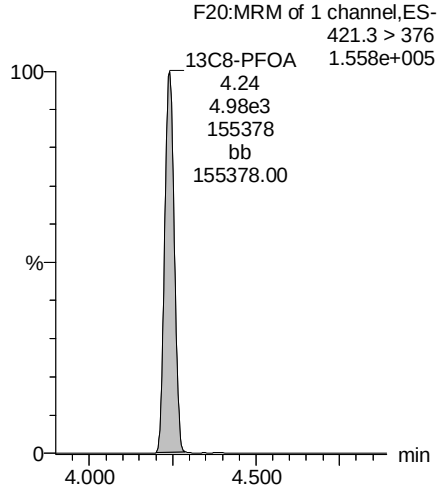
13C2-PFTeDA



13C8-PFOS



13C8-PFOA

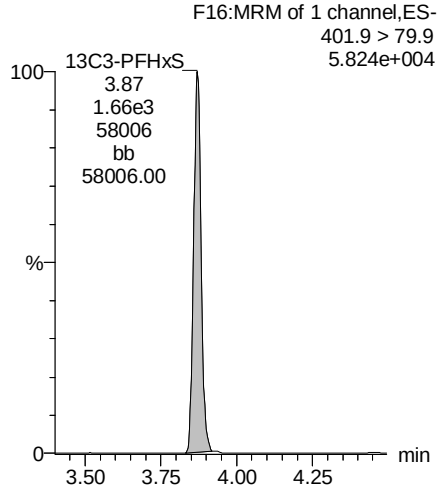


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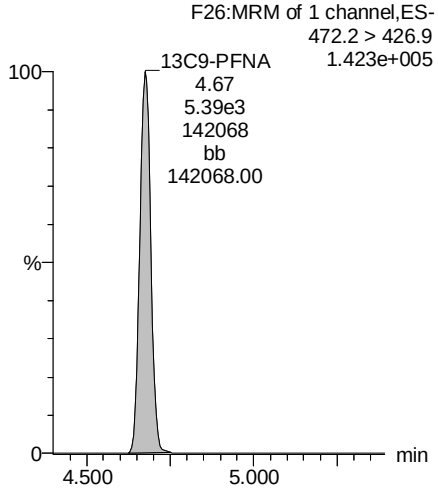
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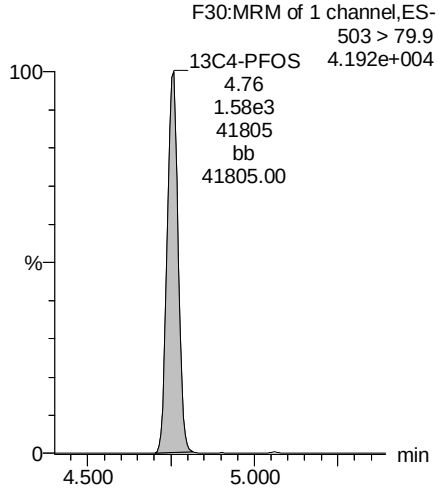
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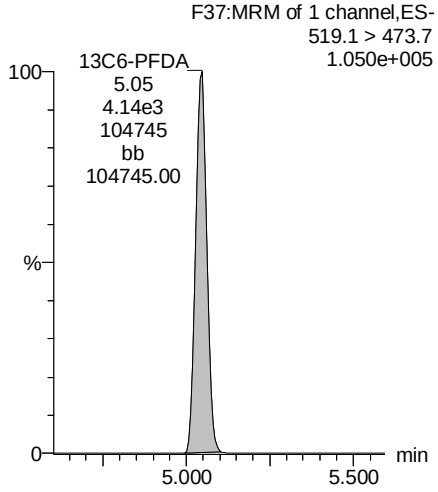
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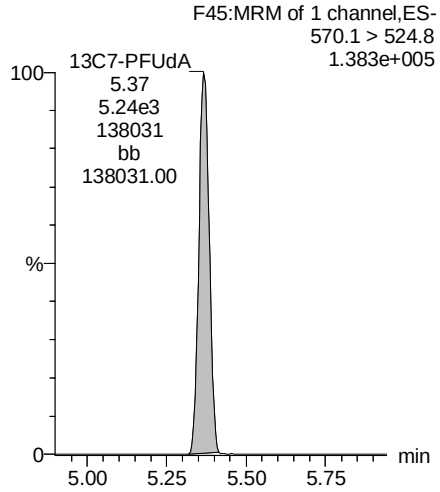
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Last Altered: Monday, January 15, 2018 14:25:45 Pacific Standard Time
Printed: Monday, January 15, 2018 14:25:54 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.60e2	0.262		2.66				
2	4	PFHxA	313.2 > 268.9	1.72e3	1.59e3	0.262		3.15	3.10	5.42	11.4282	
3	5	PFHpA	363.0 > 318.9	1.28e3	3.97e3	0.262		3.78	3.72	4.02	11.5269	
4	6	L-PFHxS	398.9 > 79.6	4.21e2	4.93e2	0.262		3.94	3.86	10.7	21.8809	
5	9	L-PFOA	413 > 368.7	3.77e3	6.01e3	0.262		4.31	4.23	7.84	27.2595	
6	12	PFNA	463.0 > 418.8	7.05e3	3.92e3	0.262		4.81	4.67	22.5	68.3836	
7	14	L-PFOS	499 > 79.9	3.32e2	1.41e3	0.262		4.89	4.75	2.95	11.8558	
8	16	PFDA	513 > 468.8	2.04e2	3.26e3	0.262		5.18	5.04	0.783	1.5493	
9	18	N-MeFOSAA	570.1 > 419		1.34e3	0.262		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.85e3	0.262		5.48				
11	20	PFUdA	563.0 > 518.9	5.75e2	5.53e3	0.262		5.50	5.37	1.30	4.2565	
12	22	PFDoA	612.9 > 569.0		3.03e3	0.262		5.77				

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:25:45 Pacific Standard Time
Printed: Monday, January 15, 2018 14:26:08 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
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Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.03e3	0.262		6.00				
2	25	PFTeDA	712.9 > 668.8		1.65e3	0.262		6.22				
3	33	13C3-PFBS	302. > 98.8	6.60e2	5.50e3	0.262	0.116	2.77	2.60	1.50	49.3134	103.2
4	34	13C2-PFHxA	315 > 269.8	1.59e3	5.50e3	0.262	0.655	3.15	3.10	3.60	21.0203	110.0
5	35	13C4-PFHpA	367.2 > 321.8	3.97e3	5.50e3	0.262	0.722	3.78	3.72	9.03	47.7695	100.0
6	36	18O2-PFHxS	403.0 > 102.6	4.93e2	1.77e3	0.262	0.348	3.94	3.87	3.48	38.2301	80.0
7	37	13C2-6:2 FTS	429.1 > 408.9	9.57e2	6.10e3	0.262	0.222	4.25	4.18	1.96	33.7897	70.7
8	38	13C2-PFOA	414.9 > 369.7	6.01e3	6.10e3	0.262	1.023	4.31	4.24	12.3	45.9711	96.2
9	39	13C5-PFNA	468.2 > 422.9	3.92e3	5.65e3	0.262	0.916	4.81	4.67	8.66	36.1336	75.6
10	40	13C8-PFOSA	506.1 > 77.7	9.72e2	5.92e3	0.262	0.210	4.87	4.73	2.05	37.2669	78.0
11	41	13C8-PFOS	507.0 > 79.9	1.41e3	1.35e3	0.262	1.035	4.89	4.76	13.0	48.1653	100.8
12	42	13C2-PFDA	515.1 > 469.9	3.26e3	3.19e3	0.262	1.142	5.18	5.05	12.8	42.7023	89.4
13	43	13C2-8:2 FTS	529.1 > 508.7	3.98e2	5.50e3	0.262	0.157	5.15	5.02	0.905	22.0865	46.2
14	44	d3-N-MeFOSAA	573.3 > 419	1.34e3	5.92e3	0.262	0.299	5.32	5.19	2.82	36.1148	75.6
15	45	d5-N-EtFOSAA	589.3 > 419	1.85e3	5.92e3	0.262	0.369	5.47	5.34	3.90	40.4105	84.6
16	46	13C2-PFUdA	565 > 519.8	5.53e3	5.92e3	0.262	1.012	5.49	5.37	11.7	44.0753	92.3
17	47	13C2-PFDoA	615.0 > 569.7	3.03e3	5.92e3	0.262	0.647	5.77	5.65	6.40	37.8075	79.1
18	49	13C2-PFTeDA	714.8 > 669.6	1.65e3	5.92e3	0.262	0.294	6.22	6.11	3.49	45.4200	95.1
19	55	13C5-PFHxA	318 > 272.9	5.50e3	5.50e3	0.262	1.000	3.15	3.10	12.5	47.7737	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.77e3	1.77e3	0.262	1.000	4.02	3.87	12.5	47.7737	100.0
21	57	13C8-PFOA	421.3 > 376	6.10e3	6.10e3	0.262	1.000	4.38	4.24	12.5	47.7737	100.0
22	58	13C9-PFNA	472.2 > 426.9	5.65e3	5.65e3	0.262	1.000	4.81	4.67	12.5	47.7737	100.0
23	59	13C4-PFOS	503 > 79.9	1.35e3	1.35e3	0.262	1.000	4.89	4.76	12.5	47.7737	100.0
24	60	13C6-PFDA	519.1 > 473.7	3.19e3	3.19e3	0.262	1.000	5.18	5.05	12.5	47.7737	100.0
25	61	13C7-PFUdA	570.1 > 524.8	5.92e3	5.92e3	0.262	1.000	5.49	5.37	12.5	47.7737	100.0
26	62	Total PFHxS	398.9 > 79.6	4.21e2	4.93e2	0.262		4.14		10.7	21.8809	
27	63	Total PFOA	413 > 368.7	3.77e3	6.01e3	0.262		4.51		7.84	27.2595	
28	64	Total PFOS	499 > 79.9	3.32e2	1.41e3	0.262		5.02		2.95	11.8558	
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.34e3	0.262		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.85e3	0.262		5.61		0.000		

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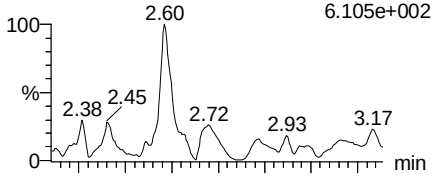
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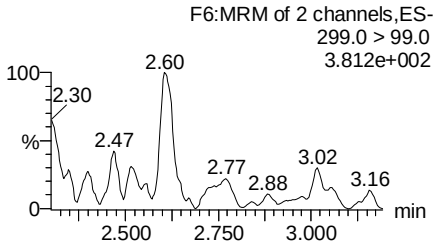
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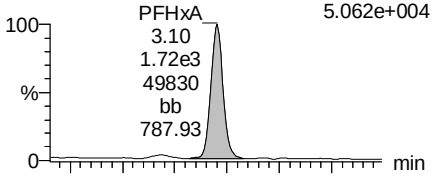
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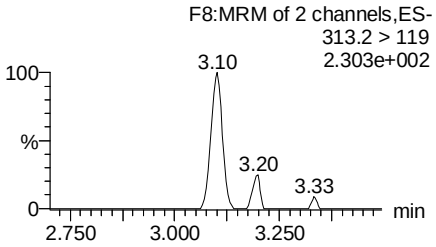
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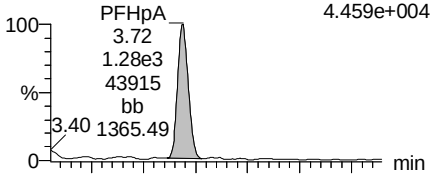


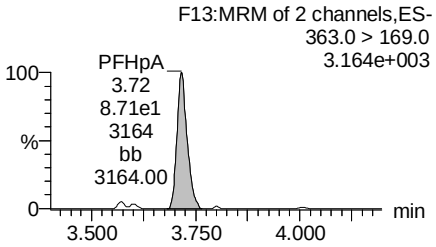
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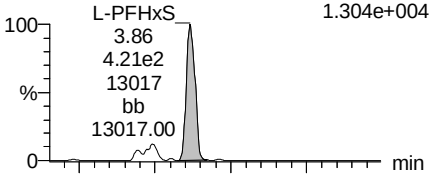


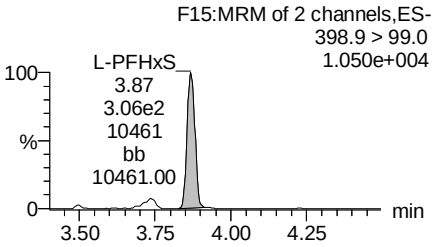
PFHpA



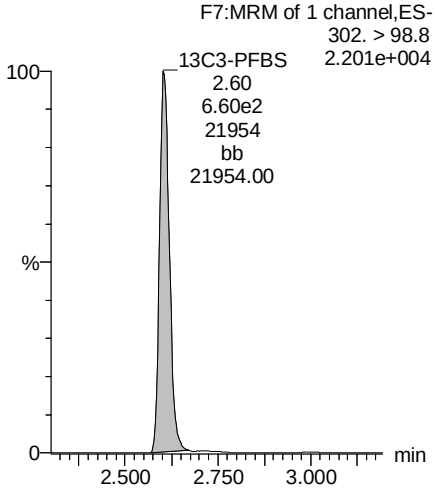


Total PFHxS

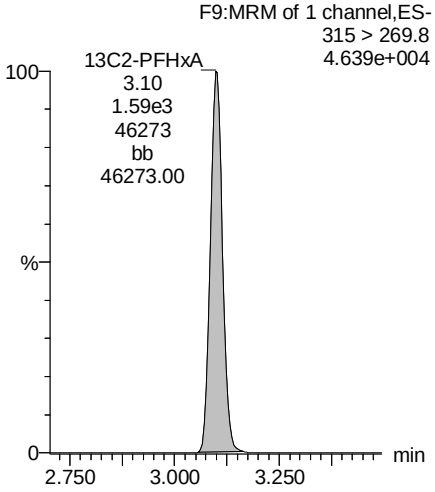




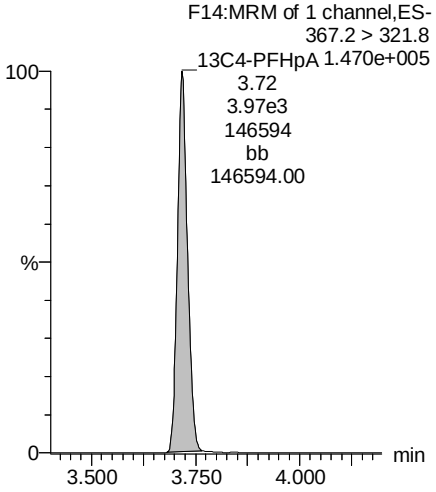
13C3-PFBS



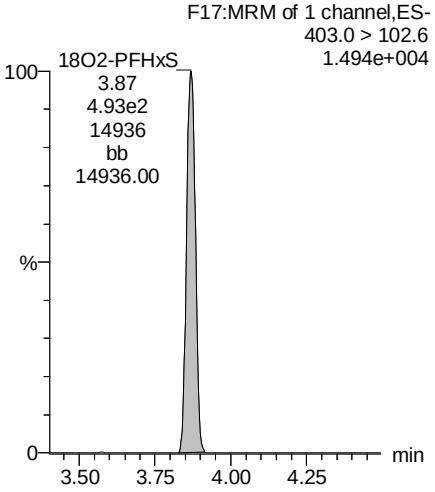
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS



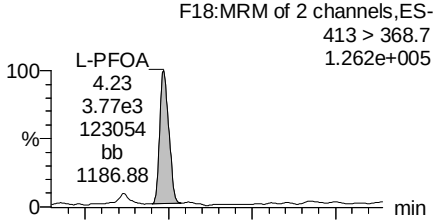
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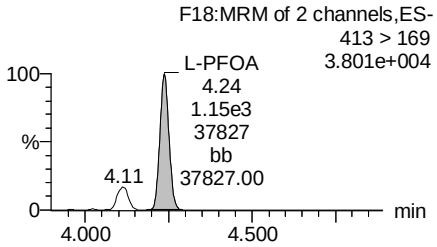
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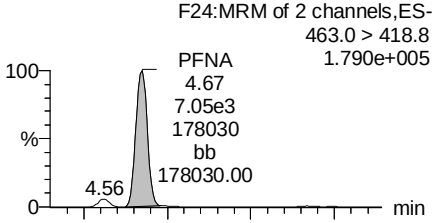
Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

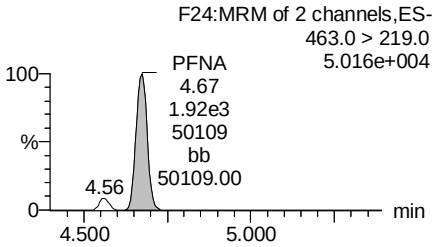
Total PFOA



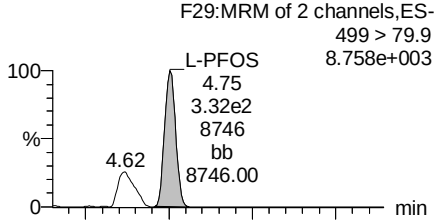


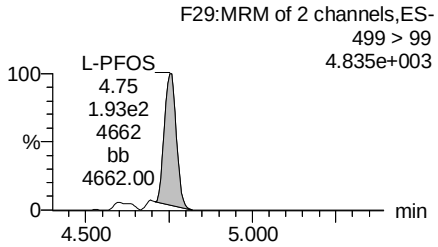
PFNA



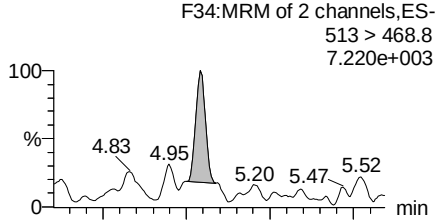


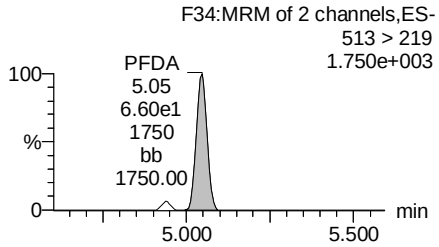
Total PFOS



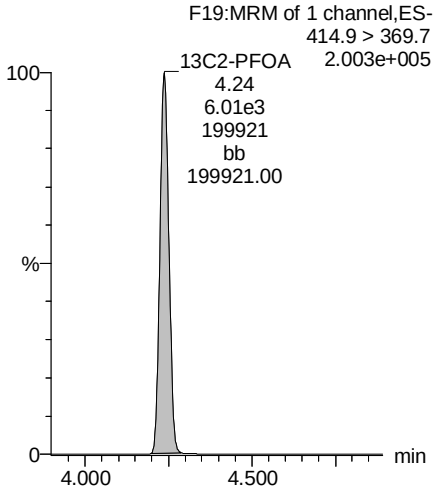


PFDA

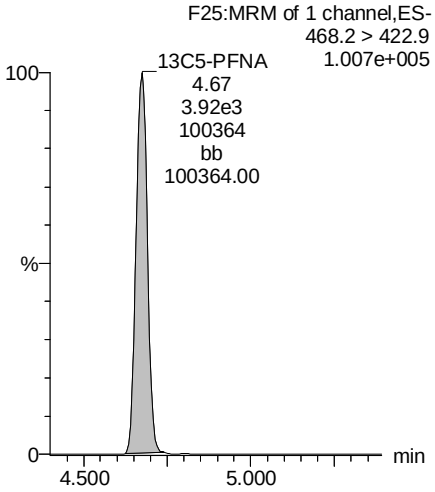




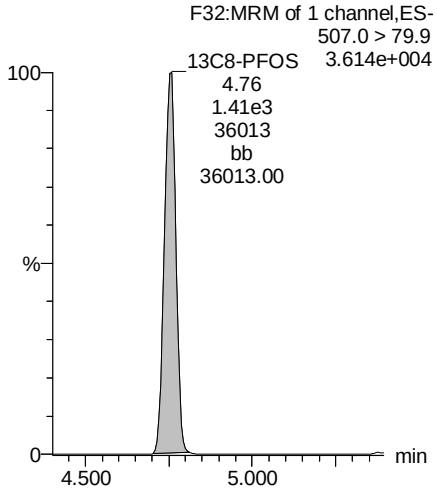
13C2-PFOA



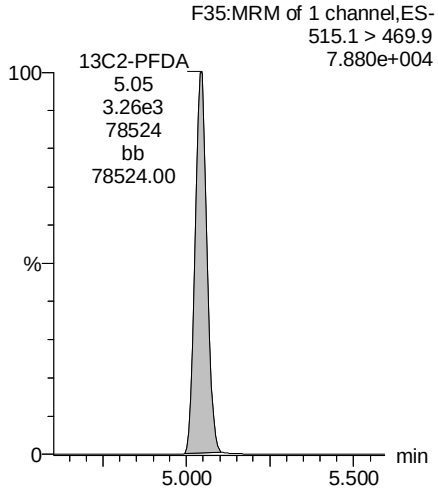
13C5-PFNA



13C8-PFOS



13C2-PFDA



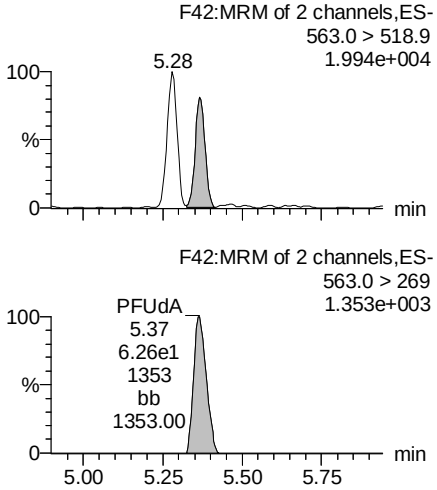
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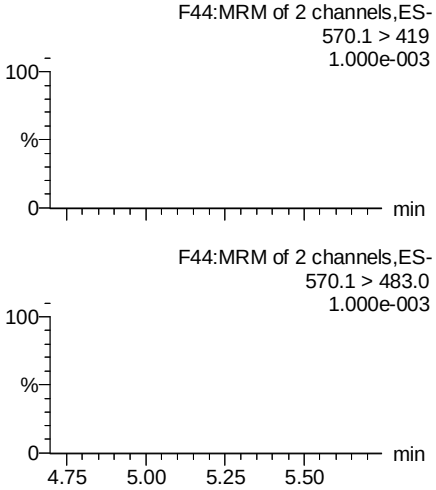
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Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

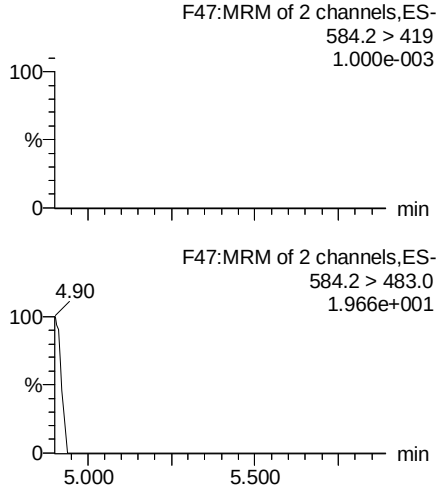
PFUdA



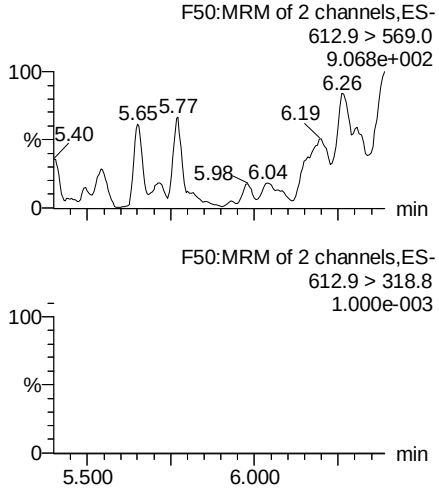
N-MeFOSAA



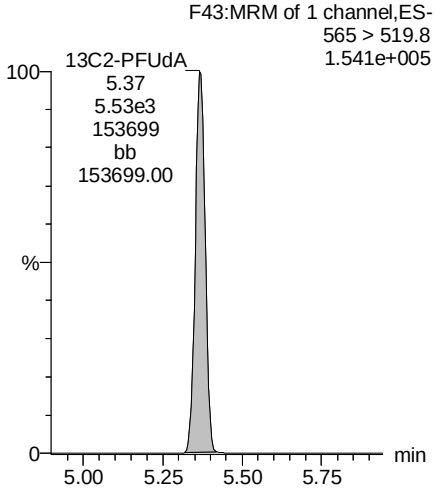
N-EtFOSAA



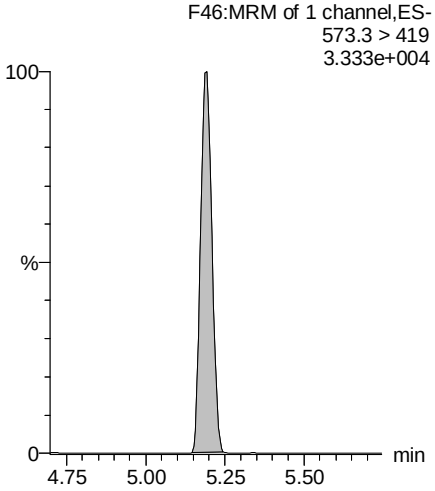
PFDoA



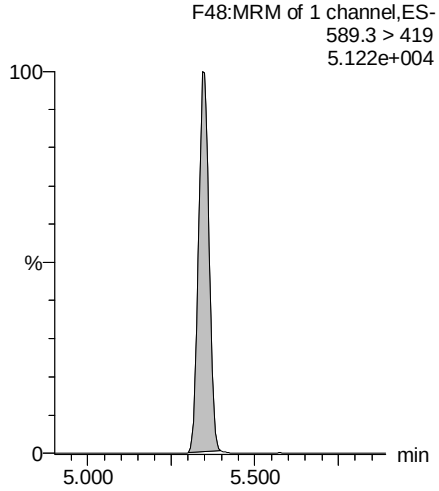
13C2-PFUdA



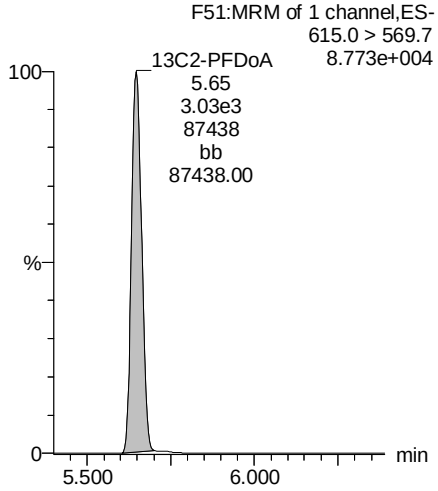
d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA

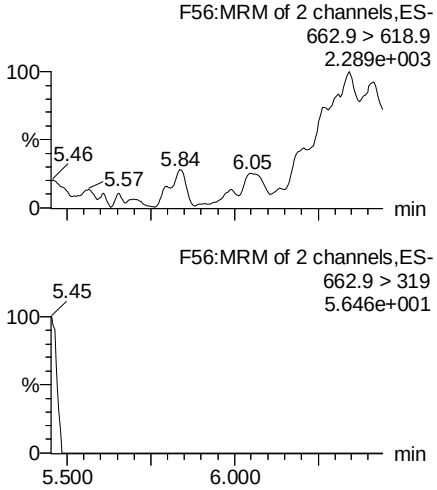


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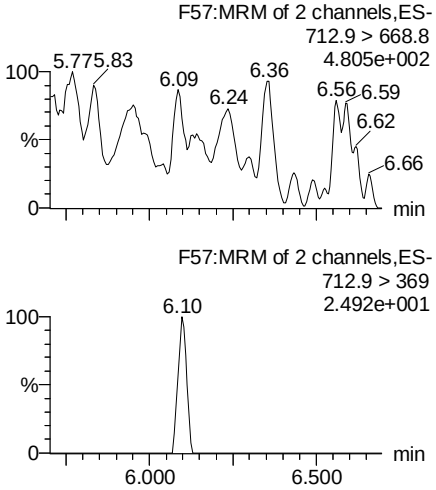
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Printed: Monday, January 15, 2018 14:26:08 Pacific Standard Time

Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

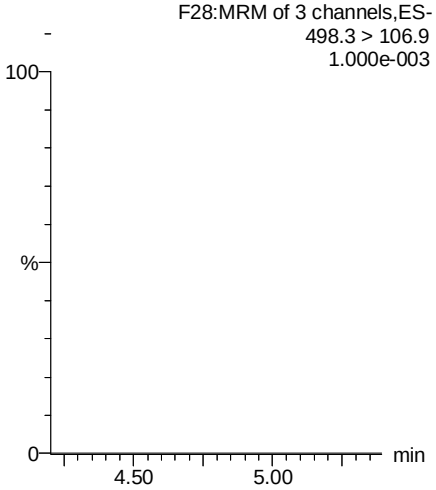
PFTrDA



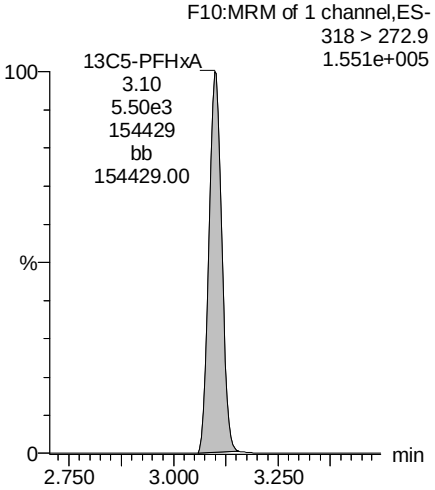
PFTeDA



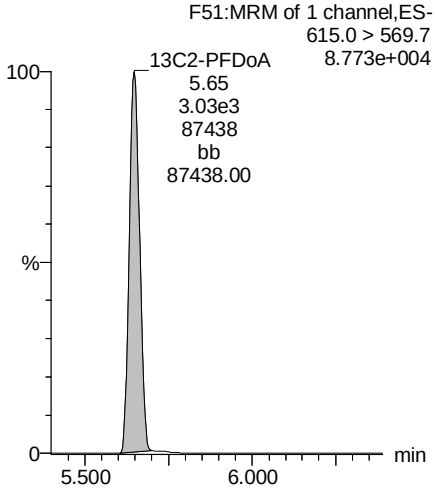
TCDA



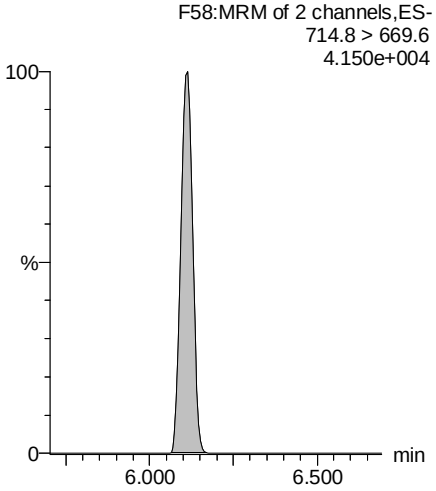
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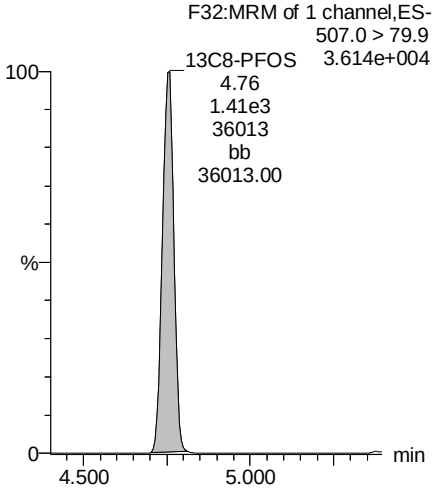
13C2-PFDoA



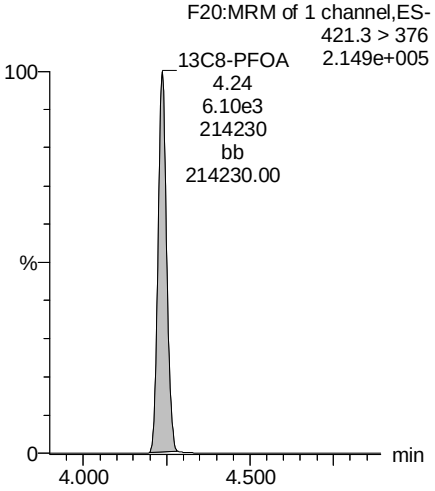
13C2-PFTeDA



13C8-PFOS



13C8-PFOA



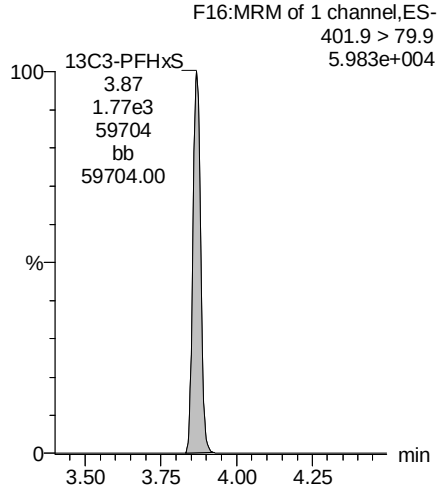
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Dataset: Untitled

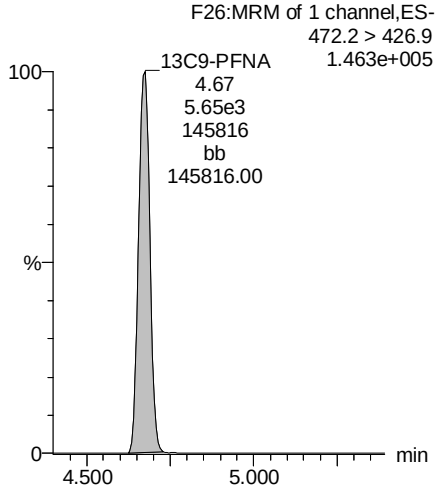
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Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

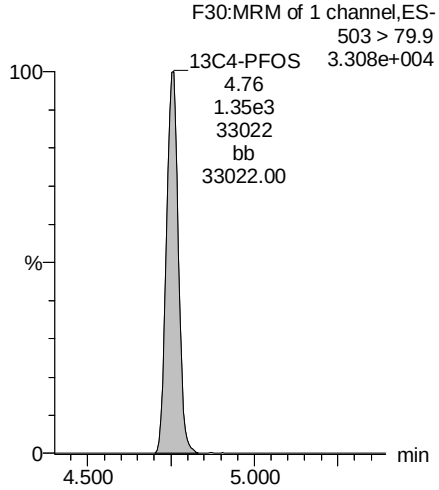
13C3-PFHxS



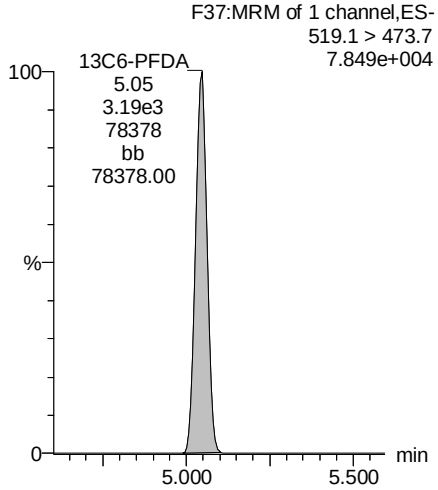
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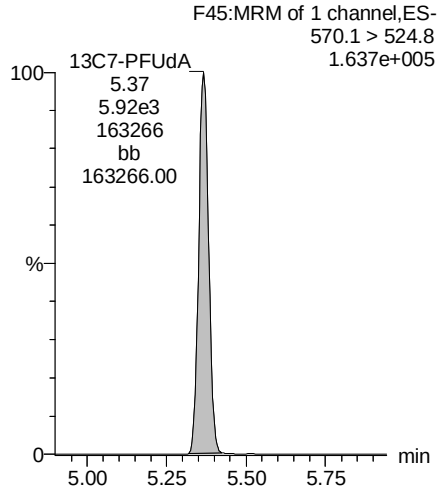
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:27:06 Pacific Standard Time
Printed: Monday, January 15, 2018 14:27:15 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_41, Date: 10-Jan-2018, Time: 22:51:32, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	3	PFBS	299.0 > 79.7		6.62e2	0.259		2.66				
2	4	PFHxA	313.2 > 268.9		1.55e3	0.259		3.15				
3	5	PFHpA	363.0 > 318.9		3.39e3	0.259		3.78				
4	6	L-PFHxS	398.9 > 79.6		5.06e2	0.259		3.94				
5	9	L-PFOA	413 > 368.7		6.14e3	0.259		4.31				
6	12	PFNA	463.0 > 418.8	2.04e2	5.06e3	0.259		4.81	5.18	0.504	1.3757	
7	14	L-PFOS	499 > 79.9		1.45e3	0.259		4.89				
8	16	PFDA	513 > 468.8		3.77e3	0.259		5.18				
9	18	N-MeFOSAA	570.1 > 419		1.40e3	0.259		5.32				
10	19	N-EtFOSAA	584.2 > 419		1.44e3	0.259		5.48				
11	20	PFUdA	563.0 > 518.9	4.23e2	5.24e3	0.259		5.50	5.37	1.01	3.3200	
12	22	PFDoA	612.9 > 569.0		3.21e3	0.259		5.77				

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, January 15, 2018 14:27:06 Pacific Standard Time
Printed: Monday, January 15, 2018 14:27:30 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_41, Date: 10-Jan-2018, Time: 22:51:32, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

	#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	24	PFTrDA	662.9 > 618.9		3.21e3	0.259		6.00				
2	25	PFTeDA	712.9 > 668.8		1.20e3	0.259		6.22				
3	33	13C3-PFBS	302. > 98.8	6.62e2	5.66e3	0.259	0.116	2.77	2.61	1.46	48.5467	100.5
4	34	13C2-PFHxA	315 > 269.8	1.55e3	5.66e3	0.259	0.655	3.15	3.10	3.43	20.2059	104.6
5	35	13C4-PFHpA	367.2 > 321.8	3.39e3	5.66e3	0.259	0.722	3.78	3.72	7.48	40.0123	82.9
6	36	18O2-PFHxS	403.0 > 102.6	5.06e2	1.48e3	0.259	0.348	3.94	3.87	4.28	47.4304	98.2
7	37	13C2-6:2 FTS	429.1 > 408.9	9.70e2	5.94e3	0.259	0.222	4.25	4.19	2.04	35.5980	73.7
8	38	13C2-PFOA	414.9 > 369.7	6.14e3	5.94e3	0.259	1.023	4.31	4.24	12.9	48.8285	101.1
9	39	13C5-PFNA	468.2 > 422.9	5.06e3	5.50e3	0.259	0.916	4.81	4.67	11.5	48.4716	100.4
10	40	13C8-PFOSA	506.1 > 77.7	8.03e2	6.13e3	0.259	0.210	4.87	4.73	1.64	30.0429	62.2
11	41	13C8-PFOS	507.0 > 79.9	1.45e3	1.42e3	0.259	1.035	4.89	4.76	12.7	47.5484	98.5
12	42	13C2-PFDA	515.1 > 469.9	3.77e3	4.81e3	0.259	1.142	5.18	5.05	9.79	33.1258	68.6
13	43	13C2-8:2 FTS	529.1 > 508.7	6.27e2	5.66e3	0.259	0.157	5.15	5.02	1.39	34.1813	70.8
14	44	d3-N-MeFOSAA	573.3 > 419	1.40e3	6.13e3	0.259	0.299	5.32	5.19	2.85	36.7927	76.2
15	45	d5-N-EtFOSAA	589.3 > 419	1.44e3	6.13e3	0.259	0.369	5.47	5.35	2.93	30.6437	63.5
16	46	13C2-PFUdA	565 > 519.8	5.24e3	6.13e3	0.259	1.012	5.49	5.37	10.7	40.7779	84.5
17	47	13C2-PFDoA	615.0 > 569.7	3.21e3	6.13e3	0.259	0.647	5.77	5.65	6.54	39.0525	80.9
18	49	13C2-PFTeDA	714.8 > 669.6	1.20e3	6.13e3	0.259	0.294	6.22	6.11	2.45	32.2342	66.8
19	55	13C5-PFHxA	318 > 272.9	5.66e3	5.66e3	0.259	1.000	3.15	3.10	12.5	48.2831	100.0
20	56	13C3-PFHxS	401.9 > 79.9	1.48e3	1.48e3	0.259	1.000	4.02	3.87	12.5	48.2831	100.0
21	57	13C8-PFOA	421.3 > 376	5.94e3	5.94e3	0.259	1.000	4.38	4.24	12.5	48.2831	100.0
22	58	13C9-PFNA	472.2 > 426.9	5.50e3	5.50e3	0.259	1.000	4.81	4.67	12.5	48.2831	100.0
23	59	13C4-PFOS	503 > 79.9	1.42e3	1.42e3	0.259	1.000	4.89	4.76	12.5	48.2831	100.0
24	60	13C6-PFDA	519.1 > 473.7	4.81e3	4.81e3	0.259	1.000	5.18	5.05	12.5	48.2831	100.0
25	61	13C7-PFUdA	570.1 > 524.8	6.13e3	6.13e3	0.259	1.000	5.49	5.37	12.5	48.2831	100.0
26	62	Total PFHxS	398.9 > 79.6	0.00e0	5.06e2	0.259		4.14		0.000		
27	63	Total PFOA	413 > 368.7	0.00e0	6.14e3	0.259		4.51		0.000		
28	64	Total PFOS	499 > 79.9	0.00e0	1.45e3	0.259		5.02		0.000		
29	65	Total N-MeFOSAA	570.1 > 419	0.00e0	1.40e3	0.259		5.45		0.000		
30	66	Total N-EtFOSAA	584.2 > 419	0.00e0	1.44e3	0.259		5.61		0.000		

Vista Analytical Laboratory

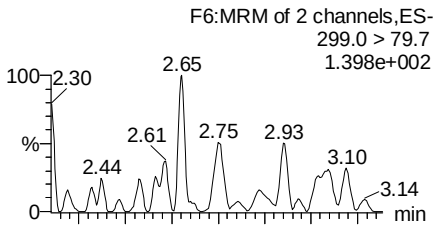
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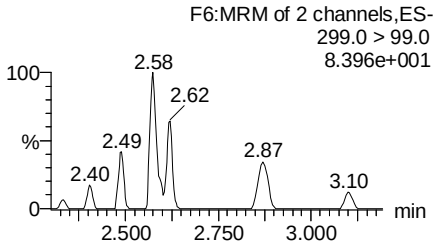
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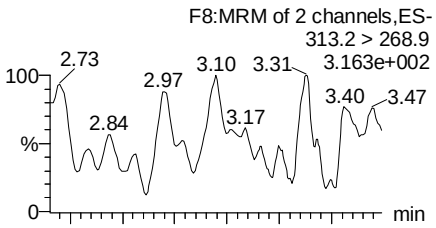
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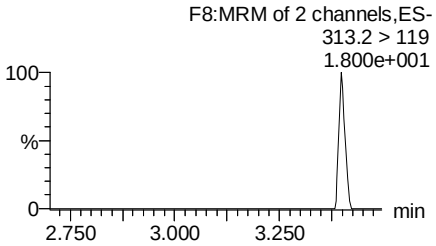
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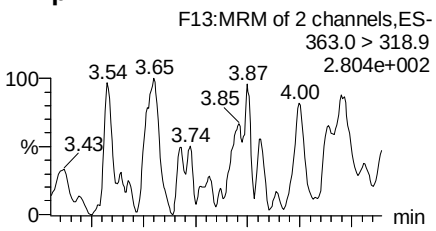


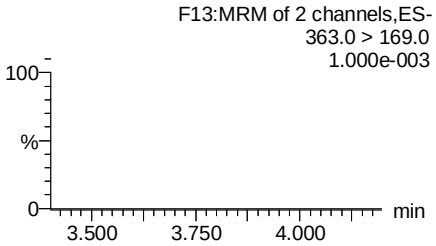
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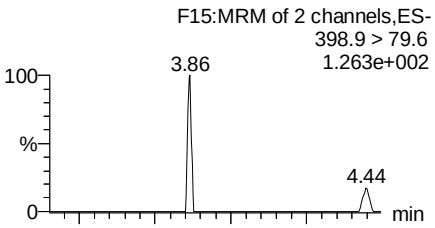


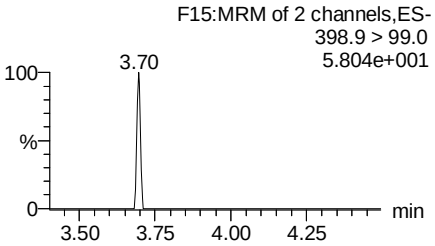
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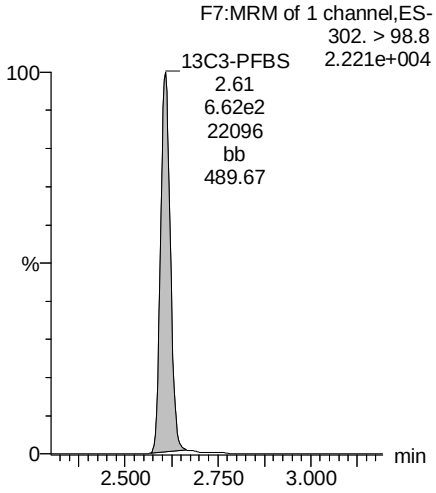


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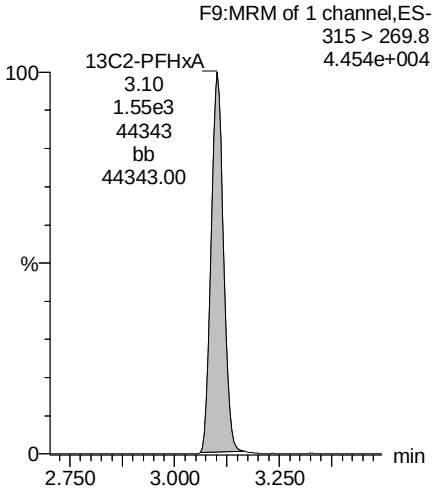




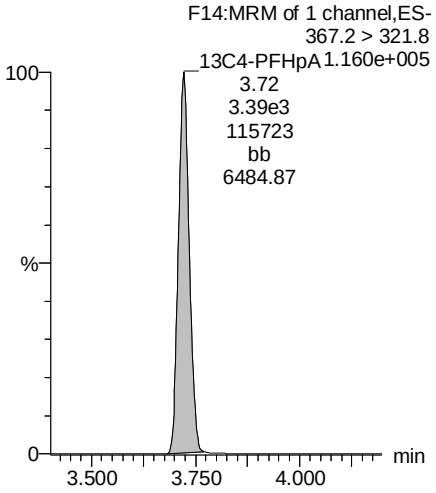
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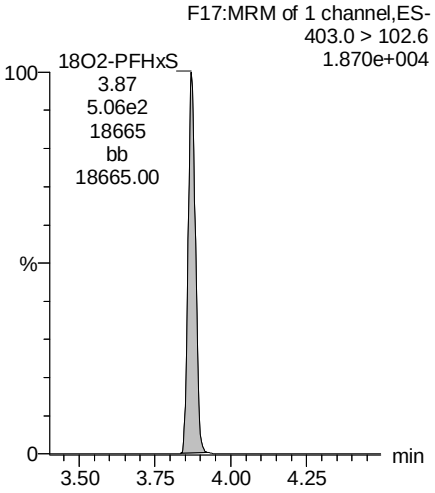
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13C4-PFHpA



18O2-PFHxS

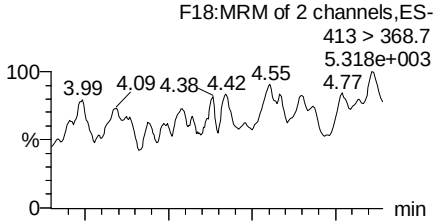


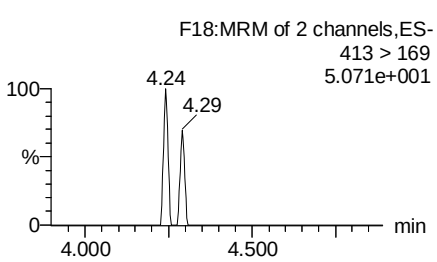
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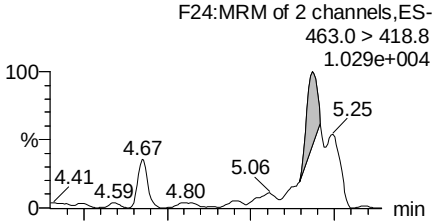
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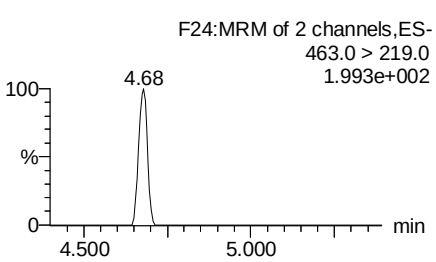
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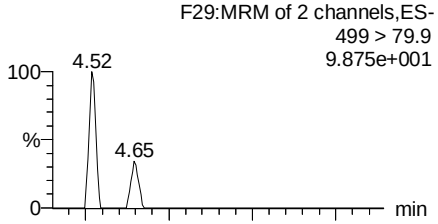


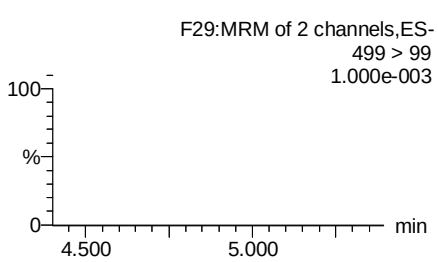
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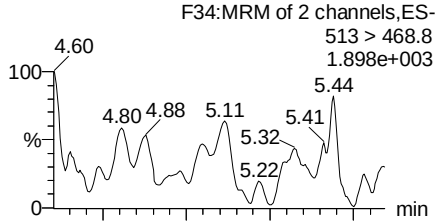


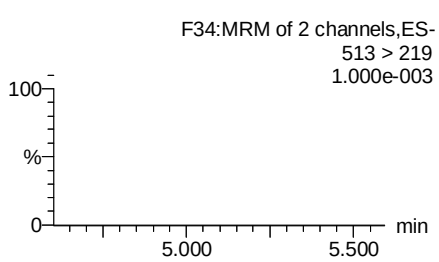
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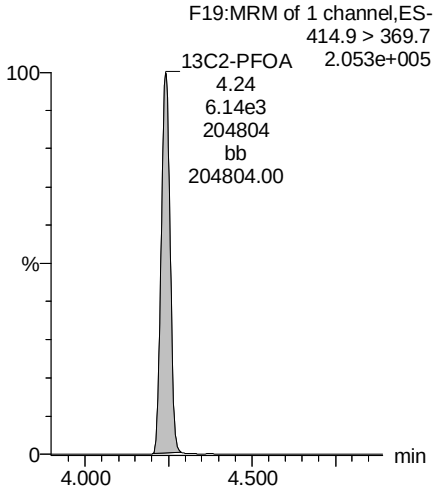


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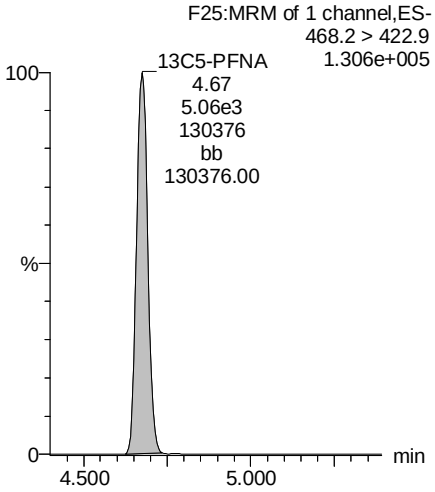




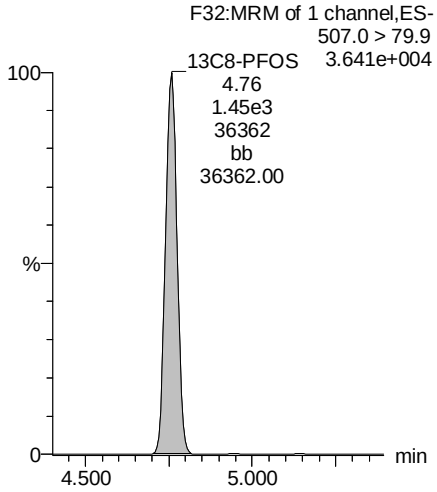
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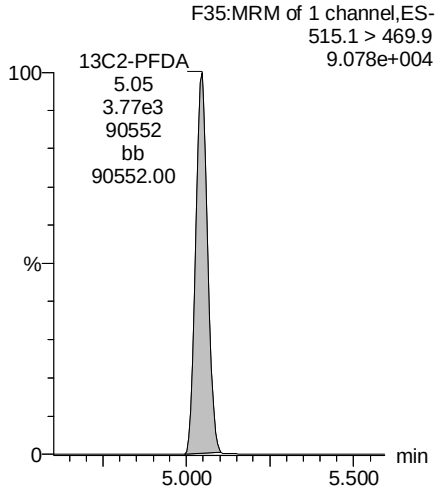
13C5-PFNA



13C8-PFOS



13C2-PFDA



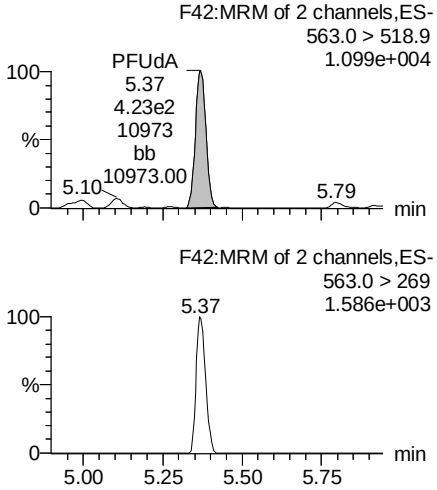
Vista Analytical Laboratory

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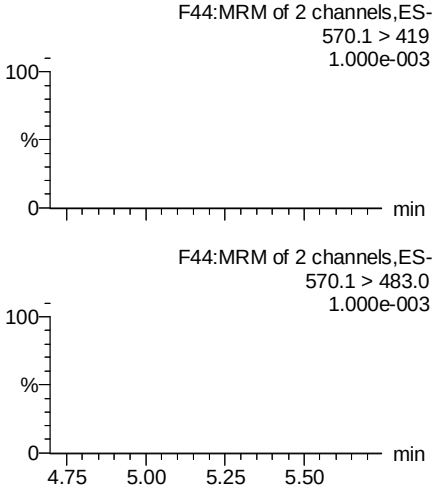
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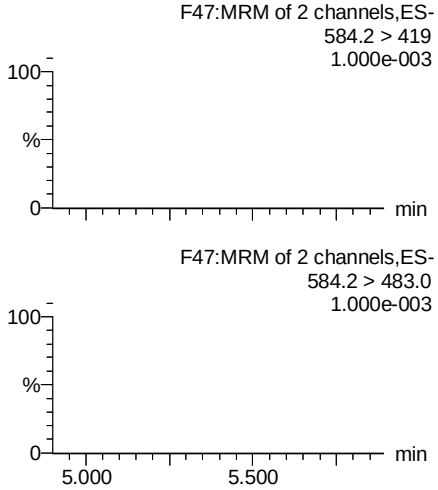
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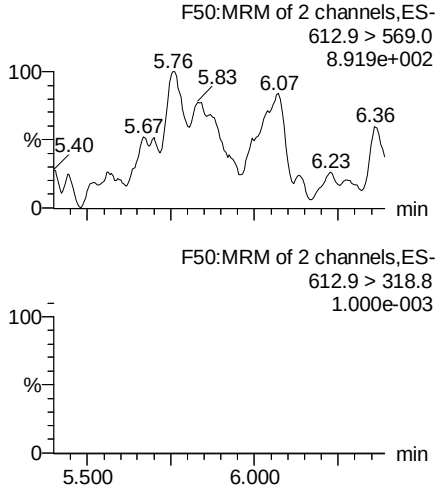
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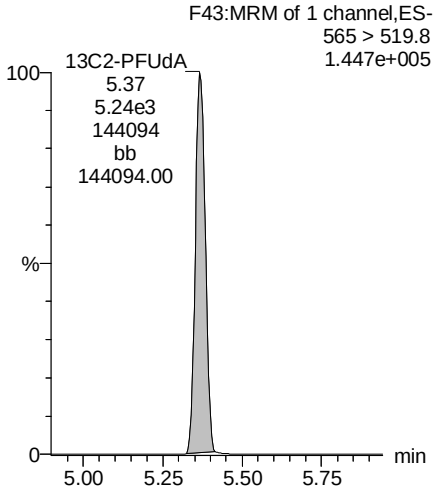
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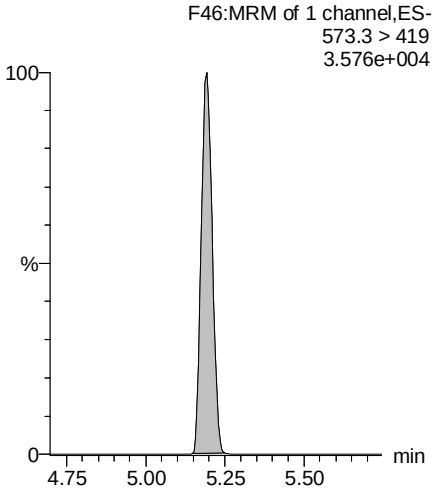
PFDoA



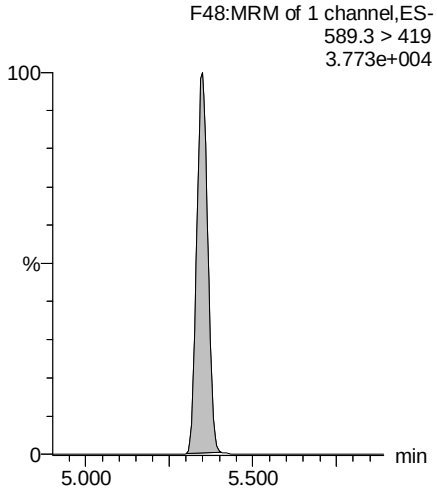
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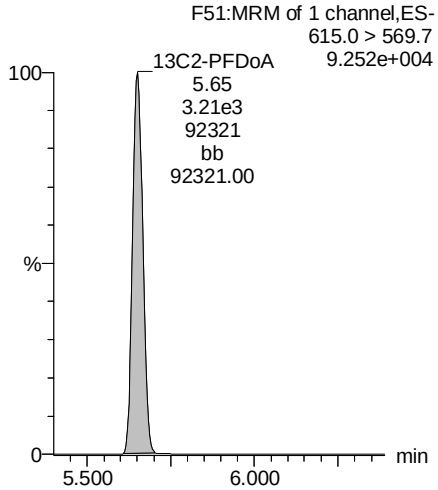
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d5-N-EtFOSAA



13C2-PFDoA



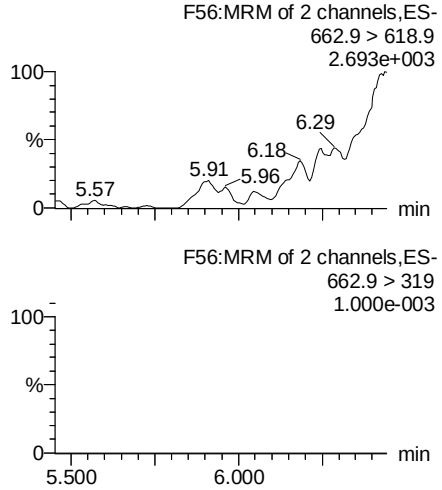
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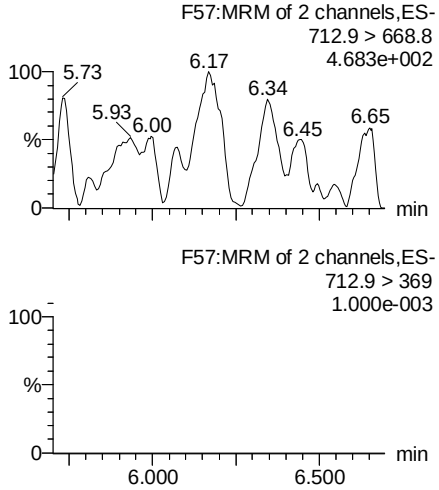
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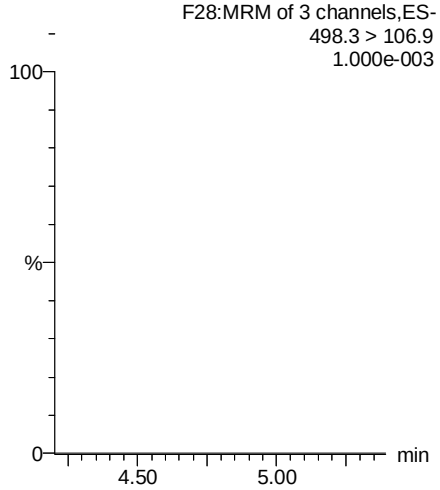
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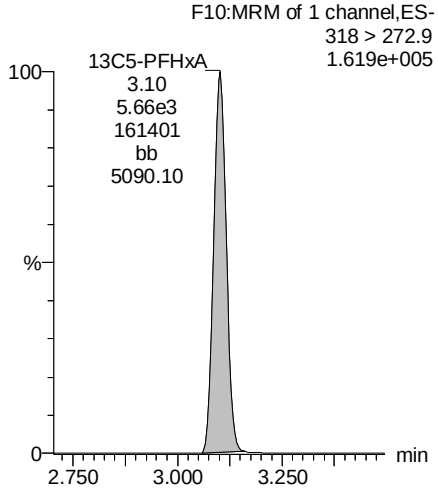
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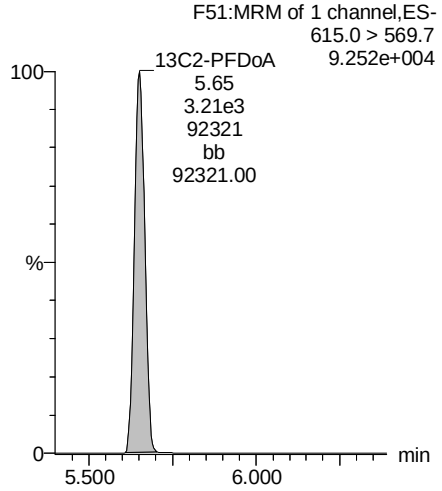
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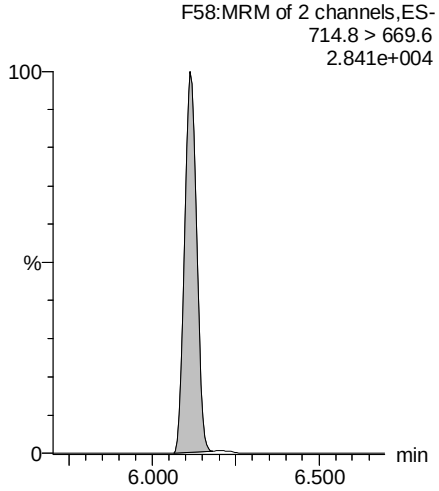
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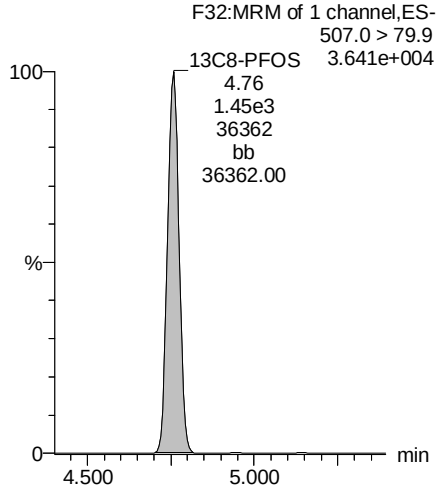
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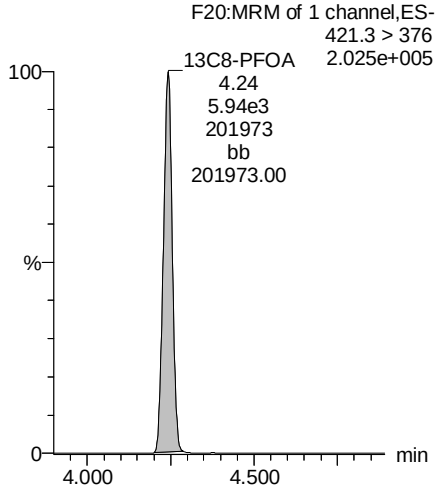
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13C8-PFOA

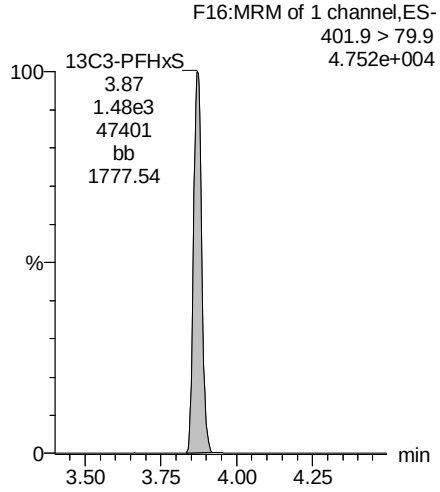


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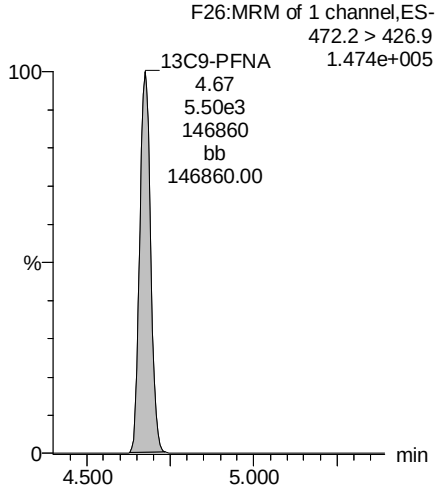
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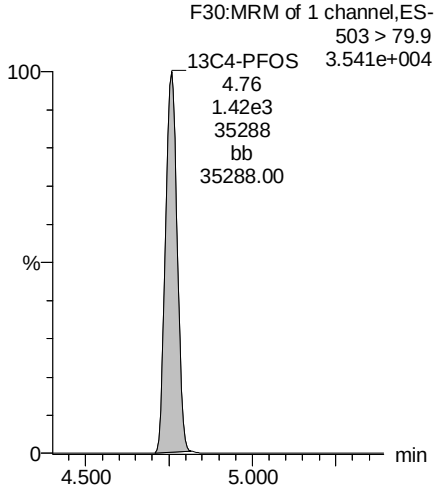
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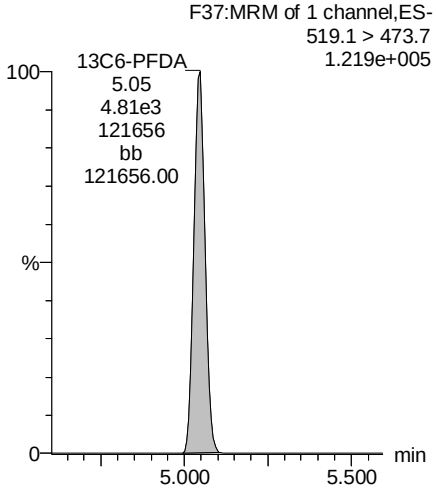
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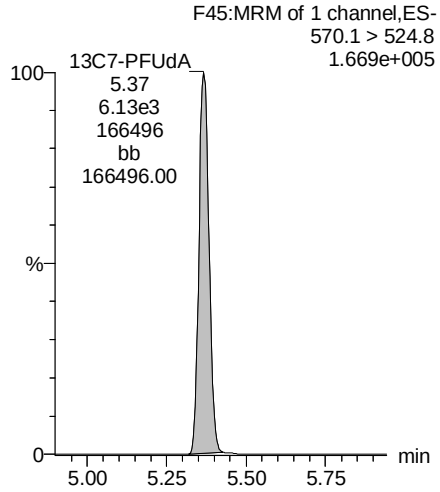
13C4-PFOS



13C6-PFDA



13C7-PFUdA



INJECTION INTERNAL STANDARD (IIS) AREAS,

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\180110M2\180110M2-IIS AREAS.qld

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Printed: Thursday, January 11, 2018 09:15:59 Pacific Standard Time

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Calibration: 11 Jan 2018 09:09:17

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1	1	13C4-PFBA	ST180110M2-1 PFC CS0 18A0808	5.85e3	100.0	NO
2	2	13C5-PFHxA	ST180110M2-1 PFC CS0 18A0808	7.28e3	100.0	NO
3	3	13C3-PFHxS	ST180110M2-1 PFC CS0 18A0808	1.46e3	100.0	NO
4	4	13C8-PFOA	ST180110M2-1 PFC CS0 18A0808	7.04e3	100.0	NO
5	5	13C9-PFNA	ST180110M2-1 PFC CS0 18A0808	6.53e3	100.0	NO
6	6	13C4-PFOS	ST180110M2-1 PFC CS0 18A0808	1.49e3	100.0	NO
7	7	13C6-PFDA	ST180110M2-1 PFC CS0 18A0808	4.40e3	100.0	NO
8	8	13C7-PFUdA	ST180110M2-1 PFC CS0 18A0808	7.24e3	100.0	NO

Name: 180110M2_2, Date: 10-Jan-2018, Time: 15:35:32, 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

Name: 180110M2_3, Date: 10-Jan-2018, Time: 15:46:43, ID: B7L0188-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-BS1 OPR 0.25	4.43e3	75.7	NO
2	2	13C5-PFHxA	B7L0188-BS1 OPR 0.25	5.03e3	69.2	NO
3	3	13C3-PFHxS	B7L0188-BS1 OPR 0.25	1.48e3	101.2	NO
4	4	13C8-PFOA	B7L0188-BS1 OPR 0.25	4.85e3	69.0	NO
5	5	13C9-PFNA	B7L0188-BS1 OPR 0.25	6.51e3	99.7	NO
6	6	13C4-PFOS	B7L0188-BS1 OPR 0.25	1.70e3	113.6	NO
7	7	13C6-PFDA	B7L0188-BS1 OPR 0.25	4.33e3	98.6	NO
8	8	13C7-PFUdA	B7L0188-BS1 OPR 0.25	5.47e3	75.5	NO

Name: 180110M2_4, Date: 10-Jan-2018, Time: 15:57:54, ID: B7L0215-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0215-BS1 OPR 0.125	5.06e3	86.5	NO
2	2	13C5-PFHxA	B7L0215-BS1 OPR 0.125	6.53e3	89.8	NO
3	3	13C3-PFHxS	B7L0215-BS1 OPR 0.125	1.84e3	126.0	NO
4	4	13C8-PFOA	B7L0215-BS1 OPR 0.125	4.94e3	70.3	NO
5	5	13C9-PFNA	B7L0215-BS1 OPR 0.125	6.78e3	103.9	NO
6	6	13C4-PFOS	B7L0215-BS1 OPR 0.125	1.62e3	108.3	NO
7	7	13C6-PFDA	B7L0215-BS1 OPR 0.125	3.84e3	87.4	NO
8	8	13C7-PFUdA	B7L0215-BS1 OPR 0.125	6.07e3	83.9	NO

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Name: 180110M2_5, Date: 10-Jan-2018, Time: 16:09:04, ID: B7L0188-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-BLK1 Method Blank 0.25	4.57e3	78.2	NO
2	2	13C5-PFHxA	B7L0188-BLK1 Method Blank 0.25	5.69e3	78.2	NO
3	3	13C3-PFHxS	B7L0188-BLK1 Method Blank 0.25	1.55e3	106.2	NO
4	4	13C8-PFOA	B7L0188-BLK1 Method Blank 0.25	5.22e3	74.3	NO
5	5	13C9-PFNA	B7L0188-BLK1 Method Blank 0.25	4.73e3	72.5	NO
6	6	13C4-PFOS	B7L0188-BLK1 Method Blank 0.25	1.32e3	88.4	NO
7	7	13C6-PFDA	B7L0188-BLK1 Method Blank 0.25	4.52e3	102.7	NO
8	8	13C7-PFUdA	B7L0188-BLK1 Method Blank 0.25	4.49e3	62.0	NO

Name: 180110M2_6, Date: 10-Jan-2018, Time: 16:20:15, ID: B7L0215-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0215-BLK1 Method Blank 0.125	4.88e3	83.4	NO
2	2	13C5-PFHxA	B7L0215-BLK1 Method Blank 0.125	5.68e3	78.1	NO
3	3	13C3-PFHxS	B7L0215-BLK1 Method Blank 0.125	1.71e3	117.2	NO
4	4	13C8-PFOA	B7L0215-BLK1 Method Blank 0.125	6.04e3	85.8	NO
5	5	13C9-PFNA	B7L0215-BLK1 Method Blank 0.125	6.54e3	100.2	NO
6	6	13C4-PFOS	B7L0215-BLK1 Method Blank 0.125	1.09e3	73.1	NO
7	7	13C6-PFDA	B7L0215-BLK1 Method Blank 0.125	3.69e3	83.9	NO
8	8	13C7-PFUdA	B7L0215-BLK1 Method Blank 0.125	6.05e3	83.6	NO

Name: 180110M2_7, Date: 10-Jan-2018, Time: 16:31:25, ID: B7L0215-MS1 Matrix Spike 0.12336, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0215-MS1 Matrix Spike 0.12336	3.91e3	66.8	NO
2	2	13C5-PFHxA	B7L0215-MS1 Matrix Spike 0.12336	4.59e3	63.1	NO
3	3	13C3-PFHxS	B7L0215-MS1 Matrix Spike 0.12336	1.47e3	101.1	NO
4	4	13C8-PFOA	B7L0215-MS1 Matrix Spike 0.12336	4.98e3	70.8	NO
5	5	13C9-PFNA	B7L0215-MS1 Matrix Spike 0.12336	4.79e3	73.4	NO
6	6	13C4-PFOS	B7L0215-MS1 Matrix Spike 0.12336	1.72e3	115.4	NO
7	7	13C6-PFDA	B7L0215-MS1 Matrix Spike 0.12336	3.15e3	71.7	NO
8	8	13C7-PFUdA	B7L0215-MS1 Matrix Spike 0.12336	4.08e3	56.4	NO

Name: 180110M2_8, Date: 10-Jan-2018, Time: 16:42:36, ID: B7L0215-MSD1 Matrix Spike Dup 0.12396, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0215-MSD1 Matrix Spike Dup 0.123...	3.89e3	66.5	NO
2	2	13C5-PFHxA	B7L0215-MSD1 Matrix Spike Dup 0.123...	5.06e3	69.6	NO
3	3	13C3-PFHxS	B7L0215-MSD1 Matrix Spike Dup 0.123...	1.64e3	112.1	NO
4	4	13C8-PFOA	B7L0215-MSD1 Matrix Spike Dup 0.123...	4.51e3	64.1	NO
5	5	13C9-PFNA	B7L0215-MSD1 Matrix Spike Dup 0.123...	4.72e3	72.3	NO
6	6	13C4-PFOS	B7L0215-MSD1 Matrix Spike Dup 0.123...	1.62e3	108.4	NO
7	7	13C6-PFDA	B7L0215-MSD1 Matrix Spike Dup 0.123...	4.28e3	97.4	NO
8	8	13C7-PFUdA	B7L0215-MSD1 Matrix Spike Dup 0.123...	5.55e3	76.7	NO

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Name: 180110M2_9, Date: 10-Jan-2018, Time: 16:53:47, ID: 1701986-01 REEPDW060 0.12357, Description: REEPDW060

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-01 REEPDW060 0.12357	3.75e3	64.1	NO
2	2	13C5-PFHxA	1701986-01 REEPDW060 0.12357	4.48e3	61.6	NO
3	3	13C3-PFHxS	1701986-01 REEPDW060 0.12357	1.41e3	96.5	NO
4	4	13C8-PFOA	1701986-01 REEPDW060 0.12357	4.45e3	63.3	NO
5	5	13C9-PFNA	1701986-01 REEPDW060 0.12357	5.40e3	82.8	NO
6	6	13C4-PFOS	1701986-01 REEPDW060 0.12357	1.44e3	96.5	NO
7	7	13C6-PFDA	1701986-01 REEPDW060 0.12357	3.14e3	71.6	NO
8	8	13C7-PFUdA	1701986-01 REEPDW060 0.12357	4.14e3	57.1	NO

Name: 180110M2_10, Date: 10-Jan-2018, Time: 17:04:58, ID: 1701986-02 REEPDW505 0.12328, Description: REEPDW505

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-02 REEPDW505 0.12328	3.62e3	61.8	NO
2	2	13C5-PFHxA	1701986-02 REEPDW505 0.12328	4.51e3	62.0	NO
3	3	13C3-PFHxS	1701986-02 REEPDW505 0.12328	1.71e3	117.1	NO
4	4	13C8-PFOA	1701986-02 REEPDW505 0.12328	4.35e3	61.8	NO
5	5	13C9-PFNA	1701986-02 REEPDW505 0.12328	4.64e3	71.1	NO
6	6	13C4-PFOS	1701986-02 REEPDW505 0.12328	1.80e3	120.7	NO
7	7	13C6-PFDA	1701986-02 REEPDW505 0.12328	3.11e3	70.7	NO
8	8	13C7-PFUdA	1701986-02 REEPDW505 0.12328	4.46e3	61.7	NO

Name: 180110M2_11, Date: 10-Jan-2018, Time: 17:16:09, ID: 1701986-03 REEPDW061 0.12293, Description: REEPDW061

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-03 REEPDW061 0.12293	4.19e3	71.6	NO
2	2	13C5-PFHxA	1701986-03 REEPDW061 0.12293	5.22e3	71.8	NO
3	3	13C3-PFHxS	1701986-03 REEPDW061 0.12293	1.59e3	108.7	NO
4	4	13C8-PFOA	1701986-03 REEPDW061 0.12293	4.48e3	63.6	NO
5	5	13C9-PFNA	1701986-03 REEPDW061 0.12293	4.91e3	75.2	NO
6	6	13C4-PFOS	1701986-03 REEPDW061 0.12293	1.63e3	109.1	NO
7	7	13C6-PFDA	1701986-03 REEPDW061 0.12293	3.38e3	76.9	NO
8	8	13C7-PFUdA	1701986-03 REEPDW061 0.12293	6.56e3	90.6	NO

Name: 180110M2_12, Date: 10-Jan-2018, Time: 17:27:19, ID: 1701986-04 REEPDW062 0.11873, Description: REEPDW062

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-04 REEPDW062 0.11873	3.59e3	61.4	NO
2	2	13C5-PFHxA	1701986-04 REEPDW062 0.11873	5.03e3	69.1	NO
3	3	13C3-PFHxS	1701986-04 REEPDW062 0.11873	1.51e3	103.4	NO
4	4	13C8-PFOA	1701986-04 REEPDW062 0.11873	4.76e3	67.7	NO
5	5	13C9-PFNA	1701986-04 REEPDW062 0.11873	4.56e3	69.8	NO
6	6	13C4-PFOS	1701986-04 REEPDW062 0.11873	1.72e3	115.0	NO
7	7	13C6-PFDA	1701986-04 REEPDW062 0.11873	3.28e3	74.6	NO
8	8	13C7-PFUdA	1701986-04 REEPDW062 0.11873	4.86e3	67.1	NO

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Name: 180110M2_13, Date: 10-Jan-2018, Time: 17:38:30, ID: 1701986-05 REEPDW063 0.12261, Description: REEPDW063

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-05 REEPDW063 0.12261	3.24e3	55.3	NO
2	2	13C5-PFHxA	1701986-05 REEPDW063 0.12261	4.18e3	57.4	NO
3	3	13C3-PFHxS	1701986-05 REEPDW063 0.12261	1.66e3	113.9	NO
4	4	13C8-PFOA	1701986-05 REEPDW063 0.12261	3.99e3	56.7	NO
5	5	13C9-PFNA	1701986-05 REEPDW063 0.12261	4.05e3	62.1	NO
6	6	13C4-PFOS	1701986-05 REEPDW063 0.12261	1.38e3	92.4	NO
7	7	13C6-PFDA	1701986-05 REEPDW063 0.12261	4.18e3	95.2	NO
8	8	13C7-PFUdA	1701986-05 REEPDW063 0.12261	5.21e3	72.0	NO

Name: 180110M2_14, Date: 10-Jan-2018, Time: 17:49:41, ID: 1701986-06 REEPDW064 0.12328, Description: REEPDW064

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-06 REEPDW064 0.12328	4.40e3	75.3	NO
2	2	13C5-PFHxA	1701986-06 REEPDW064 0.12328	5.14e3	70.6	NO
3	3	13C3-PFHxS	1701986-06 REEPDW064 0.12328	1.52e3	104.0	NO
4	4	13C8-PFOA	1701986-06 REEPDW064 0.12328	5.09e3	72.4	NO
5	5	13C9-PFNA	1701986-06 REEPDW064 0.12328	4.23e3	64.8	NO
6	6	13C4-PFOS	1701986-06 REEPDW064 0.12328	1.47e3	98.6	NO
7	7	13C6-PFDA	1701986-06 REEPDW064 0.12328	4.10e3	93.4	NO
8	8	13C7-PFUdA	1701986-06 REEPDW064 0.12328	5.85e3	80.8	NO

Name: 180110M2_15, Date: 10-Jan-2018, Time: 18:00:53, ID: 1701986-07 REEPDW065 0.12516, Description: REEPDW065

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-07 REEPDW065 0.12516	4.12e3	70.4	NO
2	2	13C5-PFHxA	1701986-07 REEPDW065 0.12516	4.90e3	67.3	NO
3	3	13C3-PFHxS	1701986-07 REEPDW065 0.12516	1.51e3	103.7	NO
4	4	13C8-PFOA	1701986-07 REEPDW065 0.12516	4.62e3	65.7	NO
5	5	13C9-PFNA	1701986-07 REEPDW065 0.12516	4.77e3	73.1	NO
6	6	13C4-PFOS	1701986-07 REEPDW065 0.12516	1.65e3	110.7	NO
7	7	13C6-PFDA	1701986-07 REEPDW065 0.12516	4.35e3	99.0	NO
8	8	13C7-PFUdA	1701986-07 REEPDW065 0.12516	5.60e3	77.4	NO

Name: 180110M2_16, Date: 10-Jan-2018, Time: 18:12:02, ID: 1701986-08 REEPDW066 0.11884, Description: REEPDW066

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-08 REEPDW066 0.11884	4.12e3	70.4	NO
2	2	13C5-PFHxA	1701986-08 REEPDW066 0.11884	5.52e3	75.8	NO
3	3	13C3-PFHxS	1701986-08 REEPDW066 0.11884	1.51e3	103.2	NO
4	4	13C8-PFOA	1701986-08 REEPDW066 0.11884	4.67e3	66.4	NO
5	5	13C9-PFNA	1701986-08 REEPDW066 0.11884	5.54e3	84.9	NO
6	6	13C4-PFOS	1701986-08 REEPDW066 0.11884	1.24e3	83.3	NO
7	7	13C6-PFDA	1701986-08 REEPDW066 0.11884	4.20e3	95.5	NO
8	8	13C7-PFUdA	1701986-08 REEPDW066 0.11884	5.29e3	73.1	NO

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Name: 180110M2_17, Date: 10-Jan-2018, Time: 18:23:13, ID: 1701986-09 REEPDW067 0.12708, Description: REEPDW067

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-09 REEPDW067 0.12708	4.29e3	73.3	NO
2	2	13C5-PFHxA	1701986-09 REEPDW067 0.12708	5.50e3	75.5	NO
3	3	13C3-PFHxS	1701986-09 REEPDW067 0.12708	1.55e3	106.0	NO
4	4	13C8-PFOA	1701986-09 REEPDW067 0.12708	5.14e3	73.0	NO
5	5	13C9-PFNA	1701986-09 REEPDW067 0.12708	4.98e3	76.3	NO
6	6	13C4-PFOS	1701986-09 REEPDW067 0.12708	1.66e3	110.8	NO
7	7	13C6-PFDA	1701986-09 REEPDW067 0.12708	4.03e3	91.8	NO
8	8	13C7-PFUdA	1701986-09 REEPDW067 0.12708	5.52e3	76.2	NO

Name: 180110M2_18, Date: 10-Jan-2018, Time: 18:34:23, ID: 1701986-10 REEPDW068 0.12339, Description: REEPDW068

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-10 REEPDW068 0.12339	4.49e3	76.7	NO
2	2	13C5-PFHxA	1701986-10 REEPDW068 0.12339	5.48e3	75.3	NO
3	3	13C3-PFHxS	1701986-10 REEPDW068 0.12339	1.67e3	114.8	NO
4	4	13C8-PFOA	1701986-10 REEPDW068 0.12339	5.27e3	74.9	NO
5	5	13C9-PFNA	1701986-10 REEPDW068 0.12339	6.47e3	99.2	NO
6	6	13C4-PFOS	1701986-10 REEPDW068 0.12339	1.50e3	100.6	NO
7	7	13C6-PFDA	1701986-10 REEPDW068 0.12339	4.90e3	111.4	NO
8	8	13C7-PFUdA	1701986-10 REEPDW068 0.12339	5.74e3	79.3	NO

Name: 180110M2_19, Date: 10-Jan-2018, Time: 18:45:34, 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: 180110M2_20, Date: 10-Jan-2018, Time: 18:56:45, ID: ST180110M2-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180110M2-2 PFC CS3 18A0811	6.56e3	112.2	NO
2	2	13C5-PFHxA	ST180110M2-2 PFC CS3 18A0811	7.51e3	103.2	NO
3	3	13C3-PFHxS	ST180110M2-2 PFC CS3 18A0811	1.99e3	136.4	NO
4	4	13C8-PFOA	ST180110M2-2 PFC CS3 18A0811	7.06e3	100.3	NO
5	5	13C9-PFNA	ST180110M2-2 PFC CS3 18A0811	7.10e3	108.8	NO
6	6	13C4-PFOS	ST180110M2-2 PFC CS3 18A0811	1.48e3	98.8	NO
7	7	13C6-PFDA	ST180110M2-2 PFC CS3 18A0811	5.96e3	135.6	NO
8	8	13C7-PFUdA	ST180110M2-2 PFC CS3 18A0811	7.95e3	109.9	NO

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Name: 180110M2_21, Date: 10-Jan-2018, Time: 19:07:56, 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

Name: 180110M2_22, Date: 10-Jan-2018, Time: 19:19:06, ID: 1701986-11 REEPDW069 0.1225, Description: REEPDW069

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-11 REEPDW069 0.1225	4.24e3	72.5	NO
2	2	13C5-PFHxA	1701986-11 REEPDW069 0.1225	5.11e3	70.2	NO
3	3	13C3-PFHxS	1701986-11 REEPDW069 0.1225	1.62e3	111.1	NO
4	4	13C8-PFOA	1701986-11 REEPDW069 0.1225	5.35e3	76.1	NO
5	5	13C9-PFNA	1701986-11 REEPDW069 0.1225	5.19e3	79.6	NO
6	6	13C4-PFOS	1701986-11 REEPDW069 0.1225	1.60e3	107.4	NO
7	7	13C6-PFDA	1701986-11 REEPDW069 0.1225	2.97e3	67.5	NO
8	8	13C7-PFUdA	1701986-11 REEPDW069 0.1225	6.50e3	89.8	NO

Name: 180110M2_23, Date: 10-Jan-2018, Time: 19:30:17, ID: 1701986-12 REEPDW070 0.12154, Description: REEPDW070

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-12 REEPDW070 0.12154	4.92e3	84.1	NO
2	2	13C5-PFHxA	1701986-12 REEPDW070 0.12154	5.53e3	76.0	NO
3	3	13C3-PFHxS	1701986-12 REEPDW070 0.12154	1.82e3	124.4	NO
4	4	13C8-PFOA	1701986-12 REEPDW070 0.12154	5.65e3	80.3	NO
5	5	13C9-PFNA	1701986-12 REEPDW070 0.12154	5.91e3	90.6	NO
6	6	13C4-PFOS	1701986-12 REEPDW070 0.12154	1.38e3	92.3	NO
7	7	13C6-PFDA	1701986-12 REEPDW070 0.12154	4.30e3	97.8	NO
8	8	13C7-PFUdA	1701986-12 REEPDW070 0.12154	6.51e3	89.9	NO

Name: 180110M2_24, Date: 10-Jan-2018, Time: 19:41:28, ID: 1701986-13 REEPDW506 0.11149, Description: REEPDW506

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-13 REEPDW506 0.11149	4.27e3	72.9	NO
2	2	13C5-PFHxA	1701986-13 REEPDW506 0.11149	5.67e3	77.9	NO
3	3	13C3-PFHxS	1701986-13 REEPDW506 0.11149	1.38e3	94.7	NO
4	4	13C8-PFOA	1701986-13 REEPDW506 0.11149	4.70e3	66.8	NO
5	5	13C9-PFNA	1701986-13 REEPDW506 0.11149	5.50e3	84.2	NO
6	6	13C4-PFOS	1701986-13 REEPDW506 0.11149	1.57e3	105.1	NO
7	7	13C6-PFDA	1701986-13 REEPDW506 0.11149	4.66e3	106.0	NO
8	8	13C7-PFUdA	1701986-13 REEPDW506 0.11149	5.69e3	78.7	NO

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Name: 180110M2_25, Date: 10-Jan-2018, Time: 19:52:39, ID: 1701986-14 REEPDW071 0.12235, Description: REEPDW071

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-14 REEPDW071 0.12235	4.09e3	70.0	NO
2	2	13C5-PFHxA	1701986-14 REEPDW071 0.12235	5.37e3	73.8	NO
3	3	13C3-PFHxS	1701986-14 REEPDW071 0.12235	1.88e3	128.9	NO
4	4	13C8-PFOA	1701986-14 REEPDW071 0.12235	5.63e3	80.0	NO
5	5	13C9-PFNA	1701986-14 REEPDW071 0.12235	6.09e3	93.4	NO
6	6	13C4-PFOS	1701986-14 REEPDW071 0.12235	1.60e3	106.8	NO
7	7	13C6-PFDA	1701986-14 REEPDW071 0.12235	4.40e3	100.1	NO
8	8	13C7-PFUdA	1701986-14 REEPDW071 0.12235	6.30e3	87.0	NO

Name: 180110M2_26, Date: 10-Jan-2018, Time: 20:03:49, ID: 1701986-15 REEPDW072 0.12184, Description: REEPDW072

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701986-15 REEPDW072 0.12184	4.69e3	80.2	NO
2	2	13C5-PFHxA	1701986-15 REEPDW072 0.12184	5.93e3	81.5	NO
3	3	13C3-PFHxS	1701986-15 REEPDW072 0.12184	1.67e3	114.4	NO
4	4	13C8-PFOA	1701986-15 REEPDW072 0.12184	5.39e3	76.7	NO
5	5	13C9-PFNA	1701986-15 REEPDW072 0.12184	5.19e3	79.5	NO
6	6	13C4-PFOS	1701986-15 REEPDW072 0.12184	1.70e3	114.0	NO
7	7	13C6-PFDA	1701986-15 REEPDW072 0.12184	4.34e3	98.8	NO
8	8	13C7-PFUdA	1701986-15 REEPDW072 0.12184	6.19e3	85.5	NO

Name: 180110M2_27, Date: 10-Jan-2018, Time: 20:15:00, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-MS1 Matrix Spike 0.24896	4.48e3	76.6	NO
2	2	13C5-PFHxA	B7L0188-MS1 Matrix Spike 0.24896	5.70e3	78.4	NO
3	3	13C3-PFHxS	B7L0188-MS1 Matrix Spike 0.24896	1.23e3	84.3	NO
4	4	13C8-PFOA	B7L0188-MS1 Matrix Spike 0.24896	4.79e3	68.2	NO
5	5	13C9-PFNA	B7L0188-MS1 Matrix Spike 0.24896	3.81e3	58.4	NO
6	6	13C4-PFOS	B7L0188-MS1 Matrix Spike 0.24896	1.34e3	90.0	NO
7	7	13C6-PFDA	B7L0188-MS1 Matrix Spike 0.24896	3.25e3	73.8	NO
8	8	13C7-PFUdA	B7L0188-MS1 Matrix Spike 0.24896	5.32e3	73.5	NO

Name: 180110M2_28, Date: 10-Jan-2018, Time: 20:26:11, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-MSD1 Matrix Spike Dup 0.237...	3.95e3	67.5	NO
2	2	13C5-PFHxA	B7L0188-MSD1 Matrix Spike Dup 0.237...	5.08e3	69.8	NO
3	3	13C3-PFHxS	B7L0188-MSD1 Matrix Spike Dup 0.237...	1.14e3	78.4	NO
4	4	13C8-PFOA	B7L0188-MSD1 Matrix Spike Dup 0.237...	4.43e3	62.9	NO
5	5	13C9-PFNA	B7L0188-MSD1 Matrix Spike Dup 0.237...	4.40e3	67.4	NO
6	6	13C4-PFOS	B7L0188-MSD1 Matrix Spike Dup 0.237...	1.09e3	72.9	NO
7	7	13C6-PFDA	B7L0188-MSD1 Matrix Spike Dup 0.237...	3.48e3	79.3	NO
8	8	13C7-PFUdA	B7L0188-MSD1 Matrix Spike Dup 0.237...	4.99e3	69.0	NO

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Name: 180110M2_29, Date: 10-Jan-2018, Time: 20:37:21, ID: 1701970-01 FT-PZ458S-20171214 0.25998, Description: FT-PZ458S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-01 FT-PZ458S-20171214 0.25...	4.61e3	78.7	NO
2	2	13C5-PFHxA	1701970-01 FT-PZ458S-20171214 0.25...	5.76e3	79.1	NO
3	3	13C3-PFHxS	1701970-01 FT-PZ458S-20171214 0.25...	1.56e3	106.6	NO
4	4	13C8-PFOA	1701970-01 FT-PZ458S-20171214 0.25...	5.00e3	71.0	NO
5	5	13C9-PFNA	1701970-01 FT-PZ458S-20171214 0.25...	5.30e3	81.2	NO
6	6	13C4-PFOS	1701970-01 FT-PZ458S-20171214 0.25...	1.44e3	96.6	NO
7	7	13C6-PFDA	1701970-01 FT-PZ458S-20171214 0.25...	3.71e3	84.4	NO
8	8	13C7-PFUdA	1701970-01 FT-PZ458S-20171214 0.25...	5.13e3	70.9	NO

Name: 180110M2_30, Date: 10-Jan-2018, Time: 20:48:32, ID: 1701970-02 FT-PZ458I-20171214 0.25291, Description: FT-PZ458I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-02 FT-PZ458I-20171214 0.25...	4.23e3	72.3	NO
2	2	13C5-PFHxA	1701970-02 FT-PZ458I-20171214 0.25...	5.17e3	71.0	NO
3	3	13C3-PFHxS	1701970-02 FT-PZ458I-20171214 0.25...	1.49e3	101.9	NO
4	4	13C8-PFOA	1701970-02 FT-PZ458I-20171214 0.25...	4.48e3	63.7	NO
5	5	13C9-PFNA	1701970-02 FT-PZ458I-20171214 0.25...	3.88e3	59.5	NO
6	6	13C4-PFOS	1701970-02 FT-PZ458I-20171214 0.25...	1.46e3	97.6	NO
7	7	13C6-PFDA	1701970-02 FT-PZ458I-20171214 0.25...	3.89e3	88.5	NO
8	8	13C7-PFUdA	1701970-02 FT-PZ458I-20171214 0.25...	5.56e3	76.9	NO

Name: 180110M2_31, Date: 10-Jan-2018, Time: 20:59:43, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-03 SA-MW132S-20171214 0....	4.39e3	75.0	NO
2	2	13C5-PFHxA	1701970-03 SA-MW132S-20171214 0....	5.48e3	75.3	NO
3	3	13C3-PFHxS	1701970-03 SA-MW132S-20171214 0....	1.38e3	94.8	NO
4	4	13C8-PFOA	1701970-03 SA-MW132S-20171214 0....	5.03e3	71.5	NO
5	5	13C9-PFNA	1701970-03 SA-MW132S-20171214 0....	5.51e3	84.4	NO
6	6	13C4-PFOS	1701970-03 SA-MW132S-20171214 0....	1.30e3	86.8	NO
7	7	13C6-PFDA	1701970-03 SA-MW132S-20171214 0....	4.88e3	111.1	NO
8	8	13C7-PFUdA	1701970-03 SA-MW132S-20171214 0....	6.04e3	83.5	NO

Name: 180110M2_32, Date: 10-Jan-2018, Time: 21:10:53, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-04 SA-MW132S-FRB-201712...	4.86e3	83.1	NO
2	2	13C5-PFHxA	1701970-04 SA-MW132S-FRB-201712...	5.99e3	82.3	NO
3	3	13C3-PFHxS	1701970-04 SA-MW132S-FRB-201712...	1.46e3	100.1	NO
4	4	13C8-PFOA	1701970-04 SA-MW132S-FRB-201712...	5.19e3	73.7	NO
5	5	13C9-PFNA	1701970-04 SA-MW132S-FRB-201712...	6.00e3	92.0	NO
6	6	13C4-PFOS	1701970-04 SA-MW132S-FRB-201712...	1.21e3	80.8	NO
7	7	13C6-PFDA	1701970-04 SA-MW132S-FRB-201712...	3.45e3	78.5	NO
8	8	13C7-PFUdA	1701970-04 SA-MW132S-FRB-201712...	6.53e3	90.3	NO

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Name: 180110M2_33, Date: 10-Jan-2018, Time: 21:22:04, ID: 1701970-05 SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-05 SA-MW132I-20171214 0.2...	4.70e3	80.3	NO
2	2	13C5-PFHxA	1701970-05 SA-MW132I-20171214 0.2...	5.41e3	74.3	NO
3	3	13C3-PFHxS	1701970-05 SA-MW132I-20171214 0.2...	1.53e3	105.1	NO
4	4	13C8-PFOA	1701970-05 SA-MW132I-20171214 0.2...	4.75e3	67.5	NO
5	5	13C9-PFNA	1701970-05 SA-MW132I-20171214 0.2...	4.59e3	70.4	NO
6	6	13C4-PFOS	1701970-05 SA-MW132I-20171214 0.2...	1.34e3	89.6	NO
7	7	13C6-PFDA	1701970-05 SA-MW132I-20171214 0.2...	2.83e3	64.4	NO
8	8	13C7-PFUdA	1701970-05 SA-MW132I-20171214 0.2...	5.91e3	81.6	NO

Name: 180110M2_34, Date: 10-Jan-2018, Time: 21:33:14, 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: 180110M2_35, Date: 10-Jan-2018, Time: 21:44:25, ID: ST180110M2-3 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180110M2-3 PFC CS3 18A0811	7.65e3	130.7	NO
2	2	13C5-PFHxA	ST180110M2-3 PFC CS3 18A0811	9.41e3	129.3	NO
3	3	13C3-PFHxS	ST180110M2-3 PFC CS3 18A0811	2.25e3	154.1	YES
4	4	13C8-PFOA	ST180110M2-3 PFC CS3 18A0811	6.78e3	96.4	NO
5	5	13C9-PFNA	ST180110M2-3 PFC CS3 18A0811	8.52e3	130.6	NO
6	6	13C4-PFOS	ST180110M2-3 PFC CS3 18A0811	1.99e3	133.0	NO
7	7	13C6-PFDA	ST180110M2-3 PFC CS3 18A0811	5.94e3	135.2	NO
8	8	13C7-PFUdA	ST180110M2-3 PFC CS3 18A0811	8.60e3	118.8	NO

Name: 180110M2_36, Date: 10-Jan-2018, Time: 21:55:36, 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: 180110M2_37, Date: 10-Jan-2018, Time: 22:06:47, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-06 FT-PZ459S-20171214 0.25...	5.02e3	85.8	NO
2	2	13C5-PFHxA	1701970-06 FT-PZ459S-20171214 0.25...	5.70e3	78.3	NO
3	3	13C3-PFHxS	1701970-06 FT-PZ459S-20171214 0.25...	1.41e3	96.3	NO
4	4	13C8-PFOA	1701970-06 FT-PZ459S-20171214 0.25...	5.37e3	76.4	NO
5	5	13C9-PFNA	1701970-06 FT-PZ459S-20171214 0.25...	6.07e3	92.9	NO
6	6	13C4-PFOS	1701970-06 FT-PZ459S-20171214 0.25...	1.43e3	95.8	NO
7	7	13C6-PFDA	1701970-06 FT-PZ459S-20171214 0.25...	3.92e3	89.1	NO
8	8	13C7-PFUdA	1701970-06 FT-PZ459S-20171214 0.25...	5.66e3	78.2	NO

Name: 180110M2_38, Date: 10-Jan-2018, Time: 22:18:02, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-07 FT-PZ459I-20171214 0.2457	4.48e3	76.6	NO
2	2	13C5-PFHxA	1701970-07 FT-PZ459I-20171214 0.2457	5.33e3	73.2	NO
3	3	13C3-PFHxS	1701970-07 FT-PZ459I-20171214 0.2457	1.35e3	92.2	NO
4	4	13C8-PFOA	1701970-07 FT-PZ459I-20171214 0.2457	5.08e3	72.2	NO
5	5	13C9-PFNA	1701970-07 FT-PZ459I-20171214 0.2457	5.29e3	81.1	NO
6	6	13C4-PFOS	1701970-07 FT-PZ459I-20171214 0.2457	1.34e3	89.5	NO
7	7	13C6-PFDA	1701970-07 FT-PZ459I-20171214 0.2457	4.21e3	95.8	NO
8	8	13C7-PFUdA	1701970-07 FT-PZ459I-20171214 0.2457	5.16e3	71.3	NO

Name: 180110M2_39, Date: 10-Jan-2018, Time: 22:29:11, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-08 FT-PZ463S-20171214 0.25...	4.95e3	84.7	NO
2	2	13C5-PFHxA	1701970-08 FT-PZ463S-20171214 0.25...	6.88e3	94.5	NO
3	3	13C3-PFHxS	1701970-08 FT-PZ463S-20171214 0.25...	1.66e3	113.5	NO
4	4	13C8-PFOA	1701970-08 FT-PZ463S-20171214 0.25...	4.98e3	70.8	NO
5	5	13C9-PFNA	1701970-08 FT-PZ463S-20171214 0.25...	5.39e3	82.6	NO
6	6	13C4-PFOS	1701970-08 FT-PZ463S-20171214 0.25...	1.58e3	105.4	NO
7	7	13C6-PFDA	1701970-08 FT-PZ463S-20171214 0.25...	4.14e3	94.1	NO
8	8	13C7-PFUdA	1701970-08 FT-PZ463S-20171214 0.25...	5.24e3	72.3	NO

Name: 180110M2_40, Date: 10-Jan-2018, Time: 22:40:22, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-09 FT-PZ463I-20171214 0.26...	4.93e3	84.3	NO
2	2	13C5-PFHxA	1701970-09 FT-PZ463I-20171214 0.26...	5.50e3	75.6	NO
3	3	13C3-PFHxS	1701970-09 FT-PZ463I-20171214 0.26...	1.77e3	121.2	NO
4	4	13C8-PFOA	1701970-09 FT-PZ463I-20171214 0.26...	6.10e3	86.8	NO
5	5	13C9-PFNA	1701970-09 FT-PZ463I-20171214 0.26...	5.65e3	86.7	NO
6	6	13C4-PFOS	1701970-09 FT-PZ463I-20171214 0.26...	1.35e3	90.5	NO
7	7	13C6-PFDA	1701970-09 FT-PZ463I-20171214 0.26...	3.19e3	72.6	NO
8	8	13C7-PFUdA	1701970-09 FT-PZ463I-20171214 0.26...	5.92e3	81.8	NO

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Name: 180110M2_41, Date: 10-Jan-2018, Time: 22:51:32, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-10 CV-TANK-20171214 0.25889	4.69e3	80.2	NO
2	2	13C5-PFHxA	1701970-10 CV-TANK-20171214 0.25889	5.66e3	77.8	NO
3	3	13C3-PFHxS	1701970-10 CV-TANK-20171214 0.25889	1.48e3	101.3	NO
4	4	13C8-PFOA	1701970-10 CV-TANK-20171214 0.25889	5.94e3	84.4	NO
5	5	13C9-PFNA	1701970-10 CV-TANK-20171214 0.25889	5.50e3	84.3	NO
6	6	13C4-PFOS	1701970-10 CV-TANK-20171214 0.25889	1.42e3	95.3	NO
7	7	13C6-PFDA	1701970-10 CV-TANK-20171214 0.25889	4.81e3	109.4	NO
8	8	13C7-PFUdA	1701970-10 CV-TANK-20171214 0.25889	6.13e3	84.7	NO

Name: 180110M2_42, Date: 10-Jan-2018, Time: 23:02:43, 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: 180110M2_43, Date: 10-Jan-2018, Time: 23:13:54, ID: B7L0218-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BS1 OPR 0.25	4.89e3	83.6	NO
2	2	13C5-PFHxA	B7L0218-BS1 OPR 0.25	6.59e3	90.6	NO
3	3	13C3-PFHxS	B7L0218-BS1 OPR 0.25	1.79e3	122.7	NO
4	4	13C8-PFOA	B7L0218-BS1 OPR 0.25	6.02e3	85.6	NO
5	5	13C9-PFNA	B7L0218-BS1 OPR 0.25	7.53e3	115.5	NO
6	6	13C4-PFOS	B7L0218-BS1 OPR 0.25	1.42e3	94.7	NO
7	7	13C6-PFDA	B7L0218-BS1 OPR 0.25	4.14e3	94.3	NO
8	8	13C7-PFUdA	B7L0218-BS1 OPR 0.25	6.15e3	84.9	NO

Name: 180110M2_44, Date: 10-Jan-2018, Time: 23:25:04, ID: B7L0218-BSD1 LCSD 0.25, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BSD1 LCSD 0.25	4.38e3	74.9	NO
2	2	13C5-PFHxA	B7L0218-BSD1 LCSD 0.25	5.29e3	72.8	NO
3	3	13C3-PFHxS	B7L0218-BSD1 LCSD 0.25	1.34e3	91.6	NO
4	4	13C8-PFOA	B7L0218-BSD1 LCSD 0.25	5.12e3	72.8	NO
5	5	13C9-PFNA	B7L0218-BSD1 LCSD 0.25	5.49e3	84.2	NO
6	6	13C4-PFOS	B7L0218-BSD1 LCSD 0.25	1.46e3	98.0	NO
7	7	13C6-PFDA	B7L0218-BSD1 LCSD 0.25	3.14e3	71.5	NO
8	8	13C7-PFUdA	B7L0218-BSD1 LCSD 0.25	5.32e3	73.5	NO

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Name: 180110M2_45, Date: 10-Jan-2018, Time: 23:36:15, 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: 180110M2_46, Date: 10-Jan-2018, Time: 23:47:26, ID: B7L0218-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BLK1 Method Blank 0.25	3.79e3	64.8	NO
2	2	13C5-PFHxA	B7L0218-BLK1 Method Blank 0.25	4.86e3	66.8	NO
3	3	13C3-PFHxS	B7L0218-BLK1 Method Blank 0.25	1.41e3	96.6	NO
4	4	13C8-PFOA	B7L0218-BLK1 Method Blank 0.25	4.66e3	66.2	NO
5	5	13C9-PFNA	B7L0218-BLK1 Method Blank 0.25	4.75e3	72.7	NO
6	6	13C4-PFOS	B7L0218-BLK1 Method Blank 0.25	1.11e3	74.0	NO
7	7	13C6-PFDA	B7L0218-BLK1 Method Blank 0.25	3.34e3	76.1	NO
8	8	13C7-PFUdA	B7L0218-BLK1 Method Blank 0.25	5.65e3	78.1	NO

Name: 180110M2_47, Date: 10-Jan-2018, Time: 23:58:45, ID: 1701991-01 REEPDW073 0.11453, Description: REEPDW073

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701991-01 REEPDW073 0.11453	3.07e3	52.5	NO
2	2	13C5-PFHxA	1701991-01 REEPDW073 0.11453	3.65e3	50.1	NO
3	3	13C3-PFHxS	1701991-01 REEPDW073 0.11453	1.70e3	116.5	NO
4	4	13C8-PFOA	1701991-01 REEPDW073 0.11453	3.65e3	51.9	NO
5	5	13C9-PFNA	1701991-01 REEPDW073 0.11453	3.59e3	55.0	NO
6	6	13C4-PFOS	1701991-01 REEPDW073 0.11453	1.52e3	101.7	NO
7	7	13C6-PFDA	1701991-01 REEPDW073 0.11453	3.45e3	78.6	NO
8	8	13C7-PFUdA	1701991-01 REEPDW073 0.11453	4.14e3	57.2	NO

Name: 180110M2_48, Date: 11-Jan-2018, Time: 00:09:55, ID: 1701991-02 REEPDW074 0.11902, Description: REEPDW074

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701991-02 REEPDW074 0.11902	2.59e3	44.2	YES
2	2	13C5-PFHxA	1701991-02 REEPDW074 0.11902	3.33e3	45.7	YES
3	3	13C3-PFHxS	1701991-02 REEPDW074 0.11902	1.49e3	102.1	NO
4	4	13C8-PFOA	1701991-02 REEPDW074 0.11902	3.55e3	50.5	NO
5	5	13C9-PFNA	1701991-02 REEPDW074 0.11902	3.75e3	57.5	NO
6	6	13C4-PFOS	1701991-02 REEPDW074 0.11902	1.49e3	99.6	NO
7	7	13C6-PFDA	1701991-02 REEPDW074 0.11902	3.22e3	73.4	NO
8	8	13C7-PFUdA	1701991-02 REEPDW074 0.11902	3.86e3	53.3	NO

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Name: 180110M2_49, Date: 11-Jan-2018, Time: 00:21:06, ID: 1701991-03 REEPDW075 0.11962, Description: REEPDW075

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701991-03 REEPDW075 0.11962	3.40e3	58.1	NO
2	2	13C5-PFHxA	1701991-03 REEPDW075 0.11962	4.38e3	60.2	NO
3	3	13C3-PFHxS	1701991-03 REEPDW075 0.11962	1.50e3	102.8	NO
4	4	13C8-PFOA	1701991-03 REEPDW075 0.11962	3.96e3	56.3	NO
5	5	13C9-PFNA	1701991-03 REEPDW075 0.11962	4.03e3	61.8	NO
6	6	13C4-PFOS	1701991-03 REEPDW075 0.11962	1.40e3	93.9	NO
7	7	13C6-PFDA	1701991-03 REEPDW075 0.11962	3.27e3	74.5	NO
8	8	13C7-PFUdA	1701991-03 REEPDW075 0.11962	4.01e3	55.4	NO

Name: 180110M2_50, Date: 11-Jan-2018, Time: 00:32:17, ID: 1701991-04 REEPDW076 0.11478, Description: REEPDW076

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701991-04 REEPDW076 0.11478	3.58e3	61.2	NO
2	2	13C5-PFHxA	1701991-04 REEPDW076 0.11478	3.95e3	54.2	NO
3	3	13C3-PFHxS	1701991-04 REEPDW076 0.11478	1.47e3	100.8	NO
4	4	13C8-PFOA	1701991-04 REEPDW076 0.11478	4.32e3	61.5	NO
5	5	13C9-PFNA	1701991-04 REEPDW076 0.11478	4.68e3	71.8	NO
6	6	13C4-PFOS	1701991-04 REEPDW076 0.11478	1.58e3	105.8	NO
7	7	13C6-PFDA	1701991-04 REEPDW076 0.11478	3.35e3	76.3	NO
8	8	13C7-PFUdA	1701991-04 REEPDW076 0.11478	4.12e3	56.9	NO

Name: 180110M2_51, Date: 11-Jan-2018, Time: 00:43:31, ID: 1701991-05 REEPDW077 0.11838, Description: REEPDW077

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701991-05 REEPDW077 0.11838	3.66e3	62.6	NO
2	2	13C5-PFHxA	1701991-05 REEPDW077 0.11838	4.21e3	57.9	NO
3	3	13C3-PFHxS	1701991-05 REEPDW077 0.11838	1.37e3	93.8	NO
4	4	13C8-PFOA	1701991-05 REEPDW077 0.11838	3.58e3	50.9	NO
5	5	13C9-PFNA	1701991-05 REEPDW077 0.11838	4.36e3	66.8	NO
6	6	13C4-PFOS	1701991-05 REEPDW077 0.11838	1.41e3	94.6	NO
7	7	13C6-PFDA	1701991-05 REEPDW077 0.11838	3.19e3	72.7	NO
8	8	13C7-PFUdA	1701991-05 REEPDW077 0.11838	4.10e3	56.7	NO

Name: 180110M2_52, Date: 11-Jan-2018, Time: 00:54:49, ID: 1701992-01 REEPDW073FRB 0.11802, Description: REEPDW073FRB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701992-01 REEPDW073FRB 0.11802	4.33e3	74.0	NO
2	2	13C5-PFHxA	1701992-01 REEPDW073FRB 0.11802	5.80e3	79.8	NO
3	3	13C3-PFHxS	1701992-01 REEPDW073FRB 0.11802	1.37e3	94.1	NO
4	4	13C8-PFOA	1701992-01 REEPDW073FRB 0.11802	5.31e3	75.5	NO
5	5	13C9-PFNA	1701992-01 REEPDW073FRB 0.11802	4.90e3	75.1	NO
6	6	13C4-PFOS	1701992-01 REEPDW073FRB 0.11802	1.21e3	80.7	NO
7	7	13C6-PFDA	1701992-01 REEPDW073FRB 0.11802	4.65e3	105.8	NO
8	8	13C7-PFUdA	1701992-01 REEPDW073FRB 0.11802	5.66e3	78.1	NO

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Name: 180110M2_53, Date: 11-Jan-2018, Time: 01:06:06, ID: 1701992-02 REEPDW074FRB 0.11783, Description: REEPDW074FRB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701992-02 REEPDW074FRB 0.11783	4.79e3	81.9	NO
2	2	13C5-PFHxA	1701992-02 REEPDW074FRB 0.11783	5.46e3	75.0	NO
3	3	13C3-PFHxS	1701992-02 REEPDW074FRB 0.11783	1.49e3	102.4	NO
4	4	13C8-PFOA	1701992-02 REEPDW074FRB 0.11783	5.53e3	78.6	NO
5	5	13C9-PFNA	1701992-02 REEPDW074FRB 0.11783	6.52e3	99.9	NO
6	6	13C4-PFOS	1701992-02 REEPDW074FRB 0.11783	1.53e3	102.5	NO
7	7	13C6-PFDA	1701992-02 REEPDW074FRB 0.11783	4.82e3	109.6	NO
8	8	13C7-PFUdA	1701992-02 REEPDW074FRB 0.11783	6.19e3	85.5	NO

Name: 180110M2_54, Date: 11-Jan-2018, Time: 01:17:16, ID: 1701992-03 REEPDW075FRB 0.10583, Description: REEPDW075FRB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701992-03 REEPDW075FRB 0.10583	5.37e3	91.8	NO
2	2	13C5-PFHxA	1701992-03 REEPDW075FRB 0.10583	6.45e3	88.6	NO
3	3	13C3-PFHxS	1701992-03 REEPDW075FRB 0.10583	1.97e3	135.3	NO
4	4	13C8-PFOA	1701992-03 REEPDW075FRB 0.10583	5.25e3	74.6	NO
5	5	13C9-PFNA	1701992-03 REEPDW075FRB 0.10583	5.92e3	90.8	NO
6	6	13C4-PFOS	1701992-03 REEPDW075FRB 0.10583	1.21e3	80.8	NO
7	7	13C6-PFDA	1701992-03 REEPDW075FRB 0.10583	4.76e3	108.4	NO
8	8	13C7-PFUdA	1701992-03 REEPDW075FRB 0.10583	6.43e3	88.9	NO

Name: 180110M2_55, Date: 11-Jan-2018, Time: 01:28:27, ID: 1701992-04 REEPDW076FRB 0.11734, Description: REEPDW076FRB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701992-04 REEPDW076FRB 0.11734	5.21e3	89.0	NO
2	2	13C5-PFHxA	1701992-04 REEPDW076FRB 0.11734	6.29e3	86.5	NO
3	3	13C3-PFHxS	1701992-04 REEPDW076FRB 0.11734	1.62e3	111.0	NO
4	4	13C8-PFOA	1701992-04 REEPDW076FRB 0.11734	6.54e3	92.9	NO
5	5	13C9-PFNA	1701992-04 REEPDW076FRB 0.11734	6.81e3	104.4	NO
6	6	13C4-PFOS	1701992-04 REEPDW076FRB 0.11734	1.48e3	98.9	NO
7	7	13C6-PFDA	1701992-04 REEPDW076FRB 0.11734	4.52e3	102.7	NO
8	8	13C7-PFUdA	1701992-04 REEPDW076FRB 0.11734	6.41e3	88.5	NO

Name: 180110M2_56, Date: 11-Jan-2018, Time: 08:37:58, ID: 1701992-05 REEPDW077FRB 0.11805, Description: REEPDW077FRB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701992-05 REEPDW077FRB 0.11805	4.52e3	77.3	NO
2	2	13C5-PFHxA	1701992-05 REEPDW077FRB 0.11805	6.22e3	85.5	NO
3	3	13C3-PFHxS	1701992-05 REEPDW077FRB 0.11805	1.50e3	103.1	NO
4	4	13C8-PFOA	1701992-05 REEPDW077FRB 0.11805	5.10e3	72.4	NO
5	5	13C9-PFNA	1701992-05 REEPDW077FRB 0.11805	5.71e3	87.6	NO
6	6	13C4-PFOS	1701992-05 REEPDW077FRB 0.11805	1.54e3	103.3	NO
7	7	13C6-PFDA	1701992-05 REEPDW077FRB 0.11805	4.74e3	107.7	NO
8	8	13C7-PFUdA	1701992-05 REEPDW077FRB 0.11805	7.82e3	108.0	NO

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Name: 180110M2_57, Date: 11-Jan-2018, Time: 08:49:16, 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: 180110M2_58, Date: 11-Jan-2018, Time: 09:00:26, ID: ST180110M2-4 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180110M2-4 PFC CS3 18A0811	7.66e3	131.0	NO
2	2	13C5-PFHxA	ST180110M2-4 PFC CS3 18A0811	9.59e3	131.7	NO
3	3	13C3-PFHxS	ST180110M2-4 PFC CS3 18A0811	2.48e3	170.2	YES
4	4	13C8-PFOA	ST180110M2-4 PFC CS3 18A0811	8.37e3	119.0	NO
5	5	13C9-PFNA	ST180110M2-4 PFC CS3 18A0811	9.39e3	143.9	NO
6	6	13C4-PFOS	ST180110M2-4 PFC CS3 18A0811	2.13e3	142.9	NO
7	7	13C6-PFDA	ST180110M2-4 PFC CS3 18A0811	6.67e3	151.8	YES
8	8	13C7-PFUdA	ST180110M2-4 PFC CS3 18A0811	8.84e3	122.1	NO

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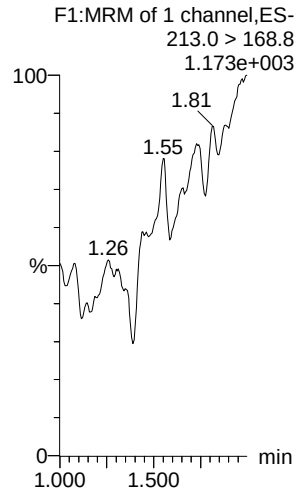
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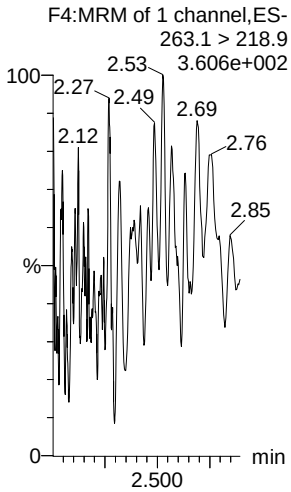
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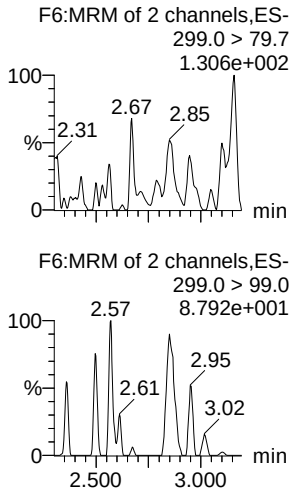
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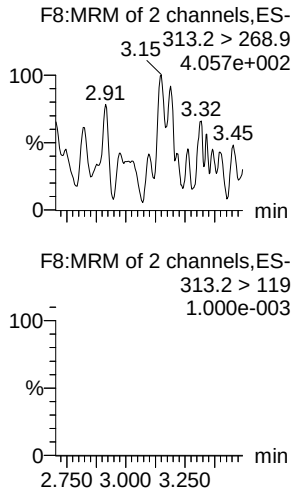
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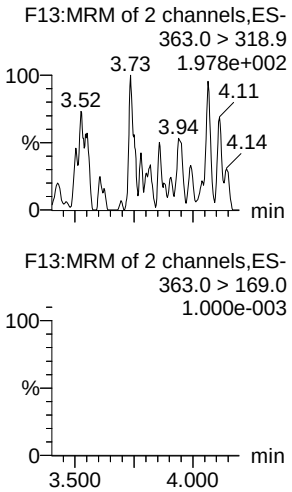
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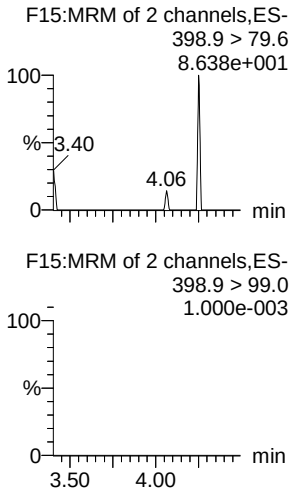
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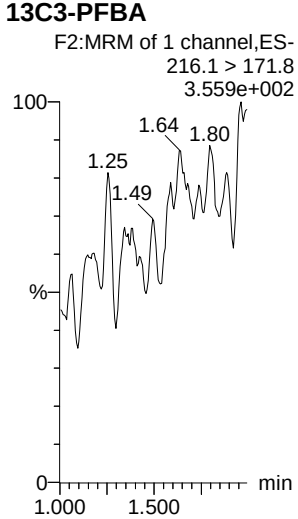
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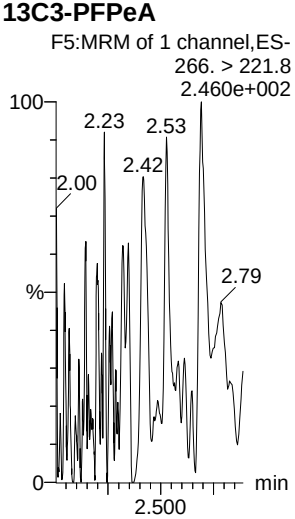
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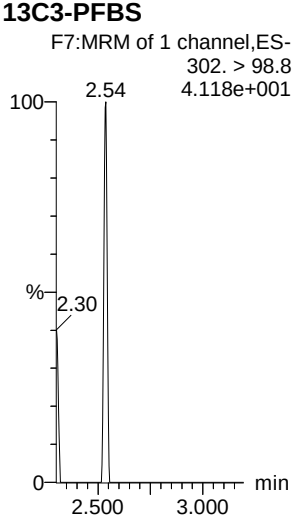
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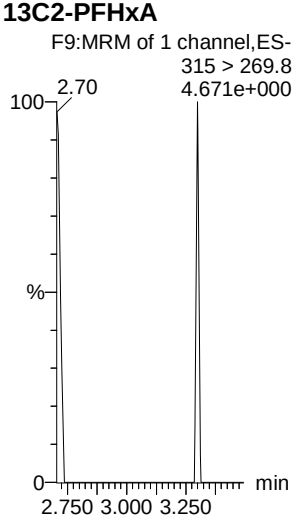
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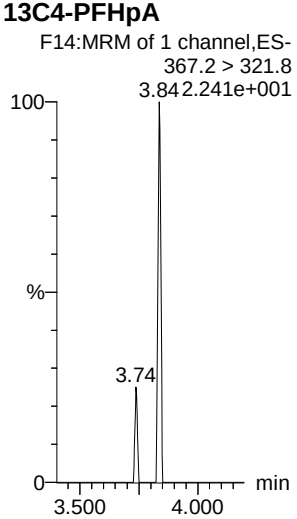
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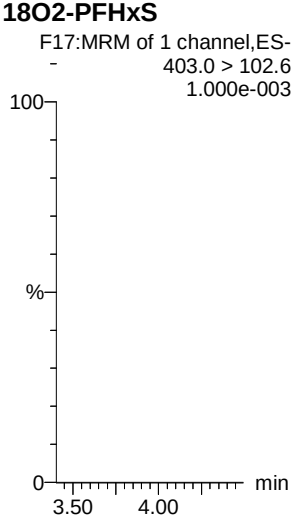
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13C4-PFHpA



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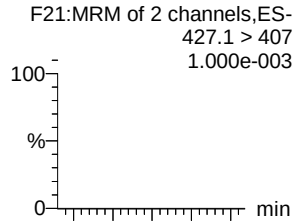
Vista Analytical Laboratory

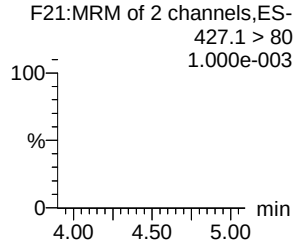
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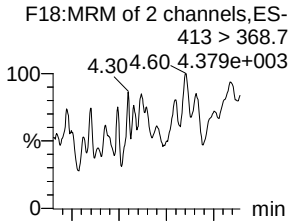
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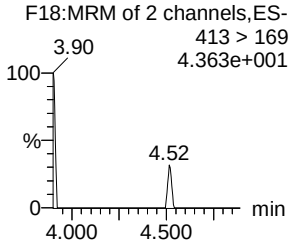
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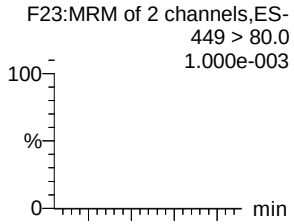


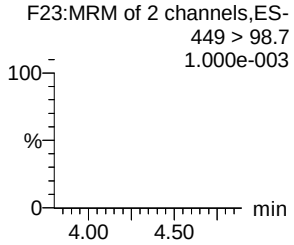
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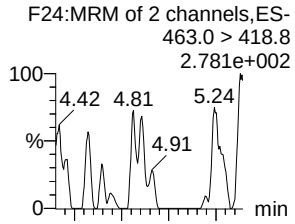


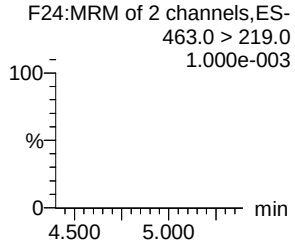
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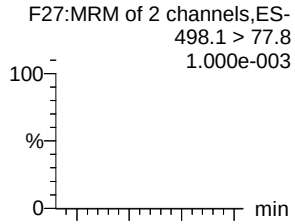


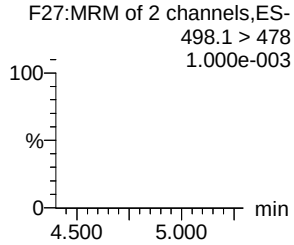
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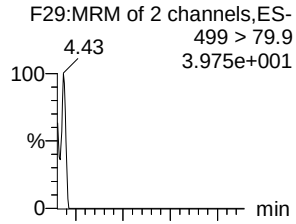


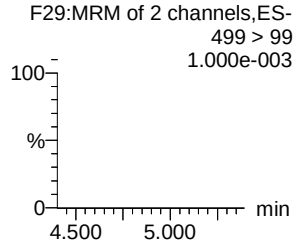
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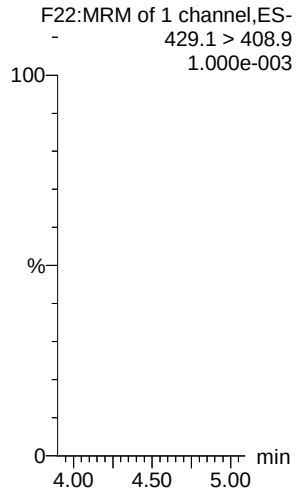


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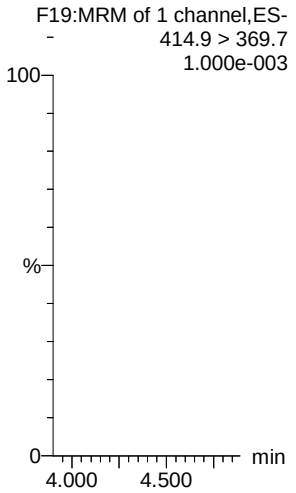




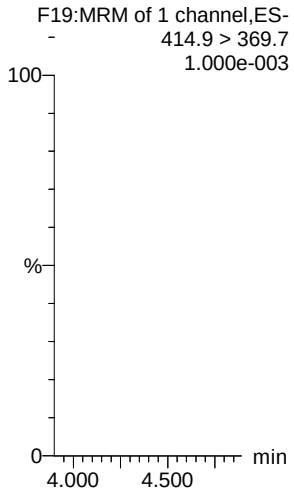
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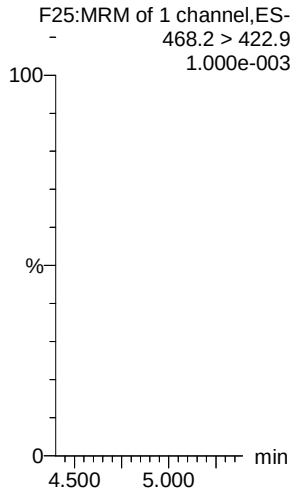
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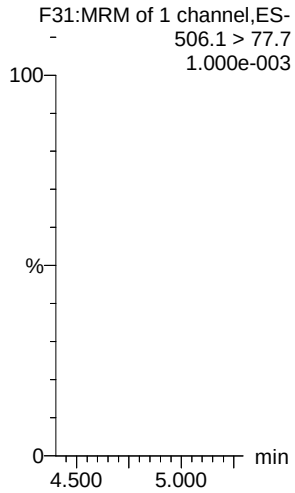
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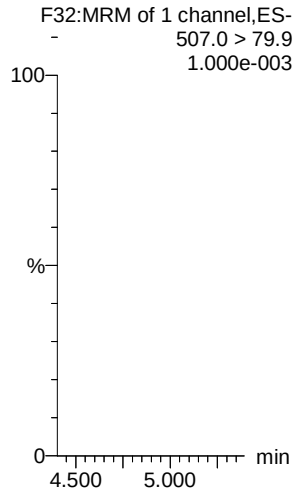
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13C8-PFOSA



13C8-PFOS

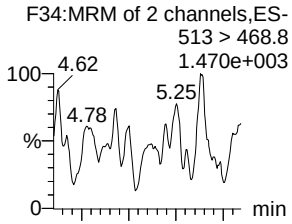


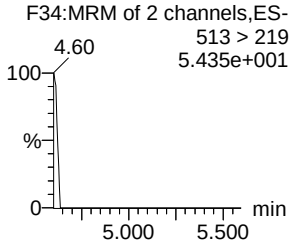
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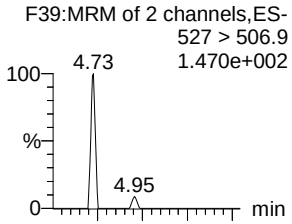
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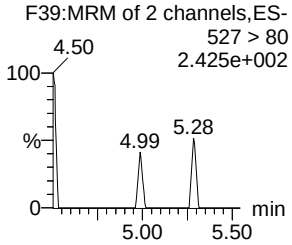
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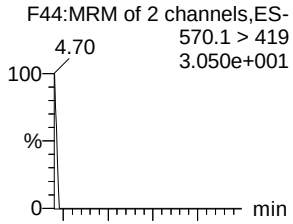


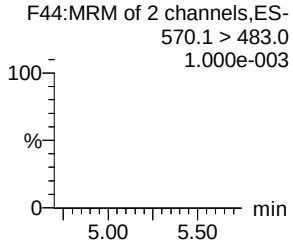
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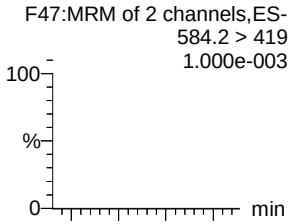


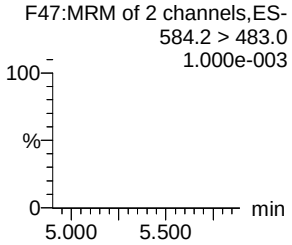
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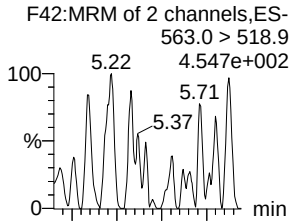


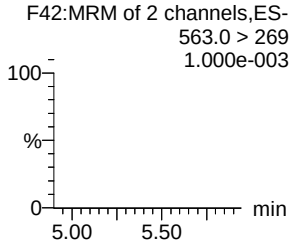
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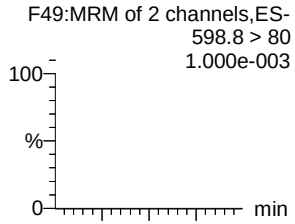


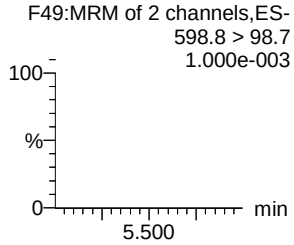
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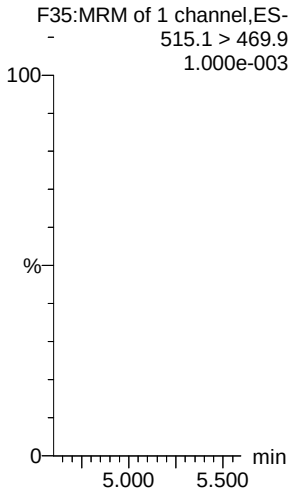


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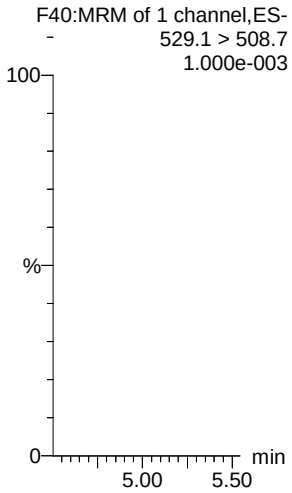




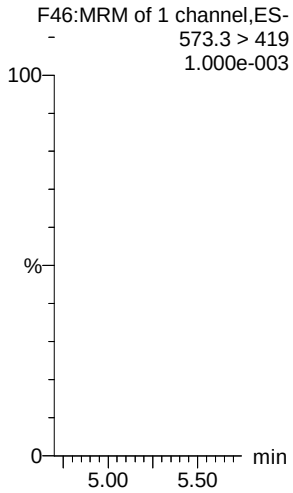
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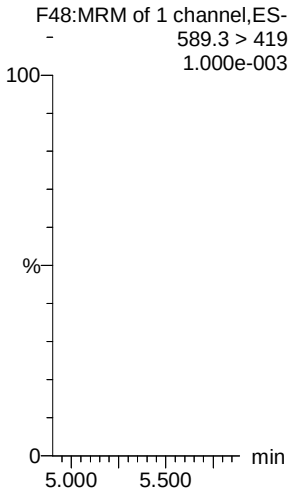
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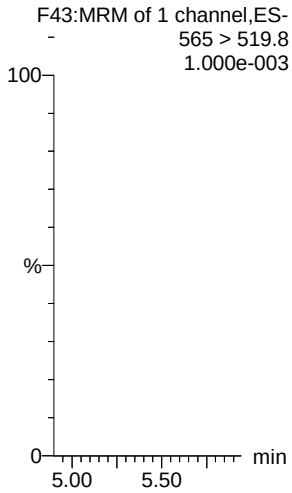
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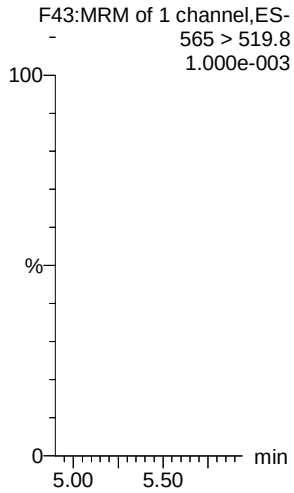
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13C2-PFUdA



13C2-PFUdA

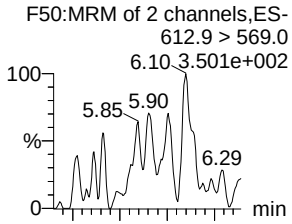


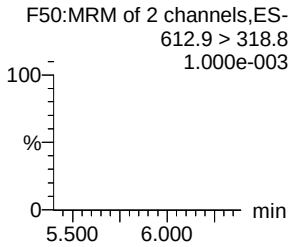
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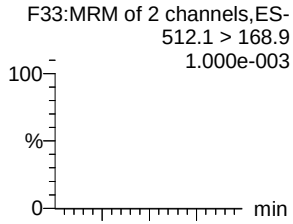
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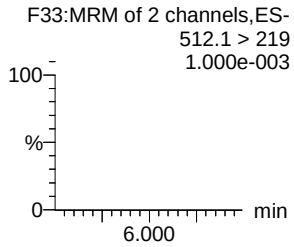
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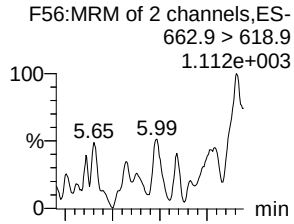


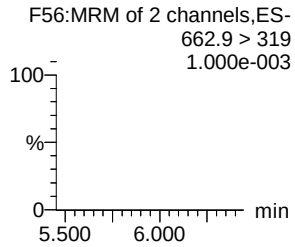
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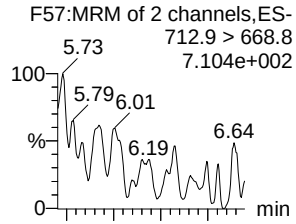


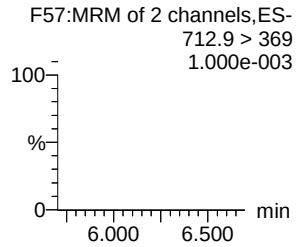
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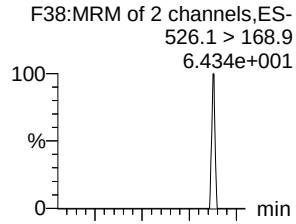


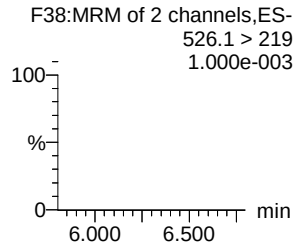
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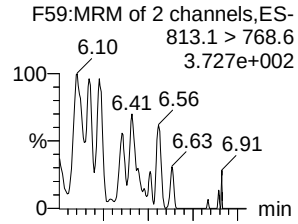


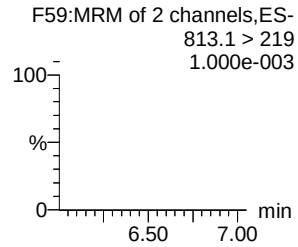
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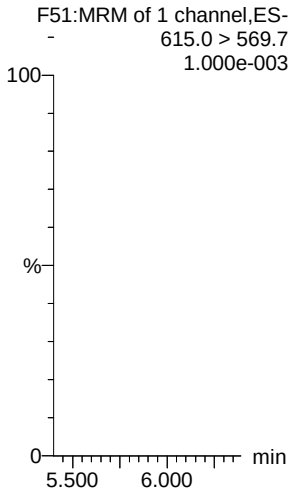


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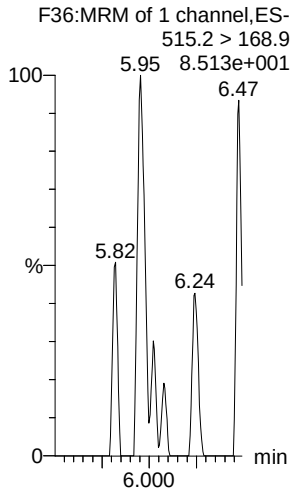




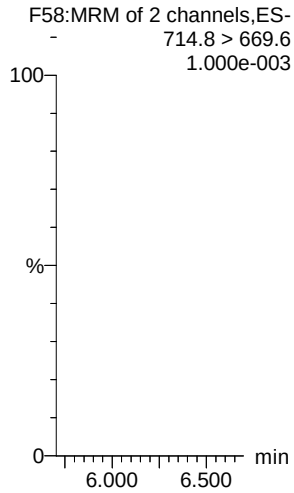
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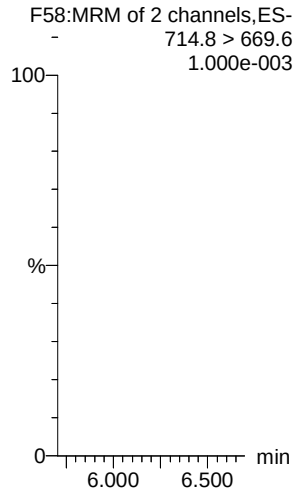
d3-N-MeFOSA



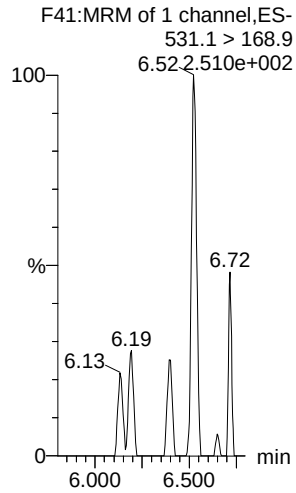
13C2-PFTeDA



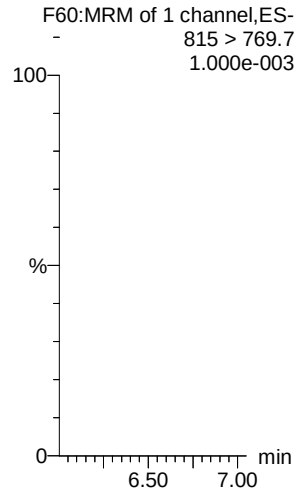
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA



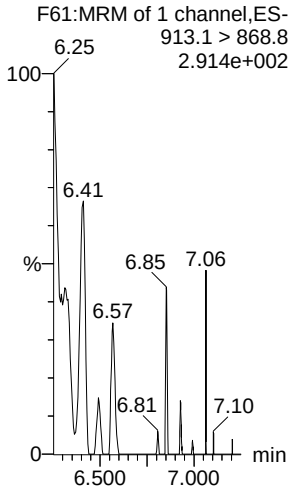
Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\180110M2\180110M2-2.qld

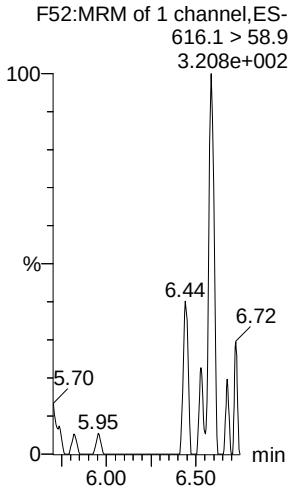
Last Altered: Thursday, January 11, 2018 09:03:04 Pacific Standard Time
Printed: Tuesday, January 16, 2018 08:20:09 Pacific Standard Time

Name: 180110M2_2, Date: 10-Jan-2018, Time: 15:35:32, ID: IPA, Description: IPA

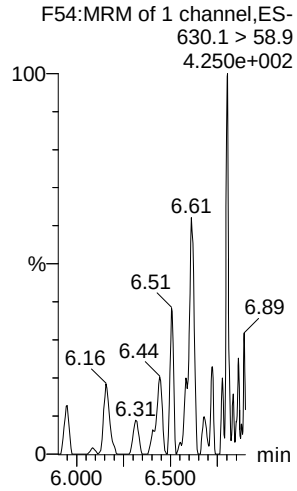
PFODA



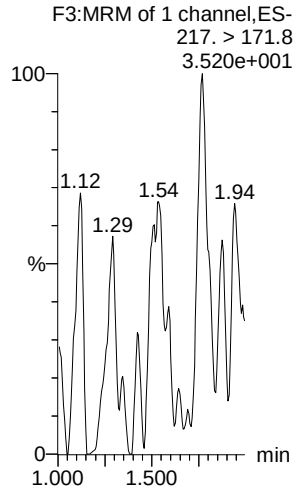
N-MeFOSE



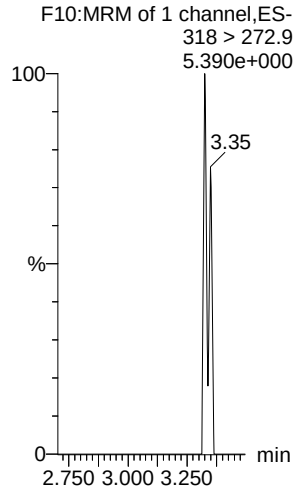
N-EtFOSE



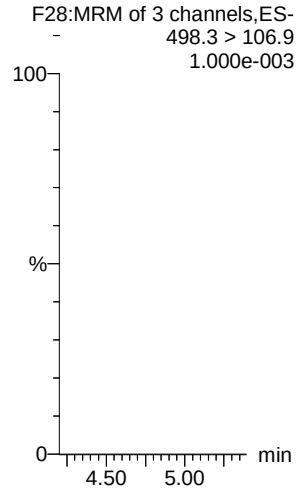
13C4-PFBA



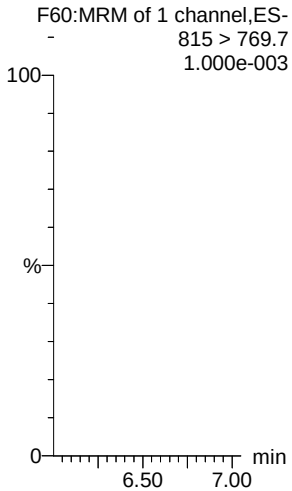
13C5-PFHxA



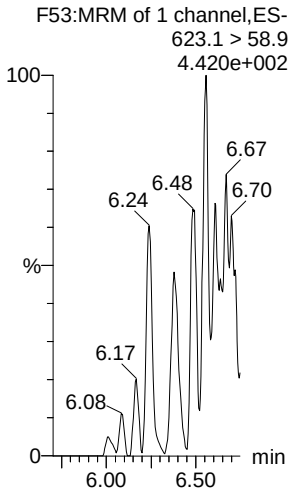
TCDA



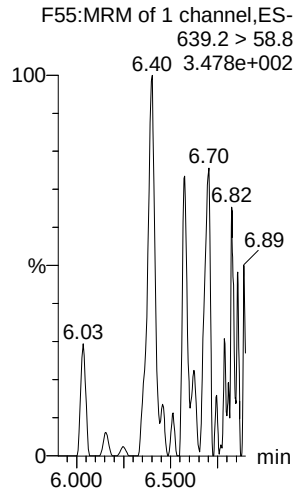
13C2-PFHxDA



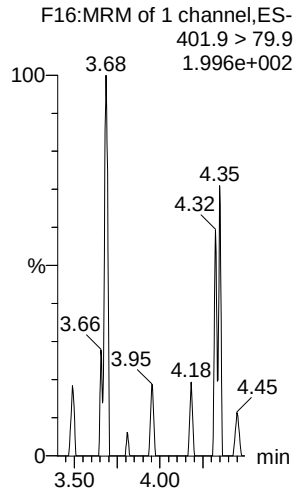
d7-N-MeFOSE



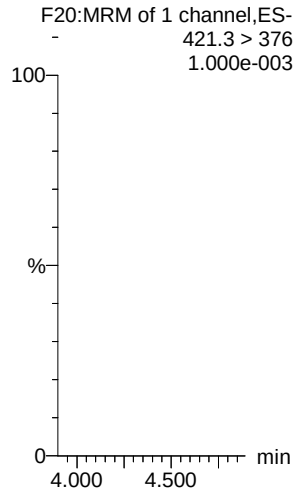
d9-N-EtFOSE



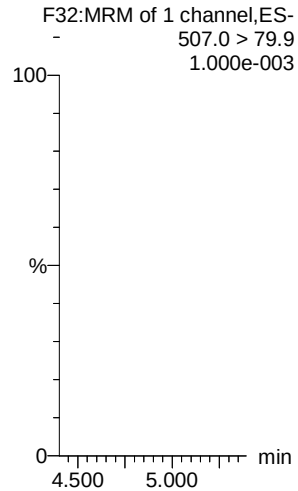
13C3-PFHxS



13C8-PFOA



13C8-PFOS

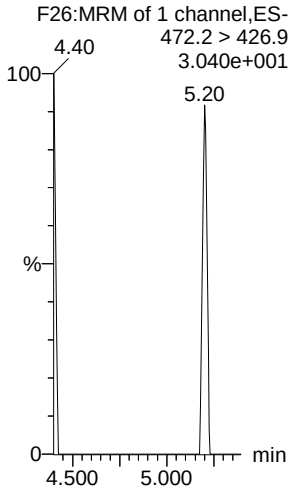


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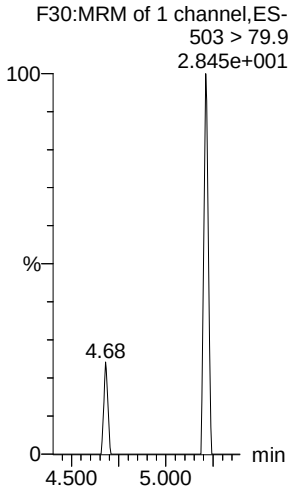
Last Altered: Thursday, January 11, 2018 09:03:04 Pacific Standard Time
Printed: Tuesday, January 16, 2018 08:20:09 Pacific Standard Time

Name: 180110M2_2, Date: 10-Jan-2018, Time: 15:35:32, ID: IPA, Description: IPA

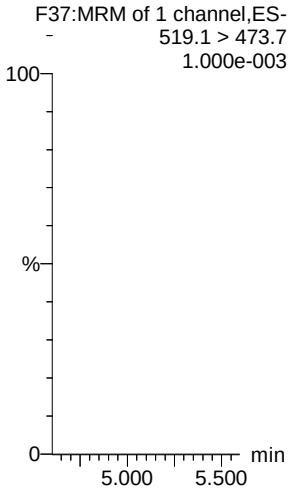
13C9-PFNA



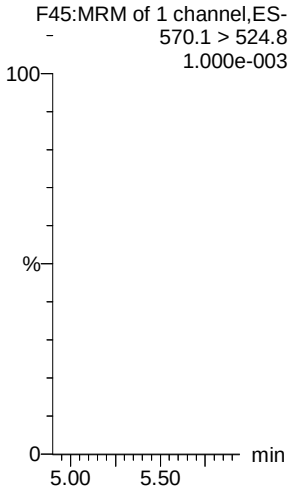
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Dataset: U:\Q4.PRO\results\180110M2\180110M2-1.qld

Last Altered: Thursday, January 11, 2018 08:33:13 Pacific Standard Time
Printed: Thursday, January 11, 2018 08:34:11 Pacific Standard Time

Ⓐ PFOSA > 130%

AC 1/11/18

JA- 01/11/2018

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_1, Date: 10-Jan-2018, Time: 15:24:24, ID: ST180110M2-1 PFC CS0 18A0808, Description: PFC CS0 18A0808

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	4.94e2	5.11e3	1.0000		1.38	1.42	1.21	0.964	96.4
2	2	PFPeA	263.1 > 218.9	5.14e2	5.62e3	1.0000		2.37	2.37	1.14	1.065	106.5
3	3	PFBS	299.0 > 79.7	1.16e2	7.35e2	1.0000		2.66	2.65	1.98	1.081	108.1
4	4	PFHxA	313.2 > 268.9	7.18e2	1.81e3	1.0000		3.15	3.15	1.98	1.065	106.5
5	5	PFHpA	363.0 > 318.9	4.91e2	4.57e3	1.0000		3.78	3.77	1.34	0.982	98.2
6	6	L-PFHxS	398.9 > 79.6	9.31e1	6.35e2	1.0000		3.94	3.91	1.83	1.001	100.1
7	8	6:2 FTS	427.1 > 407	1.65e2	6.35e2	1.0000		4.25	4.22	3.26	1.299	129.9
8	9	L-PFOA	413 > 368.7	6.81e2	7.31e3	1.0000		4.31	4.28	1.16	1.081	108.1
9	11	PFHpS	449 > 80.0	1.67e2	7.31e3	1.0000		4.42	4.38	0.285	1.015	101.5
10	12	PFNA	463.0 > 418.8	6.44e2	6.65e3	1.0000		4.81	4.70	1.21	0.919	91.9
11	13	PFOSA	498.1 > 77.8	1.50e2	1.10e3	1.0000		4.87	4.77	1.69	1.568	Ⓐ 156.8
12	14	L-PFOS	499 > 79.9	1.36e2	1.59e3	1.0000		4.89	4.79	1.07	1.110	111.0
13	16	PFDA	513 > 468.8	6.64e2	5.79e3	1.0000		5.18	5.07	1.43	0.882	88.2
14	17	8:2 FTS	527 > 506.9	1.30e2	5.79e3	1.0000		5.15	5.04	0.280	0.809	80.9
15	18	N-MeFOSAA	570.1 > 419	3.15e2	2.20e3	1.0000		5.32	5.22	1.79	1.259	125.9
16	19	N-EtFOSAA	584.2 > 419	1.62e2	2.44e3	1.0000		5.48	5.37	0.830	0.818	81.8
17	20	PFUdA	563.0 > 518.9	7.31e2	7.62e3	1.0000		5.50	5.39	1.20	1.026	102.6
18	21	PFDS	598.8 > 80	1.39e2	7.62e3	1.0000		5.54	5.44	0.228	0.800	80.0
19	22	PFDoA	612.9 > 569.0	5.40e2	4.36e3	1.0000		5.77	5.67	1.55	0.704	70.4
20	23	N-MeFOSA	512.1 > 168.9	3.47e2	8.39e3	1.0000		5.80	5.75	6.20	6.001	120.0
21	24	PFTrDA	662.9 > 618.9	7.96e2	4.36e3	1.0000		6.00	5.92	2.28	0.997	99.7
22	25	PFTeDA	712.9 > 668.8	4.69e2	2.36e3	1.0000		6.22	6.12	2.48	0.921	92.1
23	26	N-EtFOSA	526.1 > 168.9	3.98e2	1.34e4	1.0000		6.17	6.13	4.44	4.781	95.6
24	27	PFHxDA	813.1 > 768.6	2.35e2	1.44e3	1.0000		6.53	6.45	0.813	0.944	94.4
25	28	PFODA	913.1 > 868.8	2.21e2	1.44e3	1.0000		6.74	6.67	0.764	0.880	88.0
26	29	N-MeFOSE	616.1 > 58.9	4.25e2	1.24e4	1.0000		6.27	6.24	5.14	5.657	113.1
27	30	N-EtFOSE	630.1 > 58.9	4.81e2	1.20e4	1.0000		6.43	6.40	6.02	5.019	100.4
28	31	13C3-PFBA	216.1 > 171.8	5.11e3	5.88e3	1.0000	0.873	1.38	1.42	10.9	12.452	99.6
29	32	13C3-PFPeA	266. > 221.8	5.62e3	7.28e3	1.0000	0.867	2.37	2.37	9.66	11.145	89.2
30	33	13C3-PFBS	302. > 98.8	7.35e2	7.28e3	1.0000	0.116	2.77	2.65	1.26	10.854	86.8
31	34	13C2-PFHxA	315 > 269.8	1.81e3	7.28e3	1.0000	0.655	3.15	3.15	3.11	4.746	94.9

70-130

50-150

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Dataset: U:\Q4.PRO\results\180110M2\180110M2-1.qld

Last Altered: Thursday, January 11, 2018 08:33:13 Pacific Standard Time
Printed: Thursday, January 11, 2018 08:34:11 Pacific Standard Time

Name: 180110M2_1, Date: 10-Jan-2018, Time: 15:24:24, ID: ST180110M2-1 PFC CS0 18A0808, Description: PFC CS0 18A0808

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C4-PFHpA	367.2 > 321.8	4.57e3	7.28e3	1.0000	0.722	3.78	3.77	7.86	10.878	87.0
33	36	18O2-PFHxS	403.0 > 102.6	6.35e2	1.46e3	1.0000	0.348	3.94	3.91	5.44	15.611	124.9
34	37	13C2-6:2 FTS	429.1 > 408.9	1.38e3	7.04e3	1.0000	0.222	4.25	4.22	2.46	11.099	88.8
35	38	13C2-PFOA	414.9 > 369.7	7.31e3	7.04e3	1.0000	1.023	4.31	4.28	13.0	12.703	101.6
36	39	13C5-PFNA	468.2 > 422.9	6.65e3	6.53e3	1.0000	0.916	4.81	4.71	12.7	13.911	111.3
37	40	13C8-PFOSA	506.1 > 77.7	1.10e3	7.24e3	1.0000	0.210	4.87	4.77	1.90	9.050	72.4
38	41	13C8-PFOS	507.0 > 79.9	1.59e3	1.49e3	1.0000	1.035	4.89	4.78	13.3	12.871	103.0
39	42	13C2-PFDA	515.1 > 469.9	5.79e3	4.40e3	1.0000	1.142	5.18	5.07	16.5	14.425	115.4
40	43	13C2-8:2 FTS	529.1 > 508.7	7.88e2	7.28e3	1.0000	0.157	5.15	5.04	1.35	8.643	69.1
41	44	d3-N-MeFOSAA	573.3 > 419	2.20e3	7.24e3	1.0000	0.299	5.32	5.22	3.80	12.727	101.8
42	45	d5-N-EtFOSAA	589.3 > 419	2.44e3	7.24e3	1.0000	0.369	5.47	5.37	4.22	11.434	91.5
43	46	13C2-PFUdA	565 > 519.8	7.62e3	7.24e3	1.0000	1.012	5.49	5.39	13.2	13.004	104.0
44	47	13C2-PFDoA	615.0 > 569.7	4.36e3	7.24e3	1.0000	0.647	5.77	5.67	7.53	11.632	93.1
45	48	d3-N-MeFOSA	515.2 > 168.9	8.39e3	7.24e3	1.0000	0.110	5.83	5.78	14.5	132.034	88.0
46	49	13C2-PFTeDA	714.8 > 669.6	2.36e3	7.24e3	1.0000	0.294	6.22	6.12	4.08	13.905	111.2
47	50	d5-N-ETFOSA	531.1 > 168.9	1.34e4	7.24e3	1.0000	0.155	6.18	6.14	23.2	149.940	100.0
48	51	13C2-PFHxDA	815 > 769.7	1.44e3	7.24e3	1.0000	0.507	6.53	6.45	2.49	4.923	98.5
49	52	d7-N-MeFOSE	623.1 > 58.9	1.24e4	7.24e3	1.0000	0.140	6.27	6.23	21.4	153.638	102.4
50	53	d9-N-EtFOSE	639.2 > 58.8	1.20e4	7.24e3	1.0000	0.132	6.42	6.38	20.7	156.260	104.2
51	54	13C4-PFBA	217. > 171.8	5.88e3	5.88e3	1.0000	1.000	1.38	1.42	12.5	12.500	100.0
52	55	13C5-PFHxA	318 > 272.9	7.28e3	7.28e3	1.0000	1.000	3.15	3.15	12.5	12.500	100.0
53	56	13C3-PFHxS	401.9 > 79.9	1.46e3	1.46e3	1.0000	1.000	4.02	3.91	12.5	12.500	100.0
54	57	13C8-PFOA	421.3 > 376	7.04e3	7.04e3	1.0000	1.000	4.38	4.28	12.5	12.500	100.0
55	58	13C9-PFNA	472.2 > 426.9	6.53e3	6.53e3	1.0000	1.000	4.81	4.70	12.5	12.500	100.0
56	59	13C4-PFOS	503 > 79.9	1.49e3	1.49e3	1.0000	1.000	4.89	4.78	12.5	12.500	100.0
57	60	13C6-PFDA	519.1 > 473.7	4.40e3	4.40e3	1.0000	1.000	5.18	5.07	12.5	12.500	100.0
58	61	13C7-PFUdA	570.1 > 524.8	7.24e3	7.24e3	1.0000	1.000	5.49	5.39	12.5	12.500	100.0

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Dataset: Untitled

Last Altered: Thursday, January 11, 2018 09:34:33 Pacific Standard Time
Printed: Thursday, January 11, 2018 09:35:07 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180110M2_1	ST180110M2-1 PFC CS0 18A0808	10-Jan-18	15:24:24
2	180110M2_2	IPA	10-Jan-18	15:35:32
3	180110M2_3	B7L0188-BS1 OPR 0.25	10-Jan-18	15:46:43
4	180110M2_4	B7L0215-BS1 OPR 0.125	10-Jan-18	15:57:54
5	180110M2_5	B7L0188-BLK1 Method Blank 0.25	10-Jan-18	16:09:04
6	180110M2_6	B7L0215-BLK1 Method Blank 0.125	10-Jan-18	16:20:15
7	180110M2_7	B7L0215-MS1 Matrix Spike 0.12336	10-Jan-18	16:31:25
8	180110M2_8	B7L0215-MSD1 Matrix Spike Dup 0.12396	10-Jan-18	16:42:36
9	180110M2_9	1701986-01 REEPDW060 0.12357	10-Jan-18	16:53:47
10	180110M2_10	1701986-02 REEPDW505 0.12328	10-Jan-18	17:04:58
11	180110M2_11	1701986-03 REEPDW061 0.12293	10-Jan-18	17:16:09
12	180110M2_12	1701986-04 REEPDW062 0.11873	10-Jan-18	17:27:19
13	180110M2_13	1701986-05 REEPDW063 0.12261	10-Jan-18	17:38:30
14	180110M2_14	1701986-06 REEPDW064 0.12328	10-Jan-18	17:49:41
15	180110M2_15	1701986-07 REEPDW065 0.12516	10-Jan-18	18:00:53
16	180110M2_16	1701986-08 REEPDW066 0.11884	10-Jan-18	18:12:02
17	180110M2_17	1701986-09 REEPDW067 0.12708	10-Jan-18	18:23:13
18	180110M2_18	1701986-10 REEPDW068 0.12339	10-Jan-18	18:34:23
19	180110M2_19	IPA	10-Jan-18	18:45:34
20	180110M2_20	ST180110M2-2 PFC CS3 18A0811	10-Jan-18	18:56:45
21	180110M2_21	IPA	10-Jan-18	19:07:56
22	180110M2_22	1701986-11 REEPDW069 0.1225	10-Jan-18	19:19:06
23	180110M2_23	1701986-12 REEPDW070 0.12154	10-Jan-18	19:30:17
24	180110M2_24	1701986-13 REEPDW506 0.11149	10-Jan-18	19:41:28
25	180110M2_25	1701986-14 REEPDW071 0.12235	10-Jan-18	19:52:39
26	180110M2_26	1701986-15 REEPDW072 0.12184	10-Jan-18	20:03:49
27	180110M2_27	B7L0188-MS1 Matrix Spike 0.24896	10-Jan-18	20:15:00
28	180110M2_28	B7L0188-MSD1 Matrix Spike Dup 0.23749	10-Jan-18	20:26:11
29	180110M2_29	1701970-01 FT-PZ458S-20171214 0.25998	10-Jan-18	20:37:21
30	180110M2_30	1701970-02 FT-PZ458I-20171214 0.25291	10-Jan-18	20:48:32
31	180110M2_31	1701970-03 SA-MW132S-20171214 0.25764	10-Jan-18	20:59:43

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Dataset: Untitled

Last Altered: Thursday, January 11, 2018 09:34:33 Pacific Standard Time
Printed: Thursday, January 11, 2018 09:35:07 Pacific Standard Time

Compound name: PFBA

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32	180110M2_32	1701970-04 SA-MW132S-FRB-20171214 0.2...	10-Jan-18	21:10:53
33	180110M2_33	1701970-05 SA-MW132I-20171214 0.23441	10-Jan-18	21:22:04
34	180110M2_34	IPA	10-Jan-18	21:33:14
35	180110M2_35	ST180110M2-3 PFC CS3 18A0811	10-Jan-18	21:44:25
36	180110M2_36	IPA	10-Jan-18	21:55:36
37	180110M2_37	1701970-06 FT-PZ459S-20171214 0.25318	10-Jan-18	22:06:47
38	180110M2_38	1701970-07 FT-PZ459I-20171214 0.2457	10-Jan-18	22:18:02
39	180110M2_39	1701970-08 FT-PZ463S-20171214 0.25736	10-Jan-18	22:29:11
40	180110M2_40	1701970-09 FT-PZ463I-20171214 0.26165	10-Jan-18	22:40:22
41	180110M2_41	1701970-10 CV-TANK-20171214 0.25889	10-Jan-18	22:51:32
42	180110M2_42	IPA	10-Jan-18	23:02:43
43	180110M2_43	B7L0218-BS1 OPR 0.25	10-Jan-18	23:13:54
44	180110M2_44	B7L0218-BSD1 LCSD 0.25	10-Jan-18	23:25:04
45	180110M2_45	IPA	10-Jan-18	23:36:15
46	180110M2_46	B7L0218-BLK1 Method Blank 0.25	10-Jan-18	23:47:26
47	180110M2_47	1701991-01 REEPDW073 0.11453	10-Jan-18	23:58:45
48	180110M2_48	1701991-02 REEPDW074 0.11902	11-Jan-18	00:09:55
49	180110M2_49	1701991-03 REEPDW075 0.11962	11-Jan-18	00:21:06
50	180110M2_50	1701991-04 REEPDW076 0.11478	11-Jan-18	00:32:17
51	180110M2_51	1701991-05 REEPDW077 0.11838	11-Jan-18	00:43:31
52	180110M2_52	1701992-01 REEPDW073FRB 0.11802	11-Jan-18	00:54:49
53	180110M2_53	1701992-02 REEPDW074FRB 0.11783	11-Jan-18	01:06:06
54	180110M2_54	1701992-03 REEPDW075FRB 0.10583	11-Jan-18	01:17:16
55	180110M2_55	1701992-04 REEPDW076FRB 0.11734	11-Jan-18	01:28:27
56	180110M2_56	1701992-05 REEPDW077FRB 0.11805 (A)	11-Jan-18	08:37:58
57	180110M2_57	IPA	11-Jan-18	08:49:16
58	180110M2_58	ST180110M2-4 PFC CS3 18A0811	11-Jan-18	09:00:26
59	180110M2_59	IPA	11-Jan-18	09:11:37

(A) RT. outside of 12 hr limit.
AC
1/11/18

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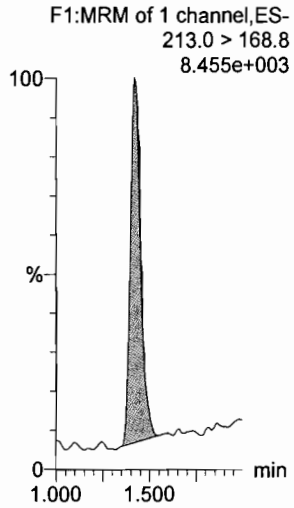
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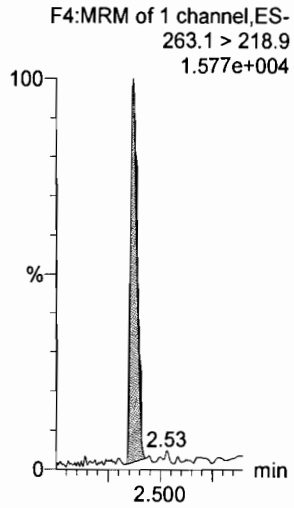
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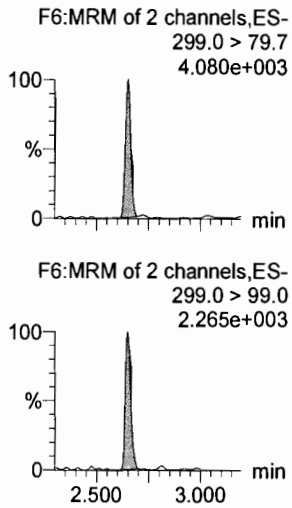
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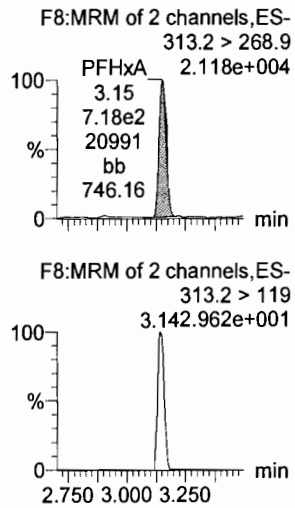
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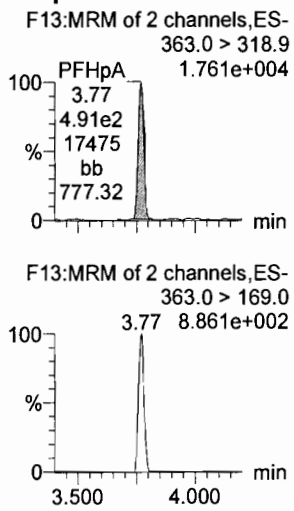
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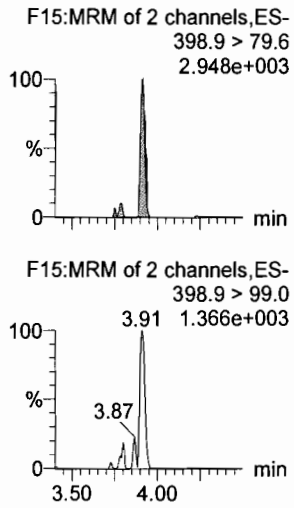
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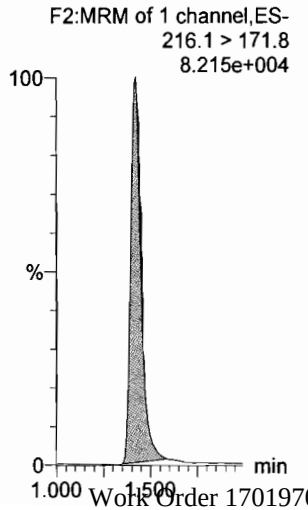
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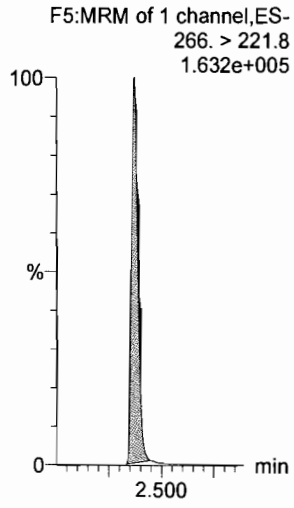
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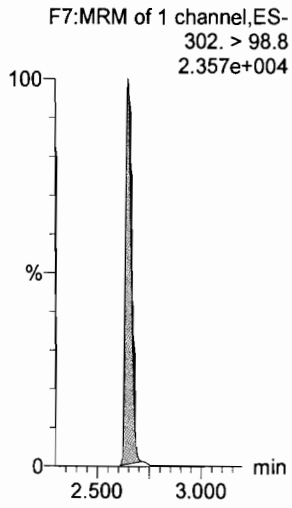
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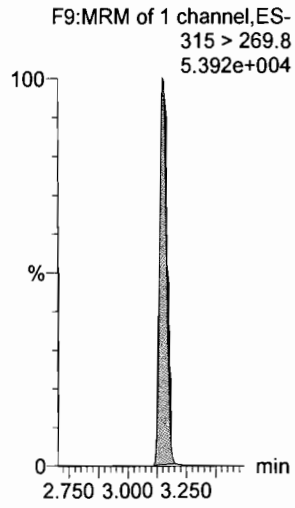
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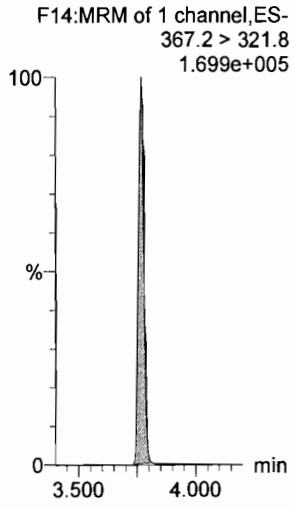
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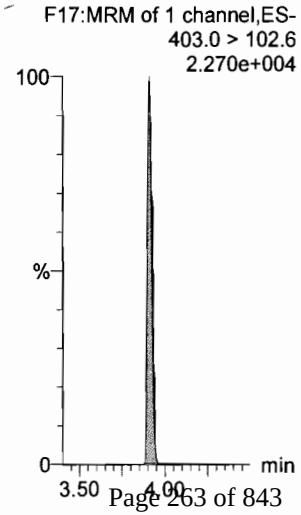
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13C4-PFHpA



18O2-PFHxS

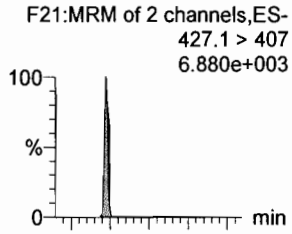


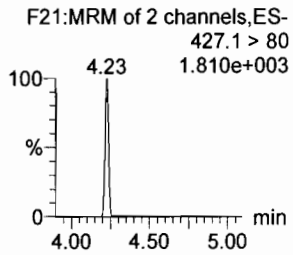
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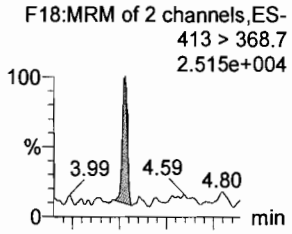
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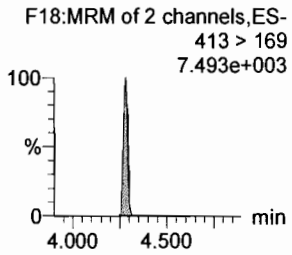
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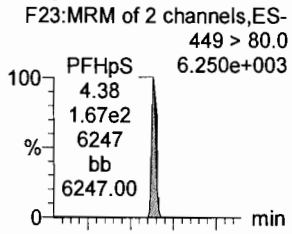


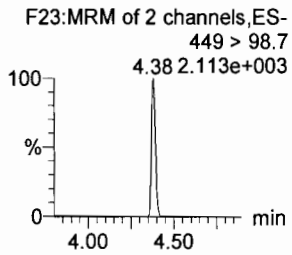
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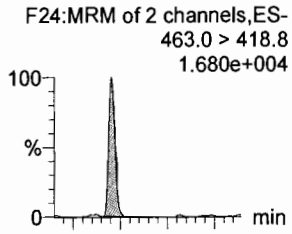


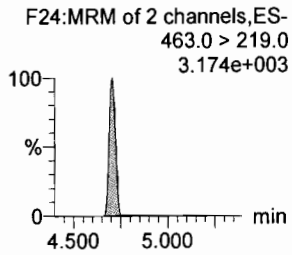
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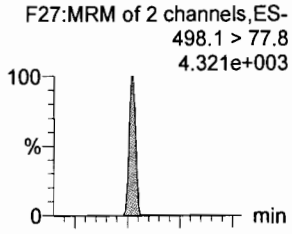


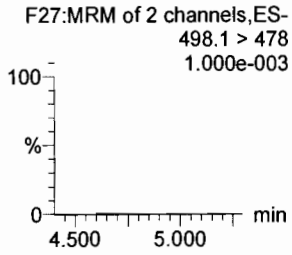
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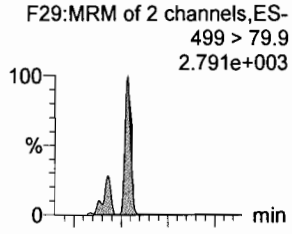


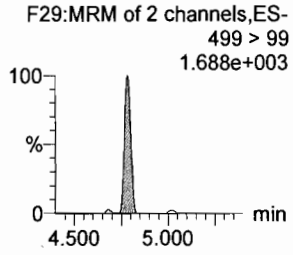
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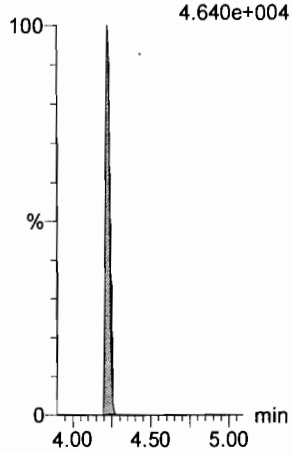


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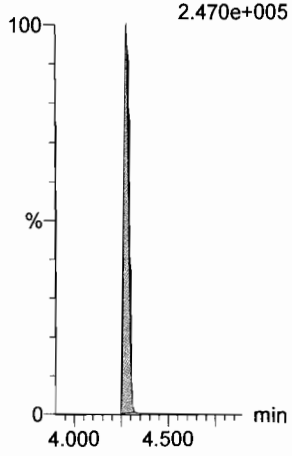




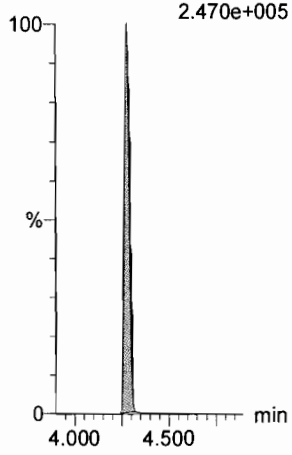
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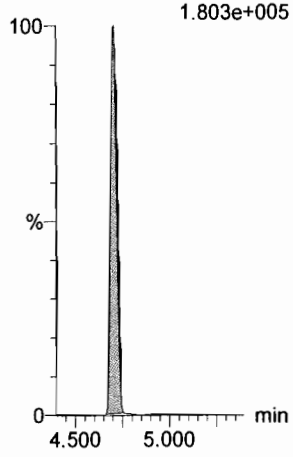
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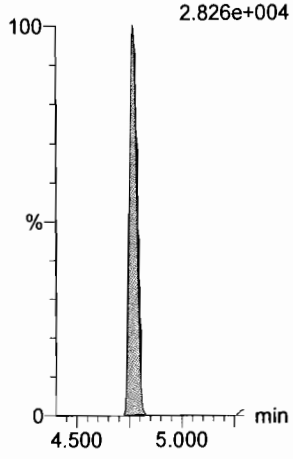
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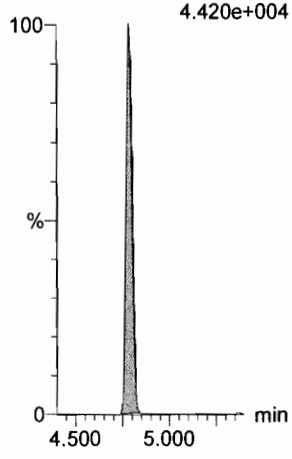
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13C8-PFOS

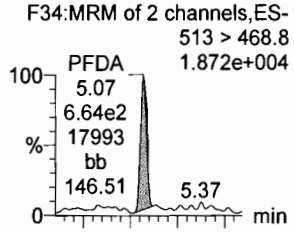


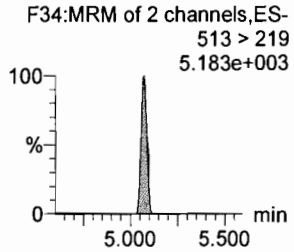
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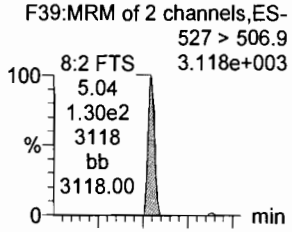
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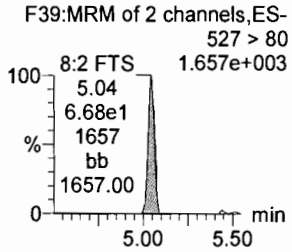
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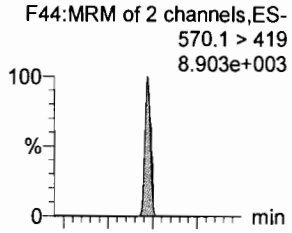


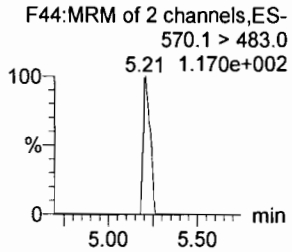
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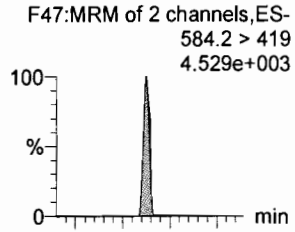


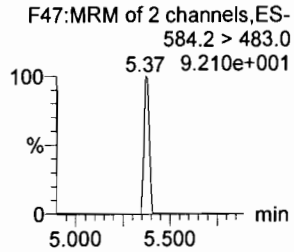
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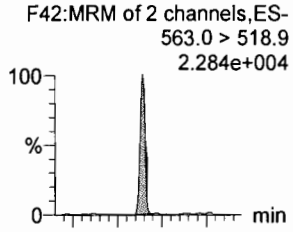


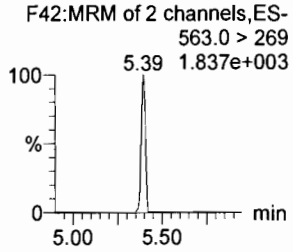
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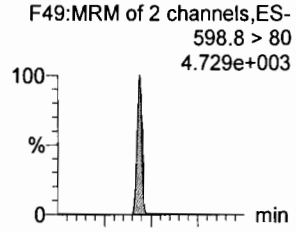


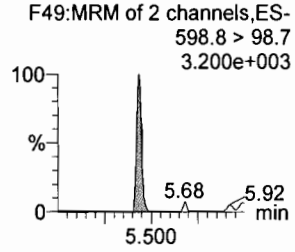
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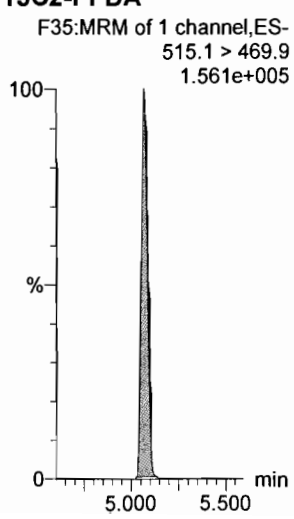


PFDS

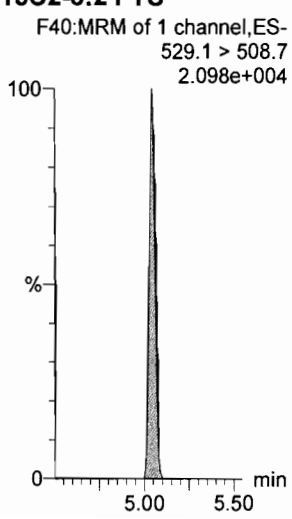




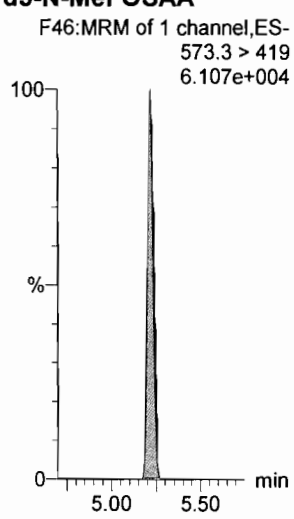
13C2-PFDA



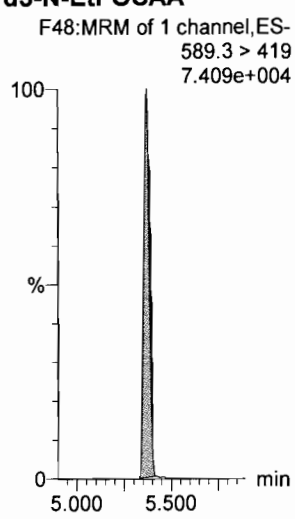
13C2-8:2 FTS



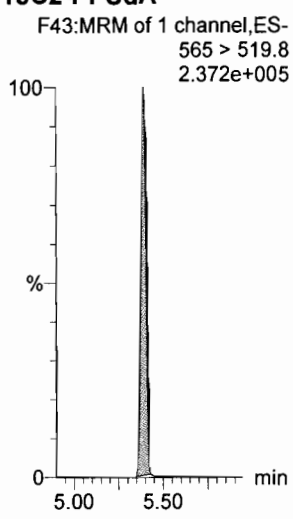
d3-N-MeFOSAA



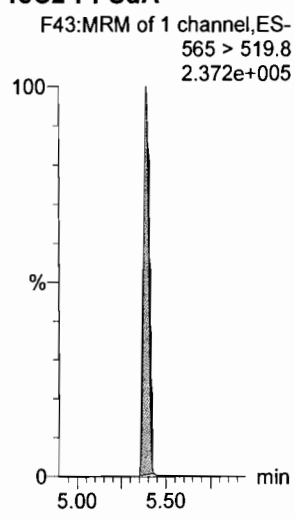
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

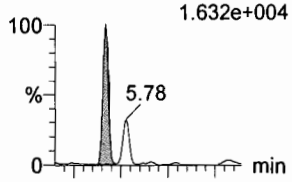


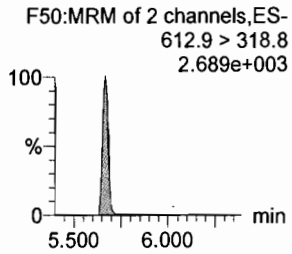
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Printed: Thursday, January 11, 2018 08:34:11 Pacific Standard Time

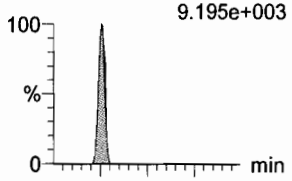
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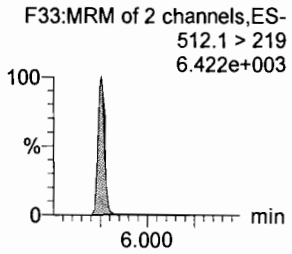
PFDoA



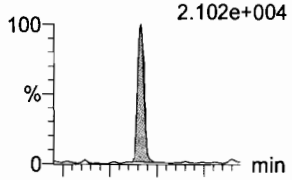


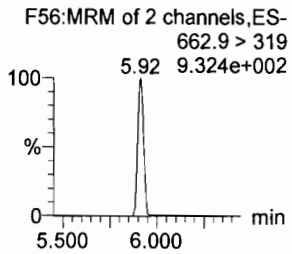
N-MeFOSA



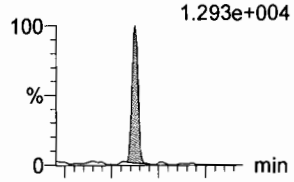


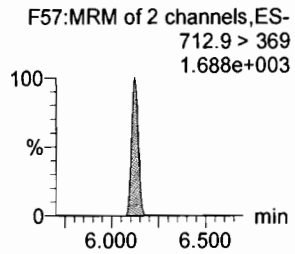
PFTrDA



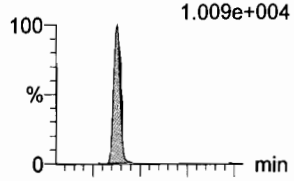


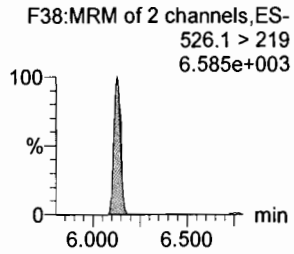
PFTeDA



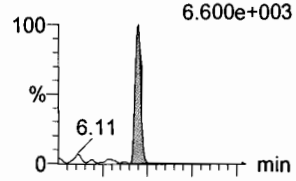


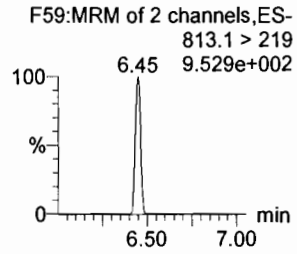
N-EtFOSA



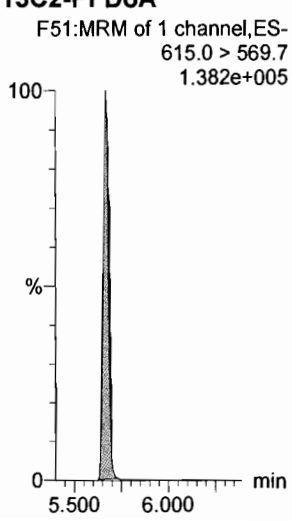


PFHxDA

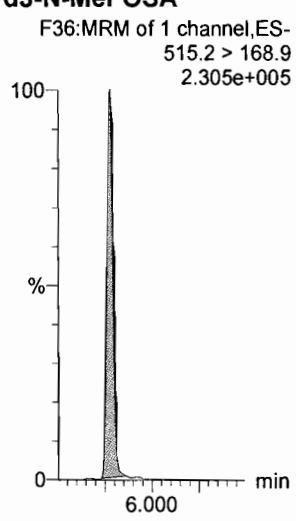




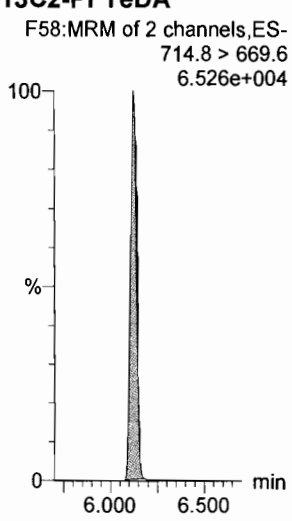
13C2-PFDoA



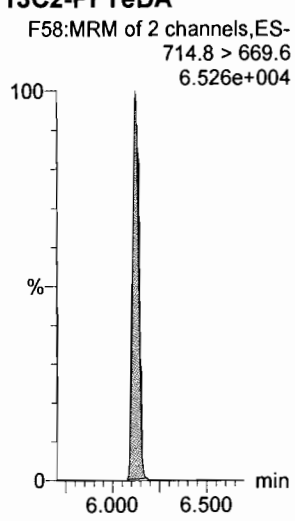
d3-N-MeFOSA



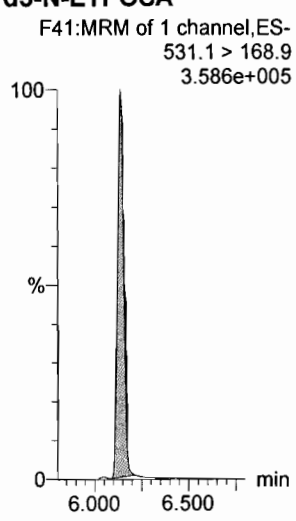
13C2-PFTeDA



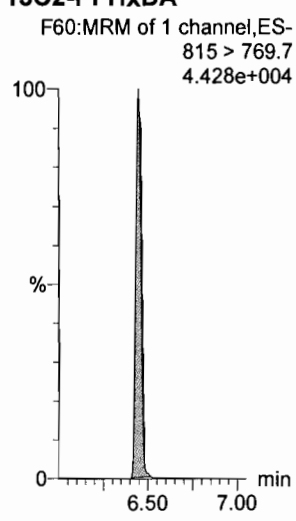
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA

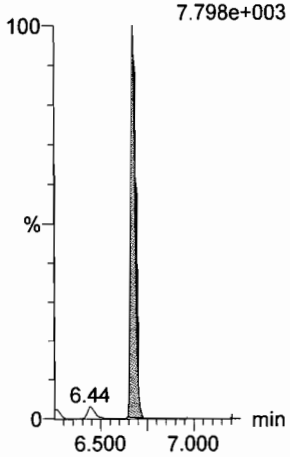


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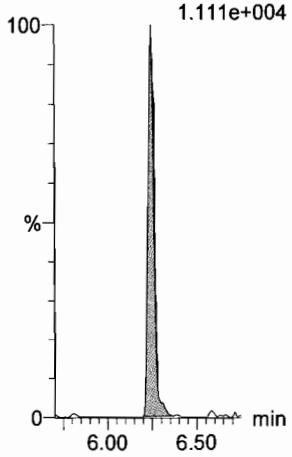
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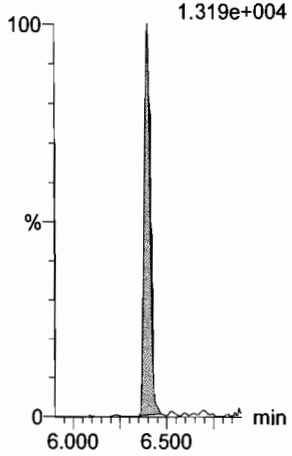
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
7.798e+003



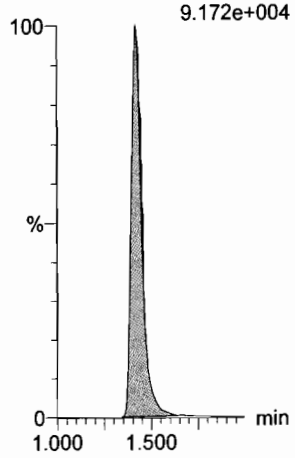
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
1.111e+004



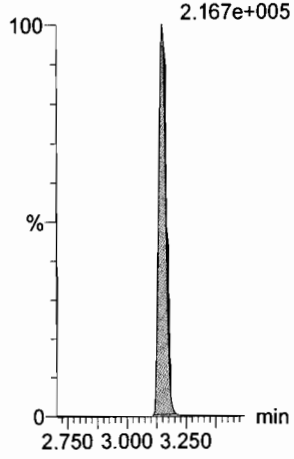
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
1.319e+004



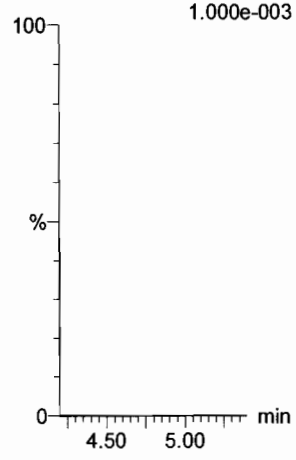
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
9.172e+004



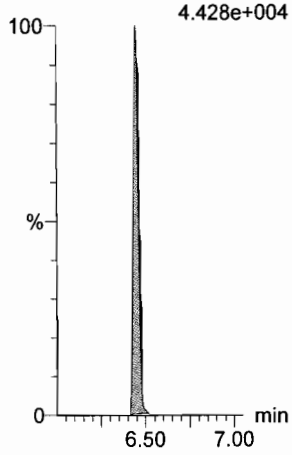
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
2.167e+005



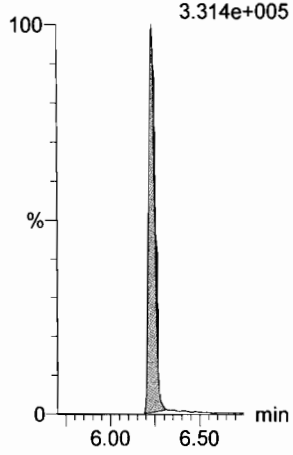
TCDA
F28:MRM of 3 channels,ES-
498.3 > 106.9
1.000e-003



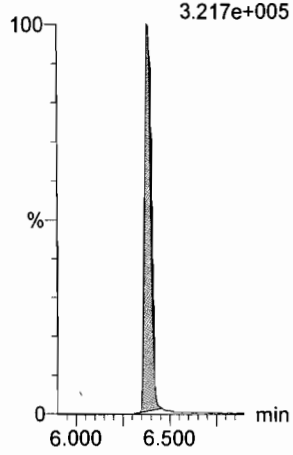
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
4.428e+004



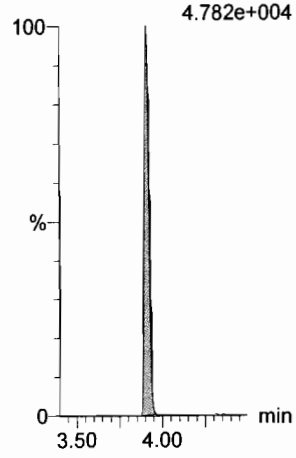
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
3.314e+005



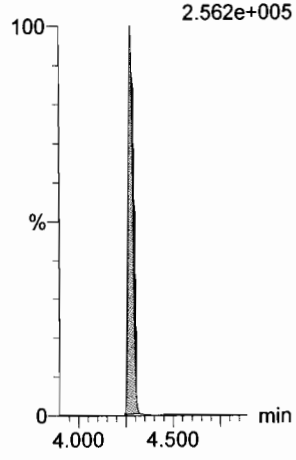
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
3.217e+005



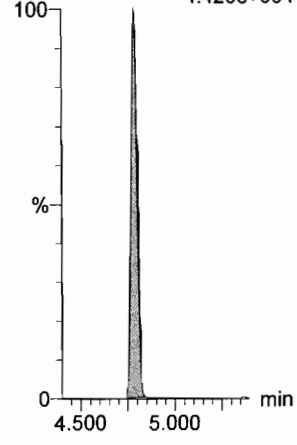
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
4.782e+004



13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
2.562e+005



13C8-PFOS
F32:MRM of 1 channel,ES-
507.0 > 79.9
4.420e+004

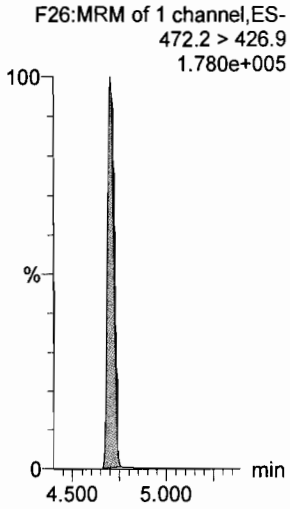


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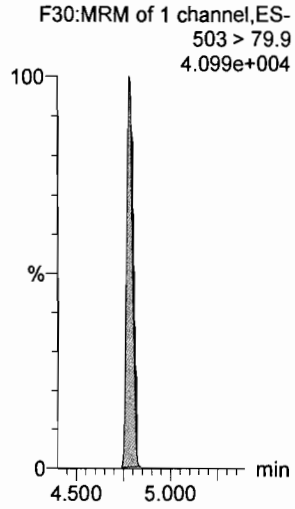
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Name: 180110M2_1, Date: 10-Jan-2018, Time: 15:24:24, ID: ST180110M2-1 PFC CS0 18A0808, Description: PFC CS0 18A0808

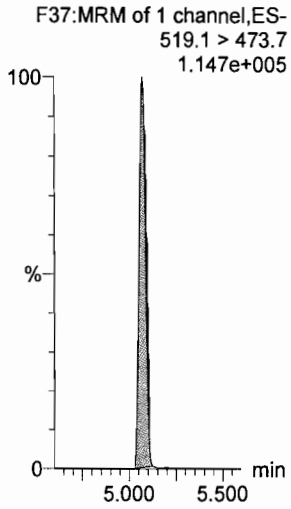
13C9-PFNA



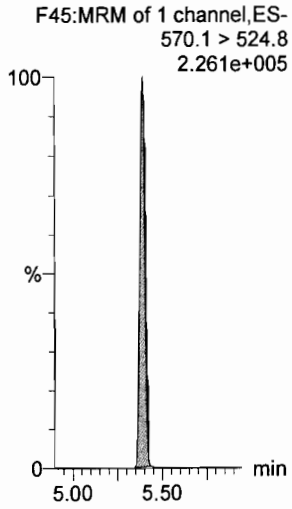
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\180110M2\180110M2-20.qld

Last Altered: Thursday, January 11, 2018 08:47:31 Pacific Standard Time
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(A) 8:2FTS <70%.

AC 1/11/18
rJA 01/11/2018

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_20, Date: 10-Jan-2018, Time: 18:56:45, ID: ST180110M2-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	5.63e3	5.66e3	1.0000		1.38	1.35	12.4	10.149	101.5
2	2	PFPeA	263.1 > 218.9	5.30e3	6.51e3	1.0000		2.37	2.33	10.2	9.792	97.9
3	3	PFBS	299.0 > 79.7	1.19e3	8.87e2	1.0000		2.66	2.61	16.7	9.266	92.7
4	4	PFHxA	313.2 > 268.9	7.42e3	2.16e3	1.0000		3.15	3.10	17.2	9.594	95.9
5	5	PFHpA	363.0 > 318.9	6.32e3	5.60e3	1.0000		3.78	3.72	14.1	10.679	106.8
6	6	L-PFHxS	398.9 > 79.6	9.56e2	7.88e2	1.0000		3.94	3.87	15.2	8.114	81.1
7	8	6:2 FTS	427.1 > 407	1.32e3	7.88e2	1.0000		4.25	4.19	21.0	7.324	73.2
8	9	L-PFOA	413 > 368.7	7.40e3	8.58e3	1.0000		4.31	4.24	10.8	9.809	98.1
9	11	PFHpS	449 > 80.0	1.66e3	8.58e3	1.0000		4.42	4.35	2.42	8.556	85.6
10	12	PFNA	463.0 > 418.8	7.19e3	6.36e3	1.0000		4.81	4.68	14.1	11.219	112.2
11	13	PFOSA	498.1 > 77.8	1.26e3	1.62e3	1.0000		4.87	4.73	9.73	9.423	94.2
12	14	L-PFOS	499 > 79.9	1.71e3	2.10e3	1.0000		4.89	4.76	10.2	10.701	107.0
13	16	PFDA	513 > 468.8	7.55e3	7.04e3	1.0000		5.18	5.05	13.4	9.257	92.6
14	17	8:2 FTS	527 > 506.9	1.26e3	7.04e3	1.0000		5.15	5.02	2.24	6.833	(A) 68.3
15	18	N-MeFOSAA	570.1 > 419	2.75e3	2.12e3	1.0000		5.32	5.20	16.2	10.741	107.4
16	19	N-EtFOSAA	584.2 > 419	2.94e3	2.73e3	1.0000		5.48	5.35	13.5	12.081	120.8
17	20	PFUdA	563.0 > 518.9	6.54e3	8.10e3	1.0000		5.50	5.37	10.1	8.814	88.1
18	21	PFDS	598.8 > 80	1.64e3	8.10e3	1.0000		5.54	5.42	2.54	8.881	88.8
19	22	PFDoA	612.9 > 569.0	8.56e3	5.04e3	1.0000		5.77	5.66	21.2	9.565	95.7
20	23	N-MeFOSA	512.1 > 168.9	3.61e3	9.87e3	1.0000		5.80	5.71	54.9	52.759	105.5
21	24	PFTrDA	662.9 > 618.9	8.24e3	5.04e3	1.0000		6.00	5.90	20.4	8.535	85.4
22	25	PFTeDA	712.9 > 668.8	5.42e3	2.50e3	1.0000		6.22	6.12	27.1	9.660	96.6
23	26	N-EtFOSA	526.1 > 168.9	4.88e3	1.54e4	1.0000		6.17	6.11	47.7	51.382	102.8
24	27	PFHxDA	813.1 > 768.6	2.73e3	1.85e3	1.0000		6.53	6.44	7.38	9.386	93.9
25	28	PFODA	913.1 > 868.8	2.88e3	1.85e3	1.0000		6.74	6.68	7.77	9.510	95.1
26	29	N-MeFOSE	616.1 > 58.9	5.23e3	1.53e4	1.0000		6.27	6.25	51.2	50.157	100.3
27	30	N-EtFOSE	630.1 > 58.9	5.75e3	1.32e4	1.0000		6.43	6.41	65.2	54.277	108.6
28	31	13C3-PFBA	216.1 > 171.8	5.66e3	6.56e3	1.0000	0.873	1.38	1.35	10.8	12.342	98.7
29	32	13C3-PFPeA	266. > 221.8	6.51e3	7.51e3	1.0000	0.867	2.37	2.32	10.8	12.500	100.0
30	33	13C3-PFBS	302. > 98.8	8.87e2	7.51e3	1.0000	0.116	2.77	2.61	1.48	12.701	101.6
31	34	13C2-PFHxA	315 > 269.8	2.16e3	7.51e3	1.0000	0.655	3.15	3.10	3.59	5.483	109.7

70-130

50-150

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Dataset: U:\Q4.PRO\results\180110M2\180110M2-20.qld

Last Altered: Thursday, January 11, 2018 08:47:31 Pacific Standard Time
Printed: Thursday, January 11, 2018 08:47:57 Pacific Standard Time

Name: 180110M2_20, Date: 10-Jan-2018, Time: 18:56:45, ID: ST180110M2-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C4-PFHpA	367.2 > 321.8	5.60e3	7.51e3	1.0000	0.722	3.78	3.72	9.33	12.923	103.4
33	36	18O2-PFHxS	403.0 > 102.6	7.88e2	1.99e3	1.0000	0.348	3.94	3.87	4.95	14.209	113.7
34	37	13C2-6:2 FTS	429.1 > 408.9	1.54e3	7.06e3	1.0000	0.222	4.25	4.19	2.73	12.334	98.7
35	38	13C2-PFOA	414.9 > 369.7	8.58e3	7.06e3	1.0000	1.023	4.31	4.24	15.2	14.861	118.9
36	39	13C5-PFNA	468.2 > 422.9	6.36e3	7.10e3	1.0000	0.916	4.81	4.68	11.2	12.222	97.8
37	40	13C8-PFOSA	506.1 > 77.7	1.62e3	7.95e3	1.0000	0.210	4.87	4.74	2.55	12.102	96.8
38	41	13C8-PFOS	507.0 > 79.9	2.10e3	1.48e3	1.0000	1.035	4.89	4.76	17.8	17.193	137.5
39	42	13C2-PFDA	515.1 > 469.9	7.04e3	5.96e3	1.0000	1.142	5.18	5.05	14.8	12.925	103.4
40	43	13C2-8:2 FTS	529.1 > 508.7	7.43e2	7.51e3	1.0000	0.157	5.15	5.02	1.24	7.905	63.2
41	44	d3-N-MeFOSAA	573.3 > 419	2.12e3	7.95e3	1.0000	0.299	5.32	5.20	3.33	11.153	89.2
42	45	d5-N-EtFOSAA	589.3 > 419	2.73e3	7.95e3	1.0000	0.369	5.47	5.35	4.28	11.607	92.9
43	46	13C2-PFUdA	565 > 519.8	8.10e3	7.95e3	1.0000	1.012	5.49	5.37	12.7	12.580	100.6
44	47	13C2-PFDoA	615.0 > 569.7	5.04e3	7.95e3	1.0000	0.647	5.77	5.65	7.93	12.255	98.0
45	48	d3-N-MeFOSA	515.2 > 168.9	9.87e3	7.95e3	1.0000	0.110	5.83	5.73	15.5	141.354	94.2
46	49	13C2-PFTeDA	714.8 > 669.6	2.50e3	7.95e3	1.0000	0.294	6.22	6.11	3.93	13.399	107.2
47	50	d5-N-ETFOSA	531.1 > 168.9	1.54e4	7.95e3	1.0000	0.155	6.18	6.12	24.2	156.255	104.2
48	51	13C2-PFHxDA	815 > 769.7	1.85e3	7.95e3	1.0000	0.507	6.53	6.44	2.91	5.741	114.8
49	52	d7-N-MeFOSE	623.1 > 58.9	1.53e4	7.95e3	1.0000	0.140	6.27	6.25	24.1	172.445	115.0
50	53	d9-N-EtFOSE	639.2 > 58.8	1.32e4	7.95e3	1.0000	0.132	6.42	6.40	20.8	157.037	104.7
51	54	13C4-PFBA	217. > 171.8	6.56e3	6.56e3	1.0000	1.000	1.38	1.35	12.5	12.500	100.0
52	55	13C5-PFHxA	318 > 272.9	7.51e3	7.51e3	1.0000	1.000	3.15	3.10	12.5	12.500	100.0
53	56	13C3-PFHxS	401.9 > 79.9	1.99e3	1.99e3	1.0000	1.000	4.02	3.87	12.5	12.500	100.0
54	57	13C8-PFOA	421.3 > 376	7.06e3	7.06e3	1.0000	1.000	4.38	4.24	12.5	12.500	100.0
55	58	13C9-PFNA	472.2 > 426.9	7.10e3	7.10e3	1.0000	1.000	4.81	4.68	12.5	12.500	100.0
56	59	13C4-PFOS	503 > 79.9	1.48e3	1.48e3	1.0000	1.000	4.89	4.76	12.5	12.500	100.0
57	60	13C6-PFDA	519.1 > 473.7	5.96e3	5.96e3	1.0000	1.000	5.18	5.05	12.5	12.500	100.0
58	61	13C7-PFUdA	570.1 > 524.8	7.95e3	7.95e3	1.0000	1.000	5.49	5.37	12.5	12.500	100.0

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Dataset: Untitled

Last Altered: Thursday, January 11, 2018 09:34:33 Pacific Standard Time
Printed: Thursday, January 11, 2018 09:35:07 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180110M2_1	ST180110M2-1 PFC CS0 18A0808	10-Jan-18	15:24:24
2	180110M2_2	IPA	10-Jan-18	15:35:32
3	180110M2_3	B7L0188-BS1 OPR 0.25	10-Jan-18	15:46:43
4	180110M2_4	B7L0215-BS1 OPR 0.125	10-Jan-18	15:57:54
5	180110M2_5	B7L0188-BLK1 Method Blank 0.25	10-Jan-18	16:09:04
6	180110M2_6	B7L0215-BLK1 Method Blank 0.125	10-Jan-18	16:20:15
7	180110M2_7	B7L0215-MS1 Matrix Spike 0.12336	10-Jan-18	16:31:25
8	180110M2_8	B7L0215-MSD1 Matrix Spike Dup 0.12396	10-Jan-18	16:42:36
9	180110M2_9	1701986-01 REEPDW060 0.12357	10-Jan-18	16:53:47
10	180110M2_10	1701986-02 REEPDW505 0.12328	10-Jan-18	17:04:58
11	180110M2_11	1701986-03 REEPDW061 0.12293	10-Jan-18	17:16:09
12	180110M2_12	1701986-04 REEPDW062 0.11873	10-Jan-18	17:27:19
13	180110M2_13	1701986-05 REEPDW063 0.12261	10-Jan-18	17:38:30
14	180110M2_14	1701986-06 REEPDW064 0.12328	10-Jan-18	17:49:41
15	180110M2_15	1701986-07 REEPDW065 0.12516	10-Jan-18	18:00:53
16	180110M2_16	1701986-08 REEPDW066 0.11884	10-Jan-18	18:12:02
17	180110M2_17	1701986-09 REEPDW067 0.12708	10-Jan-18	18:23:13
18	180110M2_18	1701986-10 REEPDW068 0.12339	10-Jan-18	18:34:23
19	180110M2_19	IPA	10-Jan-18	18:45:34
20	180110M2_20	ST180110M2-2 PFC CS3 18A0811	10-Jan-18	18:56:45
21	180110M2_21	IPA	10-Jan-18	19:07:56
22	180110M2_22	1701986-11 REEPDW069 0.1225	10-Jan-18	19:19:06
23	180110M2_23	1701986-12 REEPDW070 0.12154	10-Jan-18	19:30:17
24	180110M2_24	1701986-13 REEPDW506 0.11149	10-Jan-18	19:41:28
25	180110M2_25	1701986-14 REEPDW071 0.12235	10-Jan-18	19:52:39
26	180110M2_26	1701986-15 REEPDW072 0.12184	10-Jan-18	20:03:49
27	180110M2_27	B7L0188-MS1 Matrix Spike 0.24896	10-Jan-18	20:15:00
28	180110M2_28	B7L0188-MSD1 Matrix Spike Dup 0.23749	10-Jan-18	20:26:11
29	180110M2_29	1701970-01 FT-PZ458S-20171214 0.25998	10-Jan-18	20:37:21
30	180110M2_30	1701970-02 FT-PZ458I-20171214 0.25291	10-Jan-18	20:48:32
31	180110M2_31	1701970-03 SA-MW132S-20171214 0.25764	10-Jan-18	20:59:43

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Dataset: Untitled

Last Altered: Thursday, January 11, 2018 09:34:33 Pacific Standard Time
Printed: Thursday, January 11, 2018 09:35:07 Pacific Standard Time

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
32	180110M2_32	1701970-04 SA-MW132S-FRB-20171214 0.2...	10-Jan-18	21:10:53
33	180110M2_33	1701970-05 SA-MW132I-20171214 0.23441	10-Jan-18	21:22:04
34	180110M2_34	IPA	10-Jan-18	21:33:14
35	180110M2_35	ST180110M2-3 PFC CS3 18A0811	10-Jan-18	21:44:25
36	180110M2_36	IPA	10-Jan-18	21:55:36
37	180110M2_37	1701970-06 FT-PZ459S-20171214 0.25318	10-Jan-18	22:06:47
38	180110M2_38	1701970-07 FT-PZ459I-20171214 0.2457	10-Jan-18	22:18:02
39	180110M2_39	1701970-08 FT-PZ463S-20171214 0.25736	10-Jan-18	22:29:11
40	180110M2_40	1701970-09 FT-PZ463I-20171214 0.26165	10-Jan-18	22:40:22
41	180110M2_41	1701970-10 CV-TANK-20171214 0.25889	10-Jan-18	22:51:32
42	180110M2_42	IPA	10-Jan-18	23:02:43
43	180110M2_43	B7L0218-BS1 OPR 0.25	10-Jan-18	23:13:54
44	180110M2_44	B7L0218-BSD1 LCSD 0.25	10-Jan-18	23:25:04
45	180110M2_45	IPA	10-Jan-18	23:36:15
46	180110M2_46	B7L0218-BLK1 Method Blank 0.25	10-Jan-18	23:47:26
47	180110M2_47	1701991-01 REEPDW073 0.11453	10-Jan-18	23:58:45
48	180110M2_48	1701991-02 REEPDW074 0.11902	11-Jan-18	00:09:55
49	180110M2_49	1701991-03 REEPDW075 0.11962	11-Jan-18	00:21:06
50	180110M2_50	1701991-04 REEPDW076 0.11478	11-Jan-18	00:32:17
51	180110M2_51	1701991-05 REEPDW077 0.11838	11-Jan-18	00:43:31
52	180110M2_52	1701992-01 REEPDW073FRB 0.11802	11-Jan-18	00:54:49
53	180110M2_53	1701992-02 REEPDW074FRB 0.11783	11-Jan-18	01:06:06
54	180110M2_54	1701992-03 REEPDW075FRB 0.10583	11-Jan-18	01:17:16
55	180110M2_55	1701992-04 REEPDW076FRB 0.11734	11-Jan-18	01:28:27
56	180110M2_56	1701992-05 REEPDW077FRB 0.11805 (A)	11-Jan-18	08:37:58
57	180110M2_57	IPA	11-Jan-18	08:49:16
58	180110M2_58	ST180110M2-4 PFC CS3 18A0811	11-Jan-18	09:00:26
59	180110M2_59	IPA	11-Jan-18	09:11:37

(A) RT. outside of 12 hr limit.
AC 1/11/18

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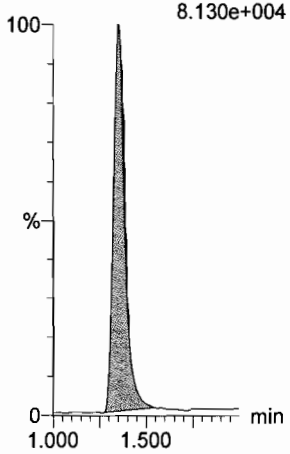
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Last Altered: Thursday, January 11, 2018 08:47:31 Pacific Standard Time
Printed: Thursday, January 11, 2018 08:47:57 Pacific Standard Time

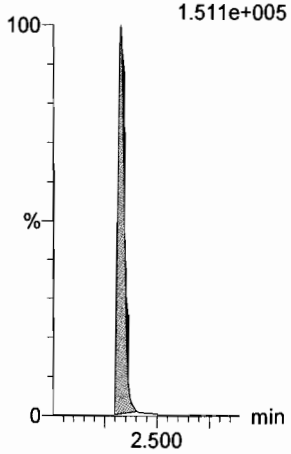
Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180110M2_20, Date: 10-Jan-2018, Time: 18:56:45, ID: ST180110M2-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

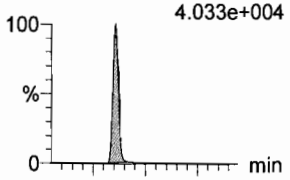
PFBA
F1:MRM of 1 channel,ES-
213.0 > 168.8
8.130e+004



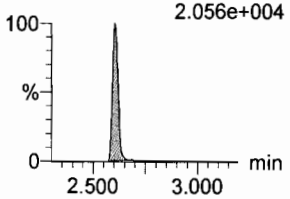
PFPeA
F4:MRM of 1 channel,ES-
263.1 > 218.9
1.511e+005



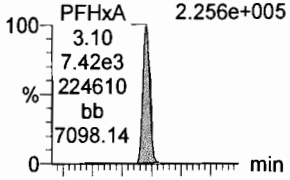
PFBS
F6:MRM of 2 channels,ES-
299.0 > 79.7
4.033e+004



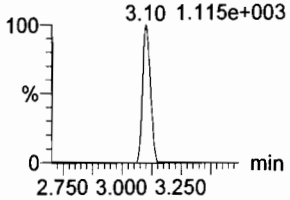
F6:MRM of 2 channels,ES-
299.0 > 99.0
2.056e+004



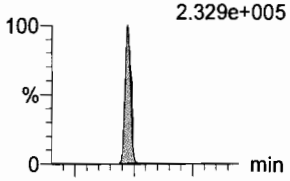
PFHxA
F8:MRM of 2 channels,ES-
313.2 > 268.9
2.256e+005



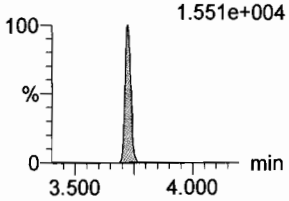
F8:MRM of 2 channels,ES-
313.2 > 119
3.10 1.115e+003



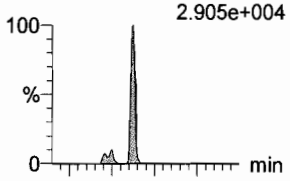
PFHpA
F13:MRM of 2 channels,ES-
363.0 > 318.9
2.329e+005



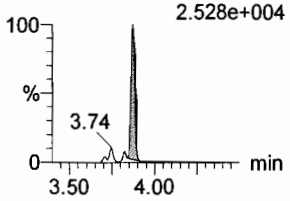
F13:MRM of 2 channels,ES-
363.0 > 169.0
1.551e+004



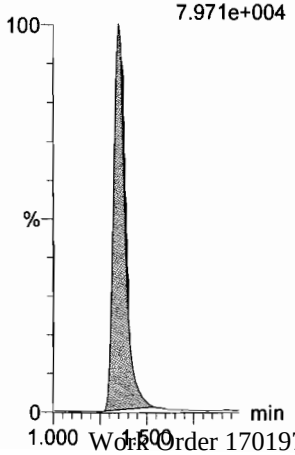
L-PFHxS
F15:MRM of 2 channels,ES-
398.9 > 79.6
2.905e+004



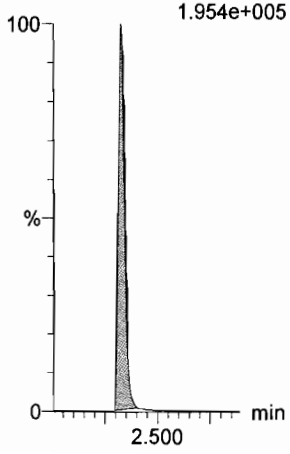
F15:MRM of 2 channels,ES-
398.9 > 99.0
2.528e+004



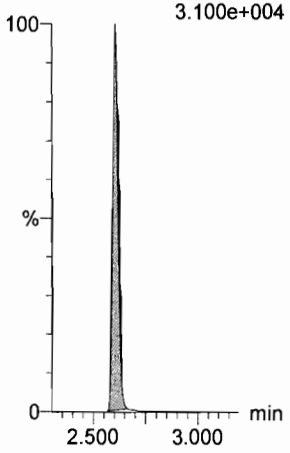
13C3-PFBA
F2:MRM of 1 channel,ES-
216.1 > 171.8
7.971e+004



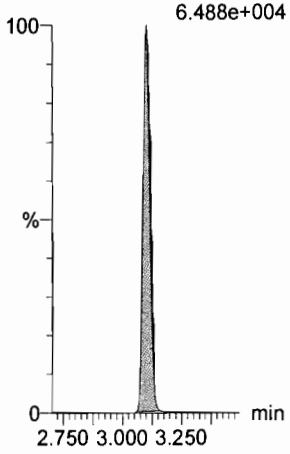
13C3-PFPeA
F5:MRM of 1 channel,ES-
266. > 221.8
1.954e+005



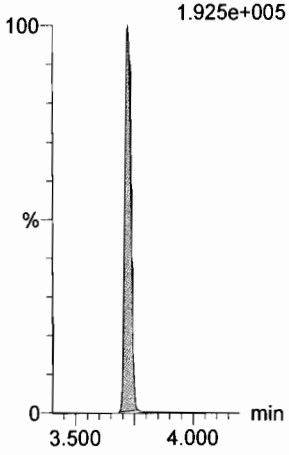
13C3-PFBS
F7:MRM of 1 channel,ES-
302. > 98.8
3.100e+004



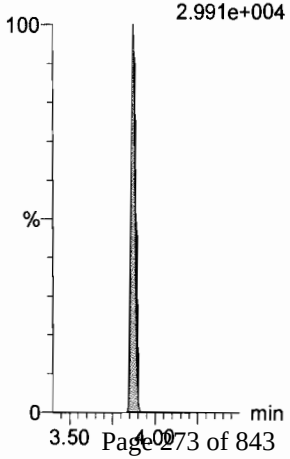
13C2-PFHxA
F9:MRM of 1 channel,ES-
315 > 269.8
6.488e+004



13C4-PFHpA
F14:MRM of 1 channel,ES-
367.2 > 321.8
1.925e+005



18O2-PFHxS
F17:MRM of 1 channel,ES-
403.0 > 102.6
2.991e+004

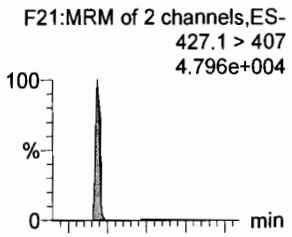


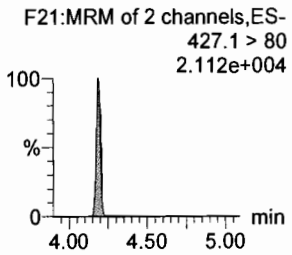
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Last Altered: Thursday, January 11, 2018 08:47:31 Pacific Standard Time
Printed: Thursday, January 11, 2018 08:47:57 Pacific Standard Time

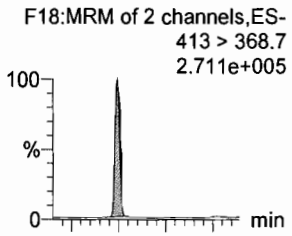
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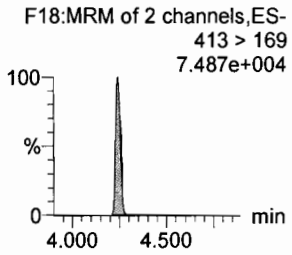
6:2 FTS



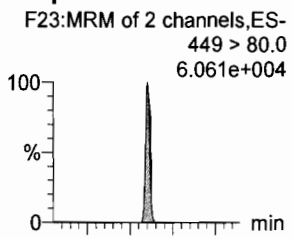


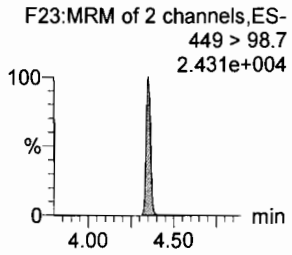
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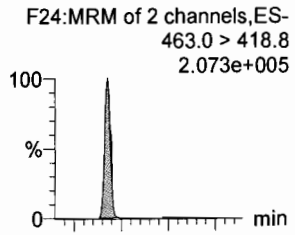


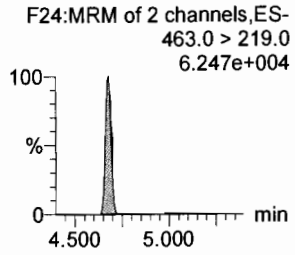
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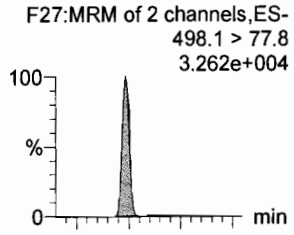


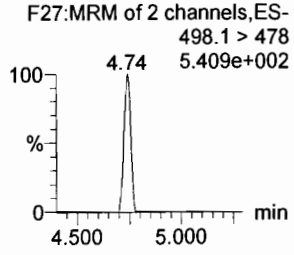
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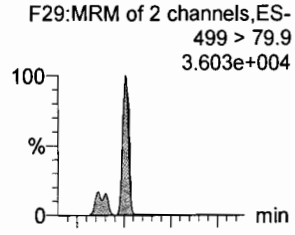


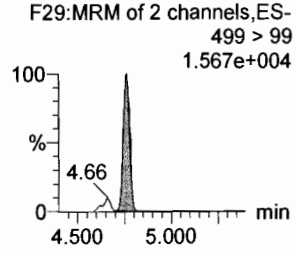
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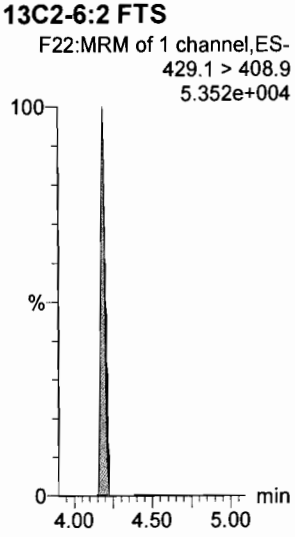


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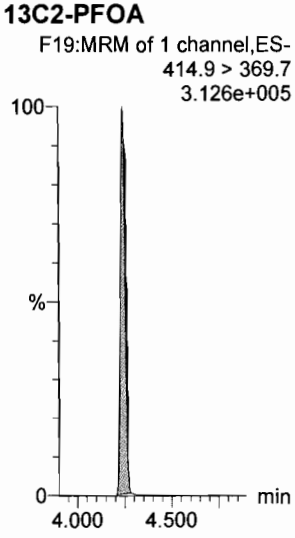




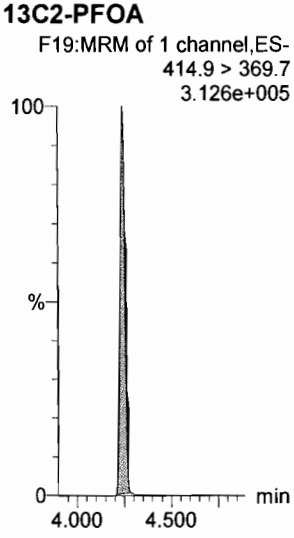
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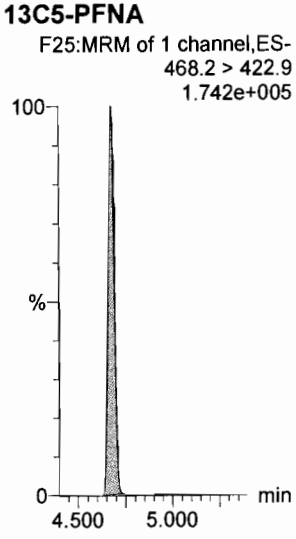
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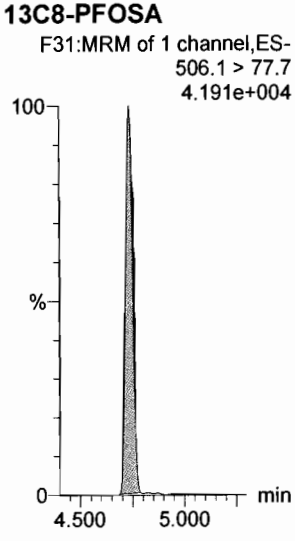
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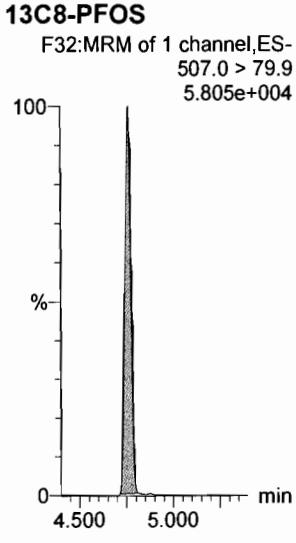
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13C8-PFOSA



13C8-PFOS

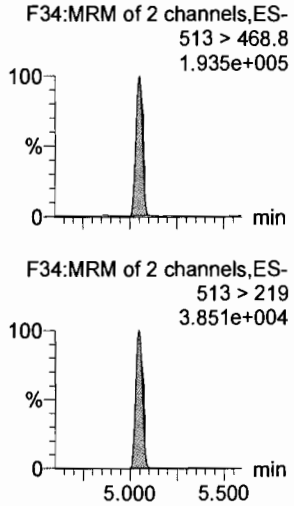


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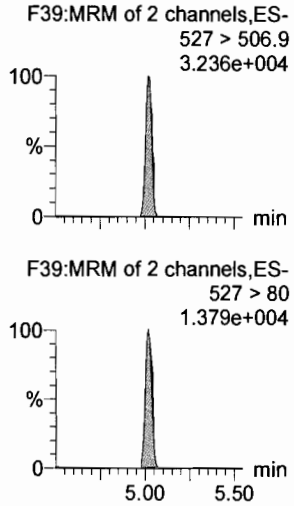
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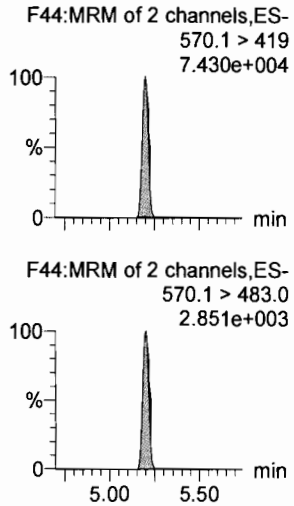
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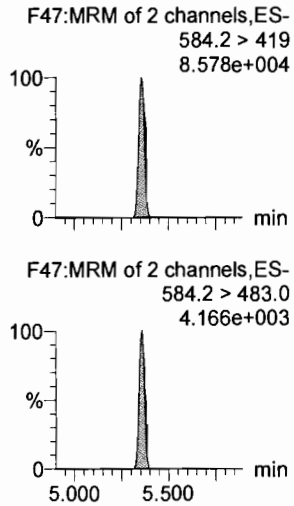
8:2 FTS



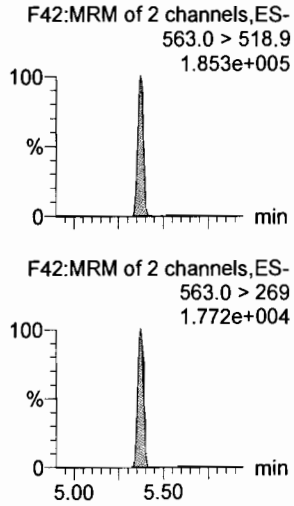
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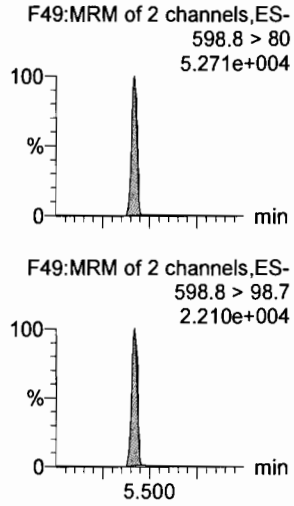
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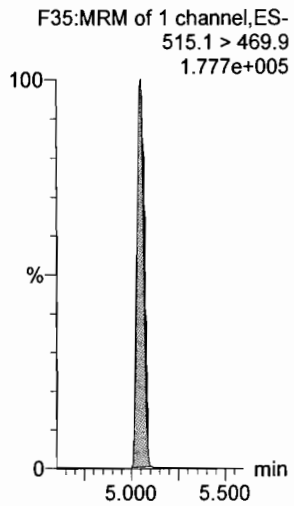
PFUdA



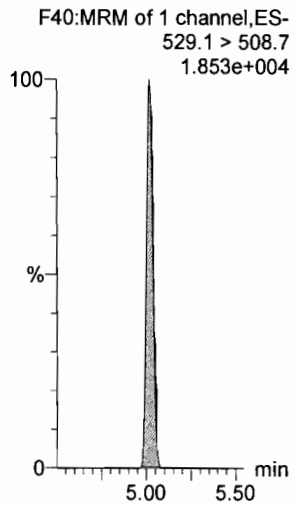
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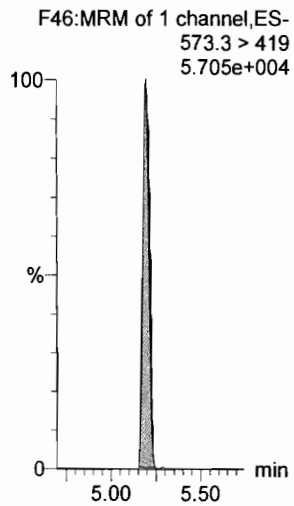
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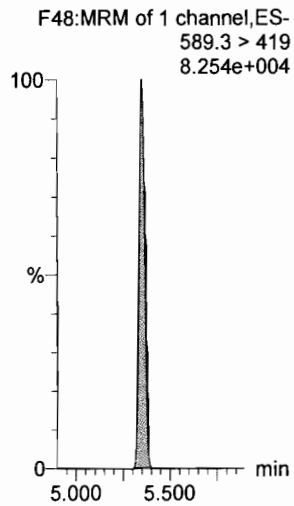
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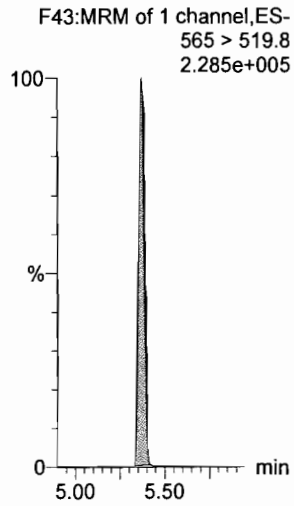
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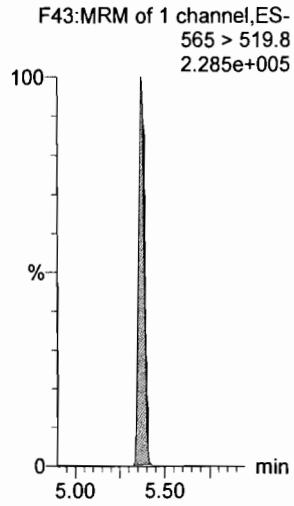
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

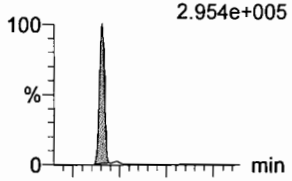


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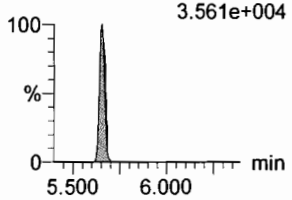
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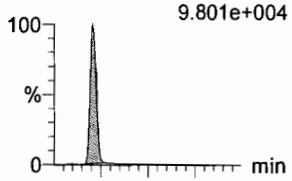
PFDoA
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612.9 > 569.0
2.954e+005



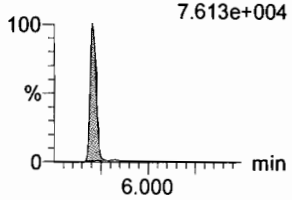
F50:MRM of 2 channels,ES-
612.9 > 318.8
3.561e+004



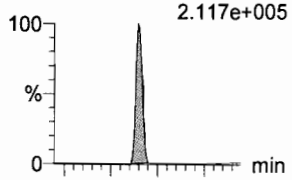
N-MeFOSA
F33:MRM of 2 channels,ES-
512.1 > 168.9
9.801e+004



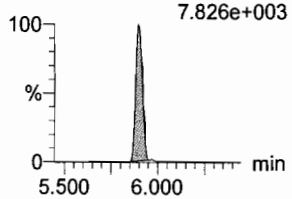
F33:MRM of 2 channels,ES-
512.1 > 219
7.613e+004



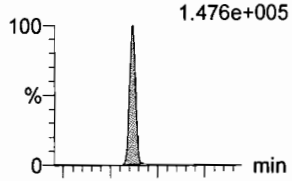
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
2.117e+005



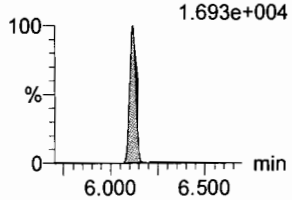
F56:MRM of 2 channels,ES-
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7.826e+003



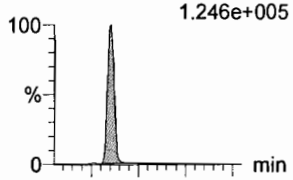
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
1.476e+005



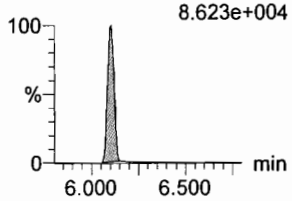
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1.693e+004



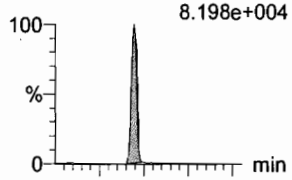
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
1.246e+005



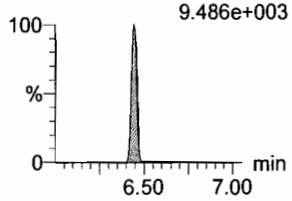
F38:MRM of 2 channels,ES-
526.1 > 219
8.623e+004



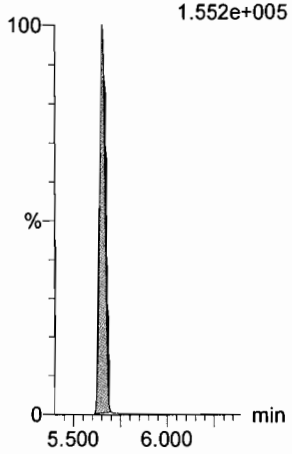
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
8.198e+004



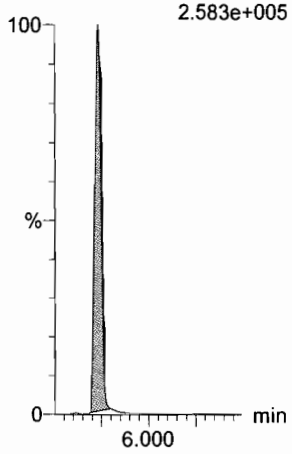
F59:MRM of 2 channels,ES-
813.1 > 219
9.486e+003



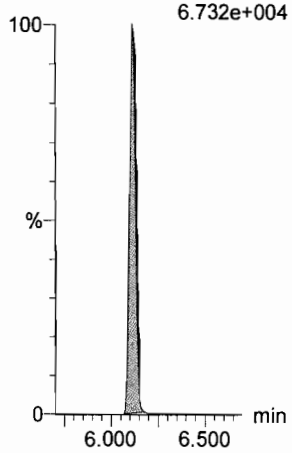
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
1.552e+005



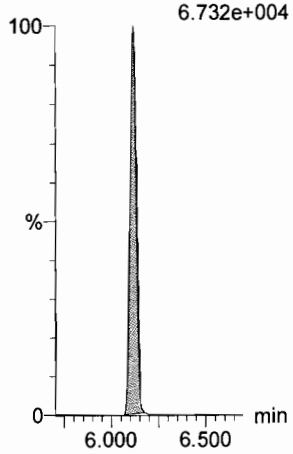
d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
2.583e+005



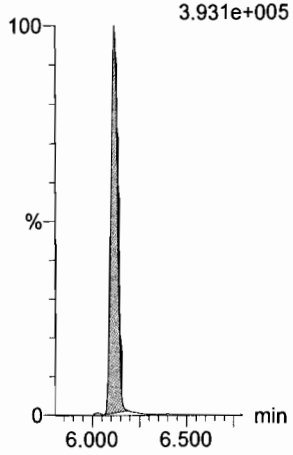
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
6.732e+004



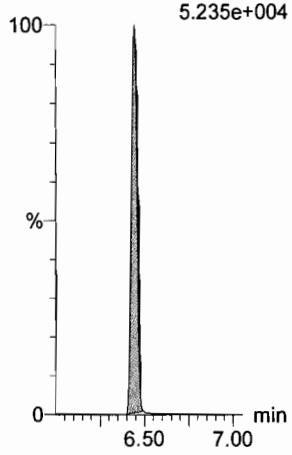
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F58:MRM of 2 channels,ES-
714.8 > 669.6
6.732e+004



d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
3.931e+005



13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
5.235e+004

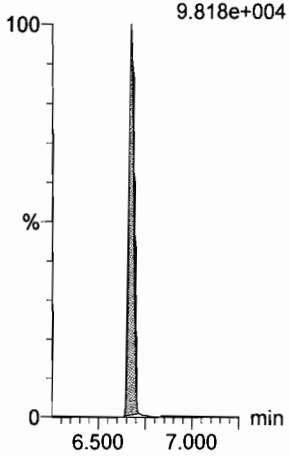


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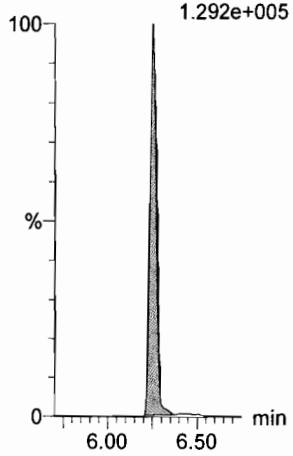
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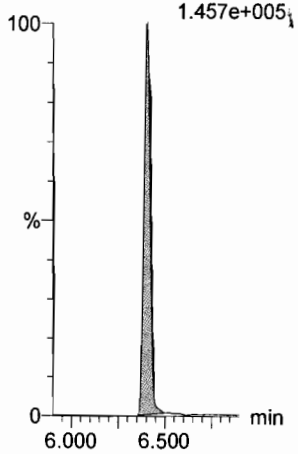
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
9.818e+004



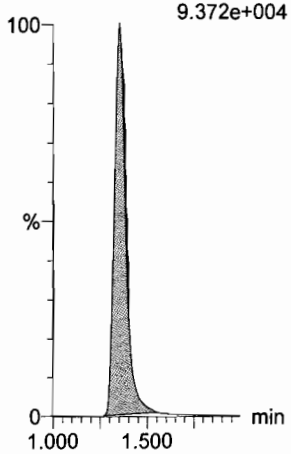
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
1.292e+005



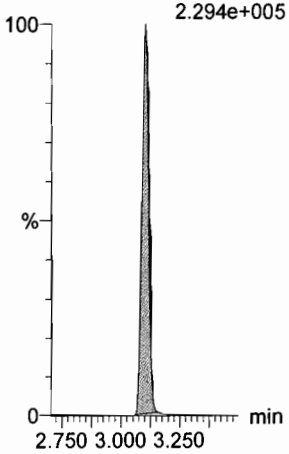
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
1.457e+005



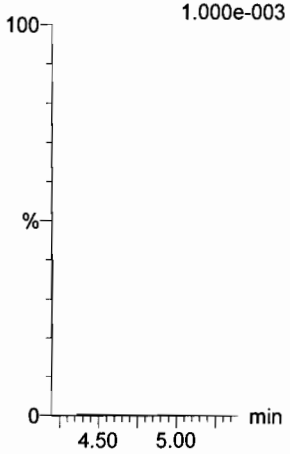
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
9.372e+004



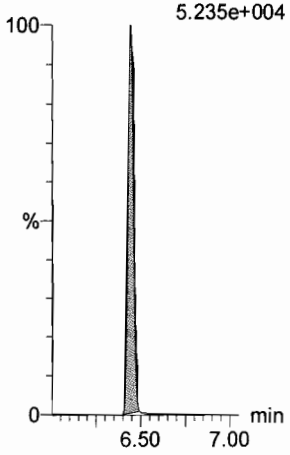
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
2.294e+005



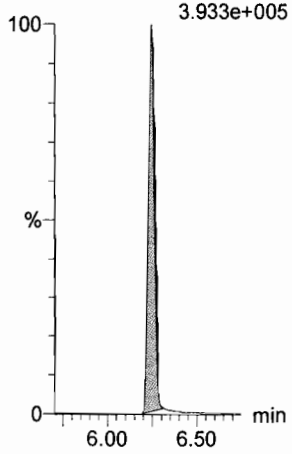
TCDA
F28:MRM of 3 channels,ES-
498.3 > 106.9
1.000e-003



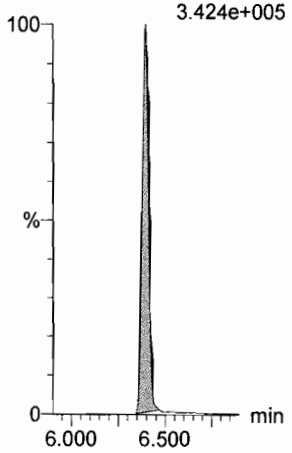
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
5.235e+004



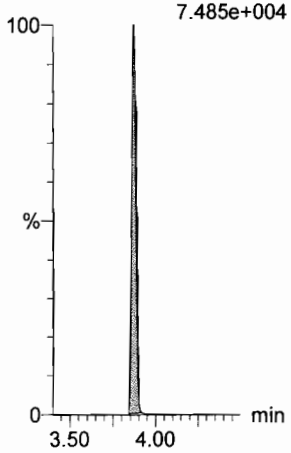
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
3.933e+005



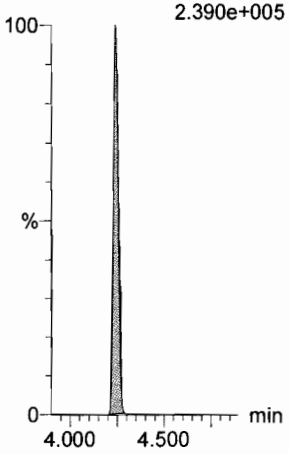
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
3.424e+005



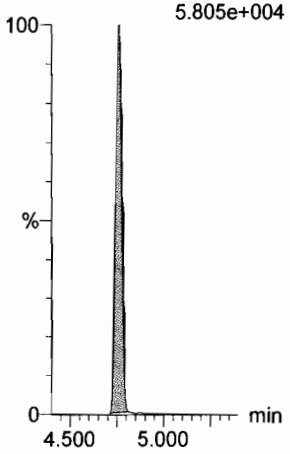
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
7.485e+004



13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
2.390e+005



13C8-PFOS
F32:MRM of 1 channel,ES-
507.0 > 79.9
5.805e+004

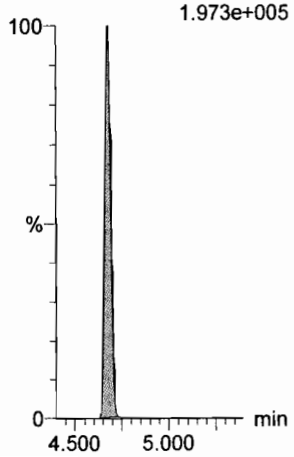


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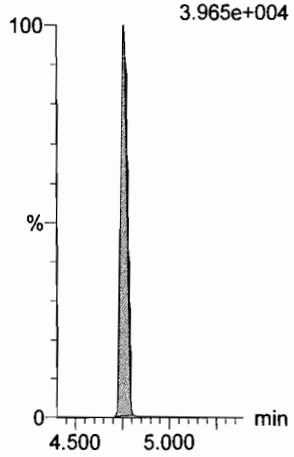
Last Altered: Thursday, January 11, 2018 08:47:31 Pacific Standard Time
Printed: Thursday, January 11, 2018 08:47:57 Pacific Standard Time

Name: 180110M2_20, Date: 10-Jan-2018, Time: 18:56:45, ID: ST180110M2-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

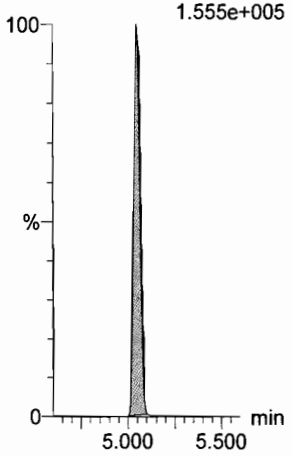
13C9-PFNA



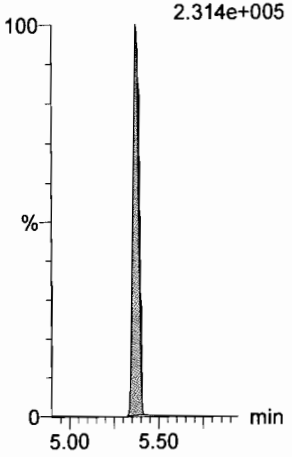
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: U:\Q4.PRO\results\180112M3\180112M3_IIS.qld

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Method: U:\Q4.PRO\MethDB\PFAS_RS-12-29-17.mdb 30 Dec 2017 10:03:31
Calibration: 13 Jan 2018 17:04:49

Name: 180112M3_6, Date: 12-Jan-2018, Time: 14:33:24, ID: ST180112M3-6 PFC CS3 18A0811, Description: ST180108M2-6 PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-6 PFC CS3 18A0811	1.13e4	100.0	NO
2	2	13C5-PFHxA	ST180112M3-6 PFC CS3 18A0811	1.39e4	100.0	NO
3	3	13C3-PFHxS	ST180112M3-6 PFC CS3 18A0811	3.49e3	100.0	NO
4	4	13C8-PFOA	ST180112M3-6 PFC CS3 18A0811	1.13e4	100.0	NO
5	5	13C9-PFNA	ST180112M3-6 PFC CS3 18A0811	1.37e4	100.0	NO
6	6	13C4-PFOS	ST180112M3-6 PFC CS3 18A0811	3.43e3	100.0	NO
7	7	13C6-PFDA	ST180112M3-6 PFC CS3 18A0811	7.49e3	100.0	NO
8	8	13C7-PFUdA	ST180112M3-6 PFC CS3 18A0811	9.23e3	100.0	NO

Name: 180112M3_7, Date: 12-Jan-2018, Time: 14:44:53, ID: ST180112M3-7 PFC CS4 18A0812, Description: ST180108M2-7 PFC CS4 18A0812

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-7 PFC CS4 18A0812	1.01e4	90.0	NO
2	2	13C5-PFHxA	ST180112M3-7 PFC CS4 18A0812	1.34e4	96.6	NO
3	3	13C3-PFHxS	ST180112M3-7 PFC CS4 18A0812	3.35e3	95.9	NO
4	4	13C8-PFOA	ST180112M3-7 PFC CS4 18A0812	1.17e4	103.1	NO
5	5	13C9-PFNA	ST180112M3-7 PFC CS4 18A0812	1.31e4	96.0	NO
6	6	13C4-PFOS	ST180112M3-7 PFC CS4 18A0812	3.07e3	89.6	NO
7	7	13C6-PFDA	ST180112M3-7 PFC CS4 18A0812	6.96e3	92.9	NO
8	8	13C7-PFUdA	ST180112M3-7 PFC CS4 18A0812	9.71e3	105.2	NO

Name: 180112M3_8, Date: 12-Jan-2018, Time: 14:56:24, ID: ST180112M3-8 PFC CS5 18A0813, Description: ST180108M2-8 PFC CS5 18A0813

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-8 PFC CS5 18A0813	1.04e4	92.5	NO
2	2	13C5-PFHxA	ST180112M3-8 PFC CS5 18A0813	1.22e4	88.3	NO
3	3	13C3-PFHxS	ST180112M3-8 PFC CS5 18A0813	3.32e3	95.1	NO
4	4	13C8-PFOA	ST180112M3-8 PFC CS5 18A0813	1.03e4	91.3	NO
5	5	13C9-PFNA	ST180112M3-8 PFC CS5 18A0813	1.16e4	84.6	NO
6	6	13C4-PFOS	ST180112M3-8 PFC CS5 18A0813	3.43e3	99.9	NO
7	7	13C6-PFDA	ST180112M3-8 PFC CS5 18A0813	7.09e3	94.6	NO
8	8	13C7-PFUdA	ST180112M3-8 PFC CS5 18A0813	1.09e4	118.0	NO

Name: 180112M3_9, Date: 12-Jan-2018, Time: 15:07:57, ID: ST180112M3-9 PFC CS6 18A0814, Description: ST180108M2-9 PFC CS6 18A0814

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-9 PFC CS6 18A0814	1.04e4	92.0	NO
2	2	13C5-PFHxA	ST180112M3-9 PFC CS6 18A0814	1.21e4	87.5	NO
3	3	13C3-PFHxS	ST180112M3-9 PFC CS6 18A0814	2.60e3	74.6	NO
4	4	13C8-PFOA	ST180112M3-9 PFC CS6 18A0814	1.07e4	94.8	NO
5	5	13C9-PFNA	ST180112M3-9 PFC CS6 18A0814	1.02e4	74.4	NO

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Name: 180112M3_9, Date: 12-Jan-2018, Time: 15:07:57, ID: ST180112M3-9 PFC CS6 18A0814, Description: ST180108M2-9 PFC CS6 18A0814

	#	Name	ID	Area	%Rec	Area Out
6	6	13C4-PFOS	ST180112M3-9 PFC CS6 18A0814	2.48e3	72.2	NO
7	7	13C6-PFDA	ST180112M3-9 PFC CS6 18A0814	7.00e3	93.5	NO
8	8	13C7-PFUdA	ST180112M3-9 PFC CS6 18A0814	1.02e4	110.9	NO

Name: 180112M3_10, Date: 12-Jan-2018, Time: 15:19:28, ID: ST180112M3-10 PFC CS7 18A0815, Description: ST180108M2-10 PFC CS7 18A0815

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-10 PFC CS7 18A0815	1.05e4	93.5	NO
2	2	13C5-PFHxA	ST180112M3-10 PFC CS7 18A0815	1.15e4	83.1	NO
3	3	13C3-PFHxS	ST180112M3-10 PFC CS7 18A0815	2.72e3	77.9	NO
4	4	13C8-PFOA	ST180112M3-10 PFC CS7 18A0815	9.62e3	85.0	NO
5	5	13C9-PFNA	ST180112M3-10 PFC CS7 18A0815	1.12e4	82.1	NO
6	6	13C4-PFOS	ST180112M3-10 PFC CS7 18A0815	2.65e3	77.2	NO
7	7	13C6-PFDA	ST180112M3-10 PFC CS7 18A0815	6.36e3	84.9	NO
8	8	13C7-PFUdA	ST180112M3-10 PFC CS7 18A0815	1.09e4	118.1	NO

Name: 180112M3_11, Date: 12-Jan-2018, Time: 15:30:56, 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

Name: 180112M3_12, Date: 12-Jan-2018, Time: 15:42:29, ID: ICV180112M3-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ICV180112M3-1 PFC ICV 18A0805	1.04e4	92.7	NO
2	2	13C5-PFHxA	ICV180112M3-1 PFC ICV 18A0805	1.46e4	105.6	NO
3	3	13C3-PFHxS	ICV180112M3-1 PFC ICV 18A0805	3.54e3	101.3	NO
4	4	13C8-PFOA	ICV180112M3-1 PFC ICV 18A0805	1.14e4	100.3	NO
5	5	13C9-PFNA	ICV180112M3-1 PFC ICV 18A0805	9.80e3	71.6	NO
6	6	13C4-PFOS	ICV180112M3-1 PFC ICV 18A0805	3.23e3	94.1	NO
7	7	13C6-PFDA	ICV180112M3-1 PFC ICV 18A0805	6.97e3	93.0	NO
8	8	13C7-PFUdA	ICV180112M3-1 PFC ICV 18A0805	1.10e4	119.1	NO

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Name: 180112M3_13, Date: 12-Jan-2018, Time: 15:54:01, 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: 180112M3_14, Date: 12-Jan-2018, Time: 16:05:31, ID: B7L0218-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BS1 OPR 0.25	8.45e3	75.0	NO
2	2	13C5-PFHxA	B7L0218-BS1 OPR 0.25	1.06e4	76.6	NO
3	3	13C3-PFHxS	B7L0218-BS1 OPR 0.25	2.61e3	74.7	NO
4	4	13C8-PFOA	B7L0218-BS1 OPR 0.25	1.05e4	92.9	NO
5	5	13C9-PFNA	B7L0218-BS1 OPR 0.25	9.86e3	72.0	NO
6	6	13C4-PFOS	B7L0218-BS1 OPR 0.25	2.81e3	81.9	NO
7	7	13C6-PFDA	B7L0218-BS1 OPR 0.25	6.99e3	93.4	NO
8	8	13C7-PFUdA	B7L0218-BS1 OPR 0.25	1.04e4	112.8	NO

Name: 180112M3_15, Date: 12-Jan-2018, Time: 16:17:07, ID: B7L0218-BSD1 LCSD 0.25, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BSD1 LCSD 0.25	8.29e3	73.6	NO
2	2	13C5-PFHxA	B7L0218-BSD1 LCSD 0.25	1.05e4	75.5	NO
3	3	13C3-PFHxS	B7L0218-BSD1 LCSD 0.25	3.03e3	86.8	NO
4	4	13C8-PFOA	B7L0218-BSD1 LCSD 0.25	9.79e3	86.5	NO
5	5	13C9-PFNA	B7L0218-BSD1 LCSD 0.25	9.62e3	70.3	NO
6	6	13C4-PFOS	B7L0218-BSD1 LCSD 0.25	2.67e3	77.9	NO
7	7	13C6-PFDA	B7L0218-BSD1 LCSD 0.25	4.74e3	63.2	NO
8	8	13C7-PFUdA	B7L0218-BSD1 LCSD 0.25	9.16e3	99.2	NO

Name: 180112M3_16, Date: 12-Jan-2018, Time: 16:28:41, ID: B7L0218-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BLK1 Method Blank 0.25	7.72e3	68.5	NO
2	2	13C5-PFHxA	B7L0218-BLK1 Method Blank 0.25	1.00e4	72.3	NO
3	3	13C3-PFHxS	B7L0218-BLK1 Method Blank 0.25	2.68e3	76.7	NO
4	4	13C8-PFOA	B7L0218-BLK1 Method Blank 0.25	8.21e3	72.5	NO
5	5	13C9-PFNA	B7L0218-BLK1 Method Blank 0.25	8.44e3	61.7	NO
6	6	13C4-PFOS	B7L0218-BLK1 Method Blank 0.25	2.61e3	76.1	NO
7	7	13C6-PFDA	B7L0218-BLK1 Method Blank 0.25	5.34e3	71.3	NO
8	8	13C7-PFUdA	B7L0218-BLK1 Method Blank 0.25	9.05e3	98.1	NO

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Name: 180112M3_17, Date: 12-Jan-2018, Time: 16:40:14, ID: B7L0188-MS1 Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-MS1 Matrix Spike 0.24896	8.64e3	76.7	NO
2	2	13C5-PFHxA	B7L0188-MS1 Matrix Spike 0.24896	1.10e4	79.4	NO
3	3	13C3-PFHxS	B7L0188-MS1 Matrix Spike 0.24896	2.70e3	77.3	NO
4	4	13C8-PFOA	B7L0188-MS1 Matrix Spike 0.24896	9.62e3	84.9	NO
5	5	13C9-PFNA	B7L0188-MS1 Matrix Spike 0.24896	8.62e3	63.0	NO
6	6	13C4-PFOS	B7L0188-MS1 Matrix Spike 0.24896	2.64e3	76.8	NO
7	7	13C6-PFDA	B7L0188-MS1 Matrix Spike 0.24896	6.42e3	85.7	NO
8	8	13C7-PFUdA	B7L0188-MS1 Matrix Spike 0.24896	9.26e3	100.3	NO

Name: 180112M3_18, Date: 12-Jan-2018, Time: 16:51:42, ID: B7L0188-MSD1 Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-MSD1 Matrix Spike Dup 0.237...	8.27e3	73.4	NO
2	2	13C5-PFHxA	B7L0188-MSD1 Matrix Spike Dup 0.237...	9.88e3	71.3	NO
3	3	13C3-PFHxS	B7L0188-MSD1 Matrix Spike Dup 0.237...	2.75e3	78.9	NO
4	4	13C8-PFOA	B7L0188-MSD1 Matrix Spike Dup 0.237...	8.39e3	74.1	NO
5	5	13C9-PFNA	B7L0188-MSD1 Matrix Spike Dup 0.237...	7.88e3	57.6	NO
6	6	13C4-PFOS	B7L0188-MSD1 Matrix Spike Dup 0.237...	2.39e3	69.7	NO
7	7	13C6-PFDA	B7L0188-MSD1 Matrix Spike Dup 0.237...	5.77e3	77.0	NO
8	8	13C7-PFUdA	B7L0188-MSD1 Matrix Spike Dup 0.237...	6.74e3	73.0	NO

Name: 180112M3_19, Date: 12-Jan-2018, Time: 17:03:12, ID: 1701970-01 FT-PZ458S-20171214 0.25998, Description: FT-PZ458S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-01 FT-PZ458S-20171214 0.25...	9.00e3	79.9	NO
2	2	13C5-PFHxA	1701970-01 FT-PZ458S-20171214 0.25...	1.22e4	88.1	NO
3	3	13C3-PFHxS	1701970-01 FT-PZ458S-20171214 0.25...	3.44e3	98.4	NO
4	4	13C8-PFOA	1701970-01 FT-PZ458S-20171214 0.25...	1.02e4	89.9	NO
5	5	13C9-PFNA	1701970-01 FT-PZ458S-20171214 0.25...	1.04e4	75.8	NO
6	6	13C4-PFOS	1701970-01 FT-PZ458S-20171214 0.25...	3.45e3	100.5	NO
7	7	13C6-PFDA	1701970-01 FT-PZ458S-20171214 0.25...	8.12e3	108.4	NO
8	8	13C7-PFUdA	1701970-01 FT-PZ458S-20171214 0.25...	9.49e3	102.8	NO

Name: 180112M3_20, Date: 12-Jan-2018, Time: 17:15:53, ID: 1701970-02 FT-PZ458I-20171214 0.25291, Description: FT-PZ458I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-02 FT-PZ458I-20171214 0.25...	8.34e3	74.1	NO
2	2	13C5-PFHxA	1701970-02 FT-PZ458I-20171214 0.25...	1.01e4	72.9	NO
3	3	13C3-PFHxS	1701970-02 FT-PZ458I-20171214 0.25...	2.99e3	85.7	NO
4	4	13C8-PFOA	1701970-02 FT-PZ458I-20171214 0.25...	1.14e4	100.8	NO
5	5	13C9-PFNA	1701970-02 FT-PZ458I-20171214 0.25...	8.86e3	64.7	NO
6	6	13C4-PFOS	1701970-02 FT-PZ458I-20171214 0.25...	3.08e3	89.6	NO
7	7	13C6-PFDA	1701970-02 FT-PZ458I-20171214 0.25...	6.93e3	92.5	NO
8	8	13C7-PFUdA	1701970-02 FT-PZ458I-20171214 0.25...	7.69e3	83.3	NO

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Name: 180112M3_21, Date: 12-Jan-2018, Time: 17:27:26, ID: 1701970-03 SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-03 SA-MW132S-20171214 0....	8.60e3	76.4	NO
2	2	13C5-PFHxA	1701970-03 SA-MW132S-20171214 0....	1.12e4	80.6	NO
3	3	13C3-PFHxS	1701970-03 SA-MW132S-20171214 0....	2.98e3	85.2	NO
4	4	13C8-PFOA	1701970-03 SA-MW132S-20171214 0....	1.06e4	93.2	NO
5	5	13C9-PFNA	1701970-03 SA-MW132S-20171214 0....	8.95e3	65.5	NO
6	6	13C4-PFOS	1701970-03 SA-MW132S-20171214 0....	3.12e3	90.9	NO
7	7	13C6-PFDA	1701970-03 SA-MW132S-20171214 0....	6.42e3	85.7	NO
8	8	13C7-PFUdA	1701970-03 SA-MW132S-20171214 0....	8.29e3	89.9	NO

Name: 180112M3_22, Date: 12-Jan-2018, Time: 17:39:06, ID: 1701970-04 SA-MW132S-FRB-20171214 0.23367, Description: SA-MW132S-FRB-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-04 SA-MW132S-FRB-201712...	8.90e3	79.0	NO
2	2	13C5-PFHxA	1701970-04 SA-MW132S-FRB-201712...	1.14e4	82.3	NO
3	3	13C3-PFHxS	1701970-04 SA-MW132S-FRB-201712...	3.18e3	91.0	NO
4	4	13C8-PFOA	1701970-04 SA-MW132S-FRB-201712...	1.09e4	96.3	NO
5	5	13C9-PFNA	1701970-04 SA-MW132S-FRB-201712...	1.06e4	77.7	NO
6	6	13C4-PFOS	1701970-04 SA-MW132S-FRB-201712...	3.06e3	89.2	NO
7	7	13C6-PFDA	1701970-04 SA-MW132S-FRB-201712...	5.40e3	72.1	NO
8	8	13C7-PFUdA	1701970-04 SA-MW132S-FRB-201712...	1.05e4	114.1	NO

Name: 180112M3_23, Date: 12-Jan-2018, Time: 17:52:40, ID: 1701970-05 SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-05 SA-MW132I-20171214 0.2...	8.02e3	71.2	NO
2	2	13C5-PFHxA	1701970-05 SA-MW132I-20171214 0.2...	9.02e3	65.1	NO
3	3	13C3-PFHxS	1701970-05 SA-MW132I-20171214 0.2...	2.80e3	80.3	NO
4	4	13C8-PFOA	1701970-05 SA-MW132I-20171214 0.2...	8.85e3	78.1	NO
5	5	13C9-PFNA	1701970-05 SA-MW132I-20171214 0.2...	7.66e3	56.0	NO
6	6	13C4-PFOS	1701970-05 SA-MW132I-20171214 0.2...	3.04e3	88.7	NO
7	7	13C6-PFDA	1701970-05 SA-MW132I-20171214 0.2...	6.55e3	87.4	NO
8	8	13C7-PFUdA	1701970-05 SA-MW132I-20171214 0.2...	9.01e3	97.6	NO

Name: 180112M3_24, Date: 12-Jan-2018, Time: 18:04:06, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-06 FT-PZ459S-20171214 0.25...	9.42e3	83.6	NO
2	2	13C5-PFHxA	1701970-06 FT-PZ459S-20171214 0.25...	1.06e4	76.4	NO
3	3	13C3-PFHxS	1701970-06 FT-PZ459S-20171214 0.25...	2.92e3	83.7	NO
4	4	13C8-PFOA	1701970-06 FT-PZ459S-20171214 0.25...	1.03e4	91.4	NO
5	5	13C9-PFNA	1701970-06 FT-PZ459S-20171214 0.25...	1.06e4	77.3	NO
6	6	13C4-PFOS	1701970-06 FT-PZ459S-20171214 0.25...	2.78e3	81.0	NO
7	7	13C6-PFDA	1701970-06 FT-PZ459S-20171214 0.25...	6.60e3	88.2	NO
8	8	13C7-PFUdA	1701970-06 FT-PZ459S-20171214 0.25...	1.02e4	110.7	NO

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Name: 180112M3_25, Date: 12-Jan-2018, Time: 18:15:15, ID: 1701970-07 FT-PZ459I-20171214 0.2457, Description: FT-PZ459I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-07 FT-PZ459I-20171214 0.2457	8.92e3	79.2	NO
2	2	13C5-PFHxA	1701970-07 FT-PZ459I-20171214 0.2457	1.07e4	76.9	NO
3	3	13C3-PFHxS	1701970-07 FT-PZ459I-20171214 0.2457	2.94e3	84.1	NO
4	4	13C8-PFOA	1701970-07 FT-PZ459I-20171214 0.2457	1.07e4	94.4	NO
5	5	13C9-PFNA	1701970-07 FT-PZ459I-20171214 0.2457	1.04e4	75.7	NO
6	6	13C4-PFOS	1701970-07 FT-PZ459I-20171214 0.2457	2.76e3	80.5	NO
7	7	13C6-PFDA	1701970-07 FT-PZ459I-20171214 0.2457	5.15e3	68.7	NO
8	8	13C7-PFUdA	1701970-07 FT-PZ459I-20171214 0.2457	8.75e3	94.8	NO

Name: 180112M3_26, Date: 12-Jan-2018, Time: 18:26:25, ID: 1701970-08 FT-PZ463S-20171214 0.25736, Description: FT-PZ463S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-08 FT-PZ463S-20171214 0.25...	9.13e3	81.1	NO
2	2	13C5-PFHxA	1701970-08 FT-PZ463S-20171214 0.25...	1.11e4	80.2	NO
3	3	13C3-PFHxS	1701970-08 FT-PZ463S-20171214 0.25...	3.11e3	89.1	NO
4	4	13C8-PFOA	1701970-08 FT-PZ463S-20171214 0.25...	1.00e4	88.5	NO
5	5	13C9-PFNA	1701970-08 FT-PZ463S-20171214 0.25...	9.66e3	70.6	NO
6	6	13C4-PFOS	1701970-08 FT-PZ463S-20171214 0.25...	2.92e3	85.1	NO
7	7	13C6-PFDA	1701970-08 FT-PZ463S-20171214 0.25...	5.62e3	75.0	NO
8	8	13C7-PFUdA	1701970-08 FT-PZ463S-20171214 0.25...	9.73e3	105.4	NO

Name: 180112M3_27, Date: 12-Jan-2018, Time: 18:37:36, ID: 1701970-09 FT-PZ463I-20171214 0.26165, Description: FT-PZ463I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-09 FT-PZ463I-20171214 0.26...	9.13e3	81.0	NO
2	2	13C5-PFHxA	1701970-09 FT-PZ463I-20171214 0.26...	1.17e4	84.5	NO
3	3	13C3-PFHxS	1701970-09 FT-PZ463I-20171214 0.26...	3.02e3	86.6	NO
4	4	13C8-PFOA	1701970-09 FT-PZ463I-20171214 0.26...	1.05e4	92.5	NO
5	5	13C9-PFNA	1701970-09 FT-PZ463I-20171214 0.26...	1.08e4	79.0	NO
6	6	13C4-PFOS	1701970-09 FT-PZ463I-20171214 0.26...	3.13e3	91.4	NO
7	7	13C6-PFDA	1701970-09 FT-PZ463I-20171214 0.26...	7.19e3	95.9	NO
8	8	13C7-PFUdA	1701970-09 FT-PZ463I-20171214 0.26...	1.03e4	111.1	NO

Name: 180112M3_28, Date: 12-Jan-2018, Time: 18:48:47, ID: 1701970-10 CV-TANK-20171214 0.25889, Description: CV-TANK-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-10 CV-TANK-20171214 0.25889	8.57e3	76.1	NO
2	2	13C5-PFHxA	1701970-10 CV-TANK-20171214 0.25889	1.11e4	80.1	NO
3	3	13C3-PFHxS	1701970-10 CV-TANK-20171214 0.25889	3.16e3	90.4	NO
4	4	13C8-PFOA	1701970-10 CV-TANK-20171214 0.25889	9.86e3	87.1	NO
5	5	13C9-PFNA	1701970-10 CV-TANK-20171214 0.25889	9.91e3	72.4	NO
6	6	13C4-PFOS	1701970-10 CV-TANK-20171214 0.25889	2.43e3	70.8	NO
7	7	13C6-PFDA	1701970-10 CV-TANK-20171214 0.25889	7.11e3	94.9	NO
8	8	13C7-PFUdA	1701970-10 CV-TANK-20171214 0.25889	1.06e4	114.8	NO

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Name: 180112M3_29, Date: 12-Jan-2018, Time: 18:59:58, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA	9.45e3	83.9	NO
2	2	13C5-PFHxA	IPA	1.12e4	80.9	NO
3	3	13C3-PFHxS	IPA	3.29e3	94.2	NO
4	4	13C8-PFOA	IPA	1.11e4	98.0	NO
5	5	13C9-PFNA	IPA	1.21e4	88.6	NO
6	6	13C4-PFOS	IPA	2.95e3	86.1	NO
7	7	13C6-PFDA	IPA	7.30e3	97.5	NO
8	8	13C7-PFUdA	IPA	8.69e3	94.2	NO

Name: 180112M3_30, Date: 12-Jan-2018, Time: 19:11:09, ID: ST180112M3-11 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-11 PFC CS3 18A0811	1.26e4	111.8	NO
2	2	13C5-PFHxA	ST180112M3-11 PFC CS3 18A0811	1.51e4	108.9	NO
3	3	13C3-PFHxS	ST180112M3-11 PFC CS3 18A0811	3.63e3	104.0	NO
4	4	13C8-PFOA	ST180112M3-11 PFC CS3 18A0811	1.43e4	126.6	NO
5	5	13C9-PFNA	ST180112M3-11 PFC CS3 18A0811	1.47e4	107.7	NO
6	6	13C4-PFOS	ST180112M3-11 PFC CS3 18A0811	3.05e3	89.0	NO
7	7	13C6-PFDA	ST180112M3-11 PFC CS3 18A0811	8.49e3	113.3	NO
8	8	13C7-PFUdA	ST180112M3-11 PFC CS3 18A0811	1.58e4	171.1	YES

Name: 180112M3_31, Date: 12-Jan-2018, Time: 19:22:19, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA	1.02e4	90.6	NO
2	2	13C5-PFHxA	IPA	1.26e4	91.3	NO
3	3	13C3-PFHxS	IPA	3.50e3	100.2	NO
4	4	13C8-PFOA	IPA	1.10e4	97.5	NO
5	5	13C9-PFNA	IPA	1.24e4	90.5	NO
6	6	13C4-PFOS	IPA	3.20e3	93.2	NO
7	7	13C6-PFDA	IPA	5.89e3	78.6	NO
8	8	13C7-PFUdA	IPA	1.04e4	112.3	NO

Name: 180112M3_34, Date: 12-Jan-2018, Time: 19:33:30, ID: 1702013-01 WI-CV-1RW14-1217 0.26251, Description: WI-CV-1RW14-1217

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702013-01 WI-CV-1RW14-1217 0.262...	8.49e3	75.3	NO
2	2	13C5-PFHxA	1702013-01 WI-CV-1RW14-1217 0.262...	1.05e4	75.8	NO
3	3	13C3-PFHxS	1702013-01 WI-CV-1RW14-1217 0.262...	3.26e3	93.3	NO
4	4	13C8-PFOA	1702013-01 WI-CV-1RW14-1217 0.262...	9.61e3	84.8	NO
5	5	13C9-PFNA	1702013-01 WI-CV-1RW14-1217 0.262...	1.01e4	73.8	NO
6	6	13C4-PFOS	1702013-01 WI-CV-1RW14-1217 0.262...	2.94e3	85.7	NO
7	7	13C6-PFDA	1702013-01 WI-CV-1RW14-1217 0.262...	6.62e3	88.3	NO
8	8	13C7-PFUdA	1702013-01 WI-CV-1RW14-1217 0.262...	9.27e3	100.4	NO

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Name: 180112M3_35, Date: 12-Jan-2018, Time: 19:44:40, ID: 1702013-02 WI-CV-1FB14-1217 0.25636, Description: WI-CV-1FB14-1217

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702013-02 WI-CV-1FB14-1217 0.25636	8.15e3	72.4	NO
2	2	13C5-PFHxA	1702013-02 WI-CV-1FB14-1217 0.25636	9.73e3	70.2	NO
3	3	13C3-PFHxS	1702013-02 WI-CV-1FB14-1217 0.25636	2.40e3	68.7	NO
4	4	13C8-PFOA	1702013-02 WI-CV-1FB14-1217 0.25636	9.42e3	83.2	NO
5	5	13C9-PFNA	1702013-02 WI-CV-1FB14-1217 0.25636	9.18e3	67.1	NO
6	6	13C4-PFOS	1702013-02 WI-CV-1FB14-1217 0.25636	2.84e3	82.7	NO
7	7	13C6-PFDA	1702013-02 WI-CV-1FB14-1217 0.25636	6.35e3	84.7	NO
8	8	13C7-PFUdA	1702013-02 WI-CV-1FB14-1217 0.25636	7.18e3	77.8	NO

Name: 180112M3_36, Date: 12-Jan-2018, Time: 19:55:51, ID: 1701997-01 MTBE_8323 0.25626, Description: MTBE_8323

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701997-01 MTBE_8323 0.25626	9.11e3	80.9	NO
2	2	13C5-PFHxA	1701997-01 MTBE_8323 0.25626	1.11e4	80.1	NO
3	3	13C3-PFHxS	1701997-01 MTBE_8323 0.25626	2.94e3	84.3	NO
4	4	13C8-PFOA	1701997-01 MTBE_8323 0.25626	8.71e3	76.9	NO
5	5	13C9-PFNA	1701997-01 MTBE_8323 0.25626	9.78e3	71.5	NO
6	6	13C4-PFOS	1701997-01 MTBE_8323 0.25626	2.91e3	84.7	NO
7	7	13C6-PFDA	1701997-01 MTBE_8323 0.25626	5.86e3	78.3	NO
8	8	13C7-PFUdA	1701997-01 MTBE_8323 0.25626	8.32e3	90.1	NO

Name: 180112M3_37, Date: 12-Jan-2018, Time: 20:07:04, ID: 1701998-01 MTBE_8322 0.25742, Description: MTBE_8322

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701998-01 MTBE_8322 0.25742	8.13e3	72.2	NO
2	2	13C5-PFHxA	1701998-01 MTBE_8322 0.25742	1.01e4	72.7	NO
3	3	13C3-PFHxS	1701998-01 MTBE_8322 0.25742	2.71e3	77.7	NO
4	4	13C8-PFOA	1701998-01 MTBE_8322 0.25742	9.16e3	80.9	NO
5	5	13C9-PFNA	1701998-01 MTBE_8322 0.25742	1.08e4	78.8	NO
6	6	13C4-PFOS	1701998-01 MTBE_8322 0.25742	2.69e3	78.3	NO
7	7	13C6-PFDA	1701998-01 MTBE_8322 0.25742	5.49e3	73.3	NO
8	8	13C7-PFUdA	1701998-01 MTBE_8322 0.25742	8.81e3	95.4	NO

Name: 180112M3_38, Date: 12-Jan-2018, Time: 20:18:13, ID: 1701998-02 MTBE_8322 DUP 0.26171, Description: MTBE_8322 DUP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701998-02 MTBE_8322 DUP 0.26171	8.36e3	74.2	NO
2	2	13C5-PFHxA	1701998-02 MTBE_8322 DUP 0.26171	9.51e3	68.6	NO
3	3	13C3-PFHxS	1701998-02 MTBE_8322 DUP 0.26171	2.78e3	79.6	NO
4	4	13C8-PFOA	1701998-02 MTBE_8322 DUP 0.26171	1.01e4	89.5	NO
5	5	13C9-PFNA	1701998-02 MTBE_8322 DUP 0.26171	9.90e3	72.3	NO
6	6	13C4-PFOS	1701998-02 MTBE_8322 DUP 0.26171	2.91e3	84.7	NO
7	7	13C6-PFDA	1701998-02 MTBE_8322 DUP 0.26171	6.30e3	84.2	NO
8	8	13C7-PFUdA	1701998-02 MTBE_8322 DUP 0.26171	8.05e3	87.2	NO

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Name: 180112M3_39, Date: 12-Jan-2018, Time: 20:29:24, ID: 1701998-03 FIELD BLANK 0.25674, Description: FIELD BLANK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701998-03 FIELD BLANK 0.25674	8.65e3	76.8	NO
2	2	13C5-PFHxA	1701998-03 FIELD BLANK 0.25674	1.12e4	80.5	NO
3	3	13C3-PFHxS	1701998-03 FIELD BLANK 0.25674	2.74e3	78.5	NO
4	4	13C8-PFOA	1701998-03 FIELD BLANK 0.25674	9.86e3	87.1	NO
5	5	13C9-PFNA	1701998-03 FIELD BLANK 0.25674	9.52e3	69.6	NO
6	6	13C4-PFOS	1701998-03 FIELD BLANK 0.25674	2.79e3	81.4	NO
7	7	13C6-PFDA	1701998-03 FIELD BLANK 0.25674	5.75e3	76.8	NO
8	8	13C7-PFUdA	1701998-03 FIELD BLANK 0.25674	1.07e4	116.2	NO

Name: 180112M3_40, Date: 12-Jan-2018, Time: 20:40:34, ID: 1701954-01 WURTS_MSPTS_Eff-171214 0.4885, Description: WURTS_MSPTS_Eff-171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701954-01 WURTS_MSPTS_Eff-1712...	6.98e3	62.0	NO
2	2	13C5-PFHxA	1701954-01 WURTS_MSPTS_Eff-1712...	9.34e3	67.4	NO
3	3	13C3-PFHxS	1701954-01 WURTS_MSPTS_Eff-1712...	2.16e3	61.8	NO
4	4	13C8-PFOA	1701954-01 WURTS_MSPTS_Eff-1712...	8.57e3	75.7	NO
5	5	13C9-PFNA	1701954-01 WURTS_MSPTS_Eff-1712...	9.41e3	68.8	NO
6	6	13C4-PFOS	1701954-01 WURTS_MSPTS_Eff-1712...	2.18e3	63.6	NO
7	7	13C6-PFDA	1701954-01 WURTS_MSPTS_Eff-1712...	5.14e3	68.6	NO
8	8	13C7-PFUdA	1701954-01 WURTS_MSPTS_Eff-1712...	6.83e3	74.0	NO

Name: 180112M3_41, Date: 12-Jan-2018, Time: 20:51:45, ID: 1701954-02 WURTS_Outfall002-171214 0.49686, Description: WURTS_Outfall002-171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701954-02 WURTS_Outfall002-17121...	8.48e3	75.3	NO
2	2	13C5-PFHxA	1701954-02 WURTS_Outfall002-17121...	1.08e4	78.3	NO
3	3	13C3-PFHxS	1701954-02 WURTS_Outfall002-17121...	2.15e3	61.6	NO
4	4	13C8-PFOA	1701954-02 WURTS_Outfall002-17121...	9.65e3	85.3	NO
5	5	13C9-PFNA	1701954-02 WURTS_Outfall002-17121...	9.77e3	71.4	NO
6	6	13C4-PFOS	1701954-02 WURTS_Outfall002-17121...	2.84e3	82.9	NO
7	7	13C6-PFDA	1701954-02 WURTS_Outfall002-17121...	6.92e3	92.3	NO
8	8	13C7-PFUdA	1701954-02 WURTS_Outfall002-17121...	8.22e3	89.1	NO

Name: 180112M3_42, Date: 12-Jan-2018, Time: 21:02:56, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA	9.86e3	87.5	NO
2	2	13C5-PFHxA	IPA	1.18e4	85.0	NO
3	3	13C3-PFHxS	IPA	3.55e3	101.8	NO
4	4	13C8-PFOA	IPA	1.11e4	98.2	NO
5	5	13C9-PFNA	IPA	1.23e4	89.8	NO
6	6	13C4-PFOS	IPA	3.06e3	89.2	NO
7	7	13C6-PFDA	IPA	8.48e3	113.2	NO
8	8	13C7-PFUdA	IPA	1.00e4	108.8	NO

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Name: 180112M3_43, Date: 12-Jan-2018, Time: 21:14:07, ID: ST180112M3-12 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-12 PFC CS3 18A0811	1.25e4	111.3	NO
2	2	13C5-PFHxA	ST180112M3-12 PFC CS3 18A0811	1.55e4	112.0	NO
3	3	13C3-PFHxS	ST180112M3-12 PFC CS3 18A0811	3.48e3	99.7	NO
4	4	13C8-PFOA	ST180112M3-12 PFC CS3 18A0811	1.31e4	115.8	NO
5	5	13C9-PFNA	ST180112M3-12 PFC CS3 18A0811	1.30e4	94.8	NO
6	6	13C4-PFOS	ST180112M3-12 PFC CS3 18A0811	3.27e3	95.4	NO
7	7	13C6-PFDA	ST180112M3-12 PFC CS3 18A0811	9.20e3	122.8	NO
8	8	13C7-PFUdA	ST180112M3-12 PFC CS3 18A0811	1.20e4	130.2	NO

Name: 180112M3_44, Date: 12-Jan-2018, Time: 21:25:18, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA	1.02e4	90.1	NO
2	2	13C5-PFHxA	IPA	1.24e4	89.6	NO
3	3	13C3-PFHxS	IPA	3.51e3	100.4	NO
4	4	13C8-PFOA	IPA	1.09e4	95.9	NO
5	5	13C9-PFNA	IPA	1.02e4	74.2	NO
6	6	13C4-PFOS	IPA	3.59e3	104.6	NO
7	7	13C6-PFDA	IPA	7.85e3	104.7	NO
8	8	13C7-PFUdA	IPA	1.18e4	128.1	NO

Name: 180112M3_45, Date: 12-Jan-2018, Time: 21:36:28, ID: 1702012-01 GW1721171218RAP 0.26166, Description: GW1721171218RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-01 GW1721171218RAP 0.261...	7.97e3	70.7	NO
2	2	13C5-PFHxA	1702012-01 GW1721171218RAP 0.261...	1.06e4	76.5	NO
3	3	13C3-PFHxS	1702012-01 GW1721171218RAP 0.261...	3.10e3	88.7	NO
4	4	13C8-PFOA	1702012-01 GW1721171218RAP 0.261...	1.02e4	90.0	NO
5	5	13C9-PFNA	1702012-01 GW1721171218RAP 0.261...	9.51e3	69.5	NO
6	6	13C4-PFOS	1702012-01 GW1721171218RAP 0.261...	2.95e3	86.1	NO
7	7	13C6-PFDA	1702012-01 GW1721171218RAP 0.261...	6.64e3	88.6	NO
8	8	13C7-PFUdA	1702012-01 GW1721171218RAP 0.261...	8.88e3	96.3	NO

Name: 180112M3_46, Date: 12-Jan-2018, Time: 21:47:39, ID: 1702012-02 GW2731171218RAP 0.26149, Description: GW2731171218RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-02 GW2731171218RAP 0.261...	8.34e3	74.0	NO
2	2	13C5-PFHxA	1702012-02 GW2731171218RAP 0.261...	1.06e4	76.4	NO
3	3	13C3-PFHxS	1702012-02 GW2731171218RAP 0.261...	3.25e3	93.1	NO
4	4	13C8-PFOA	1702012-02 GW2731171218RAP 0.261...	1.09e4	96.4	NO
5	5	13C9-PFNA	1702012-02 GW2731171218RAP 0.261...	1.08e4	79.2	NO
6	6	13C4-PFOS	1702012-02 GW2731171218RAP 0.261...	3.03e3	88.3	NO
7	7	13C6-PFDA	1702012-02 GW2731171218RAP 0.261...	4.81e3	64.3	NO
8	8	13C7-PFUdA	1702012-02 GW2731171218RAP 0.261...	9.03e3	97.8	NO

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Name: 180112M3_47, Date: 12-Jan-2018, Time: 21:58:50, ID: 1702012-03 GW3741171218RAP 0.25614, Description: GW3741171218RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-03 GW3741171218RAP 0.256...	7.66e3	68.0	NO
2	2	13C5-PFHxA	1702012-03 GW3741171218RAP 0.256...	9.89e3	71.4	NO
3	3	13C3-PFHxS	1702012-03 GW3741171218RAP 0.256...	2.42e3	69.2	NO
4	4	13C8-PFOA	1702012-03 GW3741171218RAP 0.256...	8.44e3	74.6	NO
5	5	13C9-PFNA	1702012-03 GW3741171218RAP 0.256...	8.64e3	63.2	NO
6	6	13C4-PFOS	1702012-03 GW3741171218RAP 0.256...	2.70e3	78.7	NO
7	7	13C6-PFDA	1702012-03 GW3741171218RAP 0.256...	6.73e3	89.8	NO
8	8	13C7-PFUdA	1702012-03 GW3741171218RAP 0.256...	9.14e3	99.0	NO

Name: 180112M3_48, Date: 12-Jan-2018, Time: 22:10:00, ID: 1702012-04 GW4751171219RAP 0.26075, Description: GW4751171219RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-04 GW4751171219RAP 0.260...	6.22e3	55.2	NO
2	2	13C5-PFHxA	1702012-04 GW4751171219RAP 0.260...	8.97e3	64.7	NO
3	3	13C3-PFHxS	1702012-04 GW4751171219RAP 0.260...	3.10e3	88.9	NO
4	4	13C8-PFOA	1702012-04 GW4751171219RAP 0.260...	8.05e3	71.1	NO
5	5	13C9-PFNA	1702012-04 GW4751171219RAP 0.260...	9.23e3	67.5	NO
6	6	13C4-PFOS	1702012-04 GW4751171219RAP 0.260...	2.79e3	81.4	NO
7	7	13C6-PFDA	1702012-04 GW4751171219RAP 0.260...	6.59e3	88.0	NO
8	8	13C7-PFUdA	1702012-04 GW4751171219RAP 0.260...	7.17e3	77.7	NO

Name: 180112M3_49, Date: 12-Jan-2018, Time: 22:21:11, ID: 1702012-05 GW5761171219RAP 0.24934, Description: GW5761171219RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-05 GW5761171219RAP 0.249...	6.78e3	60.2	NO
2	2	13C5-PFHxA	1702012-05 GW5761171219RAP 0.249...	9.14e3	66.0	NO
3	3	13C3-PFHxS	1702012-05 GW5761171219RAP 0.249...	2.84e3	81.2	NO
4	4	13C8-PFOA	1702012-05 GW5761171219RAP 0.249...	7.96e3	70.3	NO
5	5	13C9-PFNA	1702012-05 GW5761171219RAP 0.249...	9.28e3	67.9	NO
6	6	13C4-PFOS	1702012-05 GW5761171219RAP 0.249...	2.86e3	83.3	NO
7	7	13C6-PFDA	1702012-05 GW5761171219RAP 0.249...	5.04e3	67.2	NO
8	8	13C7-PFUdA	1702012-05 GW5761171219RAP 0.249...	8.39e3	90.9	NO

Name: 180112M3_50, Date: 12-Jan-2018, Time: 22:32:21, ID: 1702012-06 GW1115171219RAP 0.26005, Description: GW1115171219RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-06 GW1115171219RAP 0.260...	8.74e3	77.6	NO
2	2	13C5-PFHxA	1702012-06 GW1115171219RAP 0.260...	9.62e3	69.4	NO
3	3	13C3-PFHxS	1702012-06 GW1115171219RAP 0.260...	2.69e3	77.0	NO
4	4	13C8-PFOA	1702012-06 GW1115171219RAP 0.260...	9.41e3	83.1	NO
5	5	13C9-PFNA	1702012-06 GW1115171219RAP 0.260...	1.11e4	81.0	NO
6	6	13C4-PFOS	1702012-06 GW1115171219RAP 0.260...	2.47e3	71.9	NO
7	7	13C6-PFDA	1702012-06 GW1115171219RAP 0.260...	5.50e3	73.5	NO
8	8	13C7-PFUdA	1702012-06 GW1115171219RAP 0.260...	8.27e3	89.6	NO

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Name: 180112M3_51, Date: 12-Jan-2018, Time: 22:43:32, ID: 1702012-07 GW2125171220RAP 0.2545, Description: GW2125171220RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-07 GW2125171220RAP 0.2545	7.85e3	69.7	NO
2	2	13C5-PFHxA	1702012-07 GW2125171220RAP 0.2545	1.03e4	74.4	NO
3	3	13C3-PFHxS	1702012-07 GW2125171220RAP 0.2545	3.06e3	87.6	NO
4	4	13C8-PFOA	1702012-07 GW2125171220RAP 0.2545	8.70e3	76.9	NO
5	5	13C9-PFNA	1702012-07 GW2125171220RAP 0.2545	9.89e3	72.3	NO
6	6	13C4-PFOS	1702012-07 GW2125171220RAP 0.2545	2.75e3	80.1	NO
7	7	13C6-PFDA	1702012-07 GW2125171220RAP 0.2545	7.15e3	95.5	NO
8	8	13C7-PFUdA	1702012-07 GW2125171220RAP 0.2545	8.54e3	92.5	NO

Name: 180112M3_52, Date: 12-Jan-2018, Time: 22:54:43, ID: 1702012-08 GW3135171220RAP 0.24266, Description: GW3135171220RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-08 GW3135171220RAP 0.242...	3.40e3	30.2	YES
2	2	13C5-PFHxA	1702012-08 GW3135171220RAP 0.242...	5.34e3	38.6	YES
3	3	13C3-PFHxS	1702012-08 GW3135171220RAP 0.242...	2.91e3	83.4	NO
4	4	13C8-PFOA	1702012-08 GW3135171220RAP 0.242...	5.44e3	48.0	YES
5	5	13C9-PFNA	1702012-08 GW3135171220RAP 0.242...	7.54e3	55.1	NO
6	6	13C4-PFOS	1702012-08 GW3135171220RAP 0.242...	3.28e3	95.5	NO
7	7	13C6-PFDA	1702012-08 GW3135171220RAP 0.242...	4.57e3	60.9	NO
8	8	13C7-PFUdA	1702012-08 GW3135171220RAP 0.242...	6.80e3	73.6	NO

Name: 180112M3_53, Date: 12-Jan-2018, Time: 23:05:54, ID: 1702012-09 GW4145171220RAP 0.25823, Description: GW4145171220RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-09 GW4145171220RAP 0.258...	7.81e3	69.4	NO
2	2	13C5-PFHxA	1702012-09 GW4145171220RAP 0.258...	9.23e3	66.6	NO
3	3	13C3-PFHxS	1702012-09 GW4145171220RAP 0.258...	2.96e3	84.9	NO
4	4	13C8-PFOA	1702012-09 GW4145171220RAP 0.258...	8.76e3	77.4	NO
5	5	13C9-PFNA	1702012-09 GW4145171220RAP 0.258...	9.43e3	68.9	NO
6	6	13C4-PFOS	1702012-09 GW4145171220RAP 0.258...	2.93e3	85.3	NO
7	7	13C6-PFDA	1702012-09 GW4145171220RAP 0.258...	5.68e3	75.9	NO
8	8	13C7-PFUdA	1702012-09 GW4145171220RAP 0.258...	7.97e3	86.4	NO

Name: 180112M3_54, Date: 12-Jan-2018, Time: 23:17:05, ID: 1702012-10 GW5155171220RAP 0.24026, Description: GW5155171220RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1702012-10 GW5155171220RAP 0.240...	7.04e3	62.5	NO
2	2	13C5-PFHxA	1702012-10 GW5155171220RAP 0.240...	9.04e3	65.3	NO
3	3	13C3-PFHxS	1702012-10 GW5155171220RAP 0.240...	2.71e3	77.5	NO
4	4	13C8-PFOA	1702012-10 GW5155171220RAP 0.240...	9.16e3	80.9	NO
5	5	13C9-PFNA	1702012-10 GW5155171220RAP 0.240...	8.30e3	60.7	NO
6	6	13C4-PFOS	1702012-10 GW5155171220RAP 0.240...	3.07e3	89.6	NO
7	7	13C6-PFDA	1702012-10 GW5155171220RAP 0.240...	5.26e3	70.2	NO
8	8	13C7-PFUdA	1702012-10 GW5155171220RAP 0.240...	7.97e3	86.3	NO

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Name: 180112M3_55, Date: 12-Jan-2018, Time: 23:28:18, ID: B7L0208-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0208-BS1 OPR 0.25	7.99e3	70.9	NO
2	2	13C5-PFHxA	B7L0208-BS1 OPR 0.25	1.12e4	80.9	NO
3	3	13C3-PFHxS	B7L0208-BS1 OPR 0.25	2.72e3	77.8	NO
4	4	13C8-PFOA	B7L0208-BS1 OPR 0.25	1.06e4	93.6	NO
5	5	13C9-PFNA	B7L0208-BS1 OPR 0.25	1.06e4	77.6	NO
6	6	13C4-PFOS	B7L0208-BS1 OPR 0.25	2.89e3	84.3	NO
7	7	13C6-PFDA	B7L0208-BS1 OPR 0.25	5.42e3	72.4	NO
8	8	13C7-PFUdA	B7L0208-BS1 OPR 0.25	8.18e3	88.7	NO

Name: 180112M3_56, Date: 12-Jan-2018, Time: 23:39:28, ID: B7L0208-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0208-BLK1 Method Blank 0.25	7.77e3	69.0	NO
2	2	13C5-PFHxA	B7L0208-BLK1 Method Blank 0.25	9.95e3	71.8	NO
3	3	13C3-PFHxS	B7L0208-BLK1 Method Blank 0.25	2.55e3	72.9	NO
4	4	13C8-PFOA	B7L0208-BLK1 Method Blank 0.25	8.59e3	75.9	NO
5	5	13C9-PFNA	B7L0208-BLK1 Method Blank 0.25	8.02e3	58.6	NO
6	6	13C4-PFOS	B7L0208-BLK1 Method Blank 0.25	2.64e3	76.8	NO
7	7	13C6-PFDA	B7L0208-BLK1 Method Blank 0.25	5.10e3	68.1	NO
8	8	13C7-PFUdA	B7L0208-BLK1 Method Blank 0.25	7.49e3	81.1	NO

Name: 180112M3_57, Date: 12-Jan-2018, Time: 23:50:39, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA	9.89e3	87.8	NO
2	2	13C5-PFHxA	IPA	1.27e4	91.4	NO
3	3	13C3-PFHxS	IPA	3.10e3	88.9	NO
4	4	13C8-PFOA	IPA	1.20e4	106.0	NO
5	5	13C9-PFNA	IPA	1.25e4	91.3	NO
6	6	13C4-PFOS	IPA	3.42e3	99.6	NO
7	7	13C6-PFDA	IPA	6.24e3	83.3	NO
8	8	13C7-PFUdA	IPA	1.11e4	119.7	NO

Name: 180112M3_58, Date: 13-Jan-2018, Time: 00:01:50, ID: ST180112M3-13 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST180112M3-13 PFC CS3 18A0811	1.26e4	111.5	NO
2	2	13C5-PFHxA	ST180112M3-13 PFC CS3 18A0811	1.52e4	109.9	NO
3	3	13C3-PFHxS	ST180112M3-13 PFC CS3 18A0811	3.52e3	100.8	NO
4	4	13C8-PFOA	ST180112M3-13 PFC CS3 18A0811	1.38e4	122.0	NO
5	5	13C9-PFNA	ST180112M3-13 PFC CS3 18A0811	1.72e4	125.9	NO
6	6	13C4-PFOS	ST180112M3-13 PFC CS3 18A0811	4.24e3	123.7	NO
7	7	13C6-PFDA	ST180112M3-13 PFC CS3 18A0811	7.83e3	104.5	NO
8	8	13C7-PFUdA	ST180112M3-13 PFC CS3 18A0811	1.13e4	122.5	NO

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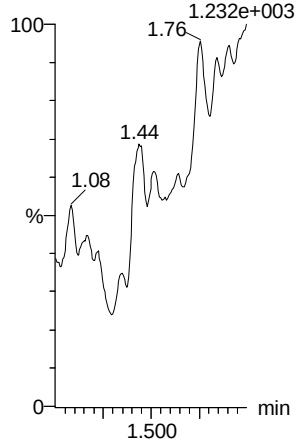
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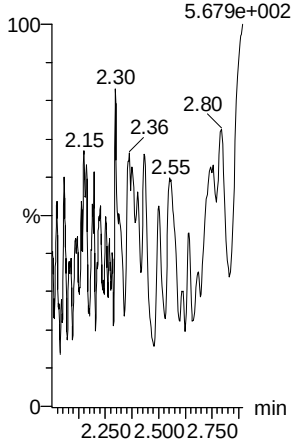
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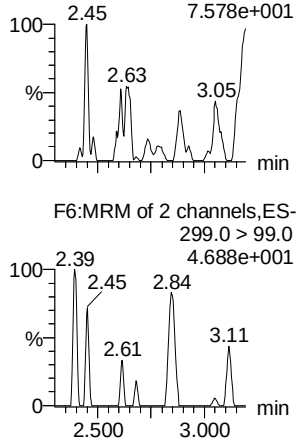
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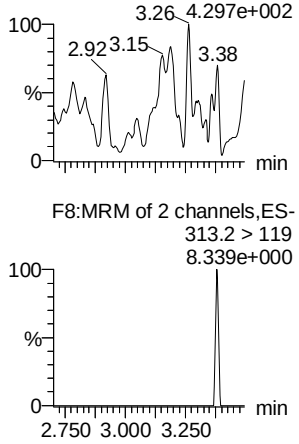
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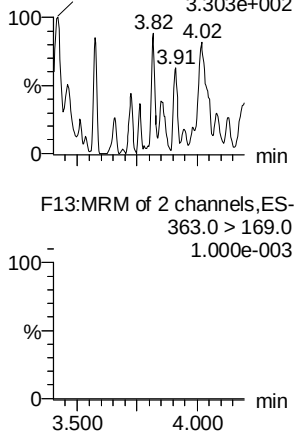
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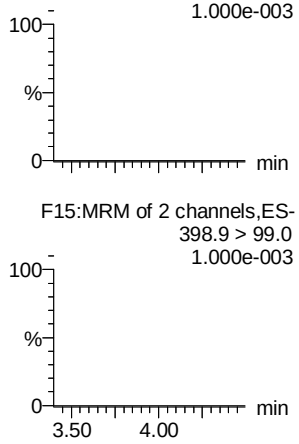
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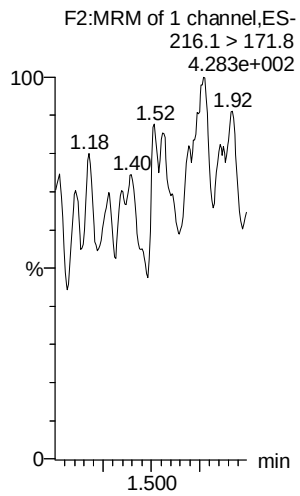
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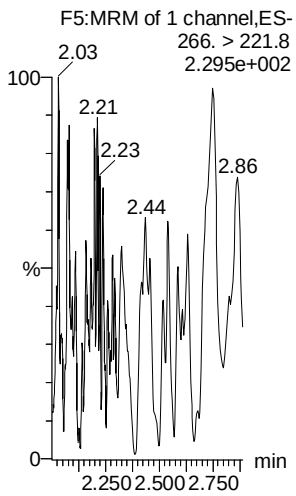
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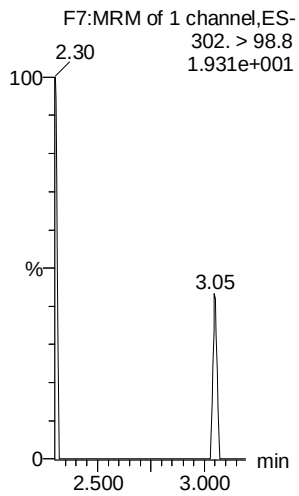
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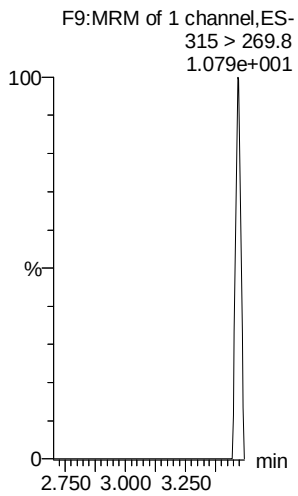
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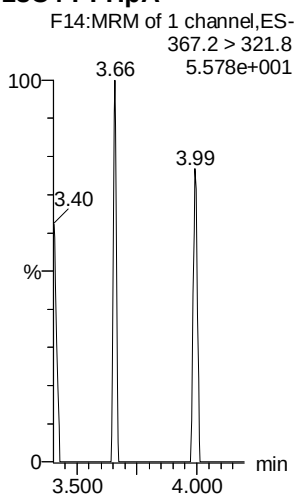
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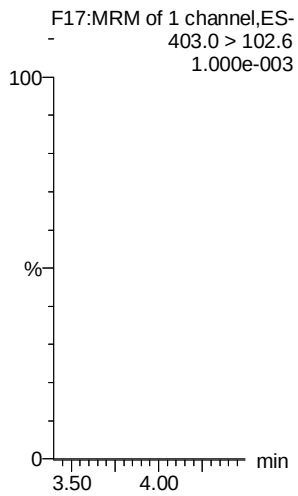
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18O2-PFHxS



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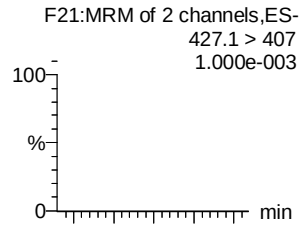
Vista Analytical Laboratory

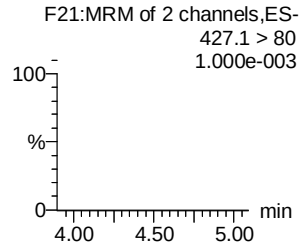
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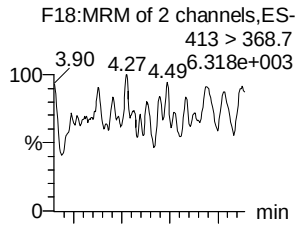
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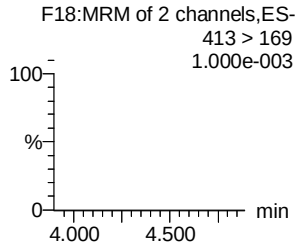
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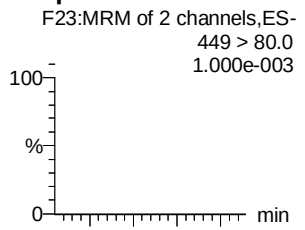


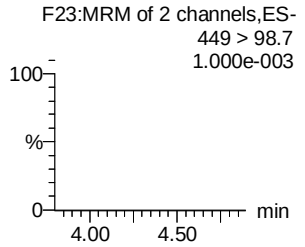
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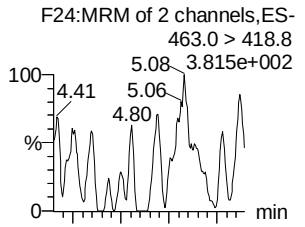


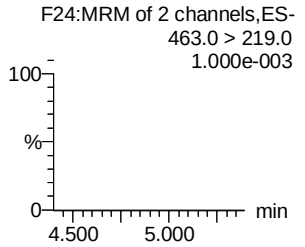
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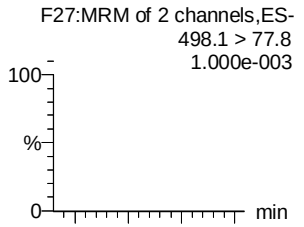


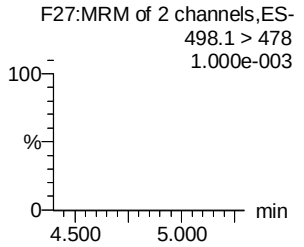
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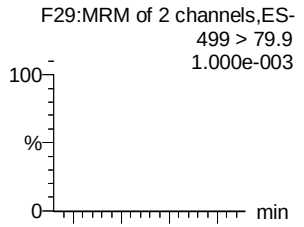


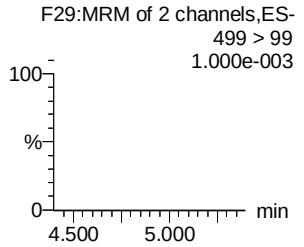
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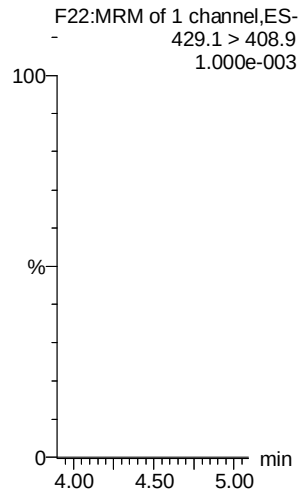


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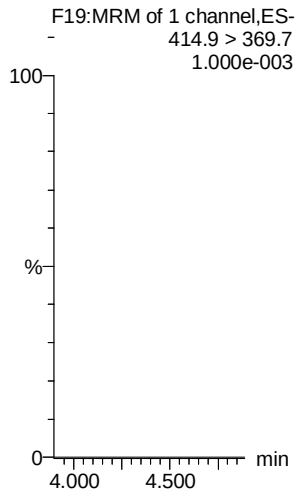




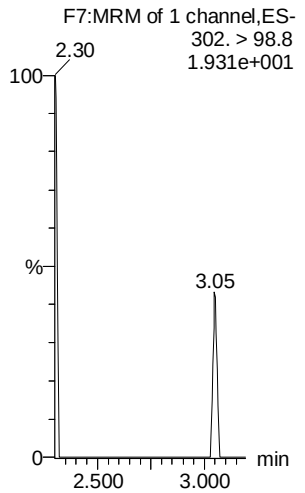
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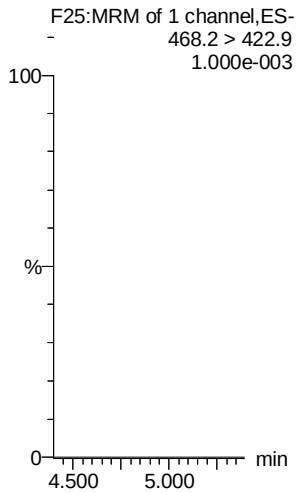
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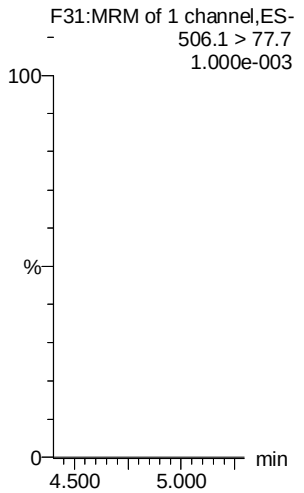
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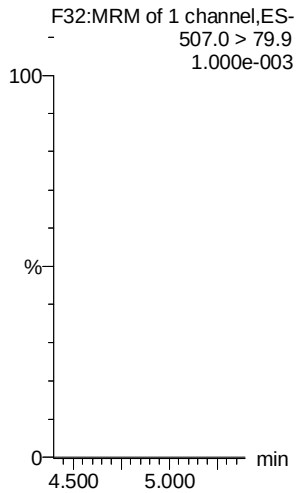
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13C8-PFOSA



13C8-PFOS



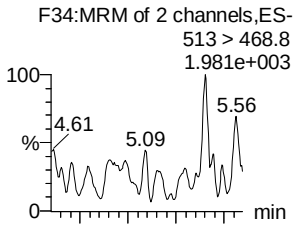
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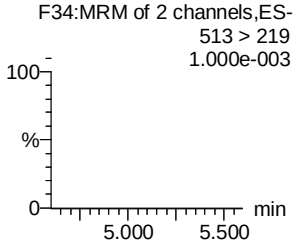
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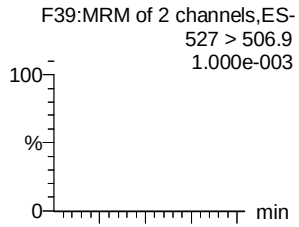
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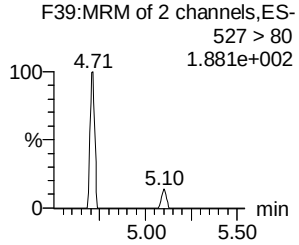
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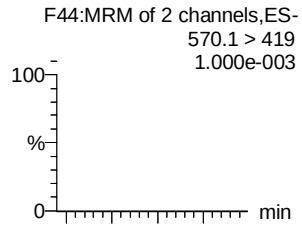


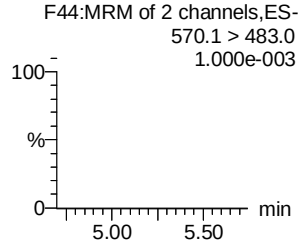
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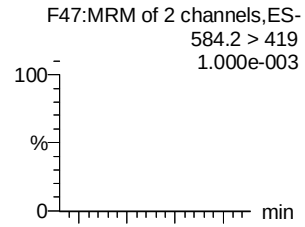


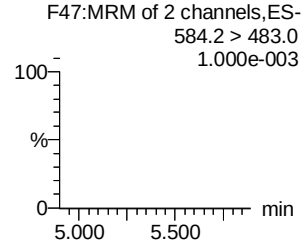
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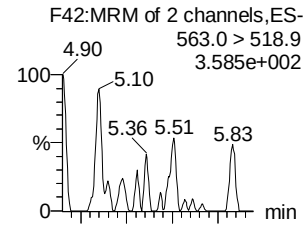


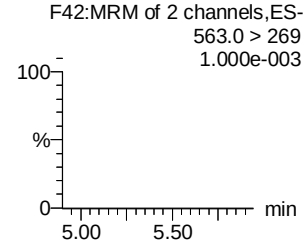
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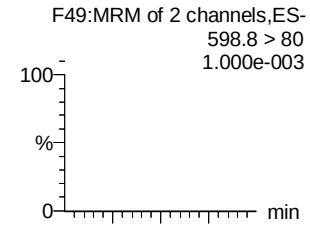


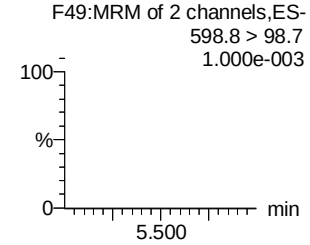
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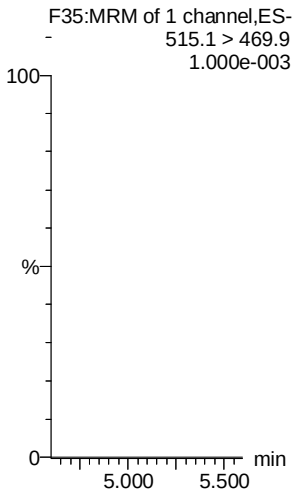


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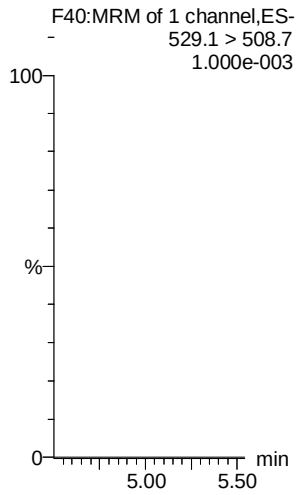




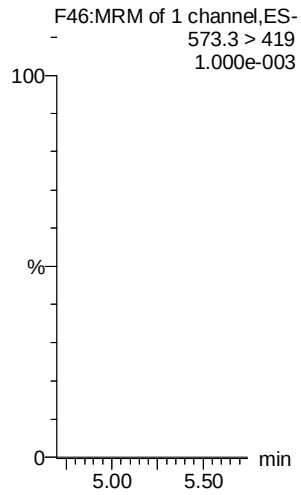
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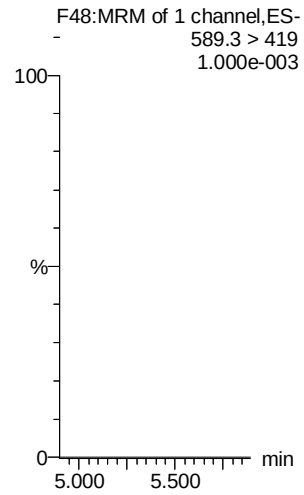
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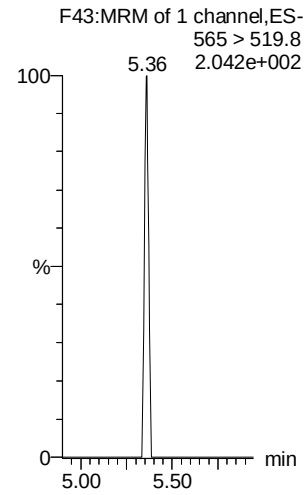
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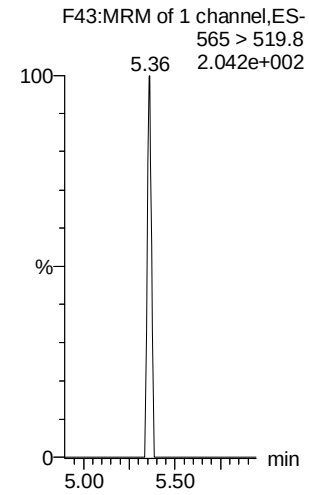
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13C2-PFUdA



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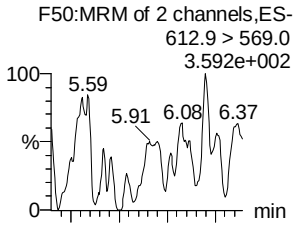
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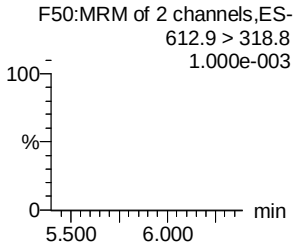
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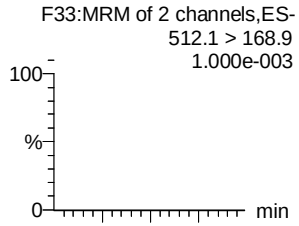
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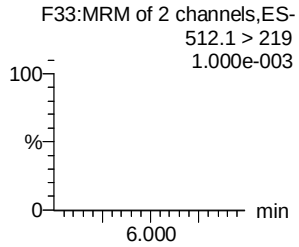
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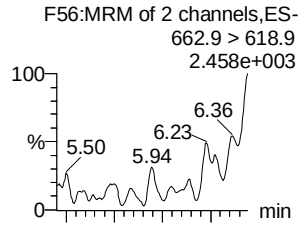


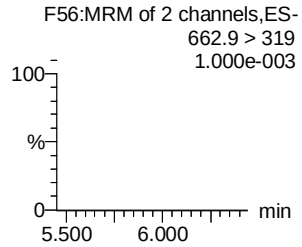
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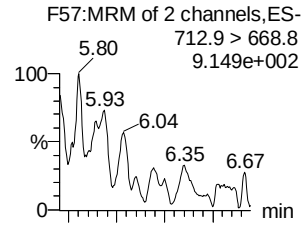


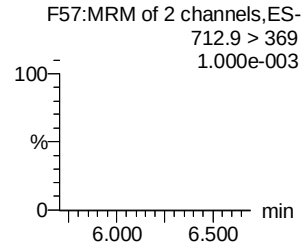
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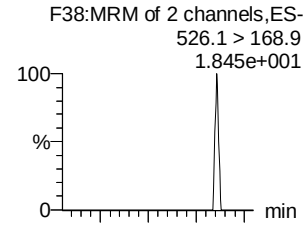


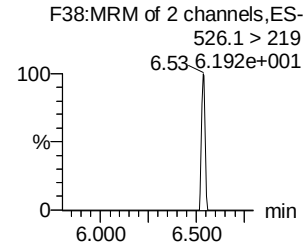
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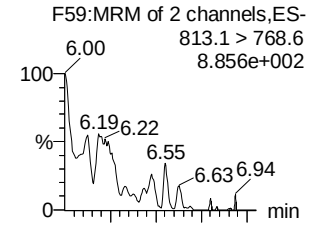


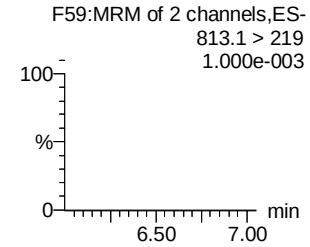
N-EtFOSA



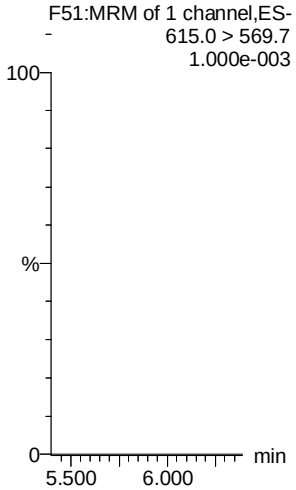


PFHxDA

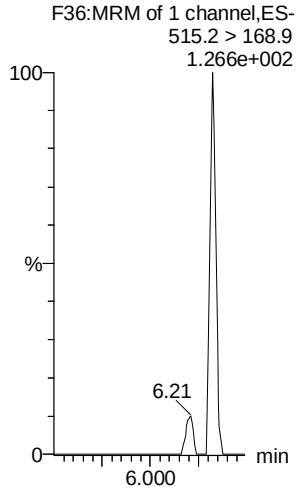




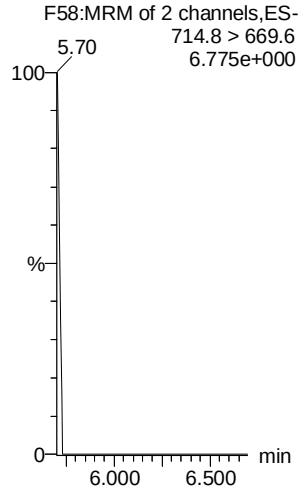
13C2-PFDoA



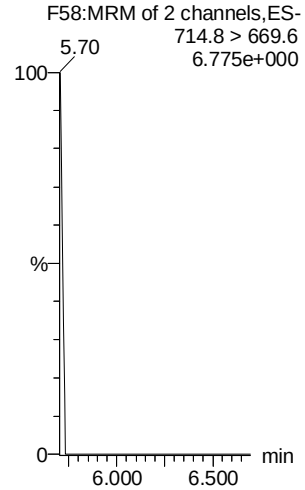
d3-N-MeFOSA



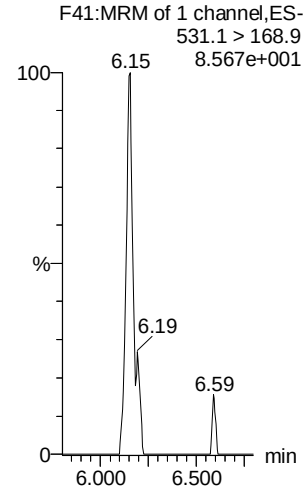
13C2-PFTeDA



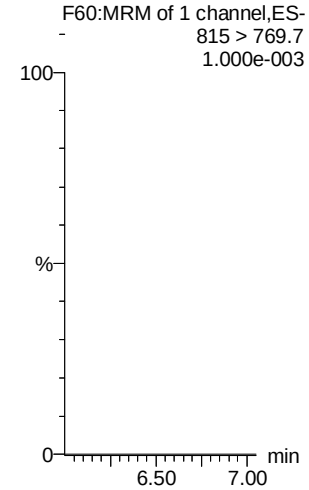
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA



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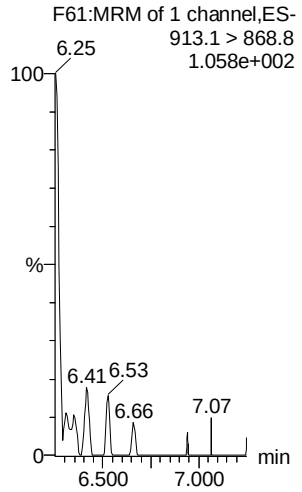
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Dataset: U:\Q4.PRO\results\180112M1\180112M1-2.qld

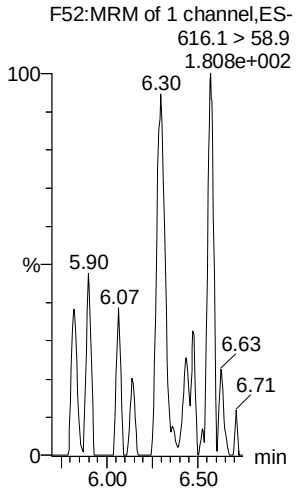
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Printed: Friday, January 12, 2018 09:12:50 Pacific Standard Time

Name: 180112M1_2, Date: 12-Jan-2018, Time: 08:53:59, ID: IPA, Description: IPA

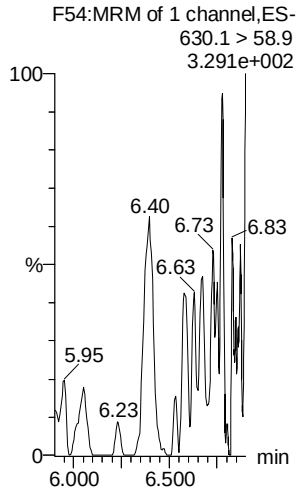
PFODA



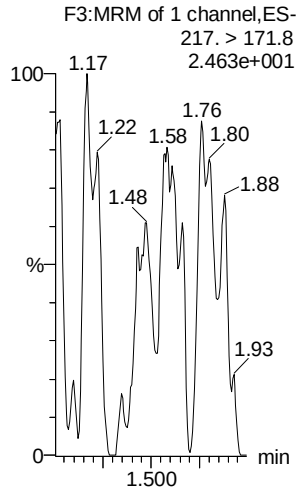
N-MeFOSE



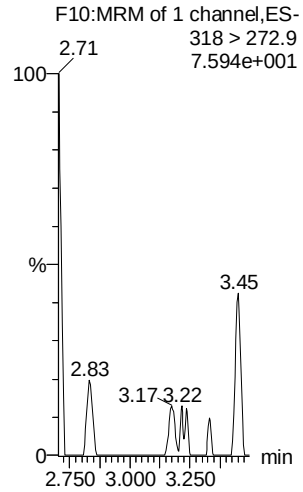
N-EtFOSE



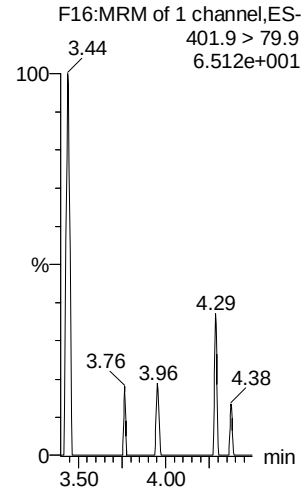
13C4-PFBA



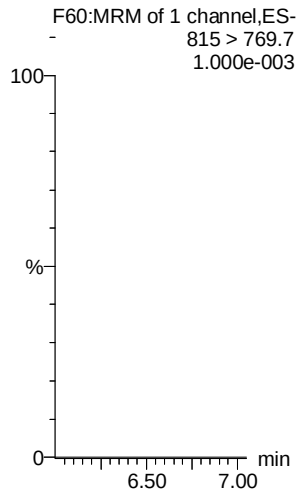
13C5-PFHxA



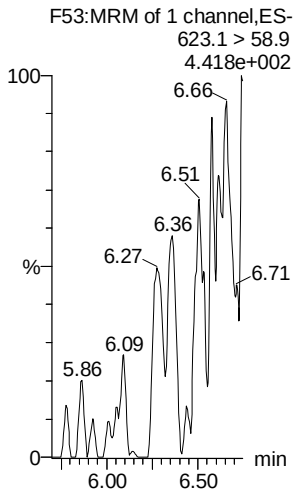
13C3-PFHxS



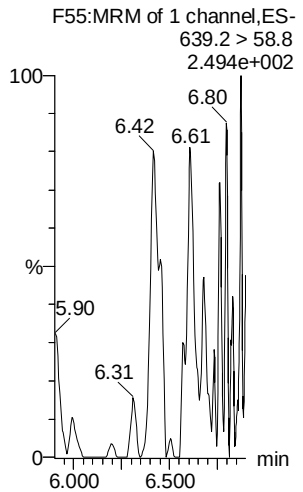
13C2-PFHxDA



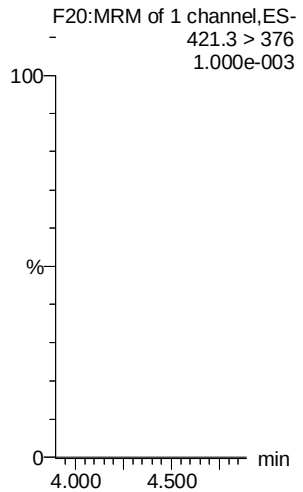
d7-N-MeFOSE



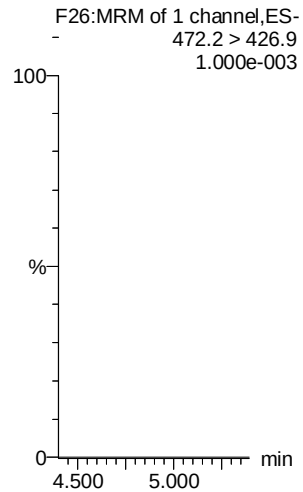
d9-N-EtFOSE



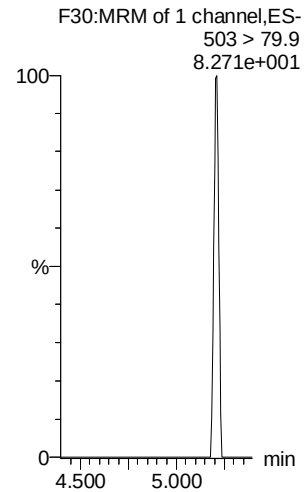
13C8-PFOA



13C9-PFNA



13C4-PFOS



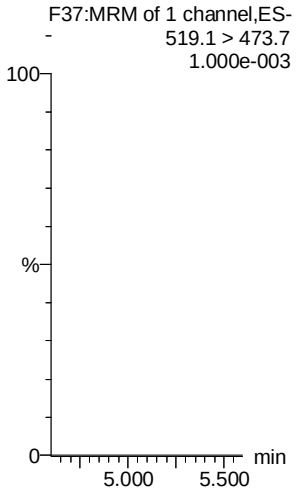
ANP 1/12/2018

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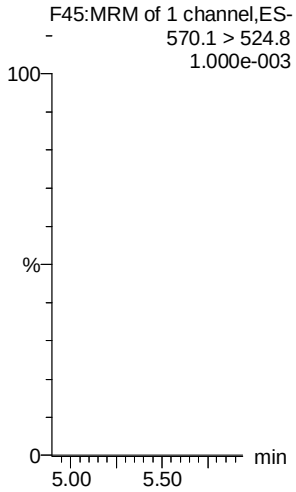
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13C6-PFDA



13C7-PFUdA



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Dataset: U:\Q4.PRO\results\180112M3\180112M3_30.qld

Last Altered: Monday, January 15, 2018 16:47:08 Pacific Standard Time
Printed: Monday, January 15, 2018 16:47:37 Pacific Standard Time

Rev'd: AMH 01/15/2018

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_30, Date: 12-Jan-2018, Time: 19:11:09, ID: ST180112M3-11 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out
1	1	PFBA	213.0 > 168.8	1.06e4	1.10e4		1.38	1.34	12.0	10.2	102.3	NO
2	2	PFPeA	263.1 > 218.9	1.02e4	1.32e4		2.37	2.32	9.67	9.37	93.7	NO
3	3	PFBS	299.0 > 79.7	2.76e3	1.65e3		2.66	2.60	20.8	11.4	114.2	NO
4	4	PFHxA	313.2 > 268.9	1.40e4	4.22e3		3.15	3.10	16.6	9.98	99.8	NO
5	5	PFHpA	363.0 > 318.9	1.22e4	1.07e4		3.78	3.71	14.3	11.1	111.5	NO
6	6	L-PFHxS	398.9 > 79.6	2.01e3	1.47e3		3.94	3.86	17.0	9.54	95.4	NO
7	8	6:2 FTS	427.1 > 407	2.74e3	1.47e3		4.25	4.18	23.2	8.81	88.1	NO
8	9	L-PFOA	413 > 368.7	1.26e4	1.43e4		4.31	4.23	11.1	10.0	100.1	NO
9	11	PFHpS	449 > 80.0	3.20e3	1.43e4		4.42	4.34	2.80	10.3	102.8	NO
10	12	PFNA	463.0 > 418.8	1.25e4	1.34e4		4.81	4.67	11.6	9.09	90.9	NO
11	13	PFOSA	498.1 > 77.8	2.95e3	3.00e3		4.87	4.73	12.3	11.0	110.4	NO
12	14	L-PFOS	499 > 79.9	2.74e3	3.37e3		4.75	4.75	10.2	8.60	86.0	NO
13	16	PFDA	513 > 468.8	1.14e4	1.10e4		5.18	5.04	12.9	9.10	91.0	NO
14	17	8:2 FTS	527 > 506.9	2.47e3	1.10e4		5.15	5.01	2.81	10.8	108.2	NO
15	18	N-MeFOSAA	570.1 > 419	6.81e3	4.85e3		5.32	5.19	17.6	10.2	102.1	NO
16	19	N-EtFOSAA	584.2 > 419	5.40e3	6.10e3		5.48	5.34	11.1	10.4	103.6	NO
17	20	PFUdA	563.0 > 518.9	1.33e4	1.26e4		5.50	5.36	13.2	11.5	115.0	NO
18	21	PFDS	598.8 > 80	3.69e3	1.26e4		5.54	5.40	3.66	11.0	109.7	NO
19	22	PFDoA	612.9 > 569.0	1.45e4	8.75e3		5.77	5.64	20.7	8.54	85.4	NO
20	23	N-MeFOSA	512.1 > 168.9	6.45e3	1.87e4		5.80	5.74	51.8	58.3	116.7	NO
21	24	PFTrDA	662.9 > 618.9	1.07e4	8.75e3		6.00	5.89	15.3	7.11	71.1	NO
22	25	PFTeDA	712.9 > 668.8	5.97e3	3.62e3		6.22	6.10	20.6	9.54	95.4	NO
23	26	N-EtFOSA	526.1 > 168.9	8.81e3	2.83e4		6.17	6.13	46.8	52.2	104.4	NO
24	27	PFHxDA	813.1 > 768.6	4.70e3	3.08e3		6.53	6.43	7.65	8.59	85.9	NO
25	28	PFODA	913.1 > 868.8	5.30e3	3.08e3		6.74	6.67	8.62	10.8	108.2	NO
26	29	N-MeFOSE	616.1 > 58.9	8.22e3	2.49e4		6.27	6.27	49.6	47.7	95.4	NO
27	30	N-EtFOSE	630.1 > 58.9	1.08e4	2.61e4		6.43	6.43	62.2	52.9	105.7	NO
28	31	13C3-PFBA	216.1 > 171.8	1.10e4	1.26e4	0.888	1.38	1.34	10.9	12.3	98.0	NO
29	32	13C3-PFPeA	266. > 221.8	1.32e4	1.51e4	0.875	2.37	2.32	11.0	12.5	100.2	NO
30	33	13C3-PFBS	302. > 98.8	1.65e3	1.51e4	0.112	2.77	2.60	1.37	12.3	98.1	NO
31	34	13C2-PFHxA	315 > 269.8	4.22e3	1.51e4	0.691	3.15	3.10	3.50	5.07	101.3	NO
32	35	13C4-PFHpA	367.2 > 321.8	1.07e4	1.51e4	0.708	3.78	3.71	8.84	12.5	99.9	NO

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Dataset: U:\Q4.PRO\results\180112M3\180112M3_30.qld

Last Altered: Monday, January 15, 2018 16:47:08 Pacific Standard Time
Printed: Monday, January 15, 2018 16:47:37 Pacific Standard Time

Name: 180112M3_30, Date: 12-Jan-2018, Time: 19:11:09, ID: ST180112M3-11 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out
33	36	18O2-PFHxS	403.0 > 102.6	1.47e3	3.63e3	0.353	3.94	3.86	5.07	14.4	115.0	NO
34	37	13C2-6:2 FTS	429.1 > 408.9	3.06e3	1.44e4	0.285	4.25	4.18	2.67	9.36	74.9	NO
35	38	13C2-PFOA	414.9 > 369.7	1.43e4	1.44e4	1.049	4.31	4.23	12.5	11.9	95.0	NO
36	39	13C5-PFNA	468.2 > 422.9	1.34e4	1.47e4	0.910	4.81	4.66	11.4	12.5	99.8	NO
37	40	13C8-PFOSA	506.1 > 77.7	3.00e3	1.58e4	0.252	4.87	4.73	2.37	9.43	75.4	NO
38	41	13C8-PFOS	507.0 > 79.9	3.37e3	3.05e3	0.987	4.89	4.75	13.8	14.0	111.8	NO
39	42	13C2-PFDA	515.1 > 469.9	1.10e4	8.49e3	1.311	5.18	5.04	16.2	12.3	98.7	NO
40	43	13C2-8:2 FTS	529.1 > 508.7	1.64e3	1.51e4	0.141	5.15	5.01	1.36	9.64	77.1	NO
41	44	d3-N-MeFOSAA	573.3 > 419	4.85e3	1.58e4	0.385	5.32	5.18	3.84	9.97	79.8	NO
42	45	d5-N-EtFOSAA	589.3 > 419	6.10e3	1.58e4	0.445	5.47	5.34	4.83	10.9	86.8	NO
43	46	13C2-PFUdA	565 > 519.8	1.26e4	1.58e4	1.014	5.49	5.36	9.97	9.83	78.7	NO
44	47	13C2-PFDoA	615.0 > 569.7	8.75e3	1.58e4	0.575	5.77	5.64	6.93	12.0	96.4	NO
45	48	d3-N-MeFOSA	515.2 > 168.9	1.87e4	1.58e4	0.130	5.83	5.77	14.8	113	75.6	NO
46	49	13C2-PFTeDA	714.8 > 669.6	3.62e3	1.58e4	0.305	6.22	6.10	2.86	9.38	75.0	NO
47	50	d5-N-ETFOSA	531.1 > 168.9	2.83e4	1.58e4	0.192	6.18	6.15	22.4	117	77.7	NO
48	51	13C2-PFHxDA	815 > 769.7	3.08e3	1.58e4	0.587	6.53	6.43	2.44	4.15	82.9	NO
49	52	d7-N-MeFOSE	623.1 > 58.9	2.49e4	1.58e4	0.163	6.27	6.27	19.7	121	80.8	NO
50	53	d9-N-EtFOSE	639.2 > 58.8	2.61e4	1.58e4	0.178	6.42	6.42	20.6	116	77.0	NO
51	54	13C4-PFBA	217. > 171.8	1.26e4	1.26e4	1.000	1.38	1.35	12.5	12.5	100.0	NO
52	55	13C5-PFHxA	318 > 272.9	1.51e4	1.51e4	1.000	3.15	3.10	12.5	12.5	100.0	NO
53	56	13C3-PFHxS	401.9 > 79.9	3.63e3	3.63e3	1.000	4.02	3.86	12.5	12.5	100.0	NO
54	57	13C8-PFOA	421.3 > 376	1.44e4	1.44e4	1.000	4.38	4.23	12.5	12.5	100.0	NO
55	58	13C9-PFNA	472.2 > 426.9	1.47e4	1.47e4	1.000	4.81	4.66	12.5	12.5	100.0	NO
56	59	13C4-PFOS	503 > 79.9	3.05e3	3.05e3	1.000	4.89	4.75	12.5	12.5	100.0	NO
57	60	13C6-PFDA	519.1 > 473.7	8.49e3	8.49e3	1.000	5.18	5.04	12.5	12.5	100.0	NO
58	61	13C7-PFUdA	570.1 > 524.8	1.58e4	1.58e4	1.000	5.49	5.36	12.5	12.5	100.0	NO

GM for AP 1/15/2018

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Dataset: U:\Q4.PRO\results\180112M3\180112M3_IIS.qld

Last Altered: Saturday, January 13, 2018 17:04:49 Pacific Standard Time
Printed: Monday, January 15, 2018 16:40:16 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_RS-12-29-17.mdb 30 Dec 2017 10:03:31
Calibration: 13 Jan 2018 17:04:49

Compound name: 13C4-PFBA

	Name	ID	Acq.Date	Acq.Time
1	180112M3_6	ST180112M3-6 PFC CS3 18A0811	12-Jan-18	14:33:24
2	180112M3_7	ST180112M3-7 PFC CS4 18A0812	12-Jan-18	14:44:53
3	180112M3_8	ST180112M3-8 PFC CS5 18A0813	12-Jan-18	14:56:24
4	180112M3_9	ST180112M3-9 PFC CS6 18A0814	12-Jan-18	15:07:57
5	180112M3_10	ST180112M3-10 PFC CS7 18A0815	12-Jan-18	15:19:28
6	180112M3_11	IPA	12-Jan-18	15:30:56
7	180112M3_12	ICV180112M3-1 PFC ICV 18A0805	12-Jan-18	15:42:29
8	180112M3_13	IPA	12-Jan-18	15:54:01
9	180112M3_14	B7L0218-BS1 OPR 0.25	12-Jan-18	16:05:31
10	180112M3_15	B7L0218-BSD1 LCSD 0.25	12-Jan-18	16:17:07
11	180112M3_16	B7L0218-BLK1 Method Blank 0.25	12-Jan-18	16:28:41
12	180112M3_17	B7L0188-MS1 Matrix Spike 0.24896	12-Jan-18	16:40:14
13	180112M3_18	B7L0188-MSD1 Matrix Spike Dup 0.23749	12-Jan-18	16:51:42
14	180112M3_19	1701970-01 FT-PZ458S-20171214 0.25998	12-Jan-18	17:03:12
15	180112M3_20	1701970-02 FT-PZ458I-20171214 0.25291	12-Jan-18	17:15:53
16	180112M3_21	1701970-03 SA-MW132S-20171214 0.25764	12-Jan-18	17:27:26
17	180112M3_22	1701970-04 SA-MW132S-FRB-20171214 0.2...	12-Jan-18	17:39:06
18	180112M3_23	1701970-05 SA-MW132I-20171214 0.23441	12-Jan-18	17:52:40
19	180112M3_24	1701970-06 FT-PZ459S-20171214 0.25318	12-Jan-18	18:04:06
20	180112M3_25	1701970-07 FT-PZ459I-20171214 0.2457	12-Jan-18	18:15:15
21	180112M3_26	1701970-08 FT-PZ463S-20171214 0.25736	12-Jan-18	18:26:25
22	180112M3_27	1701970-09 FT-PZ463I-20171214 0.26165	12-Jan-18	18:37:36
23	180112M3_28	1701970-10 CV-TANK-20171214 0.25889	12-Jan-18	18:48:47
24	180112M3_29	IPA	12-Jan-18	18:59:58
25	180112M3_30	ST180112M3-11 PFC CS3 18A0811	12-Jan-18	19:11:09
26	180112M3_31	IPA	12-Jan-18	19:22:19
27	180112M3_34	1702013-01 WI-CV-1RW14-1217 0.26251	12-Jan-18	19:33:30
28	180112M3_35	1702013-02 WI-CV-1FB14-1217 0.25636	12-Jan-18	19:44:40
29	180112M3_36	1701997-01 MTBE_8323 0.25626	12-Jan-18	19:55:51
30	180112M3_37	1701998-01 MTBE_8322 0.25742	12-Jan-18	20:07:04
31	180112M3_38	1701998-02 MTBE_8322 DUP 0.26171	12-Jan-18	20:18:13
32	180112M3_39	1701998-03 FIELD BLANK 0.25674	12-Jan-18	20:29:24

GM for AP 1/15/2018

Vista Analytical Laboratory

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33	180112M3_40	1701954-01 WURTS_MSPTS_Eff-171214 0.4...	12-Jan-18	20:40:34
34	180112M3_41	1701954-02 WURTS_Outfall002-171214 0.49...	12-Jan-18	20:51:45
35	180112M3_42	IPA	12-Jan-18	21:02:56
36	180112M3_43	ST180112M3-12 PFC CS3 18A0811	12-Jan-18	21:14:07
37	180112M3_44	IPA	12-Jan-18	21:25:18
38	180112M3_45	1702012-01 GW1721171218RAP 0.26166	12-Jan-18	21:36:28
39	180112M3_46	1702012-02 GW2731171218RAP 0.26149	12-Jan-18	21:47:39
40	180112M3_47	1702012-03 GW3741171218RAP 0.25614	12-Jan-18	21:58:50
41	180112M3_48	1702012-04 GW4751171219RAP 0.26075	12-Jan-18	22:10:00
42	180112M3_49	1702012-05 GW5761171219RAP 0.24934	12-Jan-18	22:21:11
43	180112M3_50	1702012-06 GW1115171219RAP 0.26005	12-Jan-18	22:32:21
44	180112M3_51	1702012-07 GW2125171220RAP 0.2545	12-Jan-18	22:43:32
45	180112M3_52	1702012-08 GW3135171220RAP 0.24266	12-Jan-18	22:54:43
46	180112M3_53	1702012-09 GW4145171220RAP 0.25823	12-Jan-18	23:05:54
47	180112M3_54	1702012-10 GW5155171220RAP 0.24026	12-Jan-18	23:17:05
48	180112M3_55	B7L0208-BS1 OPR 0.25	12-Jan-18	23:28:18
49	180112M3_56	B7L0208-BLK1 Method Blank 0.25	12-Jan-18	23:39:28
50	180112M3_57	IPA	12-Jan-18	23:50:39
51	180112M3_58	ST180112M3-13 PFC CS3 18A0811	13-Jan-18	00:01:50

GM for AP 1/15/2018

Vista Analytical Laboratory

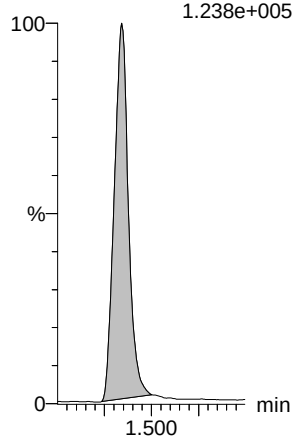
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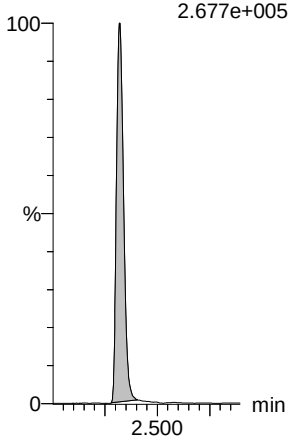
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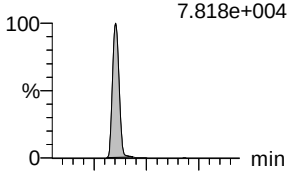
PFBA
F1:MRM of 1 channel,ES-
213.0 > 168.8
1.238e+005



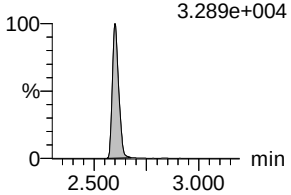
PFPeA
F4:MRM of 1 channel,ES-
263.1 > 218.9
2.677e+005



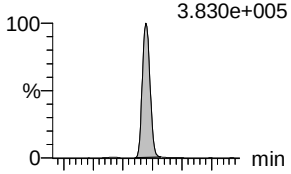
PFBS
F6:MRM of 2 channels,ES-
299.0 > 79.7
7.818e+004



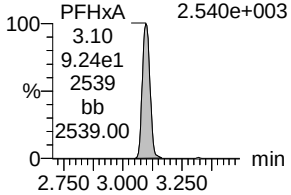
F6:MRM of 2 channels,ES-
299.0 > 99.0
3.289e+004



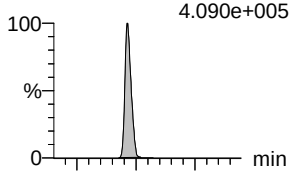
PFHxA
F8:MRM of 2 channels,ES-
313.2 > 268.9
3.830e+005



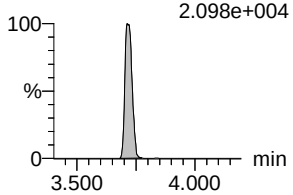
F8:MRM of 2 channels,ES-
313.2 > 119
2.540e+003



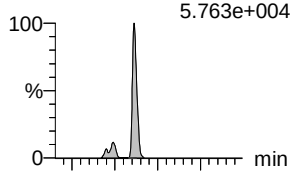
PFHpA
F13:MRM of 2 channels,ES-
363.0 > 318.9
4.090e+005



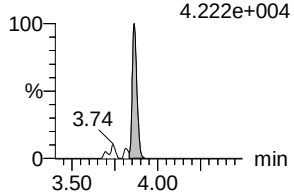
F13:MRM of 2 channels,ES-
363.0 > 169.0
2.098e+004



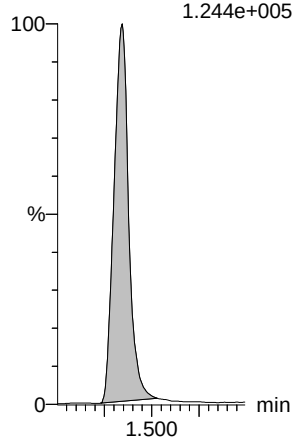
L-PFHxS
F15:MRM of 2 channels,ES-
398.9 > 79.6
5.763e+004



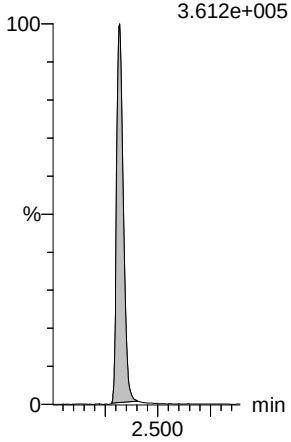
F15:MRM of 2 channels,ES-
398.9 > 99.0
4.222e+004



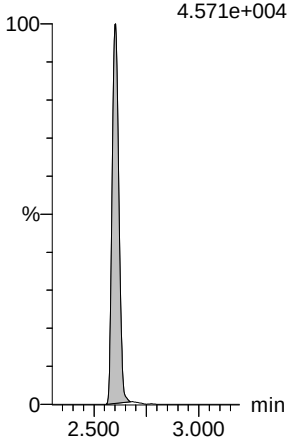
13C3-PFBA
F2:MRM of 1 channel,ES-
216.1 > 171.8
1.244e+005



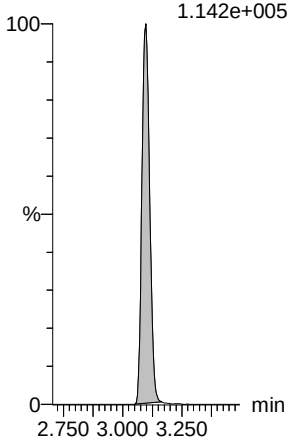
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F5:MRM of 1 channel,ES-
266. > 221.8
3.612e+005



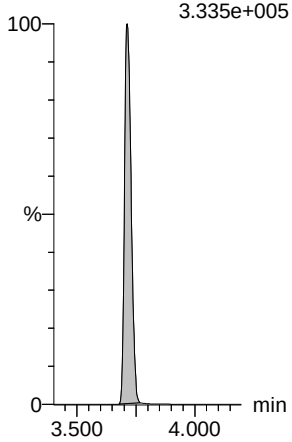
13C3-PFBS
F7:MRM of 1 channel,ES-
302. > 98.8
4.571e+004



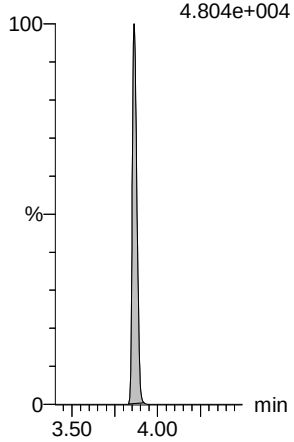
13C2-PFHxA
F9:MRM of 1 channel,ES-
315 > 269.8
1.142e+005



13C4-PFHpA
F14:MRM of 1 channel,ES-
367.2 > 321.8
3.335e+005



18O2-PFHxS
F17:MRM of 1 channel,ES-
403.0 > 102.6
4.804e+004



GM for AP 1/15/2018

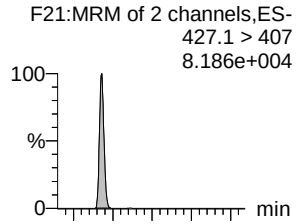
Vista Analytical Laboratory

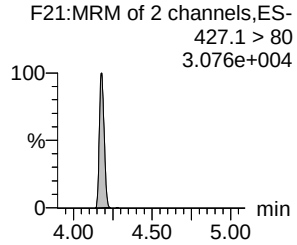
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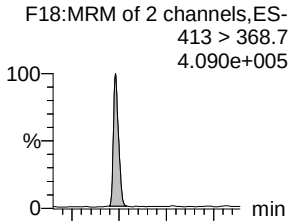
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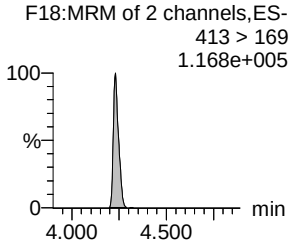
6:2 FTS



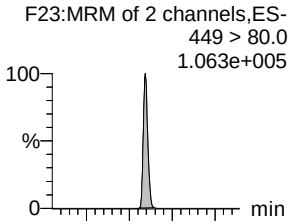


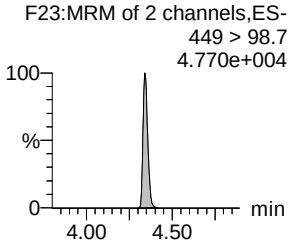
L-PFOA



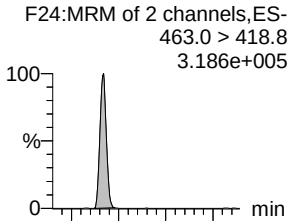


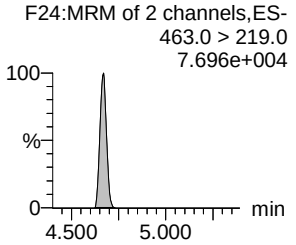
PFHpS



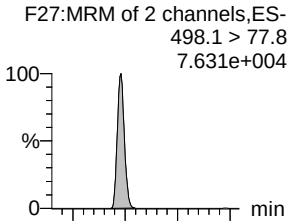


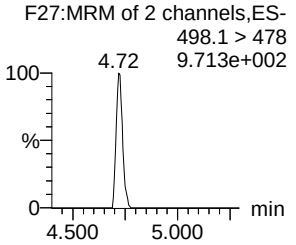
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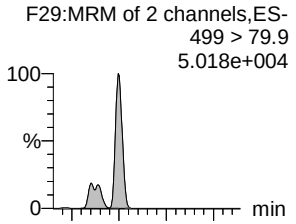


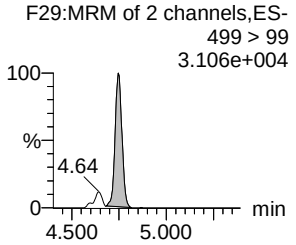
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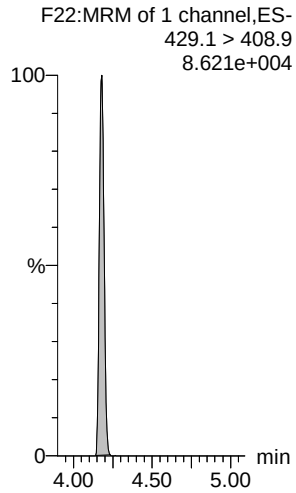


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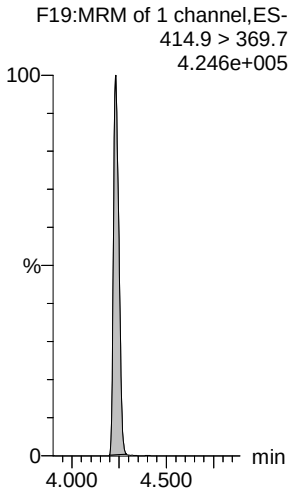




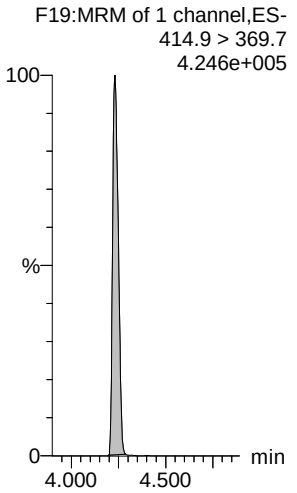
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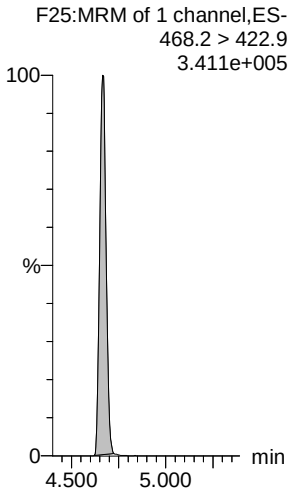
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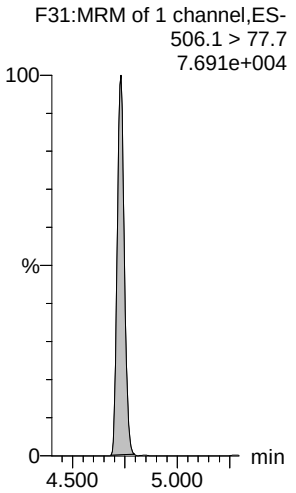
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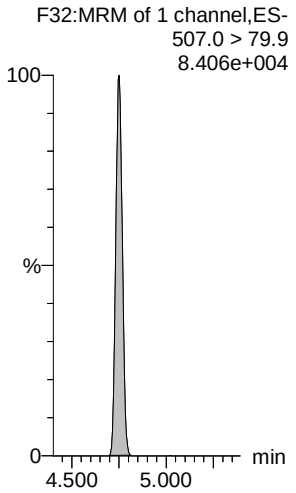
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13C8-PFOSA



13C8-PFOS



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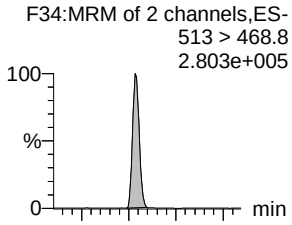
Vista Analytical Laboratory

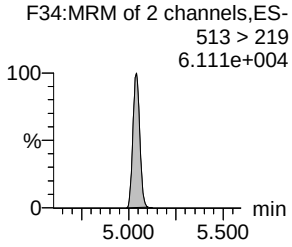
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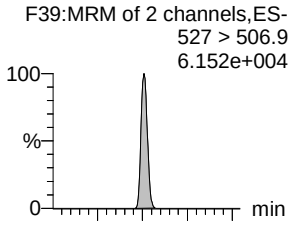
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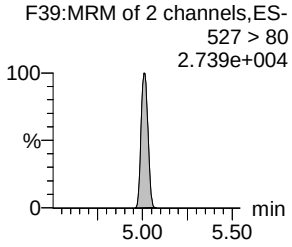
PFDA



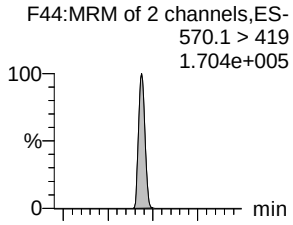


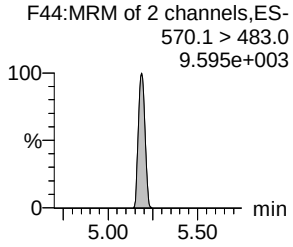
8:2 FTS



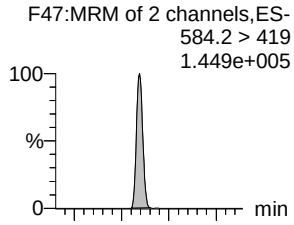


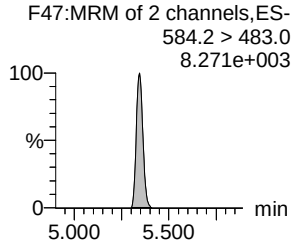
N-MeFOSAA



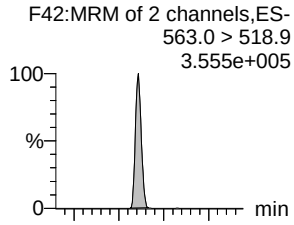


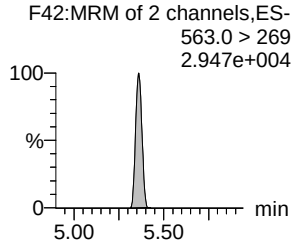
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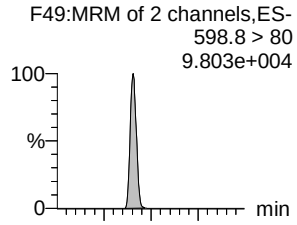


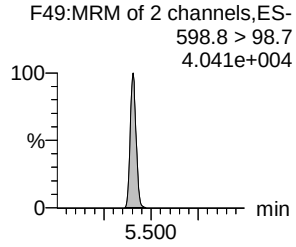
PFUdA



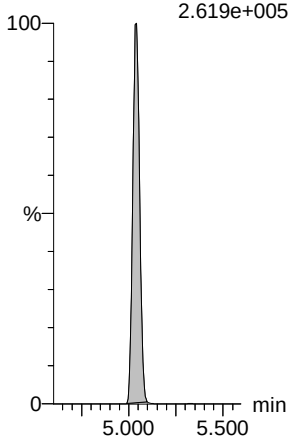


PFDS

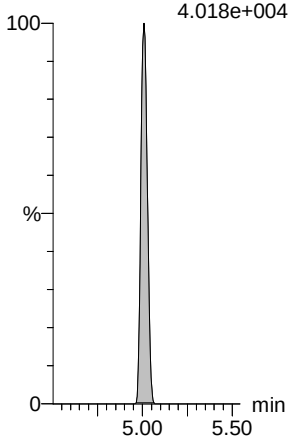




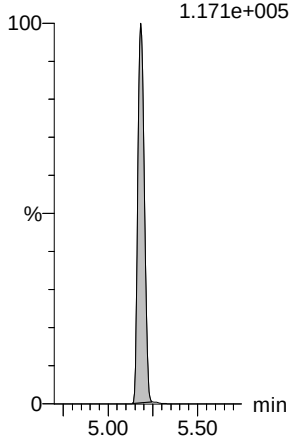
13C2-PFDA



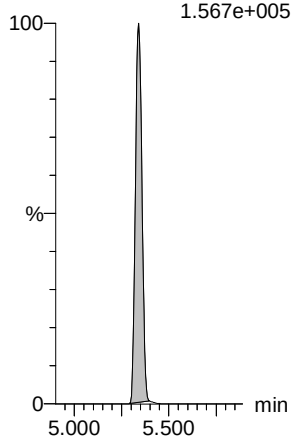
13C2-8:2 FTS



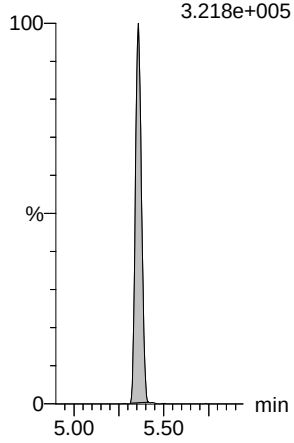
d3-N-MeFOSAA



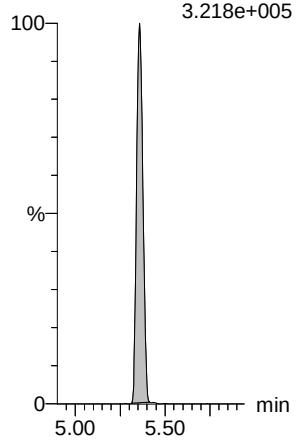
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA



GM for AP 1/15/2018

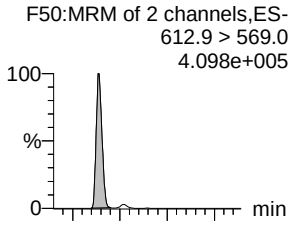
Vista Analytical Laboratory

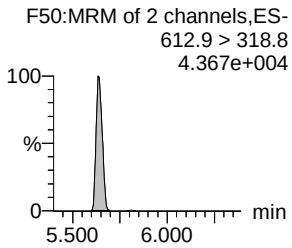
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Printed: Monday, January 15, 2018 16:47:37 Pacific Standard Time

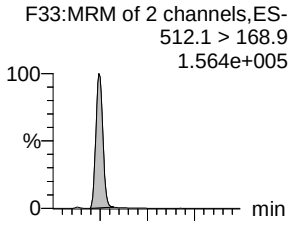
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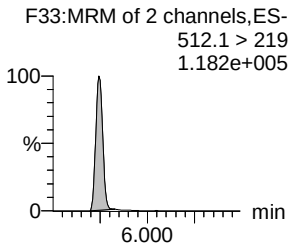
PFDoA



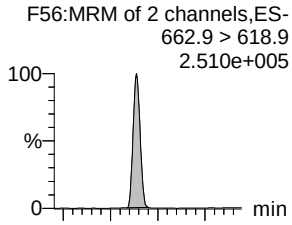


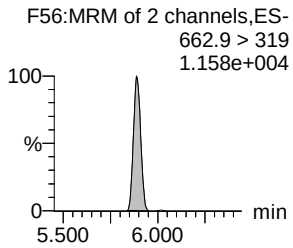
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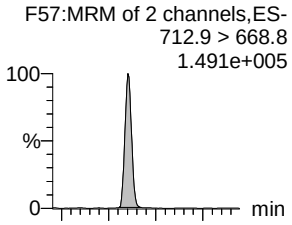


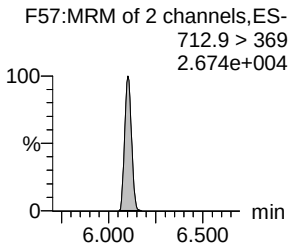
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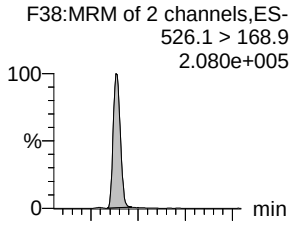


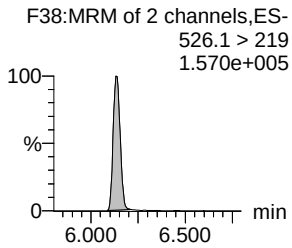
PFTeDA



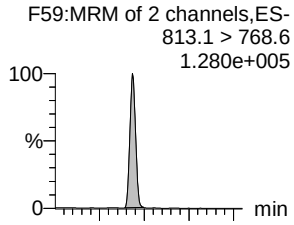


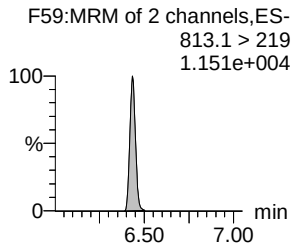
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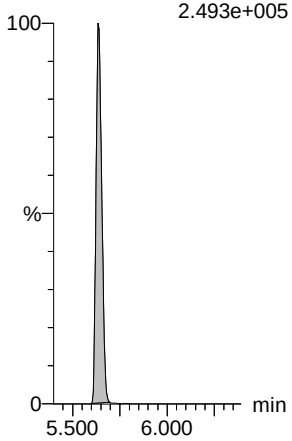


PFHxDA

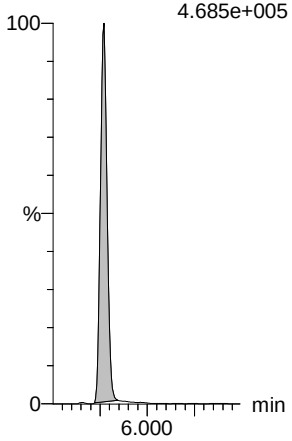




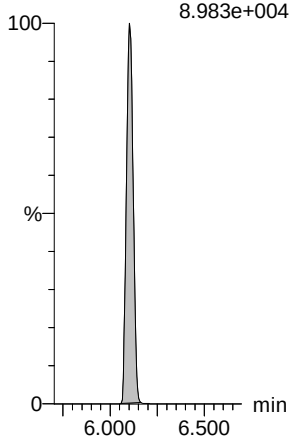
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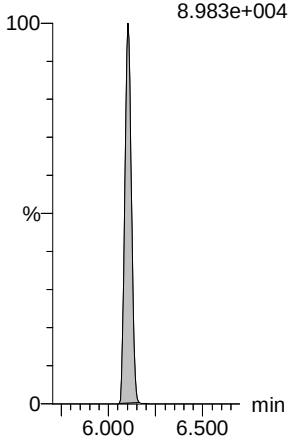
d3-N-MeFOSA



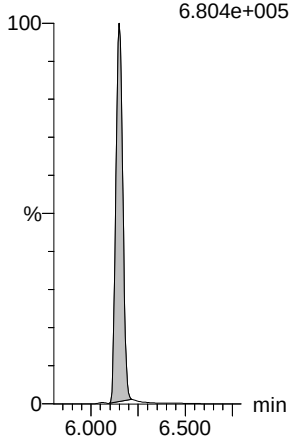
13C2-PFTeDA



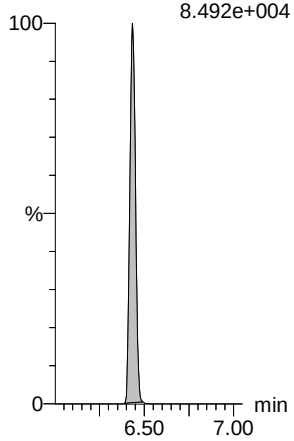
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA



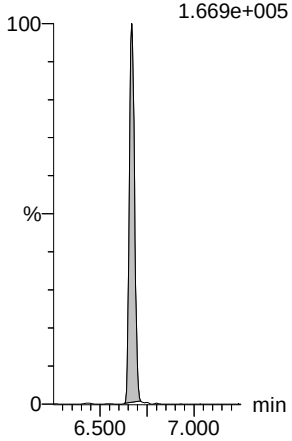
GM for AP 1/15/2018

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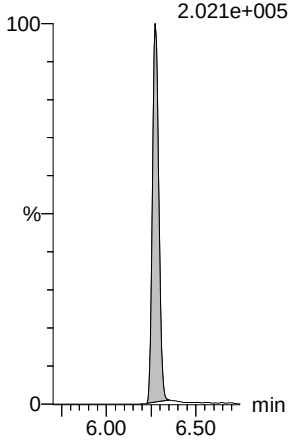
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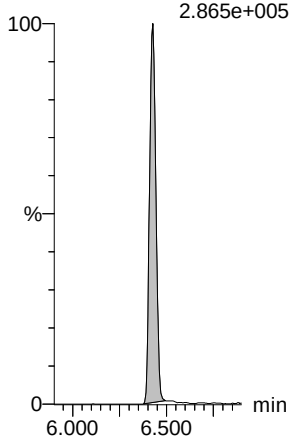
PFODA
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1.669e+005



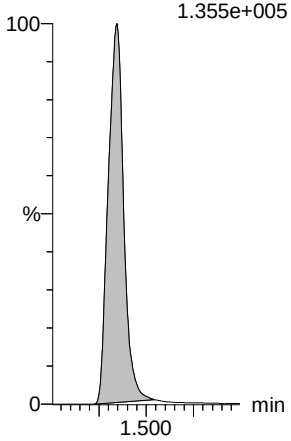
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
2.021e+005



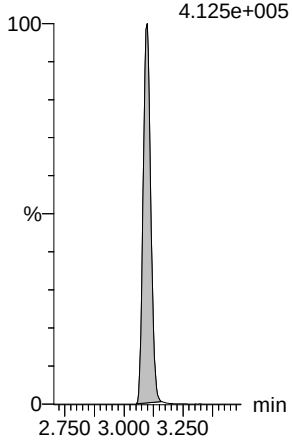
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
2.865e+005



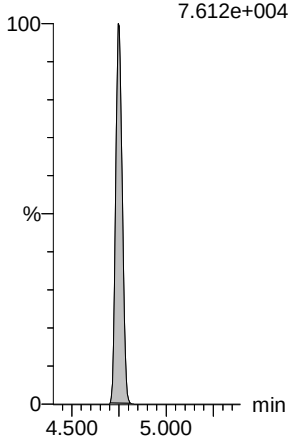
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.355e+005



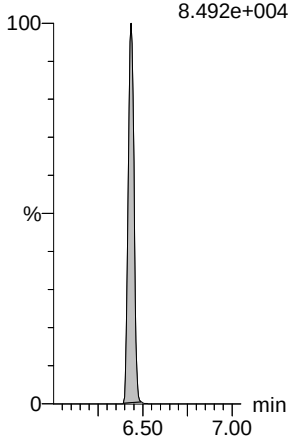
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
4.125e+005



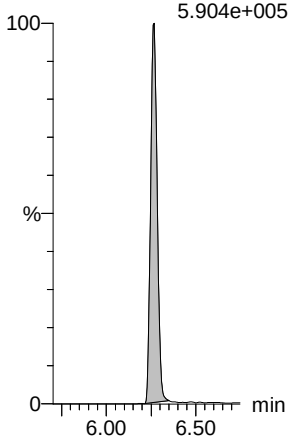
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F30:MRM of 1 channel,ES-
503 > 79.9
7.612e+004



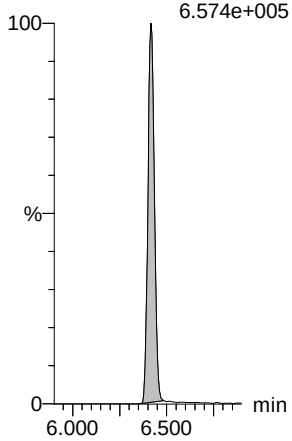
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F60:MRM of 1 channel,ES-
815 > 769.7
8.492e+004



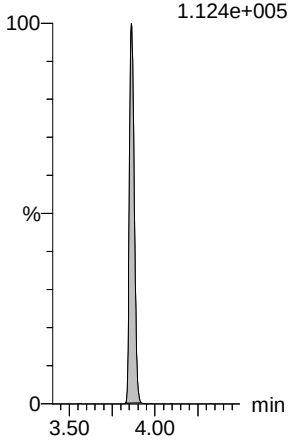
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F53:MRM of 1 channel,ES-
623.1 > 58.9
5.904e+005



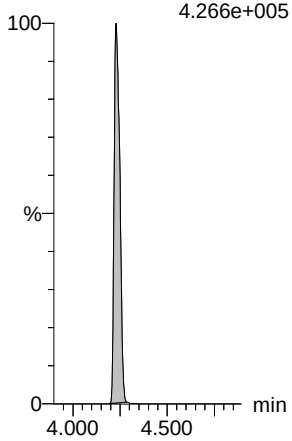
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
6.574e+005



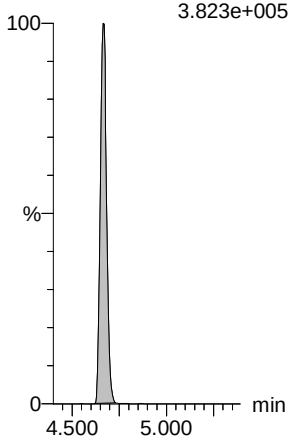
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
1.124e+005



13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
4.266e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.823e+005



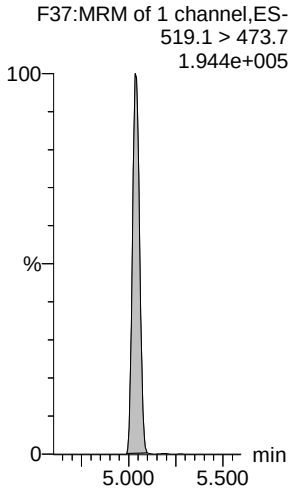
GM for AP 1/15/2018

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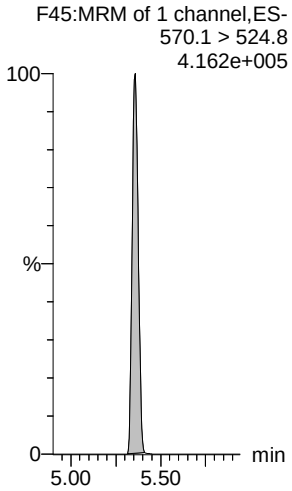
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Name: 180112M3_30, Date: 12-Jan-2018, Time: 19:11:09, ID: ST180112M3-11 PFC CS3 18A0811, Description: PFC CS3 18A0811

13C6-PFDA



13C7-PFUdA



GM for AP 1/15/2018

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Dataset: U:\Q4.PRO\results\180115M1\180115M1-IIS AREAS.qld

Last Altered: Monday, January 15, 2018 13:39:15 Pacific Standard Time
Printed: Monday, January 15, 2018 16:29:51 Pacific Standard Time

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Calibration: 15 Jan 2018 13:39:15

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2	2	13C5-PFHxA	ST180115M1-1 PFC CS0 18A0808	2.05e4	100.0	NO
3	3	13C3-PFHxS	ST180115M1-1 PFC CS0 18A0808	4.75e3	100.0	NO
4	4	13C8-PFOA	ST180115M1-1 PFC CS0 18A0808	1.77e4	100.0	NO
5	5	13C9-PFNA	ST180115M1-1 PFC CS0 18A0808	1.67e4	100.0	NO
6	6	13C4-PFOS	ST180115M1-1 PFC CS0 18A0808	4.62e3	100.0	NO
7	7	13C6-PFDA	ST180115M1-1 PFC CS0 18A0808	1.28e4	100.0	NO
8	8	13C7-PFUdA	ST180115M1-1 PFC CS0 18A0808	2.03e4	100.0	NO

Name: 180115M1_5, Date: 15-Jan-2018, Time: 11:19:52, 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	5.79e0	0.1	YES
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: 180115M1_6, Date: 15-Jan-2018, Time: 11:31:19, ID: 1701954-01@5X WURTS_MSPTS_Eff-171214 0.4885, Description: WURTS_MSPTS_Eff-171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701954-01@5X WURTS_MSPTS_Eff-...	2.02e3	10.8	YES
2	2	13C5-PFHxA	1701954-01@5X WURTS_MSPTS_Eff-...	2.36e3	11.5	YES
3	3	13C3-PFHxS	1701954-01@5X WURTS_MSPTS_Eff-...	5.46e2	11.5	YES
4	4	13C8-PFOA	1701954-01@5X WURTS_MSPTS_Eff-...	1.78e3	10.1	YES
5	5	13C9-PFNA	1701954-01@5X WURTS_MSPTS_Eff-...	2.14e3	12.8	YES
6	6	13C4-PFOS	1701954-01@5X WURTS_MSPTS_Eff-...	4.66e2	10.1	YES
7	7	13C6-PFDA	1701954-01@5X WURTS_MSPTS_Eff-...	1.66e3	13.0	YES
8	8	13C7-PFUdA	1701954-01@5X WURTS_MSPTS_Eff-...	1.83e3	9.0	YES

Name: 180115M1_7, Date: 15-Jan-2018, Time: 11:42:46, ID: 1701954-02@5X WURTS_Outfall002-171214 0.49686, Description: WURTS_Outfall002-171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701954-02@5X WURTS_Outfall002-1...	2.06e3	11.0	YES
2	2	13C5-PFHxA	1701954-02@5X WURTS_Outfall002-1...	2.31e3	11.3	YES
3	3	13C3-PFHxS	1701954-02@5X WURTS_Outfall002-1...	4.74e2	10.0	YES
4	4	13C8-PFOA	1701954-02@5X WURTS_Outfall002-1...	2.16e3	12.2	YES
5	5	13C9-PFNA	1701954-02@5X WURTS_Outfall002-1...	2.04e3	12.2	YES
6	6	13C4-PFOS	1701954-02@5X WURTS_Outfall002-1...	4.98e2	10.8	YES

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Name: 180115M1_7, Date: 15-Jan-2018, Time: 11:42:46, ID: 1701954-02@5X WURTS_Outfall002-171214 0.49686, Description: WURTS_Outfall002-171214

	#	Name	ID	Area	%Rec	Area Out
7	7	13C6-PFDA	1701954-02@5X WURTS_Outfall002-1...	1.73e3	13.5	YES
8	8	13C7-PFUdA	1701954-02@5X WURTS_Outfall002-1...	2.30e3	11.4	YES

Name: 180115M1_8, Date: 15-Jan-2018, Time: 11:54:15, ID: B7L0188-MS1@10X Matrix Spike 0.24896, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-MS1@10X Matrix Spike 0.248...	7.40e1	0.4	YES
2	2	13C5-PFHxA	B7L0188-MS1@10X Matrix Spike 0.248...	1.01e2	0.5	YES
3	3	13C3-PFHxS	B7L0188-MS1@10X Matrix Spike 0.248...	2.65e1	0.6	YES
4	4	13C8-PFOA	B7L0188-MS1@10X Matrix Spike 0.248...	9.47e1	0.5	YES
5	5	13C9-PFNA	B7L0188-MS1@10X Matrix Spike 0.248...	1.22e2	0.7	YES
6	6	13C4-PFOS	B7L0188-MS1@10X Matrix Spike 0.248...	2.88e1	0.6	YES
7	7	13C6-PFDA	B7L0188-MS1@10X Matrix Spike 0.248...	6.54e1	0.5	YES
8	8	13C7-PFUdA	B7L0188-MS1@10X Matrix Spike 0.248...	8.54e1	0.4	YES

Name: 180115M1_9, Date: 15-Jan-2018, Time: 12:06:04, ID: B7L0188-MSD1@10X Matrix Spike Dup 0.23749, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0188-MSD1@10X Matrix Spike Du...	1.38e2	0.7	YES
2	2	13C5-PFHxA	B7L0188-MSD1@10X Matrix Spike Du...	1.38e2	0.7	YES
3	3	13C3-PFHxS	B7L0188-MSD1@10X Matrix Spike Du...	4.57e1	1.0	YES
4	4	13C8-PFOA	B7L0188-MSD1@10X Matrix Spike Du...	1.30e2	0.7	YES
5	5	13C9-PFNA	B7L0188-MSD1@10X Matrix Spike Du...	1.44e2	0.9	YES
6	6	13C4-PFOS	B7L0188-MSD1@10X Matrix Spike Du...	3.91e1	0.8	YES
7	7	13C6-PFDA	B7L0188-MSD1@10X Matrix Spike Du...	1.36e2	1.1	YES
8	8	13C7-PFUdA	B7L0188-MSD1@10X Matrix Spike Du...	1.63e2	0.8	YES

Name: 180115M1_10, Date: 15-Jan-2018, Time: 12:17:55, ID: 1701970-03@10X SA-MW132S-20171214 0.25764, Description: SA-MW132S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-03@10X SA-MW132S-20171...	8.50e1	0.5	YES
2	2	13C5-PFHxA	1701970-03@10X SA-MW132S-20171...	1.02e2	0.5	YES
3	3	13C3-PFHxS	1701970-03@10X SA-MW132S-20171...	2.73e1	0.6	YES
4	4	13C8-PFOA	1701970-03@10X SA-MW132S-20171...	8.68e1	0.5	YES
5	5	13C9-PFNA	1701970-03@10X SA-MW132S-20171...	1.13e2	0.7	YES
6	6	13C4-PFOS	1701970-03@10X SA-MW132S-20171...	2.03e1	0.4	YES
7	7	13C6-PFDA	1701970-03@10X SA-MW132S-20171...	6.45e1	0.5	YES
8	8	13C7-PFUdA	1701970-03@10X SA-MW132S-20171...	1.50e2	0.7	YES

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Name: 180115M1_11, Date: 15-Jan-2018, Time: 12:29:46, ID: 1701970-05@10X SA-MW132I-20171214 0.23441, Description: SA-MW132I-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-05@10X SA-MW132I-201712...	2.72e2	1.5	YES
2	2	13C5-PFHxA	1701970-05@10X SA-MW132I-201712...	3.05e2	1.5	YES
3	3	13C3-PFHxS	1701970-05@10X SA-MW132I-201712...	7.07e1	1.5	YES
4	4	13C8-PFOA	1701970-05@10X SA-MW132I-201712...	3.33e2	1.9	YES
5	5	13C9-PFNA	1701970-05@10X SA-MW132I-201712...	3.18e2	1.9	YES
6	6	13C4-PFOS	1701970-05@10X SA-MW132I-201712...	7.35e1	1.6	YES
7	7	13C6-PFDA	1701970-05@10X SA-MW132I-201712...	1.46e2	1.1	YES
8	8	13C7-PFUdA	1701970-05@10X SA-MW132I-201712...	1.82e2	0.9	YES

Name: 180115M1_12, Date: 15-Jan-2018, Time: 12:41:37, 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	5.08e0	0.1	YES
7	7	13C6-PFDA	IPA			NO
8	8	13C7-PFUdA	IPA			NO

Name: 180115M1_13, Date: 15-Jan-2018, Time: 12:53:04, ID: 1701970-06 FT-PZ459S-20171214 0.25318, Description: FT-PZ459S-20171214

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1701970-06 FT-PZ459S-20171214 0.2...	1.30e4	69.5	NO
2	2	13C5-PFHxA	1701970-06 FT-PZ459S-20171214 0.2...	1.42e4	69.1	NO
3	3	13C3-PFHxS	1701970-06 FT-PZ459S-20171214 0.2...	3.71e3	78.2	NO
4	4	13C8-PFOA	1701970-06 FT-PZ459S-20171214 0.2...	1.32e4	74.6	NO
5	5	13C9-PFNA	1701970-06 FT-PZ459S-20171214 0.2...	1.25e4	75.0	NO
6	6	13C4-PFOS	1701970-06 FT-PZ459S-20171214 0.2...	3.43e3	74.2	NO
7	7	13C6-PFDA	1701970-06 FT-PZ459S-20171214 0.2...	8.72e3	68.3	NO
8	8	13C7-PFUdA	1701970-06 FT-PZ459S-20171214 0.2...	1.33e4	65.6	NO

Name: 180115M1_14, Date: 15-Jan-2018, Time: 13:04:31, ID: B7L0218-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BS1 OPR 0.25	8.82e3	47.2	YES
2	2	13C5-PFHxA	B7L0218-BS1 OPR 0.25	1.03e4	50.3	NO
3	3	13C3-PFHxS	B7L0218-BS1 OPR 0.25	2.48e3	52.2	NO
4	4	13C8-PFOA	B7L0218-BS1 OPR 0.25	9.36e3	53.0	NO
5	5	13C9-PFNA	B7L0218-BS1 OPR 0.25	8.65e3	51.8	NO
6	6	13C4-PFOS	B7L0218-BS1 OPR 0.25	3.07e3	66.5	NO
7	7	13C6-PFDA	B7L0218-BS1 OPR 0.25	6.15e3	48.2	YES
8	8	13C7-PFUdA	B7L0218-BS1 OPR 0.25	1.04e4	51.3	NO

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Name: 180115M1_15, Date: 15-Jan-2018, Time: 13:15:58, ID: B7L0218-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B7L0218-BLK1 Method Blank 0.25	1.00e4	53.6	NO
2	2	13C5-PFHxA	B7L0218-BLK1 Method Blank 0.25	1.05e4	51.3	NO
3	3	13C3-PFHxS	B7L0218-BLK1 Method Blank 0.25	3.05e3	64.2	NO
4	4	13C8-PFOA	B7L0218-BLK1 Method Blank 0.25	9.29e3	52.6	NO
5	5	13C9-PFNA	B7L0218-BLK1 Method Blank 0.25	1.15e4	68.8	NO
6	6	13C4-PFOS	B7L0218-BLK1 Method Blank 0.25	2.24e3	48.5	YES
7	7	13C6-PFDA	B7L0218-BLK1 Method Blank 0.25	6.40e3	50.1	NO
8	8	13C7-PFUdA	B7L0218-BLK1 Method Blank 0.25	1.13e4	55.7	NO

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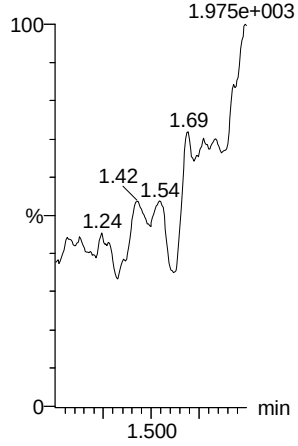
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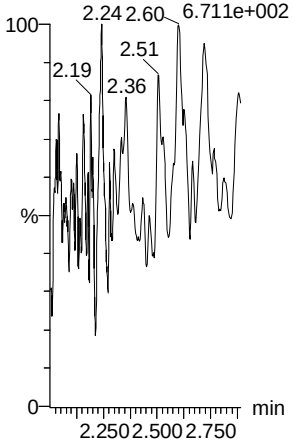
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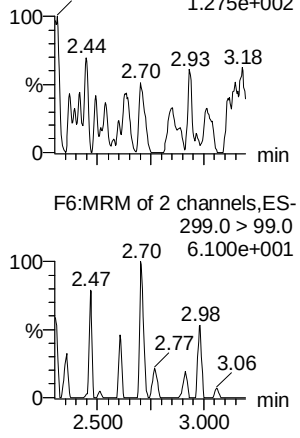
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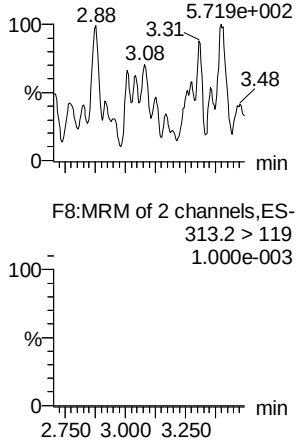
PFPeA



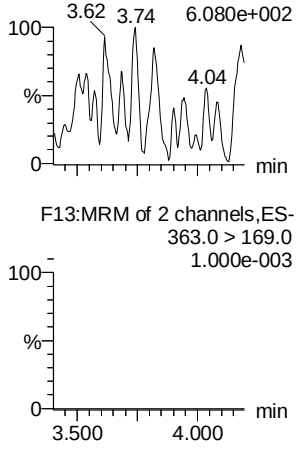
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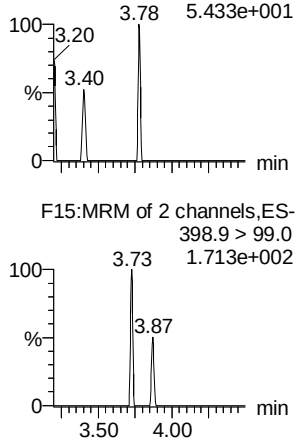
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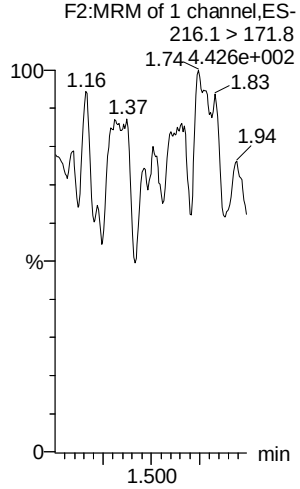
PFHpA



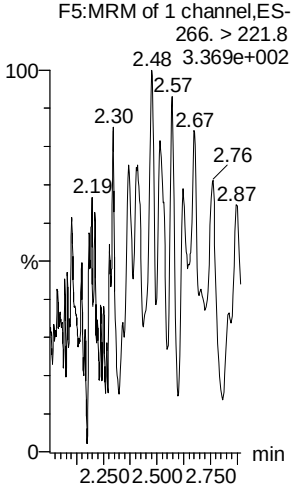
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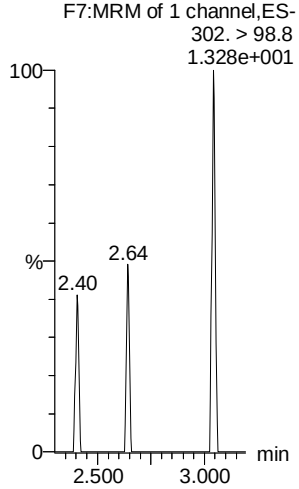
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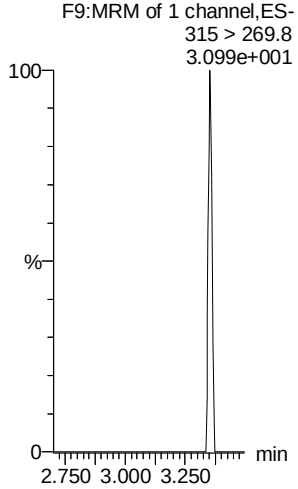
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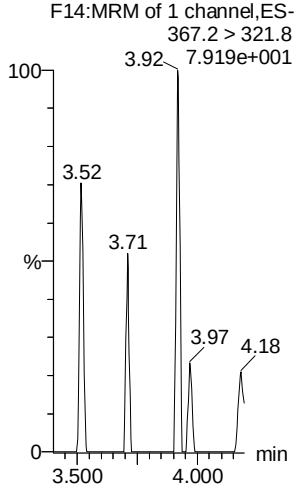
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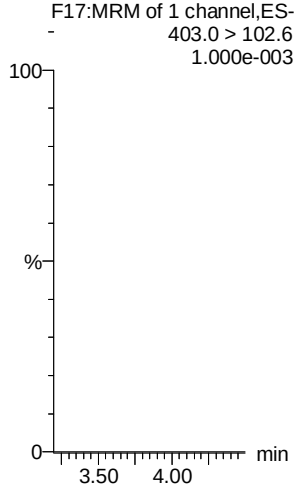
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13C4-PFHpA



18O2-PFHxS



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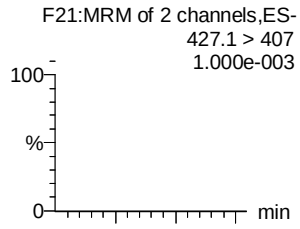
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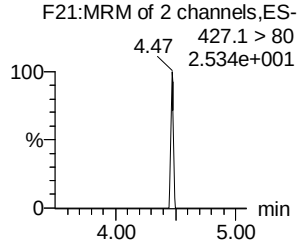
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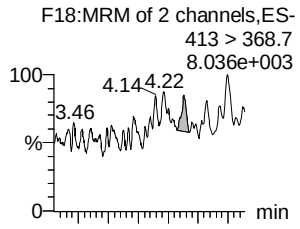
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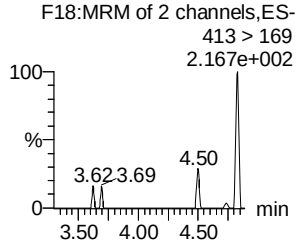
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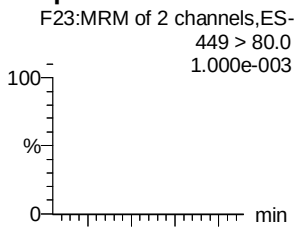


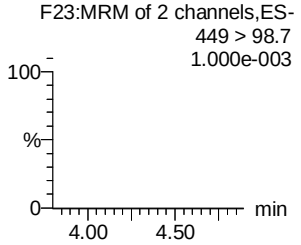
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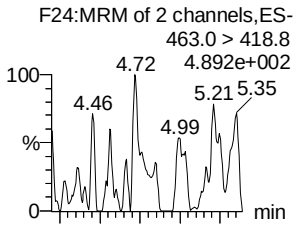


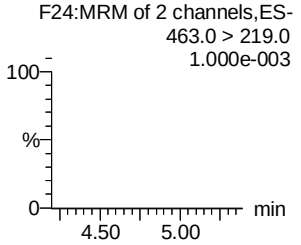
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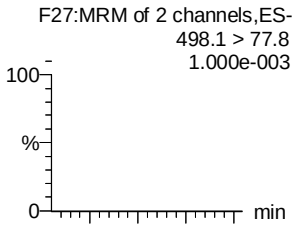


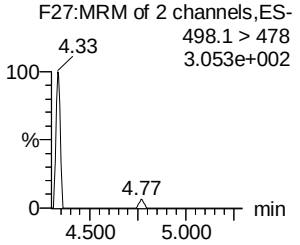
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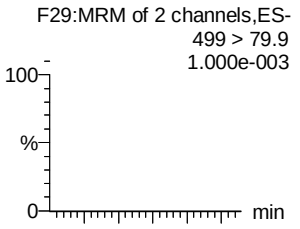


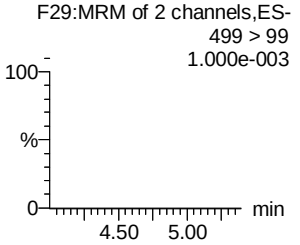
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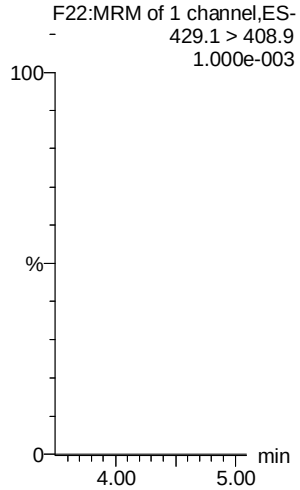


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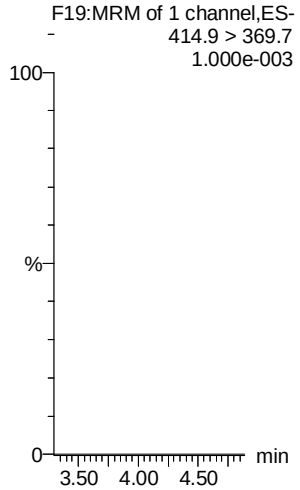




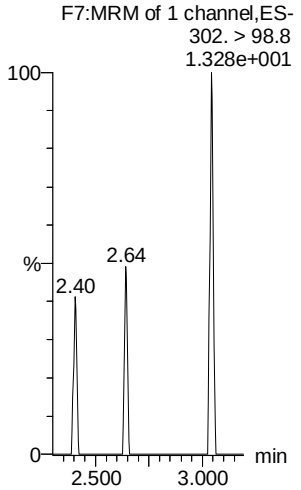
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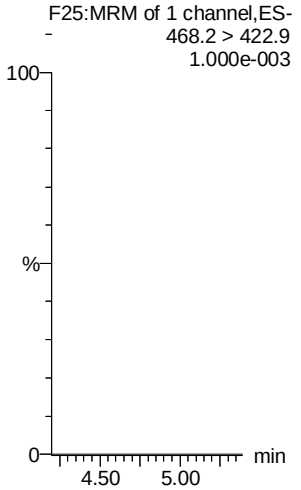
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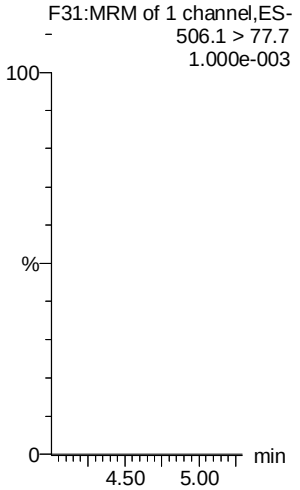
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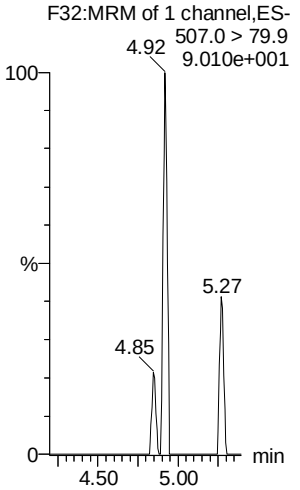
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13C8-PFOSA



13C8-PFOS



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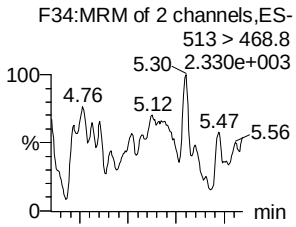
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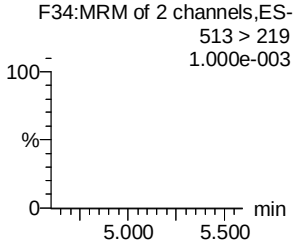
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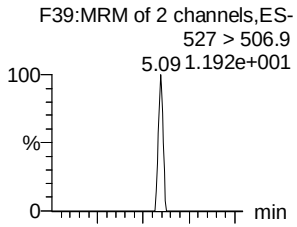
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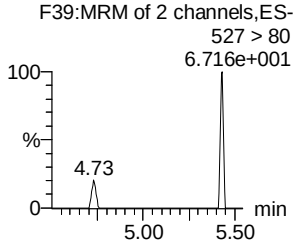
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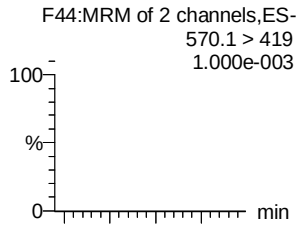


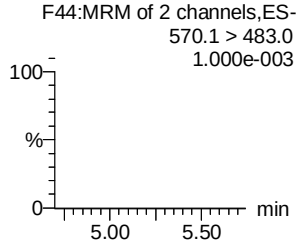
8:2 FTS



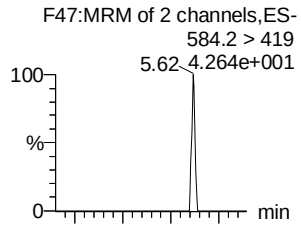


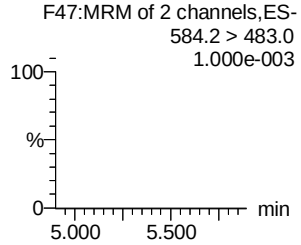
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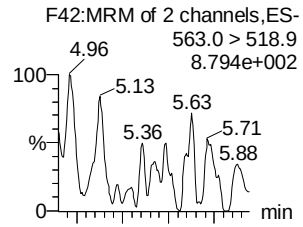


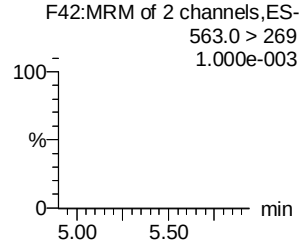
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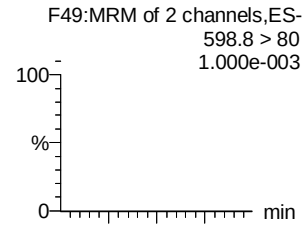


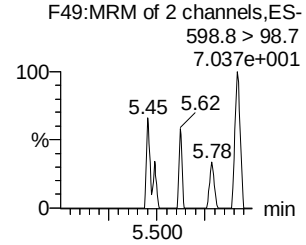
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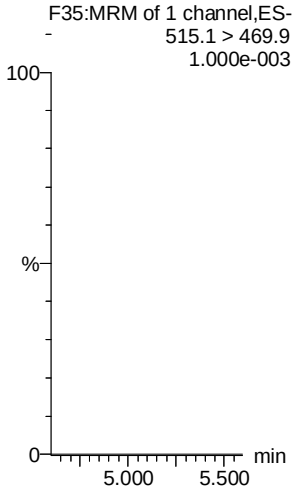


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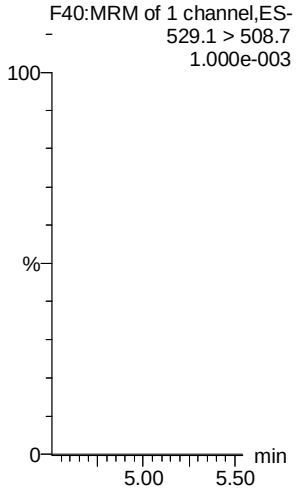




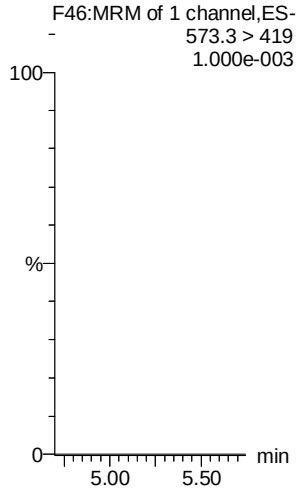
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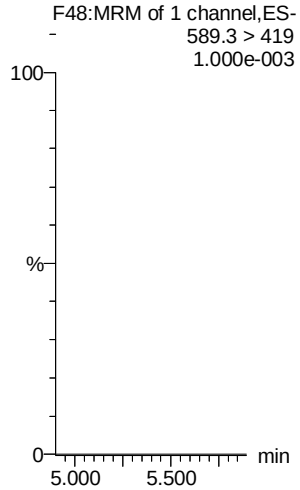
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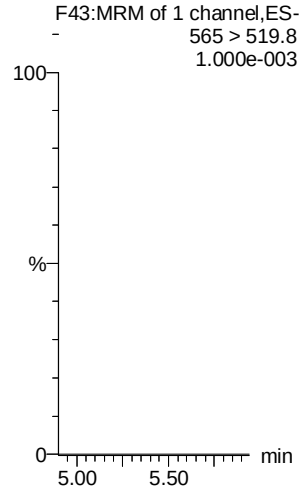
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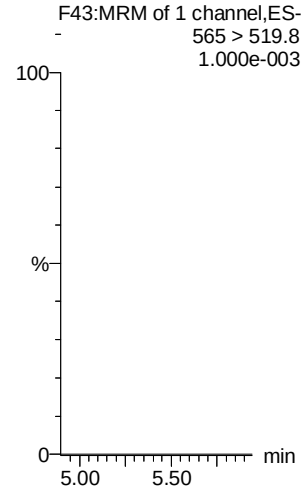
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13C2-PFUdA



13C2-PFUdA



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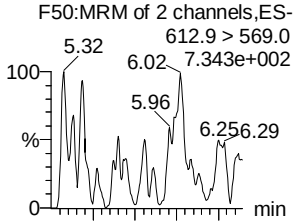
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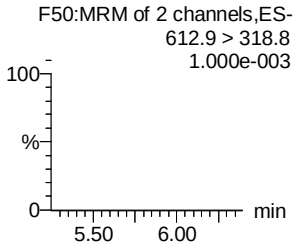
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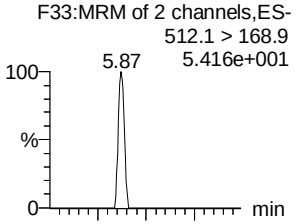
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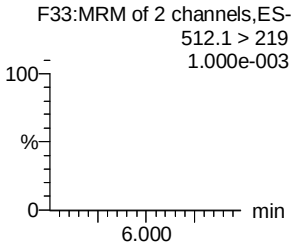
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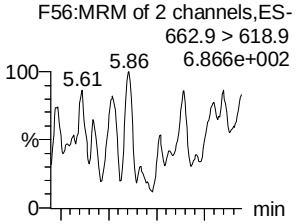


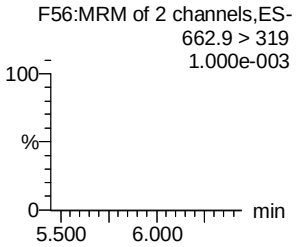
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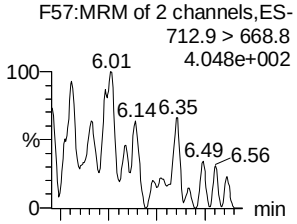


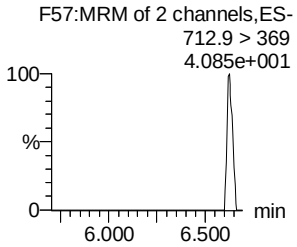
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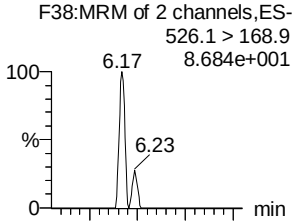


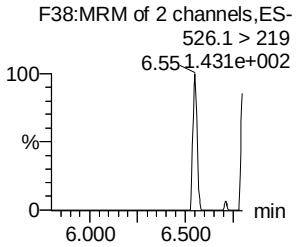
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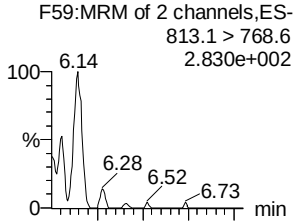


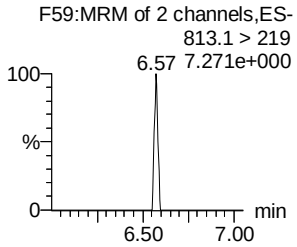
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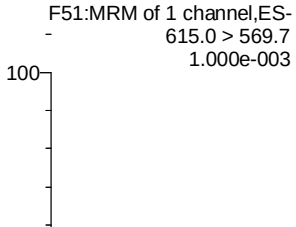


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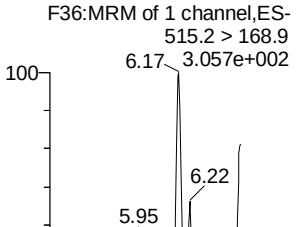




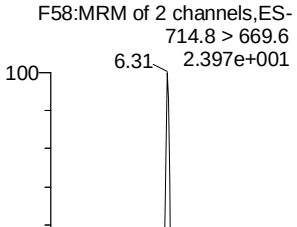
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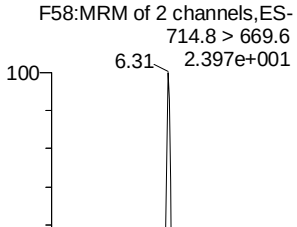
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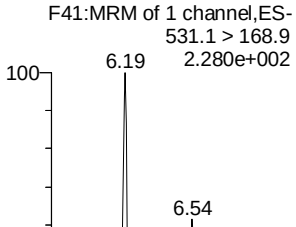
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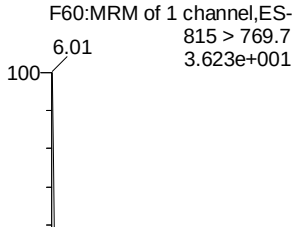
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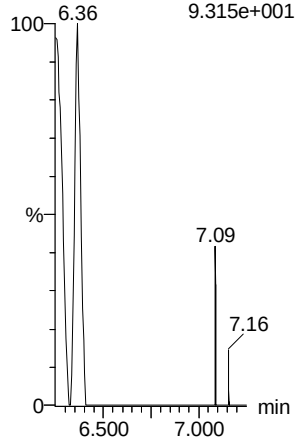
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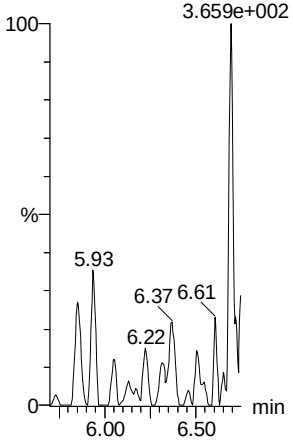
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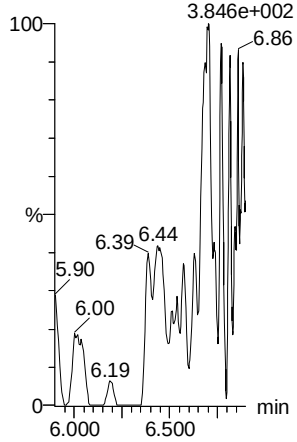
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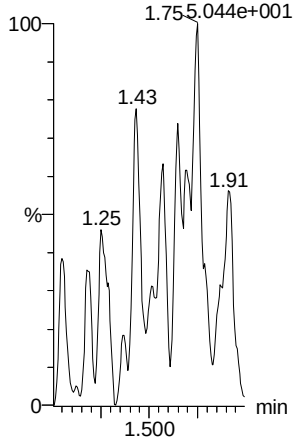
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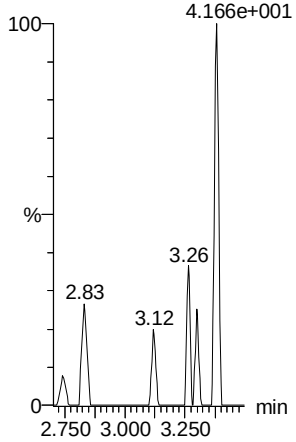
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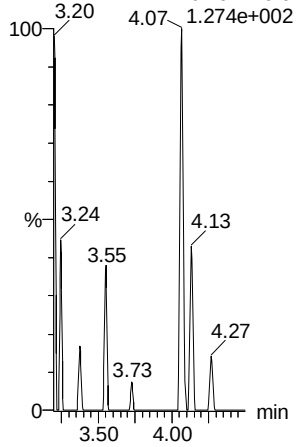
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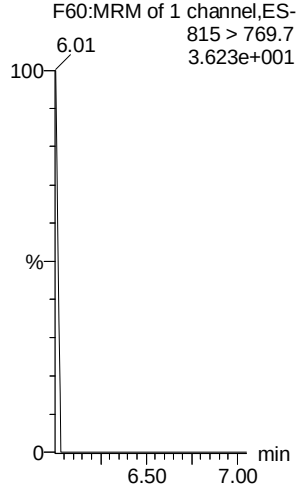
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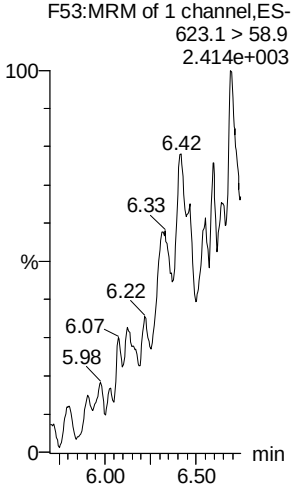
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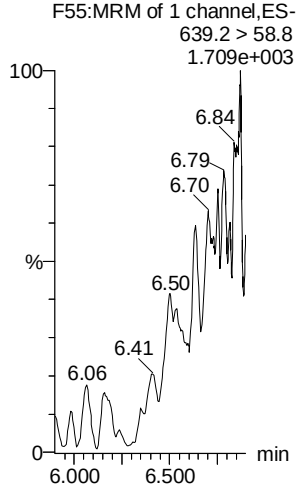
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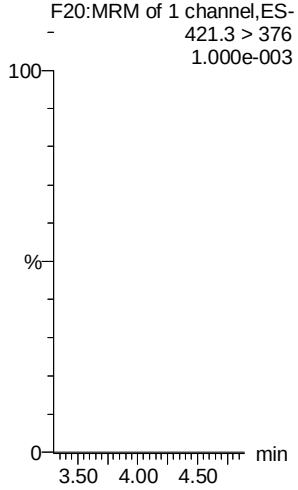
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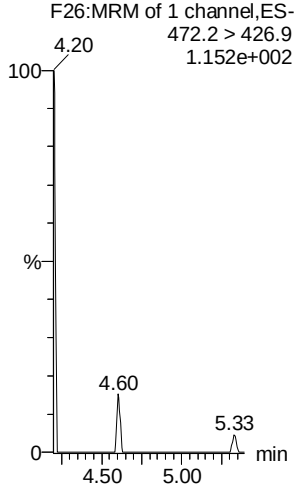
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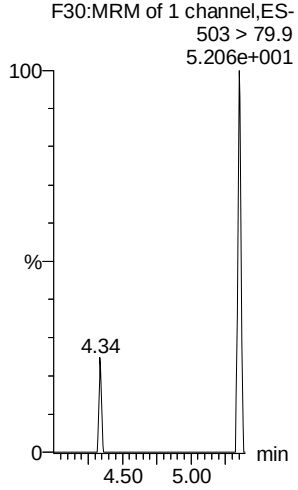
13C8-PFOA



13C9-PFNA



13C4-PFOS



AC 1/15/2018

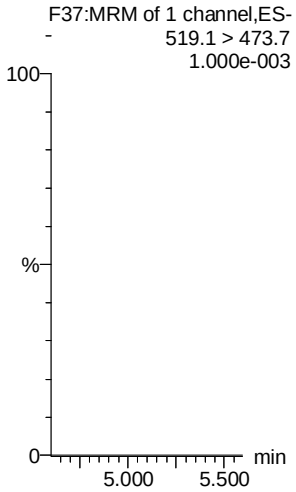
Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\180115M1\180115M1-3.qld

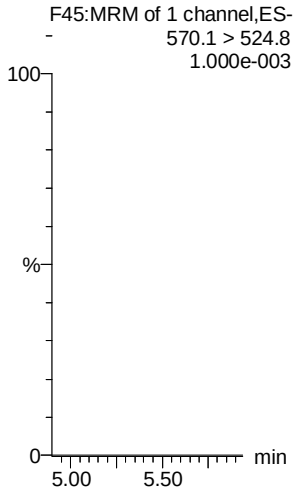
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Printed: Monday, January 15, 2018 13:35:38 Pacific Standard Time

Name: 180115M1_3, Date: 15-Jan-2018, Time: 10:52:47, ID: IPA, Description: IPA

13C6-PFDA



13C7-PFUdA



AC 1/15/2018

Dataset: U:\Q4.PRO\results\180115M1\180115M1-4.qld

Last Altered: Monday, January 15, 2018 11:40:07 Pacific Standard Time
Printed: Monday, January 15, 2018 11:56:59 Pacific Standard Time

AC 1/15/18
JH 01/15/2018

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_011518.mdb 15 Jan 2018 11:38:30
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_4, Date: 15-Jan-2018, Time: 11:08:28, ID: ST180115M1-1 PFC CS0 18A0808, Description: ~~ST180108M2-3~~ PFC CS0 18A0808

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.65e3	1.62e4	1.0000		1.64	1.63	1.27	1.060	106.0
2	2	PFPeA	263.1 > 218.9	1.67e3	1.86e4	1.0000		2.60	2.59	1.12	1.054	105.4
3	3	PFBS	299.0 > 79.7	3.48e2	2.33e3	1.0000		2.87	2.86	1.87	1.016	101.6
4	4	PFHxA	313.2 > 268.9	1.98e3	5.32e3	1.0000		3.36	3.36	1.86	1.065	106.5
5	5	PFHpA	363.0 > 318.9	1.54e3	1.40e4	1.0000		4.00	3.99	1.37	1.043	104.3
6	6	L-PFHxS	398.9 > 79.6	2.60e2	1.67e3	1.0000		4.14	4.13	1.95	1.095	109.5
7	8	6:2 FTS	427.1 > 407	4.14e2	1.67e3	1.0000		4.46	4.45	3.10	1.136	113.6
8	9	L-PFOA	413 > 368.7	1.64e3	1.93e4	1.0000		4.50	4.50	1.06	0.913	91.3
9	11	PFHpS	449 > 80.0	4.14e2	1.93e4	1.0000		4.60	4.60	0.269	0.934	93.4
10	12	PFNA	463.0 > 418.8	1.70e3	1.67e4	1.0000		4.94	4.93	1.27	0.973	97.3
11	13	PFOSA	498.1 > 77.8	4.49e2	4.69e3	1.0000		5.00	4.99	1.20	1.091	109.1
12	14	L-PFOS	499 > 79.9	3.48e2	4.96e3	1.0000		5.02	5.01	0.878	0.818	81.8
13	16	PFDA	513 > 468.8	2.04e3	1.80e4	1.0000		5.31	5.30	1.42	0.972	97.2
14	17	8:2 FTS	527 > 506.9	3.39e2	1.80e4	1.0000		5.28	5.28	0.235	0.871	87.1
15	18	N-MeFOSAA	570.1 > 419	7.77e2	6.34e3	1.0000		5.45	5.45	1.53	0.943	94.3
16	19	N-EtFOSAA	584.2 > 419	6.45e2	7.72e3	1.0000		5.60	5.60	1.04	0.998	99.8
17	20	PFUdA	563.0 > 518.9	2.11e3	2.27e4	1.0000		5.62	5.62	1.16	0.900	90.0
18	21	PFDS	598.8 > 80	5.65e2	2.27e4	1.0000		5.67	5.66	0.311	0.978	97.8
19	22	PFDoA	612.9 > 569.0	3.78e3	1.71e4	1.0000		5.91	5.90	2.76	1.257	125.7
20	23	N-MeFOSA	512.1 > 168.9	1.17e3	3.07e4	1.0000		5.87	5.87	5.71	6.012	120.2
21	24	PFTrDA	662.9 > 618.9	2.95e3	1.71e4	1.0000		6.15	6.14	2.15	0.852	85.2
22	25	PFTeDA	712.9 > 668.8	1.43e3	7.20e3	1.0000		6.35	6.34	2.48	1.022	102.2
23	26	N-EtFOSA	526.1 > 168.9	1.29e3	3.79e4	1.0000		6.25	6.22	5.12	5.637	112.7
24	27	PFHxDA	813.1 > 768.6	6.54e2	3.72e3	1.0000		6.64	6.63	0.880	0.851	85.1
25	28	PFODA	913.1 > 868.8	5.26e2	3.72e3	1.0000		6.85	6.85	0.708	0.816	81.6
26	29	N-MeFOSE	616.1 > 58.9	1.28e3	3.67e4	1.0000		6.31	6.31	5.23	5.028	100.6
27	30	N-EtFOSE	630.1 > 58.9	1.29e3	3.39e4	1.0000		6.45	6.46	5.71	4.870	97.4
28	31	13C3-PFBA	216.1 > 171.8	1.62e4	1.87e4	1.0000	0.888	1.64	1.63	10.9	12.235	97.9
29	32	13C3-PFPeA	266. > 221.8	1.86e4	2.05e4	1.0000	0.875	2.60	2.59	11.3	12.940	103.5
30	33	13C3-PFBS	302. > 98.8	2.33e3	2.05e4	1.0000	0.112	2.87	2.86	1.42	12.717	101.7
31	34	13C2-PFHxA	315 > 269.8	5.32e3	2.05e4	1.0000	0.691	3.36	3.36	3.24	4.686	93.7

70-130

50-150

Dataset: U:\Q4.PRO\results\180115M1\180115M1-4.qld

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Printed: Monday, January 15, 2018 11:56:59 Pacific Standard Time

Name: 180115M1_4, Date: 15-Jan-2018, Time: 11:08:28, ID: ST180115M1-1 PFC CS0 18A0808, Description: ST180108M2-3 PFC CS0 18A0808

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C4-PFHpA	367.2 > 321.8	1.40e4	2.05e4	1.0000	0.708	4.00	3.99	8.55	12.068	96.5
33	36	18O2-PFHxS	403.0 > 102.6	1.67e3	4.75e3	1.0000	0.353	4.14	4.13	4.39	12.449	99.6
34	37	13C2-6:2 FTS	429.1 > 408.9	4.07e3	1.77e4	1.0000	0.285	4.46	4.45	2.88	10.104	80.8
35	38	13C2-PFOA	414.9 > 369.7	1.93e4	1.77e4	1.0000	1.049	4.50	4.50	13.6	12.983	103.9
36	39	13C5-PFNA	468.2 > 422.9	1.67e4	1.68e4	1.0000	0.910	4.94	4.93	12.5	13.691	109.5
37	40	13C8-PFOSA	506.1 > 77.7	4.69e3	2.03e4	1.0000	0.252	5.00	4.99	2.90	11.511	92.1
38	41	13C8-PFOS	507.0 > 79.9	4.96e3	4.62e3	1.0000	0.987	5.02	5.01	13.4	13.578	108.6
39	42	13C2-PFDA	515.1 > 469.9	1.80e4	1.33e4	1.0000	1.311	5.31	5.30	17.0	12.985	103.9
40	43	13C2-8:2 FTS	529.1 > 508.7	2.13e3	2.05e4	1.0000	0.141	5.28	5.28	1.30	9.168	73.3
41	44	d3-N-MeFOSAA	573.3 > 419	6.34e3	2.03e4	1.0000	0.385	5.45	5.44	3.91	10.168	81.3
42	45	d5-N-EtFOSAA	589.3 > 419	7.72e3	2.03e4	1.0000	0.445	5.60	5.60	4.76	10.698	85.6
43	46	13C2-PFUdA	565 > 519.8	2.27e4	2.03e4	1.0000	1.014	5.62	5.62	14.0	13.794	110.4
44	47	13C2-PFDoA	615.0 > 569.7	1.71e4	2.03e4	1.0000	0.575	5.91	5.90	10.6	18.378	147.0
45	48	d3-N-MeFOSA	515.2 > 168.9	3.07e4	2.03e4	1.0000	0.130	5.87	5.90	18.9	145.386	96.9
46	49	13C2-PFTeDA	714.8 > 669.6	7.20e3	2.03e4	1.0000	0.305	6.35	6.34	4.44	14.544	116.4
47	50	d5-N-ETFOSA	531.1 > 168.9	3.79e4	2.03e4	1.0000	0.192	6.25	6.23	23.4	121.808	81.2
48	51	13C2-PFHxDA	815 > 769.7	3.72e3	2.03e4	1.0000	0.587	6.64	6.63	2.29	3.907	78.1
49	52	d7-N-MeFOSE	623.1 > 58.9	3.67e4	2.03e4	1.0000	0.163	6.31	6.31	22.7	139.370	92.9
50	53	d9-N-EtFOSE	639.2 > 58.8	3.39e4	2.03e4	1.0000	0.178	6.45	6.45	20.9	117.240	78.2
51	54	13C4-PFBA	217. > 171.8	1.87e4	1.87e4	1.0000	1.000	1.64	1.63	12.5	12.500	100.0
52	55	13C5-PFHxA	318 > 272.9	2.05e4	2.05e4	1.0000	1.000	3.36	3.36	12.5	12.500	100.0
53	56	13C3-PFHxS	401.9 > 79.9	4.75e3	4.75e3	1.0000	1.000	4.14	4.13	12.5	12.500	100.0
54	57	13C8-PFOA	421.3 > 376	1.77e4	1.77e4	1.0000	1.000	4.50	4.50	12.5	12.500	100.0
55	58	13C9-PFNA	472.2 > 426.9	1.68e4	1.68e4	1.0000	1.000	4.94	4.93	12.5	12.500	100.0
56	59	13C4-PFOS	503 > 79.9	4.62e3	4.62e3	1.0000	1.000	5.02	5.01	12.5	12.500	100.0
57	60	13C6-PFDA	519.1 > 473.7	1.33e4	1.33e4	1.0000	1.000	5.31	5.30	12.5	12.500	100.0
58	61	13C7-PFUdA	570.1 > 524.8	2.03e4	2.03e4	1.0000	1.000	5.62	5.62	12.5	12.500	100.0

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Dataset: Untitled

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Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_011518.mdb 15 Jan 2018 11:38:30
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Compound name: PFBA

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2	180115M1_4	ST180115M1-1 PFC CS0 18A0808	15-Jan-18	11:08:28
3	180115M1_5	IPA	15-Jan-18	11:19:52
4	180115M1_6	1701954-01@5X WURTS_MSPTS_Eff-17121...	15-Jan-18	11:31:19
5	180115M1_7	1701954-02@5X WURTS_Outfall002-171214 ...	15-Jan-18	11:42:46
6	180115M1_8	B7L0188-MS1@10X Matrix Spike 0.24896	15-Jan-18	11:54:15
7	180115M1_9	B7L0188-MSD1@10X Matrix Spike Dup 0.237...	15-Jan-18	12:06:04
8	180115M1_10	1701970-03@10X SA-MW132S-20171214 0....	15-Jan-18	12:17:55
9	180115M1_11	1701970-05@10X SA-MW132I-20171214 0.2...	15-Jan-18	12:29:46
10	180115M1_12	IPA	15-Jan-18	12:41:37
11	180115M1_13	1701970-06 FT-PZ459S-20171214 0.25318	15-Jan-18	12:53:04
12	180115M1_14	B7L0218-BS1 OPR 0.25	15-Jan-18	13:04:31
13	180115M1_15	B7L0218-BLK1 Method Blank 0.25	15-Jan-18	13:15:58
14	180115M1_16	IPA	15-Jan-18	13:27:32
15	180115M1_17	ST180115M1-2 PFC CS3 18A0811	15-Jan-18	13:39:00
16	180115M1_18	IPA	15-Jan-18	13:50:26

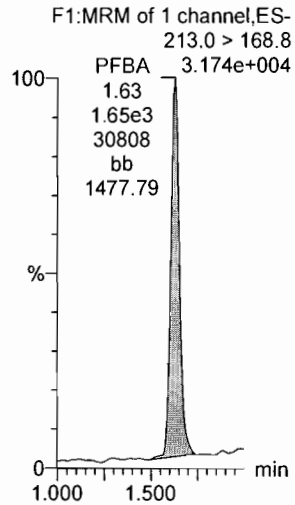
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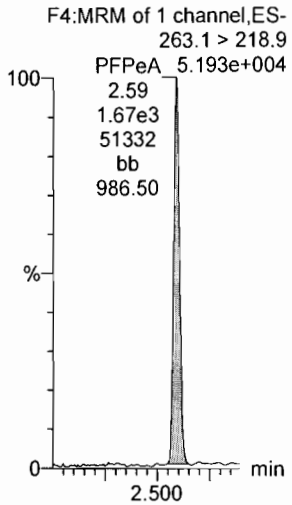
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Name: 180115M1_4, Date: 15-Jan-2018, Time: 11:08:28, ID: ST180115M1-1 PFC CS0 18A0808, Description: ST180108M2-3 PFC CS0 18A0808

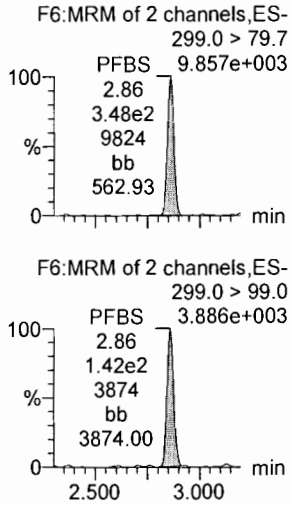
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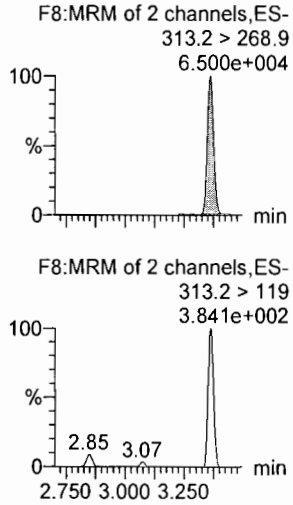
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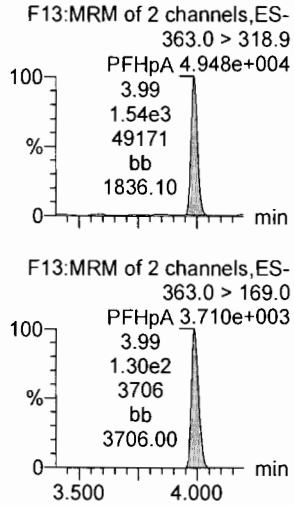
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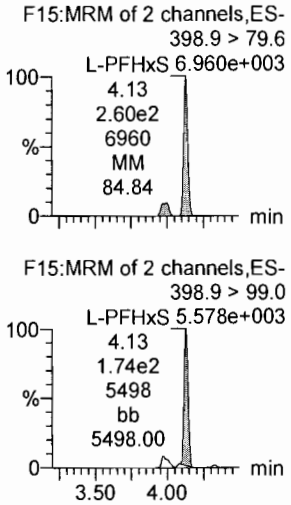
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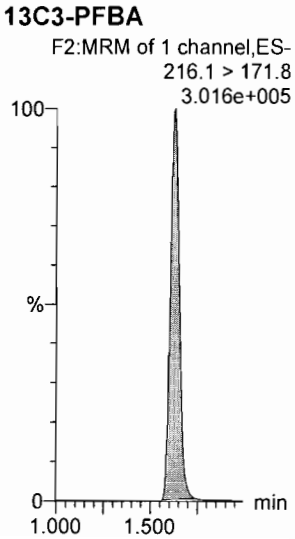
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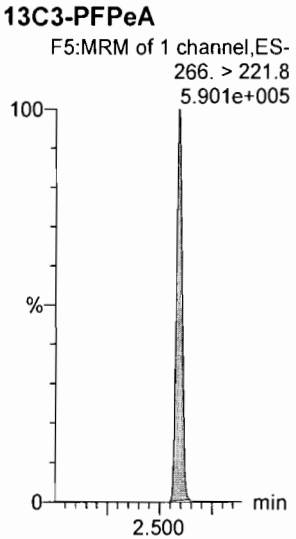
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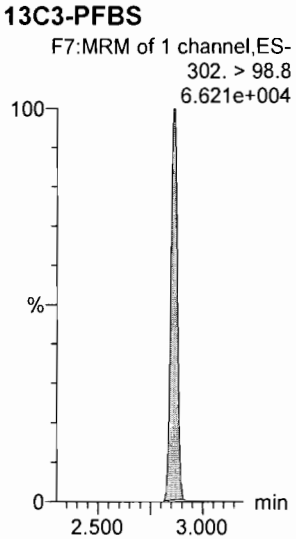
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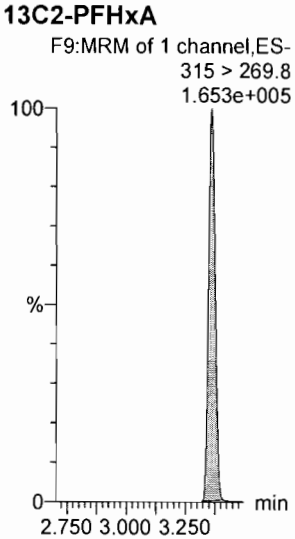
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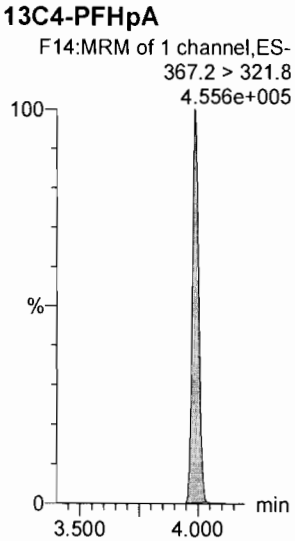
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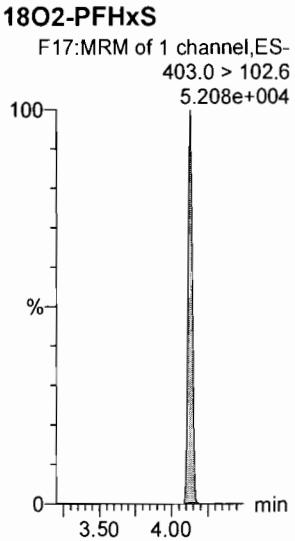
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13C4-PFHpA



18O2-PFHxS

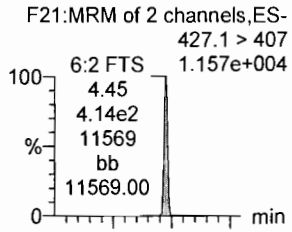


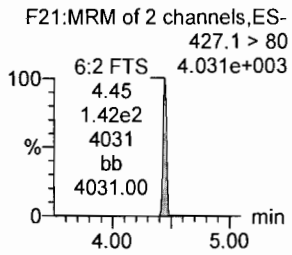
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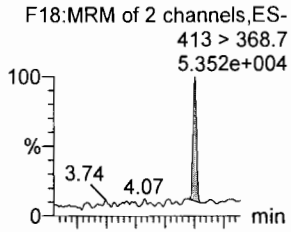
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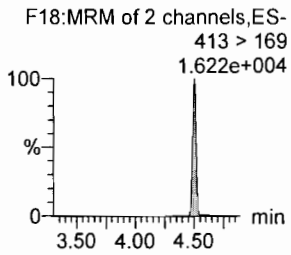
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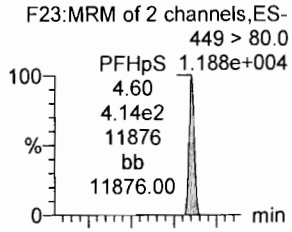


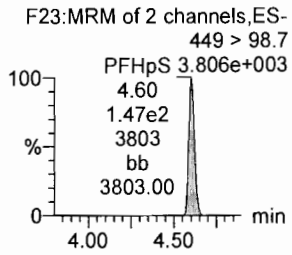
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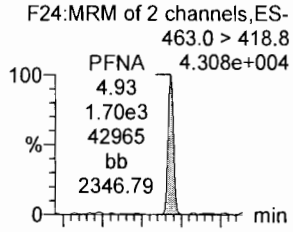


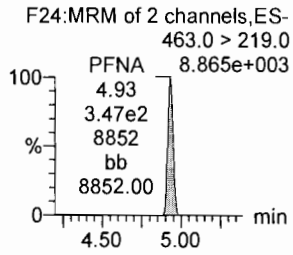
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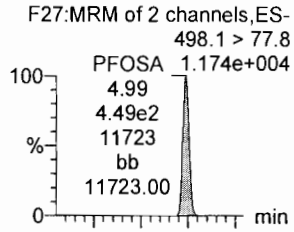


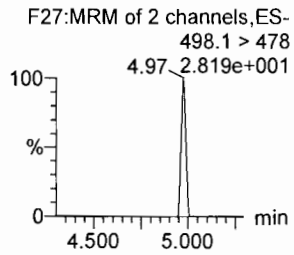
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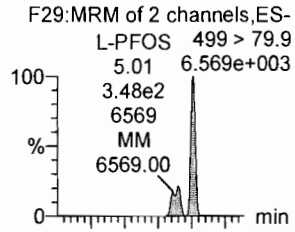


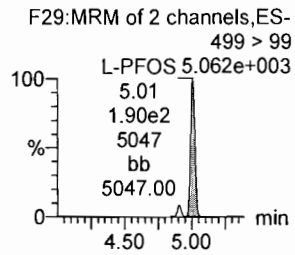
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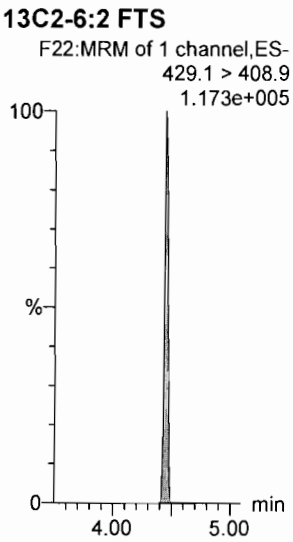


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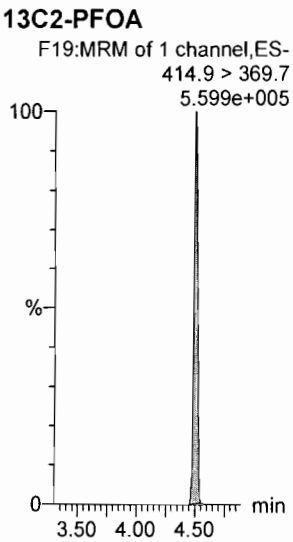




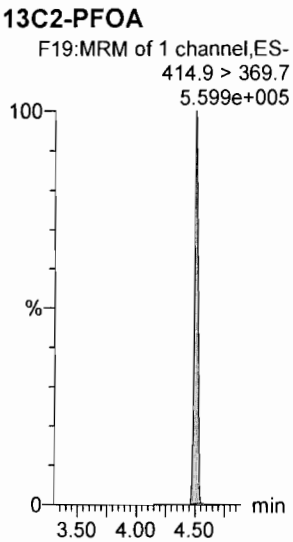
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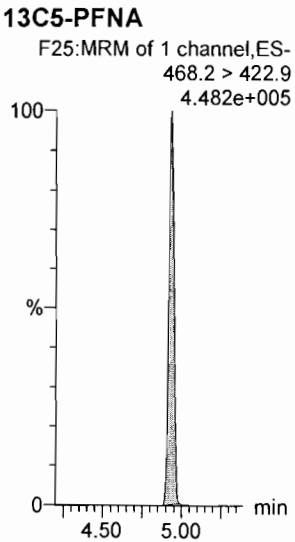
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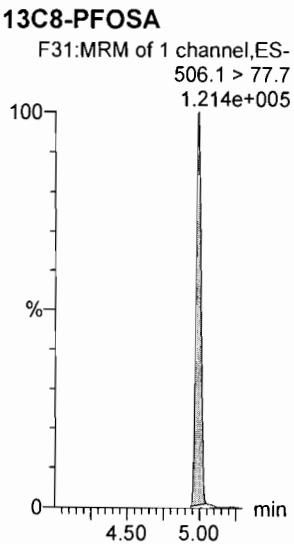
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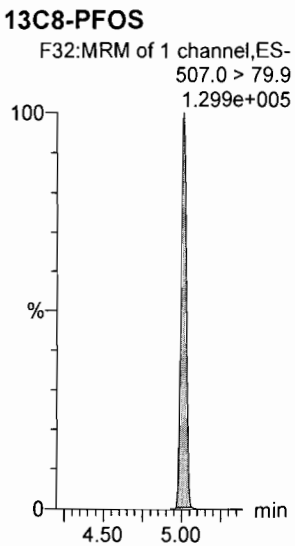
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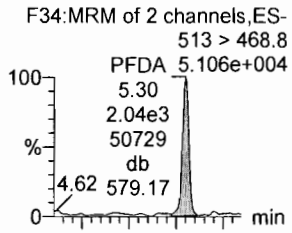


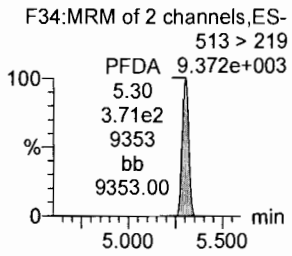
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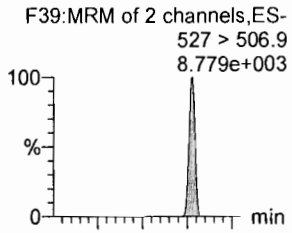
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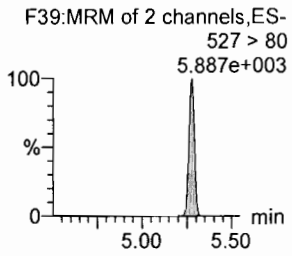
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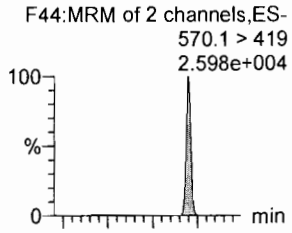


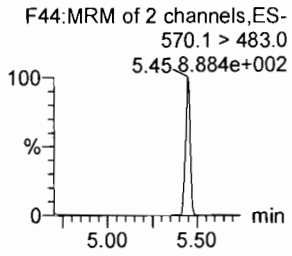
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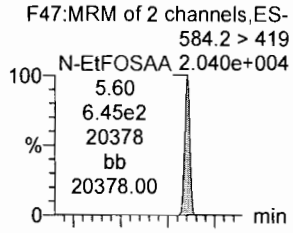


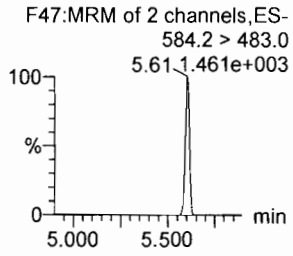
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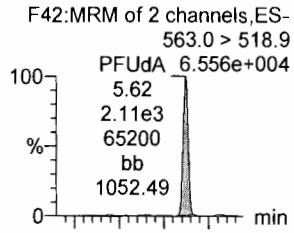


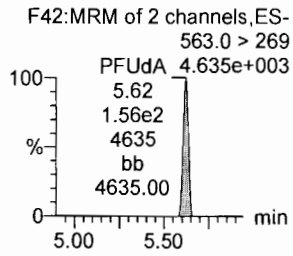
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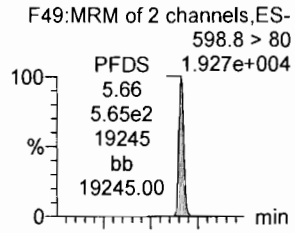


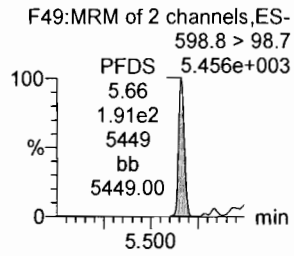
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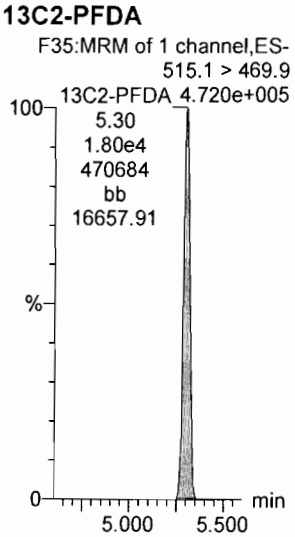


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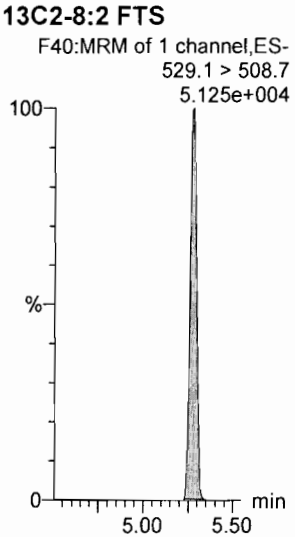




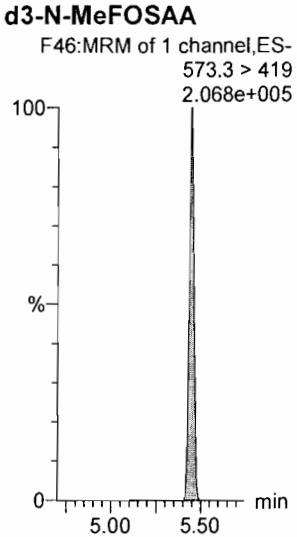
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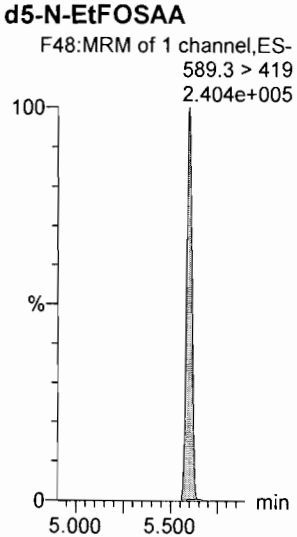
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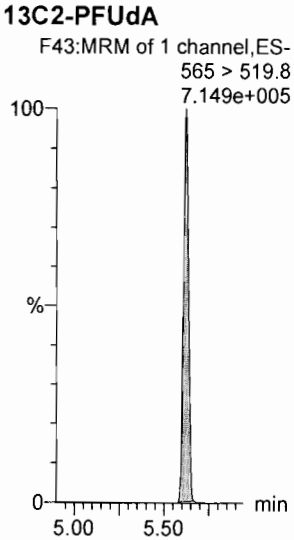
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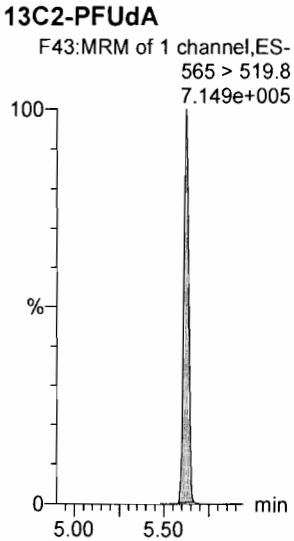
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13C2-PFUdA



13C2-PFUdA

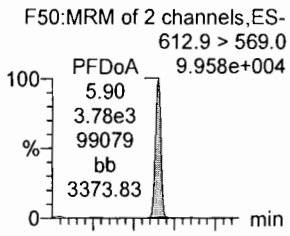


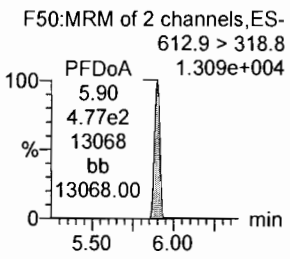
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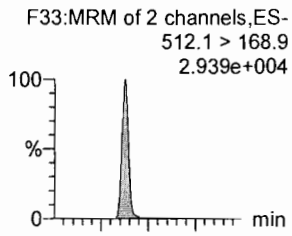
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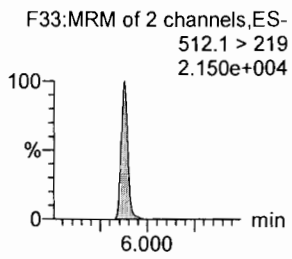
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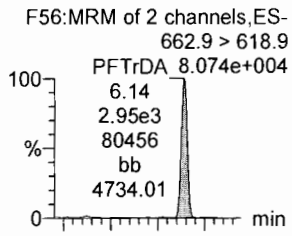


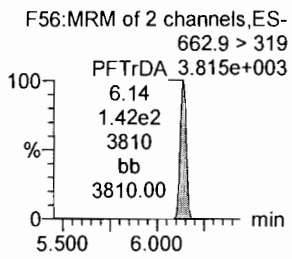
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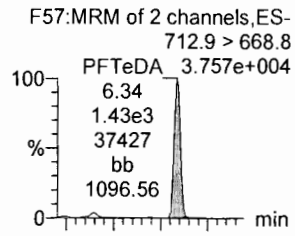


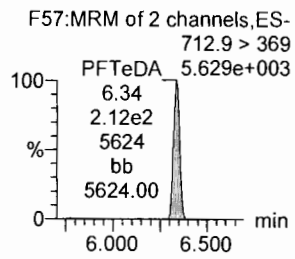
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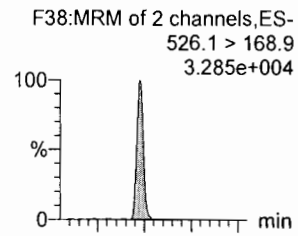


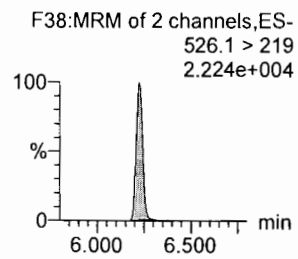
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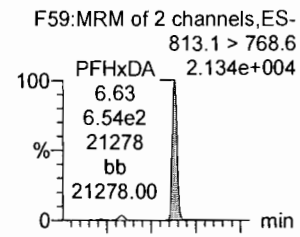


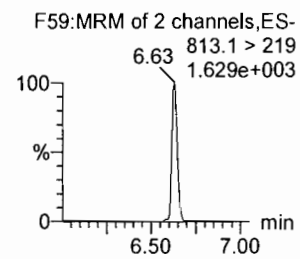
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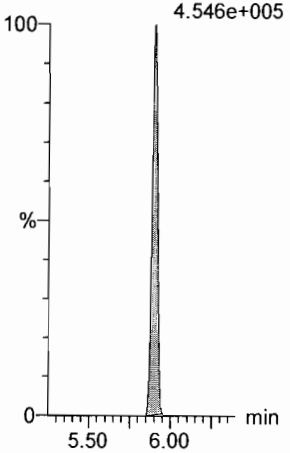


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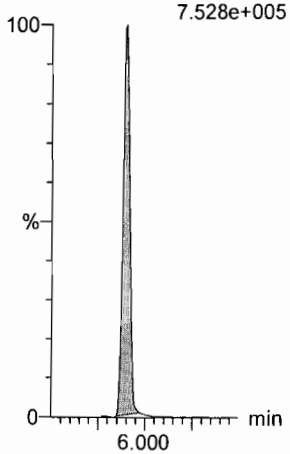




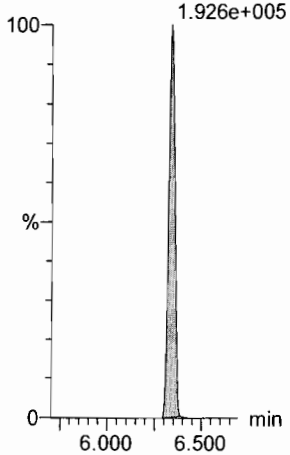
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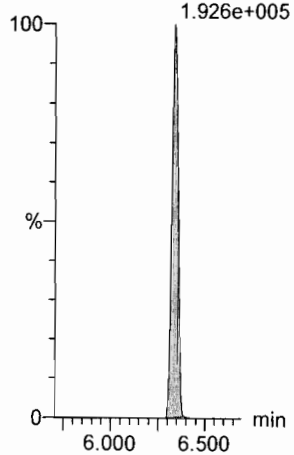
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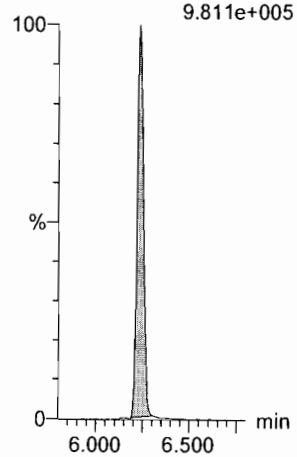
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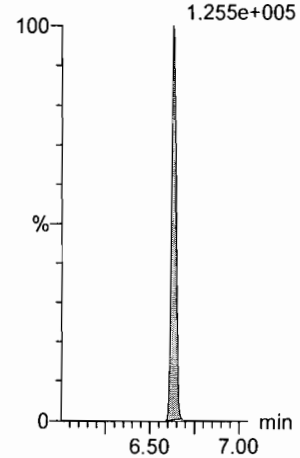
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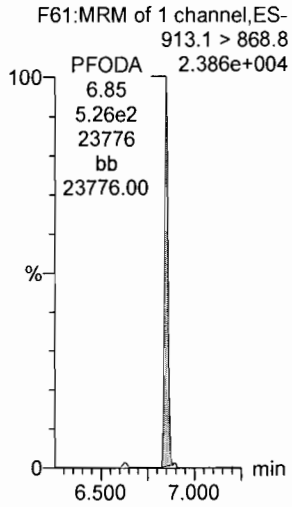
Vista Analytical Laboratory

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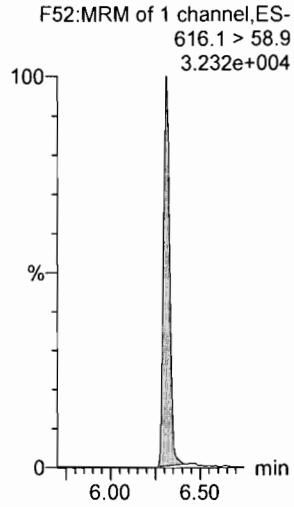
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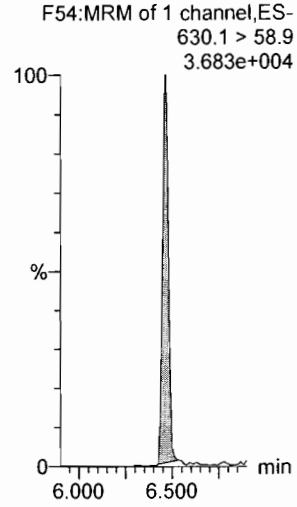
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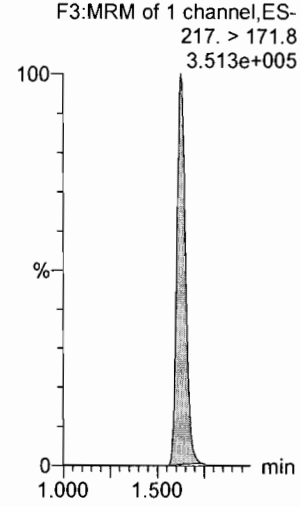
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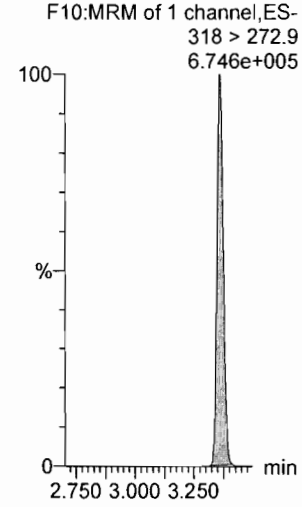
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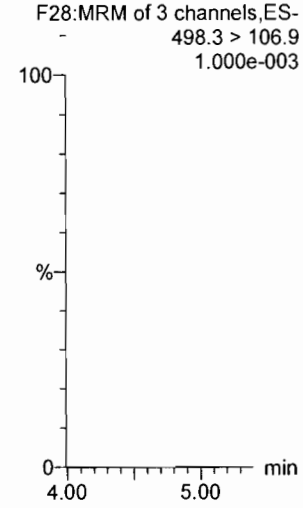
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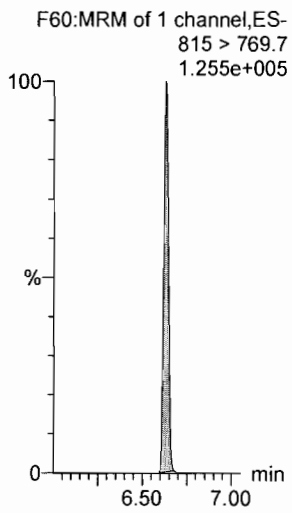
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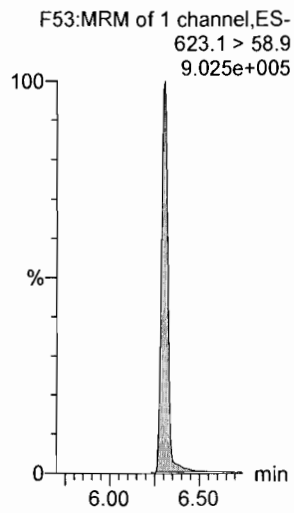
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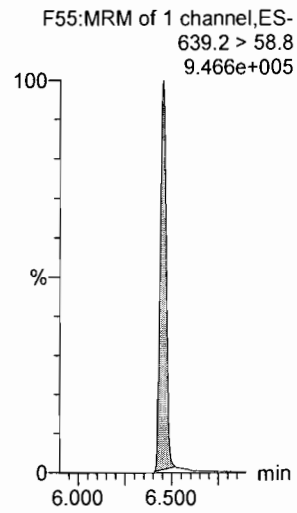
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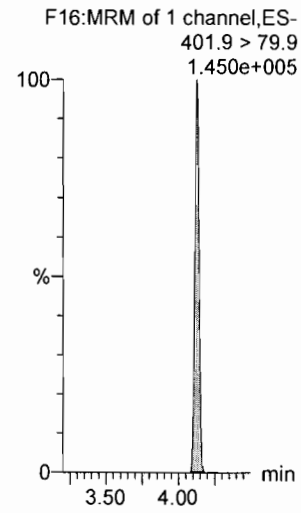
d7-N-MeFOSE



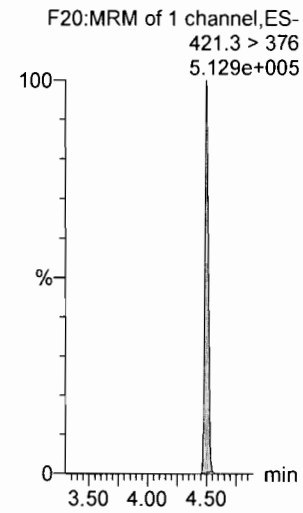
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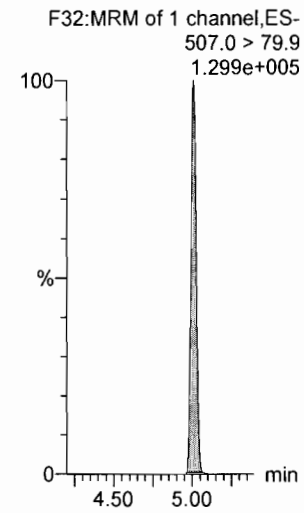
13C3-PFHxS



13C8-PFOA



13C8-PFOS

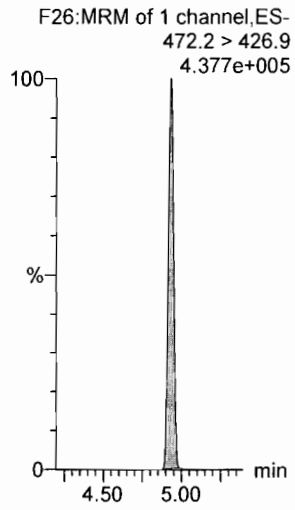


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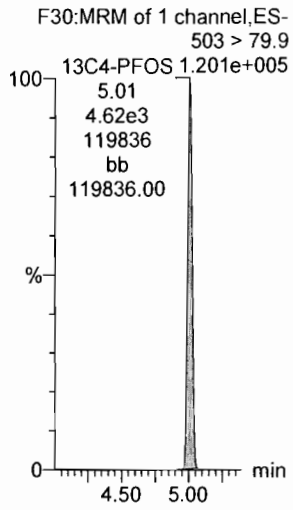
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Printed: Monday, January 15, 2018 11:56:59 Pacific Standard Time

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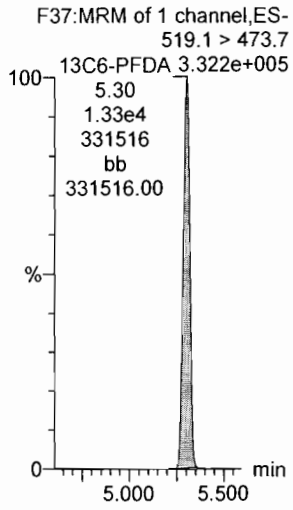
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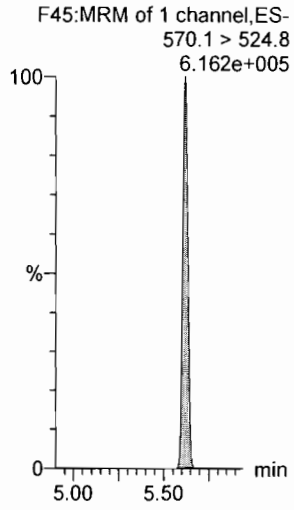
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Dataset: U:\Q4.PRO\results\180115M1\180115M1-17.qld

Last Altered: Monday, January 15, 2018 13:48:54 Pacific Standard Time
Printed: Monday, January 15, 2018 13:50:51 Pacific Standard Time

AC 1/15/18

JA 01/15/2018

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_011518.mdb 15 Jan 2018 11:38:30
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180115M1_17, Date: 15-Jan-2018, Time: 13:39:00, ID: ST180115M1-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	1.87e4	1.99e4	1.0000		1.64	1.60	11.8	9.992	99.9
2	2	PFPeA	263.1 > 218.9	1.89e4	2.22e4	1.0000		2.60	2.56	10.6	10.294	102.9
3	3	PFBS	299.0 > 79.7	4.39e3	3.02e3	1.0000		2.87	2.83	18.2	9.957	99.6
4	4	PFHxA	313.2 > 268.9	2.48e4	6.58e3	1.0000		3.36	3.33	18.8	11.340	113.4
5	5	PFHpA	363.0 > 318.9	1.88e4	1.54e4	1.0000		4.00	3.96	15.3	11.926	119.3
6	6	L-PFHxS	398.9 > 79.6	3.08e3	2.04e3	1.0000		4.14	4.09	18.9	10.564	105.6
7	8	6:2 FTS	427.1 > 407	3.44e3	2.04e3	1.0000		4.46	4.41	21.1	7.984	79.8
8	9	L-PFOA	413 > 368.7	2.04e4	2.42e4	1.0000		4.50	4.47	10.6	9.577	95.8
9	11	PFHpS	449 > 80.0	5.17e3	2.42e4	1.0000		4.60	4.57	2.68	9.827	98.3
10	12	PFNA	463.0 > 418.8	2.12e4	1.96e4	1.0000		4.94	4.90	13.5	10.554	105.5
11	13	PFOSA	498.1 > 77.8	5.16e3	5.07e3	1.0000		5.00	4.96	12.7	11.421	114.2
12	14	L-PFOS	499 > 79.9	5.02e3	4.58e3	1.0000		5.02	4.97	13.7	11.592	115.9
13	16	PFDA	513 > 468.8	1.91e4	1.70e4	1.0000		5.31	5.27	14.1	9.948	99.5
14	17	8:2 FTS	527 > 506.9	3.13e3	1.70e4	1.0000		5.28	5.24	2.31	8.882	88.8
15	18	N-MeFOSAA	570.1 > 419	1.09e4	7.63e3	1.0000		5.45	5.41	17.9	10.421	104.2
16	19	N-EtFOSAA	584.2 > 419	9.05e3	9.69e3	1.0000		5.60	5.57	11.7	10.932	109.3
17	20	PFUdA	563.0 > 518.9	1.78e4	1.82e4	1.0000		5.62	5.58	12.2	10.603	106.0
18	21	PFDS	598.8 > 80	5.62e3	1.82e4	1.0000		5.67	5.63	3.86	11.559	115.6
19	22	PFDoA	612.9 > 569.0	2.67e4	1.75e4	1.0000		5.91	5.87	19.0	7.867	78.7
20	23	N-MeFOSA	512.1 > 168.9	1.32e4	3.58e4	1.0000		5.87	5.86	55.2	62.196	124.4
21	24	PFTrDA	662.9 > 618.9	2.94e4	1.75e4	1.0000		6.15	6.10	20.9	9.812	98.1
22	25	PFTeDA	712.9 > 668.8	1.62e4	8.49e3	1.0000		6.35	6.31	23.8	11.031	110.3
23	26	N-EtFOSA	526.1 > 168.9	1.57e4	4.79e4	1.0000		6.25	6.22	49.2	54.947	109.9
24	27	PFHxDA	813.1 > 768.6	7.74e3	4.86e3	1.0000		6.64	6.60	7.96	8.951	89.5
25	28	PFODA	913.1 > 868.8	5.76e3	4.86e3	1.0000		6.85	6.82	5.92	7.386	73.9
26	29	N-MeFOSE	616.1 > 58.9	1.82e4	4.92e4	1.0000		6.31	6.30	55.4	53.356	106.7
27	30	N-EtFOSE	630.1 > 58.9	1.79e4	5.26e4	1.0000		6.45	6.46	51.1	43.411	86.8
28	31	13C3-PFBA	216.1 > 171.8	1.99e4	2.32e4	1.0000	0.888	1.64	1.60	10.7	12.041	96.3
29	32	13C3-PFPeA	266. > 221.8	2.22e4	2.39e4	1.0000	0.875	2.60	2.57	11.6	13.278	106.2
30	33	13C3-PFBS	302. > 98.8	3.02e3	2.39e4	1.0000	0.112	2.87	2.83	1.58	14.107	112.9
31	34	13C2-PFHxA	315 > 269.8	6.58e3	2.39e4	1.0000	0.691	3.36	3.33	3.44	4.975	99.5

70-130

50-150

Dataset: U:\Q4.PRO\results\180115M1\180115M1-17.qld

Last Altered: Monday, January 15, 2018 13:48:54 Pacific Standard Time
Printed: Monday, January 15, 2018 13:50:51 Pacific Standard Time

Name: 180115M1_17, Date: 15-Jan-2018, Time: 13:39:00, ID: ST180115M1-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

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32	35	13C4-PFHpA	367.2 > 321.8	1.54e4	2.39e4	1.0000	0.708	4.00	3.96	8.04	11.354	90.8
33	36	18O2-PFHxS	403.0 > 102.6	2.04e3	5.61e3	1.0000	0.353	4.14	4.09	4.54	12.872	103.0
34	37	13C2-6:2 FTS	429.1 > 408.9	4.42e3	2.37e4	1.0000	0.285	4.46	4.41	2.34	8.211	65.7
35	38	13C2-PFOA	414.9 > 369.7	2.42e4	2.37e4	1.0000	1.049	4.50	4.46	12.8	12.168	97.3
36	39	13C5-PFNA	468.2 > 422.9	1.96e4	2.30e4	1.0000	0.910	4.94	4.90	10.6	11.698	93.6
37	40	13C8-PFOSA	506.1 > 77.7	5.07e3	2.16e4	1.0000	0.252	5.00	4.95	2.94	11.666	93.3
38	41	13C8-PFOS	507.0 > 79.9	4.58e3	5.60e3	1.0000	0.987	5.02	4.97	10.2	10.347	82.8
39	42	13C2-PFDA	515.1 > 469.9	1.70e4	1.33e4	1.0000	1.311	5.31	5.27	16.0	12.178	97.4
40	43	13C2-8:2 FTS	529.1 > 508.7	1.86e3	2.39e4	1.0000	0.141	5.28	5.24	0.973	6.884	55.1
41	44	d3-N-MeFOSAA	573.3 > 419	7.63e3	2.16e4	1.0000	0.385	5.45	5.41	4.42	11.494	92.0
42	45	d5-N-EtFOSAA	589.3 > 419	9.69e3	2.16e4	1.0000	0.445	5.60	5.56	5.62	12.620	101.0
43	46	13C2-PFUdA	565 > 519.8	1.82e4	2.16e4	1.0000	1.014	5.62	5.58	10.5	10.394	83.2
44	47	13C2-PFDoA	615.0 > 569.7	1.75e4	2.16e4	1.0000	0.575	5.91	5.86	10.2	17.660	141.3
45	48	d3-N-MeFOSA	515.2 > 168.9	3.58e4	2.16e4	1.0000	0.130	5.87	5.89	20.8	159.281	106.2
46	49	13C2-PFTeDA	714.8 > 669.6	8.49e3	2.16e4	1.0000	0.305	6.35	6.31	4.92	16.120	129.0
47	50	d5-N-ETFOSA	531.1 > 168.9	4.79e4	2.16e4	1.0000	0.192	6.25	6.23	27.8	144.573	96.4
48	51	13C2-PFHxDA	815 > 769.7	4.86e3	2.16e4	1.0000	0.587	6.64	6.60	2.82	4.797	95.9
49	52	d7-N-MeFOSE	623.1 > 58.9	4.92e4	2.16e4	1.0000	0.163	6.31	6.30	28.5	175.546	117.0
50	53	d9-N-EtFOSE	639.2 > 58.8	5.26e4	2.16e4	1.0000	0.178	6.45	6.45	30.5	170.926	114.0
51	54	13C4-PFBA	217. > 171.8	2.32e4	2.32e4	1.0000	1.000	1.64	1.60	12.5	12.500	100.0
52	55	13C5-PFHxA	318 > 272.9	2.39e4	2.39e4	1.0000	1.000	3.36	3.33	12.5	12.500	100.0
53	56	13C3-PFHxS	401.9 > 79.9	5.61e3	5.61e3	1.0000	1.000	4.14	4.09	12.5	12.500	100.0
54	57	13C8-PFOA	421.3 > 376	2.37e4	2.37e4	1.0000	1.000	4.50	4.46	12.5	12.500	100.0
55	58	13C9-PFNA	472.2 > 426.9	2.30e4	2.30e4	1.0000	1.000	4.94	4.90	12.5	12.500	100.0
56	59	13C4-PFOS	503 > 79.9	5.60e3	5.60e3	1.0000	1.000	5.02	4.97	12.5	12.500	100.0
57	60	13C6-PFDA	519.1 > 473.7	1.33e4	1.33e4	1.0000	1.000	5.31	5.27	12.5	12.500	100.0
58	61	13C7-PFUdA	570.1 > 524.8	2.16e4	2.16e4	1.0000	1.000	5.62	5.59	12.5	12.500	100.0



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Last Altered: Monday, January 15, 2018 14:09:43 Pacific Standard Time
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Compound name: PFBA

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2	180115M1_4	ST180115M1-1 PFC CS0 18A0808	15-Jan-18	11:08:28
3	180115M1_5	IPA	15-Jan-18	11:19:52
4	180115M1_6	1701954-01@5X WURTS_MSPTS_Eff-17121...	15-Jan-18	11:31:19
5	180115M1_7	1701954-02@5X WURTS_Outfall002-171214 ...	15-Jan-18	11:42:46
6	180115M1_8	B7L0188-MS1@10X Matrix Spike 0.24896	15-Jan-18	11:54:15
7	180115M1_9	B7L0188-MSD1@10X Matrix Spike Dup 0.237...	15-Jan-18	12:06:04
8	180115M1_10	1701970-03@10X SA-MW132S-20171214 0....	15-Jan-18	12:17:55
9	180115M1_11	1701970-05@10X SA-MW132I-20171214 0.2...	15-Jan-18	12:29:46
10	180115M1_12	IPA	15-Jan-18	12:41:37
11	180115M1_13	1701970-06 FT-PZ459S-20171214 0.25318	15-Jan-18	12:53:04
12	180115M1_14	B7L0218-BS1 OPR 0.25	15-Jan-18	13:04:31
13	180115M1_15	B7L0218-BLK1 Method Blank 0.25	15-Jan-18	13:15:58
14	180115M1_16	IPA	15-Jan-18	13:27:32
15	180115M1_17	ST180115M1-2 PFC CS3 18A0811	15-Jan-18	13:39:00
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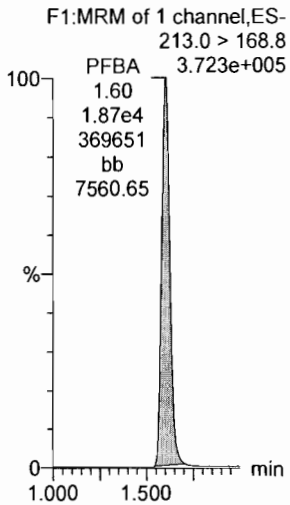
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Printed: Monday, January 15, 2018 13:50:51 Pacific Standard Time

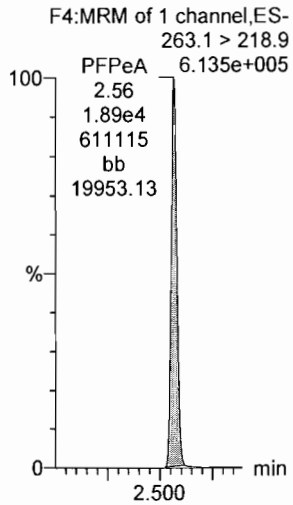
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Name: 180115M1_17, Date: 15-Jan-2018, Time: 13:39:00, ID: ST180115M1-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

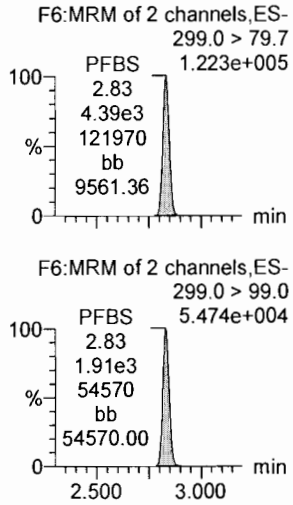
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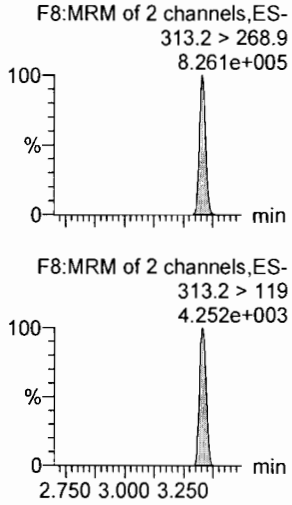
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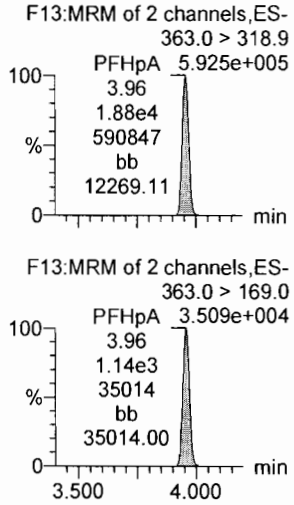
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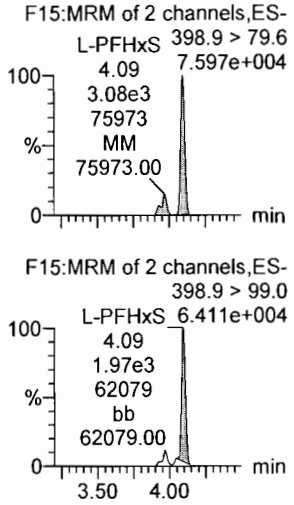
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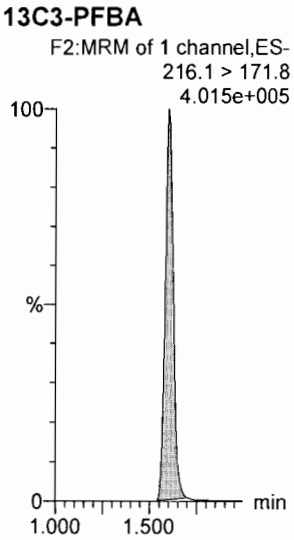
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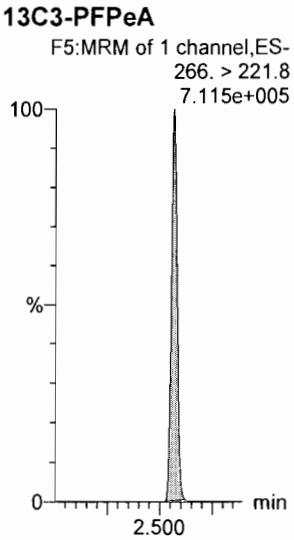
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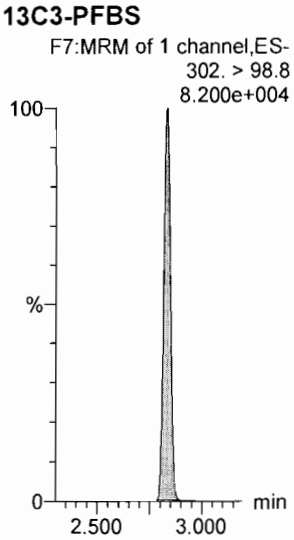
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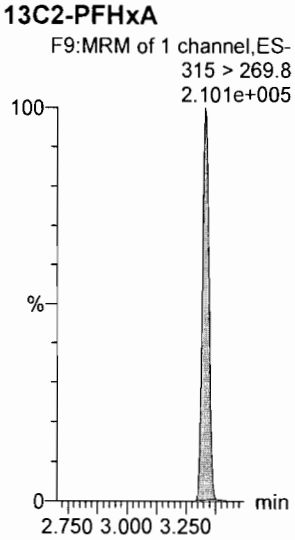
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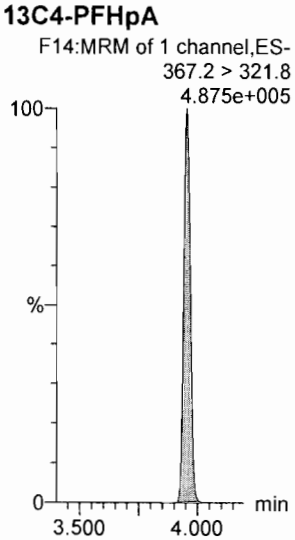
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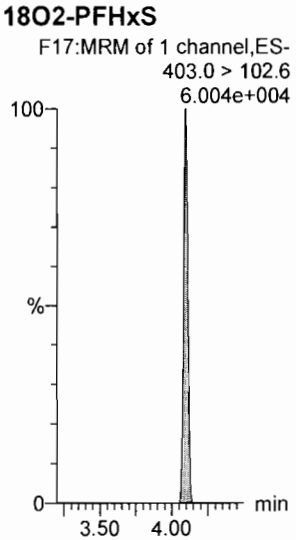
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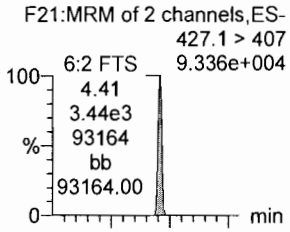


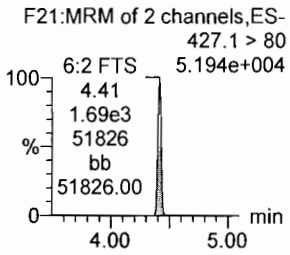
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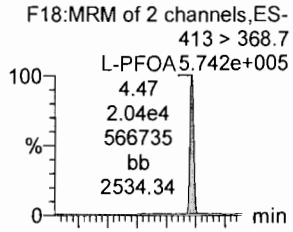
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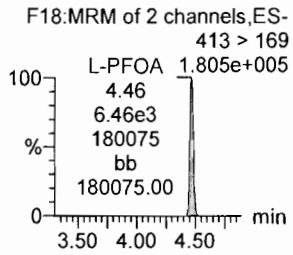
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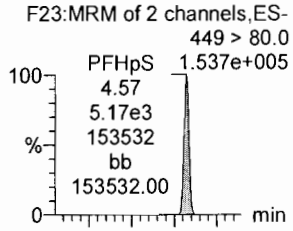


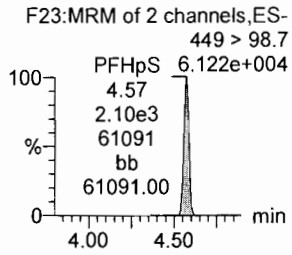
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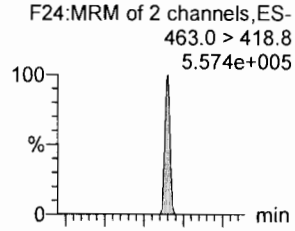


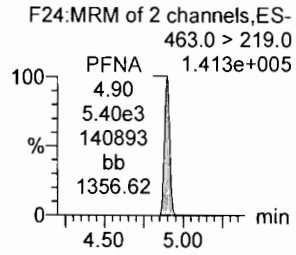
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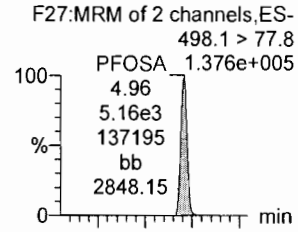


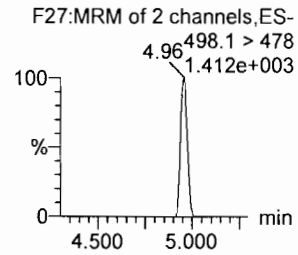
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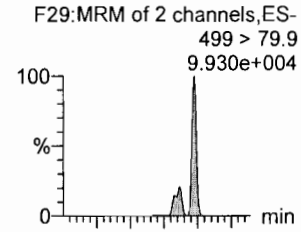


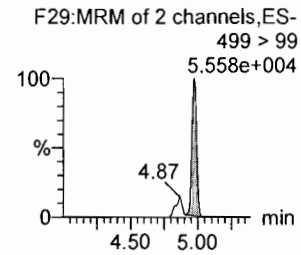
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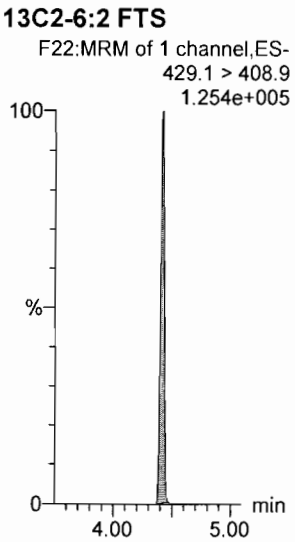


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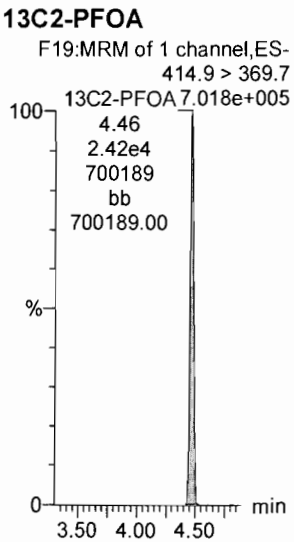




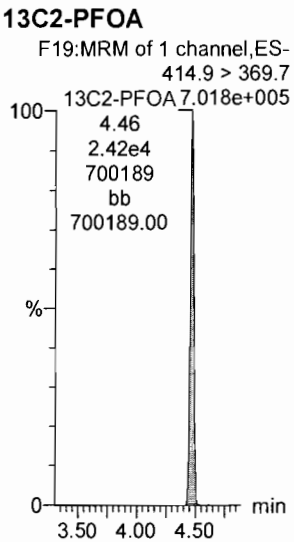
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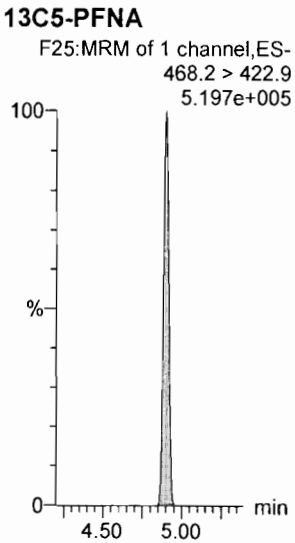
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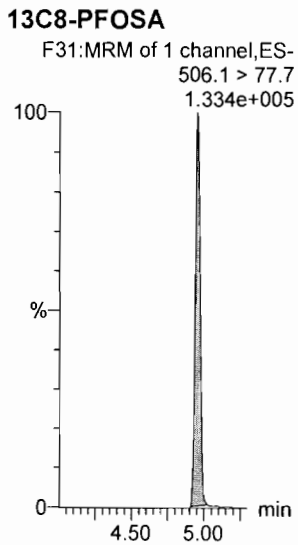
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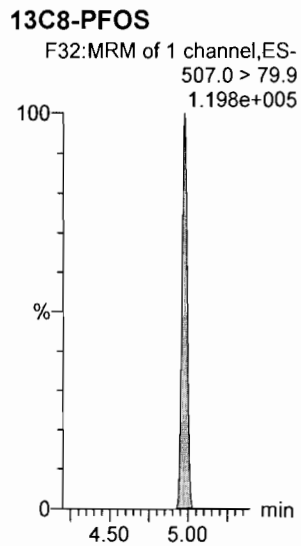
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13C8-PFOSA



13C8-PFOS

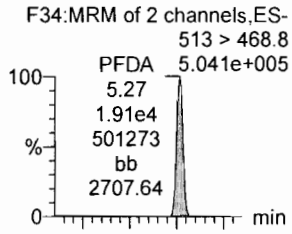


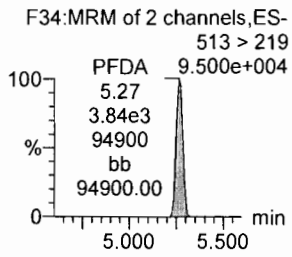
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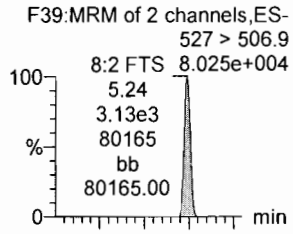
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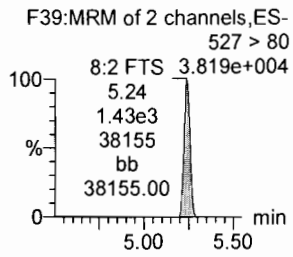
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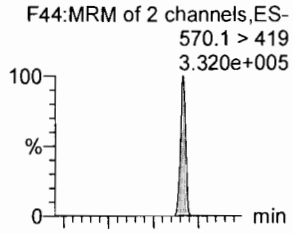


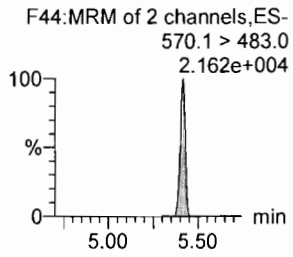
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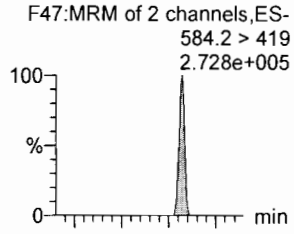


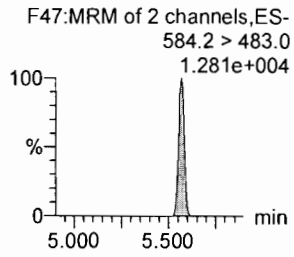
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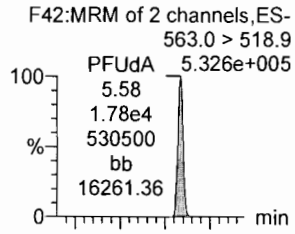


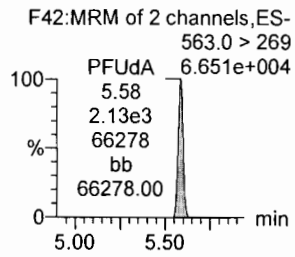
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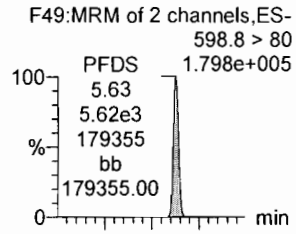


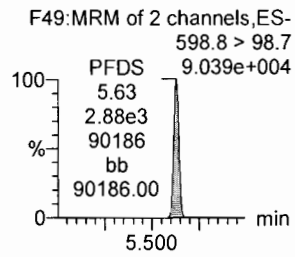
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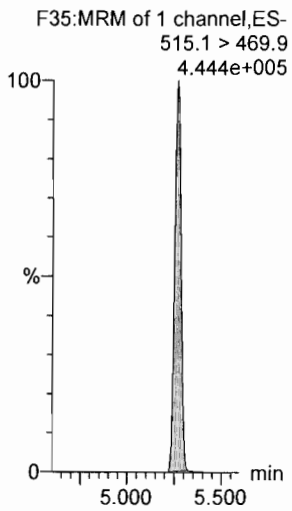


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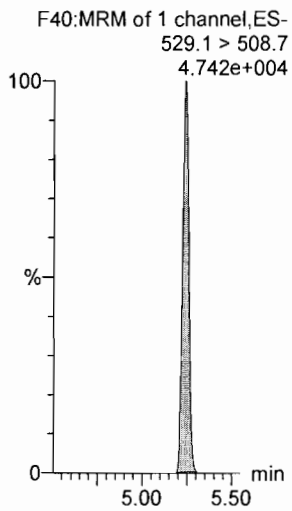




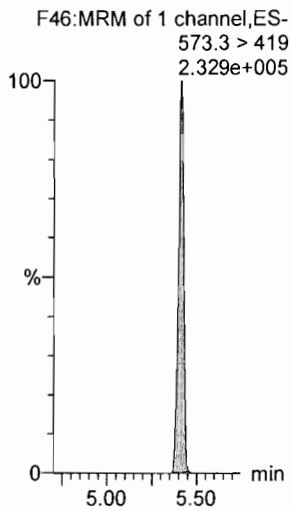
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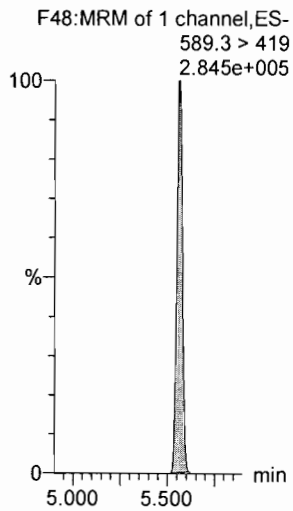
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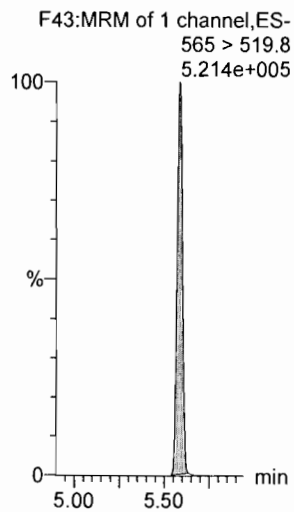
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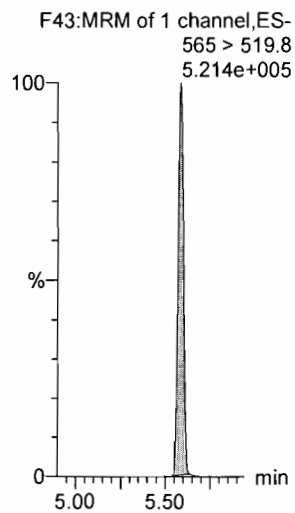
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13C2-PFUdA



13C2-PFUdA



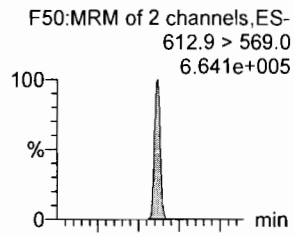
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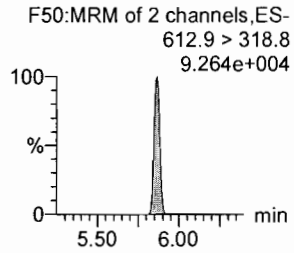
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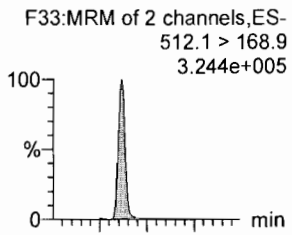
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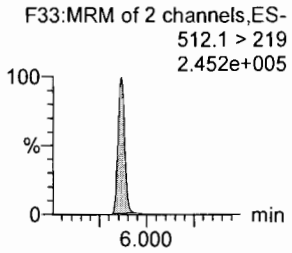
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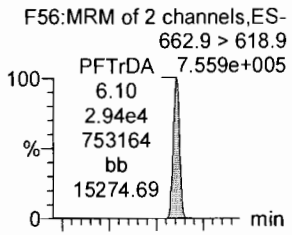


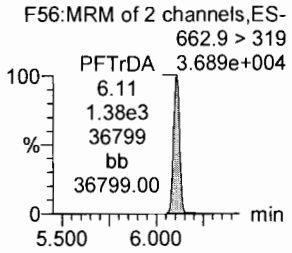
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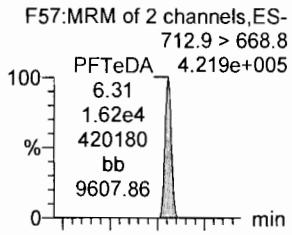


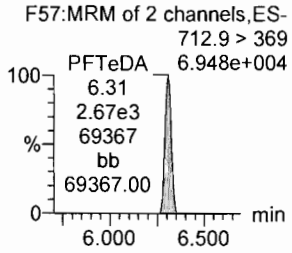
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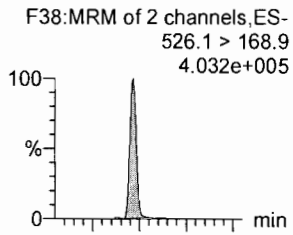


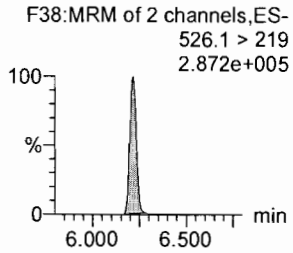
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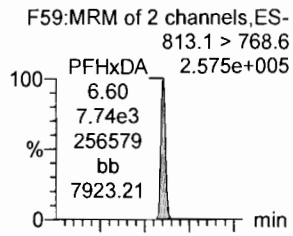


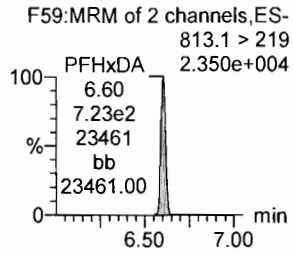
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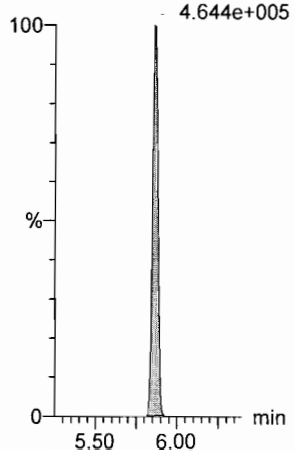


PFHxDA

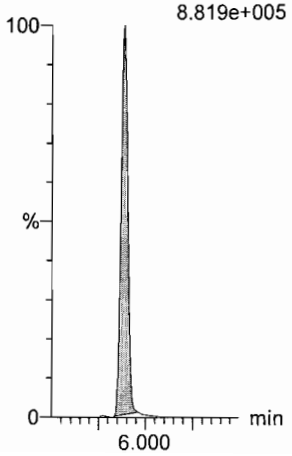




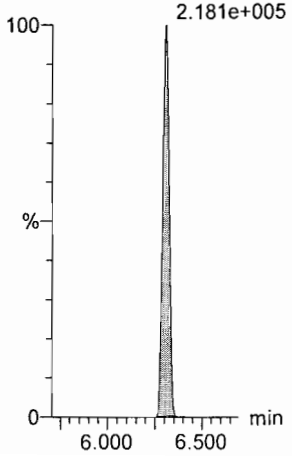
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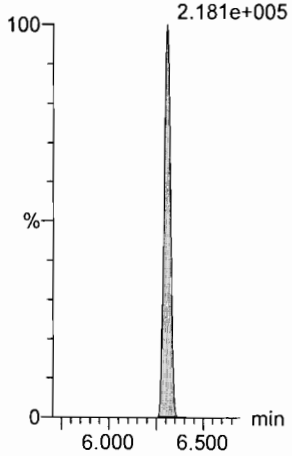
d3-N-MeFOSA



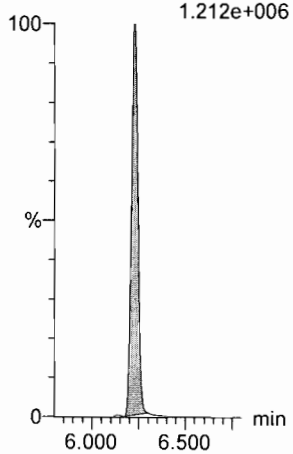
13C2-PFTeDA



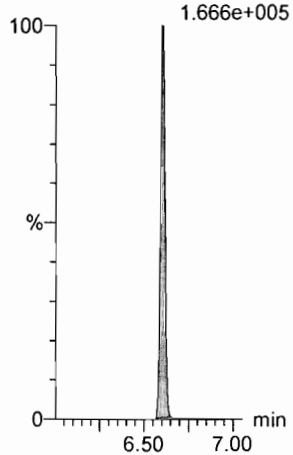
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA

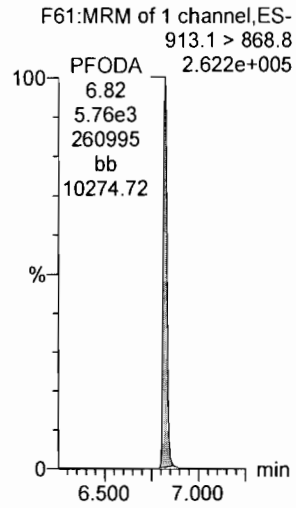


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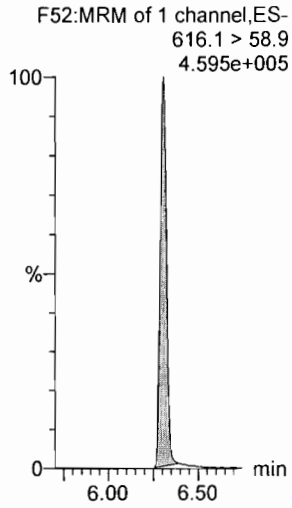
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Name: 180115M1_17, Date: 15-Jan-2018, Time: 13:39:00, ID: ST180115M1-2 PFC CS3 18A0811, Description: PFC CS3 18A0811

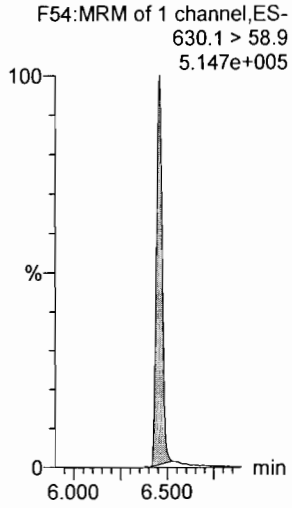
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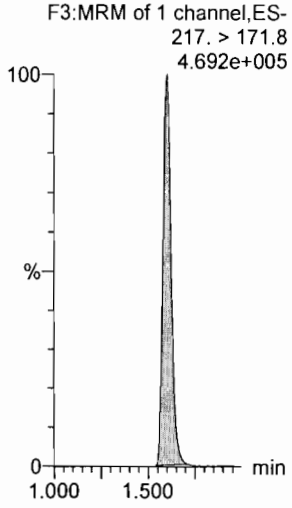
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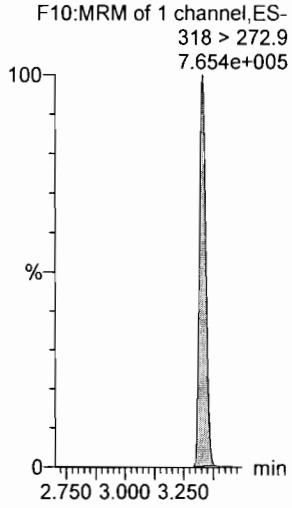
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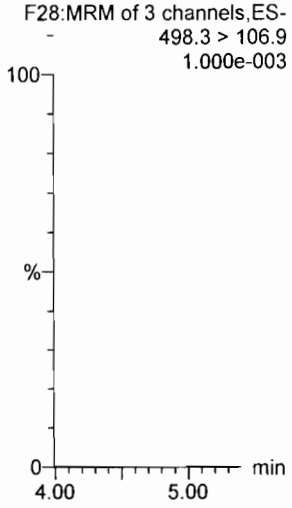
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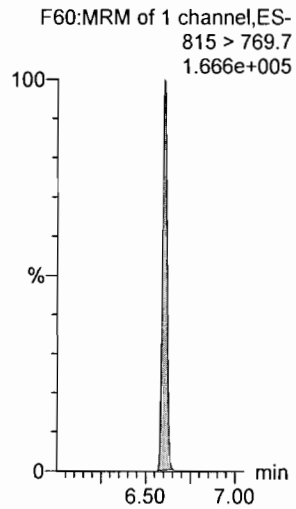
13C5-PFHxA



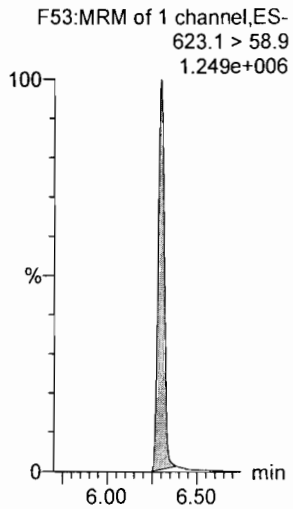
TCDA



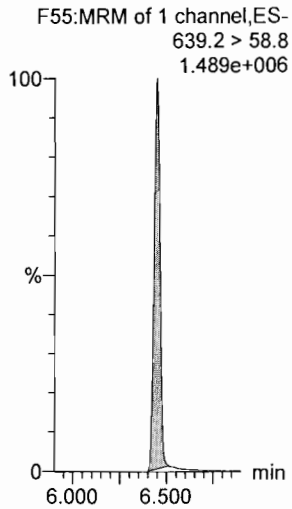
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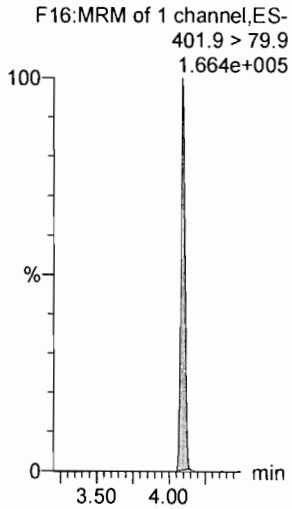
d7-N-MeFOSE



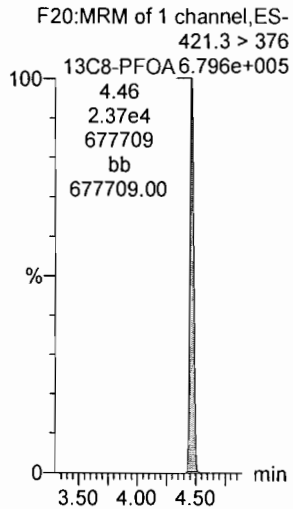
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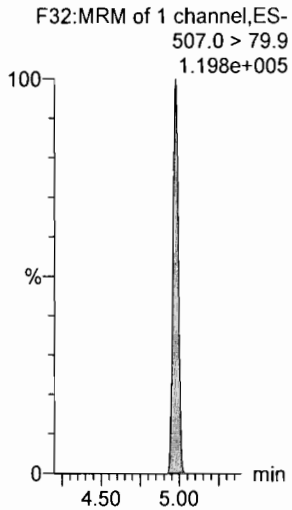
13C3-PFHxS



13C8-PFOA



13C8-PFOS

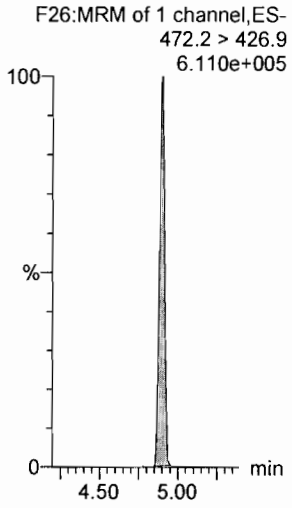


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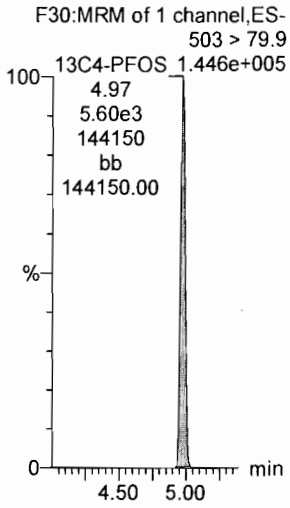
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Printed: Monday, January 15, 2018 13:50:51 Pacific Standard Time

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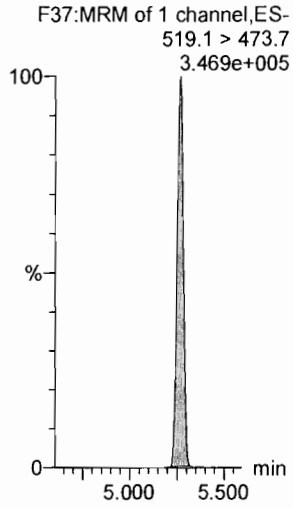
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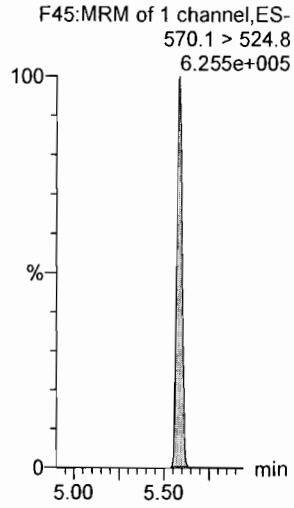
13C4-PFOS



13C6-PFDA



13C7-PFUdA



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

INITIAL CALIBRATION VERIFICATION (ICV) AND INSTRUMENT BLANK (IB)

Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 11:01:39 Pacific Standard Time
Printed: Tuesday, January 09, 2018 11:04:55 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:00:24
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

AC 1/9/18

vjm. 01/09/2018

Compound name: PFBA
Correlation coefficient: r = 0.999967, r^2 = 0.999934
Calibration curve: 1.22331 * x + 0.0281333
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: Linear, 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	180108M2_1	Standard	0.250	1.40	140.219	5421.656	0.323	0.2	-3.5	NO	1.000	NO	bb
2	2	180108M2_2	Standard	0.500	1.40	256.653	5148.906	0.623	0.5	-2.7	NO	1.000	NO	bb
3	3	180108M2_3	Standard	1.000	1.40	531.473	4932.306	1.347	1.1	7.8	NO	1.000	NO	bb
4	4	180108M2_4	Standard	2.000	1.38	1000.482	4914.914	2.545	2.1	2.9	NO	1.000	NO	bb
5	5	180108M2_5	Standard	5.000	1.39	2525.896	4985.861	6.333	5.2	3.1	NO	1.000	NO	bb
6	6	180108M2_6	Standard	10.000	1.38	4825.920	4878.047	12.366	10.1	0.9	NO	1.000	NO	bb
7	7	180108M2_7	Standard	50.000	1.40	24726.824	4988.706	61.957	50.6	1.2	NO	1.000	NO	bb
8	8	180108M2_8	Standard	100.000	1.39	49272.195	5035.588	122.310	100.0	-0.0	NO	1.000	NO	bb
9	9	180108M2_9	Standard	250.000	1.39	117892.859	4836.269	304.710	249.1	-0.4	NO	1.000	NO	bb

Compound name: PFPeA
Correlation coefficient: r = 0.999798, r^2 = 0.999596
Calibration curve: 1.03541 * x + 0.0388149
Response type: Internal Std (Ref 32), 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	180108M2_1	Standard	0.250	2.38	150.442	6375.317	0.295	0.2	-1.0	NO	1.000	NO	bb
2	2	180108M2_2	Standard	0.500	2.37	265.996	6104.348	0.545	0.5	-2.3	NO	1.000	NO	bb
3	3	180108M2_3	Standard	1.000	2.37	495.885	6019.830	1.030	1.0	-4.3	NO	1.000	NO	bb
4	4	180108M2_4	Standard	2.000	2.37	960.228	5682.090	2.112	2.0	0.1	NO	1.000	NO	bb
5	5	180108M2_5	Standard	5.000	2.37	2613.014	5783.457	5.648	5.4	8.3	NO	1.000	NO	bb
6	6	180108M2_6	Standard	10.000	2.38	5034.683	5870.812	10.720	10.3	3.2	NO	1.000	NO	bb
7	7	180108M2_7	Standard	50.000	2.37	24324.768	6069.888	50.093	48.3	-3.3	NO	1.000	NO	bb
8	8	180108M2_8	Standard	100.000	2.37	49113.207	6035.441	101.718	98.2	-1.8	NO	1.000	NO	bb
9	9	180108M2_9	Standard	250.000	2.38	118905.234	5678.038	261.766	252.8	1.1	NO	1.000	NO	bb

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
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Compound name: PFBS
Coefficient of Determination: R^2 = 0.999606
Calibration curve: -0.000599766 * x^2 + 1.8097 * x + 0.0208083
Response type: Internal Std (Ref 33), 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	180108M2_1	Standard	0.250	2.66	31.633	901.633	0.439	0.2	-7.7	NO	1.000	NO	MM
2	2	180108M2_2	Standard	0.500	2.67	53.694	780.723	0.860	0.5	-7.3	NO	1.000	NO	MM
3	3	180108M2_3	Standard	1.000	2.66	119.765	793.617	1.886	1.0	3.1	NO	1.000	NO	bb
4	4	180108M2_4	Standard	2.000	2.66	216.249	719.272	3.758	2.1	3.3	NO	1.000	NO	bb
5	5	180108M2_5	Standard	5.000	2.66	585.880	802.128	9.130	5.0	0.8	NO	1.000	NO	bb
6	6	180108M2_6	Standard	10.000	2.66	1168.190	734.016	19.894	11.0	10.2	NO	1.000	NO	bb
7	7	180108M2_7	Standard	50.000	2.66	5540.697	798.379	86.749	48.7	-2.6	NO	1.000	NO	bb
8	8	180108M2_8	Standard	100.000	2.66	11576.460	827.757	174.817	99.9	-0.1	NO	1.000	NO	bb
9	9	180108M2_9	Standard	250.000	2.66	27990.365	842.256	415.408	250.3	0.1	NO	1.000	NO	bb

Compound name: PFHxA
Correlation coefficient: r = 0.998889, r^2 = 0.997780
Calibration curve: 1.78409 * x + 0.0832728
Response type: Internal Std (Ref 34), 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	180108M2_1	Standard	0.250	3.16	205.733	2042.621	0.504	0.2	-5.8	NO	0.998	NO	bb
2	2	180108M2_2	Standard	0.500	3.16	293.136	1997.844	0.734	0.4	-27.1	NO	0.998	NO	bb
3	3	180108M2_3	Standard	1.000	3.16	678.072	1504.849	2.253	1.2	21.6	NO	0.998	NO	bb
4	4	180108M2_4	Standard	2.000	3.15	1267.859	1784.322	3.553	1.9	-2.8	NO	0.998	NO	bb
5	5	180108M2_5	Standard	5.000	3.16	3300.700	1566.294	10.537	5.9	17.2	NO	0.998	NO	bb
6	6	180108M2_6	Standard	10.000	3.16	6382.049	1928.407	16.547	9.2	-7.7	NO	0.998	NO	bb
7	7	180108M2_7	Standard	50.000	3.15	32718.494	1816.175	90.075	50.4	0.9	NO	0.998	NO	bb
8	8	180108M2_8	Standard	100.000	3.16	69676.555	1833.573	190.002	106.5	6.5	NO	0.998	NO	bb
9	9	180108M2_9	Standard	250.000	3.16	155944.781	1798.127	433.631	243.0	-2.8	NO	0.998	NO	bb

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
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Compound name: PFHpA
Correlation coefficient: r = 0.999489, r^2 = 0.998978
Calibration curve: 1.3149 * x + 0.0511636
Response type: Internal Std (Ref 35), 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	180108M2_1	Standard	0.250	3.78	155.674	5414.999	0.359	0.2	-6.2	NO	0.999	NO	bb
2	2	180108M2_2	Standard	0.500	3.78	273.657	5009.782	0.683	0.5	-3.9	NO	0.999	NO	bb
3	3	180108M2_3	Standard	1.000	3.79	548.432	4940.721	1.388	1.0	1.6	NO	0.999	NO	bb
4	4	180108M2_4	Standard	2.000	3.78	1043.030	4921.333	2.649	2.0	-1.2	NO	0.999	NO	bb
5	5	180108M2_5	Standard	5.000	3.79	2600.337	4584.273	7.090	5.4	7.1	NO	0.999	NO	bb
6	6	180108M2_6	Standard	10.000	3.79	5583.662	5113.555	13.649	10.3	3.4	NO	0.999	NO	bb
7	7	180108M2_7	Standard	50.000	3.79	24602.594	4882.781	62.983	47.9	-4.3	NO	0.999	NO	bb
8	8	180108M2_8	Standard	100.000	3.78	55644.352	5040.603	137.990	104.9	4.9	NO	0.999	NO	bb
9	9	180108M2_9	Standard	250.000	3.78	124284.461	4790.760	324.282	246.6	-1.4	NO	0.999	NO	bb

Compound name: L-PFHxS
Correlation coefficient: r = 0.995697, r^2 = 0.991413
Calibration curve: 1.8737 * x + -0.0422348
Response type: Internal Std (Ref 36), 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	180108M2_1	Standard	0.250	3.94	26.821	696.989	0.481	0.3	11.7	NO	0.991	NO	MM
2	2	180108M2_2	Standard	0.500	3.94	42.983	653.624	0.822	0.5	-7.7	NO	0.991	NO	MM
3	3	180108M2_3	Standard	1.000	3.94	76.208	645.994	1.475	0.8	-19.0	NO	0.991	NO	MM
4	4	180108M2_4	Standard	2.000	3.94	164.780	565.362	3.643	2.0	-1.7	NO	0.991	NO	MM
5	5	180108M2_5	Standard	5.000	3.94	474.756	594.729	9.978	5.3	7.0	NO	0.991	NO	MM
6	6	180108M2_6	Standard	10.000	3.94	981.918	567.584	21.625	11.6	15.6	NO	0.991	NO	MM
7	7	180108M2_7	Standard	50.000	3.94	4146.473	661.442	78.360	41.8	-16.3	NO	0.991	NO	MM
8	8	180108M2_8	Standard	100.000	3.94	10111.005	596.469	211.893	113.1	13.1	NO	0.991	NO	MM
9	9	180108M2_9	Standard	250.000	3.93	23064.850	632.321	455.956	243.4	-2.7	NO	0.991	NO	MM

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
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Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999081
Calibration curve: -0.00157359 * x^2 + 2.95364 * x + -0.577616
Response type: Internal Std (Ref 36), 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	180108M2_1	Standard	0.250	4.25	18.139	696.989	0.325	0.3	22.3	NO	0.999	NO	MM
2	2	180108M2_2	Standard	0.500	4.25	40.748	653.624	0.779	0.5	-8.1	NO	0.999	NO	MM
3	3	180108M2_3	Standard	1.000	4.25	112.094	645.994	2.169	0.9	-7.0	NO	0.999	NO	bb
4	4	180108M2_4	Standard	2.000	4.25	210.030	565.362	4.644	1.8	-11.5	NO	0.999	NO	bb
5	5	180108M2_5	Standard	5.000	4.25	615.528	594.729	12.937	4.6	-8.3	NO	0.999	NO	bb
6	6	180108M2_6	Standard	10.000	4.25	1499.385	567.584	33.021	11.4	14.5	NO	0.999	NO	bb
7	7	180108M2_7	Standard	50.000	4.25	7414.825	661.442	140.126	48.9	-2.2	NO	0.999	NO	bb
8	8	180108M2_8	Standard	100.000	4.25	13348.014	596.469	279.730	100.3	0.3	NO	0.999	NO	bb
9	9	180108M2_9	Standard	250.000	4.26	32358.711	632.321	639.681	250.1	0.0	NO	0.999	NO	bb

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999388
Calibration curve: -0.000543136 * x^2 + 1.10702 * x + -0.0314466
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	180108M2_1	Standard	0.250	4.30	185.402	7680.001	0.302	0.3	20.4	NO	0.999	NO	bb
2	2	180108M2_2	Standard	0.500	4.31	290.974	7463.181	0.487	0.5	-6.2	NO	0.999	NO	bb
3	3	180108M2_3	Standard	1.000	4.31	567.037	6769.833	1.047	1.0	-2.5	NO	0.999	NO	bb
4	4	180108M2_4	Standard	2.000	4.31	1104.425	6848.200	2.016	1.9	-7.4	NO	0.999	NO	bb
5	5	180108M2_5	Standard	5.000	4.31	3029.714	6918.426	5.474	5.0	-0.3	NO	0.999	NO	bd
6	6	180108M2_6	Standard	10.000	4.31	5695.452	6690.408	10.641	9.7	-3.1	NO	0.999	NO	bb
7	7	180108M2_7	Standard	50.000	4.31	30576.039	7359.498	51.933	48.1	-3.9	NO	0.999	NO	bb
8	8	180108M2_8	Standard	100.000	4.31	59395.477	6823.860	108.801	103.6	3.6	NO	0.999	NO	bb
9	9	180108M2_9	Standard	250.000	4.31	134745.281	6966.522	241.773	248.8	-0.5	NO	0.999	NO	bb

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Compound name: PFHpS
Coefficient of Determination: R^2 = 0.996689
Calibration curve: -0.000165057 * x^2 + 0.285225 * x + -0.00427398
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	180108M2_1	Standard	0.250	4.43	49.748	7680.001	0.081	0.3	19.6	NO	0.997	NO	MM
2	2	180108M2_2	Standard	0.500	4.42	74.957	7463.181	0.126	0.5	-8.9	NO	0.997	NO	bb
3	3	180108M2_3	Standard	1.000	4.42	152.002	6769.833	0.281	1.0	-0.0	NO	0.997	NO	bb
4	4	180108M2_4	Standard	2.000	4.42	294.211	6848.200	0.537	1.9	-5.0	NO	0.997	NO	bb
5	5	180108M2_5	Standard	5.000	4.42	689.956	6918.426	1.247	4.4	-12.1	NO	0.997	NO	bb
6	6	180108M2_6	Standard	10.000	4.42	1682.735	6690.408	3.144	11.1	11.1	NO	0.997	NO	bb
7	7	180108M2_7	Standard	50.000	4.42	7310.031	7359.498	12.416	44.7	-10.6	NO	0.997	NO	bb
8	8	180108M2_8	Standard	100.000	4.42	15611.387	6823.860	28.597	106.9	6.9	NO	0.997	NO	bb
9	9	180108M2_9	Standard	250.000	4.42	33757.578	6966.522	60.571	248.0	-0.8	NO	0.997	NO	bb

Compound name: PFNA
Coefficient of Determination: R^2 = 0.998437
Calibration curve: -0.000150178 * x^2 + 1.25742 * x + 0.0556715
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	180108M2_1	Standard	0.250	4.76	188.063	7374.425	0.319	0.2	-16.3	NO	0.998	NO	bb
2	2	180108M2_2	Standard	0.500	4.75	319.351	6571.582	0.607	0.4	-12.2	NO	0.998	NO	bb
3	3	180108M2_3	Standard	1.000	4.75	735.597	6323.052	1.454	1.1	11.2	NO	0.998	NO	bb
4	4	180108M2_4	Standard	2.000	4.75	1515.261	6955.373	2.723	2.1	6.1	NO	0.998	NO	bb
5	5	180108M2_5	Standard	5.000	4.74	3258.180	6693.576	6.085	4.8	-4.1	NO	0.998	NO	bb
6	6	180108M2_6	Standard	10.000	4.75	7381.203	6317.911	14.604	11.6	15.9	NO	0.998	NO	bb
7	7	180108M2_7	Standard	50.000	4.75	34162.758	6580.284	64.896	51.9	3.8	NO	0.998	NO	bb
8	8	180108M2_8	Standard	100.000	4.75	61589.027	6517.125	118.129	95.0	-5.0	NO	0.998	NO	bb
9	9	180108M2_9	Standard	250.000	4.75	153687.344	6258.695	306.948	251.6	0.7	NO	0.998	NO	bb

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Compound name: PFOSA
Correlation coefficient: r = 0.999164, r^2 = 0.998330
Calibration curve: 1.02264 * x + 0.0909234
Response type: Internal Std (Ref 40), 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	180108M2_1	Standard	0.250	4.81	46.665	1673.129	0.349	0.3	0.8	NO	0.998	NO	MM
2	2	180108M2_2	Standard	0.500	4.80	82.106	1705.965	0.602	0.5	-0.1	NO	0.998	NO	bb
3	3	180108M2_3	Standard	1.000	4.80	133.908	1588.310	1.054	0.9	-5.8	NO	0.998	NO	bb
4	4	180108M2_4	Standard	2.000	4.80	267.939	1551.102	2.159	2.0	1.1	NO	0.998	NO	bb
5	5	180108M2_5	Standard	5.000	4.80	620.241	1640.265	4.727	4.5	-9.3	NO	0.998	NO	bb
6	6	180108M2_6	Standard	10.000	4.80	1368.009	1537.842	11.120	10.8	7.8	NO	0.998	NO	bb
7	7	180108M2_7	Standard	50.000	4.80	6024.011	1429.944	52.660	51.4	2.8	NO	0.998	NO	bb
8	8	180108M2_8	Standard	100.000	4.80	14349.161	1658.699	108.136	105.7	5.7	NO	0.998	NO	bb
9	9	180108M2_9	Standard	250.000	4.80	30294.068	1525.414	248.245	242.7	-2.9	NO	0.998	NO	bb

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999512
Calibration curve: 0.00104467 * x^2 + 0.937739 * x + 0.0262871
Response type: Internal Std (Ref 41), 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	180108M2_1	Standard	0.250	4.84	38.985	1908.927	0.255	0.2	-2.3	NO	1.000	NO	MM
2	2	180108M2_2	Standard	0.500	4.84	54.094	1634.129	0.414	0.4	-17.4	NO	1.000	NO	MM
3	3	180108M2_3	Standard	1.000	4.84	141.295	1764.111	1.001	1.0	3.8	NO	1.000	NO	MM
4	4	180108M2_4	Standard	2.000	4.84	309.452	1611.551	2.400	2.5	26.2	NO	1.000	NO	MM
5	5	180108M2_5	Standard	5.000	4.84	662.993	1605.801	5.161	5.4	8.9	NO	1.000	NO	MM
6	6	180108M2_6	Standard	10.000	4.84	1252.061	1798.805	8.701	9.2	-8.4	NO	1.000	NO	MM
7	7	180108M2_7	Standard	50.000	4.83	6975.202	1738.847	50.142	50.6	1.2	NO	1.000	NO	MM
8	8	180108M2_8	Standard	100.000	4.83	15172.415	1836.009	103.298	99.2	-0.8	NO	1.000	NO	MM
9	9	180108M2_9	Standard	250.000	4.83	38143.273	1589.150	300.029	250.2	0.1	NO	1.000	NO	MM

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Compound name: PFDA
Coefficient of Determination: R^2 = 0.999649
Calibration curve: 0.00721614 * x^2 + 1.35715 * x + 0.231309
Response type: Internal Std (Ref 42), 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	180108M2_1	Standard	0.250	5.12	188.925	7175.434	0.329	0.1	-71.2	NO	1.000	NO	bbX
2	2	180108M2_2	Standard	0.500	5.12	436.926	5699.016	0.958	0.5	6.8	NO	1.000	NO	bb
3	3	180108M2_3	Standard	1.000	5.13	556.917	4936.802	1.410	0.9	-13.5	NO	1.000	NO	bb
4	4	180108M2_4	Standard	2.000	5.12	1279.798	5072.973	3.153	2.1	6.5	NO	1.000	NO	bb
5	5	180108M2_5	Standard	5.000	5.12	3085.837	5300.490	7.277	5.1	1.1	NO	1.000	NO	bb
6	6	180108M2_6	Standard	10.000	5.13	7323.324	6361.719	14.389	9.9	-0.9	NO	1.000	NO	bb
7	7	180108M2_7	Standard	50.000	5.12	35969.824	5219.420	86.144	50.0	0.0	NO	1.000	NO	bb
8	8	180108M2_8	Standard	100.000	5.12	57238.797	6016.366	118.923	65.0	-35.0	NO	1.000	NO	bbX
9	9	180108M2_9	Standard	250.000	5.12	153095.938	5995.269	319.202	136.3	-45.5	NO	1.000	NO	bbX

Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.992049
Calibration curve: -0.000697314 * x^2 + 0.330805 * x + 0.0126419
Response type: Internal Std (Ref 42), 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	180108M2_1	Standard	0.250	5.10	33.473	7175.434	0.058	0.1	-44.8	NO	0.992	NO	MMX
2	2	180108M2_2	Standard	0.500	5.10	32.340	5699.016	0.071	0.2	-64.7	NO	0.992	NO	MMX
3	3	180108M2_3	Standard	1.000	5.10	162.365	4936.802	0.411	1.2	20.8	NO	0.992	NO	bb
4	4	180108M2_4	Standard	2.000	5.09	192.451	5072.973	0.474	1.4	-30.0	NO	0.992	NO	MM
5	5	180108M2_5	Standard	5.000	5.09	890.347	5300.490	2.100	6.4	27.9	NO	0.992	NO	MM
6	6	180108M2_6	Standard	10.000	5.10	1386.508	6361.719	2.724	8.3	-16.6	NO	0.992	NO	MM
7	7	180108M2_7	Standard	50.000	5.10	6327.175	5219.420	15.153	51.3	2.6	NO	0.992	NO	MM
8	8	180108M2_8	Standard	100.000	5.09	12505.232	6016.366	25.982	99.3	-0.7	NO	0.992	NO	MM
9	9	180108M2_9	Standard	250.000	5.09	27075.176	5995.269	56.451			NO	0.992	NO	bbXI

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Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.997862
Calibration curve: 0.00107656 * x^2 + 1.50945 * x + -0.114518
Response type: Internal Std (Ref 44), 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	180108M2_1	Standard	0.250	5.27	31.185	2179.741	0.179	0.2	-22.3	NO	0.998	NO	MM
2	2	180108M2_2	Standard	0.500	5.29	109.857	2347.936	0.585	0.5	-7.4	NO	0.998	NO	bb
3	3	180108M2_3	Standard	1.000	5.28	241.474	2273.696	1.328	1.0	-4.5	NO	0.998	NO	bb
4	4	180108M2_4	Standard	2.000	5.28	576.328	2227.718	3.234	2.2	10.7	NO	0.998	NO	bb
5	5	180108M2_5	Standard	5.000	5.28	1263.838	2084.842	7.578	5.1	1.6	NO	0.998	NO	bb
6	6	180108M2_6	Standard	10.000	5.28	2522.748	2447.242	12.886	8.6	-14.4	NO	0.998	NO	bb
7	7	180108M2_7	Standard	50.000	5.27	16183.950	2346.581	86.210	55.0	10.1	NO	0.998	NO	bb
8	8	180108M2_8	Standard	100.000	5.28	29162.064	2369.292	153.854	95.5	-4.5	NO	0.998	NO	bb
9	9	180108M2_9	Standard	250.000	5.28	73642.641	2063.598	446.082	250.8	0.3	NO	0.998	NO	bb

Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.998238
Calibration curve: 0.000189045 * x^2 + 1.12021 * x + -0.0858122
Response type: Internal Std (Ref 45), 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	180108M2_1	Standard	0.250	5.43	48.847	3266.731	0.187	0.2	-2.6	NO	0.998	NO	MM
2	2	180108M2_2	Standard	0.500	5.43	113.845	2947.923	0.483	0.5	1.5	NO	0.998	NO	bb
3	3	180108M2_3	Standard	1.000	5.43	177.946	3131.900	0.710	0.7	-28.9	NO	0.998	NO	bb
4	4	180108M2_4	Standard	2.000	5.44	487.925	2854.786	2.136	2.0	-0.8	NO	0.998	NO	bb
5	5	180108M2_5	Standard	5.000	5.43	1271.496	2645.263	6.008	5.4	8.7	NO	0.998	NO	bb
6	6	180108M2_6	Standard	10.000	5.44	1882.207	2439.506	9.644	8.7	-13.3	NO	0.998	NO	bb
7	7	180108M2_7	Standard	50.000	5.44	12148.078	2492.206	60.930	54.0	8.0	NO	0.998	NO	bb
8	8	180108M2_8	Standard	100.000	5.43	24897.744	2830.896	109.938	96.6	-3.4	NO	0.998	NO	bb
9	9	180108M2_9	Standard	250.000	5.43	59388.402	2538.117	292.483	250.6	0.2	NO	0.998	NO	bb

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Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999299
Calibration curve: -0.000683877 * x^2 + 1.1487 * x + 0.0222509
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	180108M2_1	Standard	0.250	5.45	220.755	9211.345	0.300	0.2	-3.4	NO	0.999	NO	bb
2	2	180108M2_2	Standard	0.500	5.45	403.211	7865.505	0.641	0.5	7.7	NO	0.999	NO	bb
3	3	180108M2_3	Standard	1.000	5.45	607.448	7297.886	1.040	0.9	-11.3	NO	0.999	NO	bb
4	4	180108M2_4	Standard	2.000	5.45	1328.595	7154.166	2.321	2.0	0.2	NO	0.999	NO	bb
5	5	180108M2_5	Standard	5.000	5.45	3783.615	7264.995	6.510	5.7	13.3	NO	0.999	NO	bb
6	6	180108M2_6	Standard	10.000	5.45	6378.832	7337.336	10.867	9.5	-5.1	NO	0.999	NO	bb
7	7	180108M2_7	Standard	50.000	5.45	32984.238	7658.917	53.833	48.2	-3.5	NO	0.999	NO	bb
8	8	180108M2_8	Standard	100.000	5.45	68234.914	7723.645	110.432	102.4	2.4	NO	0.999	NO	bb
9	9	180108M2_9	Standard	250.000	5.45	144312.078	7396.208	243.895	249.3	-0.3	NO	0.999	NO	bb

Compound name: PFDS
Coefficient of Determination: R^2 = 0.996998
Calibration curve: -3.67377e-005 * x^2 + 0.286062 * x + -0.00118285
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	180108M2_1	Standard	0.250	5.50	64.173	9211.345	0.087	0.3	23.4	NO	0.997	NO	bb
2	2	180108M2_2	Standard	0.500	5.50	78.678	7865.505	0.125	0.4	-11.7	NO	0.997	NO	bb
3	3	180108M2_3	Standard	1.000	5.50	156.934	7297.886	0.269	0.9	-5.6	NO	0.997	NO	bb
4	4	180108M2_4	Standard	2.000	5.50	241.430	7154.166	0.422	1.5	-26.0	NO	0.997	NO	bb
5	5	180108M2_5	Standard	5.000	5.50	1048.851	7264.995	1.805	6.3	26.4	NO	0.997	NO	bb
6	6	180108M2_6	Standard	10.000	5.50	1641.972	7337.336	2.797	9.8	-2.0	NO	0.997	NO	bb
7	7	180108M2_7	Standard	50.000	5.49	7923.842	7658.917	12.932	45.5	-9.0	NO	0.997	NO	bb
8	8	180108M2_8	Standard	100.000	5.50	18347.066	7723.645	29.693	105.2	5.2	NO	0.997	NO	bb
9	9	180108M2_9	Standard	250.000	5.49	40760.691	7396.208	68.888	248.8	-0.5	NO	0.997	NO	bb

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Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999167
Calibration curve: -0.000912755 * x^2 + 2.22756 * x + -0.0196312
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	180108M2_1	Standard	0.250	5.74	326.506	5809.440	0.703	0.3	29.7	NO	0.999	NO	bb
2	2	180108M2_2	Standard	0.500	5.74	513.021	5204.864	1.232	0.6	12.4	NO	0.999	NO	bb
3	3	180108M2_3	Standard	1.000	5.74	802.971	5167.435	1.942	0.9	-11.9	NO	0.999	NO	bb
4	4	180108M2_4	Standard	2.000	5.74	1414.210	4729.102	3.738	1.7	-15.6	NO	0.999	NO	bb
5	5	180108M2_5	Standard	5.000	5.74	3735.023	4493.960	10.389	4.7	-6.4	NO	0.999	NO	bb
6	6	180108M2_6	Standard	10.000	5.74	8517.583	5436.003	19.586	8.8	-11.7	NO	0.999	NO	bb
7	7	180108M2_7	Standard	50.000	5.73	41659.551	4671.866	111.464	51.1	2.2	NO	0.999	NO	bb
8	8	180108M2_8	Standard	100.000	5.73	74734.195	4309.212	216.786	101.6	1.6	NO	0.999	NO	bb
9	9	180108M2_9	Standard	250.000	5.73	170993.359	4290.298	498.198	249.1	-0.4	NO	0.999	NO	bb

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999911
Calibration curve: -0.000141495 * x^2 + 1.04902 * x + -0.0884394
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	180108M2_1	Standard	1.250	5.74	74.091	10736.360	1.035	1.1	-14.3	NO	1.000	NO	bb
2	2	180108M2_2	Standard	2.500	5.73	190.176	10176.388	2.803	2.8	10.3	NO	1.000	NO	bb
3	3	180108M2_3	Standard	5.000	5.74	314.716	9669.870	4.882	4.7	-5.2	NO	1.000	NO	bb
4	4	180108M2_4	Standard	10.000	5.73	667.265	9594.506	10.432	10.0	0.4	NO	1.000	NO	bb
5	5	180108M2_5	Standard	25.000	5.73	1709.544	9843.879	26.050	25.0	0.0	NO	1.000	NO	bb
6	6	180108M2_6	Standard	50.000	5.74	3431.629	9629.046	53.457	51.4	2.8	NO	1.000	NO	bb
7	7	180108M2_7	Standard	250.000	5.74	16382.230	9808.305	250.536	247.2	-1.1	NO	1.000	NO	bb
8	8	180108M2_8	Standard	500.000	5.73	32998.266	10087.503	490.680	501.8	0.4	NO	1.000	NO	bb
9	9	180108M2_9	Standard	1250.000	5.74	72715.477	10007.245	1089.942	1249.8	-0.0	NO	1.000	NO	bb

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Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.997425
Calibration curve: 0.000610148 * x^2 + 2.40132 * x + -0.112201
Response type: Internal Std (Ref 47), 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	180108M2_1	Standard	0.250	5.99	293.291	5809.440	0.631	0.3	23.8	NO	0.997	NO	bb
2	2	180108M2_2	Standard	0.500	5.98	457.975	5204.864	1.100	0.5	0.9	NO	0.997	NO	bb
3	3	180108M2_3	Standard	1.000	5.98	867.000	5167.435	2.097	0.9	-8.0	NO	0.997	NO	bb
4	4	180108M2_4	Standard	2.000	5.98	1503.044	4729.102	3.973	1.7	-15.0	NO	0.997	NO	bb
5	5	180108M2_5	Standard	5.000	5.98	4254.161	4493.960	11.833	5.0	-0.6	NO	0.997	NO	bb
6	6	180108M2_6	Standard	10.000	5.99	8197.640	5436.003	18.850	7.9	-21.2	NO	0.997	NO	bb
7	7	180108M2_7	Standard	50.000	5.98	43296.430	4671.866	115.844	47.7	-4.6	NO	0.997	NO	bb
8	8	180108M2_8	Standard	100.000	5.98	90732.164	4309.212	263.192	106.8	6.8	NO	0.997	NO	bb
9	9	180108M2_9	Standard	250.000	5.98	217213.594	4290.298	632.863	248.0	-0.8	NO	0.997	NO	bb

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.999467
Calibration curve: -0.00816162 * x^2 + 2.9016 * x + -0.184929
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	180108M2_1	Standard	0.250	6.20	135.700	2658.979	0.638	0.3	13.5	NO	0.999	NO	bb
2	2	180108M2_2	Standard	0.500	6.20	199.242	2105.685	1.183	0.5	-5.6	NO	0.999	NO	bb
3	3	180108M2_3	Standard	1.000	6.20	407.303	2200.929	2.313	0.9	-13.7	NO	0.999	NO	bb
4	4	180108M2_4	Standard	2.000	6.20	968.861	2037.865	5.943	2.1	6.2	NO	0.999	NO	bb
5	5	180108M2_5	Standard	5.000	6.20	2271.701	1960.313	14.486	5.1	2.6	NO	0.999	NO	bb
6	6	180108M2_6	Standard	10.000	6.20	4504.264	2088.984	26.952	9.6	-3.9	NO	0.999	NO	bb
7	7	180108M2_7	Standard	50.000	6.19	25614.570	2546.078	125.755	50.6	1.2	NO	0.999	NO	bb
8	8	180108M2_8	Standard	100.000	6.20	39628.258	2383.667	207.811	99.6	-0.4	NO	0.999	NO	bb
9	9	180108M2_9	Standard	250.000	6.19	105910.969	3236.529	409.045			NO	0.999	NO	bbXI

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999796
Calibration curve: -6.59411e-005 * x^2 + 0.931369 * x + -0.00776819
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	180108M2_1	Standard	1.250	6.14	100.909	14729.266	1.028	1.1	-11.1	NO	1.000	NO	bb
2	2	180108M2_2	Standard	2.500	6.14	273.470	14733.124	2.784	3.0	19.9	NO	1.000	NO	bb
3	3	180108M2_3	Standard	5.000	6.14	385.791	14362.178	4.029	4.3	-13.3	NO	1.000	NO	bb
4	4	180108M2_4	Standard	10.000	6.14	829.201	13792.104	9.018	9.7	-3.0	NO	1.000	NO	bb
5	5	180108M2_5	Standard	25.000	6.14	2301.489	13801.328	25.014	26.9	7.7	NO	1.000	NO	bb
6	6	180108M2_6	Standard	50.000	6.14	4326.133	13949.432	46.519	50.1	0.3	NO	1.000	NO	bb
7	7	180108M2_7	Standard	250.000	6.14	20342.150	13371.583	228.195	249.4	-0.2	NO	1.000	NO	bb
8	8	180108M2_8	Standard	500.000	6.14	41444.328	13885.338	447.713	498.3	-0.3	NO	1.000	NO	bb
9	9	180108M2_9	Standard	1250.000	6.14	95642.547	13511.020	1061.828	1250.9	0.1	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998105
Calibration curve: -0.000711813 * x^2 + 0.785431 * x + 0.0721835
Response type: Internal Std (Ref 51), 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	180108M2_1	Standard	0.250	6.52	76.406	1507.392	0.253	0.2	-7.7	NO	0.998	NO	bb
2	2	180108M2_2	Standard	0.500	6.52	129.194	1466.993	0.440	0.5	-6.2	NO	0.998	NO	bb
3	3	180108M2_3	Standard	1.000	6.52	262.892	1450.641	0.906	1.1	6.3	NO	0.998	NO	bb
4	4	180108M2_4	Standard	2.000	6.51	460.339	1443.935	1.594	1.9	-2.9	NO	0.998	NO	bb
5	5	180108M2_5	Standard	5.000	6.51	1268.009	1407.920	4.503	5.7	13.4	NO	0.998	NO	bb
6	6	180108M2_6	Standard	10.000	6.52	2262.868	1420.926	7.963	10.1	1.4	NO	0.998	NO	bb
7	7	180108M2_7	Standard	50.000	6.51	11734.237	1697.693	34.559	45.8	-8.4	NO	0.998	NO	bb
8	8	180108M2_8	Standard	100.000	6.52	23396.363	1569.380	74.540	104.8	4.8	NO	0.998	NO	bb
9	9	180108M2_9	Standard	250.000	6.51	53821.215	1778.498	151.311	248.5	-0.6	NO	0.998	NO	bb

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Compound name: PFODA
Coefficient of Determination: R^2 = 0.999722
Calibration curve: -0.000640041 * x^2 + 0.818714 * x + 0.044611
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	180108M2_1	Standard	0.250	6.74	82.211	1507.392	0.273	0.3	11.5	NO	1.000	NO	bb
2	2	180108M2_2	Standard	0.500	6.74	133.225	1466.993	0.454	0.5	0.1	NO	1.000	NO	bb
3	3	180108M2_3	Standard	1.000	6.75	261.922	1450.641	0.903	1.0	4.9	NO	1.000	NO	bb
4	4	180108M2_4	Standard	2.000	6.74	492.707	1443.935	1.706	2.0	1.6	NO	1.000	NO	bb
5	5	180108M2_5	Standard	5.000	6.75	1172.789	1407.920	4.165	5.1	1.1	NO	1.000	NO	bb
6	6	180108M2_6	Standard	10.000	6.75	2429.749	1420.926	8.550	10.5	4.7	NO	1.000	NO	bb
7	7	180108M2_7	Standard	50.000	6.74	12989.005	1697.693	38.255	48.5	-3.0	NO	1.000	NO	bd
8	8	180108M2_8	Standard	100.000	6.74	23912.545	1569.380	76.185	101.0	1.0	NO	1.000	NO	bb
9	9	180108M2_9	Standard	250.000	6.74	58570.027	1778.498	164.661	249.9	-0.0	NO	1.000	NO	bb

Compound name: N-MeFOSE
Coefficient of Determination: R^2 = 0.999839
Calibration curve: -2.99189e-005 * x^2 + 1.03784 * x + -0.734823
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	180108M2_1	Standard	1.250	6.32	128.432	12179.248	1.582	2.2	78.6	NO	1.000	NO	bbX
2	2	180108M2_2	Standard	2.500	6.33	156.340	14910.501	1.573	2.2	-11.1	NO	1.000	NO	bb
3	3	180108M2_3	Standard	5.000	6.32	392.112	12366.465	4.756	5.3	5.8	NO	1.000	NO	bb
4	4	180108M2_4	Standard	10.000	6.32	738.470	11619.512	9.533	9.9	-1.0	NO	1.000	NO	bb
5	5	180108M2_5	Standard	25.000	6.32	2282.889	12417.822	27.576	27.3	9.2	NO	1.000	NO	bb
6	6	180108M2_6	Standard	50.000	6.33	4096.571	12376.121	49.651	48.6	-2.8	NO	1.000	NO	bb
7	7	180108M2_7	Standard	250.000	6.32	19974.506	11645.093	257.291	250.4	0.2	NO	1.000	NO	bb
8	8	180108M2_8	Standard	500.000	6.32	44676.801	13174.395	508.678	498.0	-0.4	NO	1.000	NO	bd
9	9	180108M2_9	Standard	1250.000	6.32	109602.195	13146.421	1250.556	1250.8	0.1	NO	1.000	NO	bb

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.998887, r^2 = 0.997775
Calibration curve: 1.20231 * x + -0.0116801
Response type: Internal Std (Ref 53), 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 180108M2_1	Standard	1.250	6.47	149.979	11897.201	1.891	1.6	26.6	NO	0.998	NO	bb
2	2 180108M2_2	Standard	2.500	6.47	256.593	13493.461	2.852	2.4	-4.7	NO	0.998	NO	bb
3	3 180108M2_3	Standard	5.000	6.47	383.638	11273.771	5.104	4.3	-14.9	NO	0.998	NO	bb
4	4 180108M2_4	Standard	10.000	6.47	809.235	11505.149	10.551	8.8	-12.2	NO	0.998	NO	bb
5	5 180108M2_5	Standard	25.000	6.47	2448.322	11861.866	30.960	25.8	3.0	NO	0.998	NO	bb
6	6 180108M2_6	Standard	50.000	6.47	4819.350	11866.781	60.918	50.7	1.4	NO	0.998	NO	bb
7	7 180108M2_7	Standard	250.000	6.47	24506.195	11483.792	320.097	266.2	6.5	NO	0.998	NO	bd
8	8 180108M2_8	Standard	500.000	6.47	46207.840	12454.501	556.520	462.9	-7.4	NO	0.998	NO	bb
9	9 180108M2_9	Standard	1250.000	6.47	123741.906	12144.680	1528.347	1271.2	1.7	NO	0.998	NO	bb

Compound name: 13C3-PFBA
Response Factor: 0.872868
RRF SD: 0.0252546, Relative SD: 2.89329
Response type: Internal Std (Ref 54), 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 180108M2_1	Standard	12.500	1.40	5421.656	6220.474	10.895	12.5	-0.1	NO		NO	bb
2	2 180108M2_2	Standard	12.500	1.40	5148.906	6140.374	10.482	12.0	-3.9	NO		NO	bb
3	3 180108M2_3	Standard	12.500	1.39	4932.306	5611.970	10.986	12.6	0.7	NO		NO	bb
4	4 180108M2_4	Standard	12.500	1.38	4914.914	5582.391	11.005	12.6	0.9	NO		NO	bb
5	5 180108M2_5	Standard	12.500	1.39	4985.861	5442.956	11.450	13.1	4.9	NO		NO	bb
6	6 180108M2_6	Standard	12.500	1.40	4878.047	5572.749	10.942	12.5	0.3	NO		NO	bb
7	7 180108M2_7	Standard	12.500	1.39	4988.706	5669.652	10.999	12.6	0.8	NO		NO	bb
8	8 180108M2_8	Standard	12.500	1.39	5035.588	5693.722	11.055	12.7	1.3	NO		NO	bb
9	9 180108M2_9	Standard	12.500	1.37	4836.269	5821.862	10.384	11.9	-4.8	NO		NO	bb

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Compound name: 13C3-PFPeA
Response Factor: 0.866667
RRF SD: 0.0592006, Relative SD: 6.83083
Response type: Internal Std (Ref 55), 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	180108M2_1	Standard	12.500	2.38	6375.317	7348.469	10.845	12.5	0.1	NO		NO	bb
2	2	180108M2_2	Standard	12.500	2.38	6104.348	7079.163	10.779	12.4	-0.5	NO		NO	bb
3	3	180108M2_3	Standard	12.500	2.37	6019.830	6096.192	12.343	14.2	13.9	NO		NO	bb
4	4	180108M2_4	Standard	12.500	2.37	5682.090	6835.402	10.391	12.0	-4.1	NO		NO	bb
5	5	180108M2_5	Standard	12.500	2.38	5783.457	6853.771	10.548	12.2	-2.6	NO		NO	bb
6	6	180108M2_6	Standard	12.500	2.38	5870.812	7027.212	10.443	12.0	-3.6	NO		NO	bb
7	7	180108M2_7	Standard	12.500	2.38	6069.888	7037.016	10.782	12.4	-0.5	NO		NO	bb
8	8	180108M2_8	Standard	12.500	2.37	6035.441	6512.142	11.585	13.4	6.9	NO		NO	bb
9	9	180108M2_9	Standard	12.500	2.37	5678.038	7253.947	9.784	11.3	-9.7	NO		NO	bb

Compound name: 13C3-PFBS
Response Factor: 0.116284
RRF SD: 0.00907118, Relative SD: 7.80091
Response type: Internal Std (Ref 55), 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	180108M2_1	Standard	12.500	2.66	901.633	7348.469	1.534	13.2	5.5	NO		NO	bb
2	2	180108M2_2	Standard	12.500	2.66	780.723	7079.163	1.379	11.9	-5.2	NO		NO	bb
3	3	180108M2_3	Standard	12.500	2.66	793.617	6096.192	1.627	14.0	12.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	2.66	719.272	6835.402	1.315	11.3	-9.5	NO		NO	bb
5	5	180108M2_5	Standard	12.500	2.66	802.128	6853.771	1.463	12.6	0.6	NO		NO	bb
6	6	180108M2_6	Standard	12.500	2.66	734.016	7027.212	1.306	11.2	-10.2	NO		NO	bb
7	7	180108M2_7	Standard	12.500	2.66	798.379	7037.016	1.418	12.2	-2.4	NO		NO	bb
8	8	180108M2_8	Standard	12.500	2.66	827.757	6512.142	1.589	13.7	9.3	NO		NO	bb
9	9	180108M2_9	Standard	12.500	2.66	842.256	7253.947	1.451	12.5	-0.1	NO		NO	bb

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Compound name: 13C2-PFHxA
Response Factor: 0.655154
RRF SD: 0.0464832, Relative SD: 7.095
Response type: Internal Std (Ref 55), 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	180108M2_1	Standard	5.000	3.16	2042.621	7348.469	3.475	5.3	6.1	NO		NO	bb
2	2	180108M2_2	Standard	5.000	3.15	1997.844	7079.163	3.528	5.4	7.7	NO		NO	bb
3	3	180108M2_3	Standard	5.000	3.15	1504.849	6096.192	3.086	4.7	-5.8	NO		NO	bb
4	4	180108M2_4	Standard	5.000	3.15	1784.322	6835.402	3.263	5.0	-0.4	NO		NO	bb
5	5	180108M2_5	Standard	5.000	3.15	1566.294	6853.771	2.857	4.4	-12.8	NO		NO	bb
6	6	180108M2_6	Standard	5.000	3.16	1928.407	7027.212	3.430	5.2	4.7	NO		NO	bb
7	7	180108M2_7	Standard	5.000	3.15	1816.175	7037.016	3.226	4.9	-1.5	NO		NO	bb
8	8	180108M2_8	Standard	5.000	3.15	1833.573	6512.142	3.520	5.4	7.4	NO		NO	bb
9	9	180108M2_9	Standard	5.000	3.15	1798.127	7253.947	3.099	4.7	-5.4	NO		NO	bb

Compound name: 13C4-PFHpA
Response Factor: 0.72221
RRF SD: 0.0479578, Relative SD: 6.64042
Response type: Internal Std (Ref 55), 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	180108M2_1	Standard	12.500	3.79	5414.999	7348.469	9.211	12.8	2.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	3.78	5009.782	7079.163	8.846	12.2	-2.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	3.78	4940.721	6096.192	10.131	14.0	12.2	NO		NO	bb
4	4	180108M2_4	Standard	12.500	3.78	4921.333	6835.402	9.000	12.5	-0.3	NO		NO	bb
5	5	180108M2_5	Standard	12.500	3.78	4584.273	6853.771	8.361	11.6	-7.4	NO		NO	bb
6	6	180108M2_6	Standard	12.500	3.78	5113.555	7027.212	9.096	12.6	0.8	NO		NO	bb
7	7	180108M2_7	Standard	12.500	3.78	4882.781	7037.016	8.673	12.0	-3.9	NO		NO	bb
8	8	180108M2_8	Standard	12.500	3.78	5040.603	6512.142	9.675	13.4	7.2	NO		NO	bb
9	9	180108M2_9	Standard	12.500	3.78	4790.760	7253.947	8.255	11.4	-8.6	NO		NO	bb

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Compound name: 18O2-PFHxS
Response Factor: 0.348337
RRF SD: 0.0333843, Relative SD: 9.5839
Response type: Internal Std (Ref 56), 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	180108M2_1	Standard	12.500	3.94	696.989	2051.925	4.246	12.2	-2.5	NO		NO	bb
2	2	180108M2_2	Standard	12.500	3.94	653.624	1806.012	4.524	13.0	3.9	NO		NO	bb
3	3	180108M2_3	Standard	12.500	3.93	645.994	1618.090	4.990	14.3	14.6	NO		NO	bb
4	4	180108M2_4	Standard	12.500	3.93	565.362	1646.690	4.292	12.3	-1.4	NO		NO	bb
5	5	180108M2_5	Standard	12.500	3.94	594.729	1861.500	3.994	11.5	-8.3	NO		NO	bb
6	6	180108M2_6	Standard	12.500	3.94	567.584	1908.069	3.718	10.7	-14.6	NO		NO	bb
7	7	180108M2_7	Standard	12.500	3.94	661.442	1664.178	4.968	14.3	14.1	NO		NO	bb
8	8	180108M2_8	Standard	12.500	3.94	596.469	1756.126	4.246	12.2	-2.5	NO		NO	bb
9	9	180108M2_9	Standard	12.500	3.94	632.321	1877.353	4.210	12.1	-3.3	NO		NO	bb

Compound name: 13C2-6:2 FTS
Response Factor: 0.221652
RRF SD: 0.0296583, Relative SD: 13.3806
Response type: Internal Std (Ref 57), 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	180108M2_1	Standard	12.500	4.26	1588.350	7487.993	2.651	12.0	-4.3	NO		NO	bb
2	2	180108M2_2	Standard	12.500	4.26	1436.439	7840.313	2.290	10.3	-17.3	NO		NO	bb
3	3	180108M2_3	Standard	12.500	4.25	1299.489	6180.695	2.628	11.9	-5.1	NO		NO	bb
4	4	180108M2_4	Standard	12.500	4.25	1346.764	6605.523	2.549	11.5	-8.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	4.25	1310.203	6537.998	2.505	11.3	-9.6	NO		NO	bb
6	6	180108M2_6	Standard	12.500	4.25	1619.194	6575.203	3.078	13.9	11.1	NO		NO	bb
7	7	180108M2_7	Standard	12.500	4.25	1778.281	7256.473	3.063	13.8	10.6	NO		NO	bb
8	8	180108M2_8	Standard	12.500	4.25	1812.892	6664.305	3.400	15.3	22.7	NO		NO	bb
9	9	180108M2_9	Standard	12.500	4.26	2733.135	7094.738	4.815	21.7	73.8	NO		NO	bbX

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Compound name: 13C2-PFOA
Response Factor: 1.02282
RRF SD: 0.041101, Relative SD: 4.01841
Response type: Internal Std (Ref 57), 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	180108M2_1	Standard	12.500	4.31	7680.001	7487.993	12.821	12.5	0.3	NO		NO	bb
2	2	180108M2_2	Standard	12.500	4.30	7463.181	7840.313	11.899	11.6	-6.9	NO		NO	bb
3	3	180108M2_3	Standard	12.500	4.31	6769.833	6180.695	13.691	13.4	7.1	NO		NO	bb
4	4	180108M2_4	Standard	12.500	4.31	6848.200	6605.523	12.959	12.7	1.4	NO		NO	bb
5	5	180108M2_5	Standard	12.500	4.30	6918.426	6537.998	13.227	12.9	3.5	NO		NO	bb
6	6	180108M2_6	Standard	12.500	4.31	6690.408	6575.203	12.719	12.4	-0.5	NO		NO	bd
7	7	180108M2_7	Standard	12.500	4.31	7359.498	7256.473	12.677	12.4	-0.8	NO		NO	bb
8	8	180108M2_8	Standard	12.500	4.30	6823.860	6664.305	12.799	12.5	0.1	NO		NO	bb
9	9	180108M2_9	Standard	12.500	4.31	6966.522	7094.738	12.274	12.0	-4.0	NO		NO	bb

Compound name: 13C5-PFNA
Response Factor: 0.915501
RRF SD: 0.026045, Relative SD: 2.84489
Response type: Internal Std (Ref 58), 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	180108M2_1	Standard	12.500	4.75	7374.425	7921.439	11.637	12.7	1.7	NO		NO	bb
2	2	180108M2_2	Standard	12.500	4.75	6571.582	6997.254	11.740	12.8	2.6	NO		NO	bb
3	3	180108M2_3	Standard	12.500	4.75	6323.052	7139.774	11.070	12.1	-3.3	NO		NO	bb
4	4	180108M2_4	Standard	12.500	4.74	6955.373	7585.688	11.461	12.5	0.2	NO		NO	bb
5	5	180108M2_5	Standard	12.500	4.74	6693.576	7506.042	11.147	12.2	-2.6	NO		NO	bb
6	6	180108M2_6	Standard	12.500	4.75	6317.911	6670.880	11.839	12.9	3.5	NO		NO	bb
7	7	180108M2_7	Standard	12.500	4.75	6580.284	7073.824	11.628	12.7	1.6	NO		NO	bb
8	8	180108M2_8	Standard	12.500	4.74	6517.125	7042.556	11.567	12.6	1.1	NO		NO	bb
9	9	180108M2_9	Standard	12.500	4.75	6258.695	7173.994	10.905	11.9	-4.7	NO		NO	bb

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Compound name: 13C8-PFOSA
Response Factor: 0.210434
RRF SD: 0.0135597, Relative SD: 6.44368
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	180108M2_1	Standard	12.500	4.80	1673.129	8285.728	2.524	12.0	-4.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	4.80	1705.965	7960.388	2.679	12.7	1.8	NO		NO	bb
3	3	180108M2_3	Standard	12.500	4.80	1588.310	7324.367	2.711	12.9	3.1	NO		NO	bb
4	4	180108M2_4	Standard	12.500	4.80	1551.102	7754.067	2.500	11.9	-4.9	NO		NO	bb
5	5	180108M2_5	Standard	12.500	4.80	1640.265	6944.944	2.952	14.0	12.2	NO		NO	bb
6	6	180108M2_6	Standard	12.500	4.80	1537.842	7668.104	2.507	11.9	-4.7	NO		NO	bb
7	7	180108M2_7	Standard	12.500	4.80	1429.944	7481.044	2.389	11.4	-9.2	NO		NO	bb
8	8	180108M2_8	Standard	12.500	4.80	1658.699	7800.454	2.658	12.6	1.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	4.80	1525.414	6925.354	2.753	13.1	4.7	NO		NO	bb

Compound name: 13C8-PFOS
Response Factor: 1.03511
RRF SD: 0.0915134, Relative SD: 8.84096
Response type: Internal Std (Ref 59), 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	180108M2_1	Standard	12.500	4.84	1908.927	1717.241	13.895	13.4	7.4	NO		NO	bb
2	2	180108M2_2	Standard	12.500	4.83	1634.129	1604.129	12.734	12.3	-1.6	NO		NO	bb
3	3	180108M2_3	Standard	12.500	4.83	1764.111	1536.795	14.349	13.9	10.9	NO		NO	bb
4	4	180108M2_4	Standard	12.500	4.83	1611.551	1537.464	13.102	12.7	1.3	NO		NO	bb
5	5	180108M2_5	Standard	12.500	4.84	1605.801	1501.549	13.368	12.9	3.3	NO		NO	bb
6	6	180108M2_6	Standard	12.500	4.84	1798.805	1706.105	13.179	12.7	1.9	NO		NO	bb
7	7	180108M2_7	Standard	12.500	4.83	1738.847	1848.306	11.760	11.4	-9.1	NO		NO	bb
8	8	180108M2_8	Standard	12.500	4.83	1836.009	1702.137	13.483	13.0	4.2	NO		NO	bb
9	9	180108M2_9	Standard	12.500	4.83	1589.150	1877.686	10.579	10.2	-18.2	NO		NO	bb

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Compound name: 13C2-PFDA
Response Factor: 1.1421
RRF SD: 0.120268, Relative SD: 10.5305
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 180108M2_1	Standard	12.500	5.12	7175.434	6189.928	14.490	12.7	1.5	NO		NO	bb
2	2 180108M2_2	Standard	12.500	5.12	5699.016	5075.857	14.035	12.3	-1.7	NO		NO	bb
3	3 180108M2_3	Standard	12.500	5.13	4936.802	4875.687	12.657	11.1	-11.3	NO		NO	MM
4	4 180108M2_4	Standard	12.500	5.12	5072.973	4732.028	13.401	11.7	-6.1	NO		NO	MM
5	5 180108M2_5	Standard	12.500	5.12	5300.490	4306.361	15.386	13.5	7.8	NO		NO	MM
6	6 180108M2_6	Standard	12.500	5.13	6361.719	4638.074	17.145	15.0	20.1	NO		NO	MM
7	7 180108M2_7	Standard	12.500	5.13	5219.420	5233.415	12.467	10.9	-12.7	NO		NO	MM
8	8 180108M2_8	Standard	12.500	5.12	6016.366	4883.994	15.398	13.5	7.9	NO		NO	MM
9	9 180108M2_9	Standard	12.500	5.12	5995.269	5547.928	13.508	11.8	-5.4	NO		NO	bb

Compound name: 13C2-8:2 FTS
Response Factor: 0.156561
RRF SD: 0.0239871, Relative SD: 15.3212
Response type: Internal Std (Ref 55), 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 180108M2_1	Standard	12.500	5.10	1121.714	7348.469	1.908	12.2	-2.5	NO		NO	bb
2	2 180108M2_2	Standard	12.500	5.09	1120.403	7079.163	1.978	12.6	1.1	NO		NO	bb
3	3 180108M2_3	Standard	12.500	5.09	1108.064	6096.192	2.272	14.5	16.1	NO		NO	bb
4	4 180108M2_4	Standard	12.500	5.10	1186.236	6835.402	2.169	13.9	10.8	NO		NO	bb
5	5 180108M2_5	Standard	12.500	5.09	727.336	6853.771	1.327	8.5	-32.2	NO		NO	bb
6	6 180108M2_6	Standard	12.500	5.10	1032.019	7027.212	1.836	11.7	-6.2	NO		NO	bb
7	7 180108M2_7	Standard	12.500	5.10	1094.893	7037.016	1.945	12.4	-0.6	NO		NO	bb
8	8 180108M2_8	Standard	12.500	5.09	1157.192	6512.142	2.221	14.2	13.5	NO		NO	bb
9	9 180108M2_9	Standard	12.500	5.09	1793.465	7253.947	3.090	19.7	57.9	NO		NO	bbX

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Compound name: d3-N-MeFOSAA
Response Factor: 0.298942
RRF SD: 0.0166612, Relative SD: 5.57339
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	180108M2_1	Standard	12.500	5.28	2179.741	8285.728	3.288	11.0	-12.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	5.27	2347.936	7960.388	3.687	12.3	-1.3	NO		NO	bb
3	3	180108M2_3	Standard	12.500	5.28	2273.696	7324.367	3.880	13.0	3.8	NO		NO	bb
4	4	180108M2_4	Standard	12.500	5.27	2227.718	7754.067	3.591	12.0	-3.9	NO		NO	bb
5	5	180108M2_5	Standard	12.500	5.28	2084.842	6944.944	3.752	12.6	0.4	NO		NO	bb
6	6	180108M2_6	Standard	12.500	5.28	2447.242	7668.104	3.989	13.3	6.8	NO		NO	bb
7	7	180108M2_7	Standard	12.500	5.27	2346.581	7481.044	3.921	13.1	4.9	NO		NO	bb
8	8	180108M2_8	Standard	12.500	5.27	2369.292	7800.454	3.797	12.7	1.6	NO		NO	bb
9	9	180108M2_9	Standard	12.500	5.27	2063.598	6925.354	3.725	12.5	-0.3	NO		NO	bb

Compound name: d5-N-EtFOSAA
Response Factor: 0.369103
RRF SD: 0.0318833, Relative SD: 8.63806
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	180108M2_1	Standard	12.500	5.43	3266.731	8285.728	4.928	13.4	6.8	NO		NO	bb
2	2	180108M2_2	Standard	12.500	5.43	2947.923	7960.388	4.629	12.5	0.3	NO		NO	bb
3	3	180108M2_3	Standard	12.500	5.43	3131.900	7324.367	5.345	14.5	15.8	NO		NO	bb
4	4	180108M2_4	Standard	12.500	5.43	2854.786	7754.067	4.602	12.5	-0.3	NO		NO	bb
5	5	180108M2_5	Standard	12.500	5.43	2645.263	6944.944	4.761	12.9	3.2	NO		NO	bb
6	6	180108M2_6	Standard	12.500	5.43	2439.506	7668.104	3.977	10.8	-13.8	NO		NO	bb
7	7	180108M2_7	Standard	12.500	5.43	2492.206	7481.044	4.164	11.3	-9.7	NO		NO	bb
8	8	180108M2_8	Standard	12.500	5.43	2830.896	7800.454	4.536	12.3	-1.7	NO		NO	bb
9	9	180108M2_9	Standard	12.500	5.43	2538.117	6925.354	4.581	12.4	-0.7	NO		NO	bb

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Compound name: 13C2-PFUdA
Response Factor: 1.01152
RRF SD: 0.0577659, Relative SD: 5.7108
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 180108M2_1	Standard	12.500	5.45	9211.345	8285.728	13.896	13.7	9.9	NO		NO	bb
2	2 180108M2_2	Standard	12.500	5.45	7865.505	7960.388	12.351	12.2	-2.3	NO		NO	bb
3	3 180108M2_3	Standard	12.500	5.45	7297.886	7324.367	12.455	12.3	-1.5	NO		NO	bb
4	4 180108M2_4	Standard	12.500	5.45	7154.166	7754.067	11.533	11.4	-8.8	NO		NO	bb
5	5 180108M2_5	Standard	12.500	5.45	7264.995	6944.944	13.076	12.9	3.4	NO		NO	bb
6	6 180108M2_6	Standard	12.500	5.45	7337.336	7668.104	11.961	11.8	-5.4	NO		NO	bb
7	7 180108M2_7	Standard	12.500	5.45	7658.917	7481.044	12.797	12.7	1.2	NO		NO	bb
8	8 180108M2_8	Standard	12.500	5.44	7723.645	7800.454	12.377	12.2	-2.1	NO		NO	bb
9	9 180108M2_9	Standard	12.500	5.45	7396.208	6925.354	13.350	13.2	5.6	NO		NO	bb

Compound name: 13C2-PFDoA
Response Factor: 0.646979
RRF SD: 0.0522227, Relative SD: 8.07178
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 180108M2_1	Standard	12.500	5.74	5809.440	8285.728	8.764	13.5	8.4	NO		NO	bb
2	2 180108M2_2	Standard	12.500	5.73	5204.864	7960.388	8.173	12.6	1.1	NO		NO	bb
3	3 180108M2_3	Standard	12.500	5.74	5167.435	7324.367	8.819	13.6	9.0	NO		NO	bb
4	4 180108M2_4	Standard	12.500	5.74	4729.102	7754.067	7.624	11.8	-5.7	NO		NO	bb
5	5 180108M2_5	Standard	12.500	5.74	4493.960	6944.944	8.089	12.5	0.0	NO		NO	bb
6	6 180108M2_6	Standard	12.500	5.74	5436.003	7668.104	8.861	13.7	9.6	NO		NO	bb
7	7 180108M2_7	Standard	12.500	5.73	4671.866	7481.044	7.806	12.1	-3.5	NO		NO	bb
8	8 180108M2_8	Standard	12.500	5.73	4309.212	7800.454	6.905	10.7	-14.6	NO		NO	bb
9	9 180108M2_9	Standard	12.500	5.74	4290.298	6925.354	7.744	12.0	-4.2	NO		NO	bb

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Compound name: d3-N-MeFOSA
Response Factor: 0.109761
RRF SD: 0.0058277, Relative SD: 5.30945
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 180108M2_1	Standard	150.000	5.76	10736.360	8285.728	16.197	147.6	-1.6	NO		NO	bb
2	2 180108M2_2	Standard	150.000	5.76	10176.388	7960.388	15.980	145.6	-2.9	NO		NO	bb
3	3 180108M2_3	Standard	150.000	5.76	9669.870	7324.367	16.503	150.4	0.2	NO		NO	bb
4	4 180108M2_4	Standard	150.000	5.76	9594.506	7754.067	15.467	140.9	-6.1	NO		NO	bb
5	5 180108M2_5	Standard	150.000	5.76	9843.879	6944.944	17.718	161.4	7.6	NO		NO	bb
6	6 180108M2_6	Standard	150.000	5.76	9629.046	7668.104	15.697	143.0	-4.7	NO		NO	bb
7	7 180108M2_7	Standard	150.000	5.76	9808.305	7481.044	16.389	149.3	-0.5	NO		NO	bb
8	8 180108M2_8	Standard	150.000	5.76	10087.503	7800.454	16.165	147.3	-1.8	NO		NO	bb
9	9 180108M2_9	Standard	150.000	5.76	10007.245	6925.354	18.063	164.6	9.7	NO		NO	bb

Compound name: 13C2-PFTeDA
Response Factor: 0.293668
RRF SD: 0.0280093, Relative SD: 9.53773
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 180108M2_1	Standard	12.500	6.20	2658.979	8285.728	4.011	13.7	9.3	NO		NO	bb
2	2 180108M2_2	Standard	12.500	6.20	2105.685	7960.388	3.307	11.3	-9.9	NO		NO	bb
3	3 180108M2_3	Standard	12.500	6.20	2200.929	7324.367	3.756	12.8	2.3	NO		NO	bb
4	4 180108M2_4	Standard	12.500	6.20	2037.865	7754.067	3.285	11.2	-10.5	NO		NO	bb
5	5 180108M2_5	Standard	12.500	6.20	1960.313	6944.944	3.528	12.0	-3.9	NO		NO	bb
6	6 180108M2_6	Standard	12.500	6.20	2088.984	7668.104	3.405	11.6	-7.2	NO		NO	bb
7	7 180108M2_7	Standard	12.500	6.20	2546.078	7481.044	4.254	14.5	15.9	NO		NO	bb
8	8 180108M2_8	Standard	12.500	6.20	2383.667	7800.454	3.820	13.0	4.1	NO		NO	bb
9	9 180108M2_9	Standard	12.500	6.20	3236.529	6925.354	5.842	19.9	59.1	NO		NO	bbX

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Compound name: d5-N-ETFOSA
Response Factor: 0.154563
RRF SD: 0.00728848, Relative SD: 4.71553
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	180108M2_1	Standard	150.000	6.15	14729.266	8285.728	22.221	143.8	-4.2	NO		NO	bb
2	2	180108M2_2	Standard	150.000	6.16	14733.124	7960.388	23.135	149.7	-0.2	NO		NO	bb
3	3	180108M2_3	Standard	150.000	6.15	14362.178	7324.367	24.511	158.6	5.7	NO		NO	bb
4	4	180108M2_4	Standard	150.000	6.15	13792.104	7754.067	22.234	143.8	-4.1	NO		NO	bb
5	5	180108M2_5	Standard	150.000	6.15	13801.328	6944.944	24.841	160.7	7.1	NO		NO	bb
6	6	180108M2_6	Standard	150.000	6.16	13949.432	7668.104	22.739	147.1	-1.9	NO		NO	bb
7	7	180108M2_7	Standard	150.000	6.15	13371.583	7481.044	22.342	144.6	-3.6	NO		NO	bb
8	8	180108M2_8	Standard	150.000	6.16	13885.338	7800.454	22.251	144.0	-4.0	NO		NO	bb
9	9	180108M2_9	Standard	150.000	6.16	13511.020	6925.354	24.387	157.8	5.2	NO		NO	bb

Compound name: 13C2-PFHxDA
Response Factor: 0.506514
RRF SD: 0.0617694, Relative SD: 12.195
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	180108M2_1	Standard	5.000	6.51	1507.392	8285.728	2.274	4.5	-10.2	NO		NO	bb
2	2	180108M2_2	Standard	5.000	6.52	1466.993	7960.388	2.304	4.5	-9.0	NO		NO	bb
3	3	180108M2_3	Standard	5.000	6.51	1450.641	7324.367	2.476	4.9	-2.2	NO		NO	bb
4	4	180108M2_4	Standard	5.000	6.51	1443.935	7754.067	2.328	4.6	-8.1	NO		NO	bb
5	5	180108M2_5	Standard	5.000	6.51	1407.920	6944.944	2.534	5.0	0.1	NO		NO	bb
6	6	180108M2_6	Standard	5.000	6.52	1420.926	7668.104	2.316	4.6	-8.5	NO		NO	bb
7	7	180108M2_7	Standard	5.000	6.51	1697.693	7481.044	2.837	5.6	12.0	NO		NO	bb
8	8	180108M2_8	Standard	5.000	6.51	1569.380	7800.454	2.515	5.0	-0.7	NO		NO	bb
9	9	180108M2_9	Standard	5.000	6.51	1778.498	6925.354	3.210	6.3	26.8	NO		NO	bb

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Compound name: d7-N-MeFOSE
Response Factor: 0.13959
RRF SD: 0.0129505, Relative SD: 9.27747
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	180108M2_1	Standard	150.000	6.31	12179.248	8285.728	18.374	131.6	-12.2	NO		NO	bb
2	2	180108M2_2	Standard	150.000	6.31	14910.501	7960.388	23.414	167.7	11.8	NO		NO	bd
3	3	180108M2_3	Standard	150.000	6.31	12366.465	7324.367	21.105	151.2	0.8	NO		NO	bb
4	4	180108M2_4	Standard	150.000	6.31	11619.512	7754.067	18.731	134.2	-10.5	NO		NO	bb
5	5	180108M2_5	Standard	150.000	6.31	12417.822	6944.944	22.350	160.1	6.7	NO		NO	bb
6	6	180108M2_6	Standard	150.000	6.31	12376.121	7668.104	20.175	144.5	-3.6	NO		NO	bd
7	7	180108M2_7	Standard	150.000	6.31	11645.093	7481.044	19.458	139.4	-7.1	NO		NO	bb
8	8	180108M2_8	Standard	150.000	6.31	13174.395	7800.454	21.112	151.2	0.8	NO		NO	bb
9	9	180108M2_9	Standard	150.000	6.31	13146.421	6925.354	23.729	170.0	13.3	NO		NO	bb

Compound name: d9-N-EtFOSE
Response Factor: 0.132359
RRF SD: 0.0090431, Relative SD: 6.83224
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	180108M2_1	Standard	150.000	6.46	11897.201	8285.728	17.948	135.6	-9.6	NO		NO	bd
2	2	180108M2_2	Standard	150.000	6.46	13493.461	7960.388	21.188	160.1	6.7	NO		NO	bb
3	3	180108M2_3	Standard	150.000	6.46	11273.771	7324.367	19.240	145.4	-3.1	NO		NO	bb
4	4	180108M2_4	Standard	150.000	6.46	11505.149	7754.067	18.547	140.1	-6.6	NO		NO	bb
5	5	180108M2_5	Standard	150.000	6.46	11861.866	6944.944	21.350	161.3	7.5	NO		NO	bd
6	6	180108M2_6	Standard	150.000	6.46	11866.781	7668.104	19.344	146.2	-2.6	NO		NO	bd
7	7	180108M2_7	Standard	150.000	6.46	11483.792	7481.044	19.188	145.0	-3.4	NO		NO	bb
8	8	180108M2_8	Standard	150.000	6.46	12454.501	7800.454	19.958	150.8	0.5	NO		NO	bb
9	9	180108M2_9	Standard	150.000	6.46	12144.680	6925.354	21.921	165.6	10.4	NO		NO	bb

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Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 54), 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	180108M2_1	Standard	12.500	1.40	6220.474	6220.474	12.500	12.5	0.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	1.39	6140.374	6140.374	12.500	12.5	0.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	1.39	5611.970	5611.970	12.500	12.5	0.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	1.38	5582.391	5582.391	12.500	12.5	0.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	1.38	5442.956	5442.956	12.500	12.5	0.0	NO		NO	bb
6	6	180108M2_6	Standard	12.500	1.39	5572.749	5572.749	12.500	12.5	0.0	NO		NO	bb
7	7	180108M2_7	Standard	12.500	1.38	5669.652	5669.652	12.500	12.5	0.0	NO		NO	bb
8	8	180108M2_8	Standard	12.500	1.39	5693.722	5693.722	12.500	12.5	0.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	1.39	5821.862	5821.862	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 55), 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	180108M2_1	Standard	12.500	3.16	7348.469	7348.469	12.500	12.5	0.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	3.16	7079.163	7079.163	12.500	12.5	0.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	3.16	6096.192	6096.192	12.500	12.5	0.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	3.16	6835.402	6835.402	12.500	12.5	0.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	3.16	6853.771	6853.771	12.500	12.5	0.0	NO		NO	bb
6	6	180108M2_6	Standard	12.500	3.16	7027.212	7027.212	12.500	12.5	0.0	NO		NO	bb
7	7	180108M2_7	Standard	12.500	3.16	7037.016	7037.016	12.500	12.5	0.0	NO		NO	bb
8	8	180108M2_8	Standard	12.500	3.16	6512.142	6512.142	12.500	12.5	0.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	3.15	7253.947	7253.947	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C3-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 56), 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	180108M2_1	Standard	12.500	3.94	2051.925	2051.925	12.500	12.5	0.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	3.93	1806.012	1806.012	12.500	12.5	0.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	3.94	1618.090	1618.090	12.500	12.5	0.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	3.93	1646.690	1646.690	12.500	12.5	0.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	3.94	1861.500	1861.500	12.500	12.5	0.0	NO		NO	bb
6	6	180108M2_6	Standard	12.500	3.94	1908.069	1908.069	12.500	12.5	0.0	NO		NO	bb
7	7	180108M2_7	Standard	12.500	3.94	1664.178	1664.178	12.500	12.5	0.0	NO		NO	bb
8	8	180108M2_8	Standard	12.500	3.94	1756.126	1756.126	12.500	12.5	0.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	3.93	1877.353	1877.353	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 57), 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	180108M2_1	Standard	12.500	4.31	7487.993	7487.993	12.500	12.5	0.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	4.31	7840.313	7840.313	12.500	12.5	0.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	4.31	6180.695	6180.695	12.500	12.5	0.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	4.31	6605.523	6605.523	12.500	12.5	0.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	4.31	6537.998	6537.998	12.500	12.5	0.0	NO		NO	bb
6	6	180108M2_6	Standard	12.500	4.31	6575.203	6575.203	12.500	12.5	0.0	NO		NO	bb
7	7	180108M2_7	Standard	12.500	4.31	7256.473	7256.473	12.500	12.5	0.0	NO		NO	bb
8	8	180108M2_8	Standard	12.500	4.31	6664.305	6664.305	12.500	12.5	0.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	4.31	7094.738	7094.738	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 58), 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 180108M2_1	Standard	12.500	4.75	7921.439	7921.439	12.500	12.5	0.0	NO		NO	bb
2	2 180108M2_2	Standard	12.500	4.75	6997.254	6997.254	12.500	12.5	0.0	NO		NO	bb
3	3 180108M2_3	Standard	12.500	4.75	7139.774	7139.774	12.500	12.5	0.0	NO		NO	bb
4	4 180108M2_4	Standard	12.500	4.75	7585.688	7585.688	12.500	12.5	0.0	NO		NO	bb
5	5 180108M2_5	Standard	12.500	4.75	7506.042	7506.042	12.500	12.5	0.0	NO		NO	bb
6	6 180108M2_6	Standard	12.500	4.75	6670.880	6670.880	12.500	12.5	0.0	NO		NO	bb
7	7 180108M2_7	Standard	12.500	4.75	7073.824	7073.824	12.500	12.5	0.0	NO		NO	bb
8	8 180108M2_8	Standard	12.500	4.75	7042.556	7042.556	12.500	12.5	0.0	NO		NO	bb
9	9 180108M2_9	Standard	12.500	4.75	7173.994	7173.994	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 59), 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 180108M2_1	Standard	12.500	4.83	1717.241	1717.241	12.500	12.5	0.0	NO		NO	bb
2	2 180108M2_2	Standard	12.500	4.83	1604.129	1604.129	12.500	12.5	0.0	NO		NO	bb
3	3 180108M2_3	Standard	12.500	4.83	1536.795	1536.795	12.500	12.5	0.0	NO		NO	bb
4	4 180108M2_4	Standard	12.500	4.83	1537.464	1537.464	12.500	12.5	0.0	NO		NO	bb
5	5 180108M2_5	Standard	12.500	4.84	1501.549	1501.549	12.500	12.5	0.0	NO		NO	bb
6	6 180108M2_6	Standard	12.500	4.84	1706.105	1706.105	12.500	12.5	0.0	NO		NO	bb
7	7 180108M2_7	Standard	12.500	4.83	1848.306	1848.306	12.500	12.5	0.0	NO		NO	bb
8	8 180108M2_8	Standard	12.500	4.83	1702.137	1702.137	12.500	12.5	0.0	NO		NO	bb
9	9 180108M2_9	Standard	12.500	4.83	1877.686	1877.686	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C6-PFDA
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	180108M2_1	Standard	12.500	5.12	6189.928	6189.928	12.500	12.5	0.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	5.12	5075.857	5075.857	12.500	12.5	0.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	5.12	4875.687	4875.687	12.500	12.5	0.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	5.12	4732.028	4732.028	12.500	12.5	0.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	5.12	4306.361	4306.361	12.500	12.5	0.0	NO		NO	bb
6	6	180108M2_6	Standard	12.500	5.13	4638.074	4638.074	12.500	12.5	0.0	NO		NO	bb
7	7	180108M2_7	Standard	12.500	5.12	5233.415	5233.415	12.500	12.5	0.0	NO		NO	bb
8	8	180108M2_8	Standard	12.500	5.12	4883.994	4883.994	12.500	12.5	0.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	5.12	5547.928	5547.928	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 0, Relative SD: 0
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	180108M2_1	Standard	12.500	5.45	8285.728	8285.728	12.500	12.5	0.0	NO		NO	bb
2	2	180108M2_2	Standard	12.500	5.45	7960.388	7960.388	12.500	12.5	0.0	NO		NO	bb
3	3	180108M2_3	Standard	12.500	5.45	7324.367	7324.367	12.500	12.5	0.0	NO		NO	bb
4	4	180108M2_4	Standard	12.500	5.44	7754.067	7754.067	12.500	12.5	0.0	NO		NO	bb
5	5	180108M2_5	Standard	12.500	5.45	6944.944	6944.944	12.500	12.5	0.0	NO		NO	bb
6	6	180108M2_6	Standard	12.500	5.45	7668.104	7668.104	12.500	12.5	0.0	NO		NO	bb
7	7	180108M2_7	Standard	12.500	5.45	7481.044	7481.044	12.500	12.5	0.0	NO		NO	bb
8	8	180108M2_8	Standard	12.500	5.45	7800.454	7800.454	12.500	12.5	0.0	NO		NO	bb
9	9	180108M2_9	Standard	12.500	5.45	6925.354	6925.354	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, January 09, 2018 11:07:39 Pacific Standard Time
Printed: Tuesday, January 09, 2018 11:16:11 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180108M2_1	ST180108M2-1 PFC CS-2 18A0806	09-Jan-18	00:36:40
2	180108M2_2	ST180108M2-2 PFC CS-1 18A0807	09-Jan-18	00:47:55
3	180108M2_3	ST180108M2-3 PFC CS0 18A0808	09-Jan-18	00:59:05
4	180108M2_4	ST180108M2-4 PFC CS1 18A0809	09-Jan-18	01:10:16
5	180108M2_5	ST180108M2-5 PFC CS2 18A0810	09-Jan-18	01:21:26
6	180108M2_6	ST180108M2-6 PFC CS3 18A0811	09-Jan-18	01:32:37
7	180108M2_7	ST180108M2-7 PFC CS4 18A0812	09-Jan-18	01:43:47
8	180108M2_8	ST180108M2-8 PFC CS5 18A0813	09-Jan-18	01:54:58
9	180108M2_9	ST180108M2-9 PFC CS6 18A0814	09-Jan-18	02:06:09
10	180108M2_10	ST180108M2-10 PFC CS7 18A0815	09-Jan-18	02:17:20
11	180108M2_11	IPA	09-Jan-18	02:28:31
12	180108M2_12	ICV180108M2-1 PFC ICV 18A0805	09-Jan-18	02:39:41

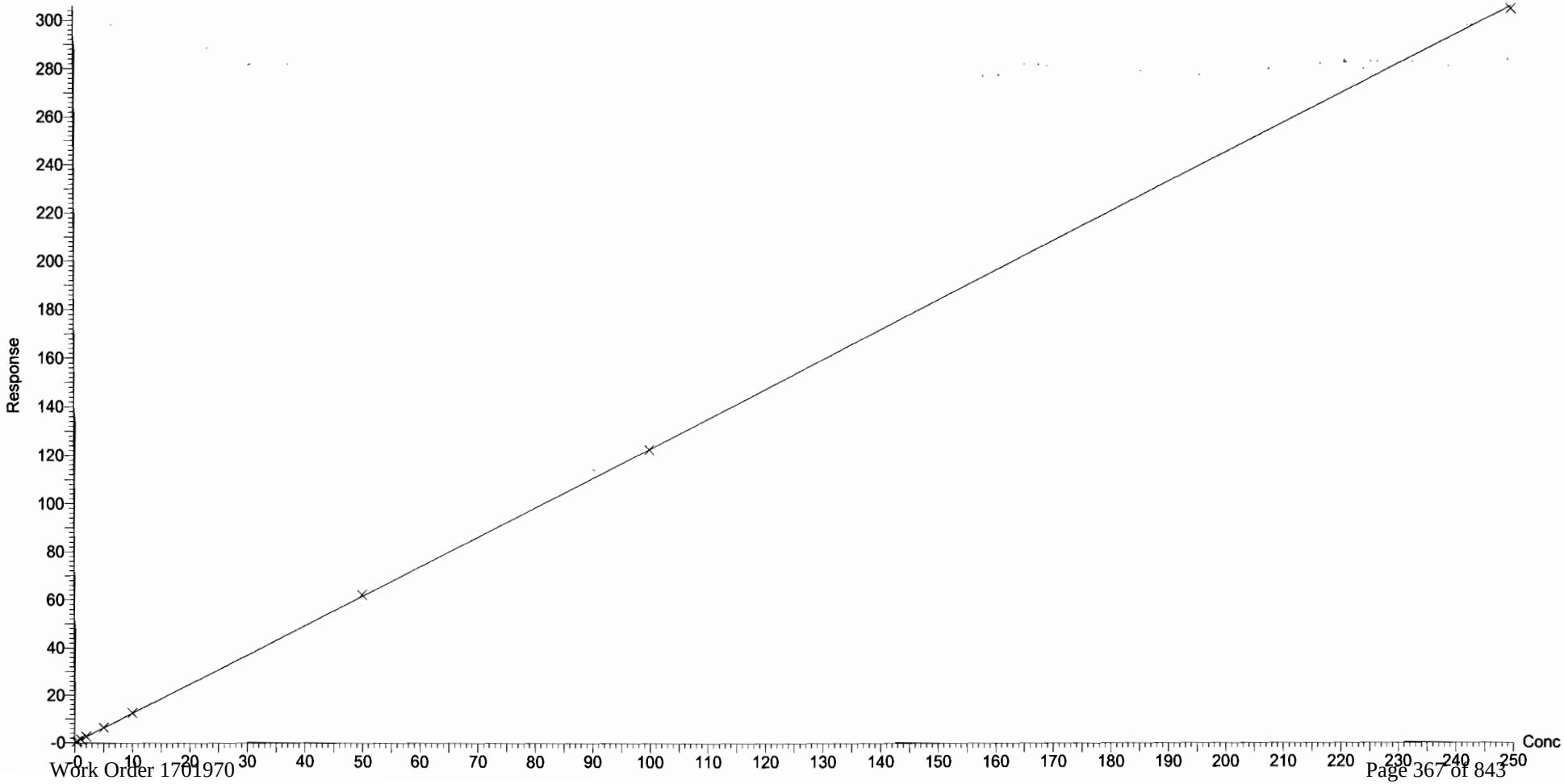
Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:00:24
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 10:42:03

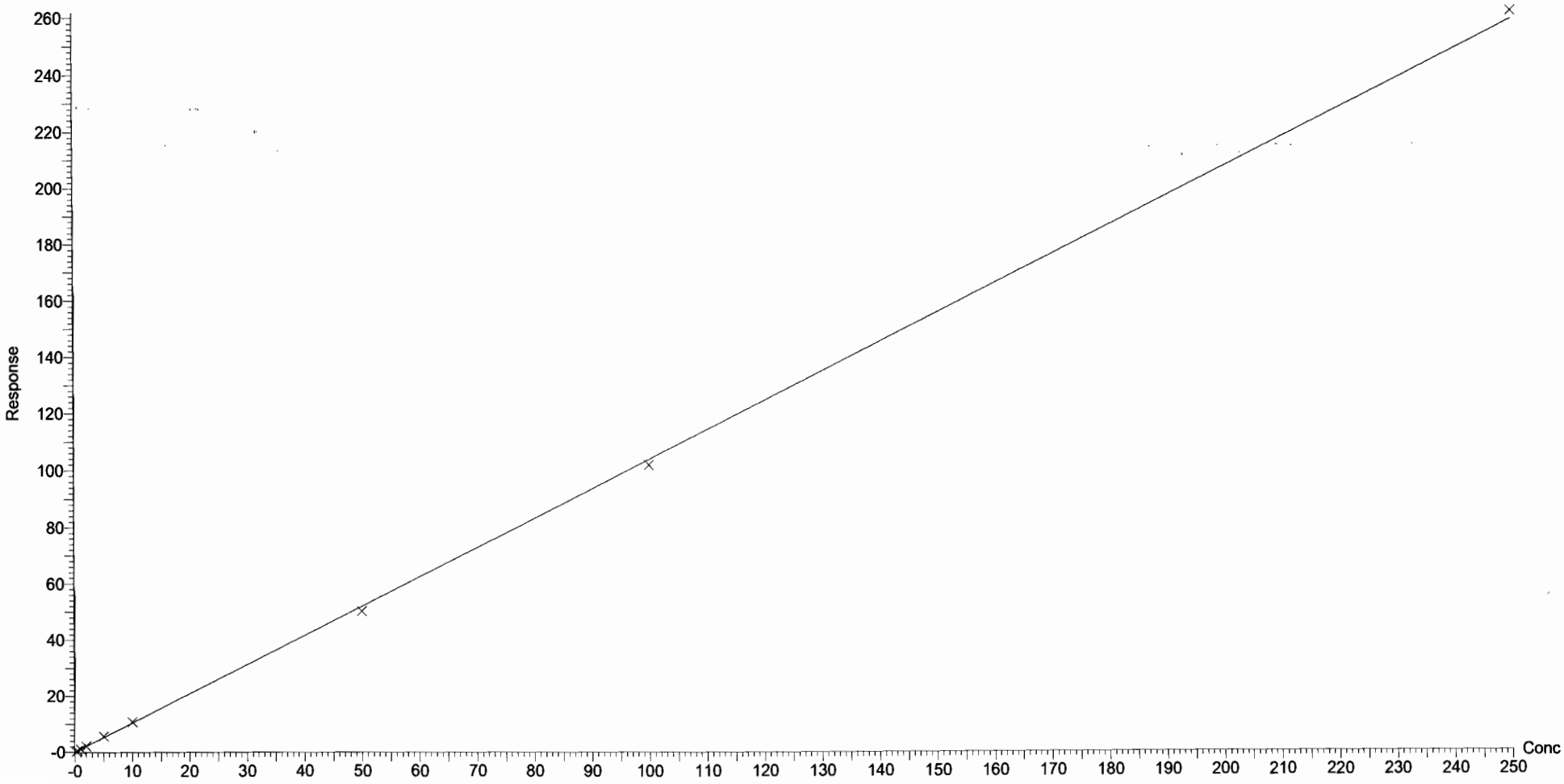
Compound name: PFBA
Correlation coefficient: r = 0.999967, r^2 = 0.999934
Calibration curve: 1.22331 * x + 0.0281333
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

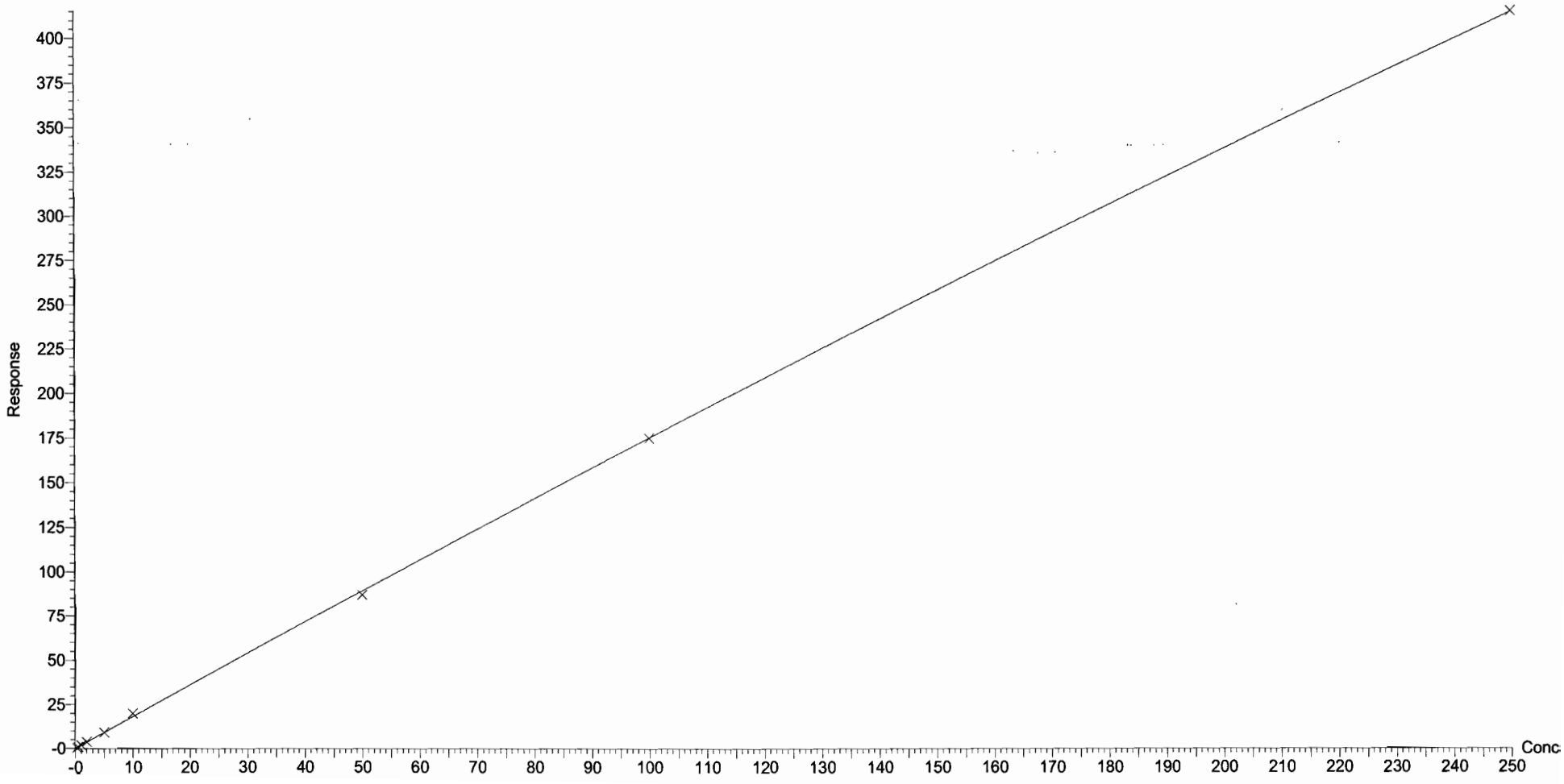
Compound name: PFPeA
Correlation coefficient: r = 0.999798, r^2 = 0.999596
Calibration curve: 1.03541 * x + 0.0388149
Response type: Internal Std (Ref 32), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

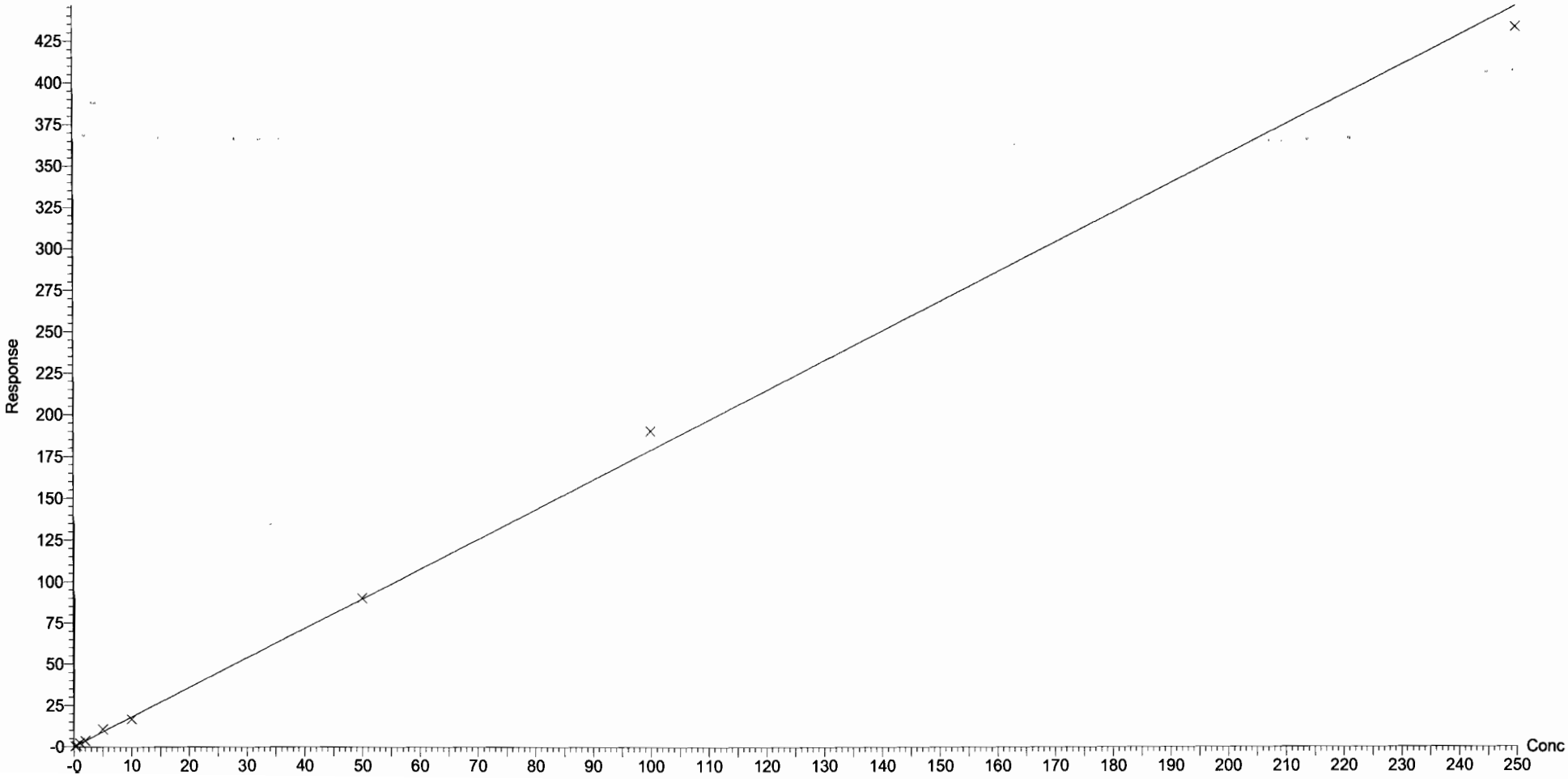
Compound name: PFBS
Coefficient of Determination: R^2 = 0.999606
Calibration curve: -0.000599766 * x^2 + 1.8097 * x + 0.0208083
Response type: Internal Std (Ref 33), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

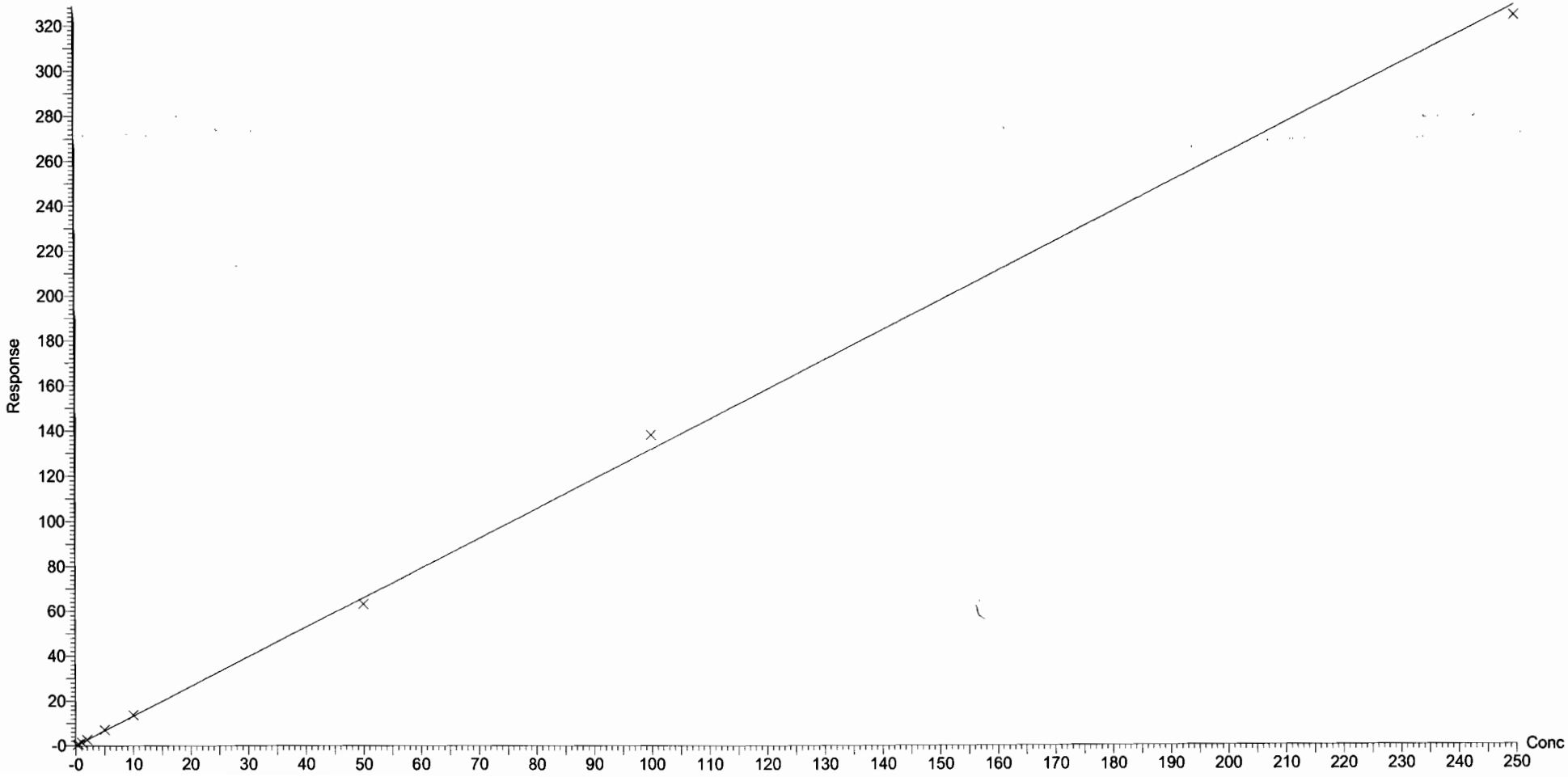
Compound name: PFHxA
Correlation coefficient: r = 0.998889, r^2 = 0.997780
Calibration curve: 1.78409 * x + 0.0832728
Response type: Internal Std (Ref 34), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

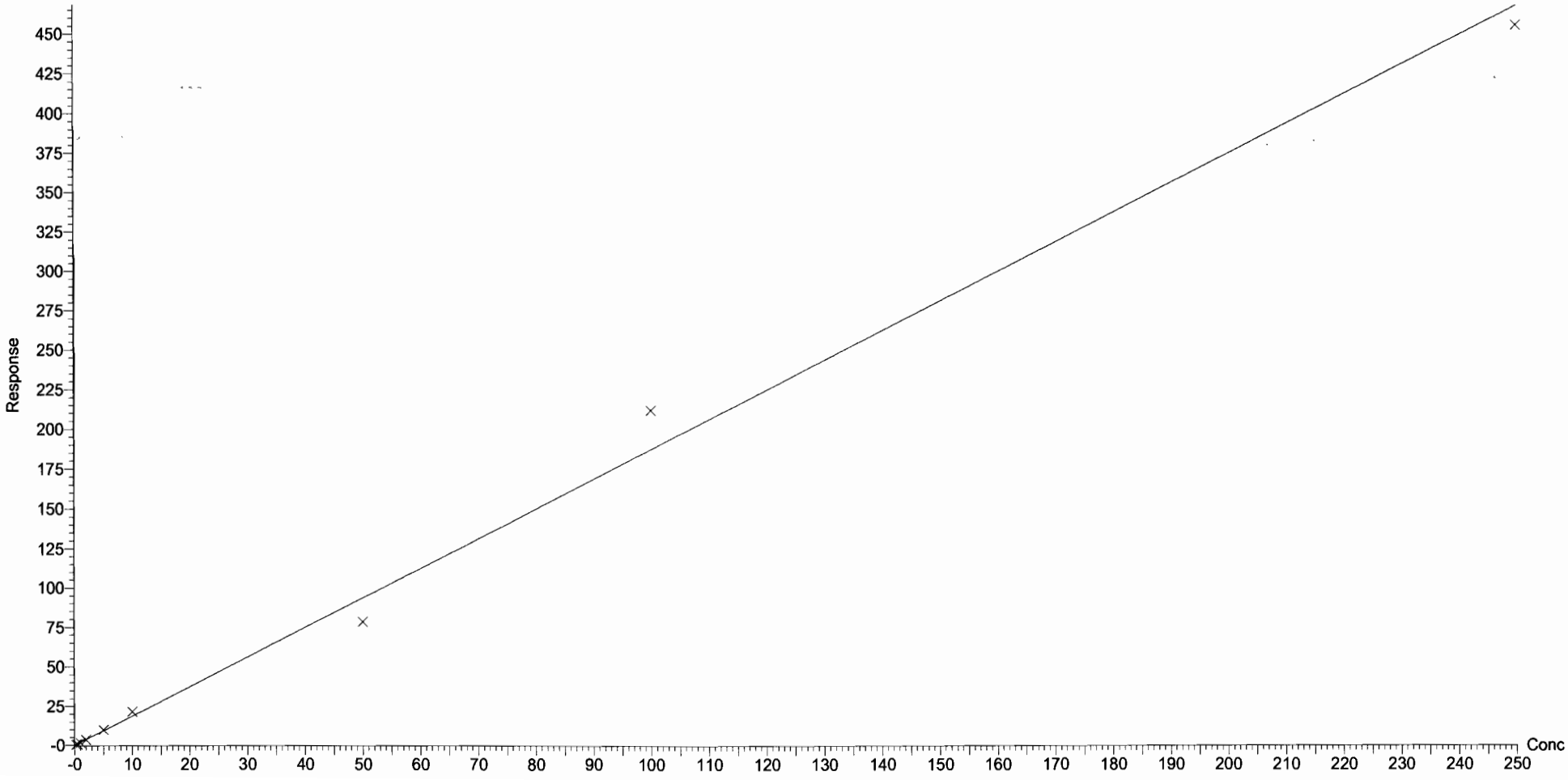
Compound name: PFHpA
Correlation coefficient: r = 0.999489, r^2 = 0.998978
Calibration curve: 1.3149 * x + 0.0511636
Response type: Internal Std (Ref 35), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

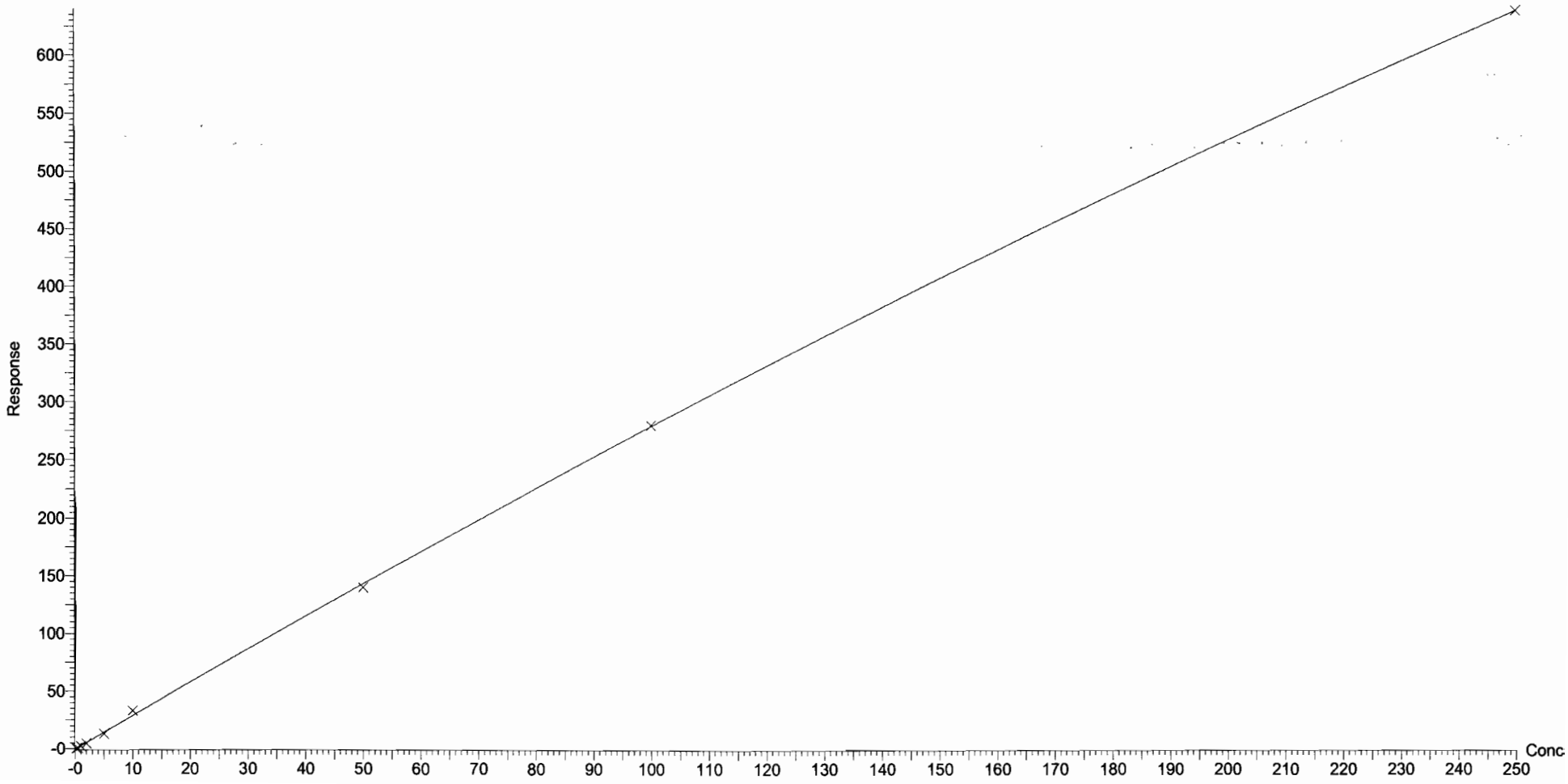
Compound name: L-PFHxS
Correlation coefficient: r = 0.995697, r^2 = 0.991413
Calibration curve: 1.8737 * x + -0.0422348
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

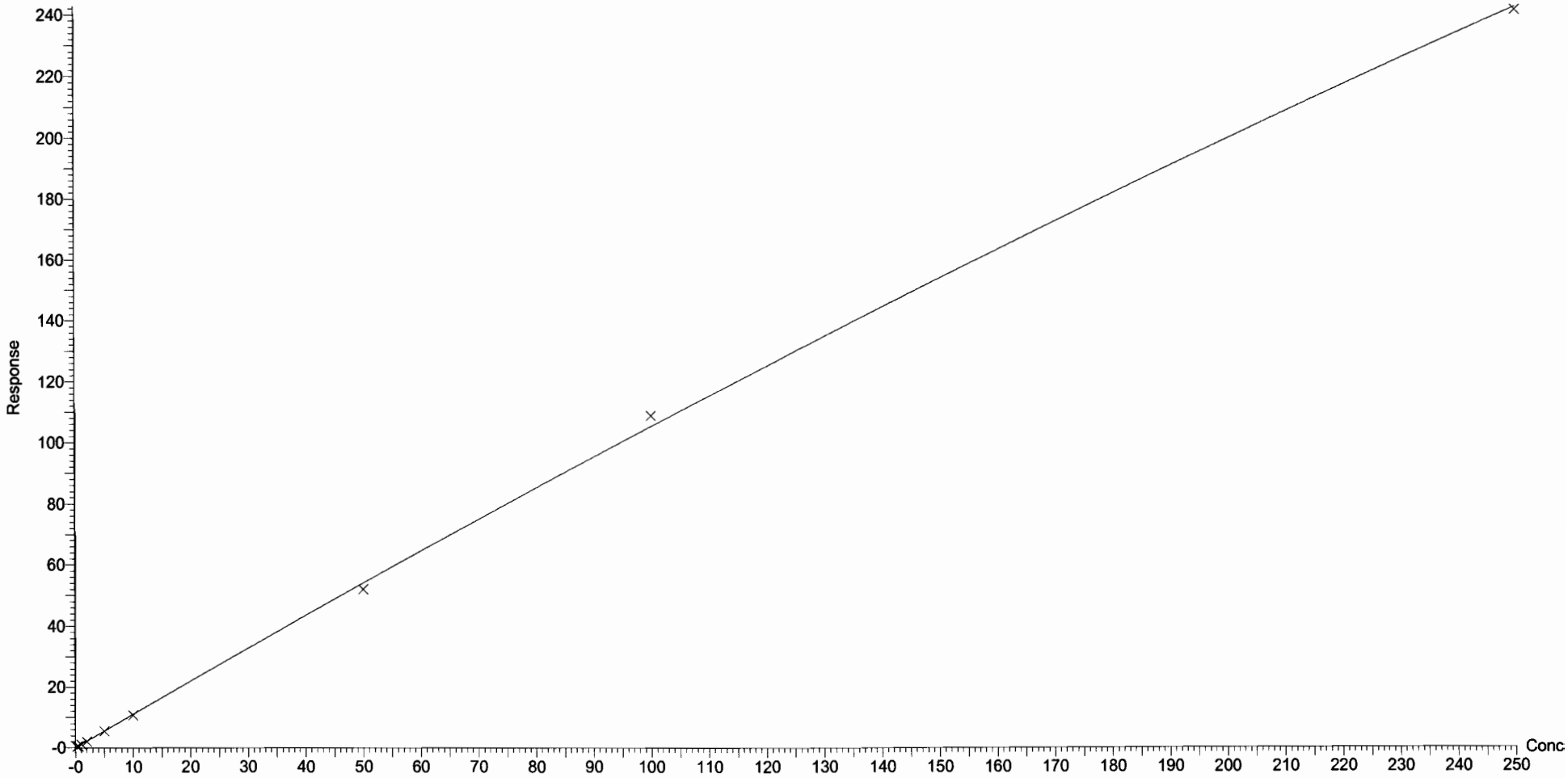
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999081
Calibration curve: -0.00157359 * x^2 + 2.95364 * x + -0.577616
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

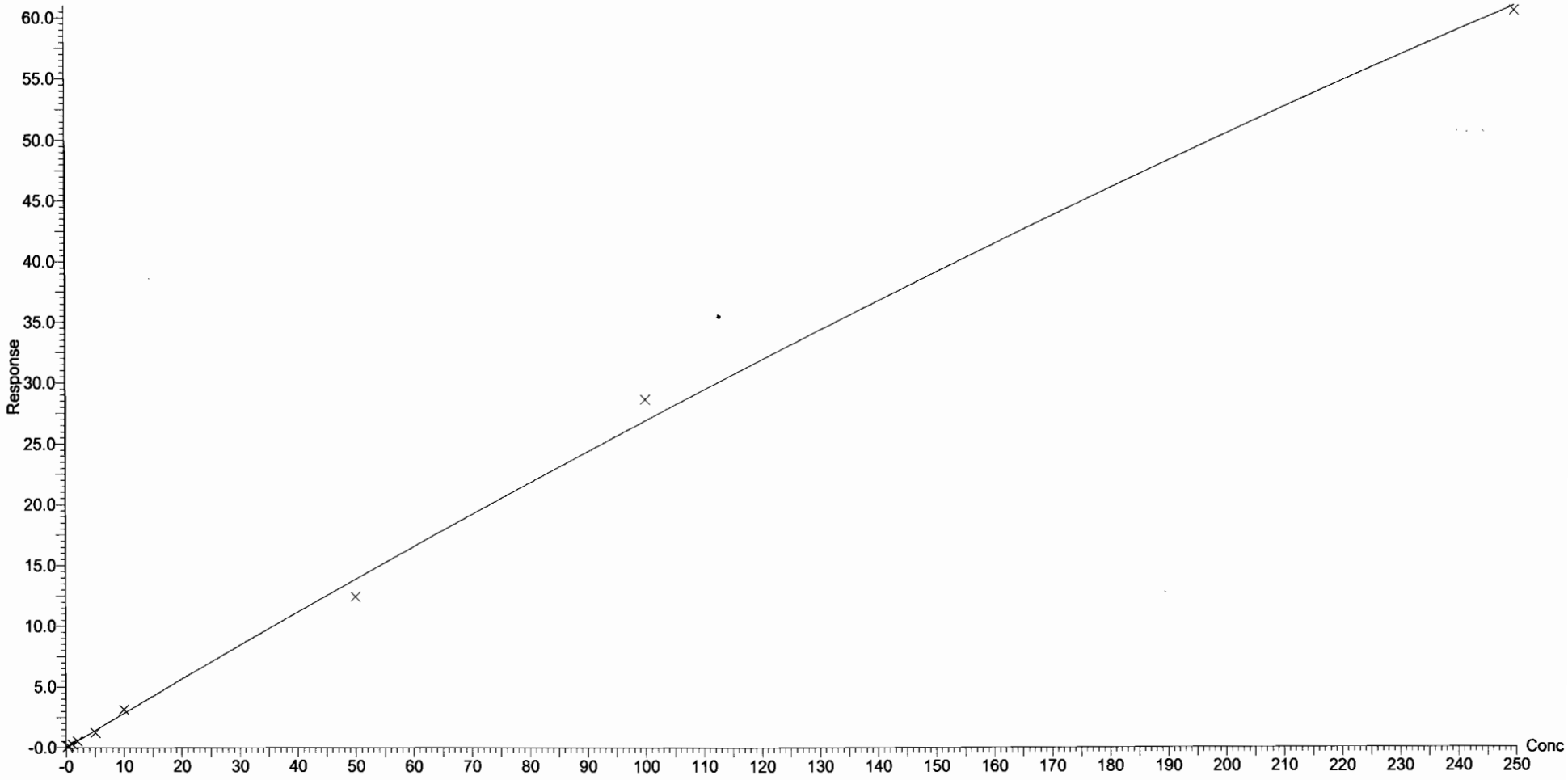
Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999388
Calibration curve: -0.000543136 * x^2 + 1.10702 * x + -0.0314466
Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

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Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

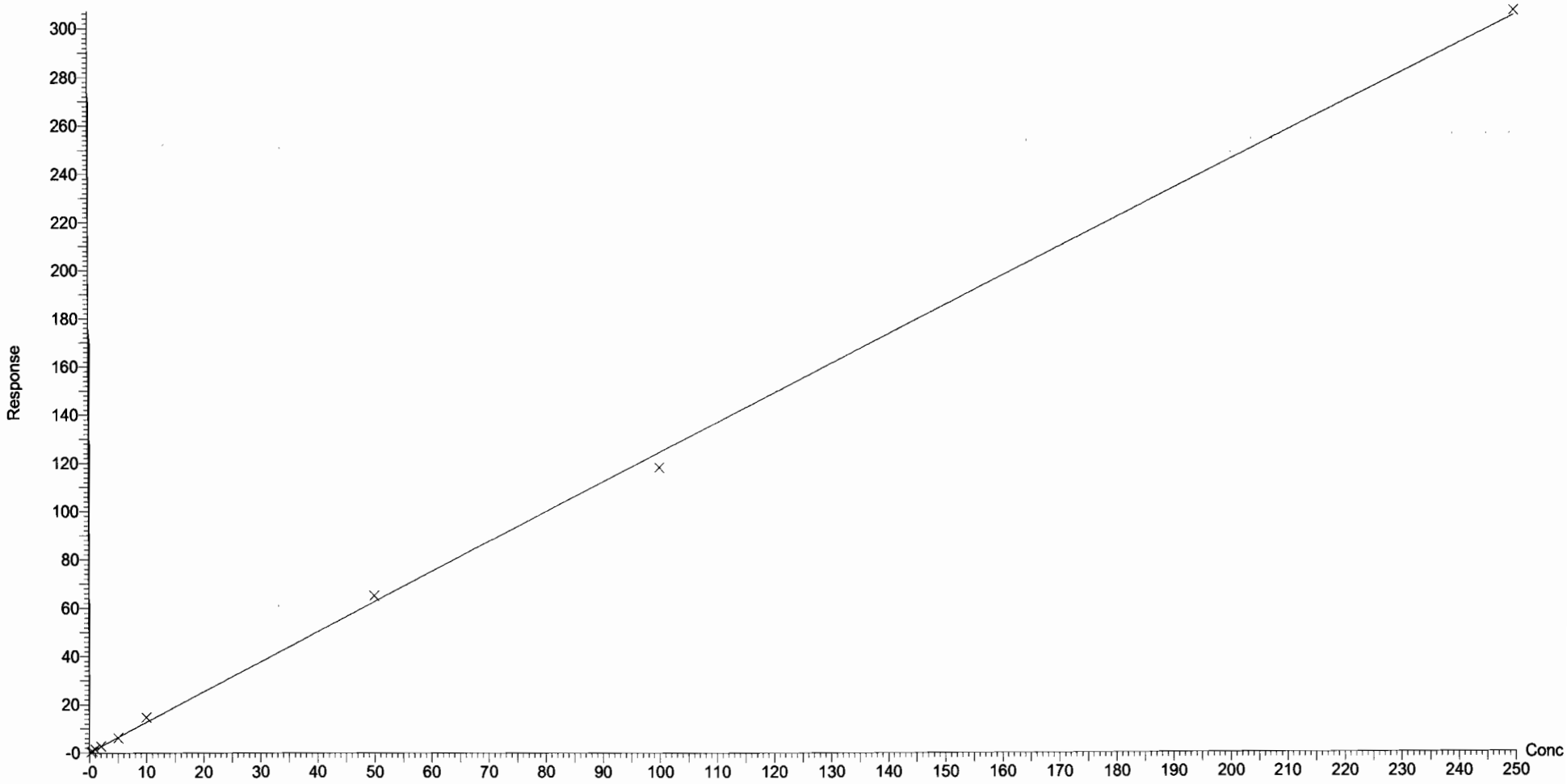
Compound name: PFHpS
Coefficient of Determination: R^2 = 0.996689
Calibration curve: -0.000165057 * x^2 + 0.285225 * x + -0.00427398
Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

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Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

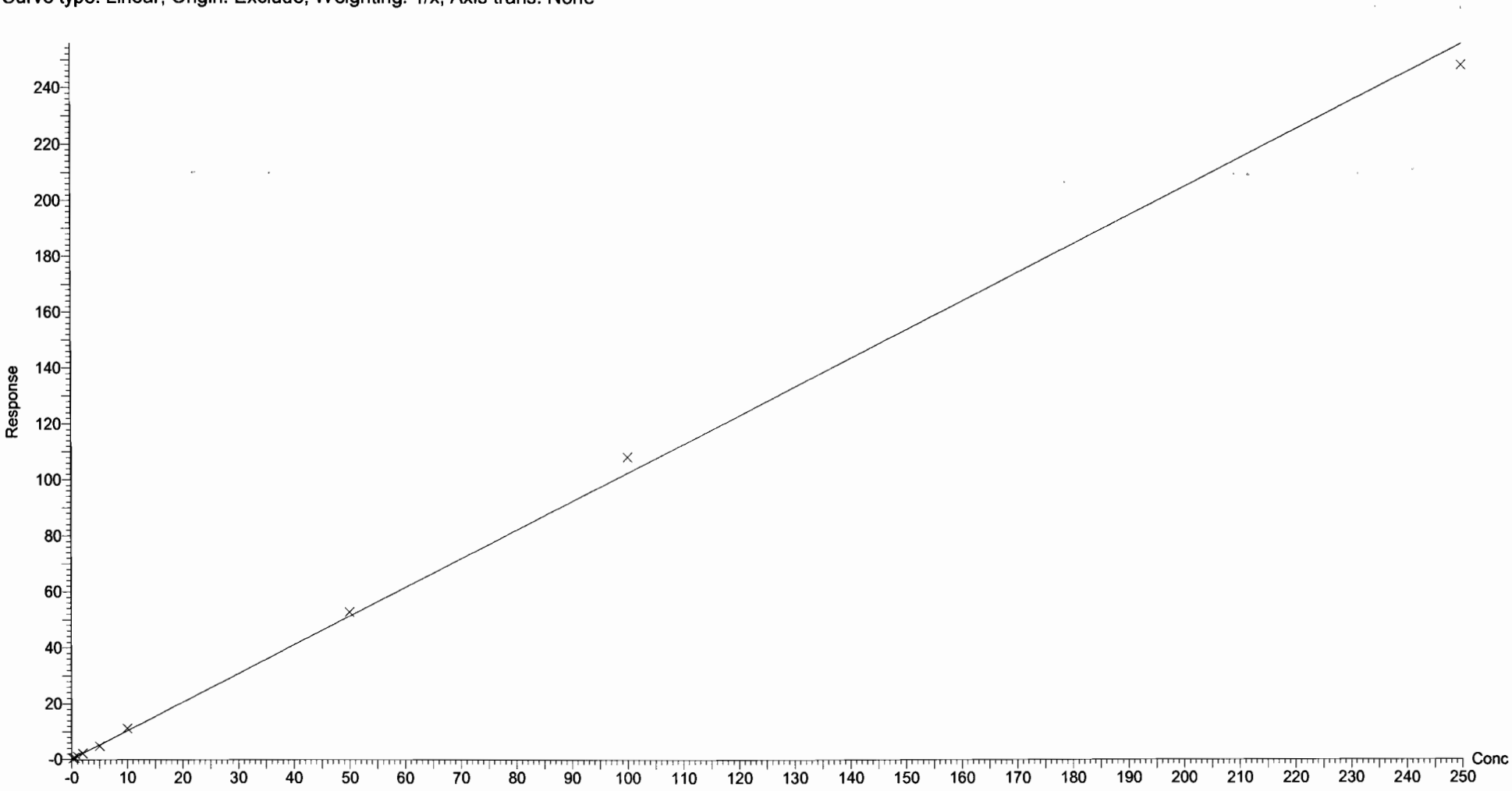
Compound name: PFNA
Coefficient of Determination: R^2 = 0.998437
Calibration curve: -0.000150178 * x^2 + 1.25742 * x + 0.0556715
Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

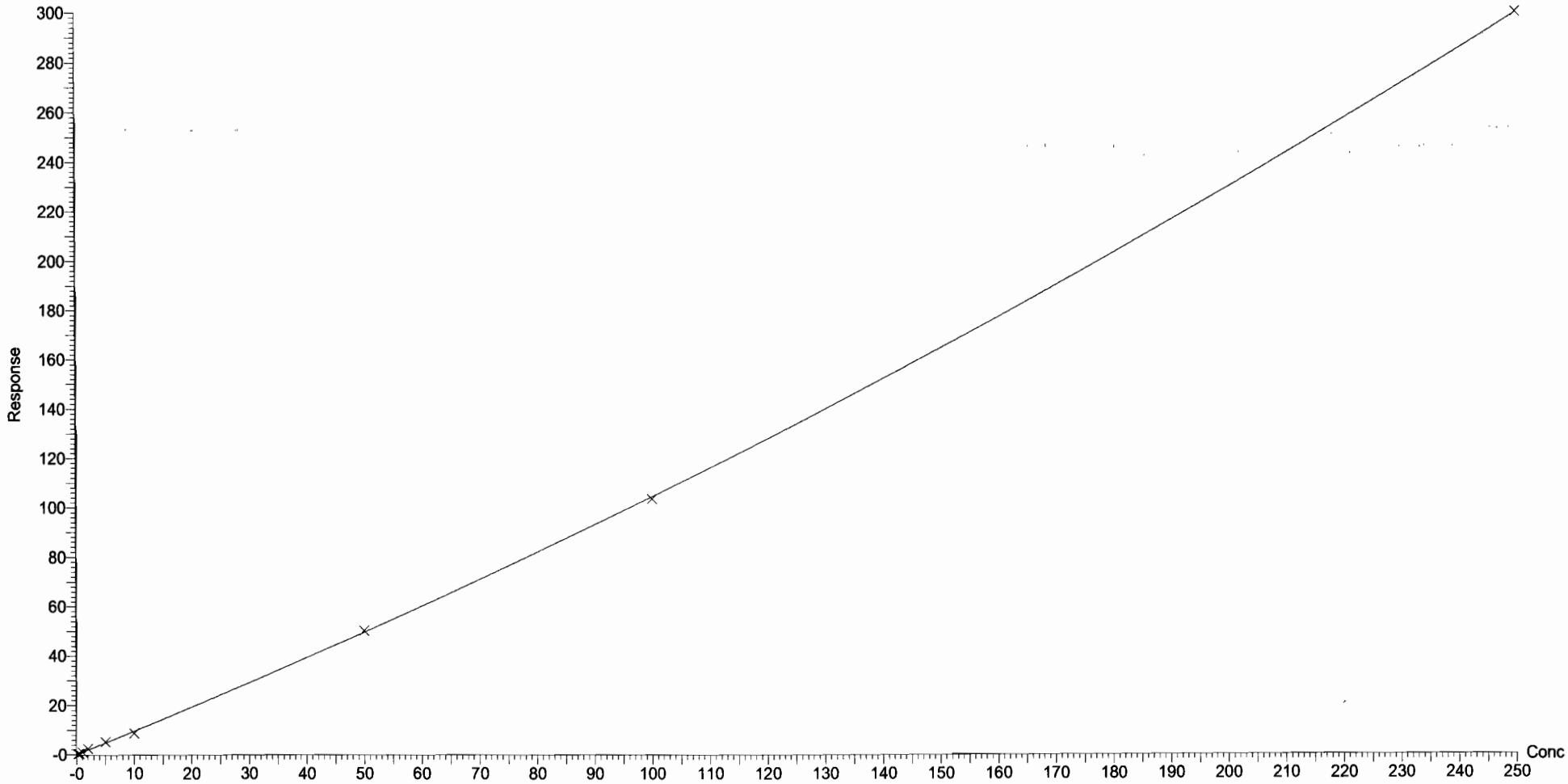
Compound name: PFOSA
Correlation coefficient: r = 0.999164, r^2 = 0.998330
Calibration curve: 1.02264 * x + 0.0909234
Response type: Internal Std (Ref 40), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999512
Calibration curve: 0.00104467 * x^2 + 0.937739 * x + 0.0262871
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



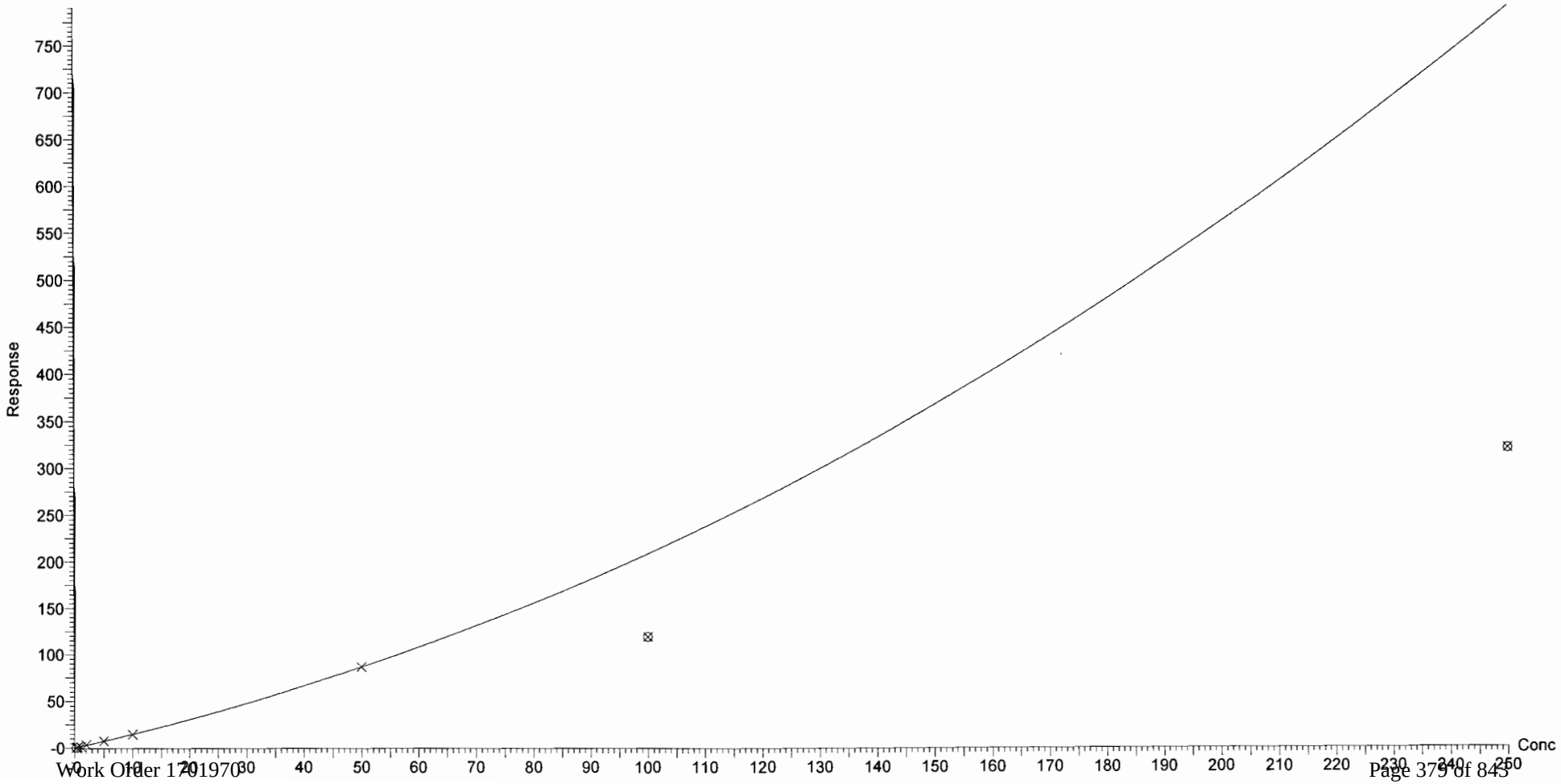
Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 11:01:39 Pacific Standard Time
Printed: Tuesday, January 09, 2018 11:02:54 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:00:24
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

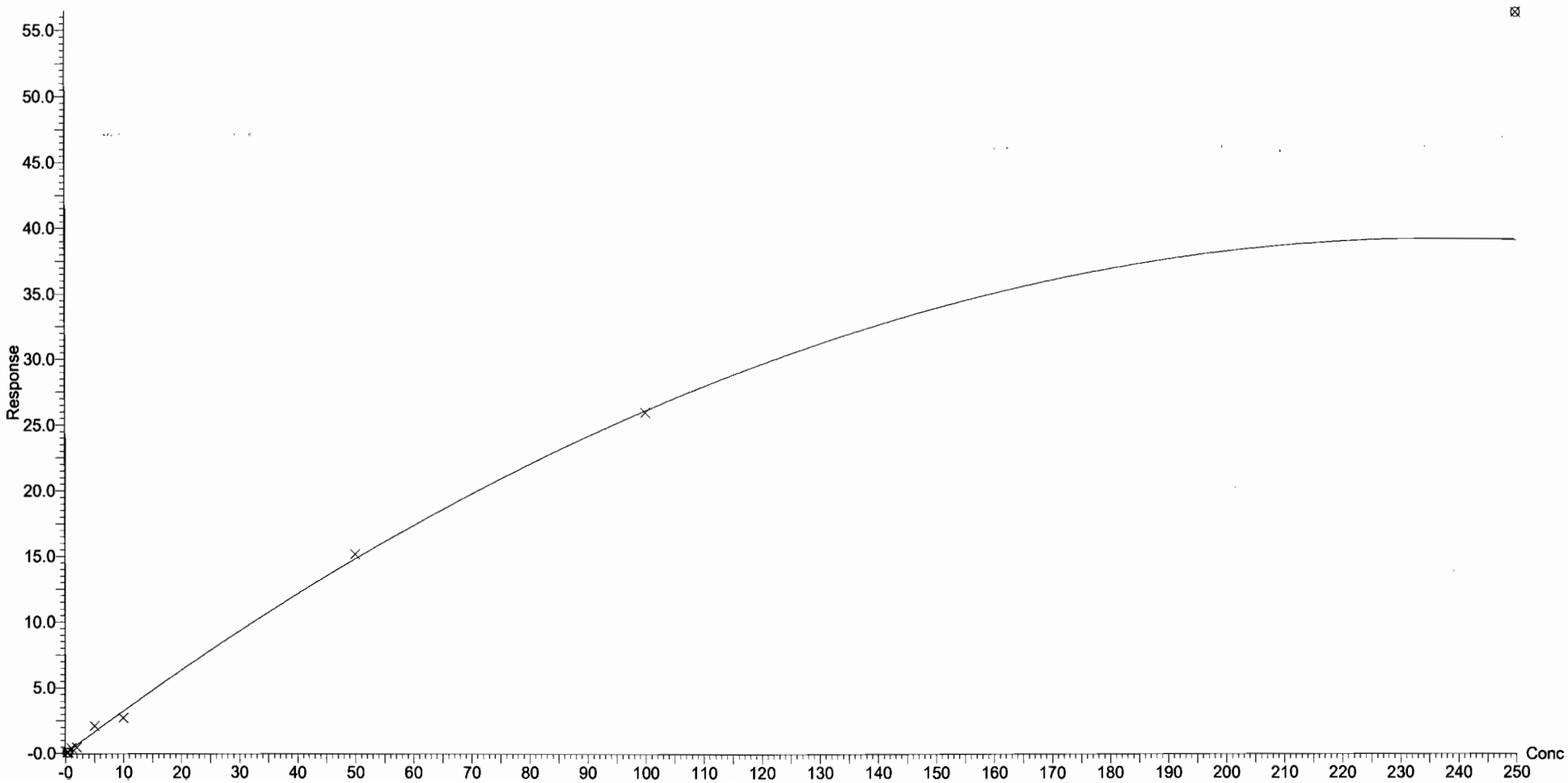
Compound name: PFDA
Coefficient of Determination: R^2 = 0.999649
Calibration curve: 0.00721614 * x^2 + 1.35715 * x + 0.231309
Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

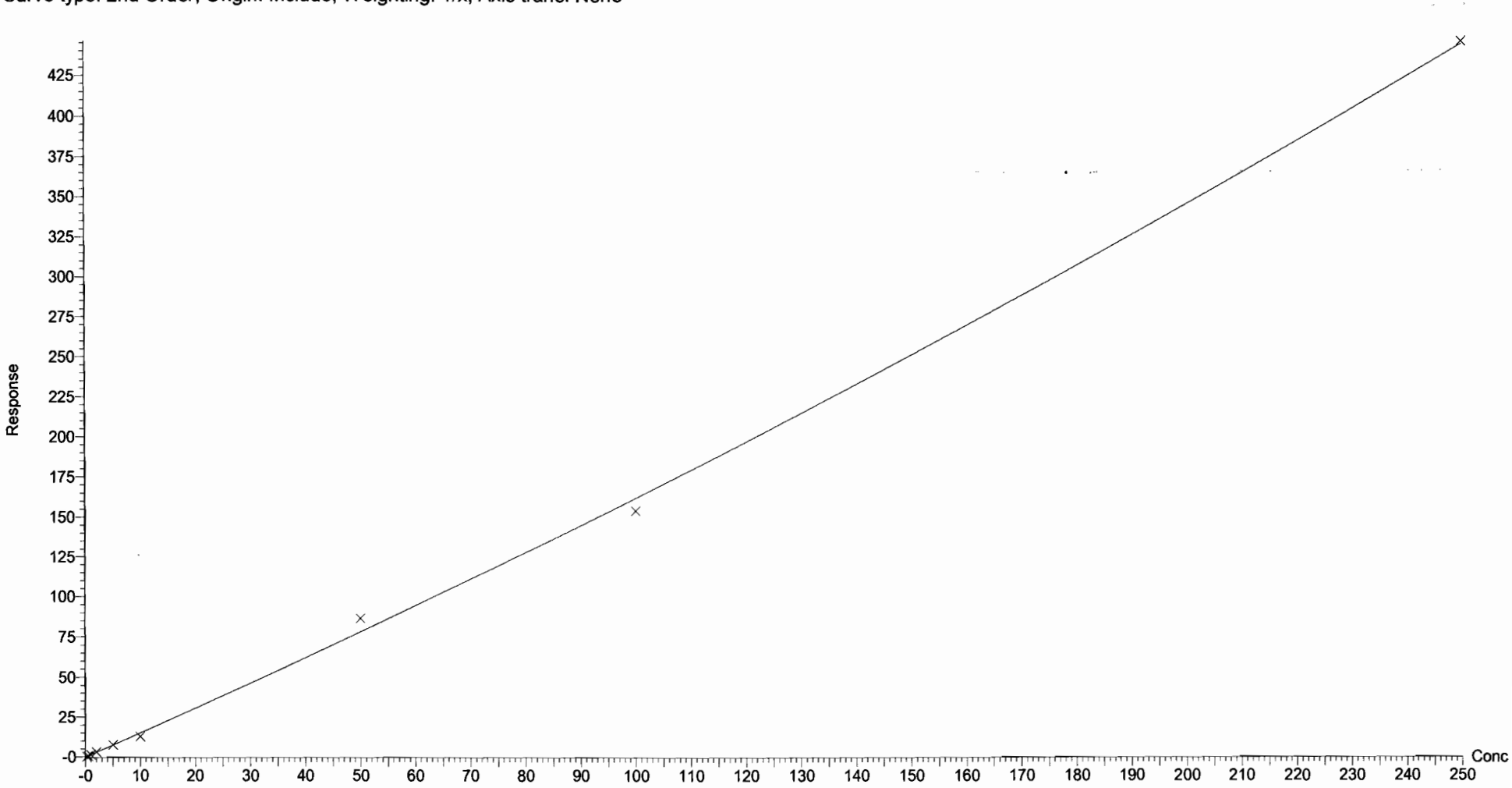
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.992049
Calibration curve: -0.000697314 * x^2 + 0.330805 * x + 0.0126419
Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

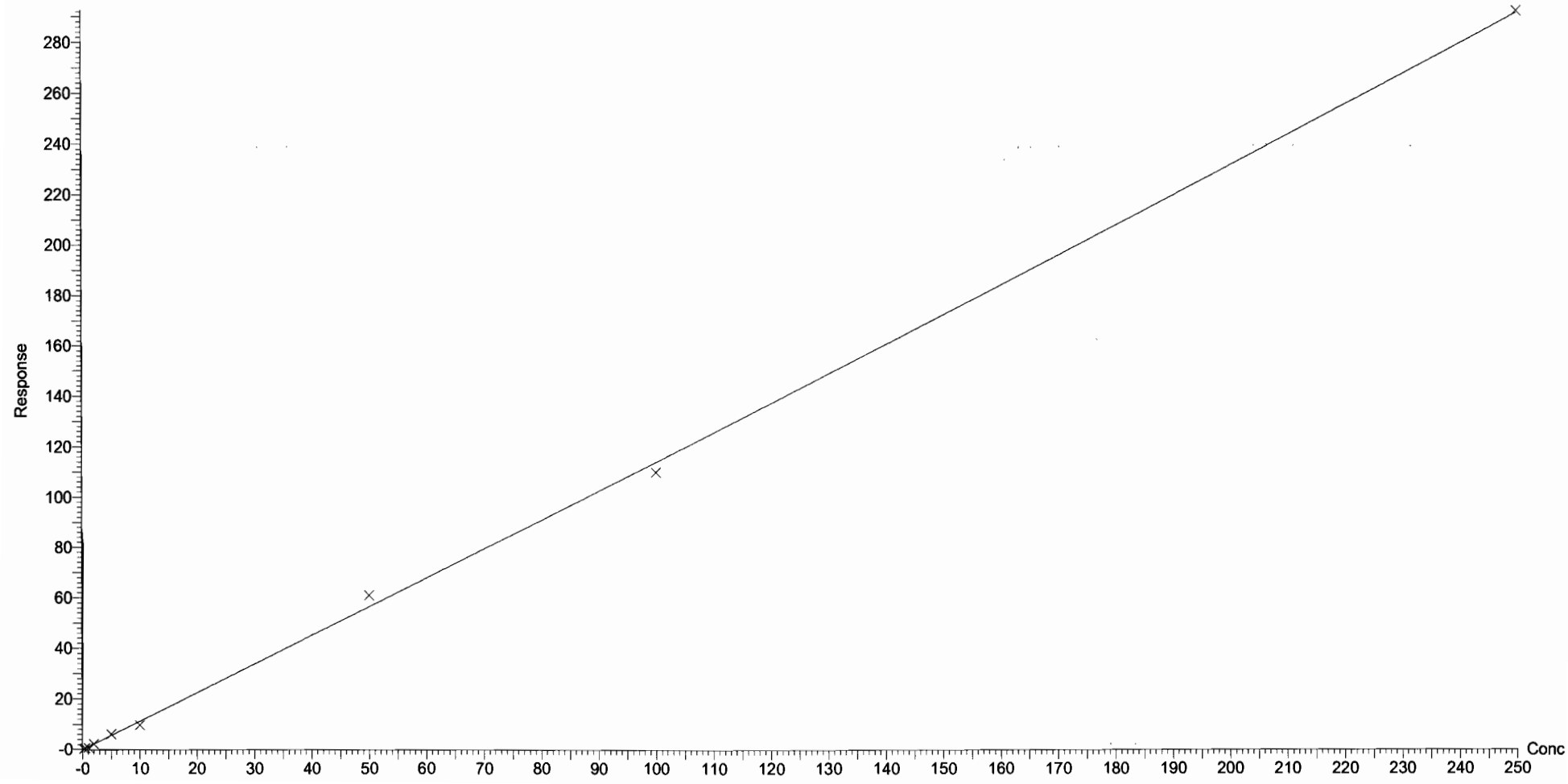
Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.997862
Calibration curve: 0.00107656 * x^2 + 1.50945 * x + -0.114518
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

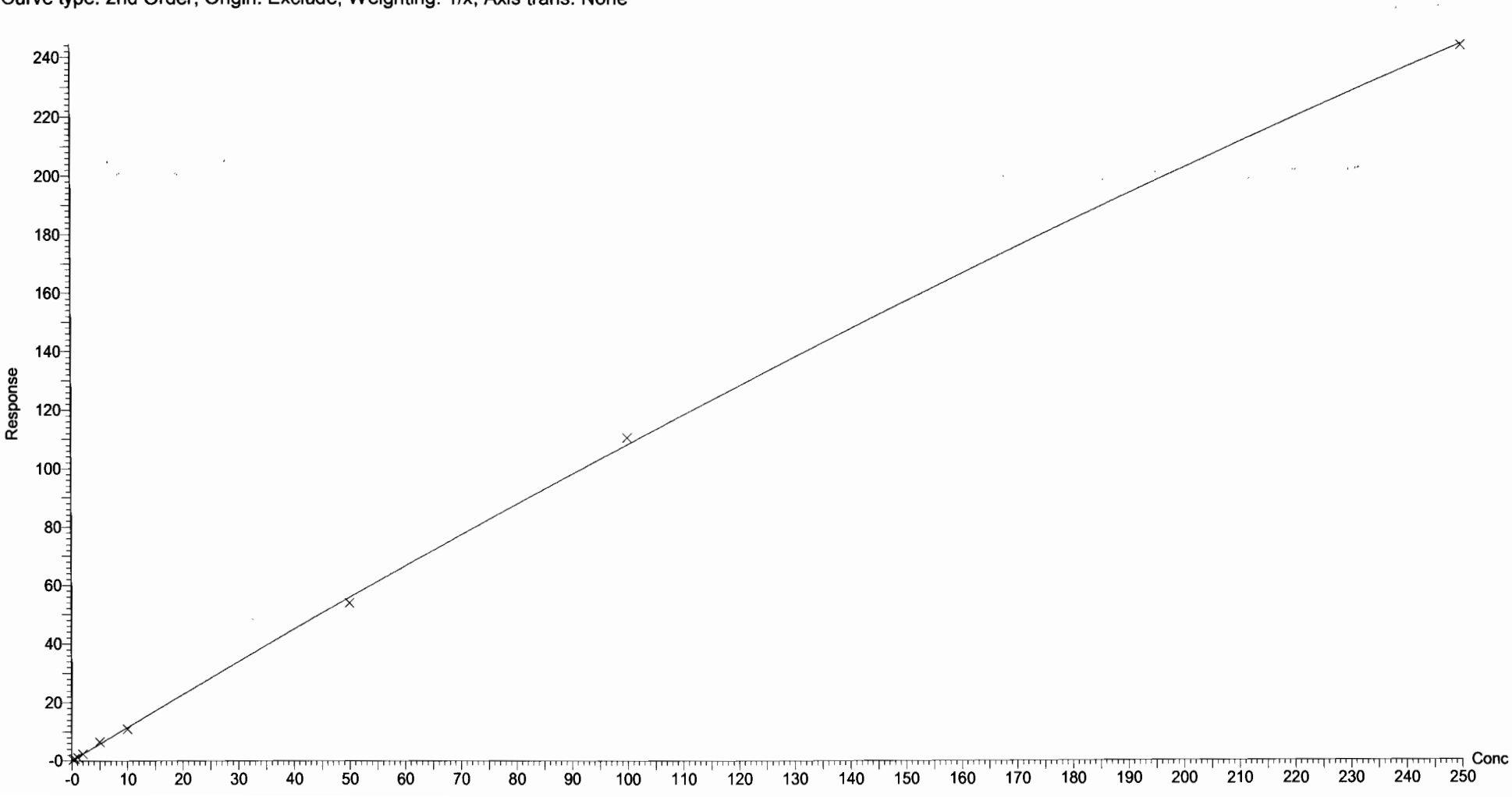
Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.998238
Calibration curve: 0.000189045 * x^2 + 1.12021 * x + -0.0858122
Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

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Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

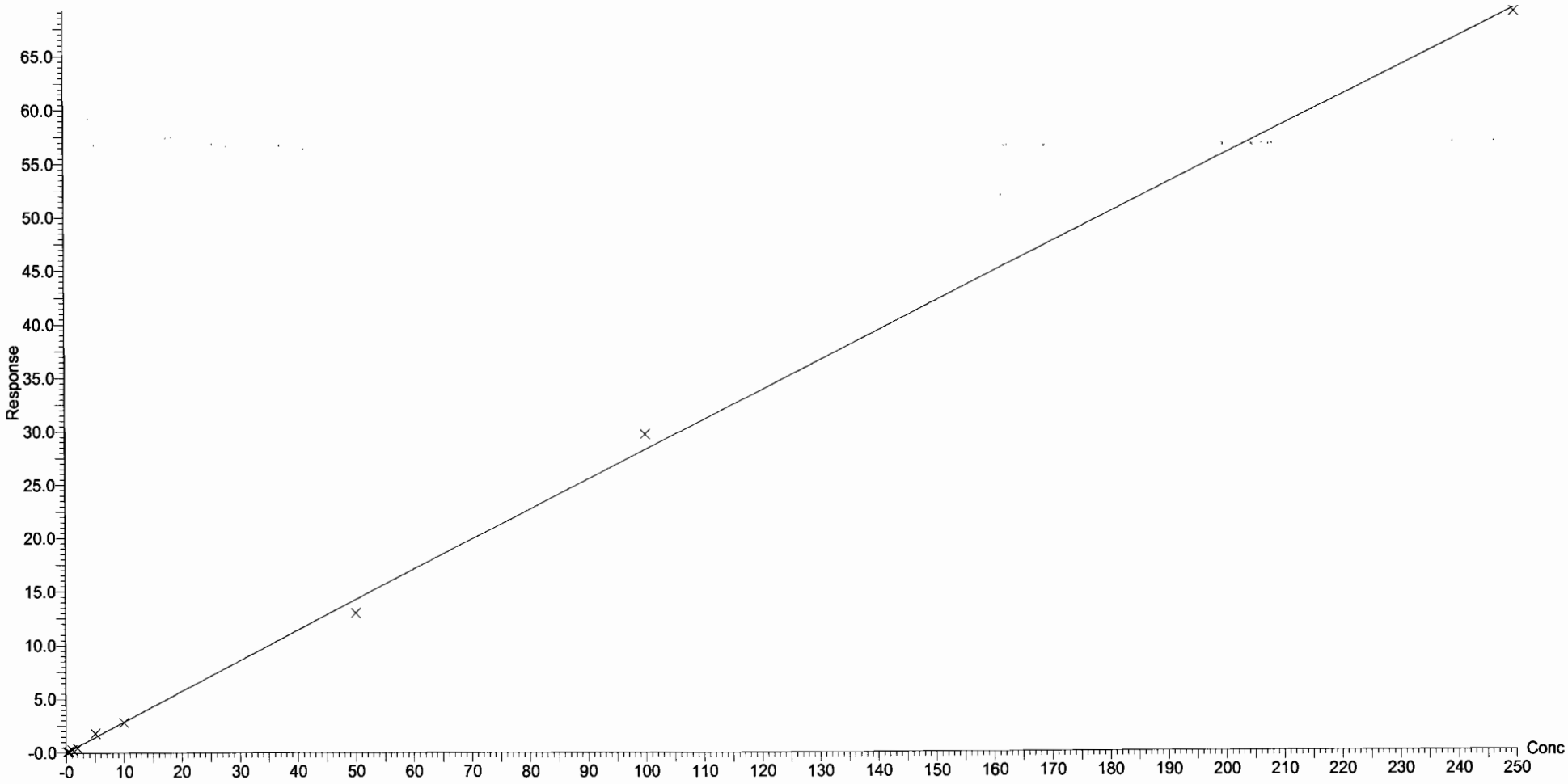
Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999299
Calibration curve: -0.000683877 * x^2 + 1.1487 * x + 0.0222509
Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

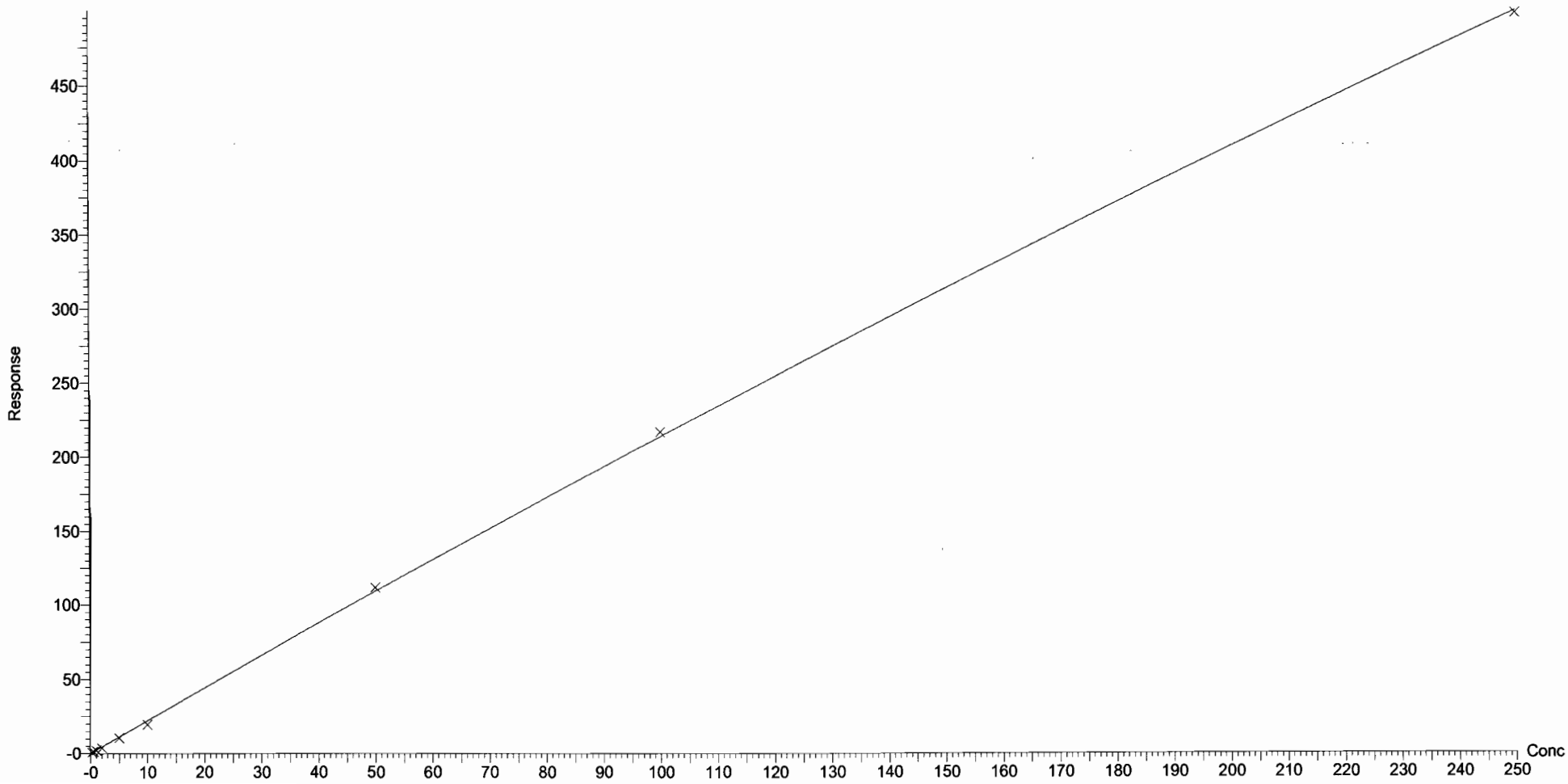
Compound name: PFDS
Coefficient of Determination: R^2 = 0.996998
Calibration curve: -3.67377e-005 * x^2 + 0.286062 * x + -0.00118285
Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

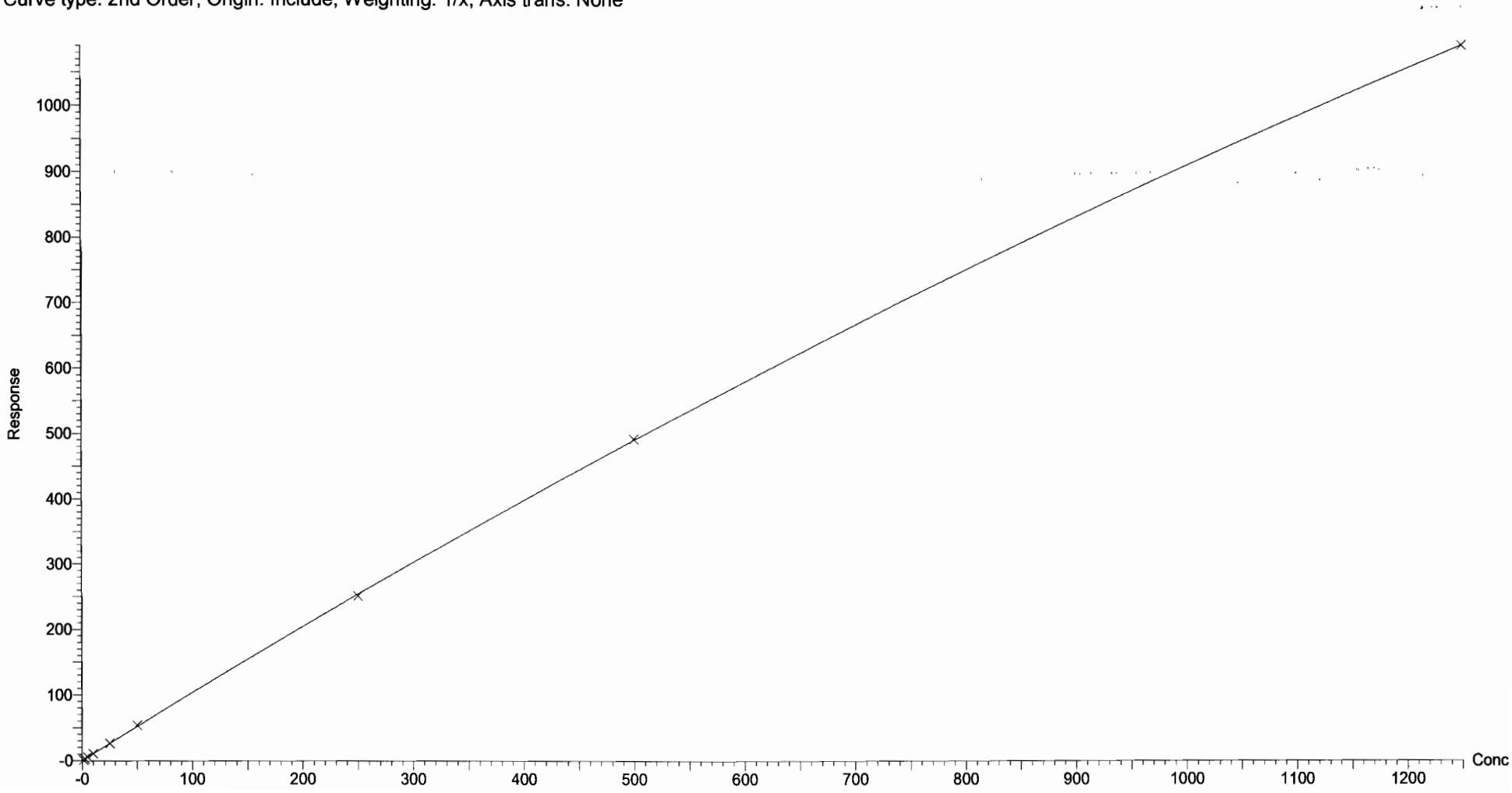
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999167
Calibration curve: -0.000912755 * x^2 + 2.22756 * x + -0.0196312
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

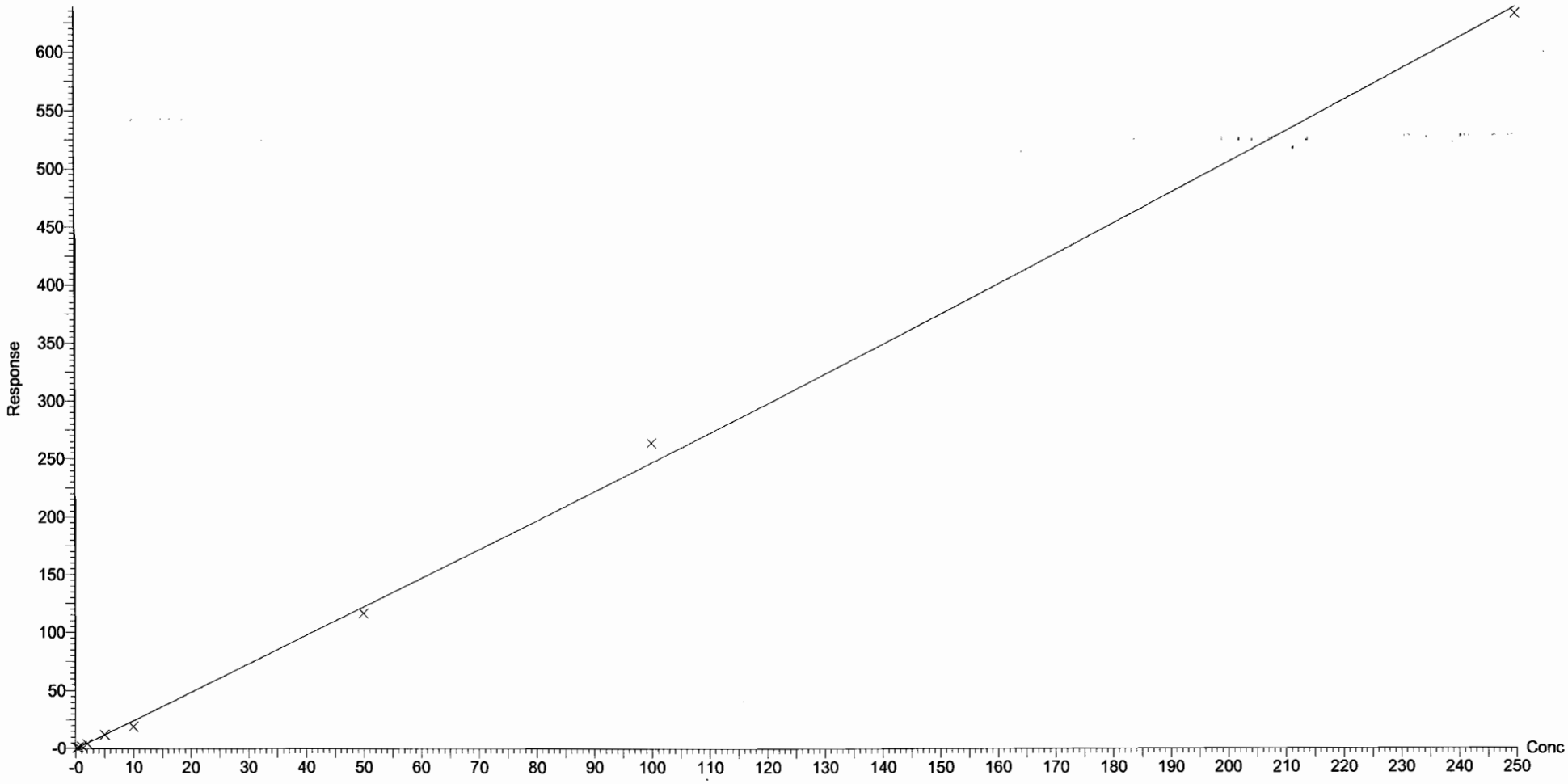
Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999911
Calibration curve: -0.000141495 * x^2 + 1.04902 * x + -0.0884394
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

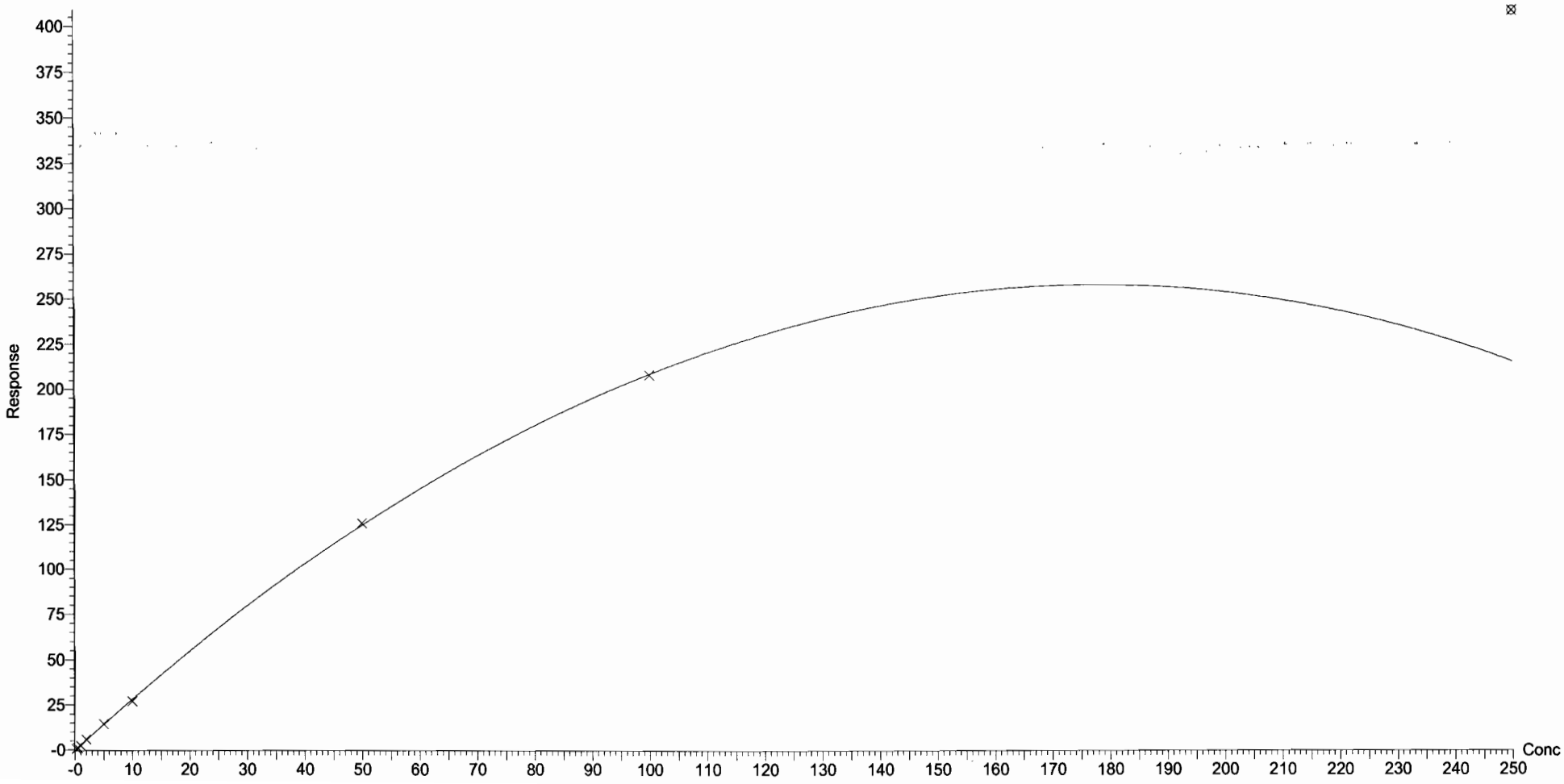
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.997425
Calibration curve: 0.000610148 * x^2 + 2.40132 * x + -0.112201
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

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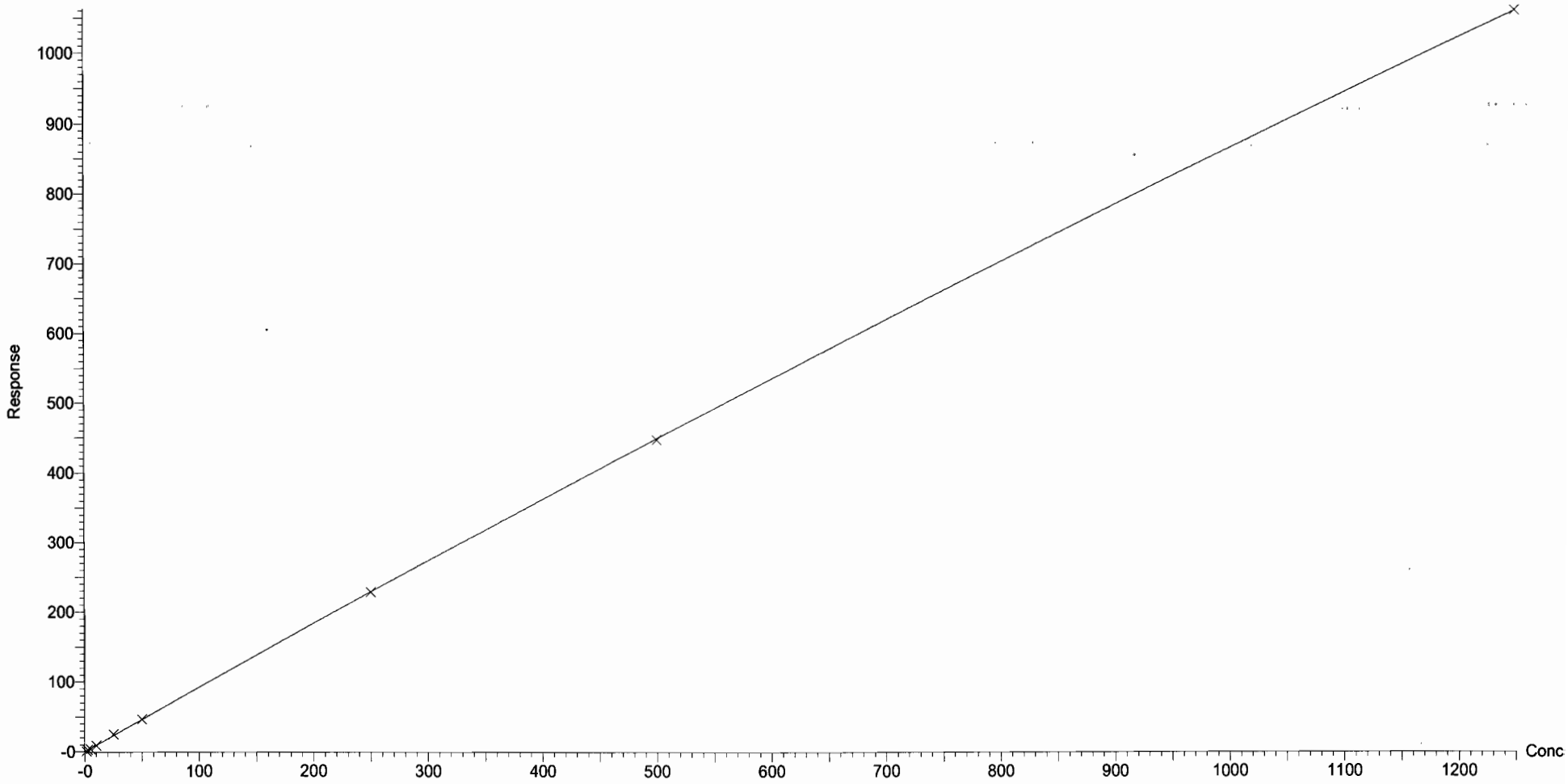
Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.999467
Calibration curve: -0.00816162 * x^2 + 2.9016 * x + -0.184929
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

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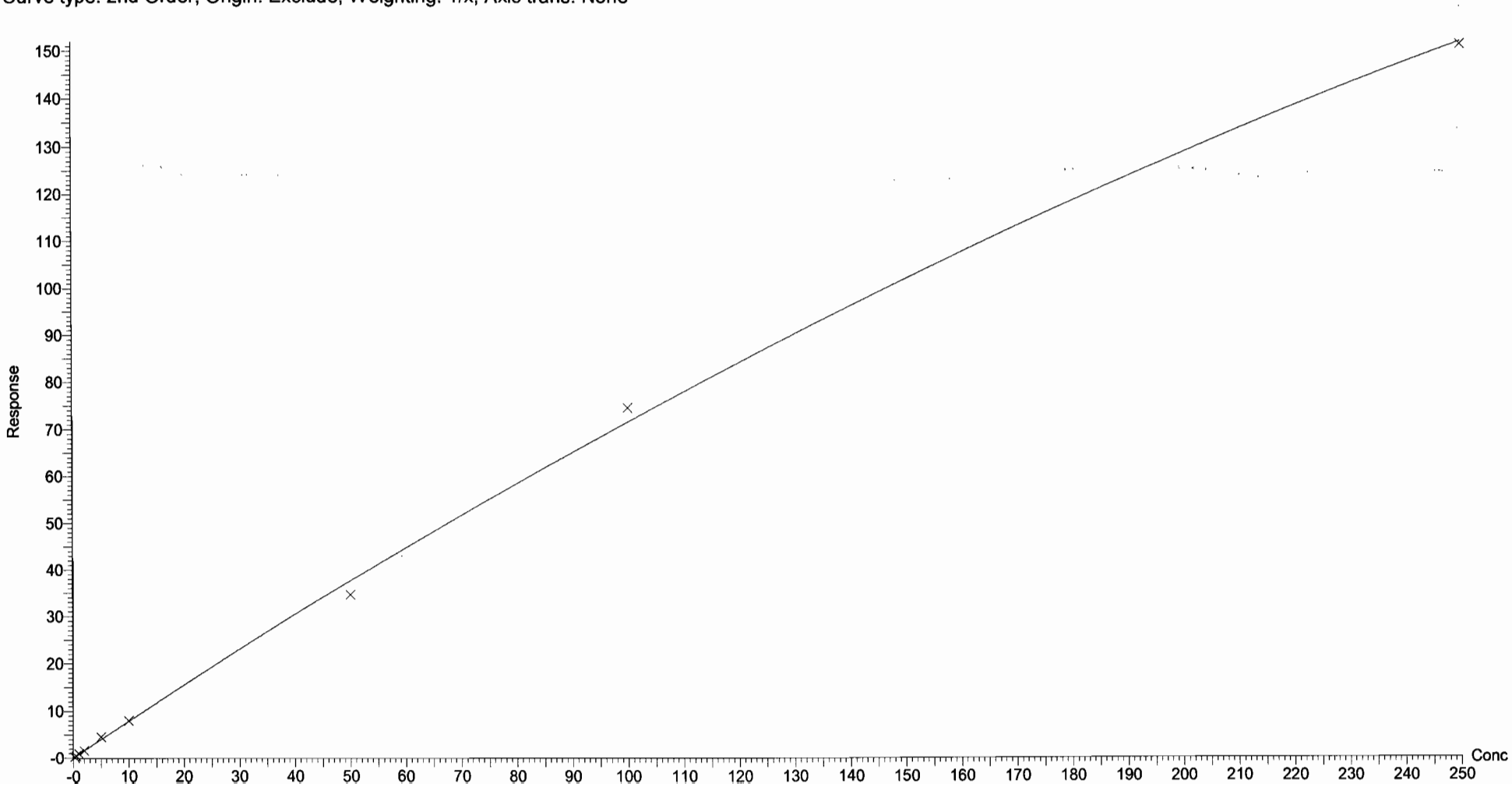
Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999796
Calibration curve: -6.59411e-005 * x^2 + 0.931369 * x + -0.00776819
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



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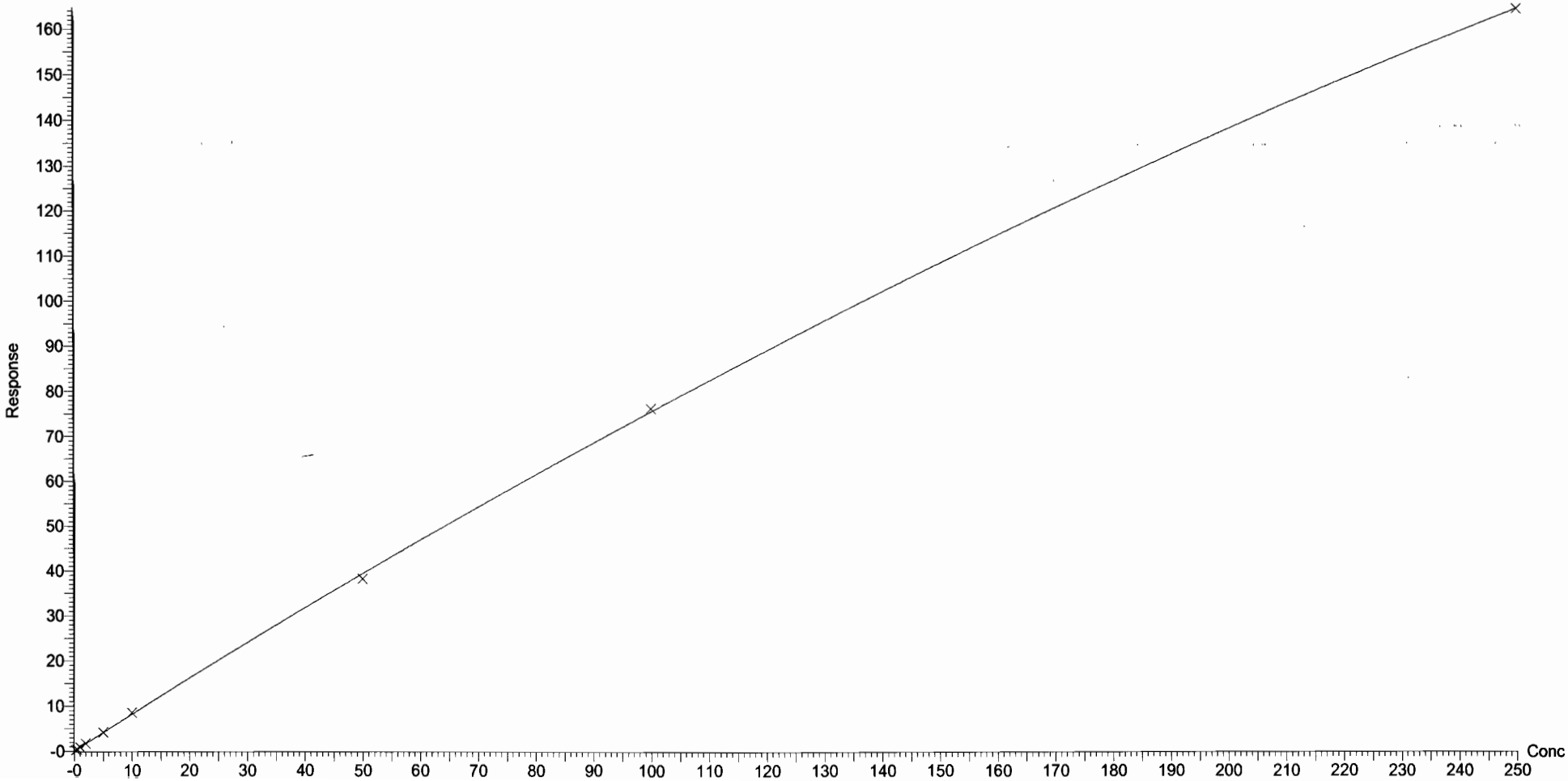
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998105
Calibration curve: -0.000711813 * x^2 + 0.785431 * x + 0.0721835
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



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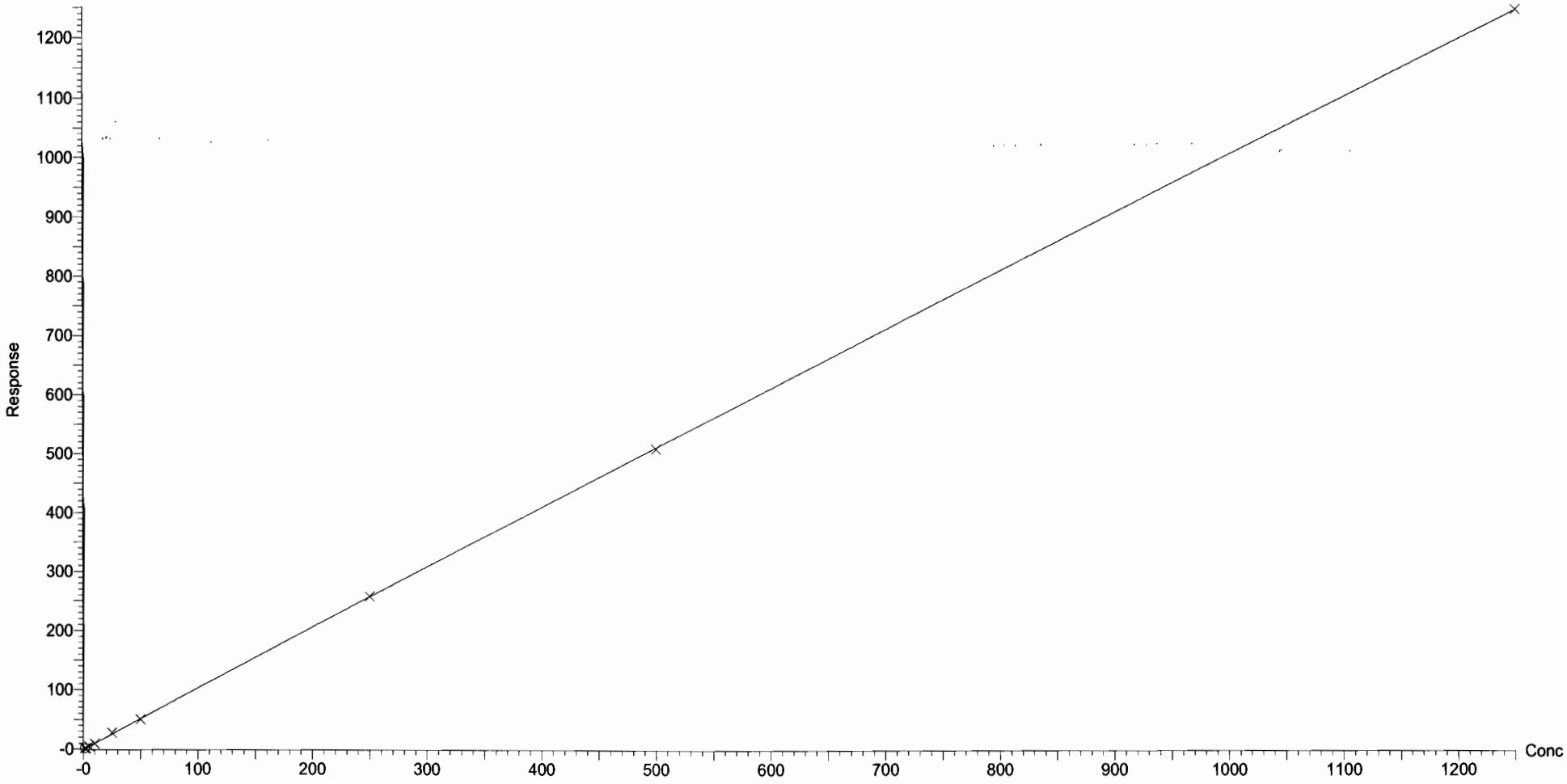
Compound name: PFODA
Coefficient of Determination: R^2 = 0.999722
Calibration curve: -0.000640041 * x^2 + 0.818714 * x + 0.044611
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
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Compound name: N-MeFOSE
Coefficient of Determination: R^2 = 0.999839
Calibration curve: -2.99189e-005 * x^2 + 1.03784 * x + -0.734823
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

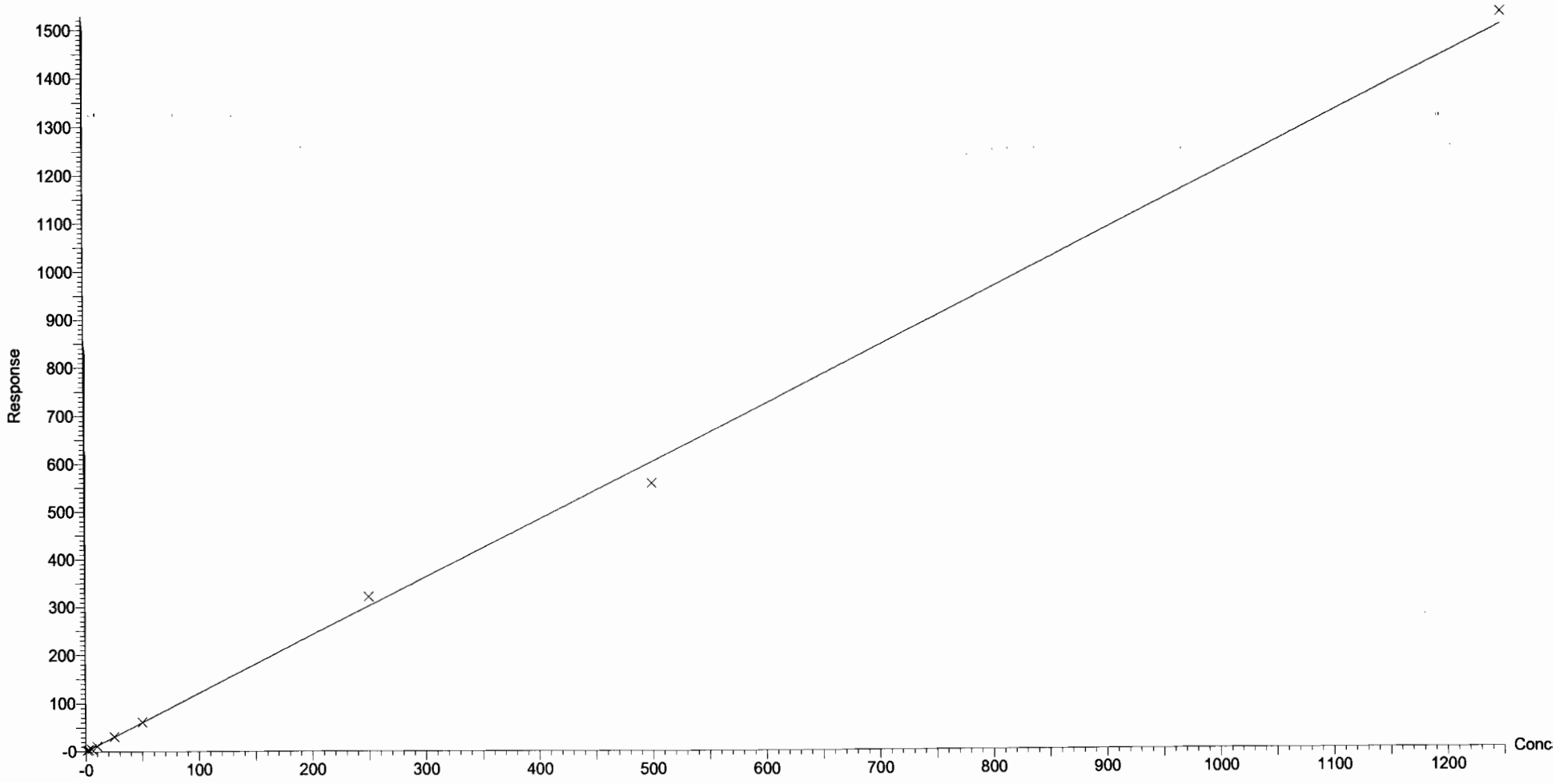


Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results\180108M2\180108M2-CRV.qld

Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:53:12 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.998887, r^2 = 0.997775
Calibration curve: 1.20231 * x + -0.0116801
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



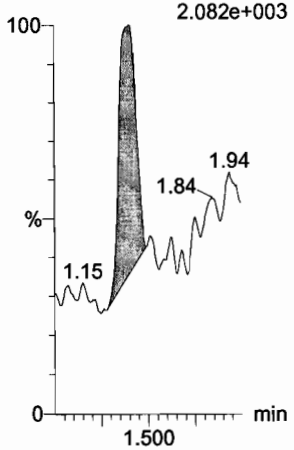
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Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

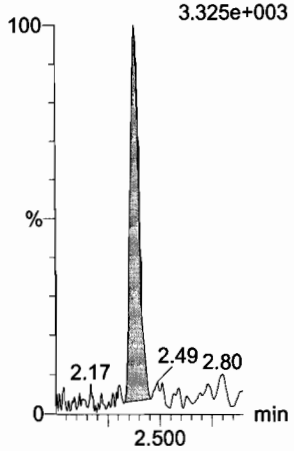
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Name: 180108M2_1, Date: 09-Jan-2018, Time: 00:36:40, ID: ST180108M2-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

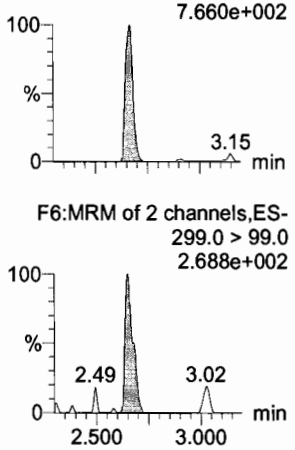
PFBA



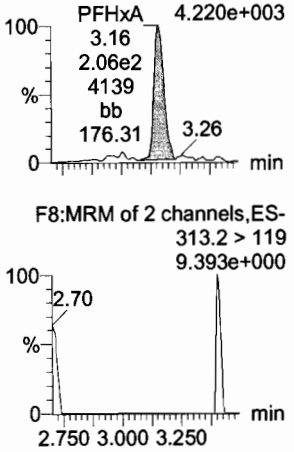
PFPeA



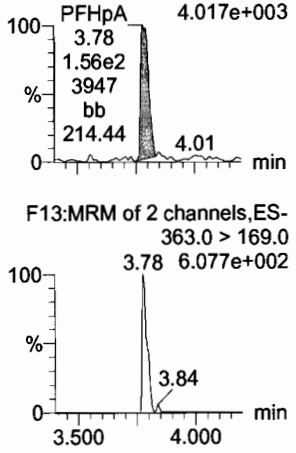
PFBS



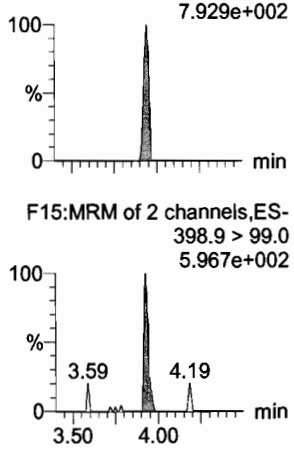
PFHxA



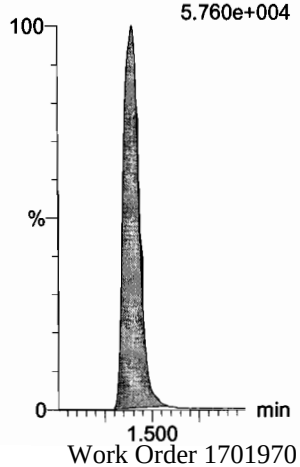
PFHpA



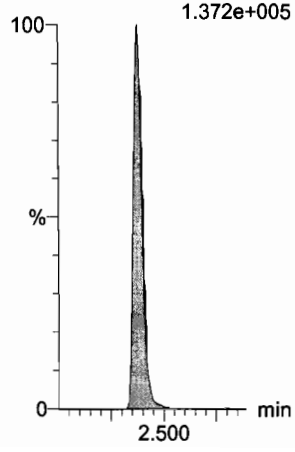
L-PFHxS



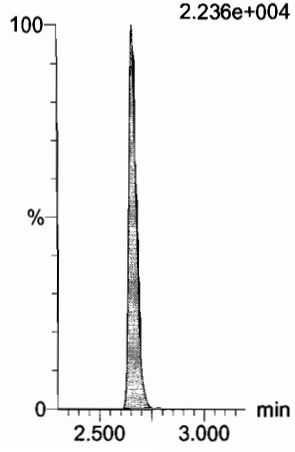
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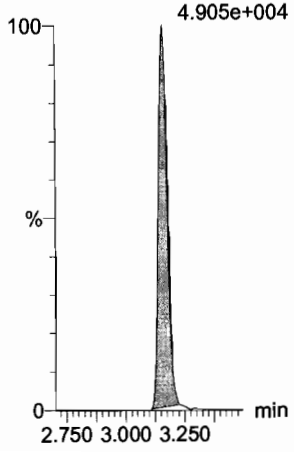
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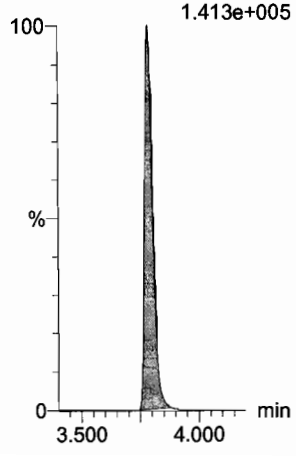
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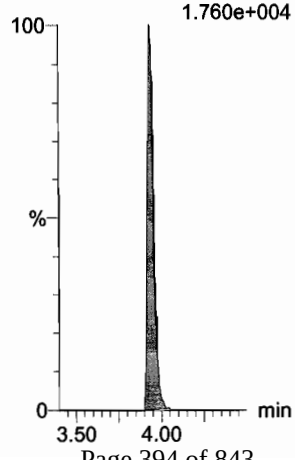
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

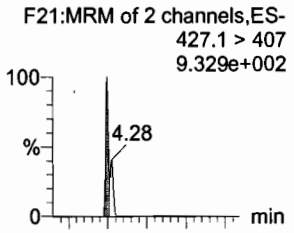


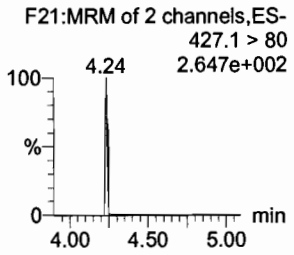
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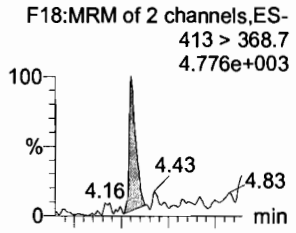
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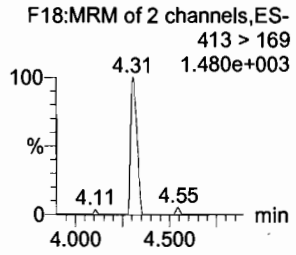
6:2 FTS



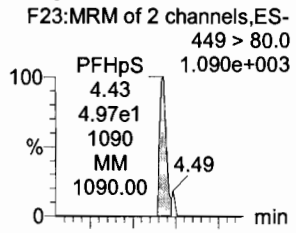


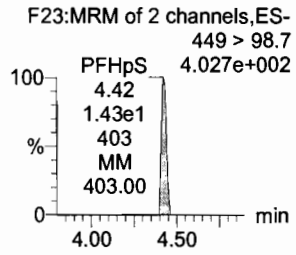
L-PFOA



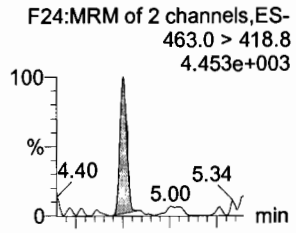


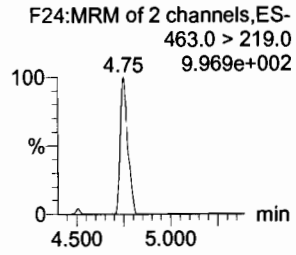
PFHpS



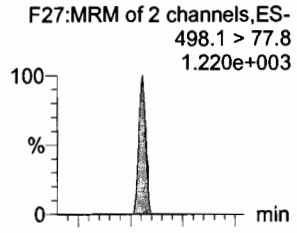


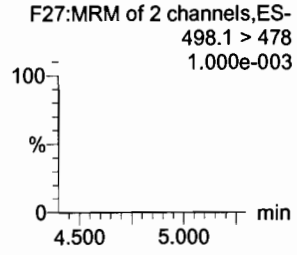
PFNA



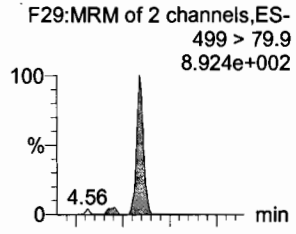


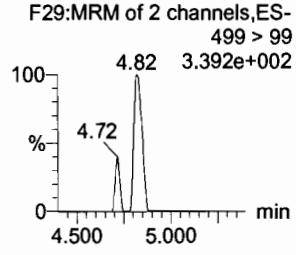
PFOSA



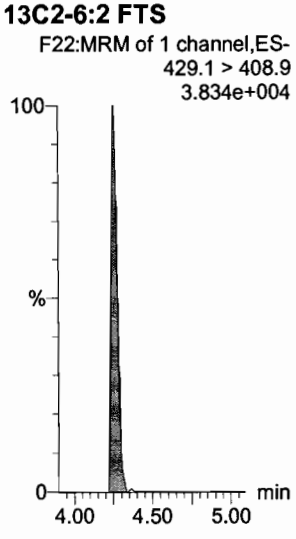


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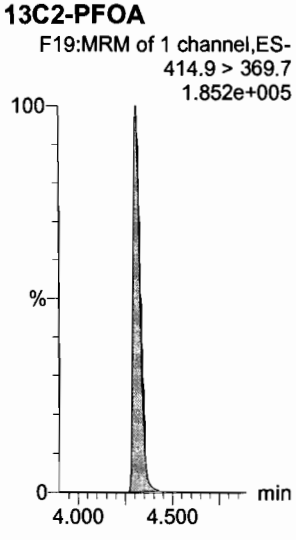




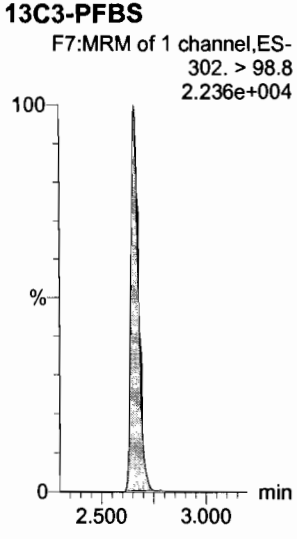
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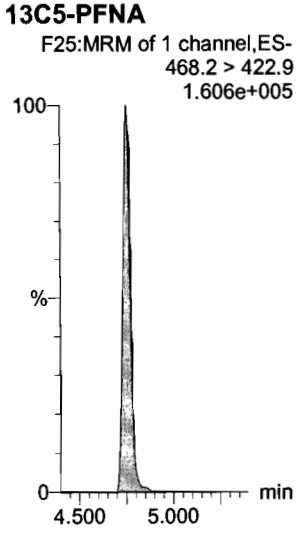
13C2-PFOA



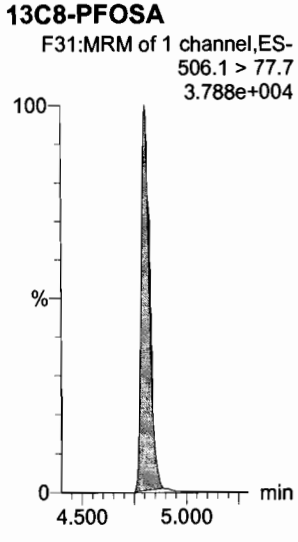
13C3-PFBS



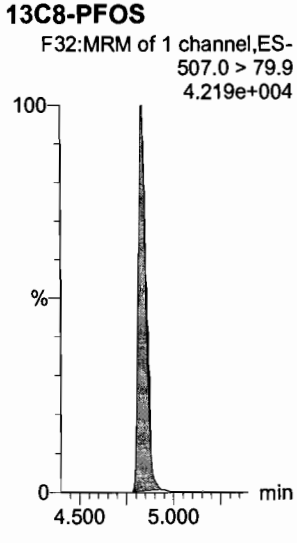
13C5-PFNA



13C8-PFOSA



13C8-PFOS

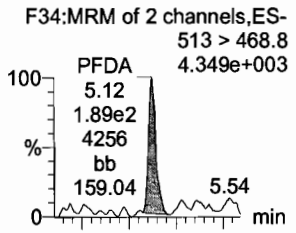


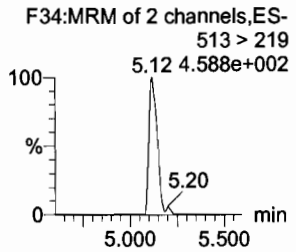
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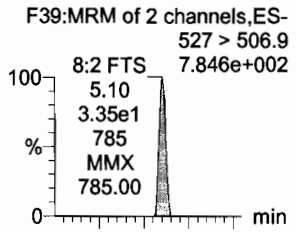
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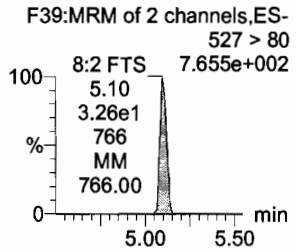
PFDA



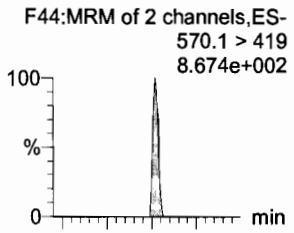


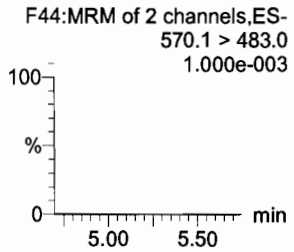
8:2 FTS



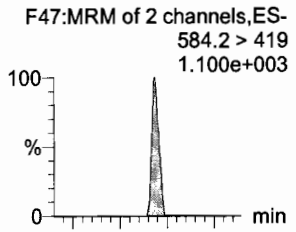


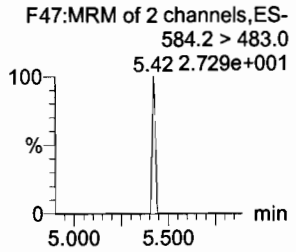
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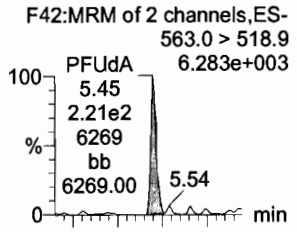


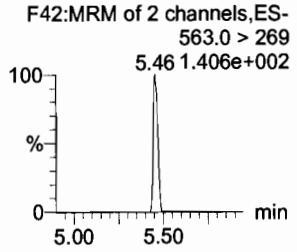
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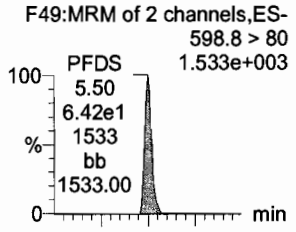


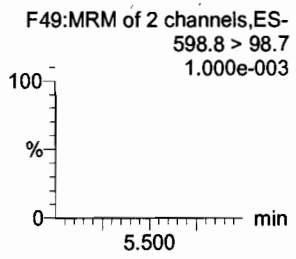
PFUdA



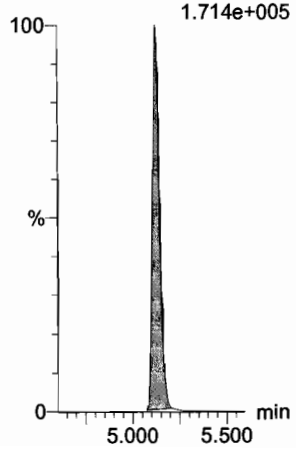


PFDS

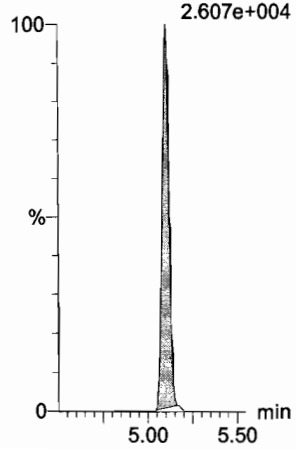




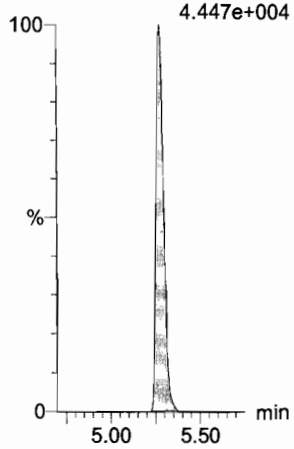
13C2-PFDA



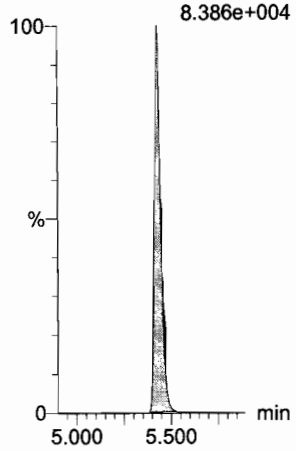
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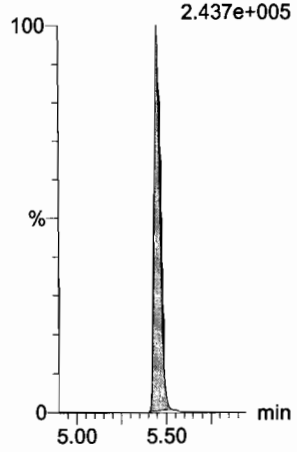
d3-N-MeFOSAA



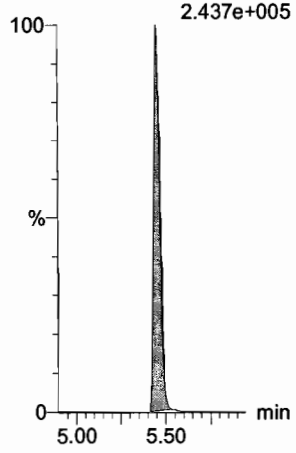
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

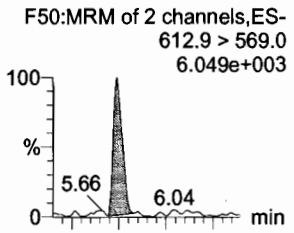


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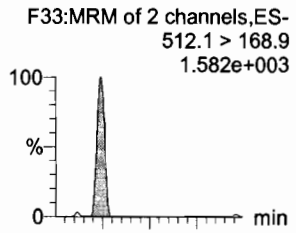
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Name: 180108M2_1, Date: 09-Jan-2018, Time: 00:36:40, ID: ST180108M2-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

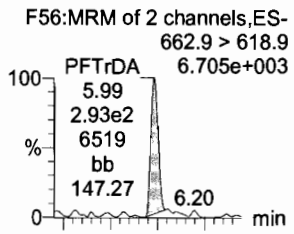
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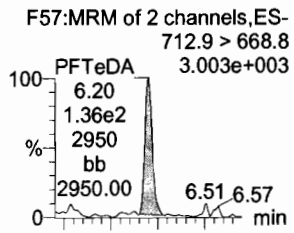
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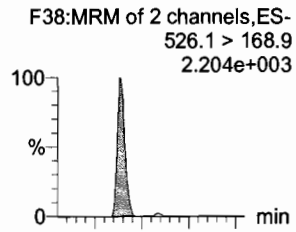
PFTrDA



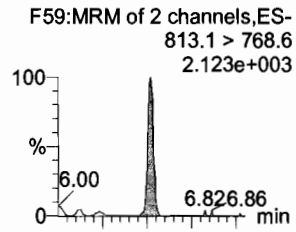
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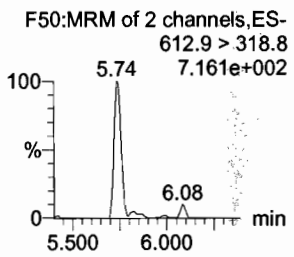


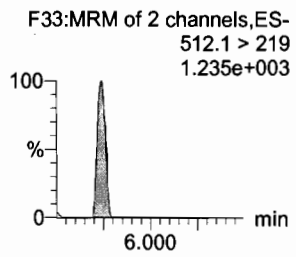
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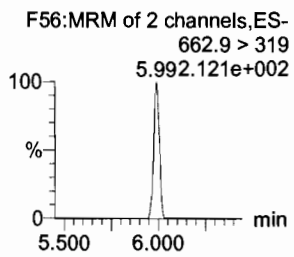


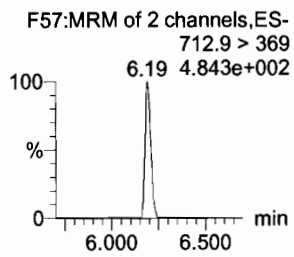
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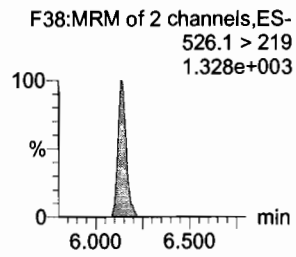


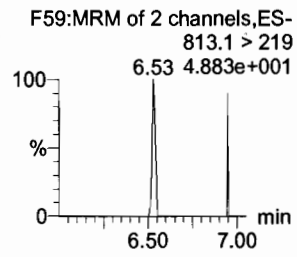




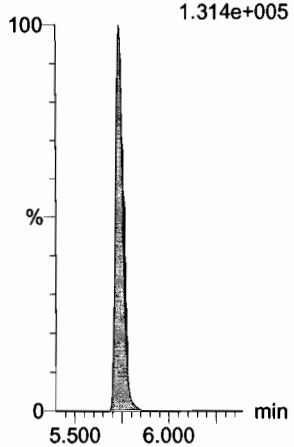




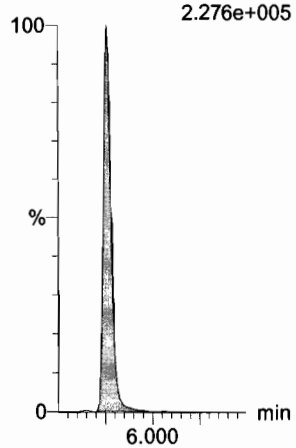




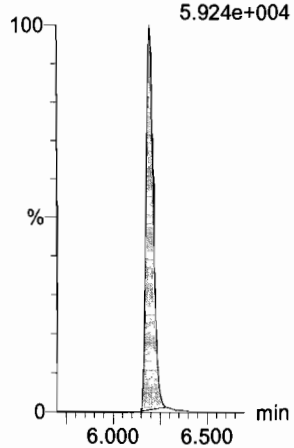
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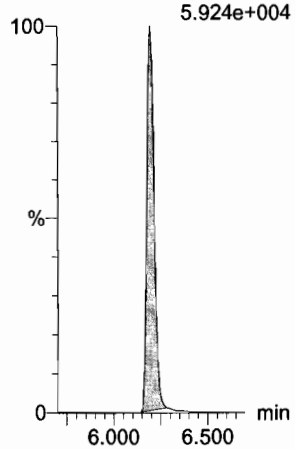
d3-N-MeFOSA



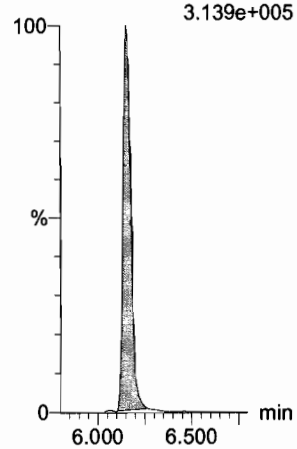
13C2-PFTeDA



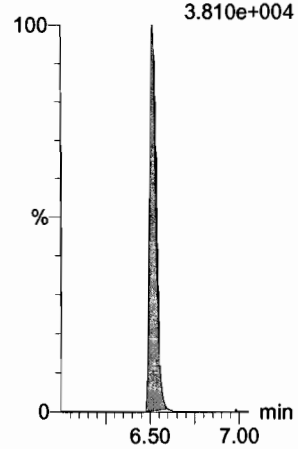
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d5-N-ETFOSA



13C2-PFHxDA

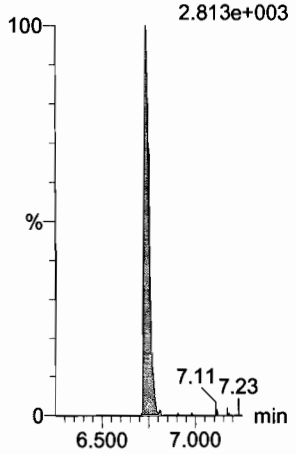


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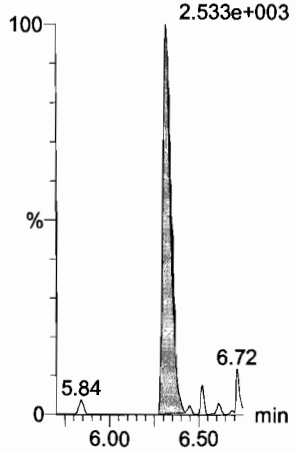
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Name: 180108M2_1, Date: 09-Jan-2018, Time: 00:36:40, ID: ST180108M2-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

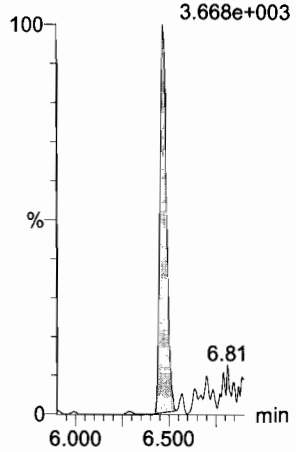
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
2.813e+003



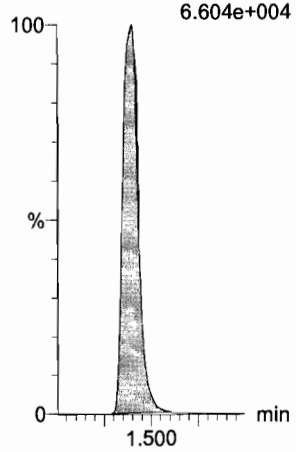
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
2.533e+003



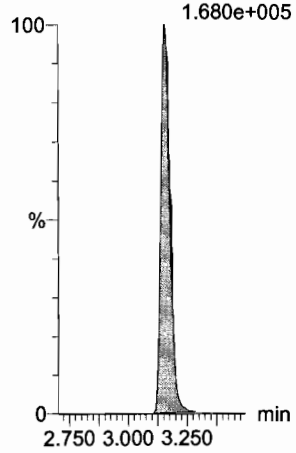
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
3.668e+003



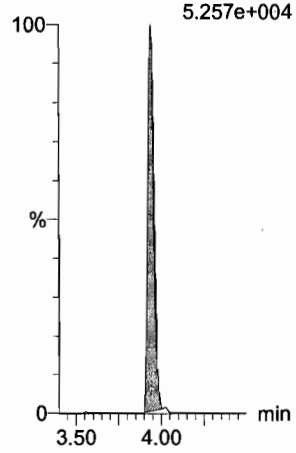
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
6.604e+004



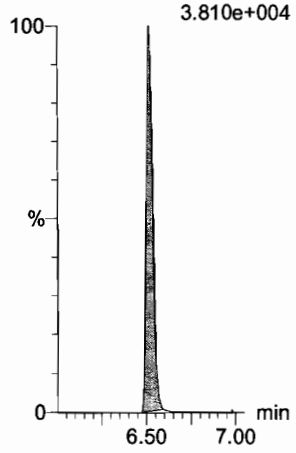
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
1.680e+005



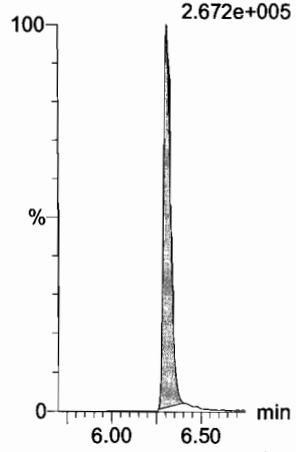
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
5.257e+004



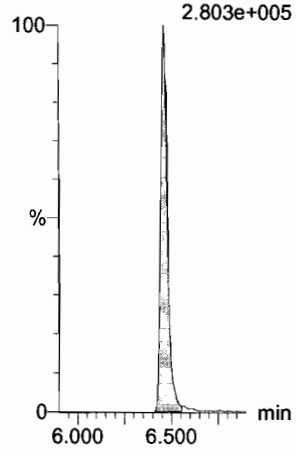
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
3.810e+004



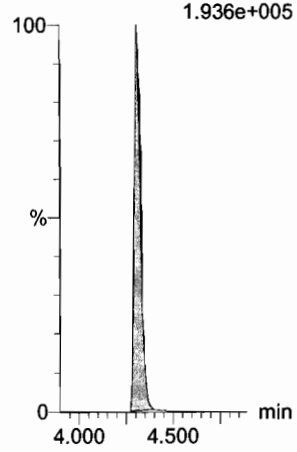
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
2.672e+005



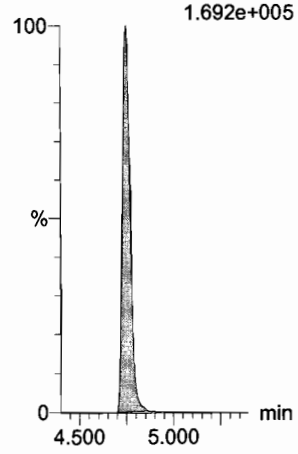
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
2.803e+005



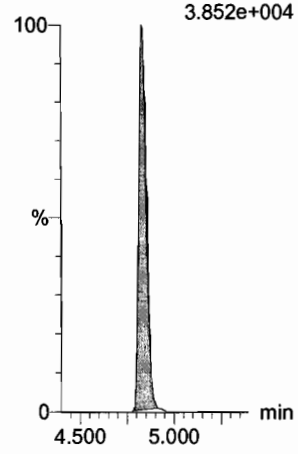
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
1.936e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
1.692e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
3.852e+004

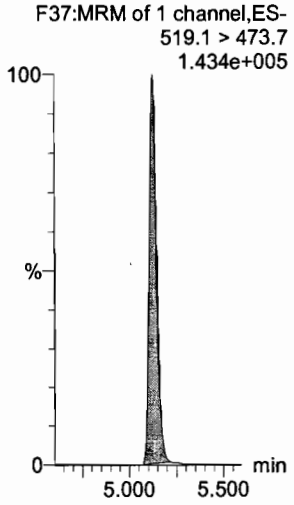


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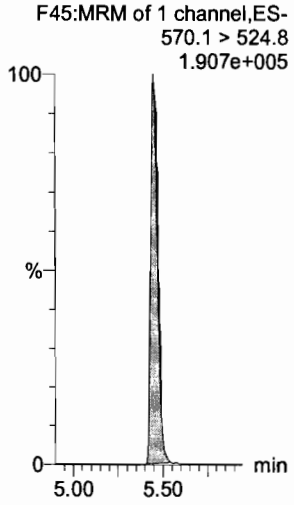
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Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

Name: 180108M2_1, Date: 09-Jan-2018, Time: 00:36:40, ID: ST180108M2-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

13C6-PFDA



13C7-PFUdA

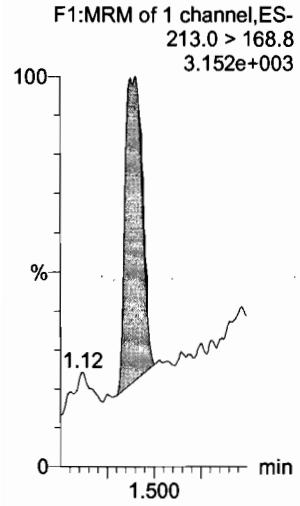


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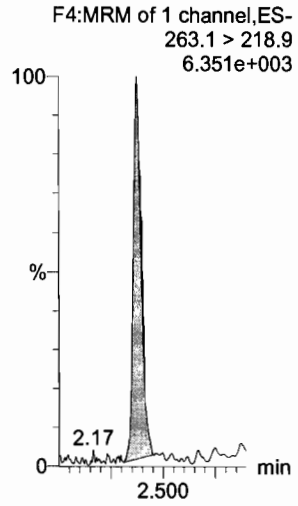
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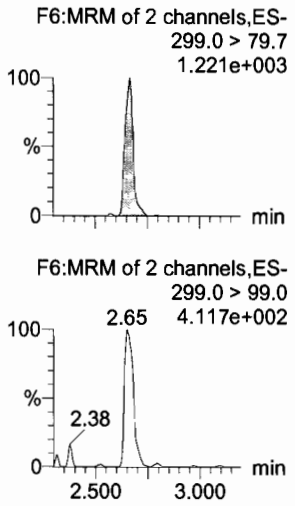
PFBA



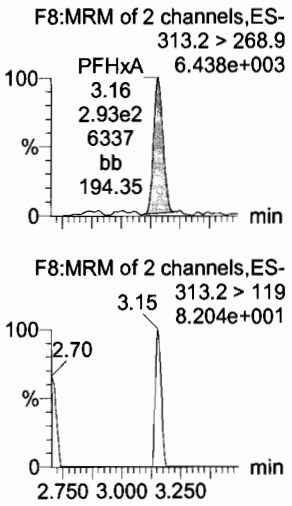
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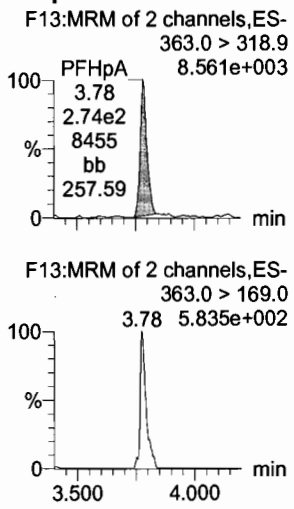
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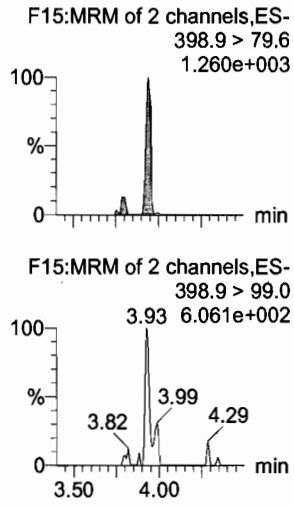
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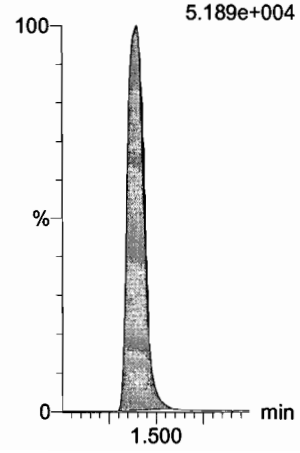
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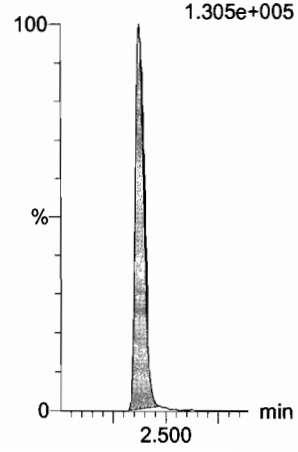
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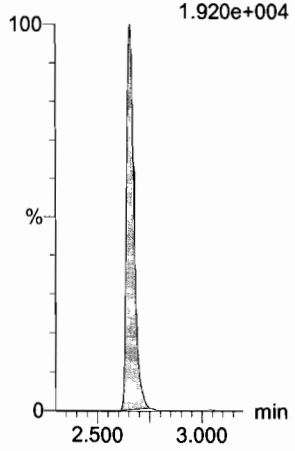
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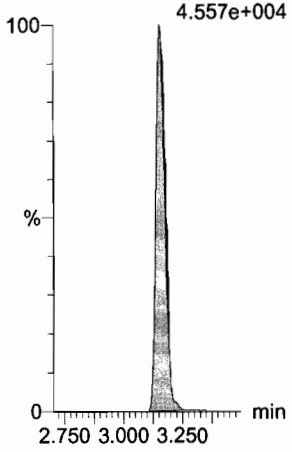
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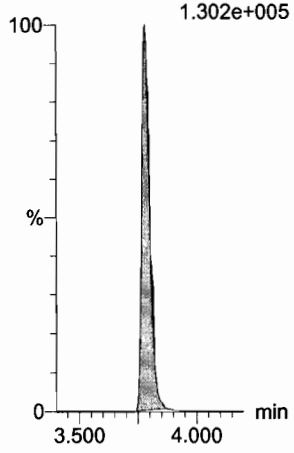
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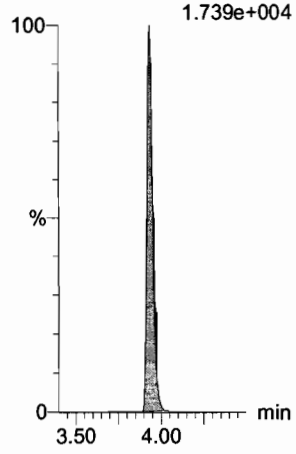
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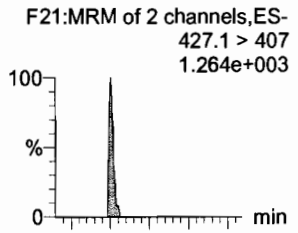


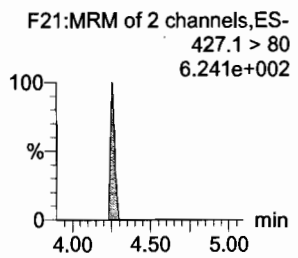
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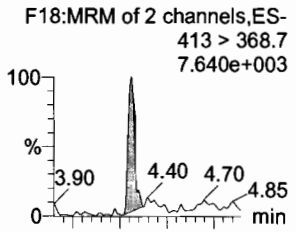
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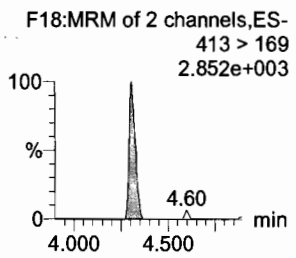
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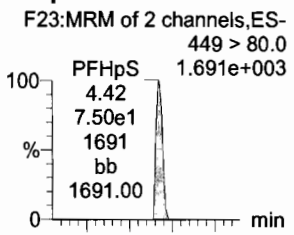


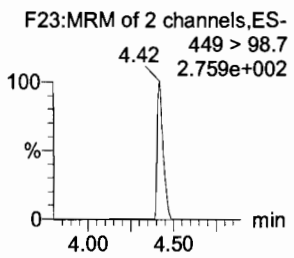
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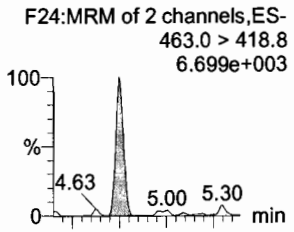


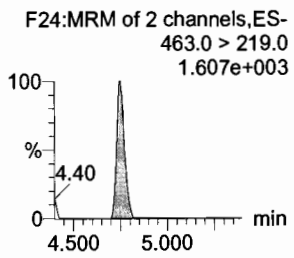
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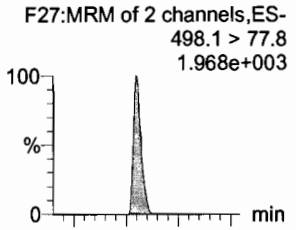


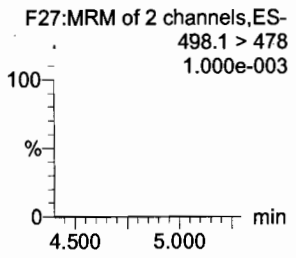
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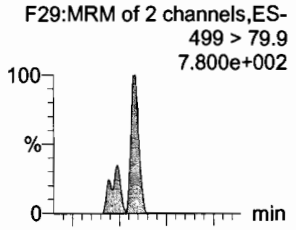


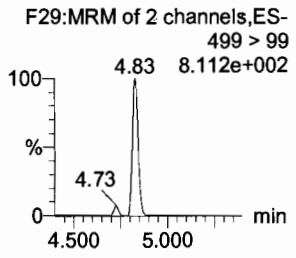
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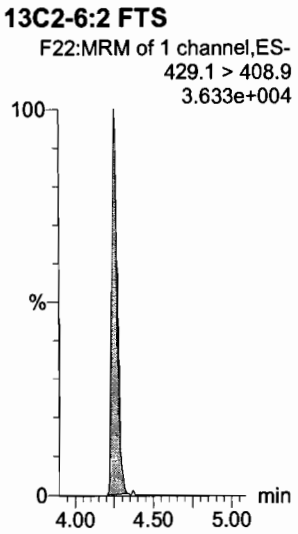


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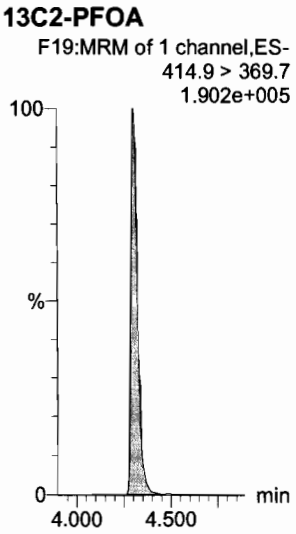




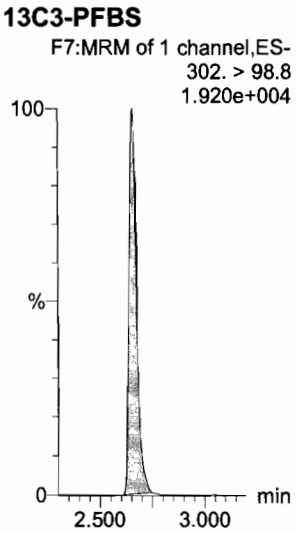
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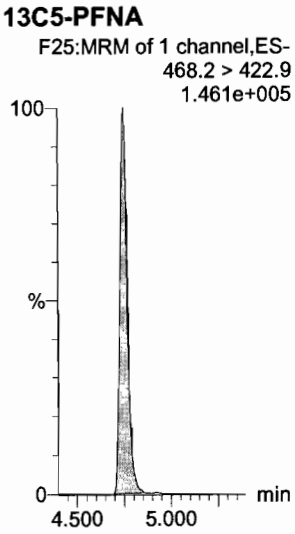
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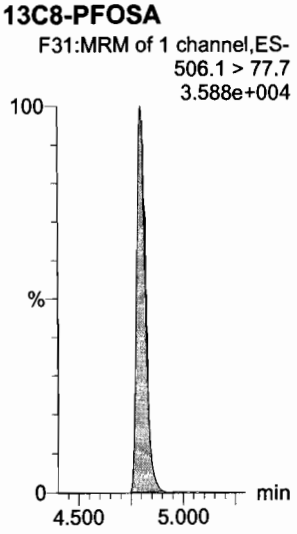
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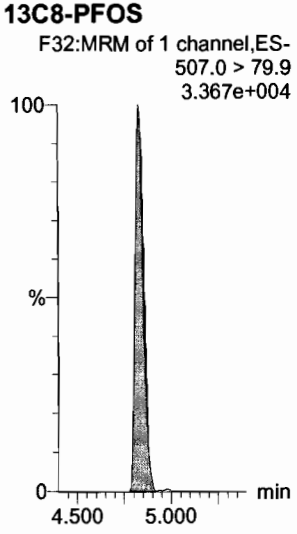
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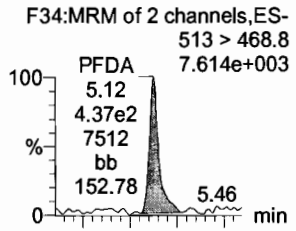


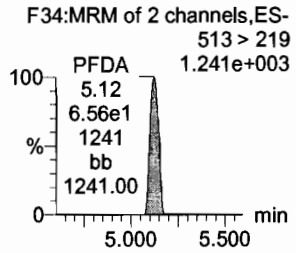
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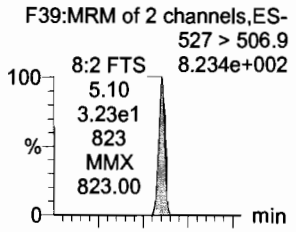
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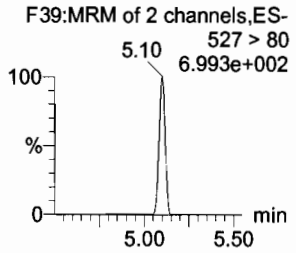
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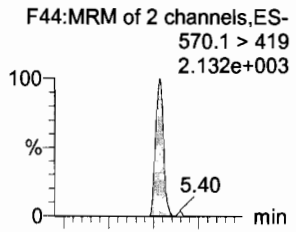


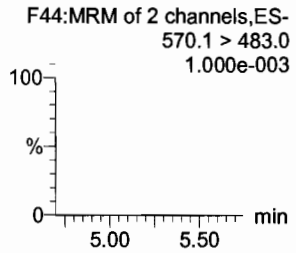
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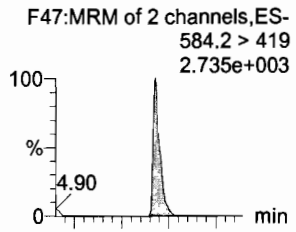


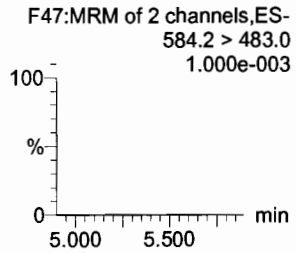
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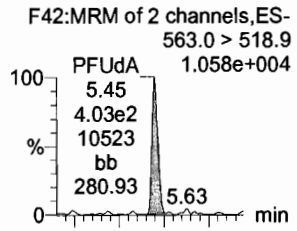


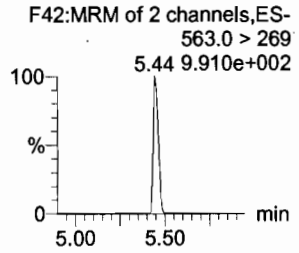
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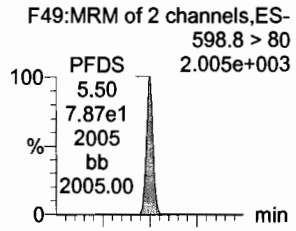


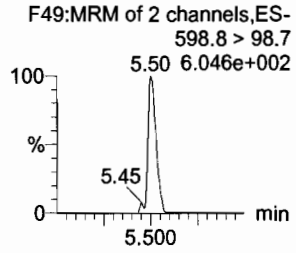
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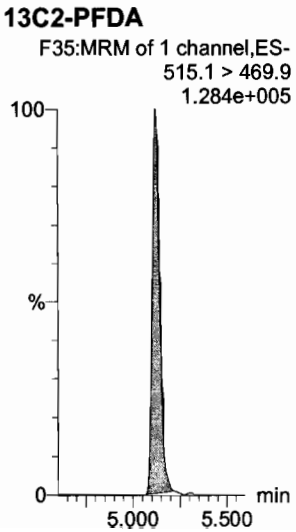


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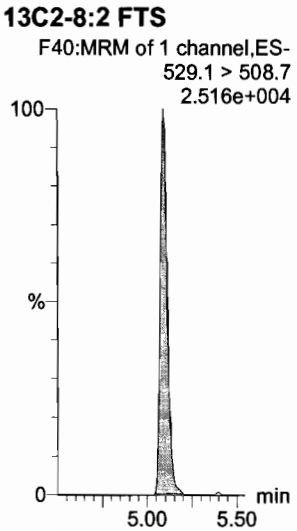




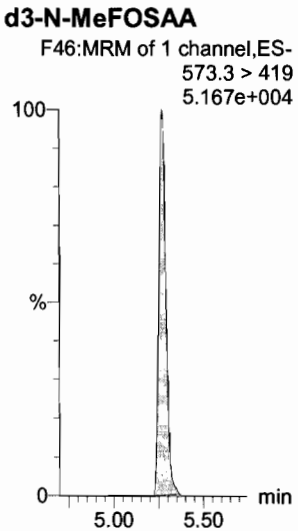
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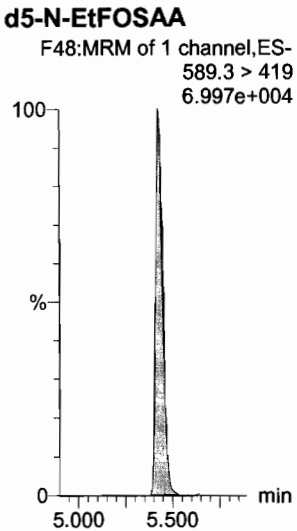
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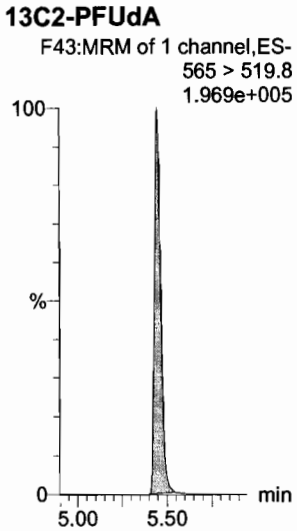
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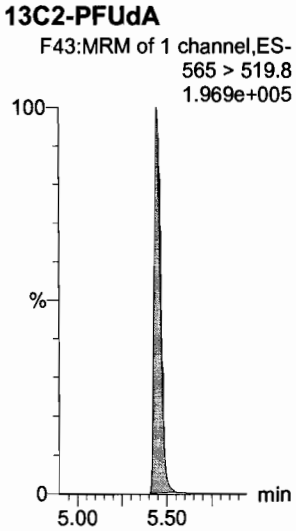
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13C2-PFUdA

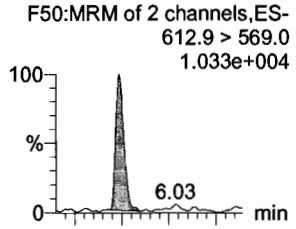


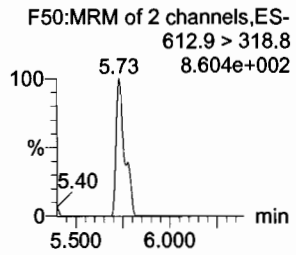
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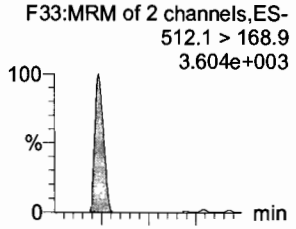
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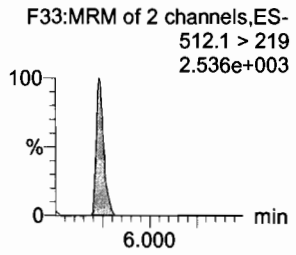
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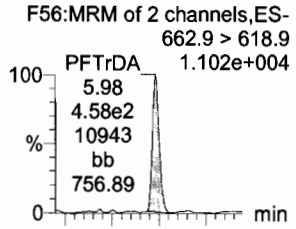


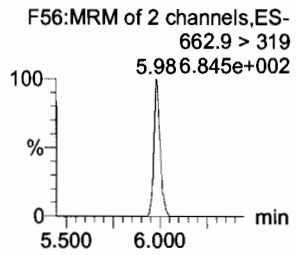
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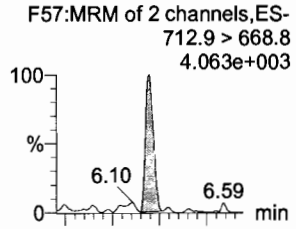


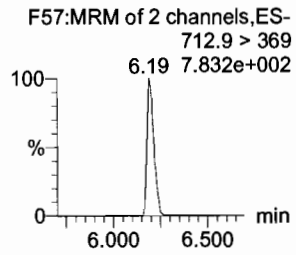
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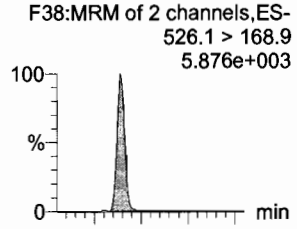


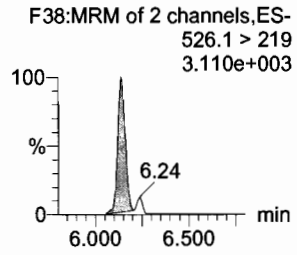
PFTeDA



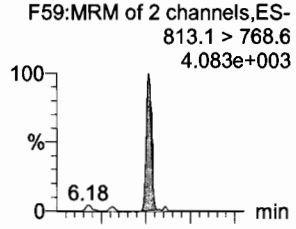


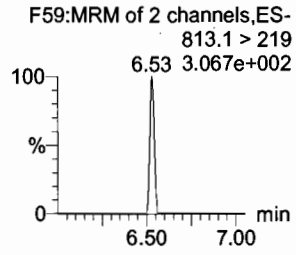
N-EtFOSA



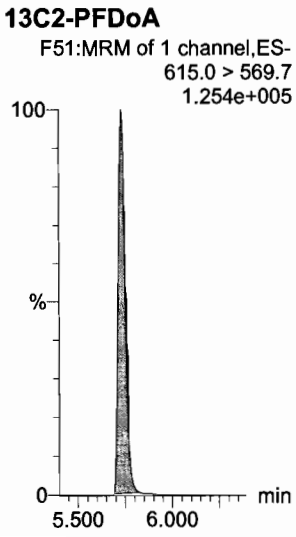


PFHxDA

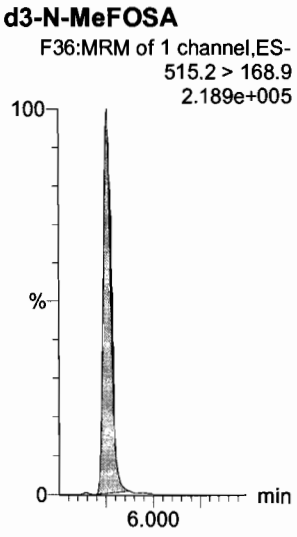




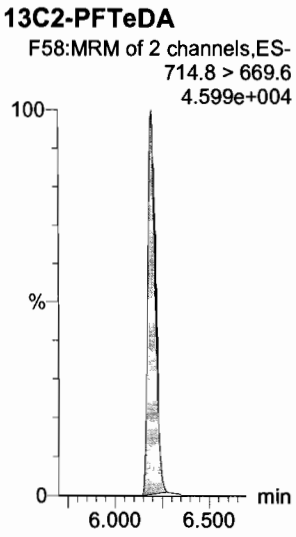
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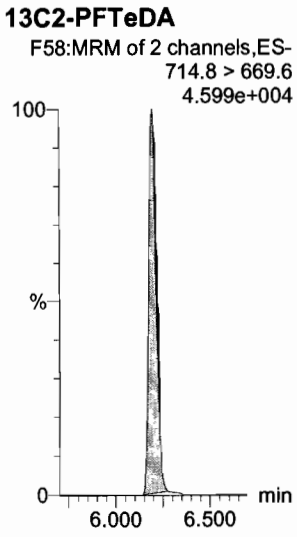
d3-N-MeFOSA



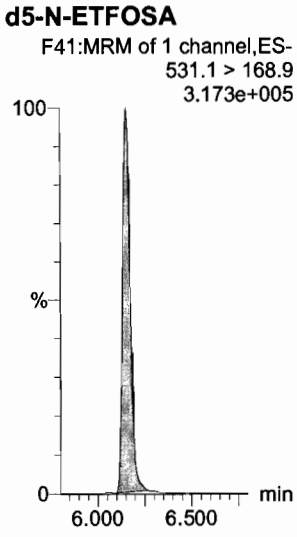
13C2-PFTeDA



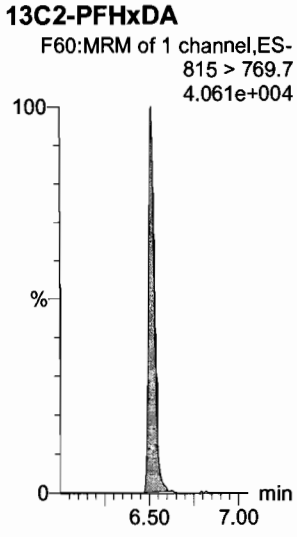
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA

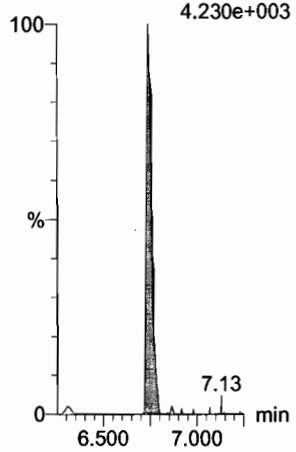


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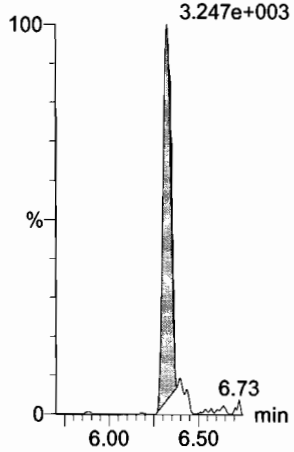
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Name: 180108M2_2, Date: 09-Jan-2018, Time: 00:47:55, ID: ST180108M2-2 PFC CS-1 18A0807, Description: ST180108M2-2 PFC CS-1 18A0807

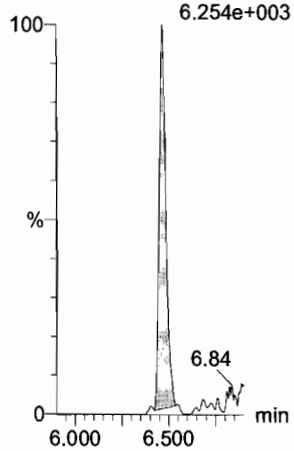
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
4.230e+003



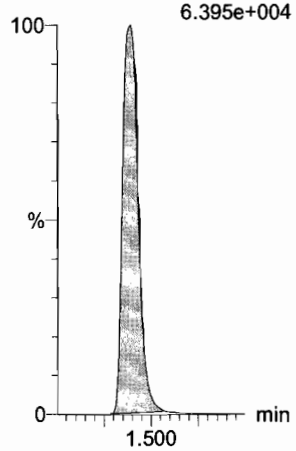
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
3.247e+003



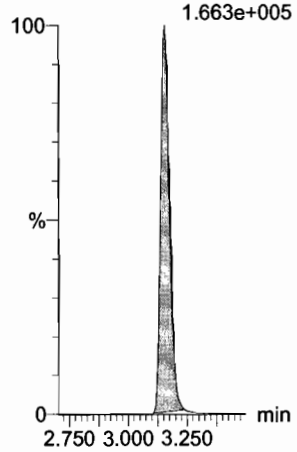
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
6.254e+003



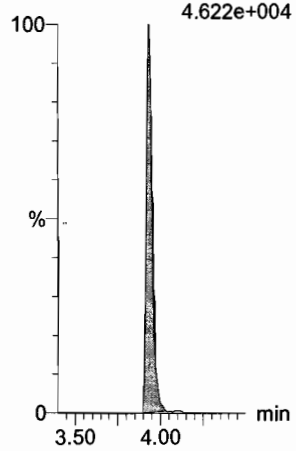
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
6.395e+004



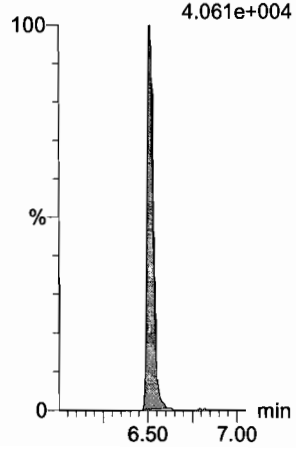
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
1.663e+005



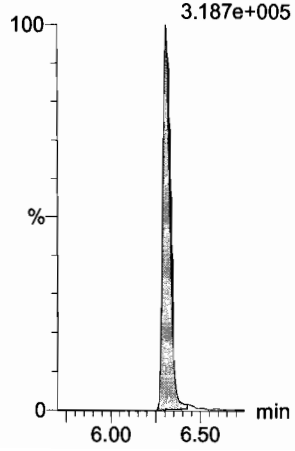
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
4.622e+004



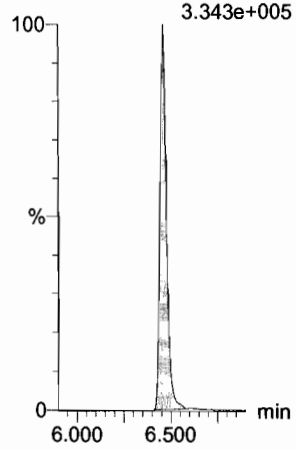
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
4.061e+004



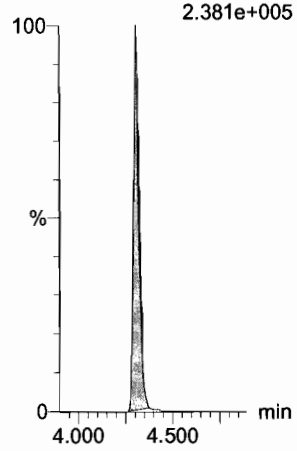
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
3.187e+005



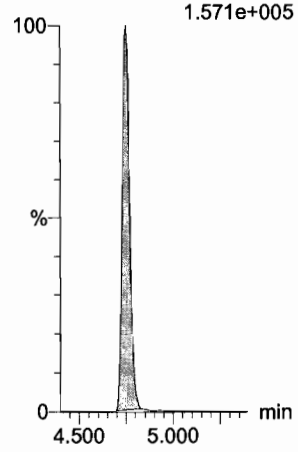
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F55:MRM of 1 channel,ES-
639.2 > 58.8
3.343e+005



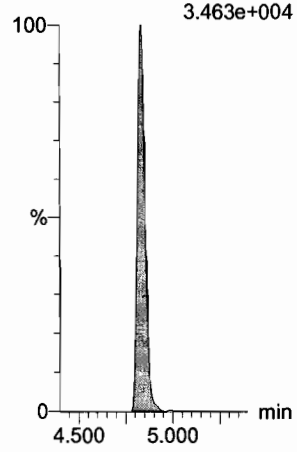
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
2.381e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
1.571e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
3.463e+004

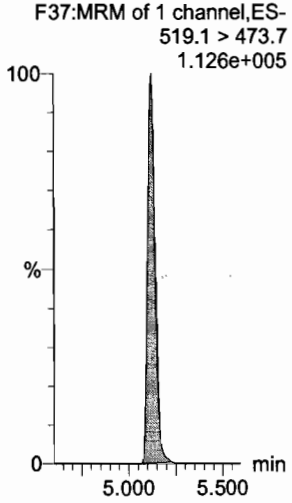


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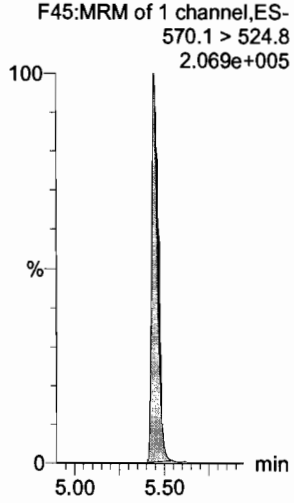
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Name: 180108M2_2, Date: 09-Jan-2018, Time: 00:47:55, ID: ST180108M2-2 PFC CS-1 18A0807, Description: ST180108M2-2 PFC CS-1 18A0807

13C6-PFDA



13C7-PFUdA

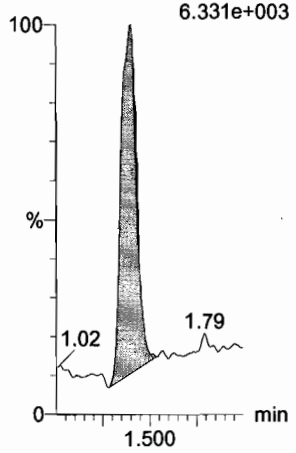


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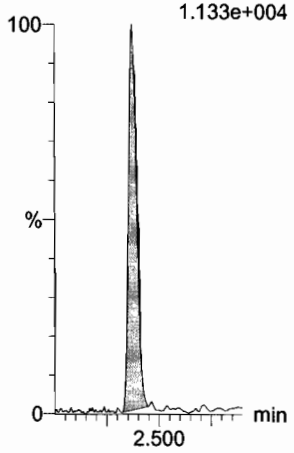
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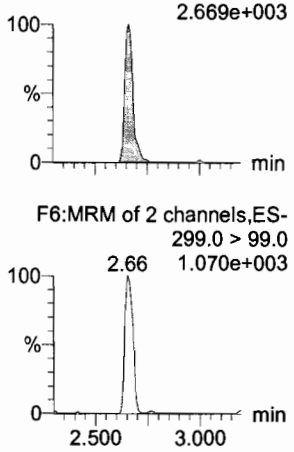
PFBA



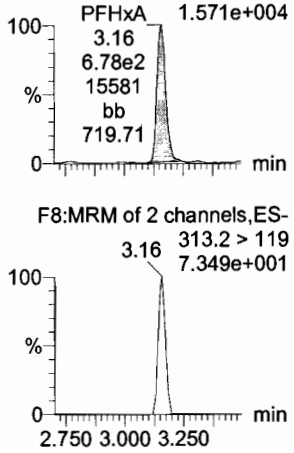
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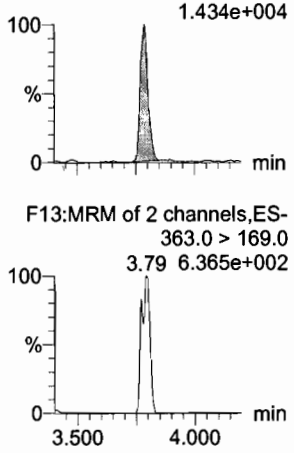
PFBS



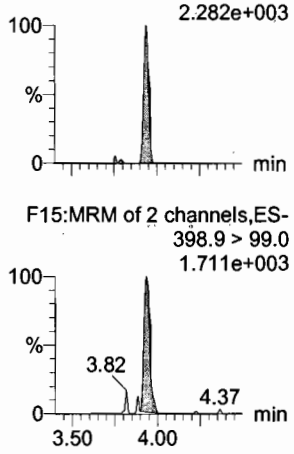
PFHxA



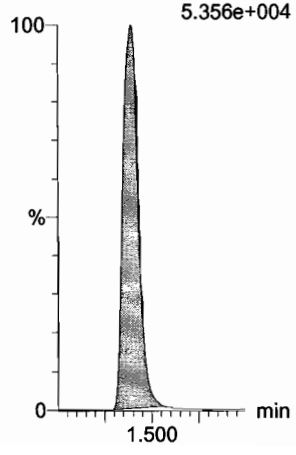
PFHpA



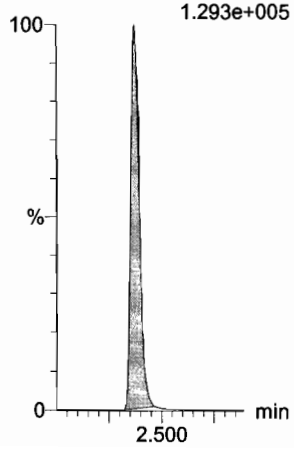
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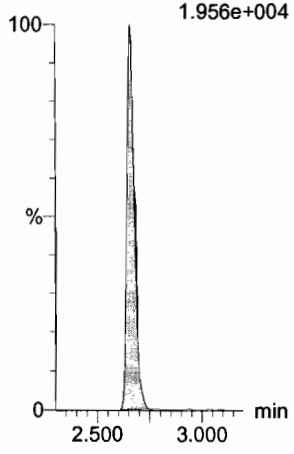
13C3-PFBA



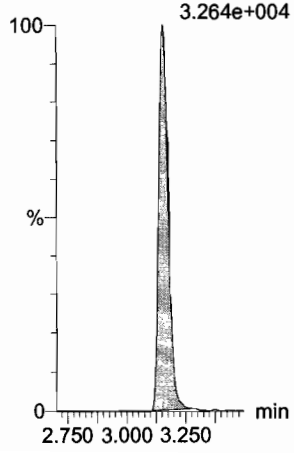
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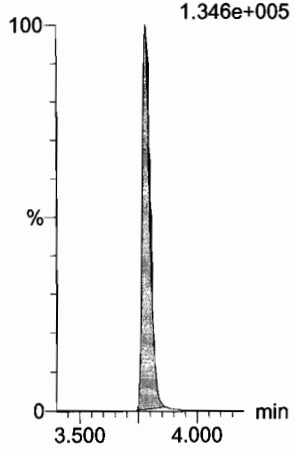
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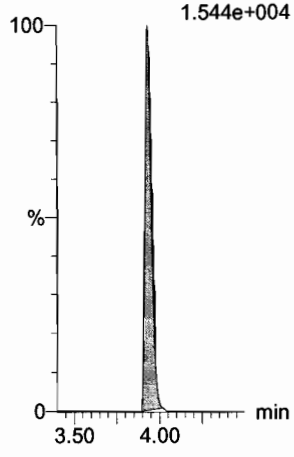
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13C4-PFHpA



18O2-PFHxS

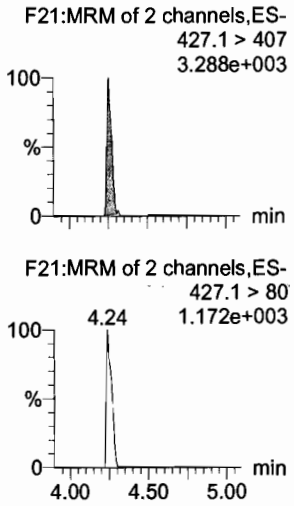


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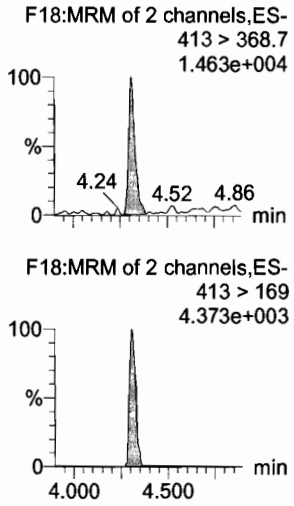
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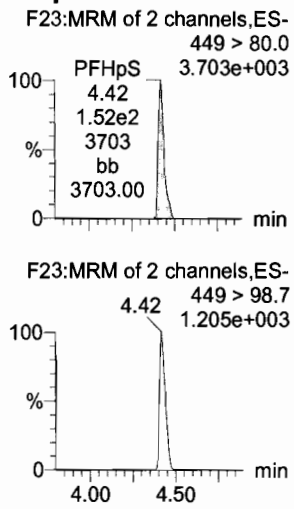
6:2 FTS



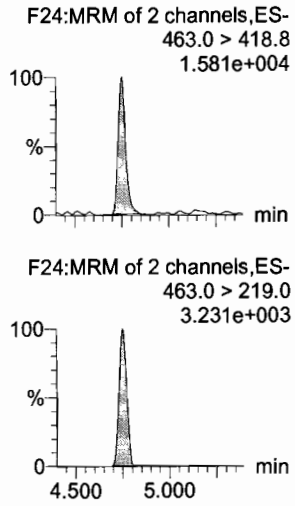
L-PFOA



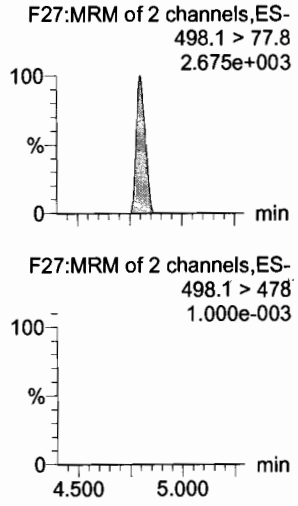
PFHpS



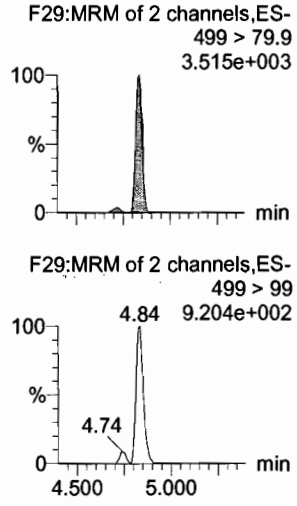
PFNA



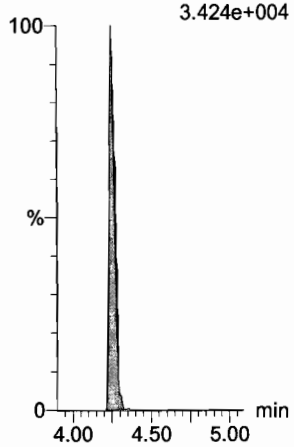
PFOSA



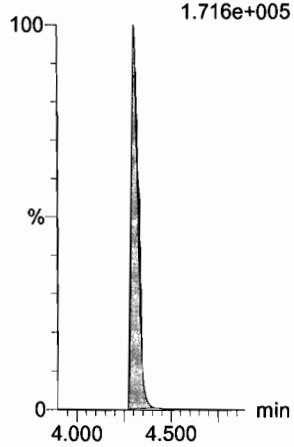
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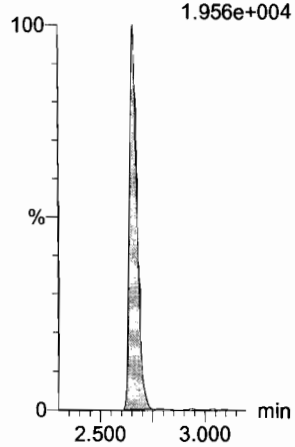
13C2-6:2 FTS



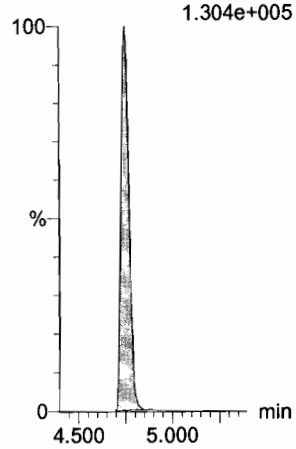
13C2-PFOA



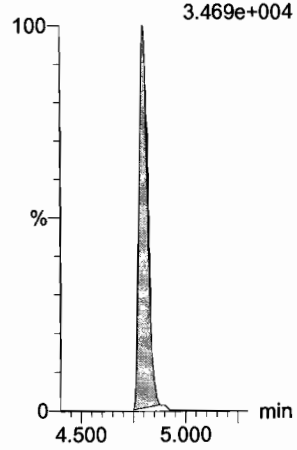
13C3-PFBS



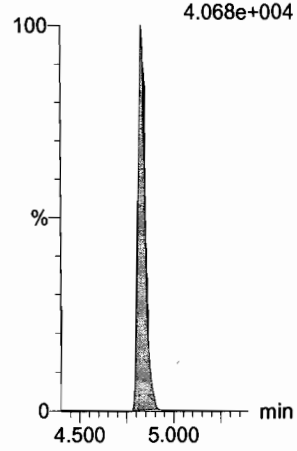
13C5-PFNA



13C8-PFOSA



13C8-PFOS

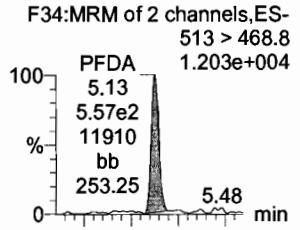


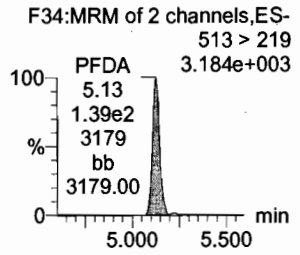
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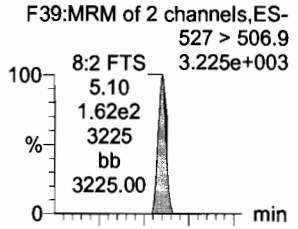
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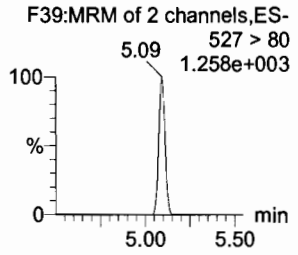
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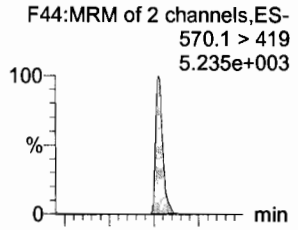


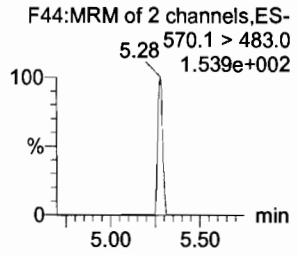
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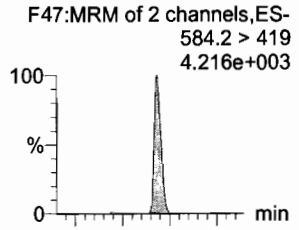


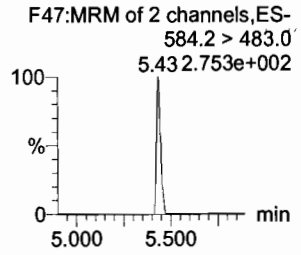
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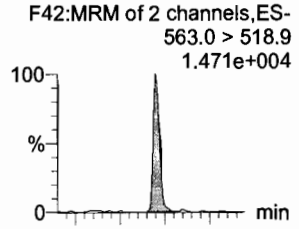


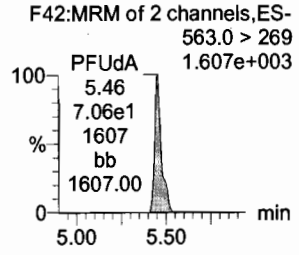
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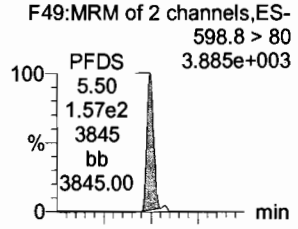


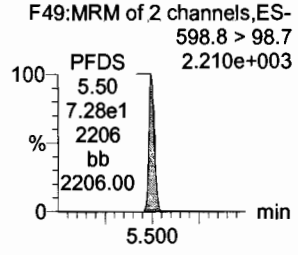
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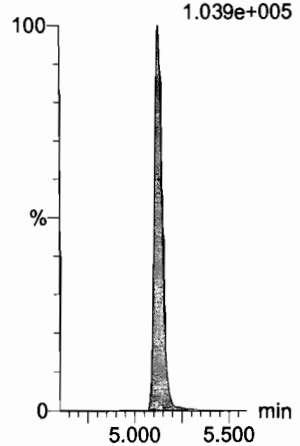


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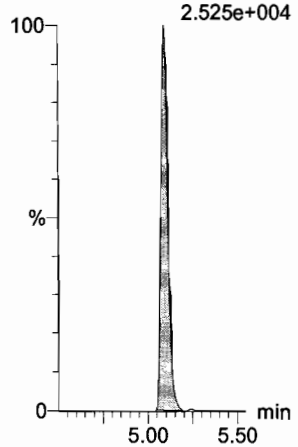




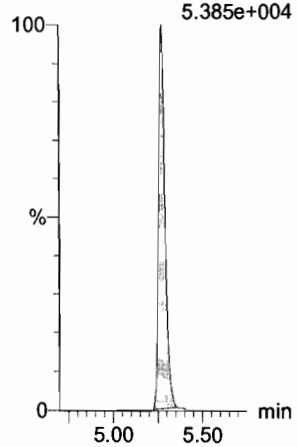
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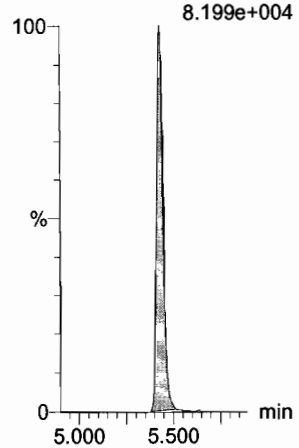
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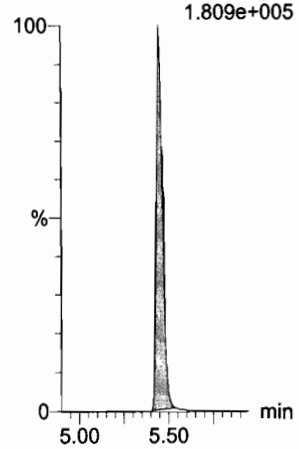
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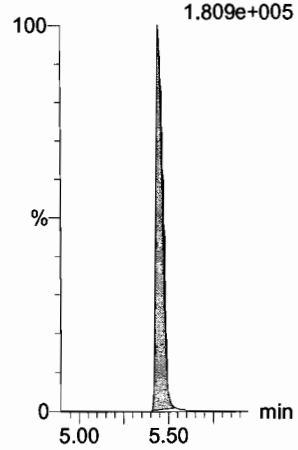
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13C2-PFUdA



13C2-PFUdA

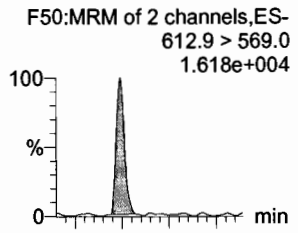


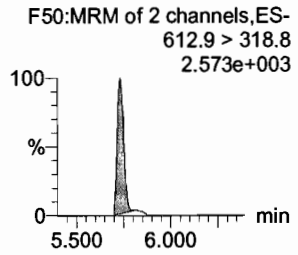
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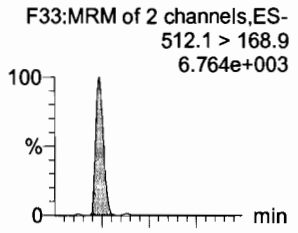
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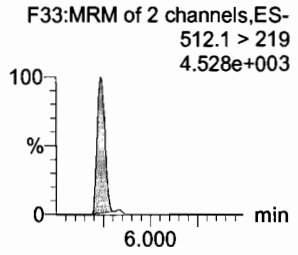
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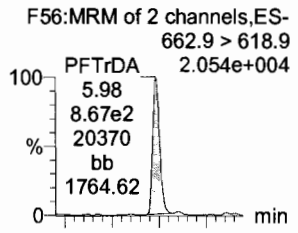


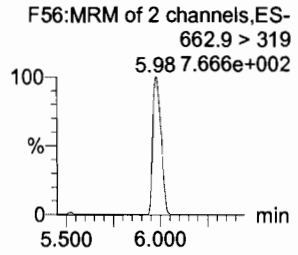
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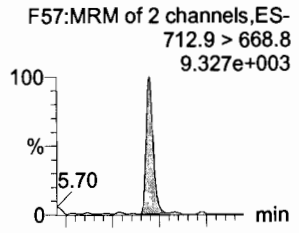


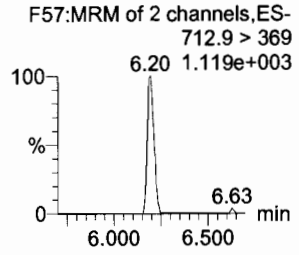
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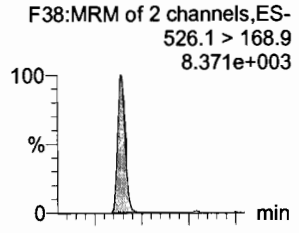


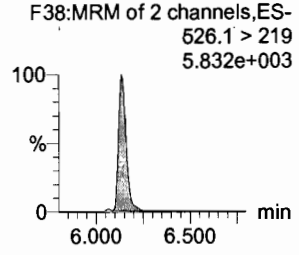
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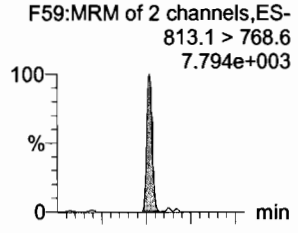


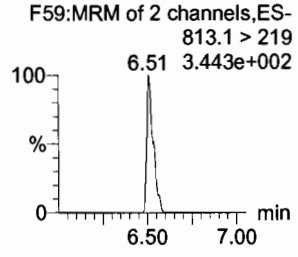
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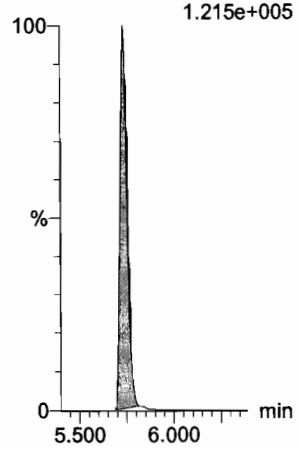


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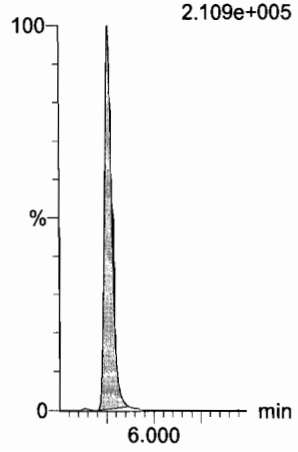




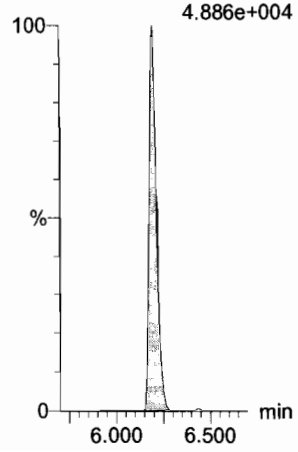
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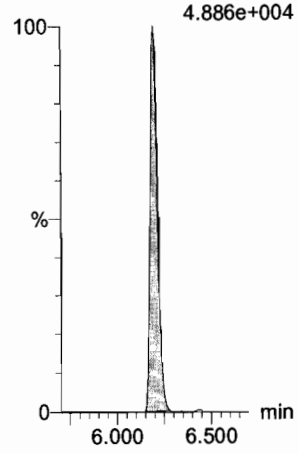
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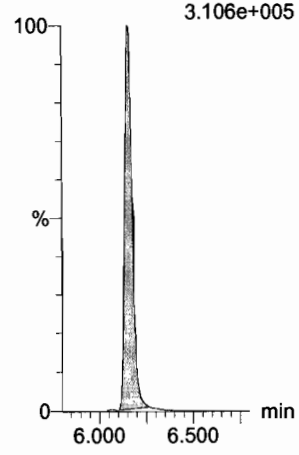
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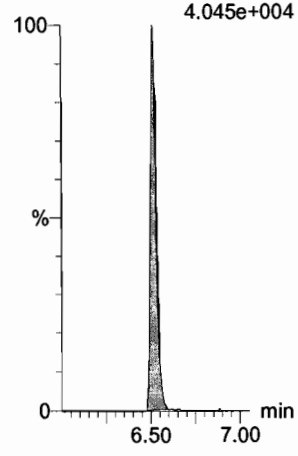
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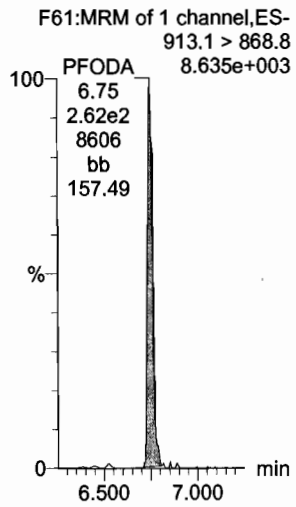


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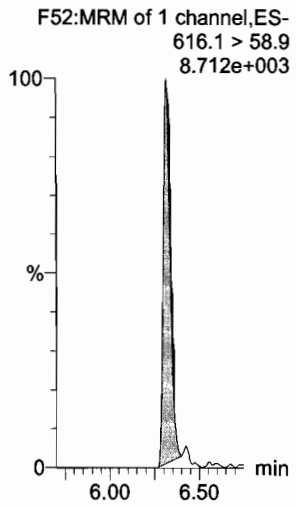
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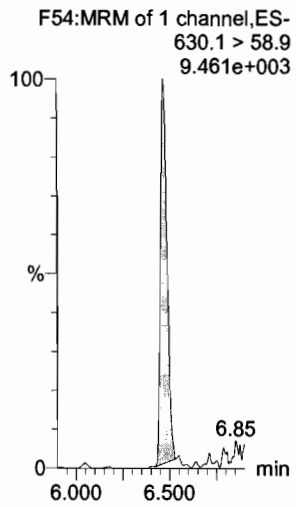
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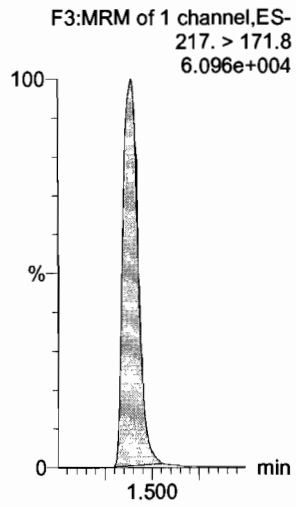
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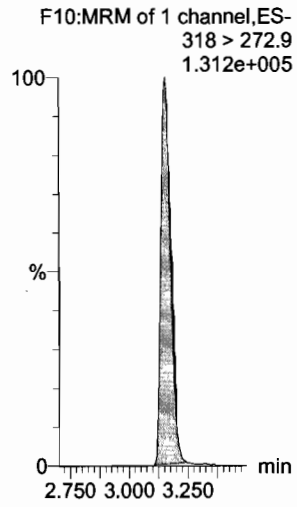
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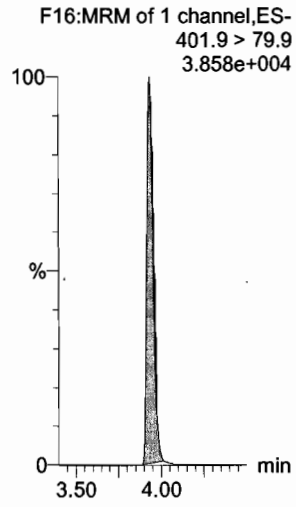
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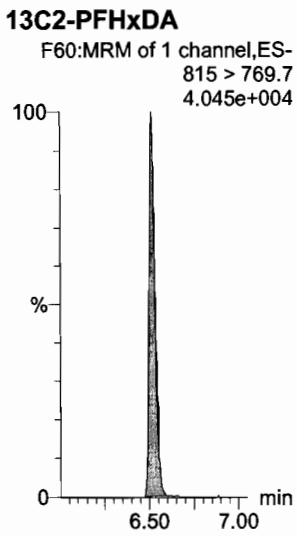
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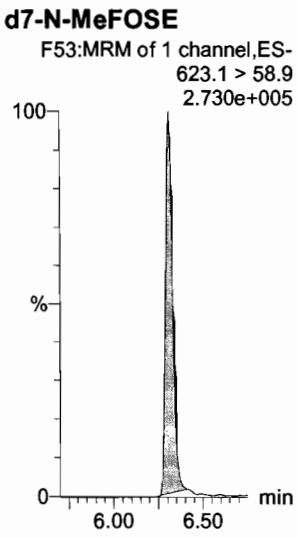
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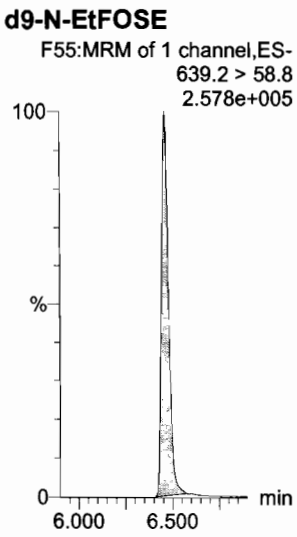
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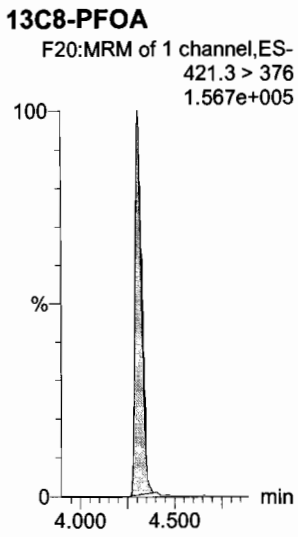
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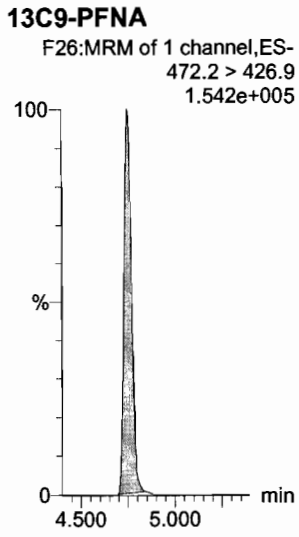
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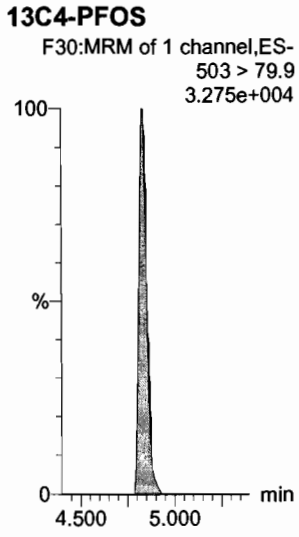
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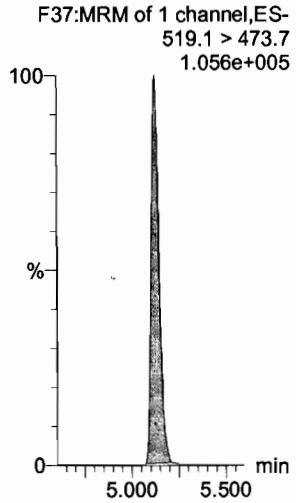


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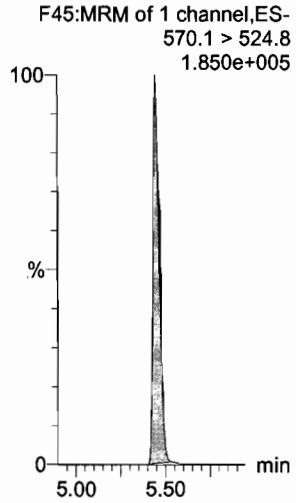
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13C6-PFDA



13C7-PFUdA

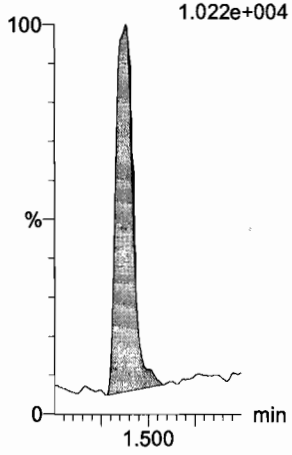


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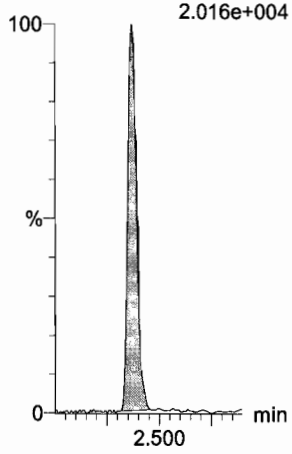
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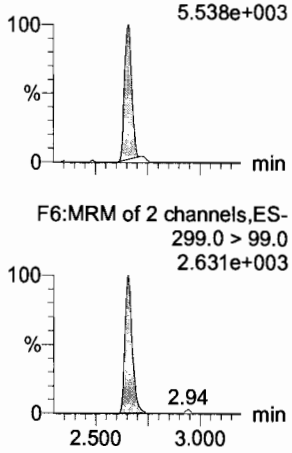
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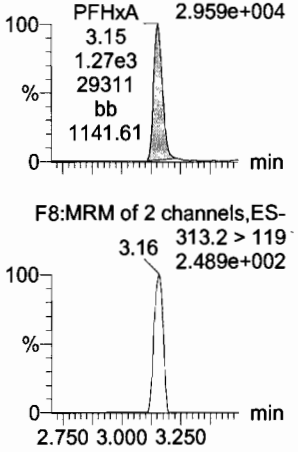
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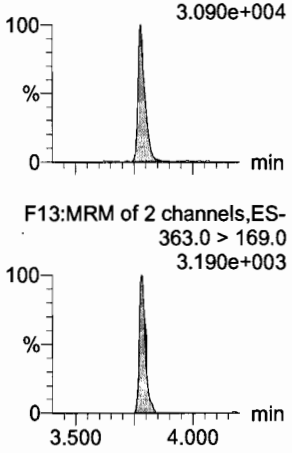
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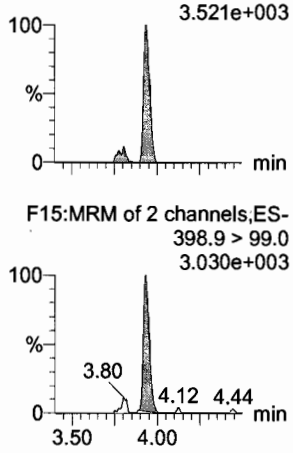
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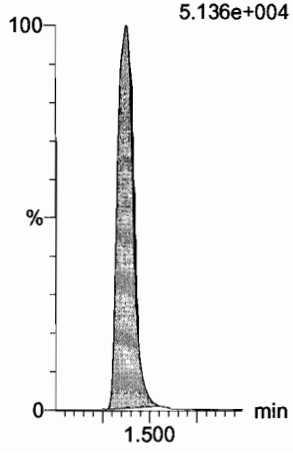
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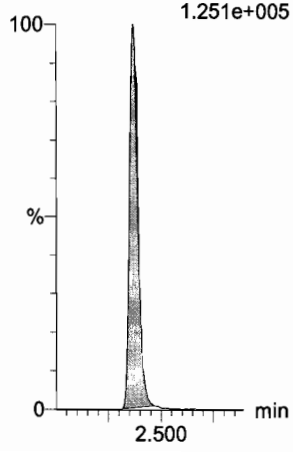
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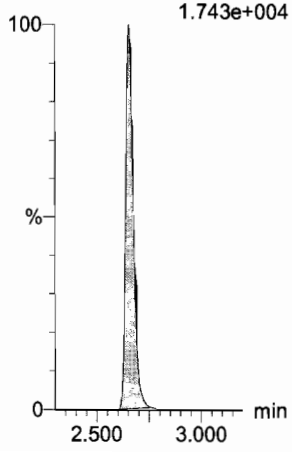
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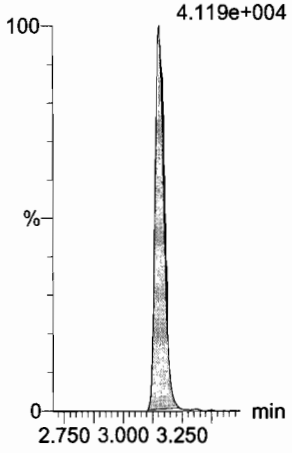
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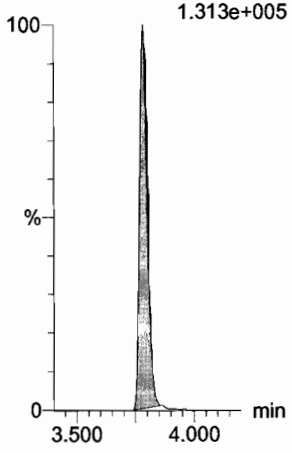
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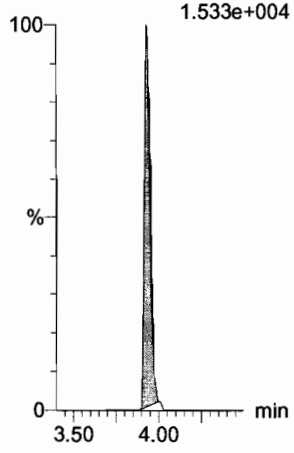
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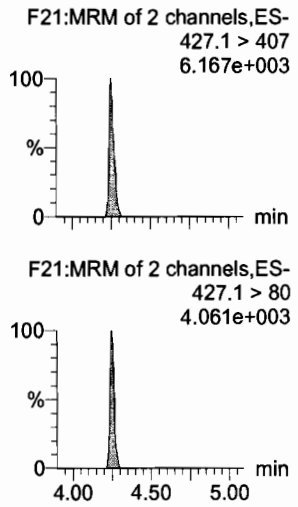


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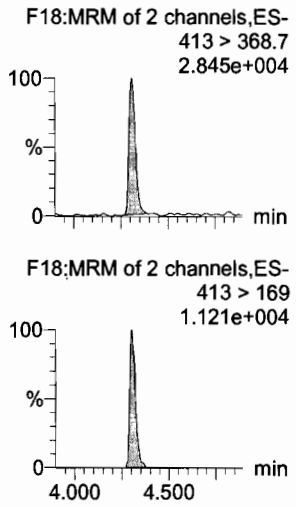
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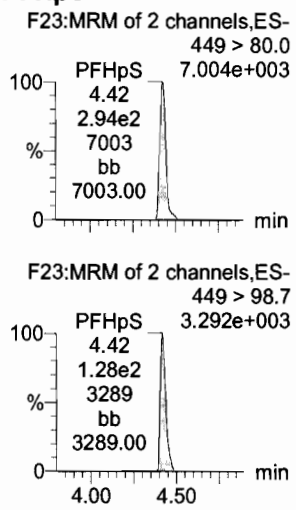
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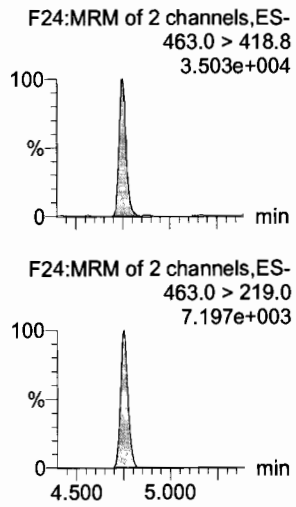
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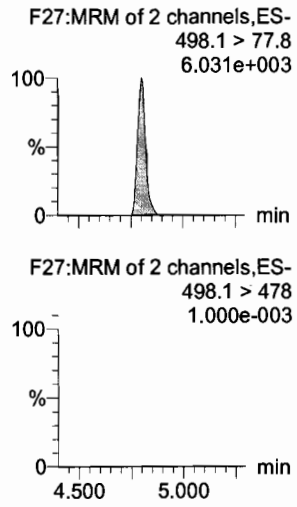
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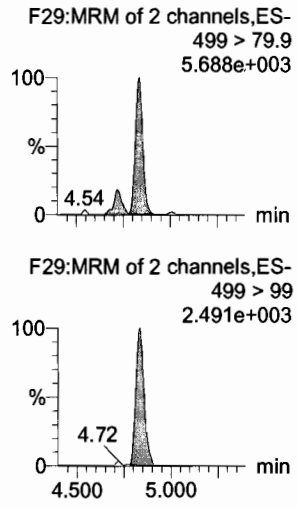
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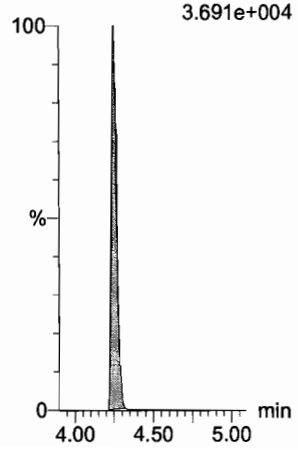
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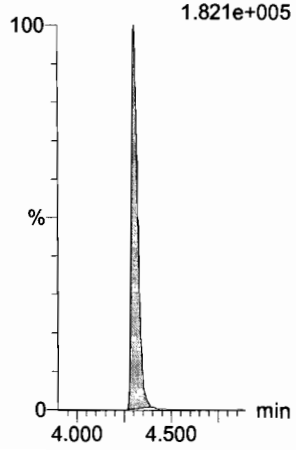
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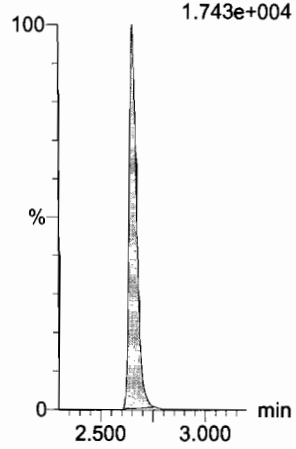
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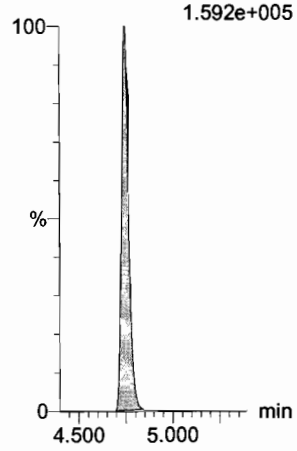
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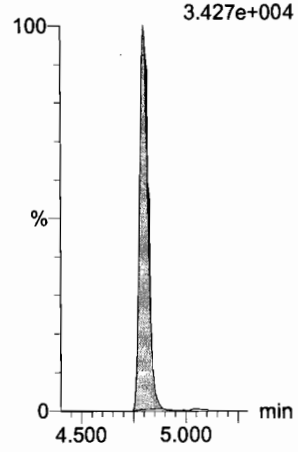
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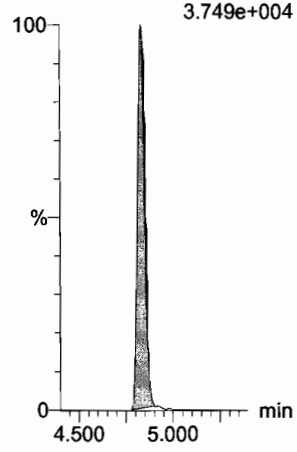
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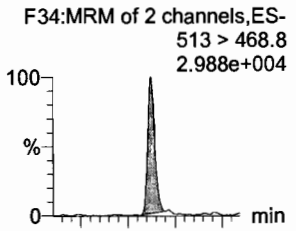


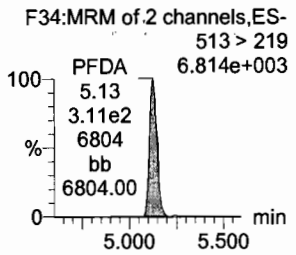
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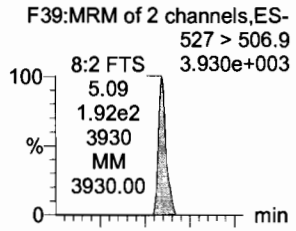
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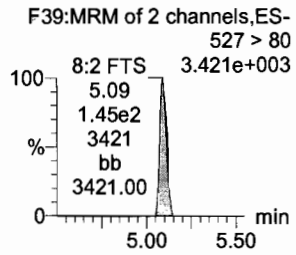
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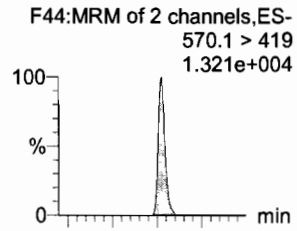


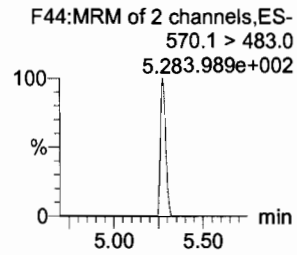
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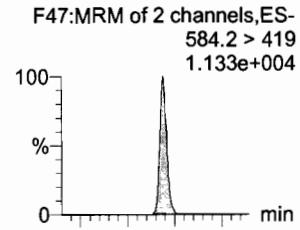


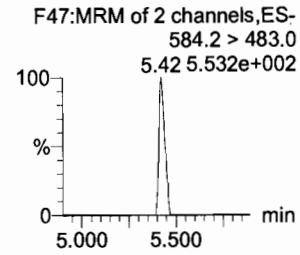
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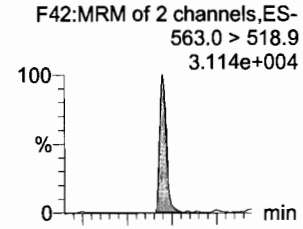


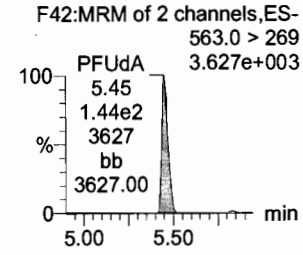
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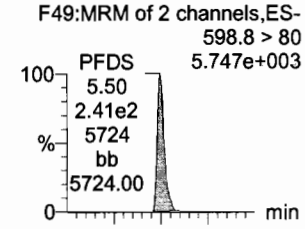


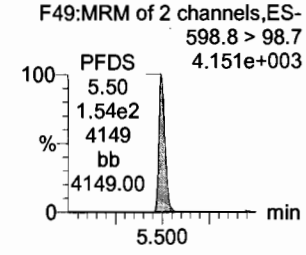
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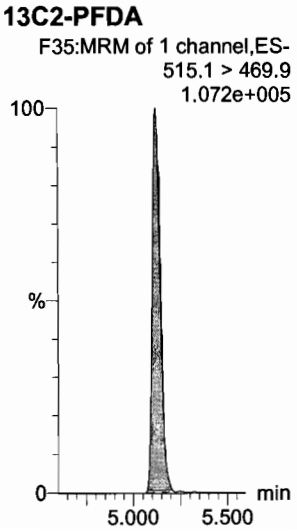


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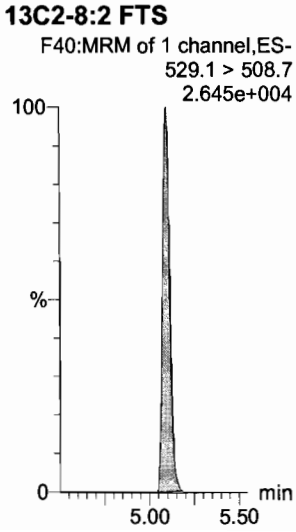




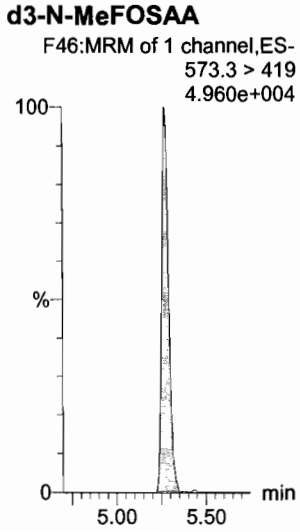
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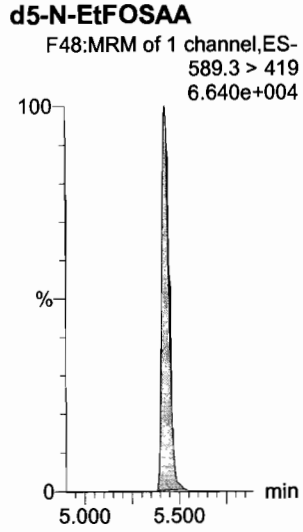
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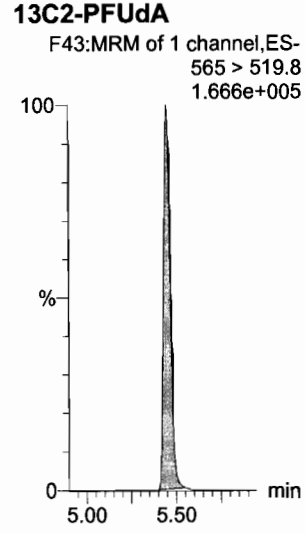
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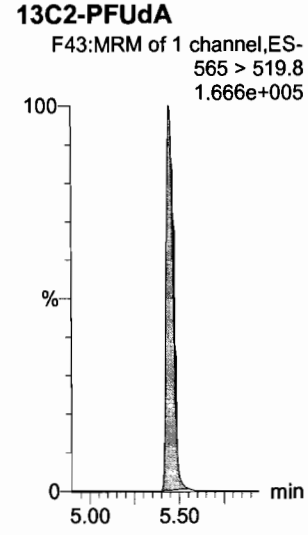
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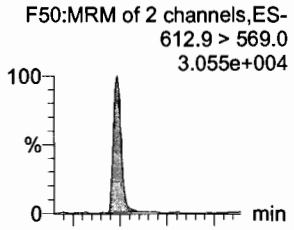


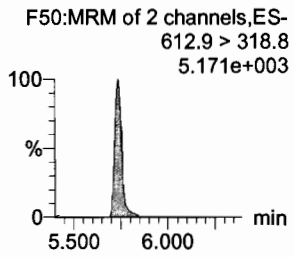
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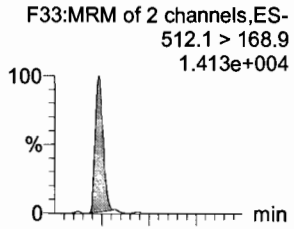
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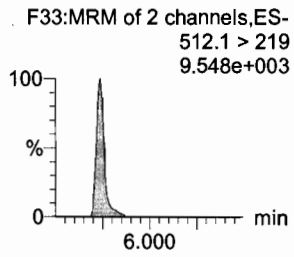
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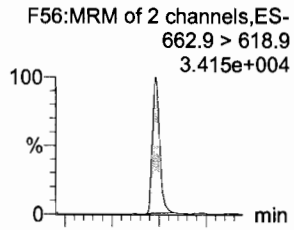


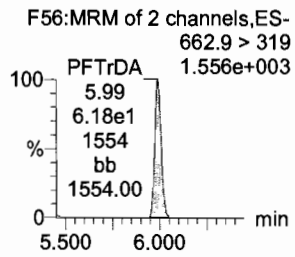
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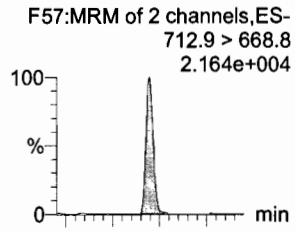


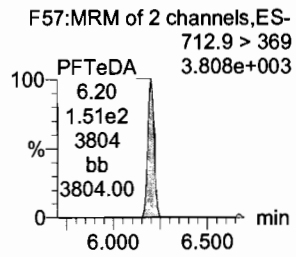
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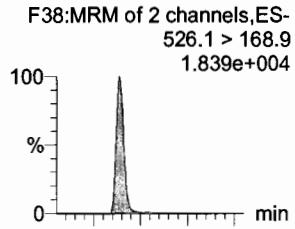


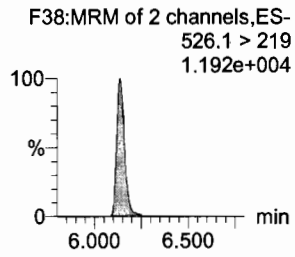
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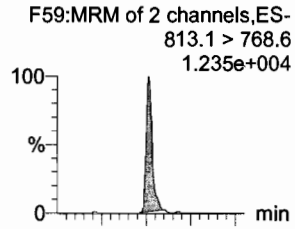


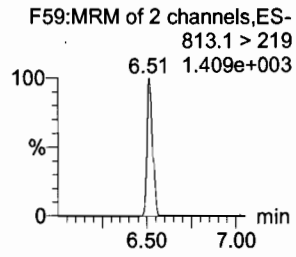
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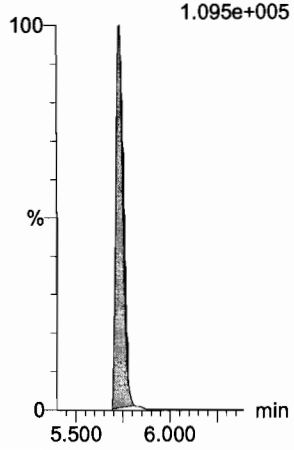


PFHxDA

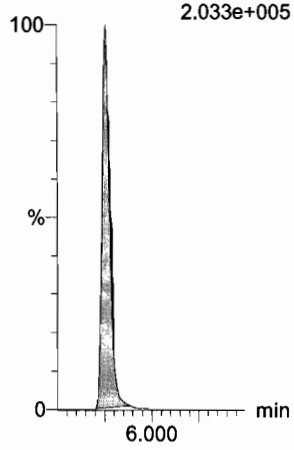




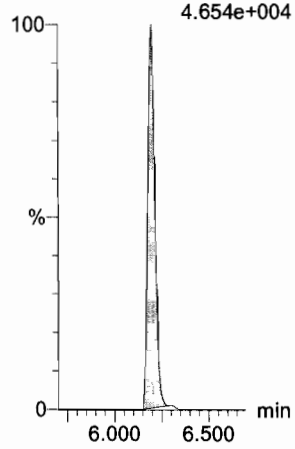
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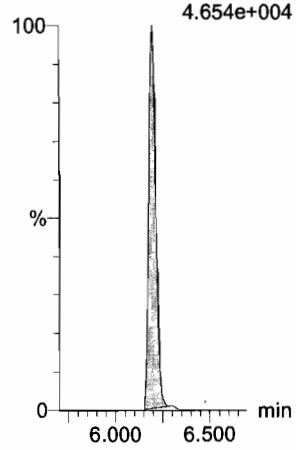
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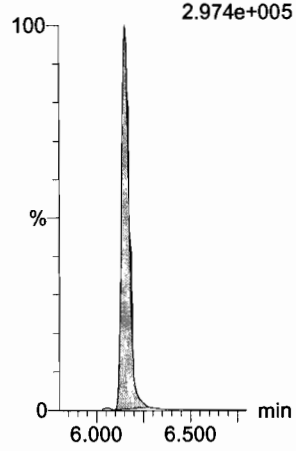
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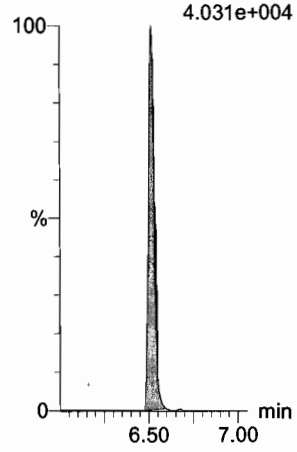
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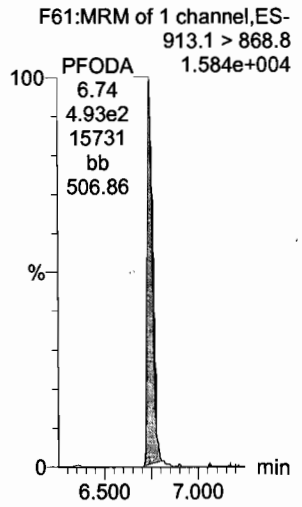


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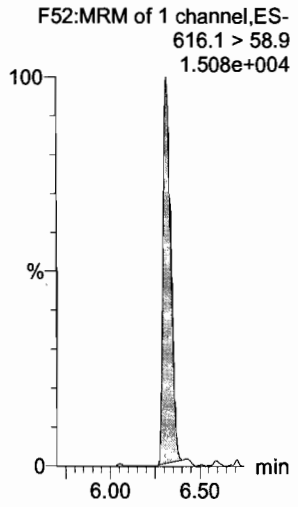
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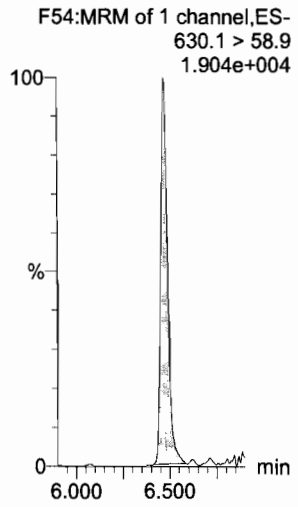
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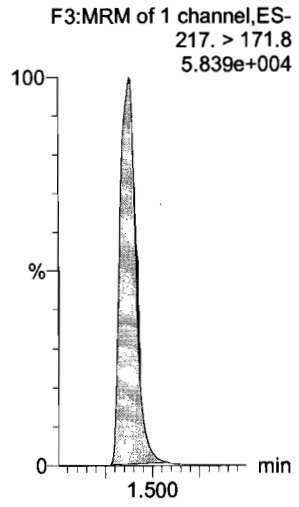
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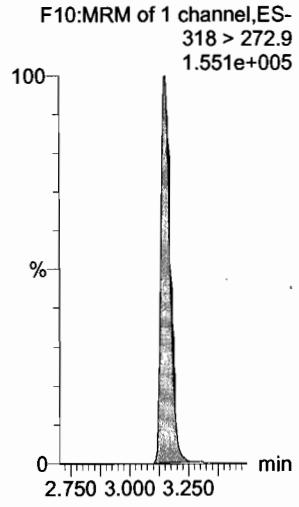
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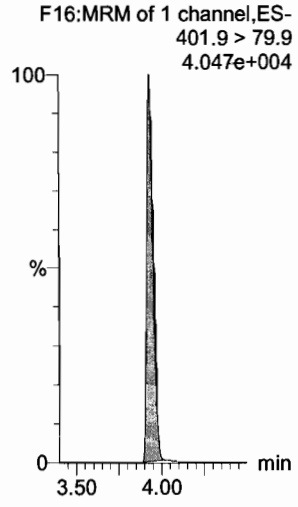
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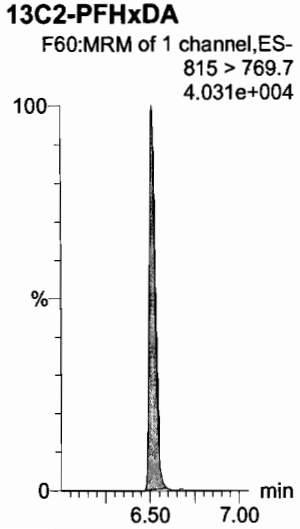
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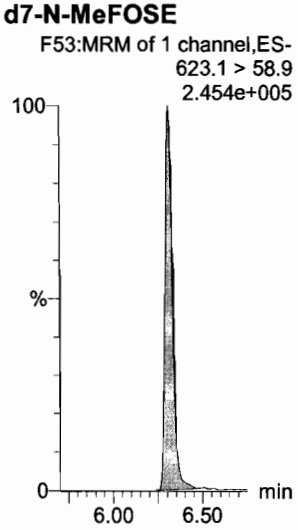
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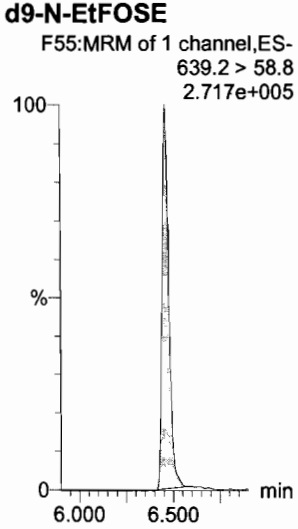
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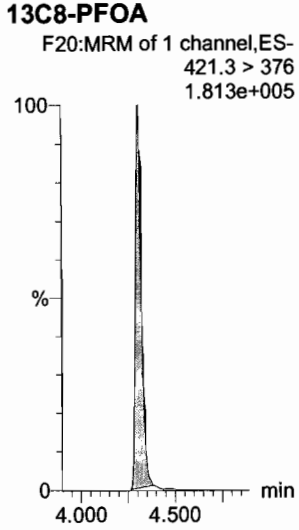
d7-N-MeFOSE



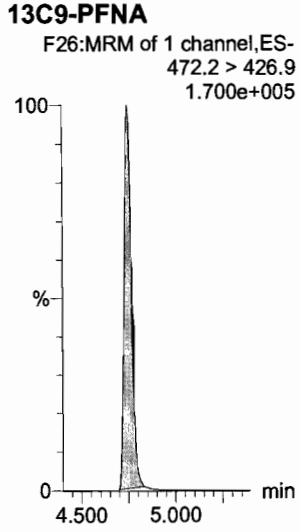
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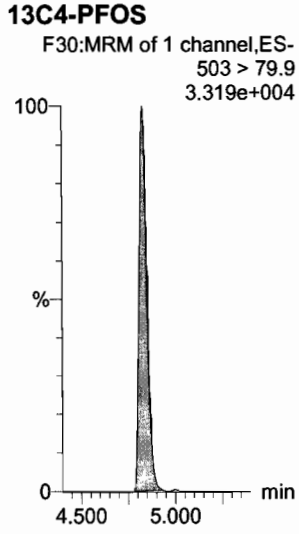
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13C9-PFNA



13C4-PFOS

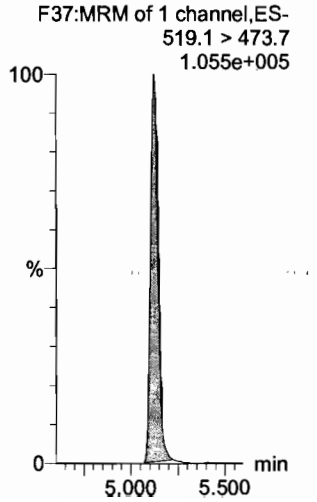


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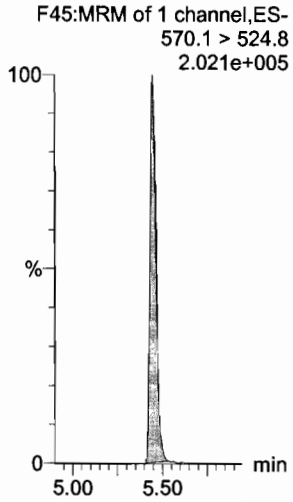
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13C6-PFDA



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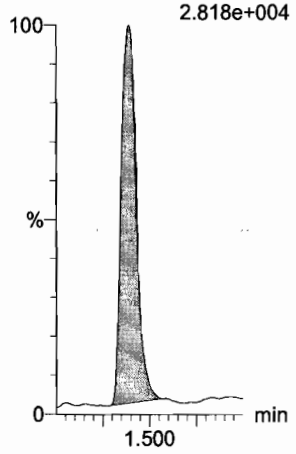


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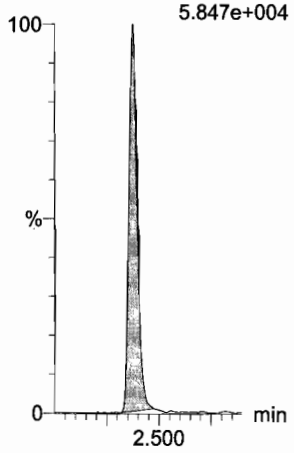
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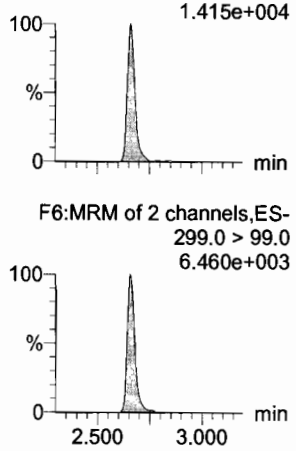
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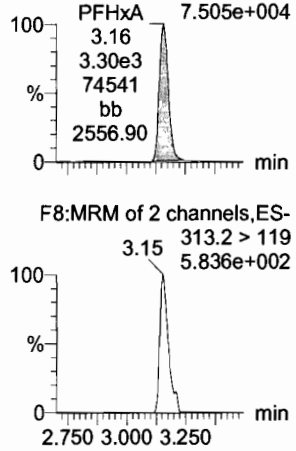
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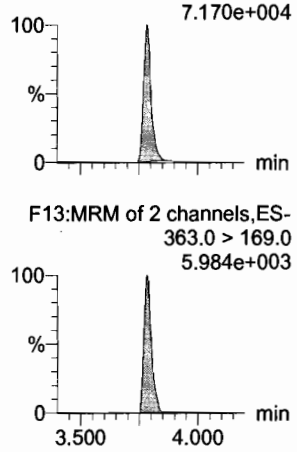
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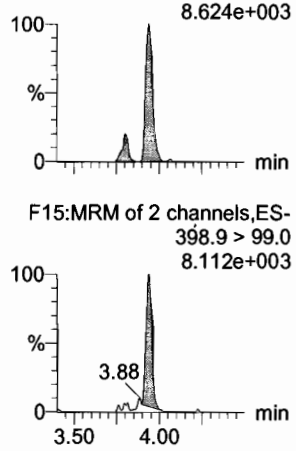
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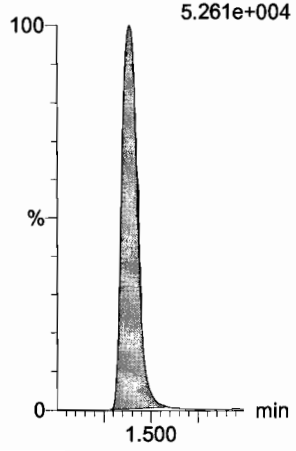
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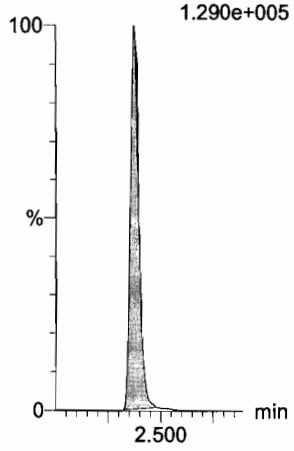
L-PFHxS



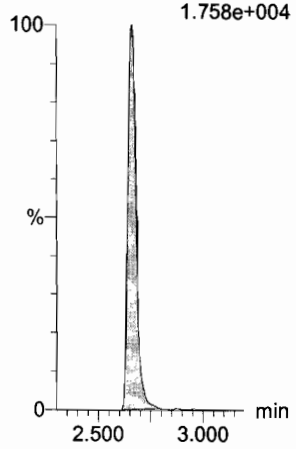
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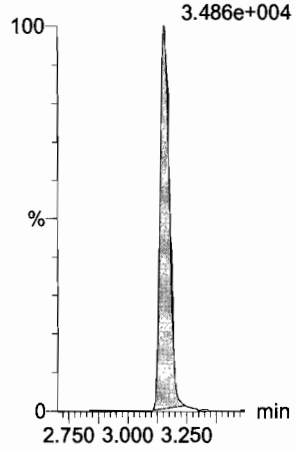
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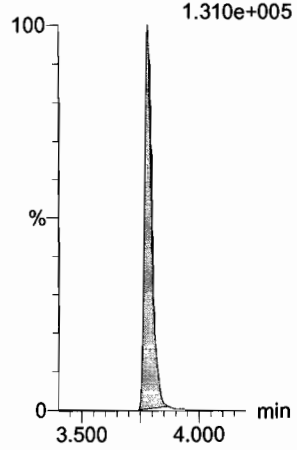
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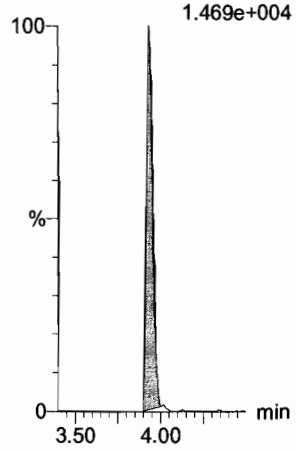
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13C4-PFHpA



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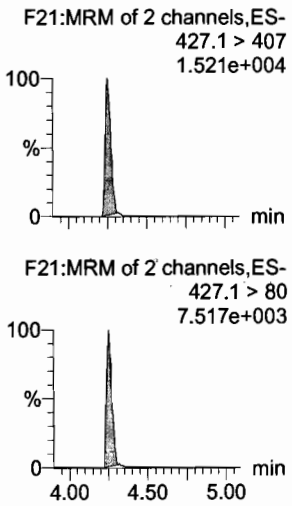


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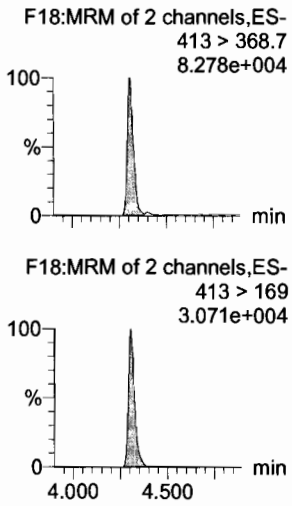
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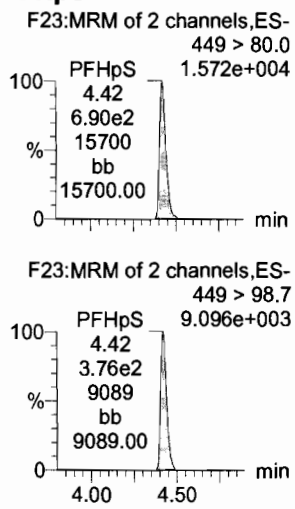
6:2 FTS



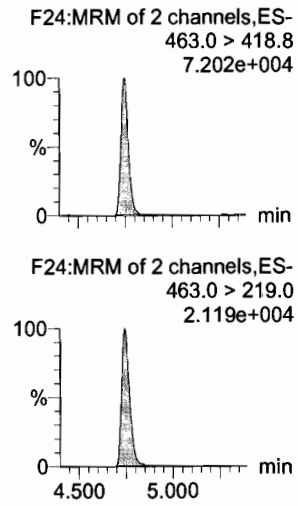
L-PFOA



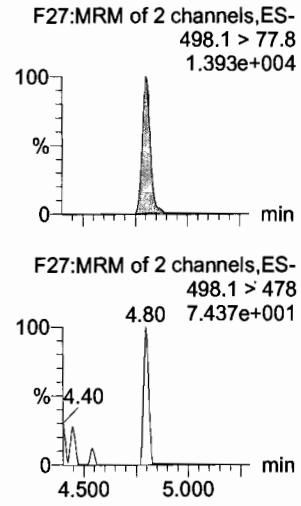
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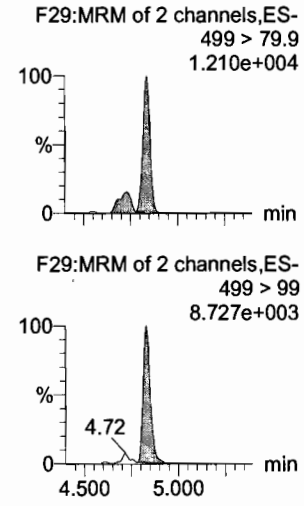
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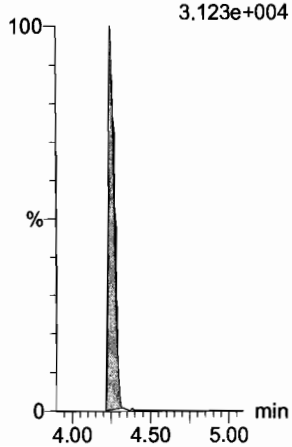
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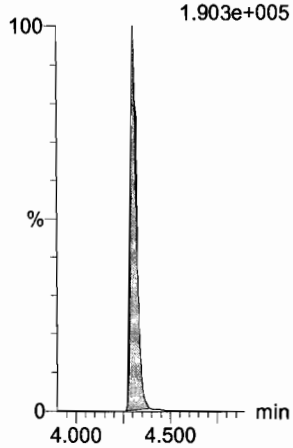
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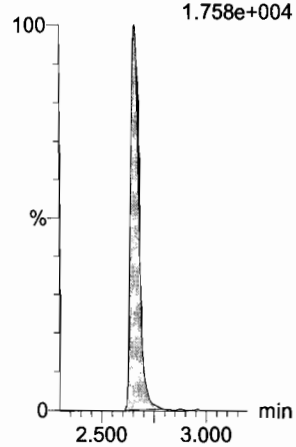
13C2-6:2 FTS



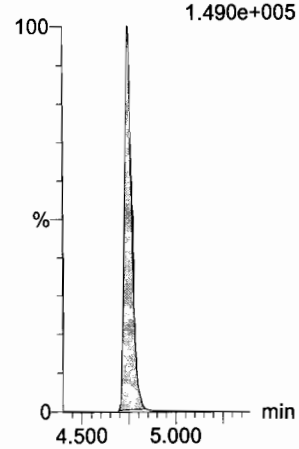
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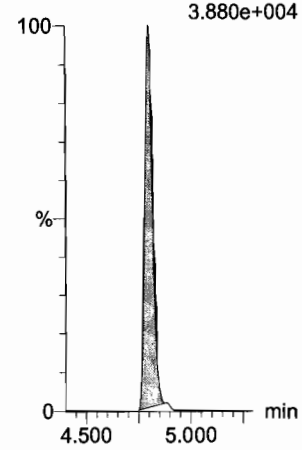
13C3-PFBS



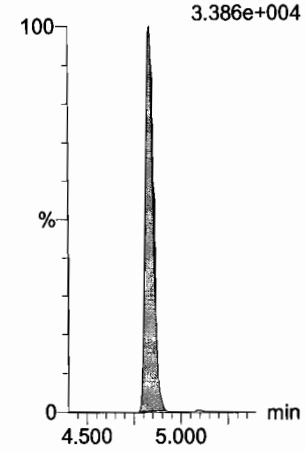
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13C8-PFOSA



13C8-PFOS

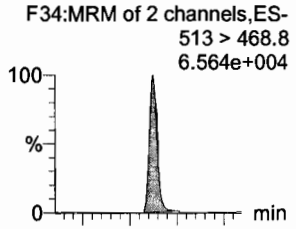


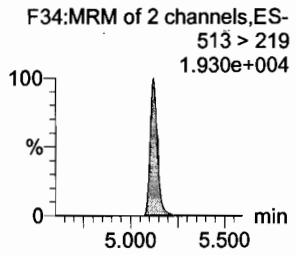
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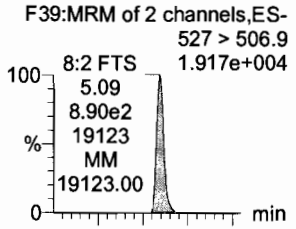
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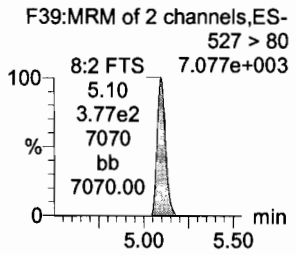
PFDA



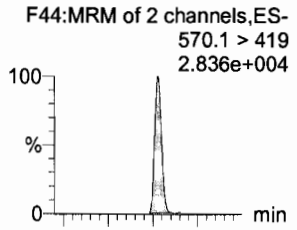


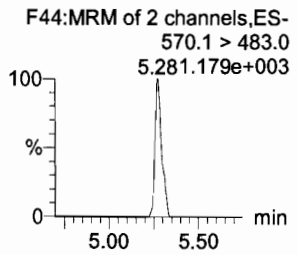
8:2 FTS



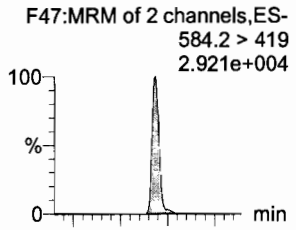


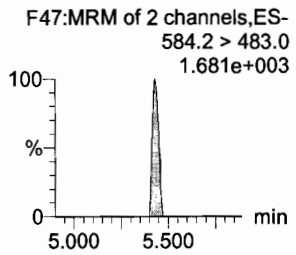
N-MeFOSAA



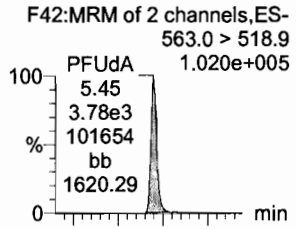


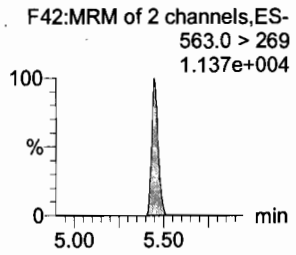
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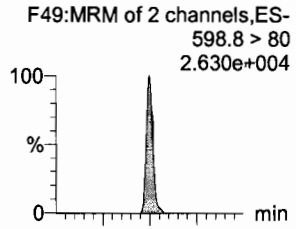


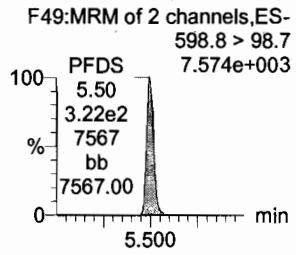
PFUdA



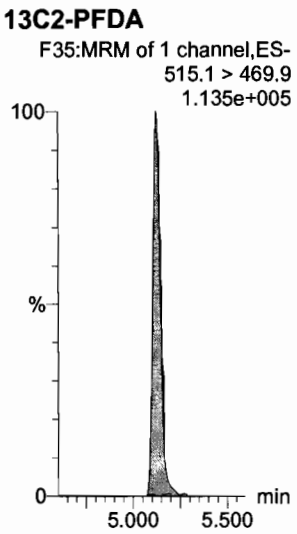


PFDS

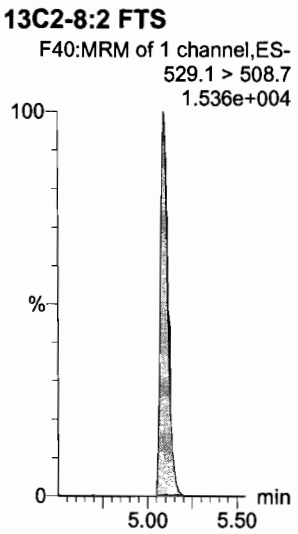




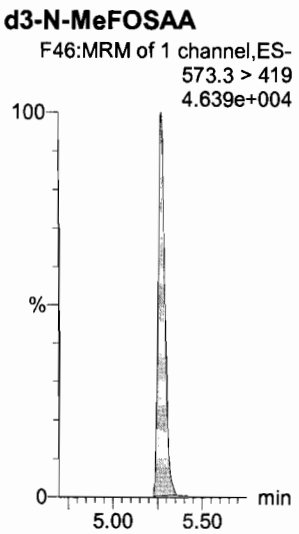
13C2-PFDA



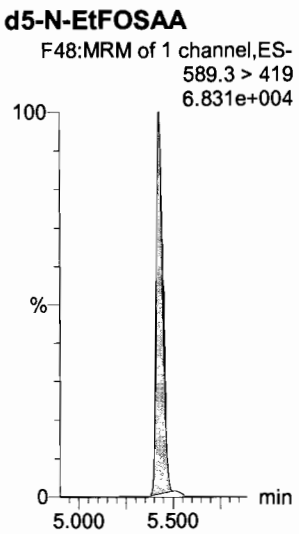
13C2-8:2 FTS



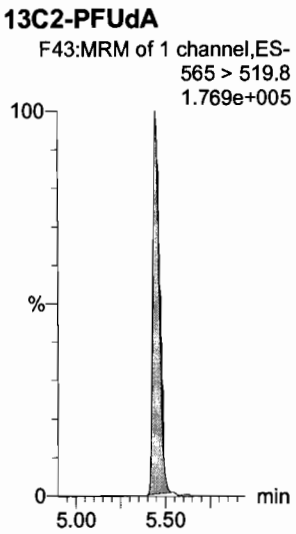
d3-N-MeFOSAA



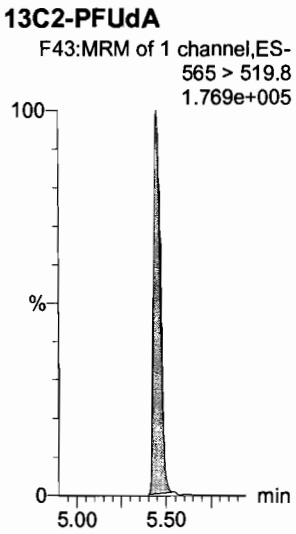
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

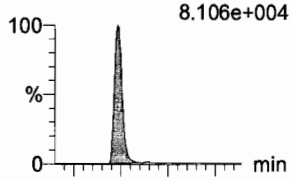


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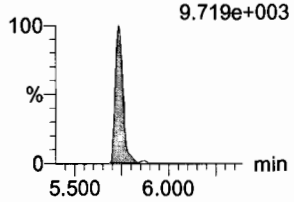
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Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

Name: 180108M2_5, Date: 09-Jan-2018, Time: 01:21:26, ID: ST180108M2-5 PFC CS2 18A0810, Description: ST180108M2-5 PFC CS2 18A0810

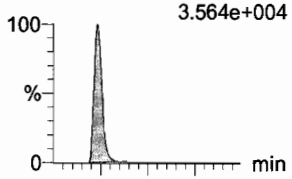
PFDoA
F50:MRM of 2 channels,ES-
612.9 > 569.0
8.106e+004



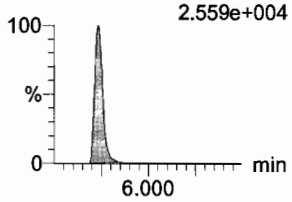
F50:MRM of 2 channels,ES-
612.9 > 318.8
9.719e+003



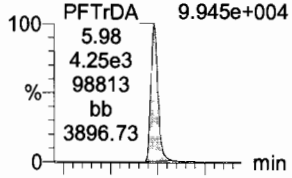
N-MeFOSA
F33:MRM of 2 channels,ES-
512.1 > 168.9
3.564e+004



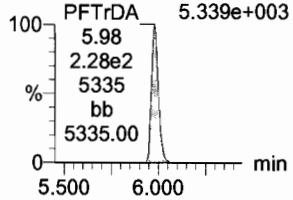
F33:MRM of 2 channels,ES-
512.1 > 219
2.559e+004



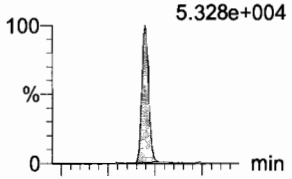
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
9.945e+004



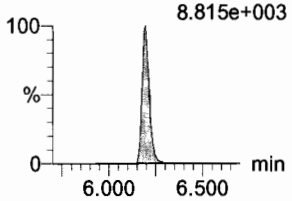
F56:MRM of 2 channels,ES-
662.9 > 319
5.339e+003



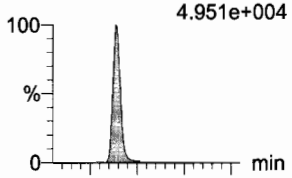
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
5.328e+004



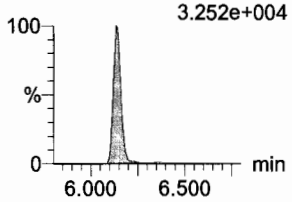
F57:MRM of 2 channels,ES-
712.9 > 369
8.815e+003



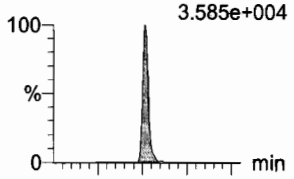
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
4.951e+004



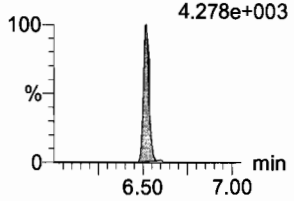
F38:MRM of 2 channels,ES-
526.1 > 219
3.252e+004



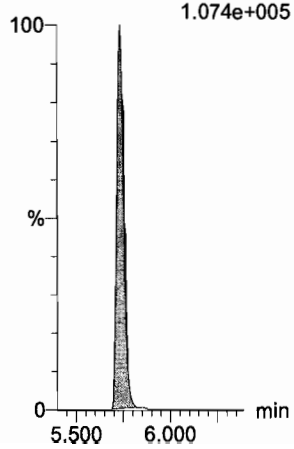
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
3.585e+004



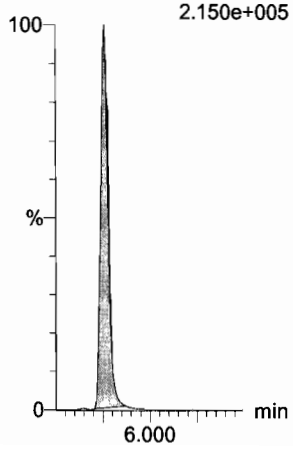
F59:MRM of 2 channels,ES-
813.1 > 219
4.278e+003



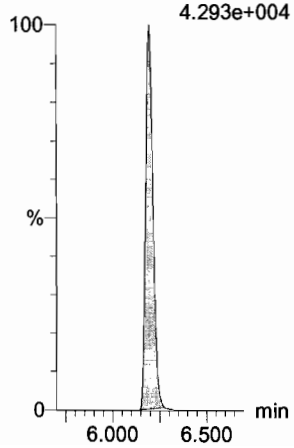
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
1.074e+005



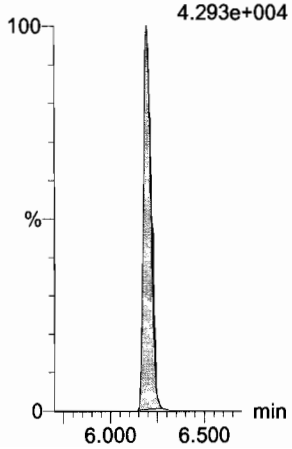
d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
2.150e+005



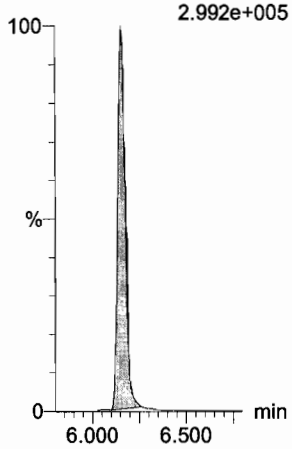
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
4.293e+004



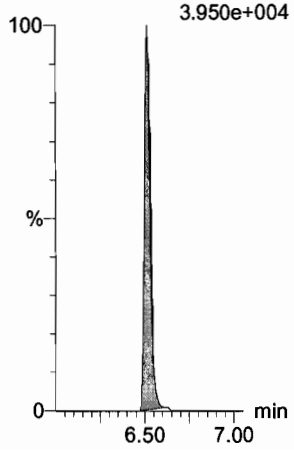
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
4.293e+004



d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
2.992e+005



13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
3.950e+004

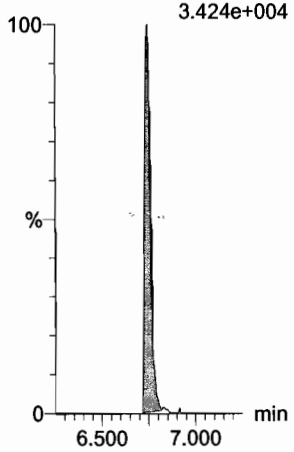


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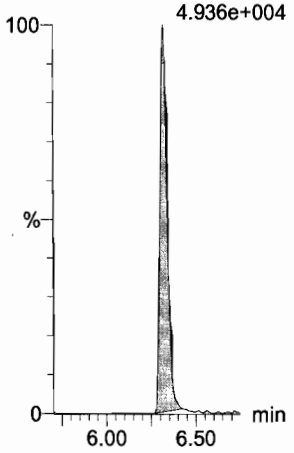
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Name: 180108M2_5, Date: 09-Jan-2018, Time: 01:21:26, ID: ST180108M2-5 PFC CS2 18A0810, Description: ST180108M2-5 PFC CS2 18A0810

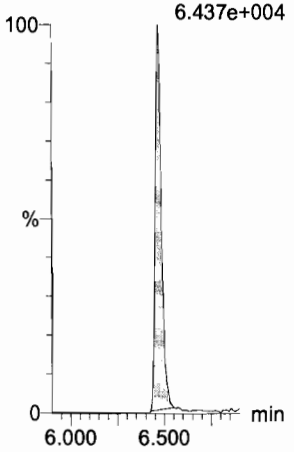
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
3.424e+004



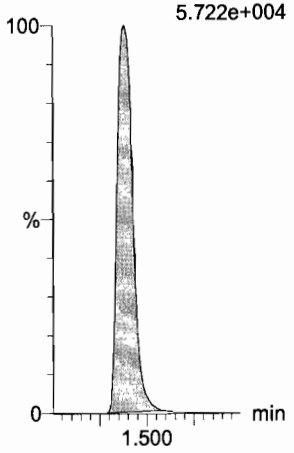
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
4.936e+004



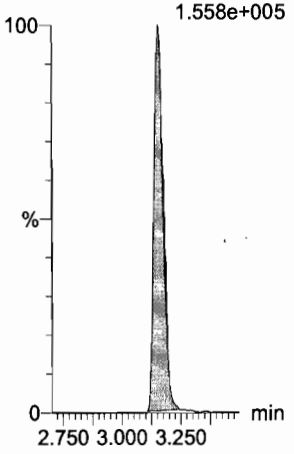
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
6.437e+004



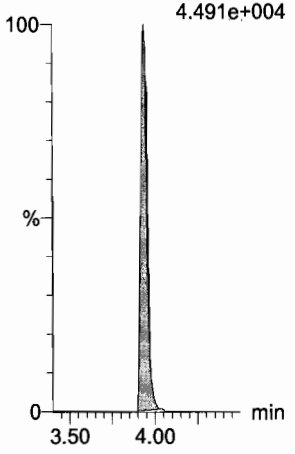
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
5.722e+004



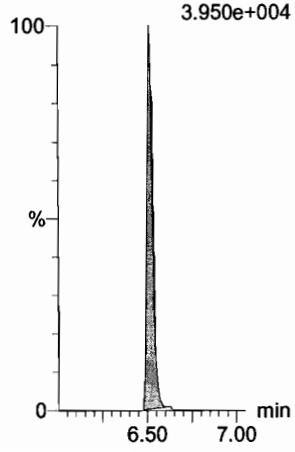
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
1.558e+005



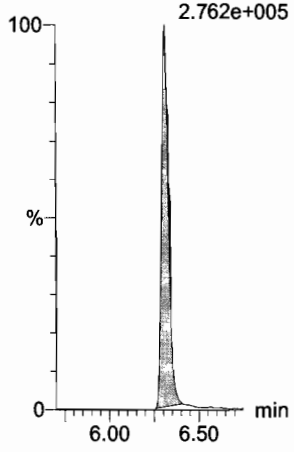
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
4.491e+004



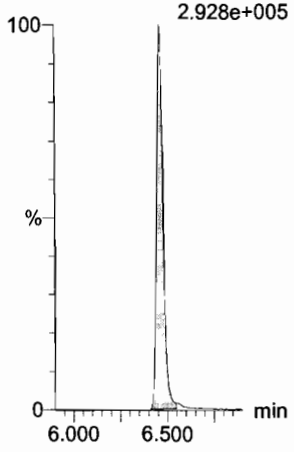
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
3.950e+004



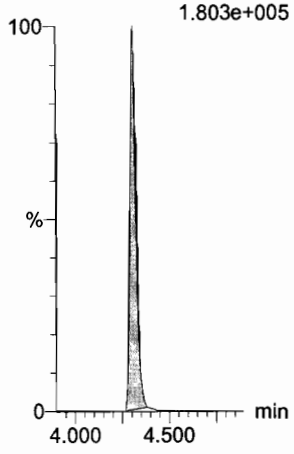
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
2.762e+005



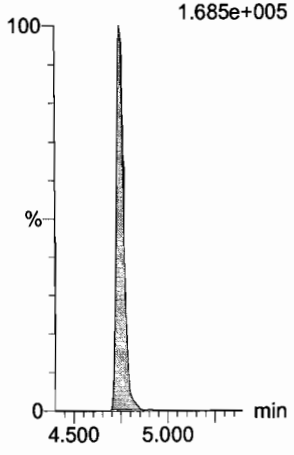
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
2.928e+005



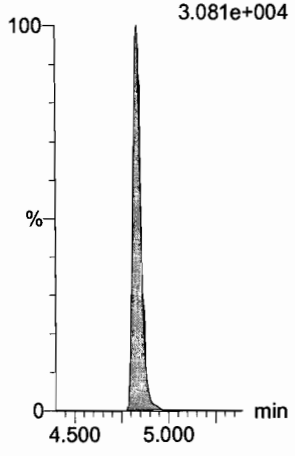
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
1.803e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
1.685e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
3.081e+004

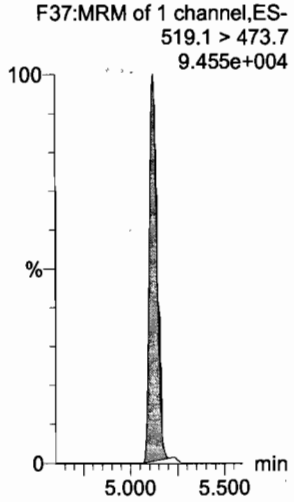


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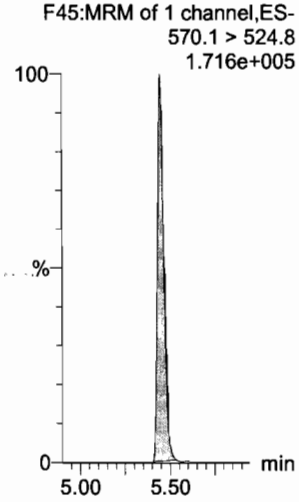
Last Altered: Tuesday, January 09, 2018 10:42:03 Pacific Standard Time
Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

Name: 180108M2_5, Date: 09-Jan-2018, Time: 01:21:26, ID: ST180108M2-5 PFC CS2 18A0810, Description: ST180108M2-5 PFC CS2 18A0810

13C6-PFDA



13C7-PFUdA

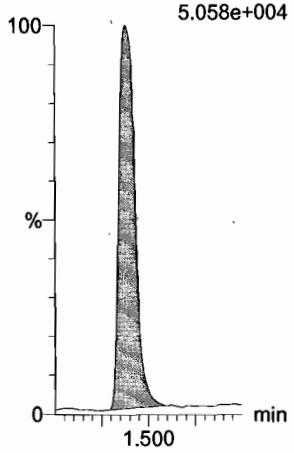


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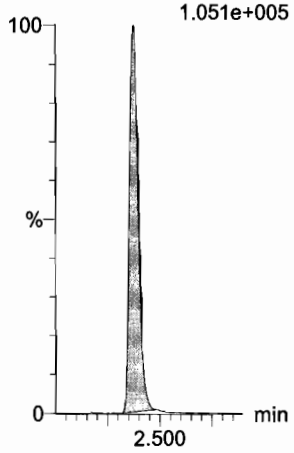
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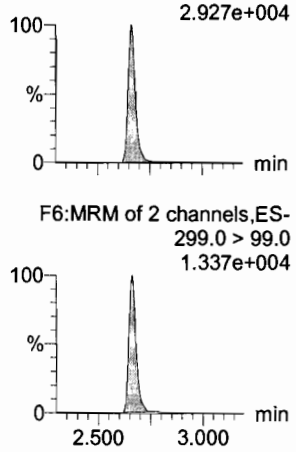
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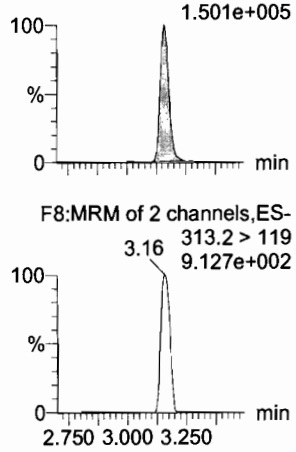
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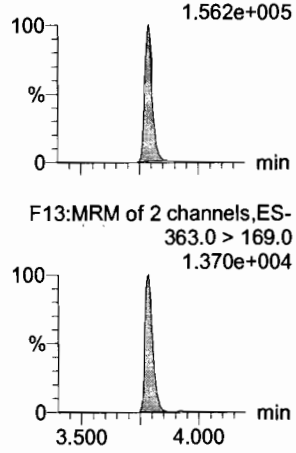
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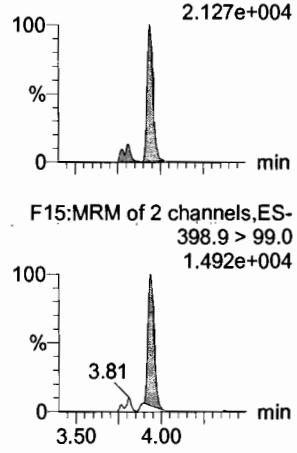
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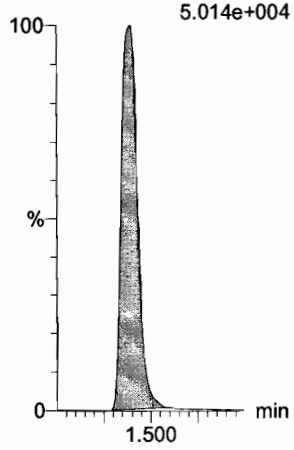
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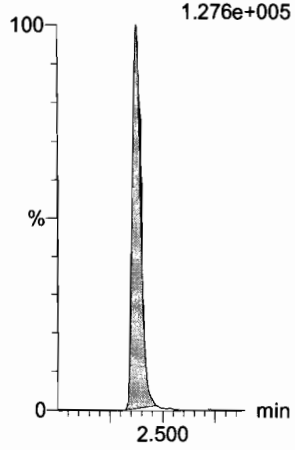
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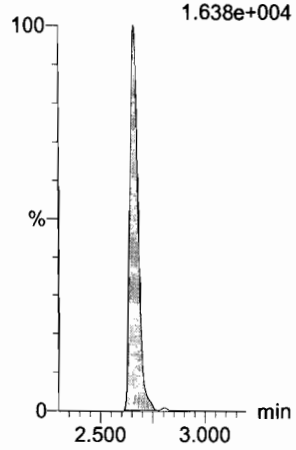
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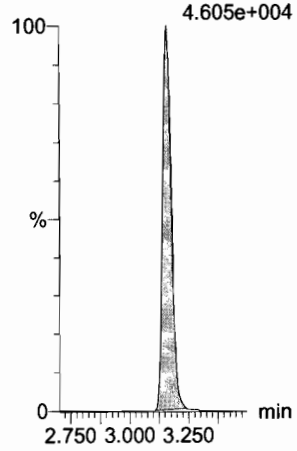
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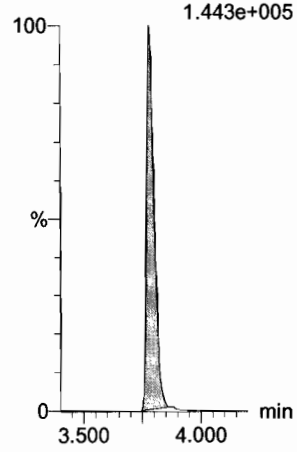
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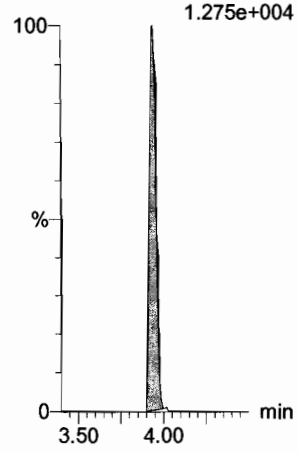
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13C4-PFHpA



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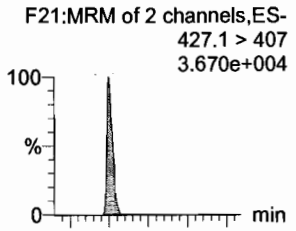


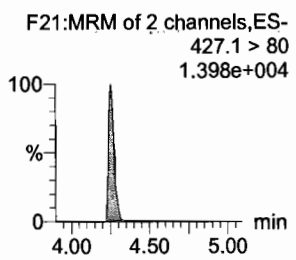
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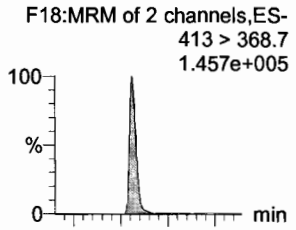
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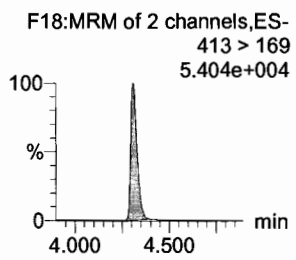
6:2 FTS



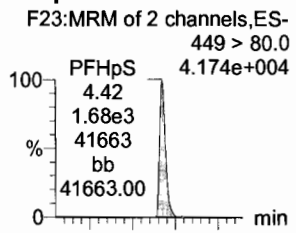


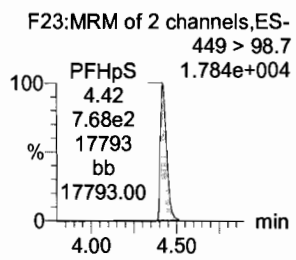
L-PFOA



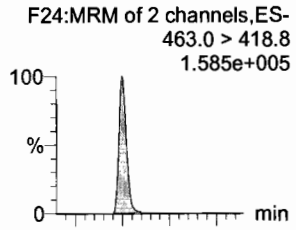


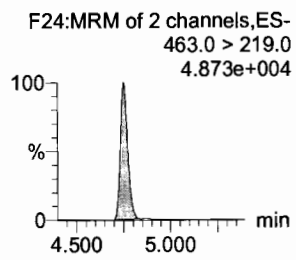
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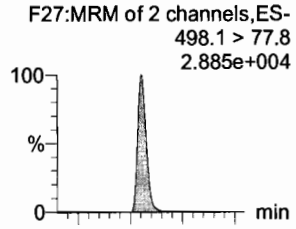


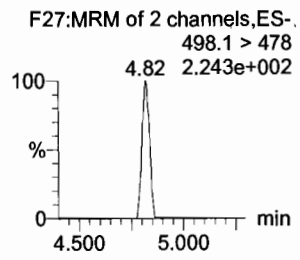
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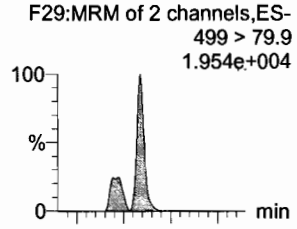


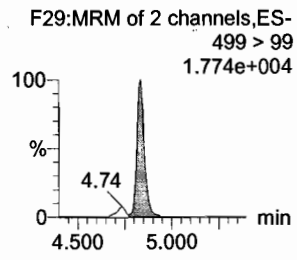
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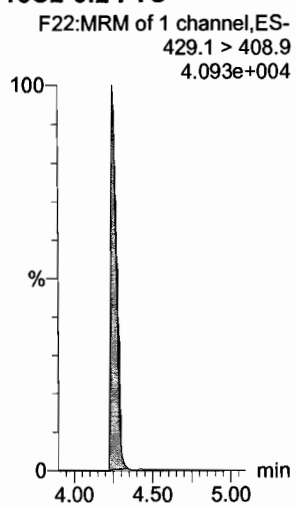


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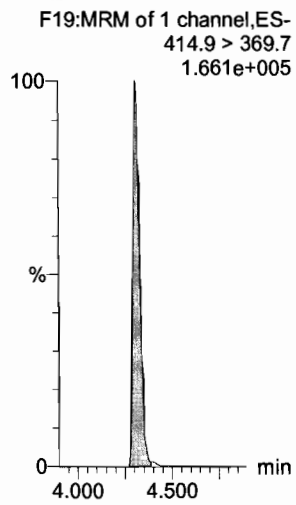




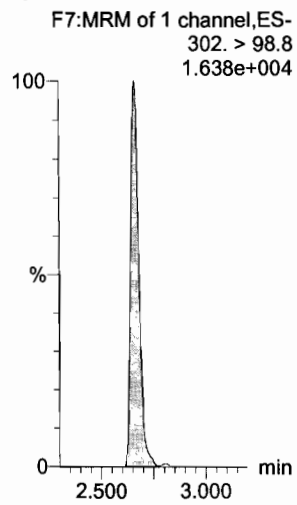
13C2-6:2 FTS



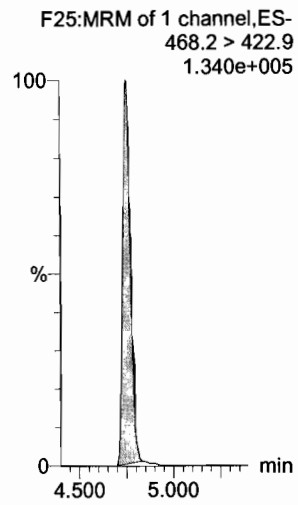
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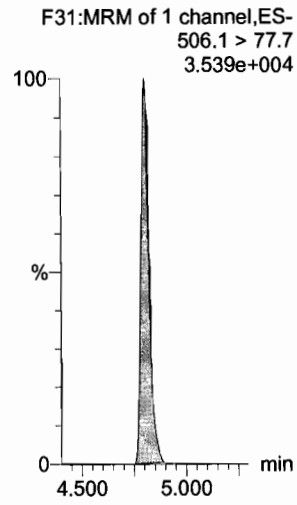
13C3-PFBS



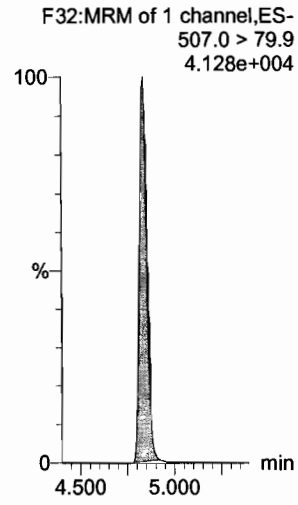
13C5-PFNA



13C8-PFOSA



13C8-PFOS

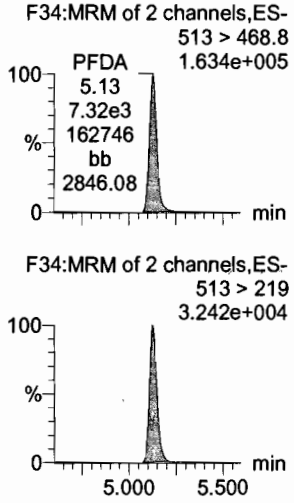


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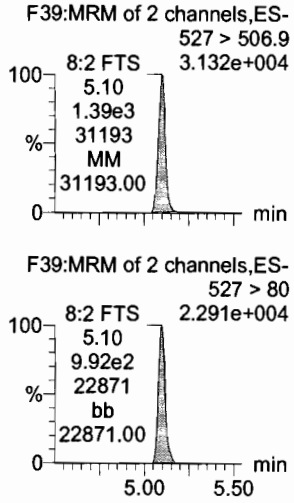
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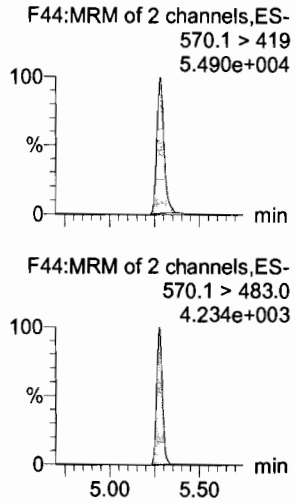
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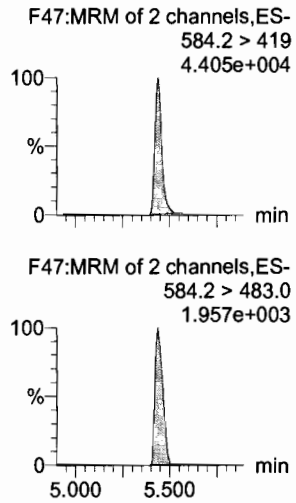
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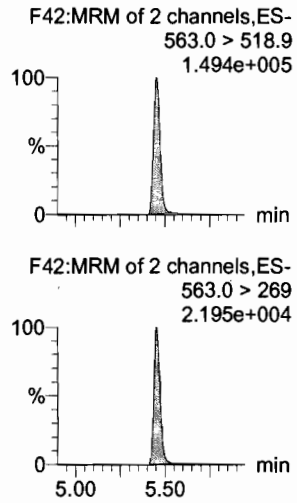
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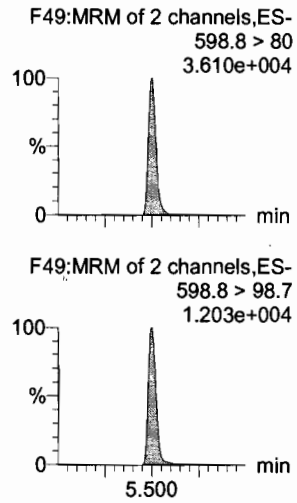
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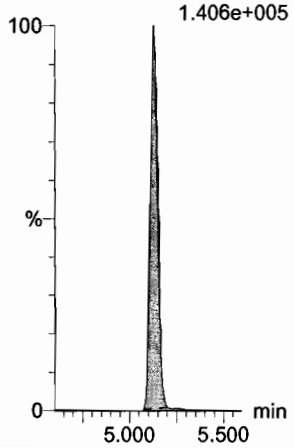
PFUdA



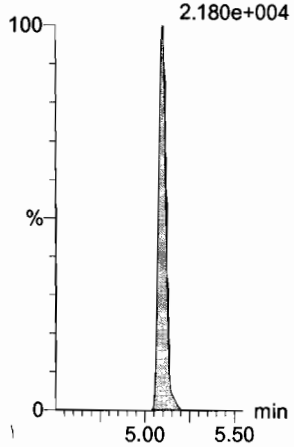
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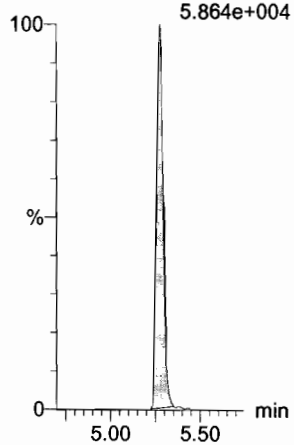
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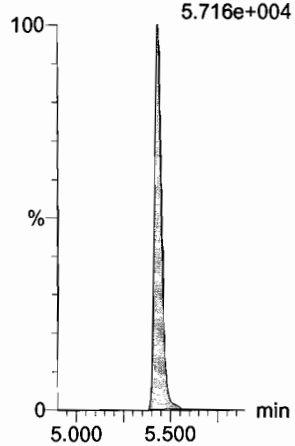
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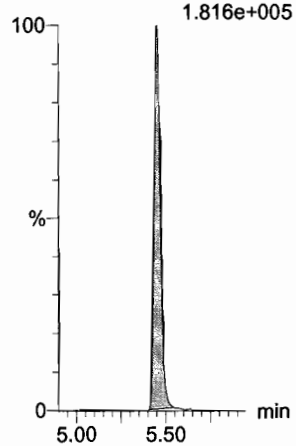
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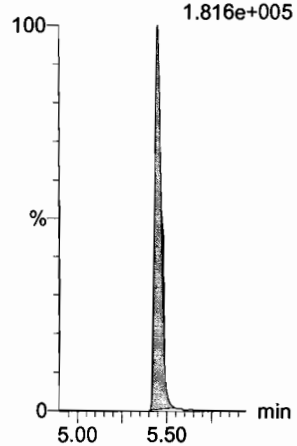
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13C2-PFUdA



13C2-PFUdA

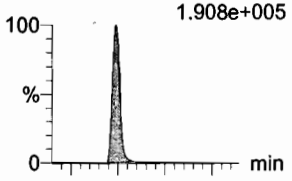


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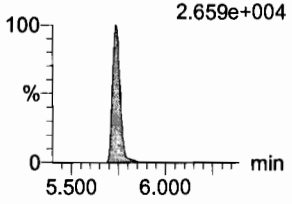
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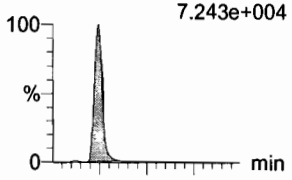
PFDoA
F50:MRM of 2 channels,ES-
612.9 > 569.0
1.908e+005



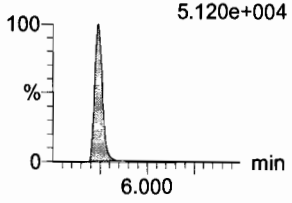
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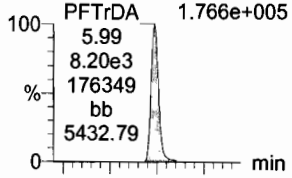
N-MeFOSA
F33:MRM of 2 channels,ES-
512.1 > 168.9
7.243e+004



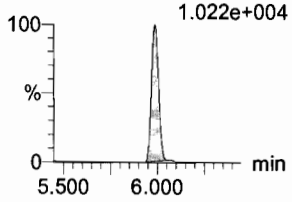
F33:MRM of 2 channels,ES-
512.1 > 219
5.120e+004



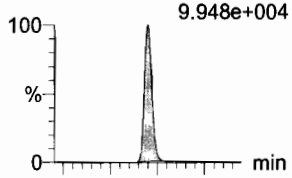
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
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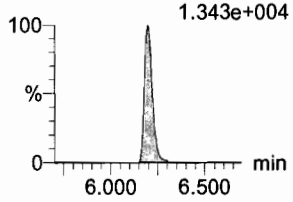
F56:MRM of 2 channels,ES-
662.9 > 319
1.022e+004



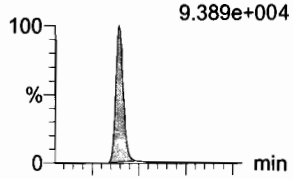
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
9.948e+004



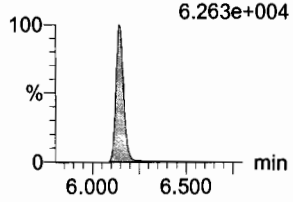
F57:MRM of 2 channels,ES-
712.9 > 369
1.343e+004



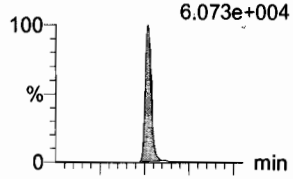
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
9.389e+004



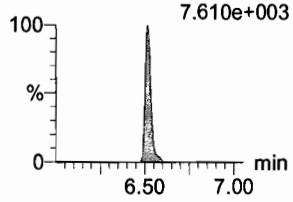
F38:MRM of 2 channels,ES-
526.1 > 219
6.263e+004



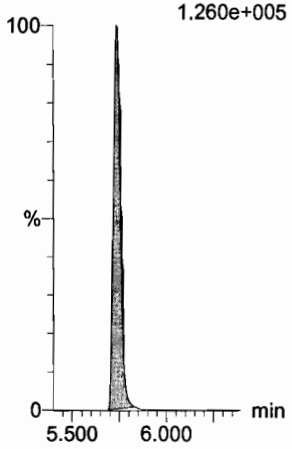
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
6.073e+004



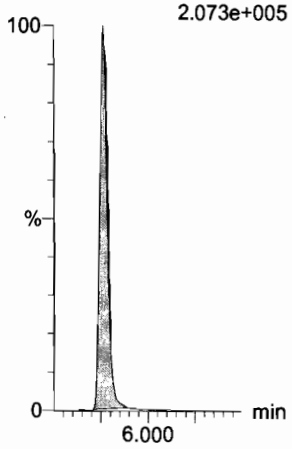
F59:MRM of 2 channels,ES-
813.1 > 219
7.610e+003



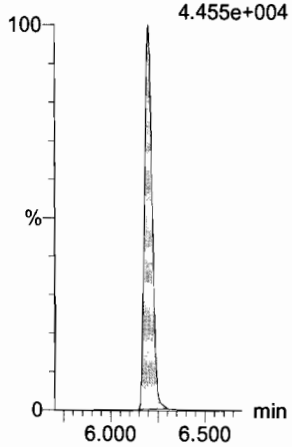
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
1.260e+005



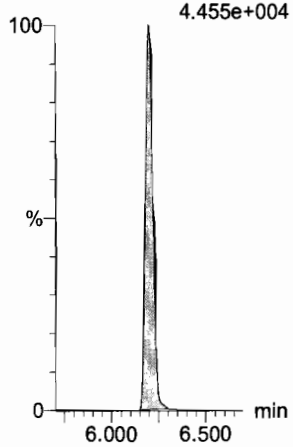
d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
2.073e+005



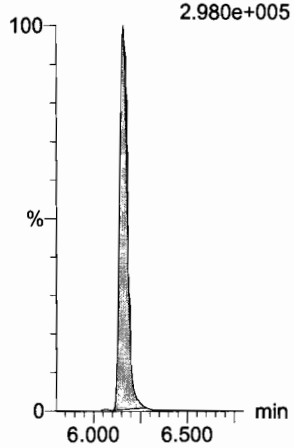
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
4.455e+004



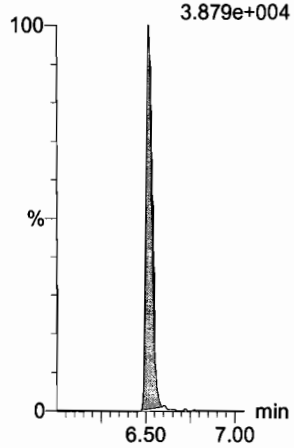
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
4.455e+004



d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
2.980e+005



13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
3.879e+004

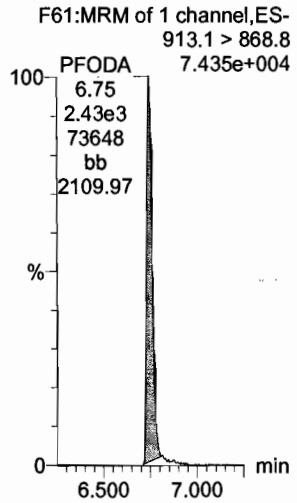


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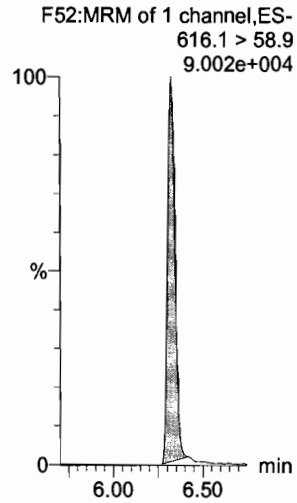
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Name: 180108M2_6, Date: 09-Jan-2018, Time: 01:32:37, ID: ST180108M2-6 PFC CS3 18A0811, Description: ST180108M2-6 PFC CS3 18A0811

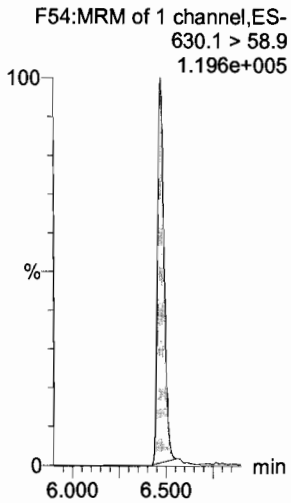
PFODA



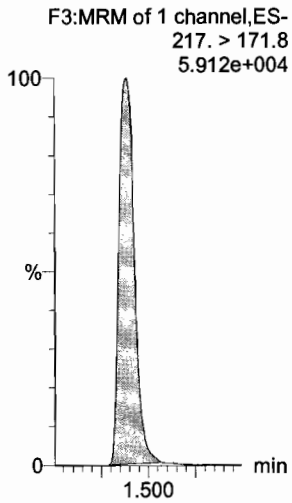
N-MeFOSE



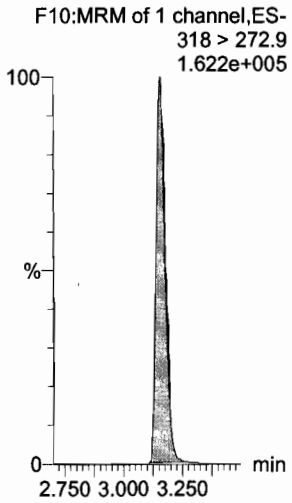
N-EtFOSE



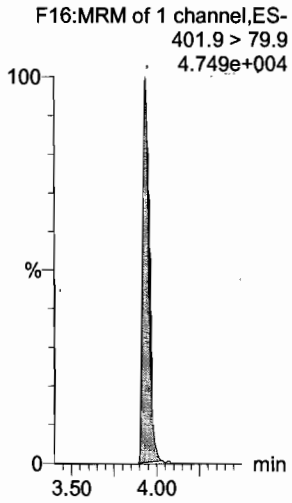
13C4-PFBA



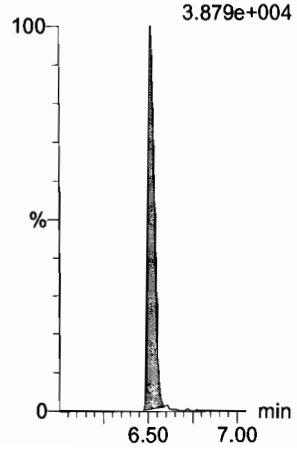
13C5-PFHxA



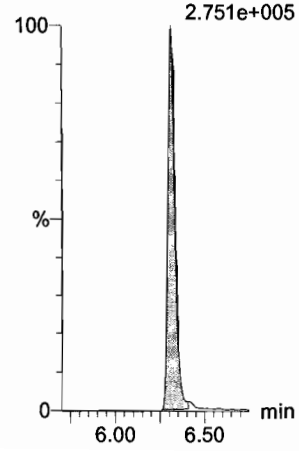
13C3-PFHxS



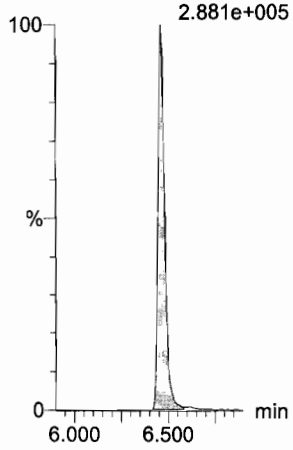
13C2-PFHxDA



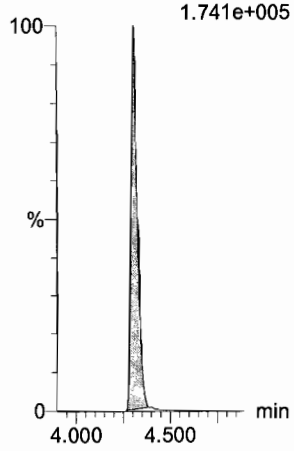
d7-N-MeFOSE



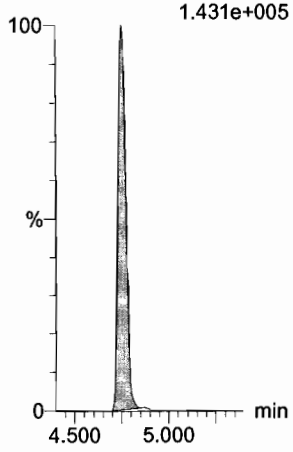
d9-N-EtFOSE



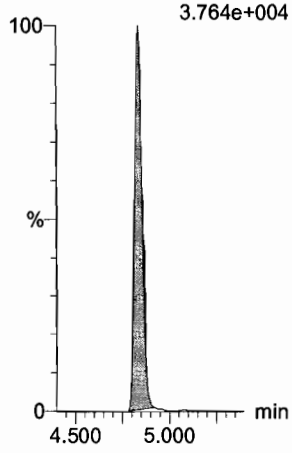
13C8-PFOA



13C9-PFNA



13C4-PFOS

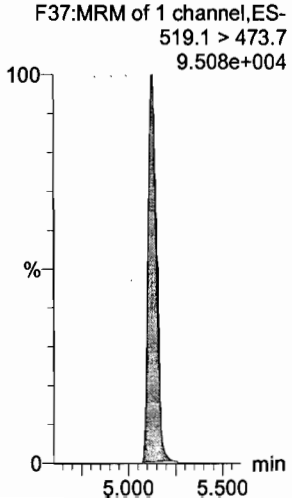


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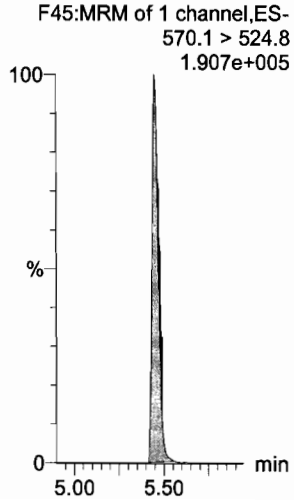
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Name: 180108M2_6, Date: 09-Jan-2018, Time: 01:32:37, ID: ST180108M2-6 PFC CS3 18A0811, Description: ST180108M2-6 PFC CS3 18A0811

13C6-PFDA



13C7-PFUdA

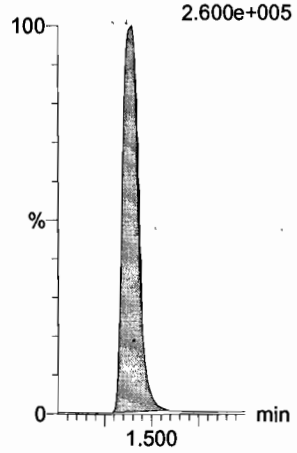


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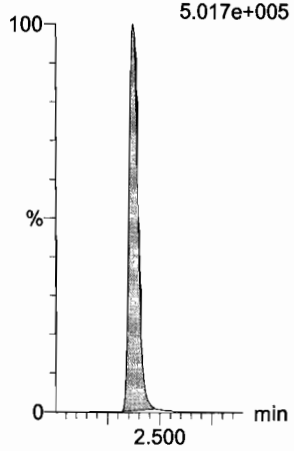
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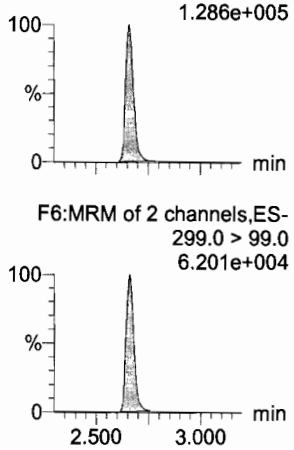
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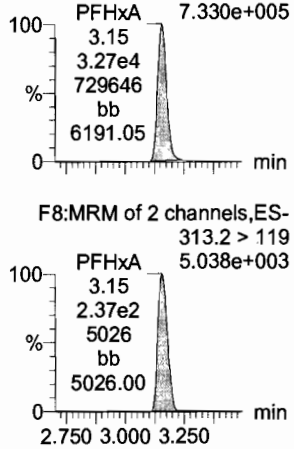
PFPeA



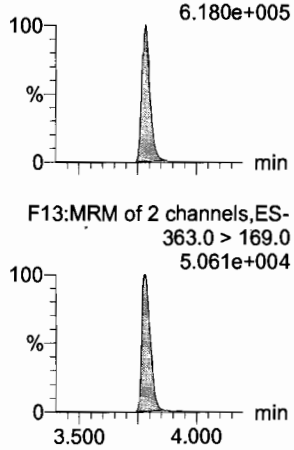
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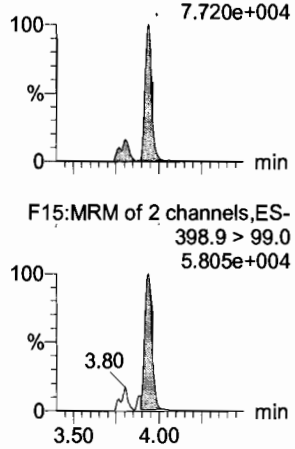
PFHxA



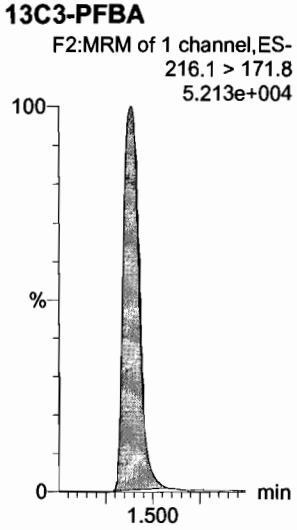
PFHpA



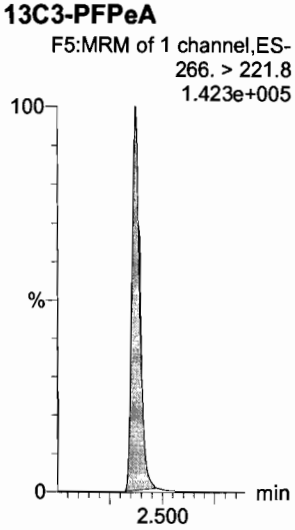
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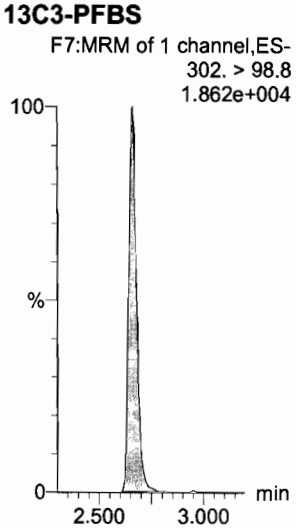
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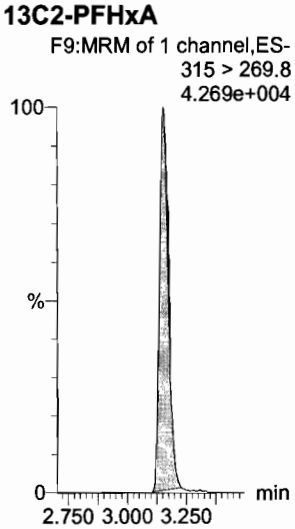
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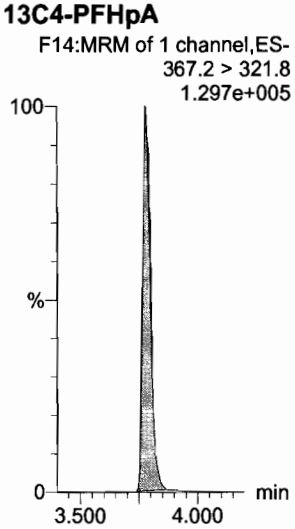
13C3-PFBS



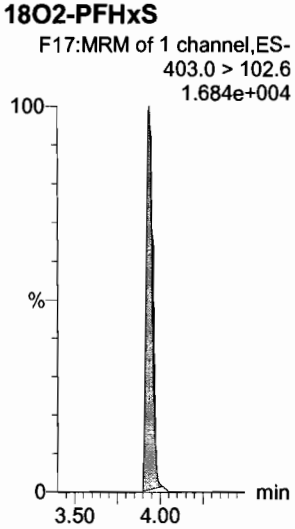
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

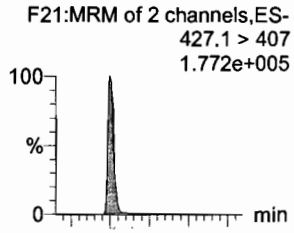


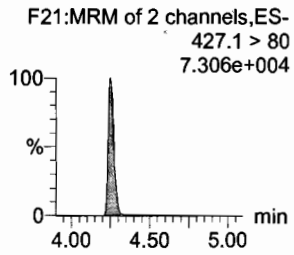
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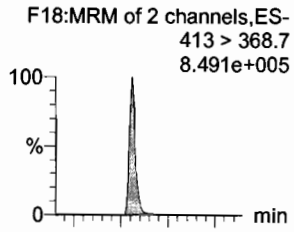
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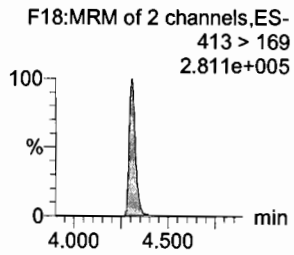
6:2 FTS



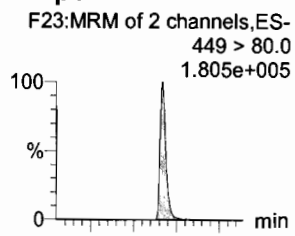


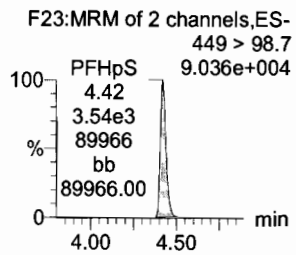
L-PFOA



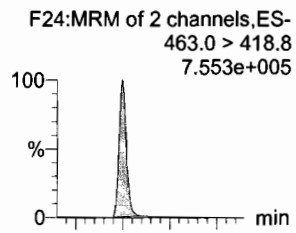


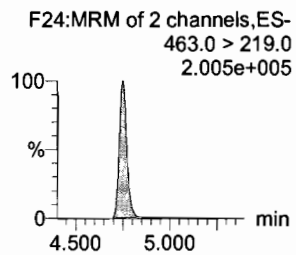
PFHpS



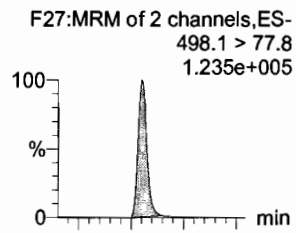


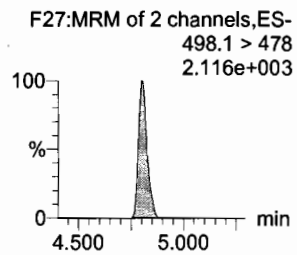
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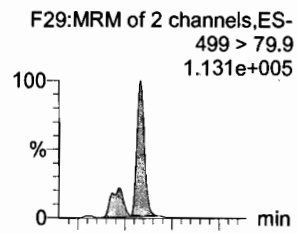


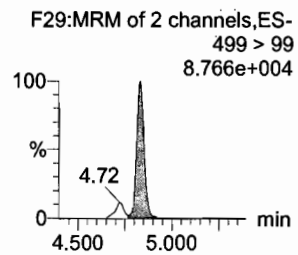
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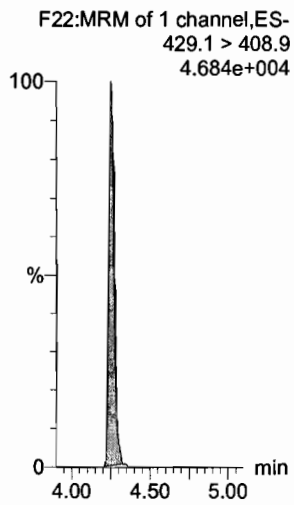


L-PFOS

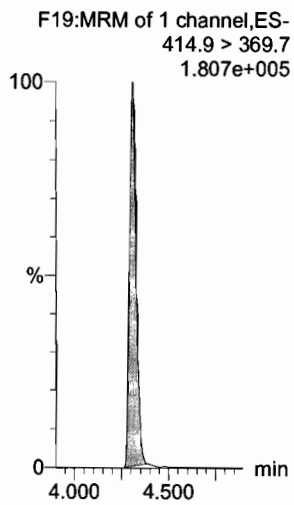




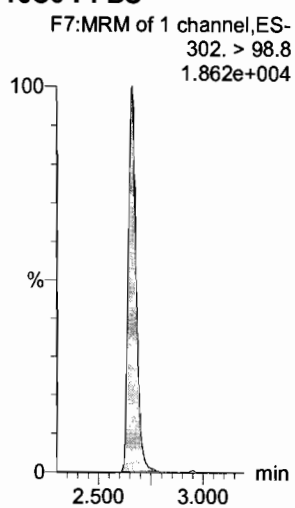
13C2-6:2 FTS



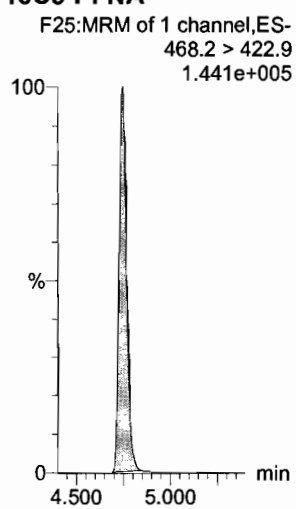
13C2-PFOA



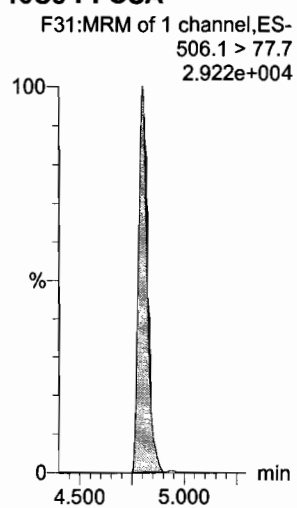
13C3-PFBS



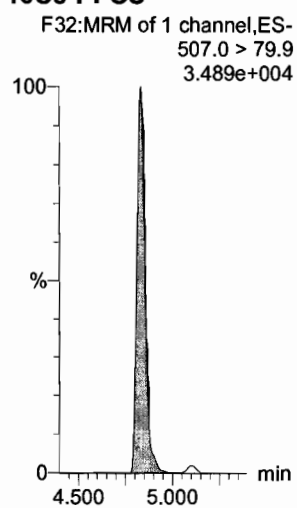
13C5-PFNA



13C8-PFOSA



13C8-PFOS

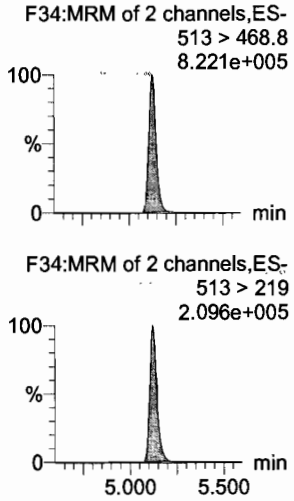


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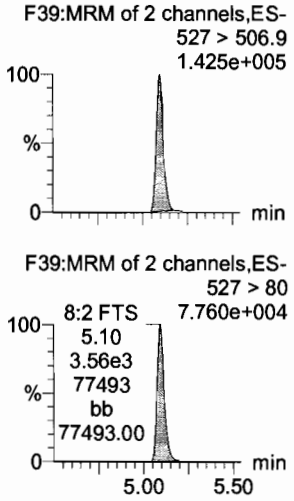
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Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

Name: 180108M2_7, Date: 09-Jan-2018, Time: 01:43:47, ID: ST180108M2-7 PFC CS4 18A0812, Description: ST180108M2-7 PFC CS4 18A0812

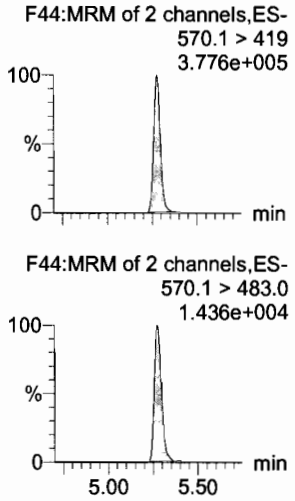
PFDA



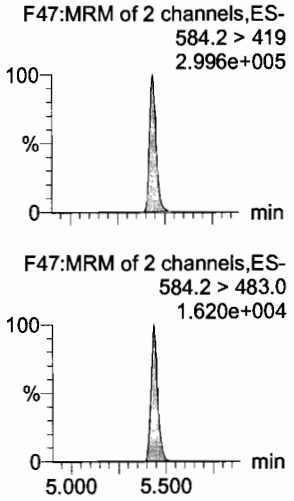
8:2 FTS



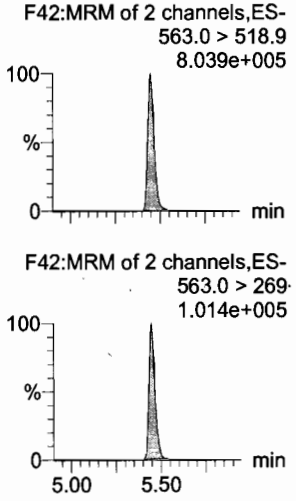
N-MeFOSAA



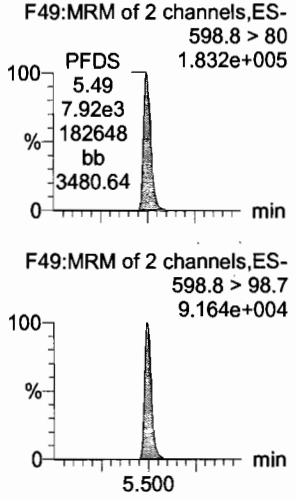
N-EtFOSAA



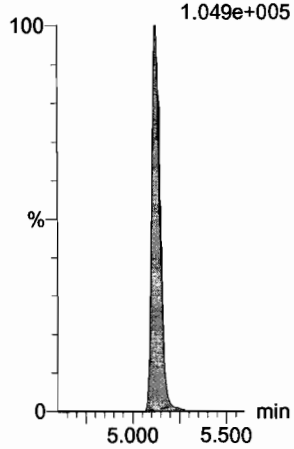
PFUdA



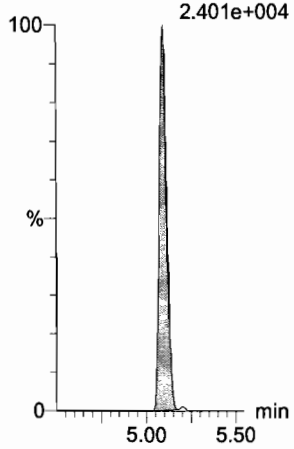
PFDS



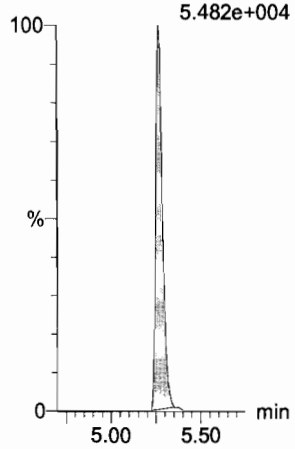
13C2-PFDA



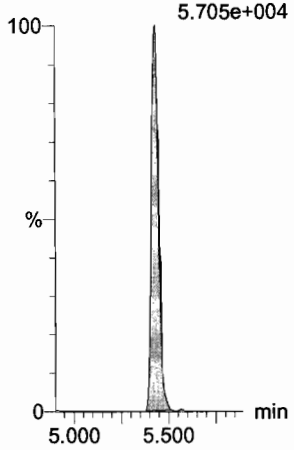
13C2-8:2 FTS



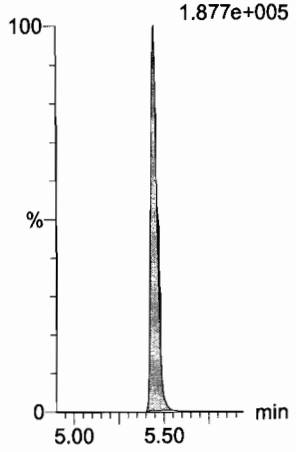
d3-N-MeFOSAA



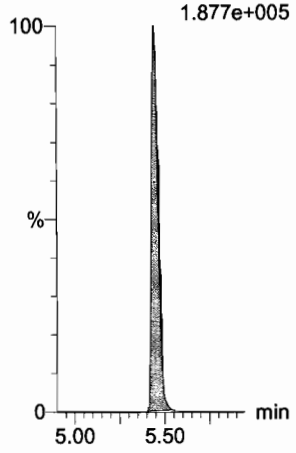
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

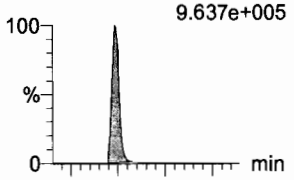


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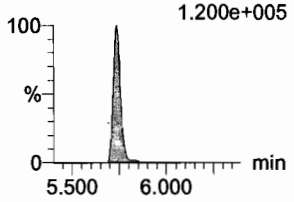
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Name: 180108M2_7, Date: 09-Jan-2018, Time: 01:43:47, ID: ST180108M2-7 PFC CS4 18A0812, Description: ST180108M2-7 PFC CS4 18A0812

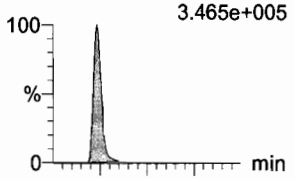
PFDoA
F50:MRM of 2 channels,ES-
612.9 > 569.0
9.637e+005



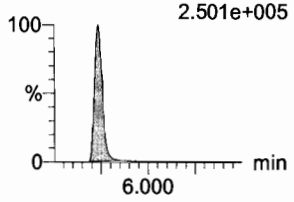
F50:MRM of 2 channels,ES-
612.9 > 318.8
1.200e+005



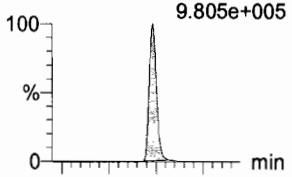
N-MeFOSA
F33:MRM of 2 channels,ES-
512.1 > 168.9
3.465e+005



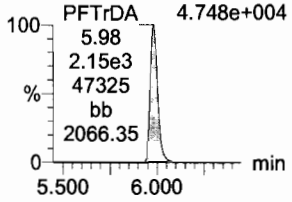
F33:MRM of 2 channels,ES-
512.1 > 219
2.501e+005



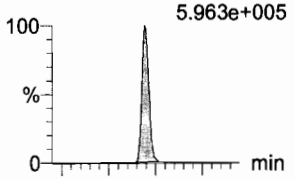
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
9.805e+005



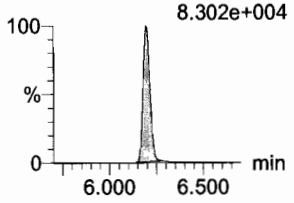
F56:MRM of 2 channels,ES-
662.9 > 319
4.748e+004



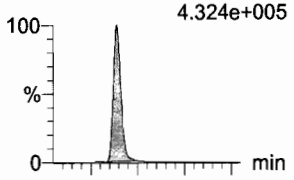
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
5.963e+005



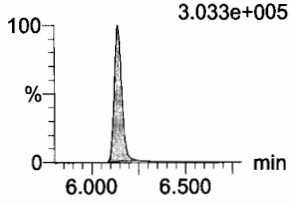
F57:MRM of 2 channels,ES-
712.9 > 369
8.302e+004



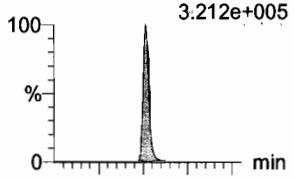
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
4.324e+005



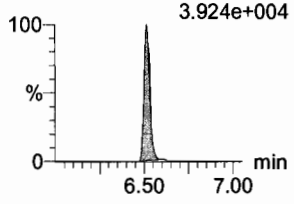
F38:MRM of 2 channels,ES-
526.1 > 219
3.033e+005



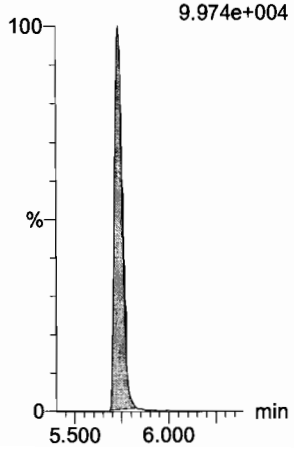
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
3.212e+005



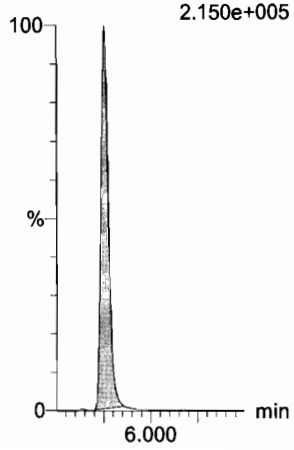
F59:MRM of 2 channels,ES-
813.1 > 219
3.924e+004



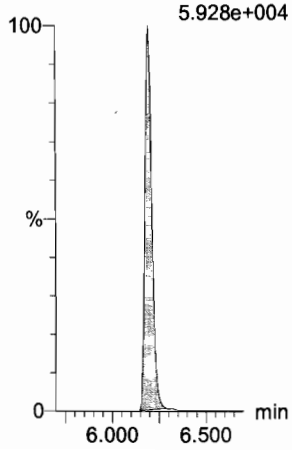
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
9.974e+004



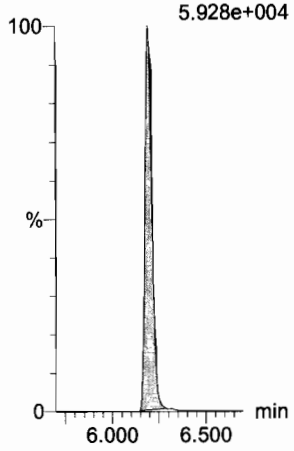
d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
2.150e+005



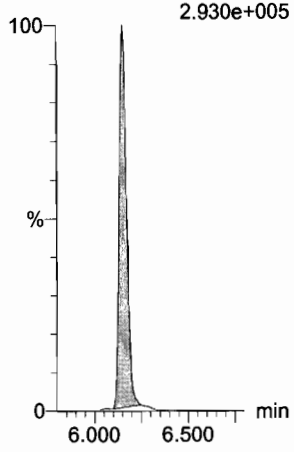
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
5.928e+004



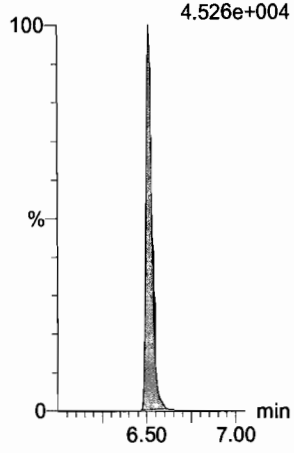
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
5.928e+004



d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
2.930e+005



13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
4.526e+004

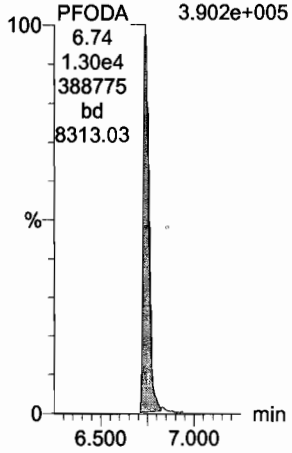


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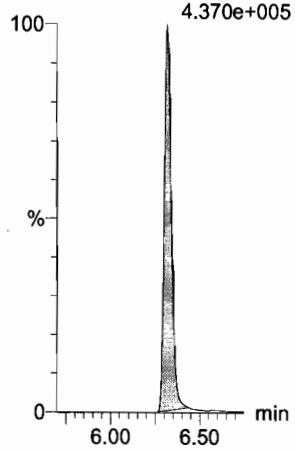
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Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

Name: 180108M2_7, Date: 09-Jan-2018, Time: 01:43:47, ID: ST180108M2-7 PFC CS4 18A0812, Description: ST180108M2-7 PFC CS4 18A0812

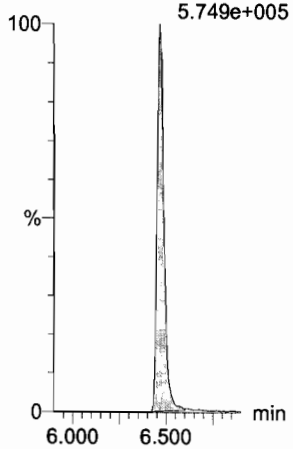
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
3.902e+005



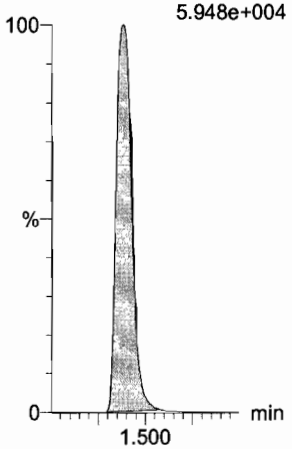
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
4.370e+005



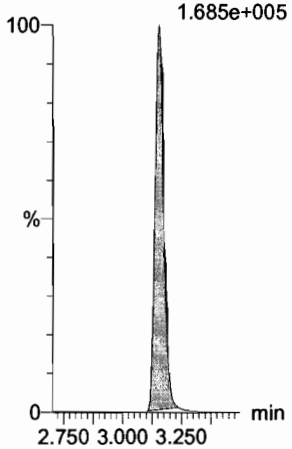
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
5.749e+005



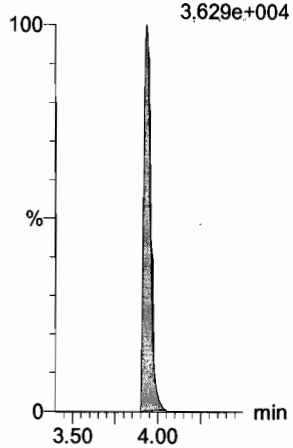
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
5.948e+004



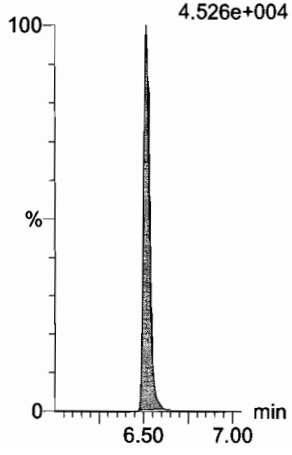
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
1.685e+005



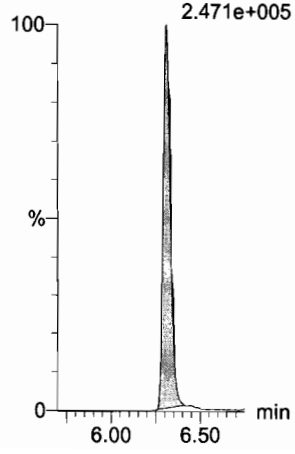
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
3.629e+004



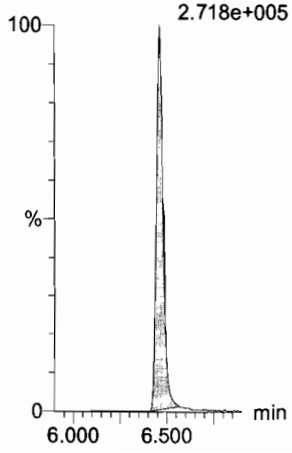
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
4.526e+004



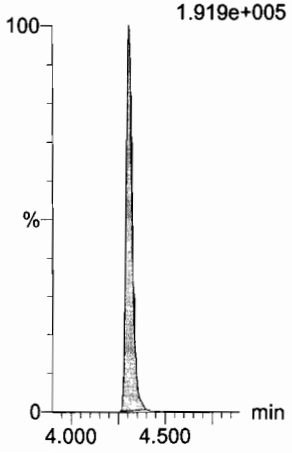
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
2.471e+005



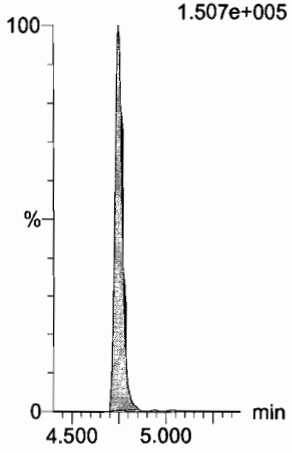
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
2.718e+005



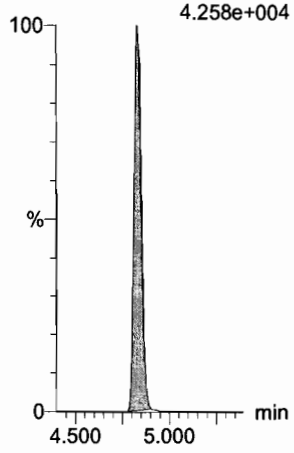
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
1.919e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
1.507e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
4.258e+004

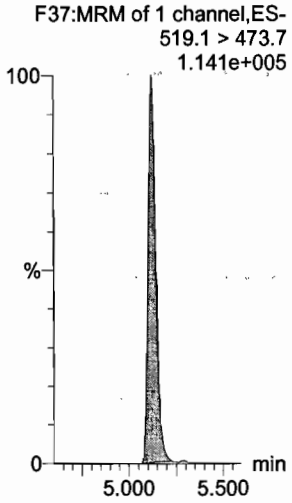


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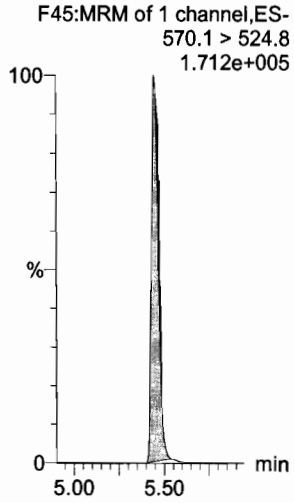
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13C7-PFUdA

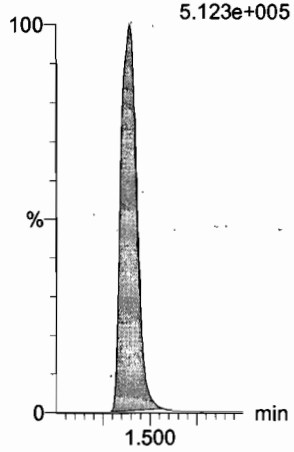


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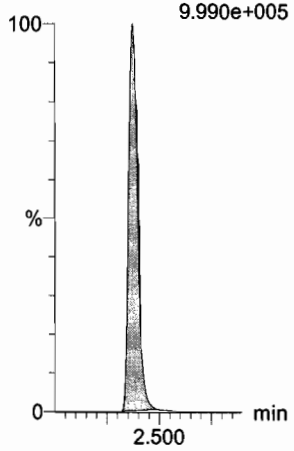
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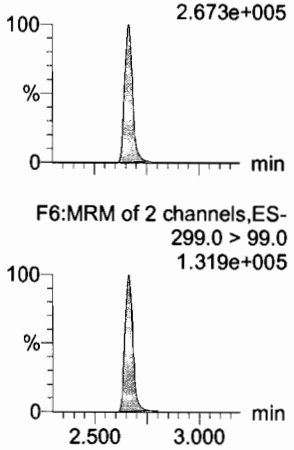
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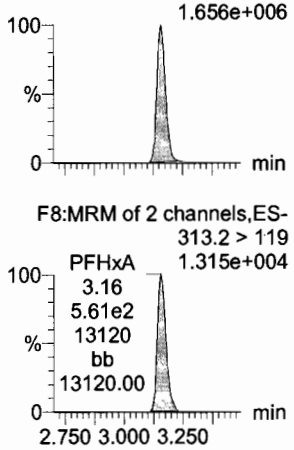
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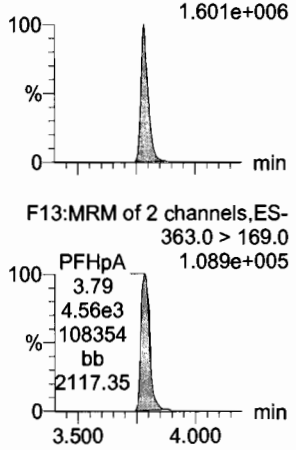
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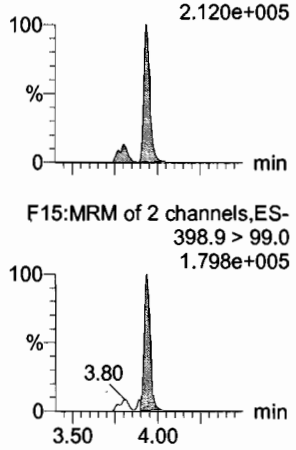
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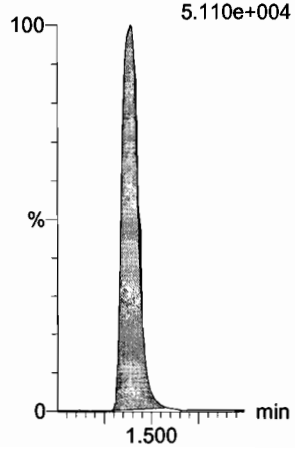
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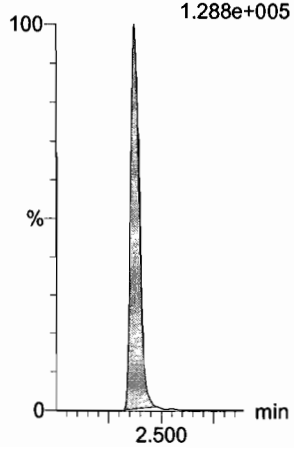
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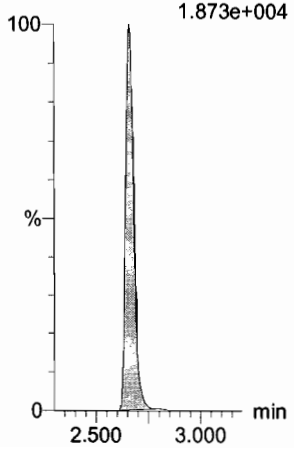
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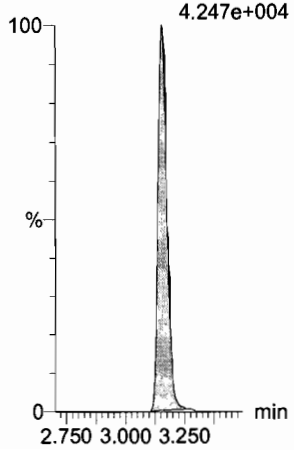
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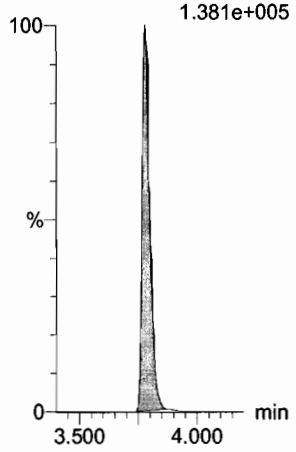
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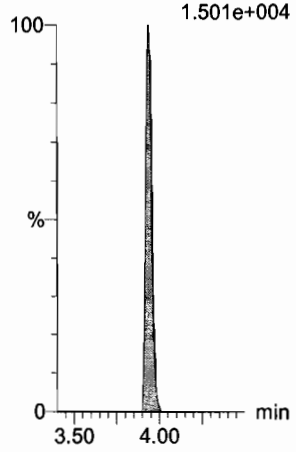
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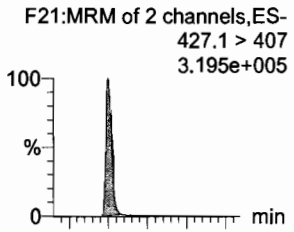


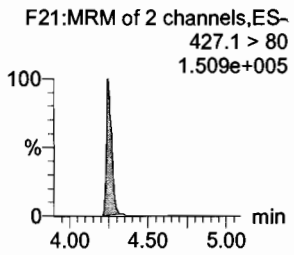
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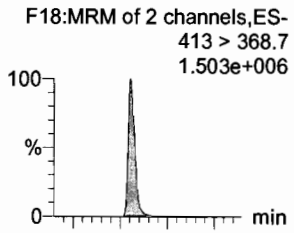
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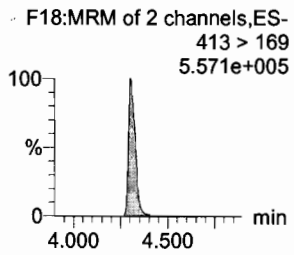
6:2 FTS



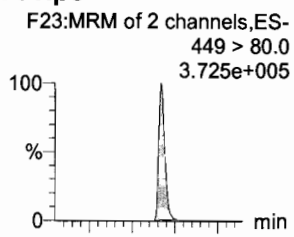


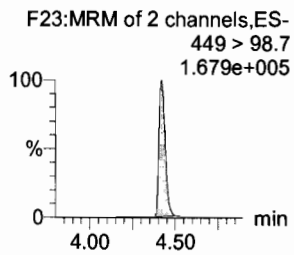
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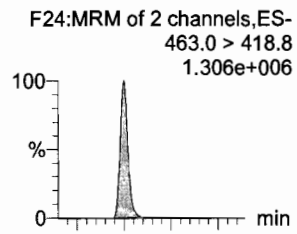


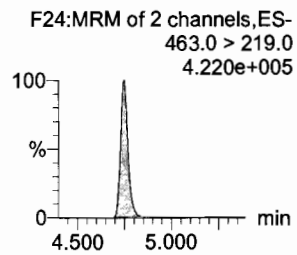
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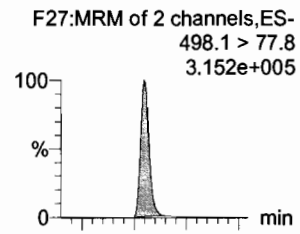


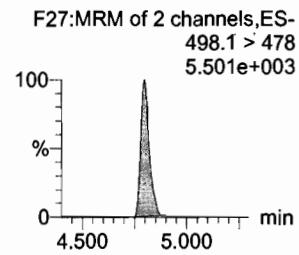
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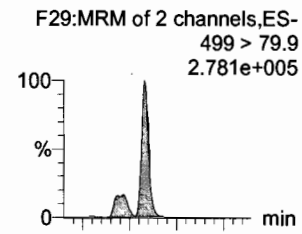


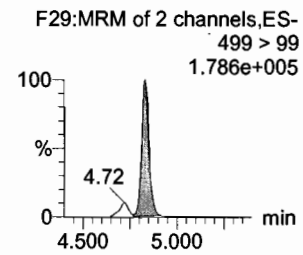
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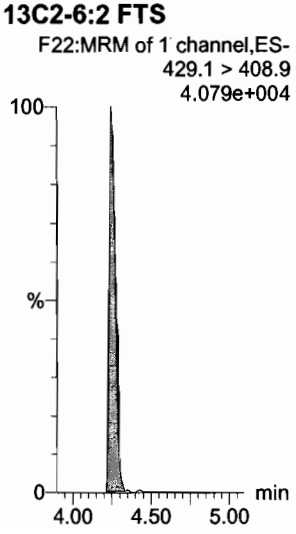


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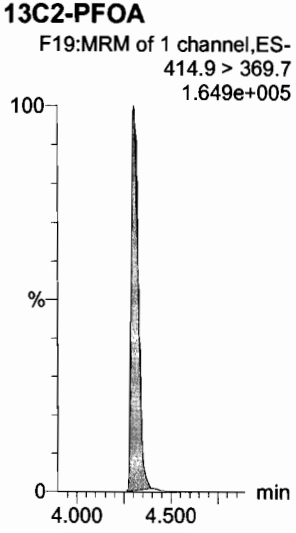




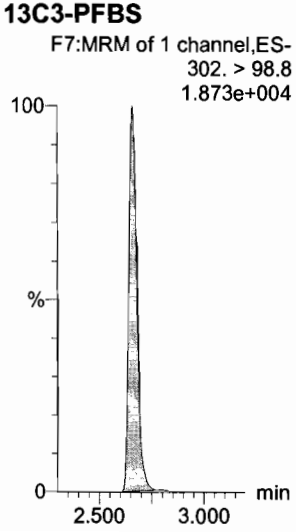
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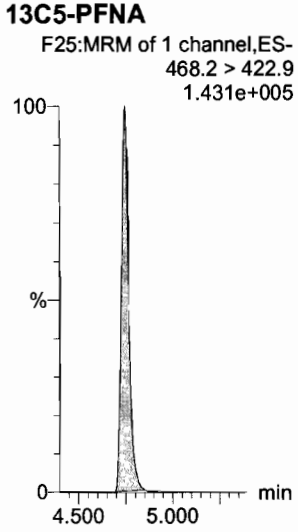
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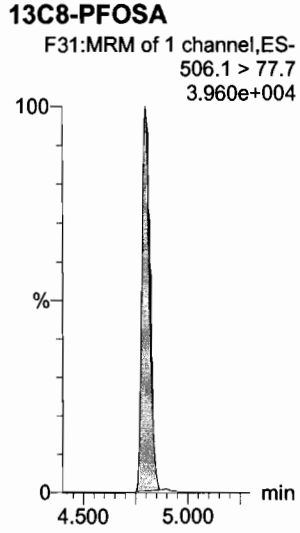
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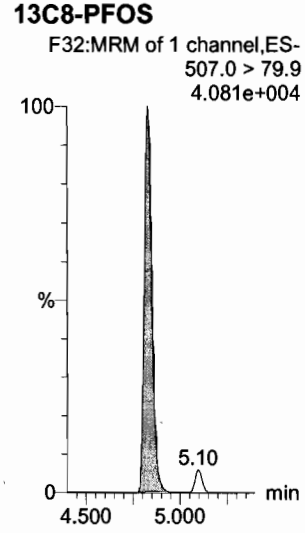
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13C8-PFOSA



13C8-PFOS

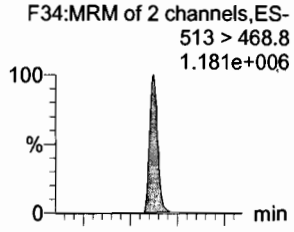


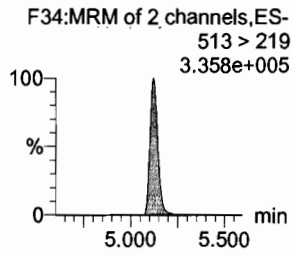
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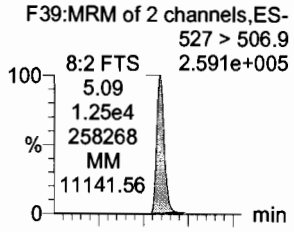
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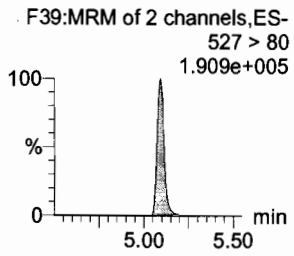
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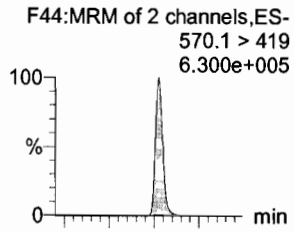


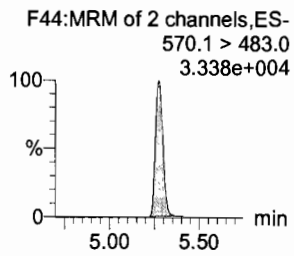
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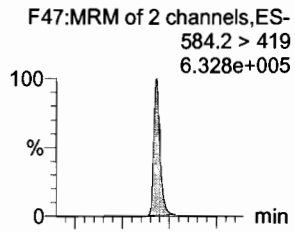


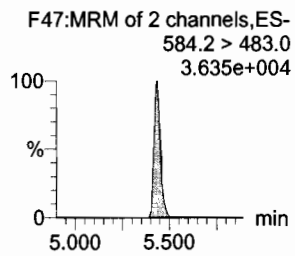
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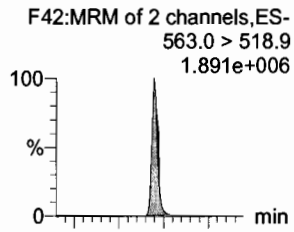


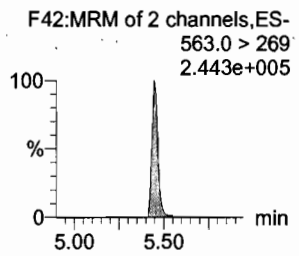
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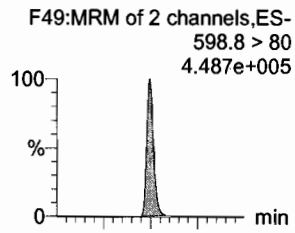


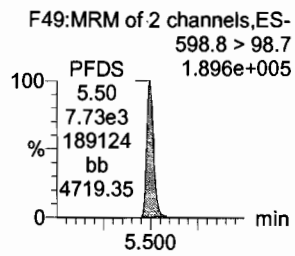
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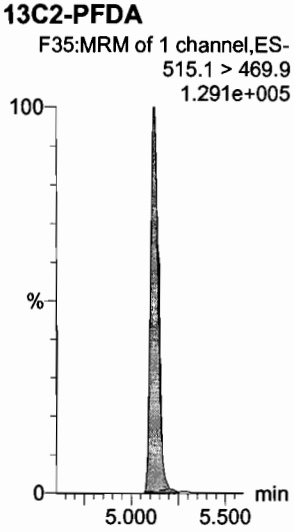


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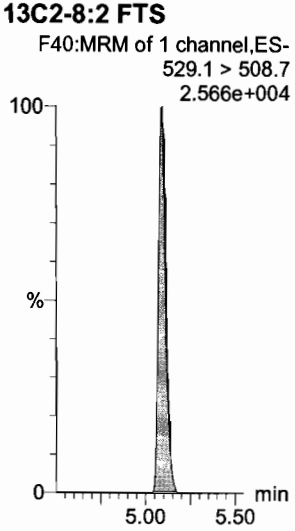




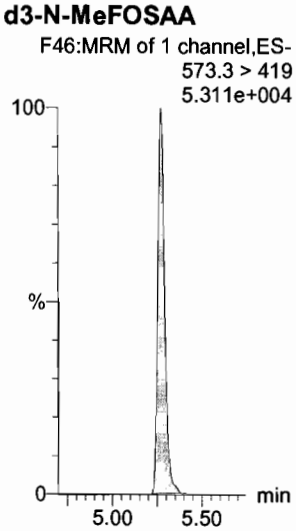
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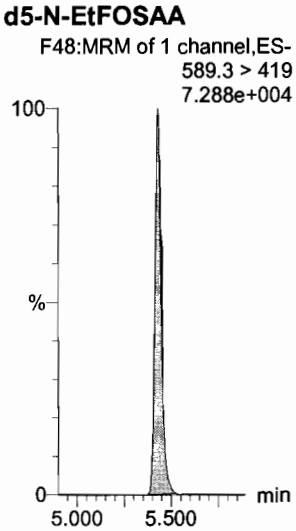
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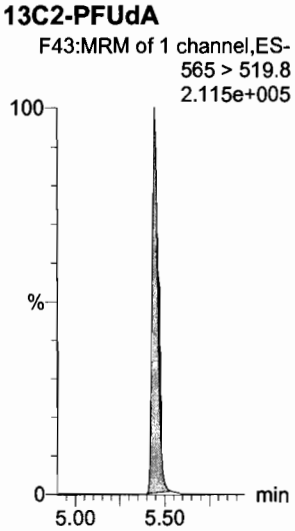
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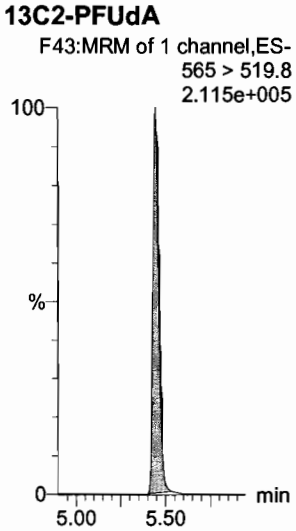
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13C2-PFUdA



13C2-PFUdA

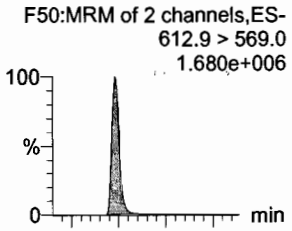


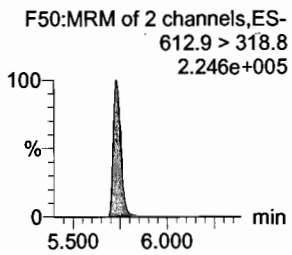
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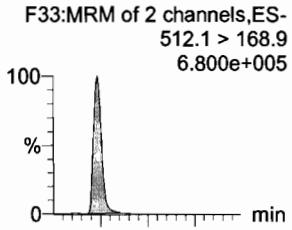
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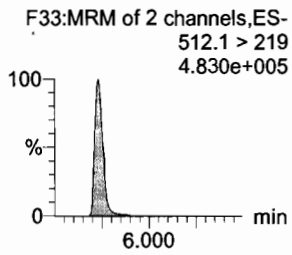
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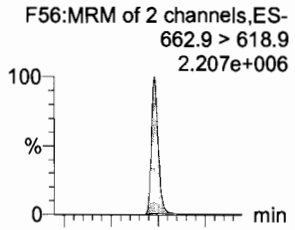


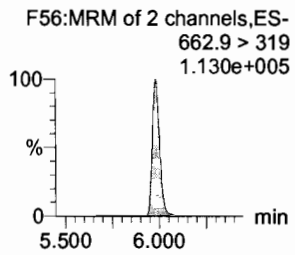
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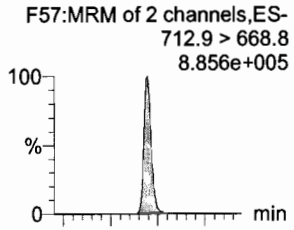


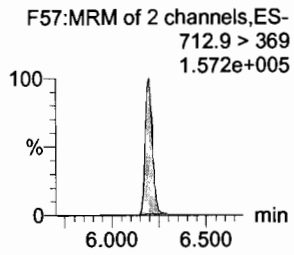
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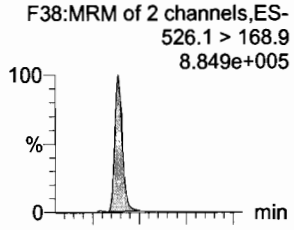


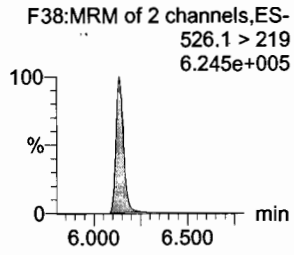
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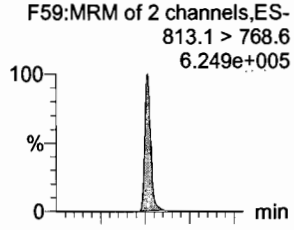


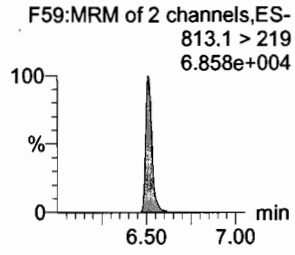
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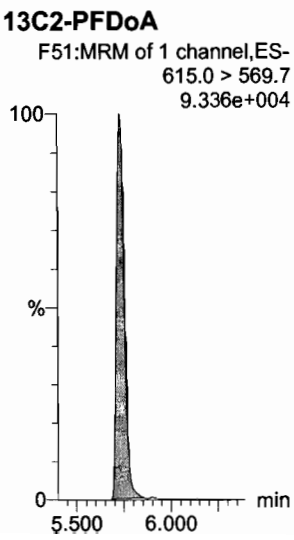


PFHxDA

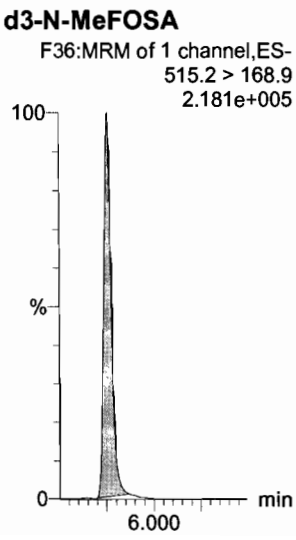




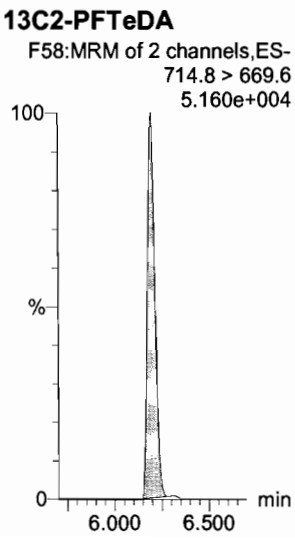
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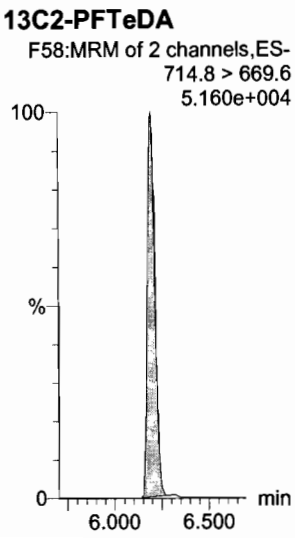
d3-N-MeFOSA



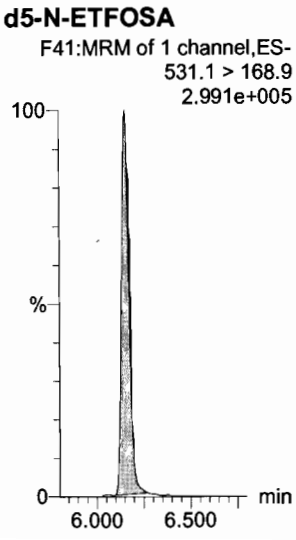
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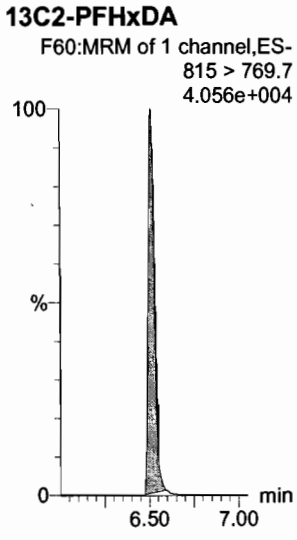
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d5-N-ETFOSA



13C2-PFHxDA

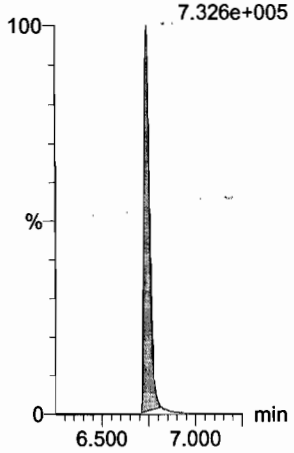


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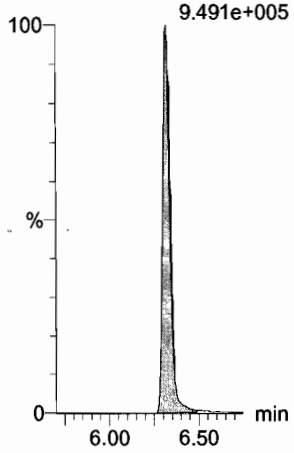
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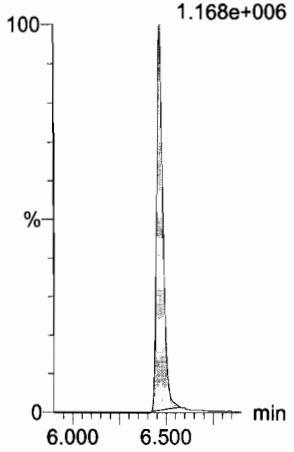
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F61:MRM of 1 channel,ES-
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7.326e+005



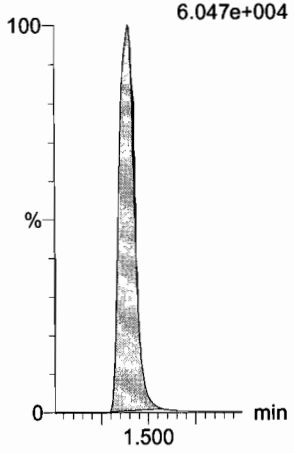
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
9.491e+005



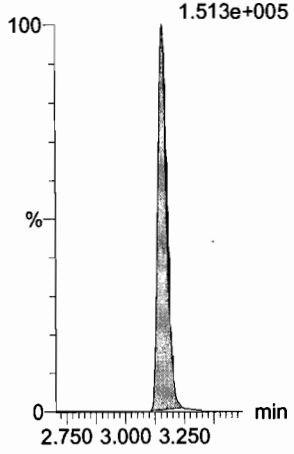
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F54:MRM of 1 channel,ES-
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1.168e+006



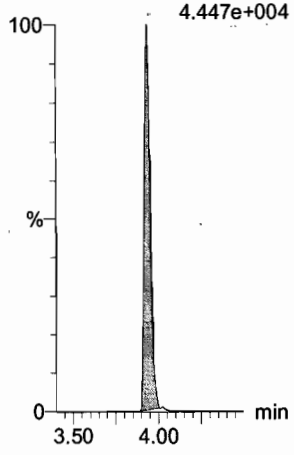
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F3:MRM of 1 channel,ES-
217. > 171.8
6.047e+004



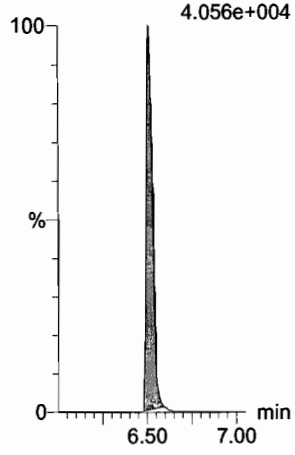
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F10:MRM of 1 channel,ES-
318 > 272.9
1.513e+005



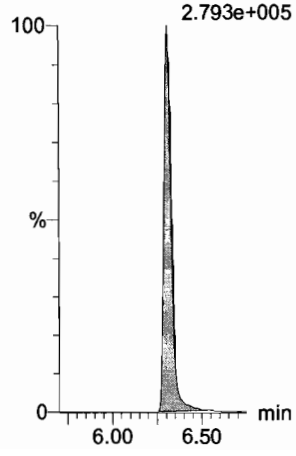
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
4.447e+004



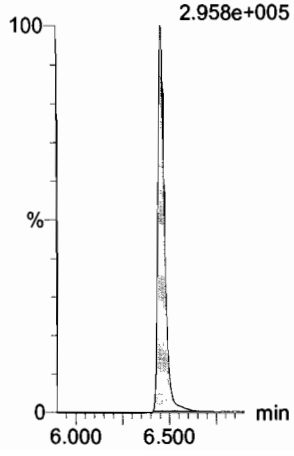
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F60:MRM of 1 channel,ES-
815 > 769.7
4.056e+004



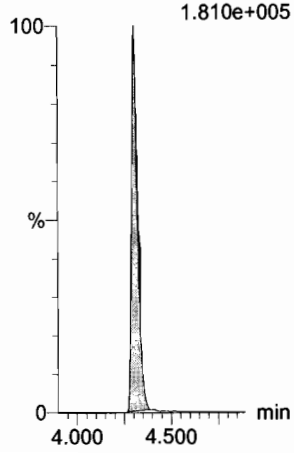
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F53:MRM of 1 channel,ES-
623.1 > 58.9
2.793e+005



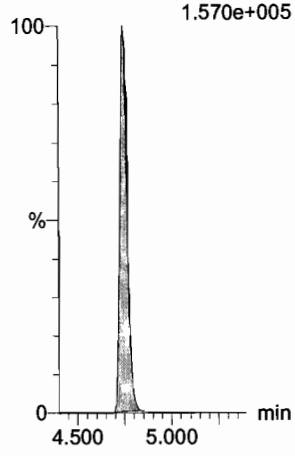
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
2.958e+005



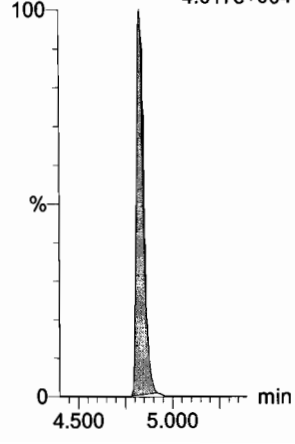
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
1.810e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
1.570e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
4.017e+004

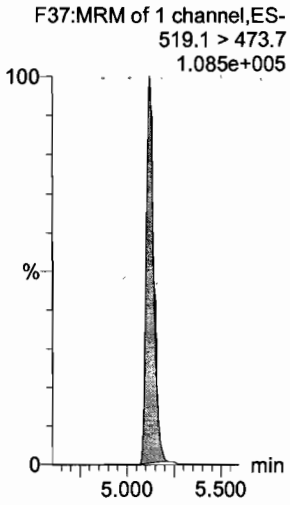


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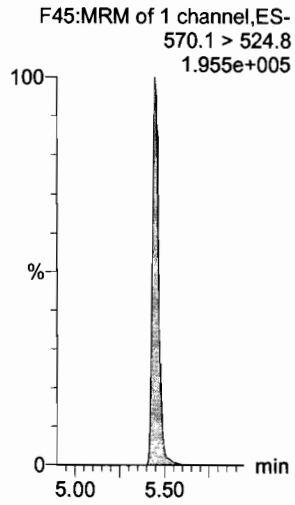
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13C6-PFDA



13C7-PFUdA

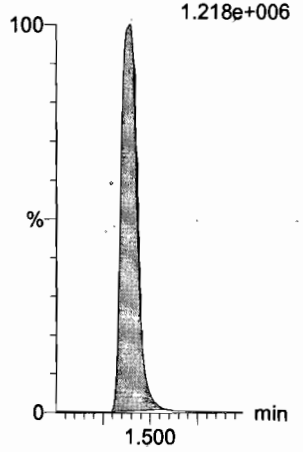


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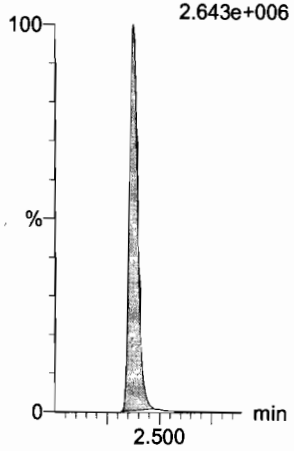
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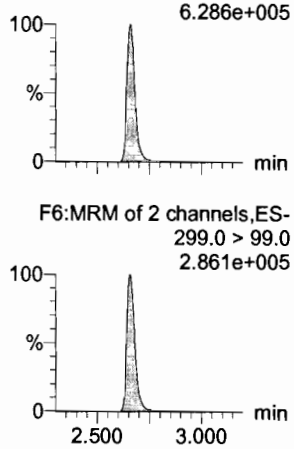
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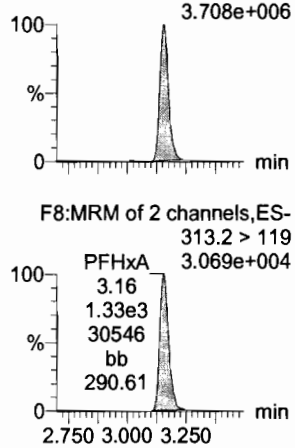
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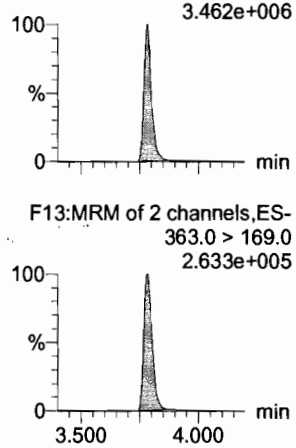
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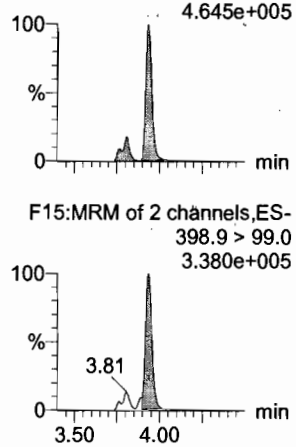
PFHxA



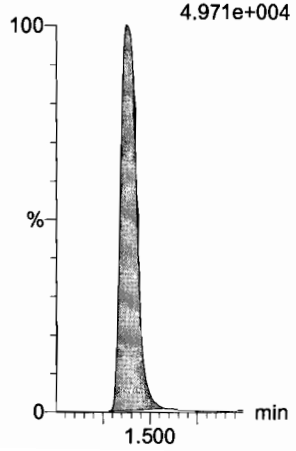
PFHpA



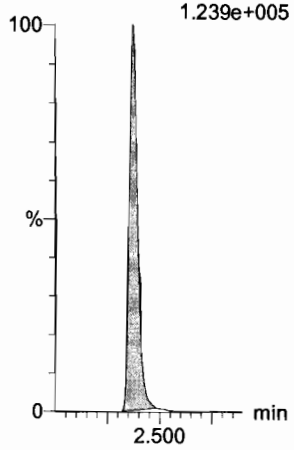
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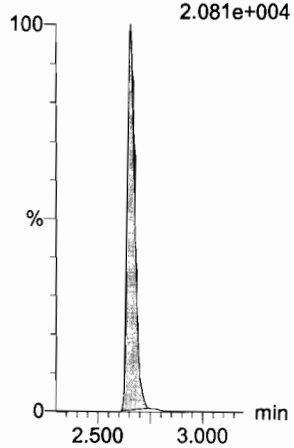
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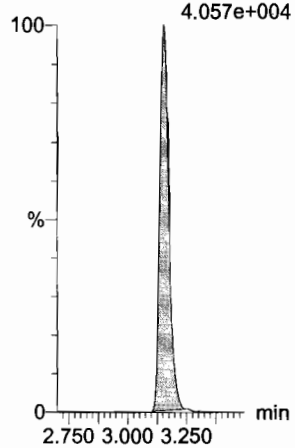
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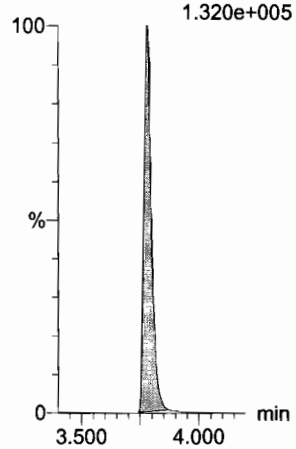
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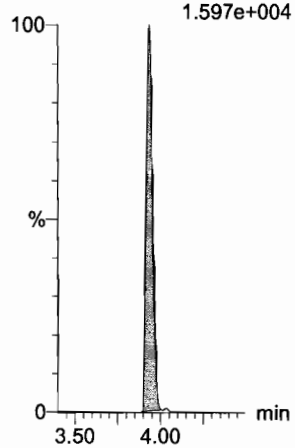
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13C4-PFHpA



18O2-PFHxS

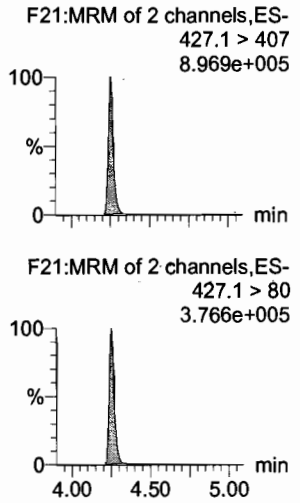


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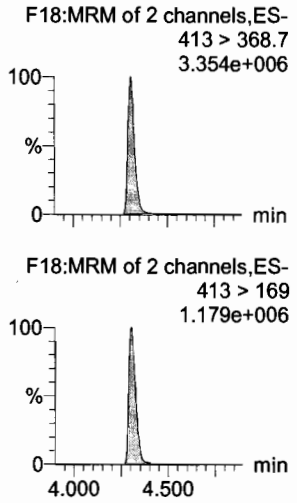
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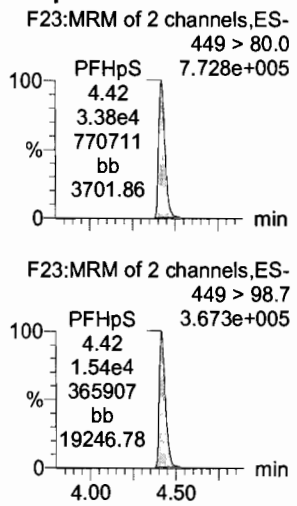
6:2 FTS



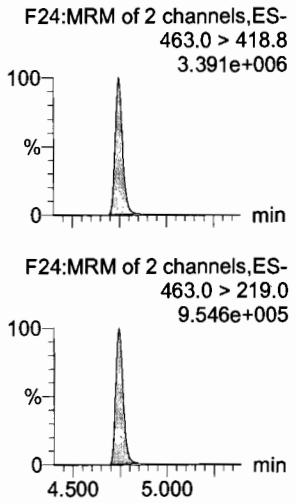
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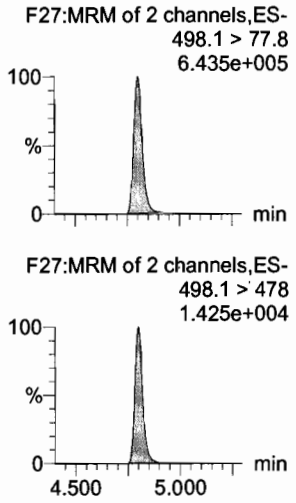
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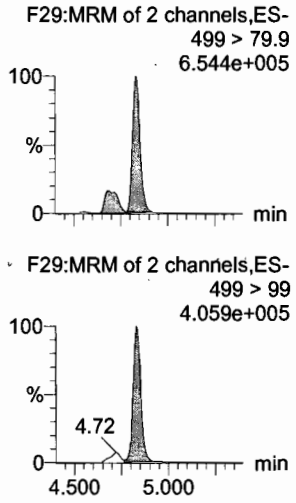
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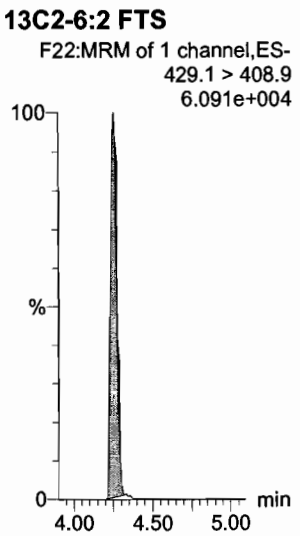
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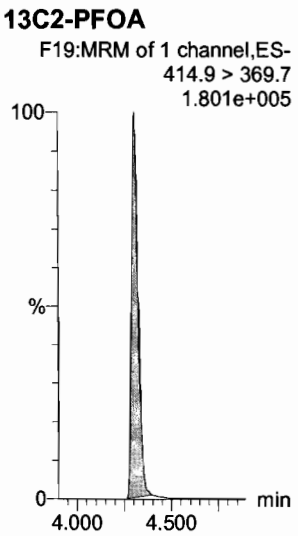
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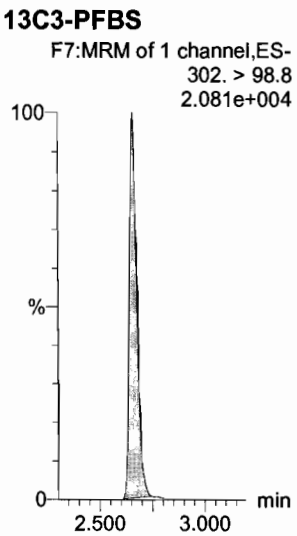
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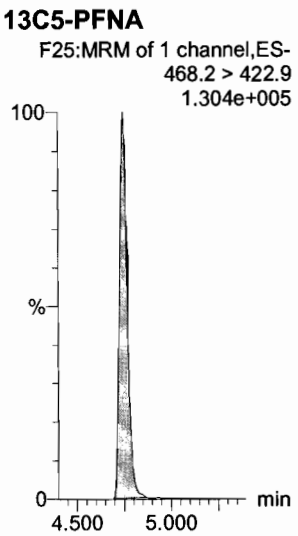
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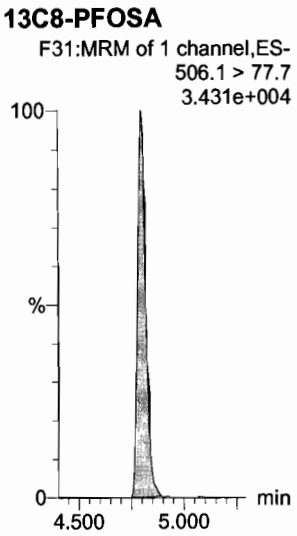
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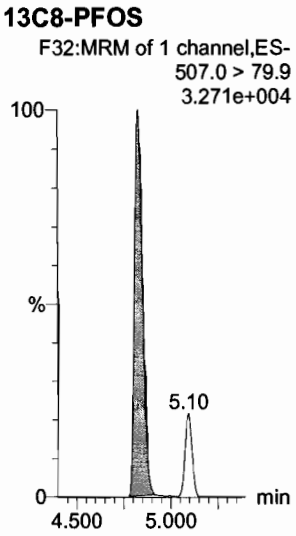
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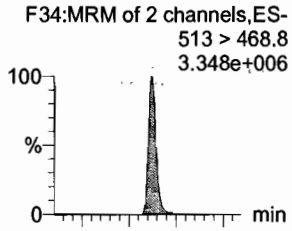


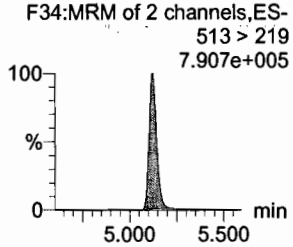
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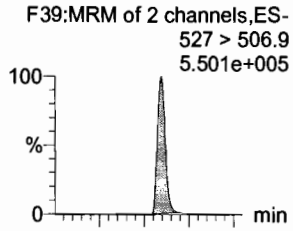
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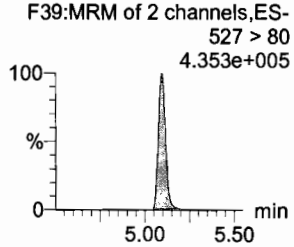
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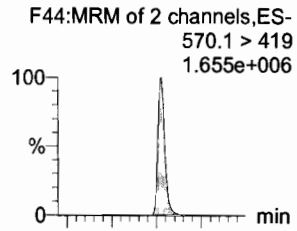


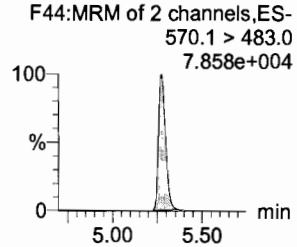
8:2 FTS



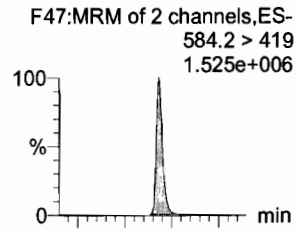


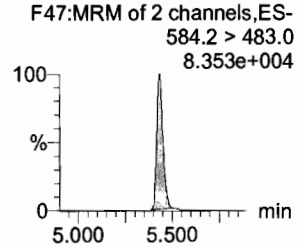
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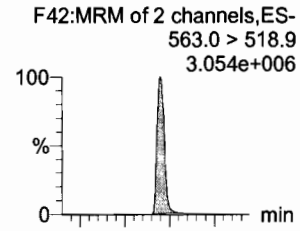


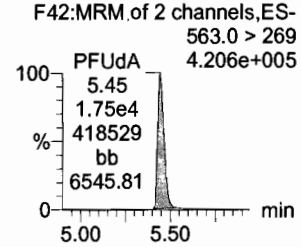
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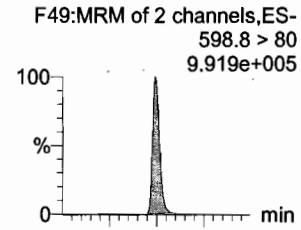


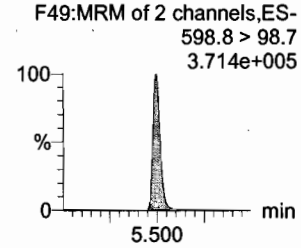
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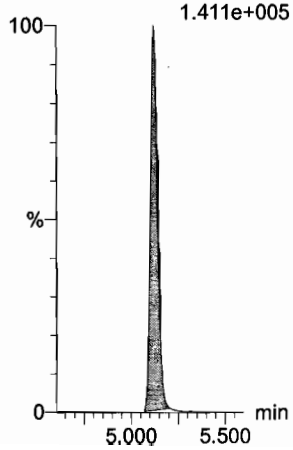


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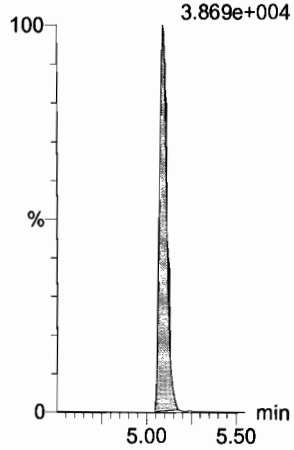




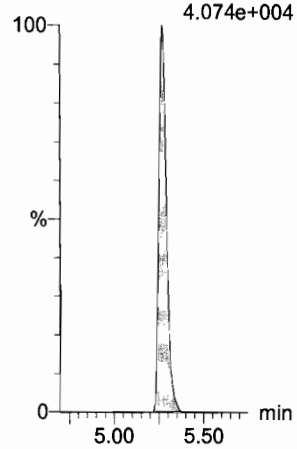
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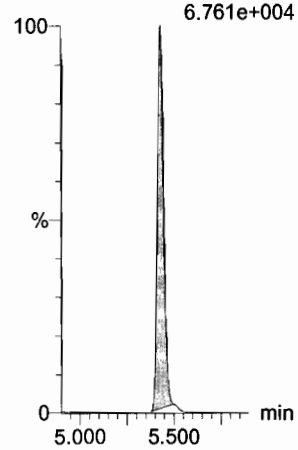
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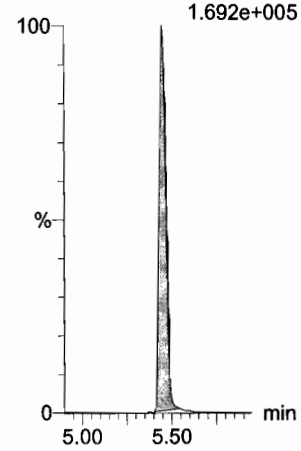
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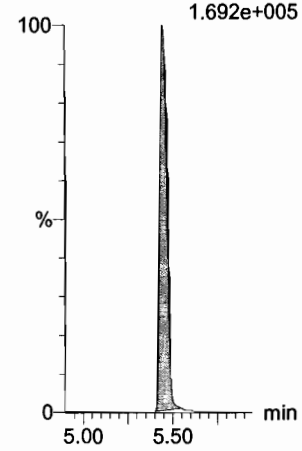
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

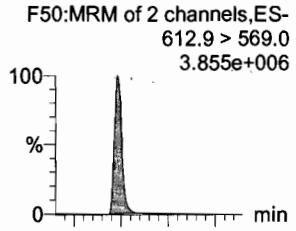


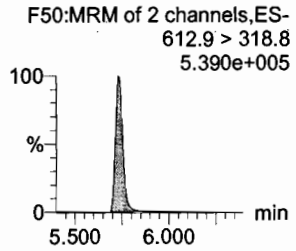
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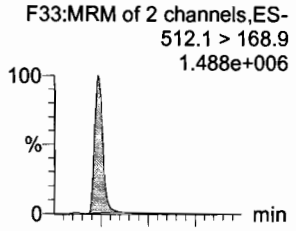
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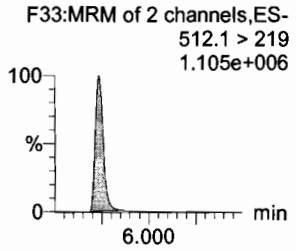
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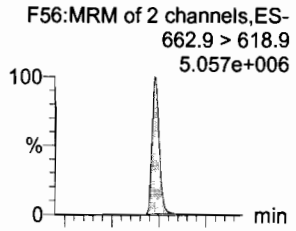


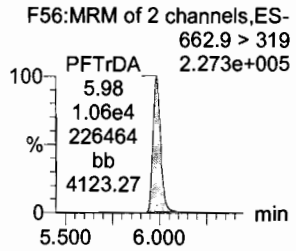
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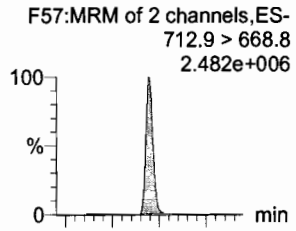


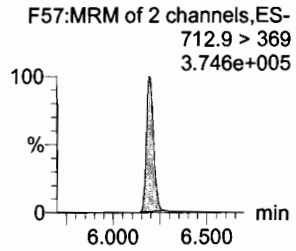
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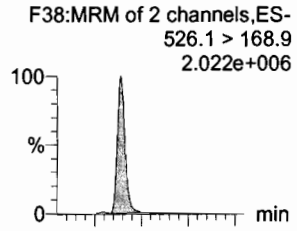


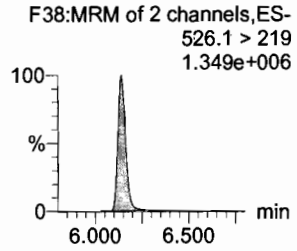
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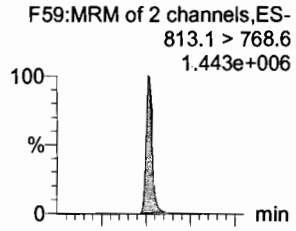


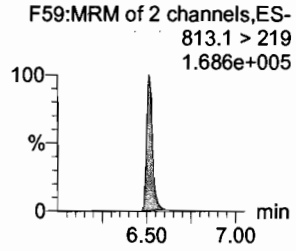
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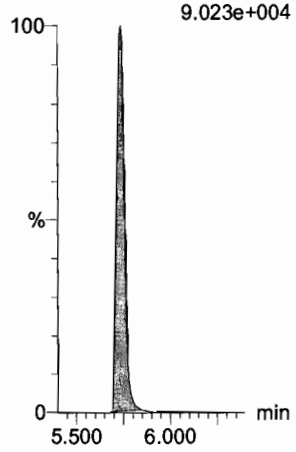


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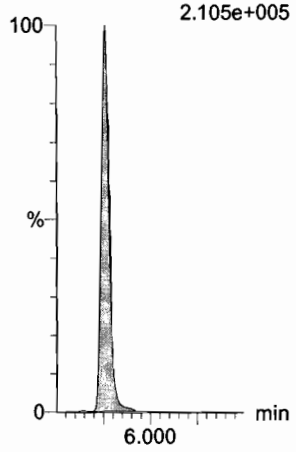




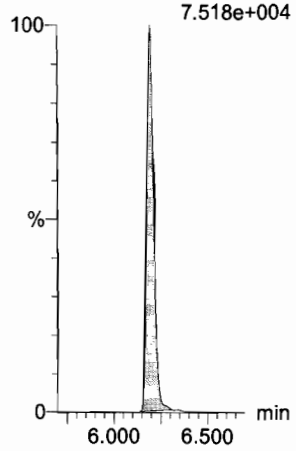
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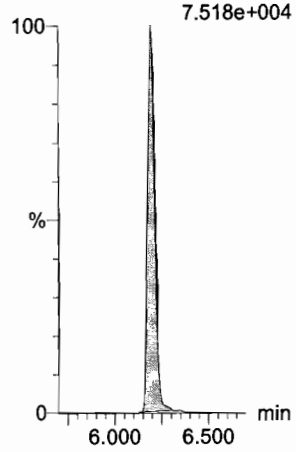
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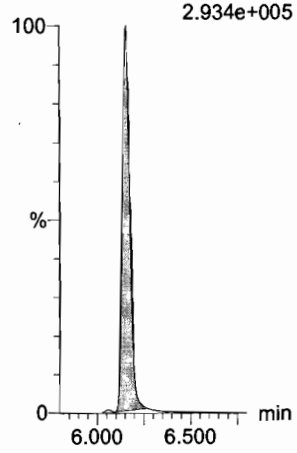
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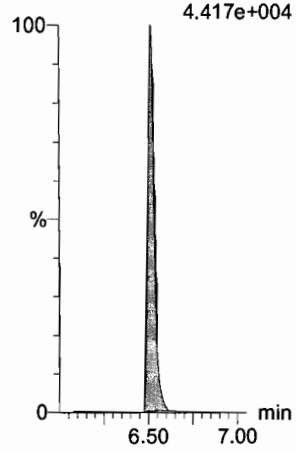
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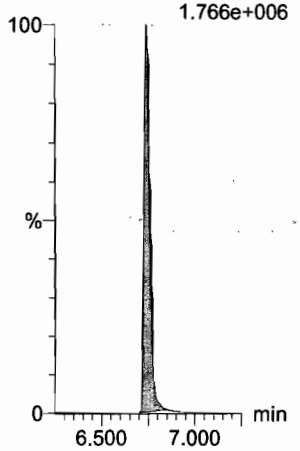


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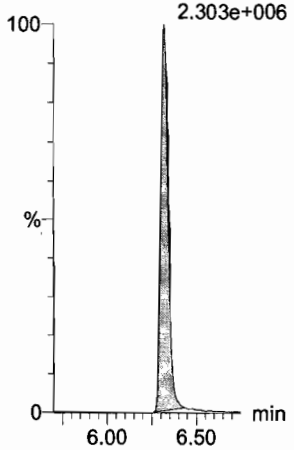
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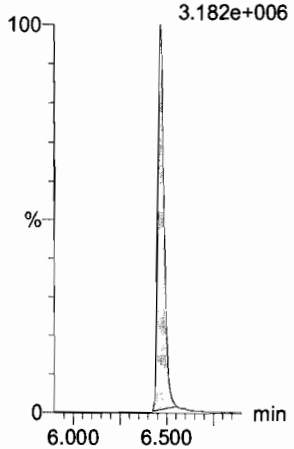
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1.766e+006



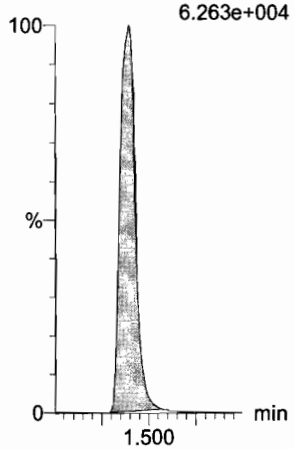
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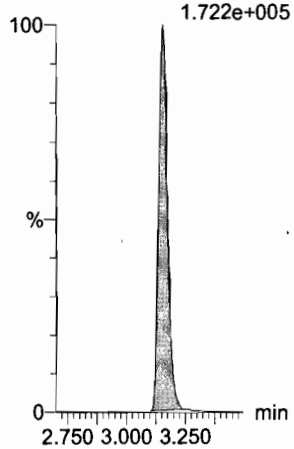
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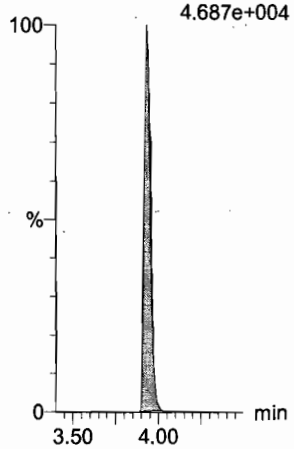
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F3:MRM of 1 channel,ES-
217. > 171.8
6.263e+004



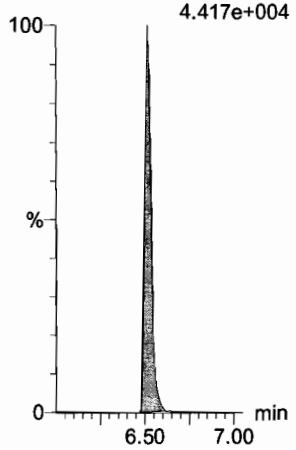
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
1.722e+005



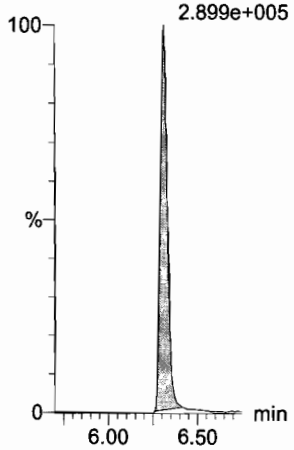
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
4.687e+004



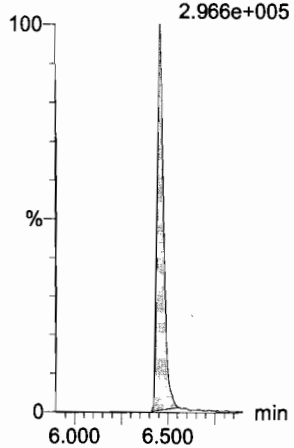
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
4.417e+004



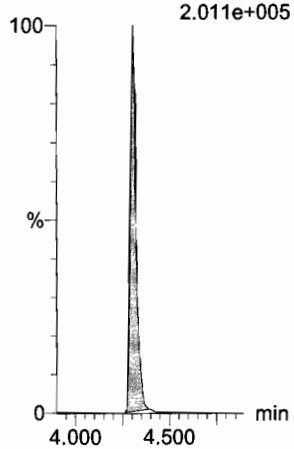
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
2.899e+005



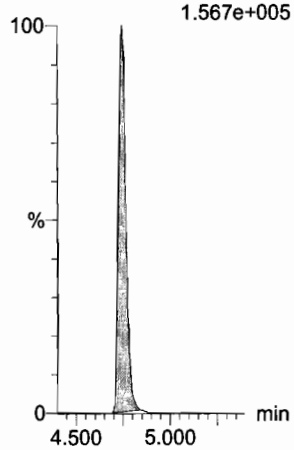
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
2.966e+005



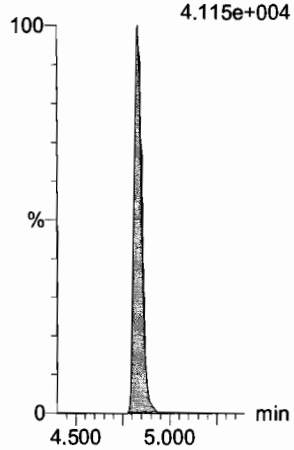
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
2.011e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
1.567e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
4.115e+004

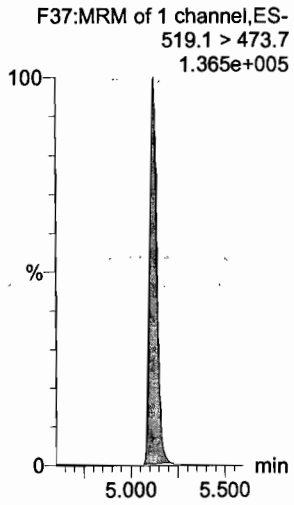


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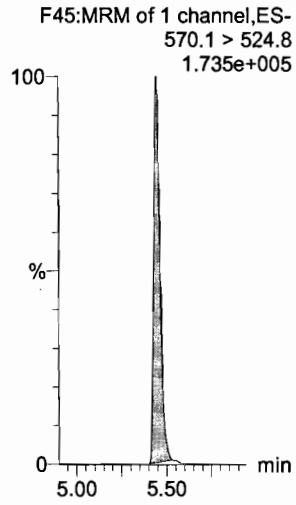
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Printed: Tuesday, January 09, 2018 10:52:17 Pacific Standard Time

Name: 180108M2_9, Date: 09-Jan-2018, Time: 02:06:09, ID: ST180108M2-9 PFC CS6 18A0814, Description: ST180108M2-9 PFC CS6 18A0814

13C6-PFDA



13C7-PFUdA



Quantify Sample Summary Report **MassLynx MassLynx V4.1 SCN 945**
Vista Analytical Laboratory

Ⓐ No SS available.

Dataset: U:\Q4.PRO\results\180108M2\180108M2-12.qld

Last Altered: Tuesday, January 09, 2018 11:37:16 Pacific Standard Time
Printed: Tuesday, January 09, 2018 11:37:42 Pacific Standard Time

AC 1/9/18 ✓JA. 01/09/2018

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818.mdb 09 Jan 2018 10:39:49
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180108M2_12, Date: 09-Jan-2018, Time: 02:39:41, ID: ICV180108M2-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1	PFBA	213.0 > 168.8	4.51e3	4.74e3	1.0000		1.38	1.39	11.9	9.698	97.0
2	2	PFPeA	263.1 > 218.9	4.24e3	5.83e3	1.0000		2.37	2.38	9.09	8.742	87.4
3	3	PFBS	299.0 > 79.7	9.02e2	7.32e2	1.0000		2.66	2.66	15.4	8.529	85.3
4	4	PFHxA	313.2 > 268.9	5.88e3	1.85e3	1.0000		3.15	3.16	15.9	8.857	88.6
5	5	PFHpA	363.0 > 318.9	5.02e3	4.94e3	1.0000		3.78	3.78	12.7	9.631	96.3
6	6	L-PFHxS	398.9 > 79.6	6.83e2	6.46e2	1.0000		3.94	3.94	13.2	7.072	70.7
7	8	6:2 FTS	427.1 > 407	1.17e3	6.46e2	1.0000		4.25	4.26	22.6	7.863	78.6
8	9	L-PFOA	413 > 368.7	4.98e3	5.93e3	1.0000		4.31	4.31	10.5	9.564	95.6
9	11	PFHpS	449 > 80.0	1.32e3	5.93e3	1.0000		4.42	4.42	2.78	9.822	98.2
10	12	PFNA	463.0 > 418.8	6.11e3	6.46e3	1.0000		4.81	4.75	11.8	9.367	93.7
11	13	PFOSA	498.1 > 77.8	1.29e3	1.57e3	1.0000		4.87	4.80	10.3	9.969	99.7
12	14	L-PFOS	499 > 79.9	1.17e3	1.78e3	1.0000		4.89	4.84	8.21	8.642	86.4
13	16	PFDA	513 > 468.8	6.22e3	6.37e3	1.0000		5.18	5.12	12.2	8.443	84.4
14	17	8:2 FTS	527 > 506.9	1.43e3	6.37e3	1.0000		5.15	5.10	2.81	8.611	86.1
15	18	N-MeFOSAA	570.1 > 419	2.56e3	2.27e3	1.0000		5.32	5.28	14.1	9.334	93.3
16	19	N-EtFOSAA	584.2 > 419	2.30e3	3.02e3	1.0000		5.48	5.44	9.52	8.560	85.6
17	20	PFUdA	563.0 > 518.9	6.63e3	6.68e3	1.0000		5.50	5.45	12.4	10.852	108.5
18	21	PFDS	598.8 > 80	1.55e3	6.68e3	1.0000		5.54	5.50	2.89	10.132	101.3
19	22	PFDoA	612.9 > 569.0	8.01e3	5.05e3	1.0000		5.77	5.74	19.8	8.940	89.4
20	23	N-MeFOSA	512.1 > 168.9		9.16e3	1.0000		5.80				Ⓐ
21	24	PFTrDA	662.9 > 618.9	8.25e3	5.05e3	1.0000		6.00	5.99	20.4	8.526	85.3
22	25	PFTeDA	712.9 > 668.8	4.29e3	2.18e3	1.0000		6.22	6.20	24.7	8.783	87.8
23	26	N-EtFOSA	526.1 > 168.9		1.37e4	1.0000		6.17				Ⓐ
24	27	PFHxDA	813.1 > 768.6		1.25e3	1.0000		6.53				
25	28	PFODA	913.1 > 868.8		1.25e3	1.0000		6.74				
26	29	N-MeFOSE	616.1 > 58.9		1.15e4	1.0000		6.27				
27	30	N-EtFOSE	630.1 > 58.9		1.10e4	1.0000		6.43				
28	31	13C3-PFBA	216.1 > 171.8	4.74e3	5.23e3	1.0000	0.873	1.38	1.39	11.3	12.961	103.7
29	32	13C3-PFPeA	266. > 221.8	5.83e3	6.95e3	1.0000	0.867	2.37	2.38	10.5	12.085	96.7
30	33	13C3-PFBS	302. > 98.8	7.32e2	6.95e3	1.0000	0.116	2.77	2.66	1.32	11.313	90.5
31	34	13C2-PFHxA	315 > 269.8	1.85e3	6.95e3	1.0000	0.655	3.15	3.16	3.33	5.080	101.6

70-130

50-150

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Dataset: U:\Q4.PRO\results\180108M2\180108M2-12.qld

Last Altered: Tuesday, January 09, 2018 11:37:16 Pacific Standard Time
Printed: Tuesday, January 09, 2018 11:37:42 Pacific Standard Time

Name: 180108M2_12, Date: 09-Jan-2018, Time: 02:39:41, ID: ICV180108M2-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

	#	Name	Trace	Area	IS Area	wt/vol	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
32	35	13C4-PFHpA	367.2 > 321.8	4.94e3	6.95e3	1.0000	0.722	3.78	3.78	8.87	12.286	98.3
33	36	18O2-PFHxS	403.0 > 102.6	6.46e2	1.59e3	1.0000	0.348	3.94	3.94	5.08	14.587	116.7
34	37	13C2-6:2 FTS	429.1 > 408.9	1.55e3	6.53e3	1.0000	0.222	4.25	4.25	2.97	13.395	107.2
35	38	13C2-PFOA	414.9 > 369.7	5.93e3	6.53e3	1.0000	1.023	4.31	4.31	11.3	11.092	88.7
36	39	13C5-PFNA	468.2 > 422.9	6.46e3	6.53e3	1.0000	0.916	4.81	4.75	12.4	13.518	108.1
37	40	13C8-PFOSA	506.1 > 77.7	1.57e3	7.15e3	1.0000	0.210	4.87	4.80	2.74	13.042	104.3
38	41	13C8-PFOS	507.0 > 79.9	1.78e3	1.81e3	1.0000	1.035	4.89	4.83	12.2	11.828	94.6
39	42	13C2-PFDA	515.1 > 469.9	6.37e3	5.31e3	1.0000	1.142	5.18	5.13	15.0	13.125	105.0
40	43	13C2-8:2 FTS	529.1 > 508.7	8.00e2	6.95e3	1.0000	0.157	5.15	5.10	1.44	9.186	73.5
41	44	d3-N-MeFOSAA	573.3 > 419	2.27e3	7.15e3	1.0000	0.299	5.32	5.28	3.97	13.272	106.2
42	45	d5-N-EtFOSAA	589.3 > 419	3.02e3	7.15e3	1.0000	0.369	5.47	5.43	5.28	14.308	114.5
43	46	13C2-PFUdA	565 > 519.8	6.68e3	7.15e3	1.0000	1.012	5.49	5.45	11.7	11.537	92.3
44	47	13C2-PFDoA	615.0 > 569.7	5.05e3	7.15e3	1.0000	0.647	5.77	5.74	8.82	13.639	109.1
45	48	d3-N-MeFOSA	515.2 > 168.9	9.16e3	7.15e3	1.0000	0.110	5.83	5.76	16.0	145.813	97.2
46	49	13C2-PFTeDA	714.8 > 669.6	2.18e3	7.15e3	1.0000	0.294	6.22	6.20	3.80	12.942	103.5
47	50	d5-N-ETFOSA	531.1 > 168.9	1.37e4	7.15e3	1.0000	0.155	6.18	6.16	23.9	154.534	103.0
48	51	13C2-PFHxDA	815 > 769.7	1.25e3	7.15e3	1.0000	0.507	6.53	6.52	2.19	4.322	86.4
49	52	d7-N-MeFOSE	623.1 > 58.9	1.15e4	7.15e3	1.0000	0.140	6.27	6.31	20.0	143.315	95.5
50	53	d9-N-EtFOSE	639.2 > 58.8	1.10e4	7.15e3	1.0000	0.132	6.42	6.46	19.2	144.972	96.6
51	54	13C4-PFBA	217. > 171.8	5.23e3	5.23e3	1.0000	1.000	1.38	1.39	12.5	12.500	100.0
52	55	13C5-PFHxA	318 > 272.9	6.95e3	6.95e3	1.0000	1.000	3.15	3.16	12.5	12.500	100.0
53	56	13C3-PFHxS	401.9 > 79.9	1.59e3	1.59e3	1.0000	1.000	4.02	3.94	12.5	12.500	100.0
54	57	13C8-PFOA	421.3 > 376	6.53e3	6.53e3	1.0000	1.000	4.38	4.31	12.5	12.500	100.0
55	58	13C9-PFNA	472.2 > 426.9	6.53e3	6.53e3	1.0000	1.000	4.81	4.75	12.5	12.500	100.0
56	59	13C4-PFOS	503 > 79.9	1.81e3	1.81e3	1.0000	1.000	4.89	4.83	12.5	12.500	100.0
57	60	13C6-PFDA	519.1 > 473.7	5.31e3	5.31e3	1.0000	1.000	5.18	5.12	12.5	12.500	100.0
58	61	13C7-PFUdA	570.1 > 524.8	7.15e3	7.15e3	1.0000	1.000	5.49	5.45	12.5	12.500	100.0

50-150

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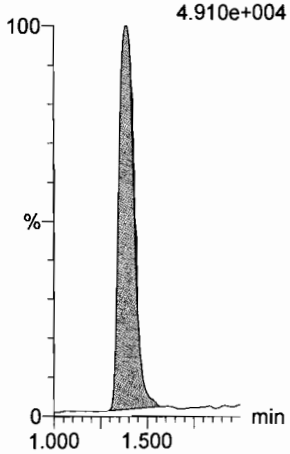
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Printed: Tuesday, January 09, 2018 11:37:42 Pacific Standard Time

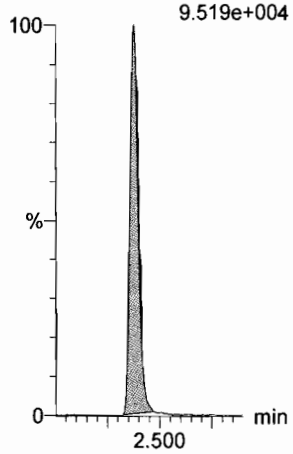
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-08-18_FULL-M2.cdb 09 Jan 2018 11:01:39

Name: 180108M2_12, Date: 09-Jan-2018, Time: 02:39:41, ID: ICV180108M2-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

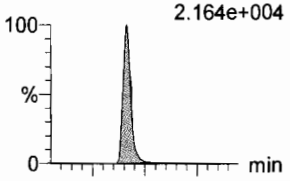
PFBA
F1:MRM of 1 channel,ES-
213.0 > 168.8
4.910e+004



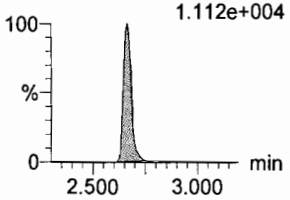
PFPeA
F4:MRM of 1 channel,ES-
263.1 > 218.9
9.519e+004



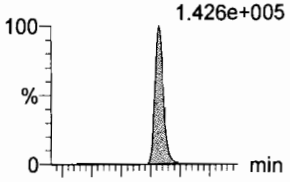
PFBS
F6:MRM of 2 channels,ES-
299.0 > 79.7
2.164e+004



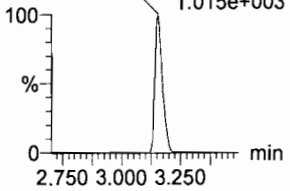
F6:MRM of 2 channels,ES-
299.0 > 99.0
1.112e+004



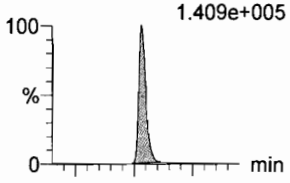
PFHxA
F8:MRM of 2 channels,ES-
313.2 > 268.9
1.426e+005



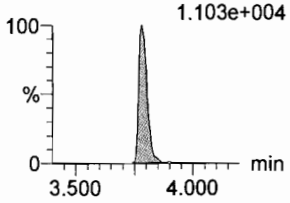
F8:MRM of 2 channels,ES-
313.2 > 119
1.015e+003



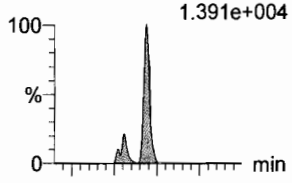
PFHpA
F13:MRM of 2 channels,ES-
363.0 > 318.9
1.409e+005



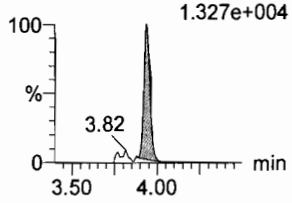
F13:MRM of 2 channels,ES-
363.0 > 169.0
1.103e+004



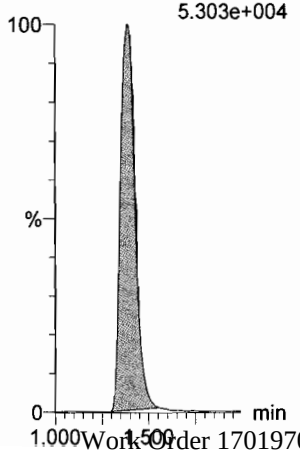
L-PFHxS
F15:MRM of 2 channels,ES-
398.9 > 79.6
1.391e+004



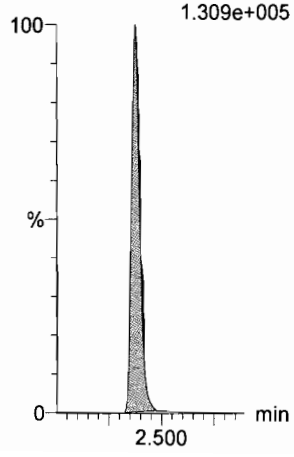
F15:MRM of 2 channels,ES-
398.9 > 99.0
1.327e+004



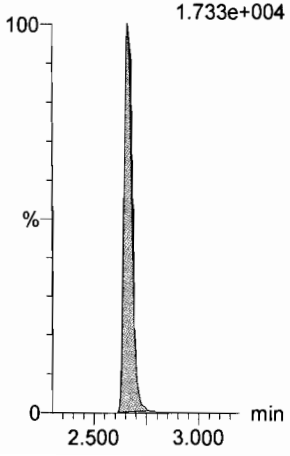
13C3-PFBA
F2:MRM of 1 channel,ES-
216.1 > 171.8
5.303e+004



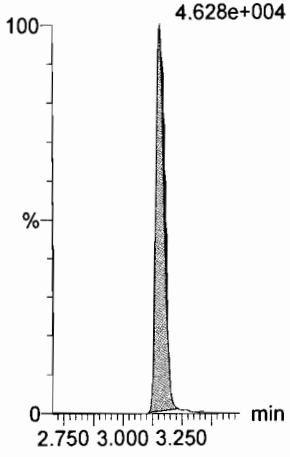
13C3-PFPeA
F5:MRM of 1 channel,ES-
266. > 221.8
1.309e+005



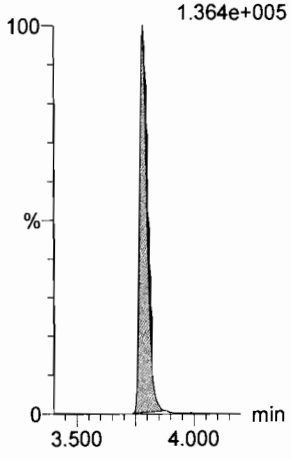
13C3-PFBS
F7:MRM of 1 channel,ES-
302. > 98.8
1.733e+004



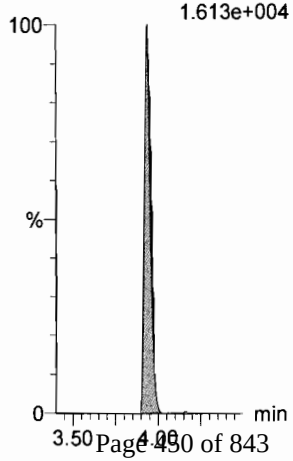
13C2-PFHxA
F9:MRM of 1 channel,ES-
315 > 269.8
4.628e+004



13C4-PFHpA
F14:MRM of 1 channel,ES-
367.2 > 321.8
1.364e+005



18O2-PFHxS
F17:MRM of 1 channel,ES-
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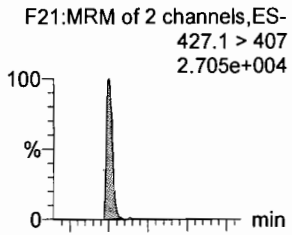


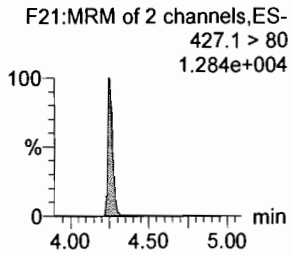
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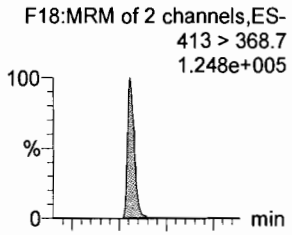
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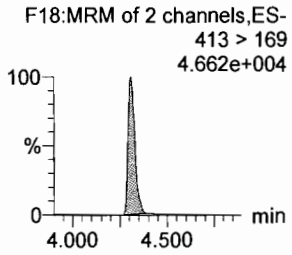
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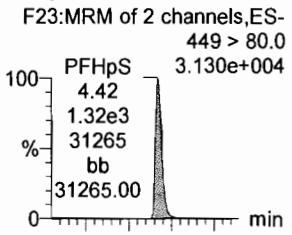


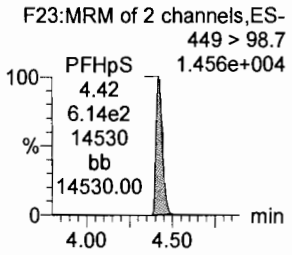
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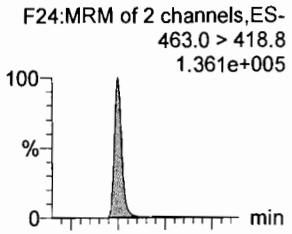


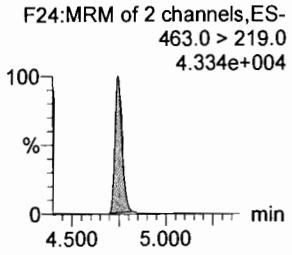
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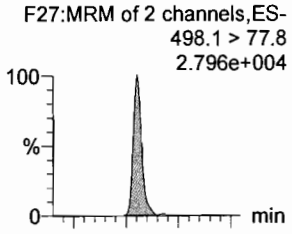


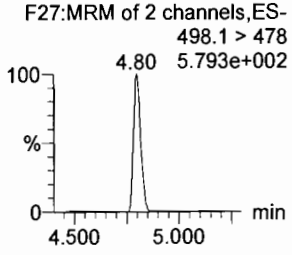
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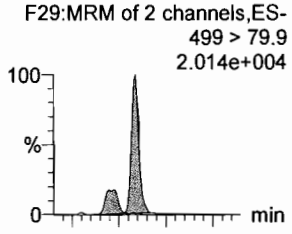


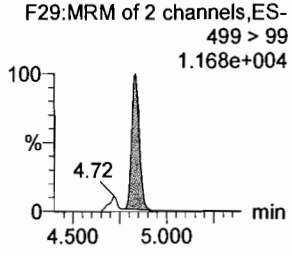
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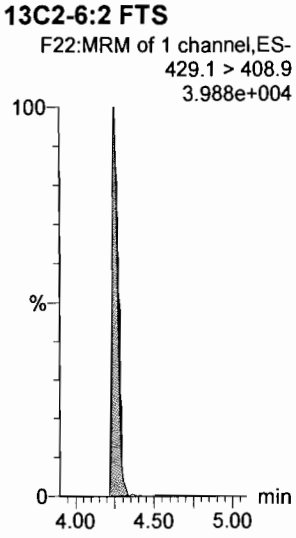


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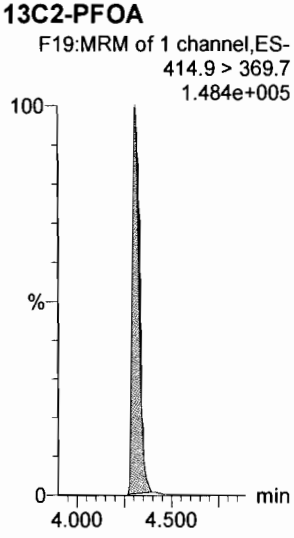




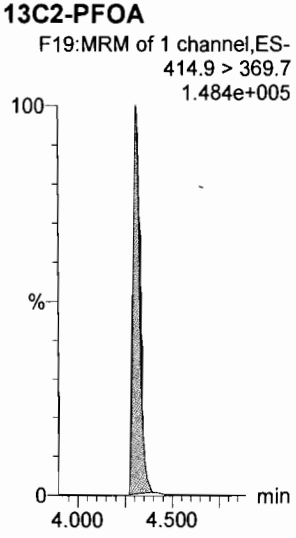
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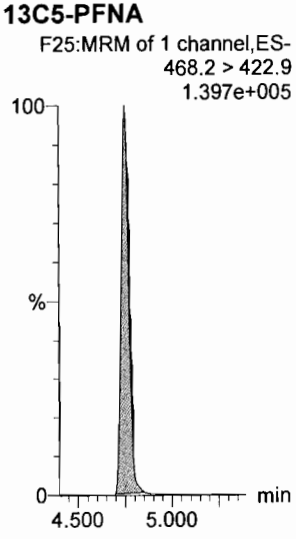
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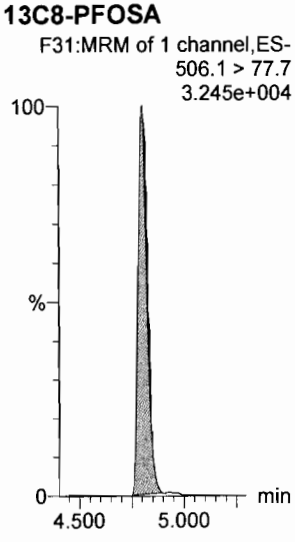
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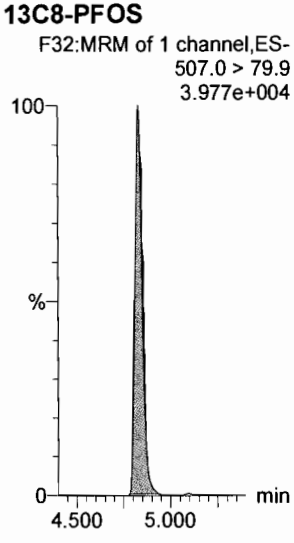
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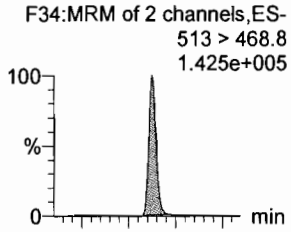


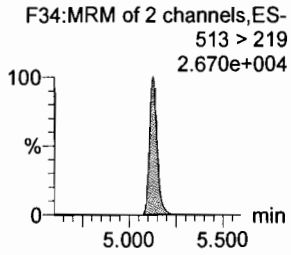
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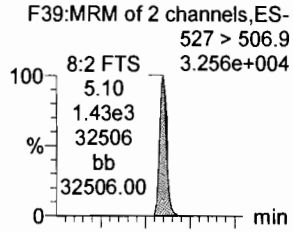
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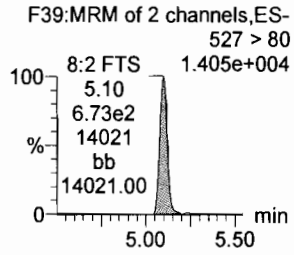
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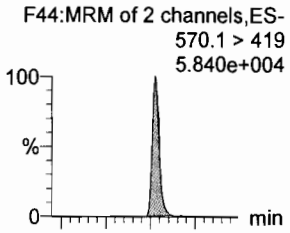


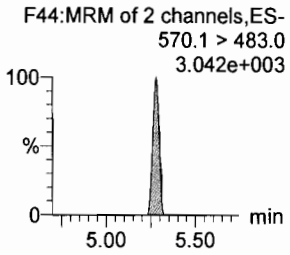
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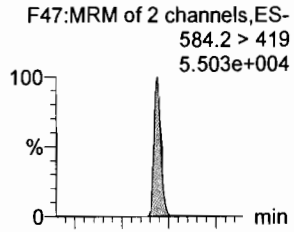


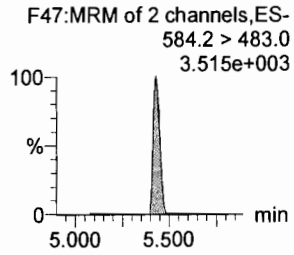
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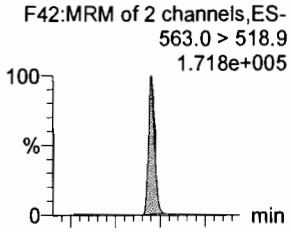


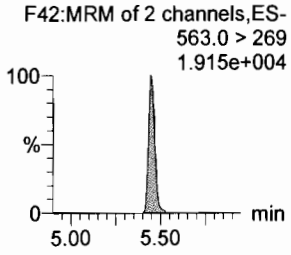
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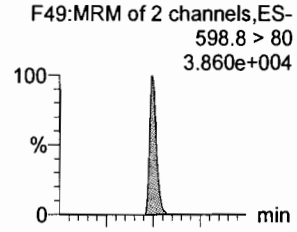


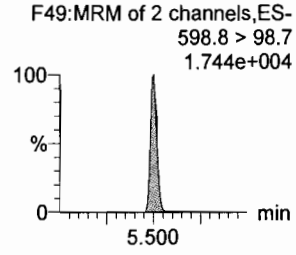
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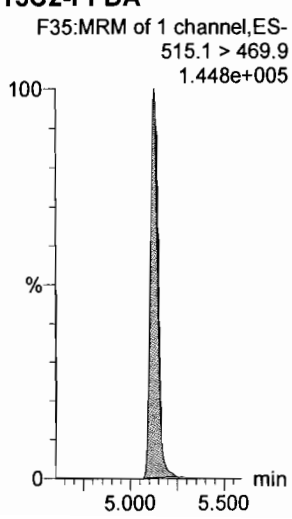


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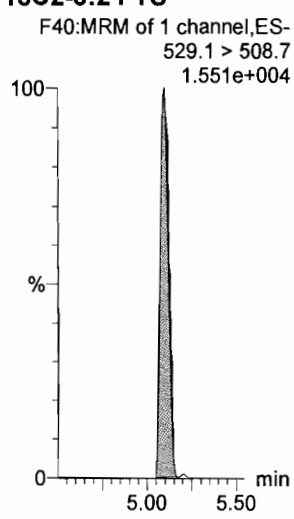




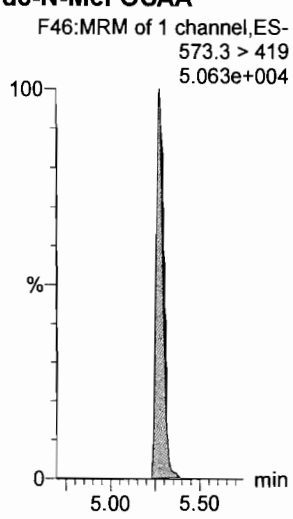
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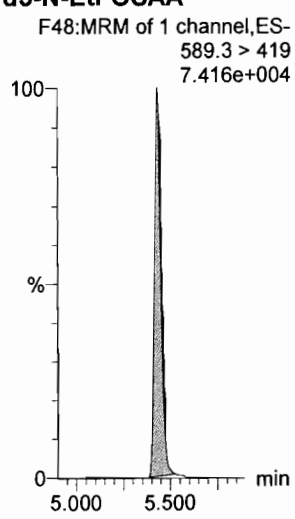
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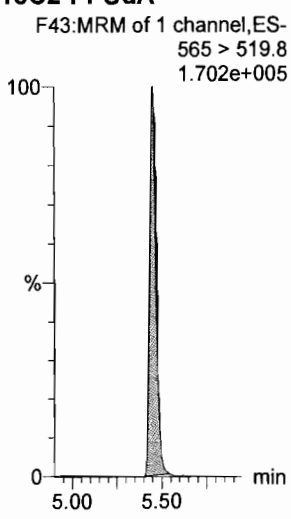
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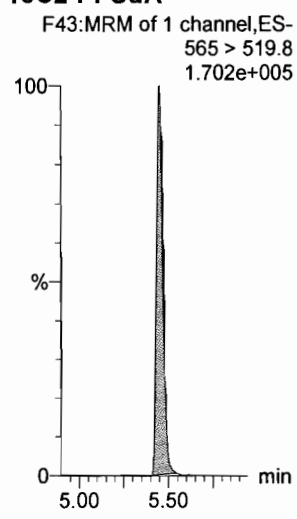
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13C2-PFUdA



13C2-PFUdA

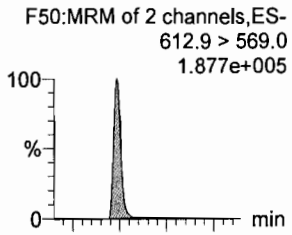


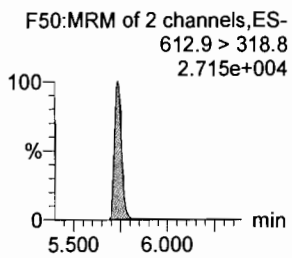
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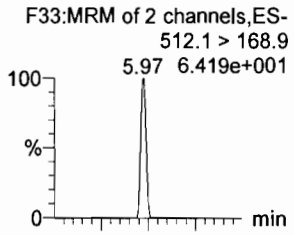
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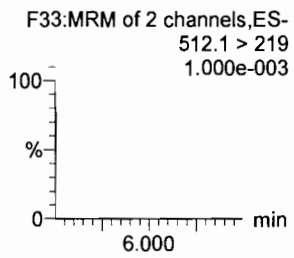
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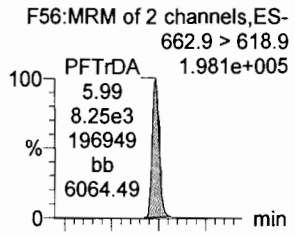


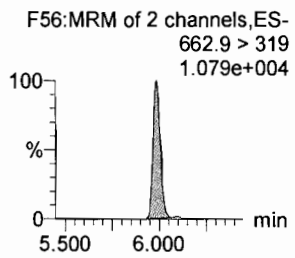
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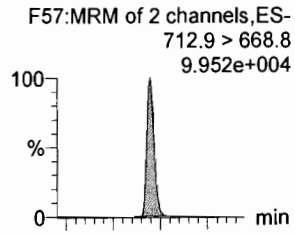


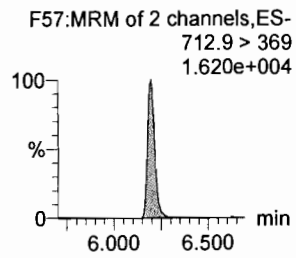
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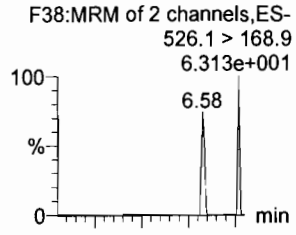


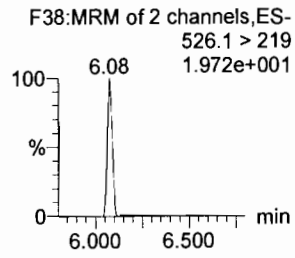
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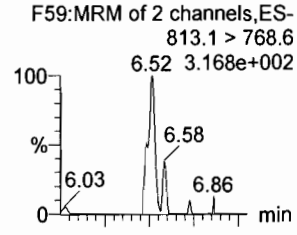


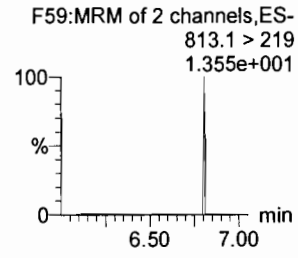
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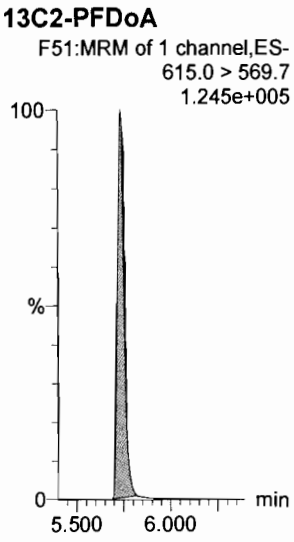


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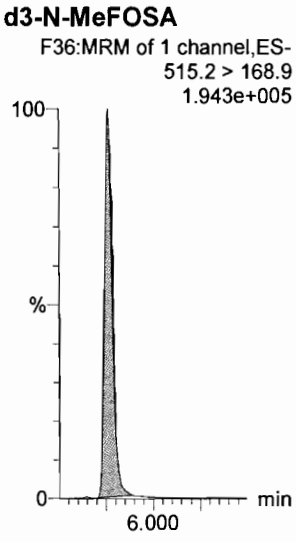




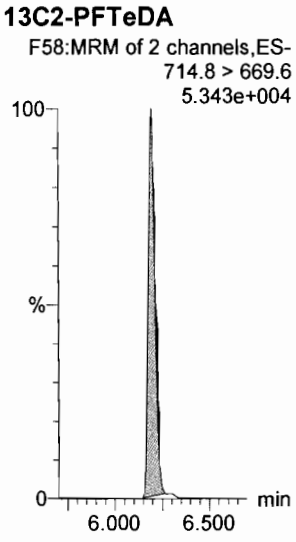
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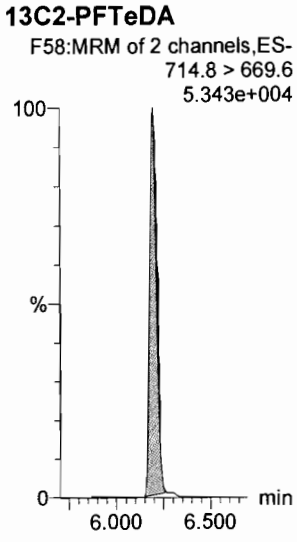
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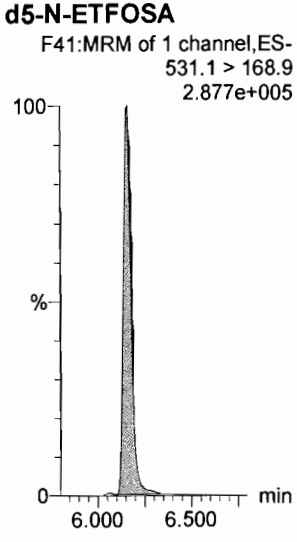
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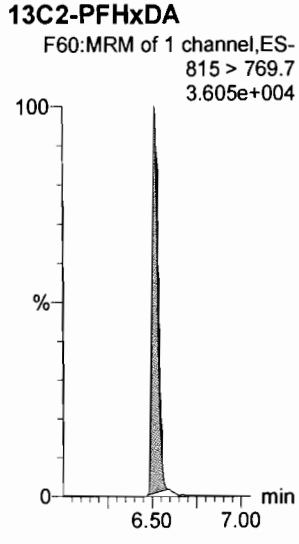
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d5-N-ETFOSA



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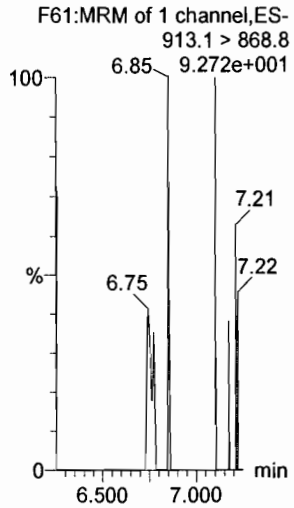


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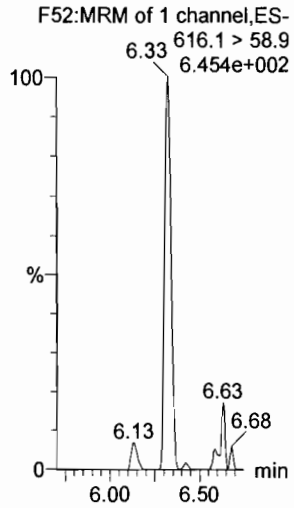
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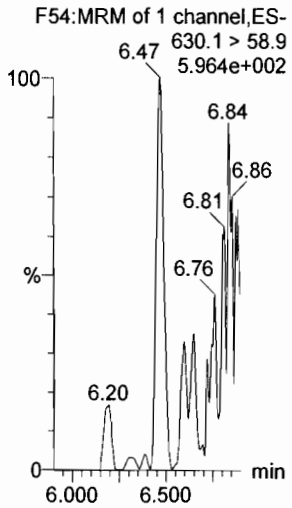
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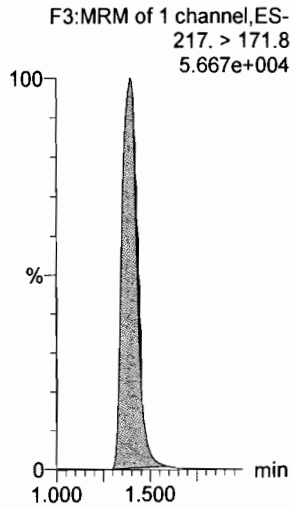
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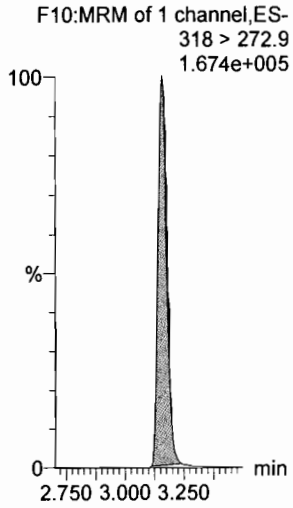
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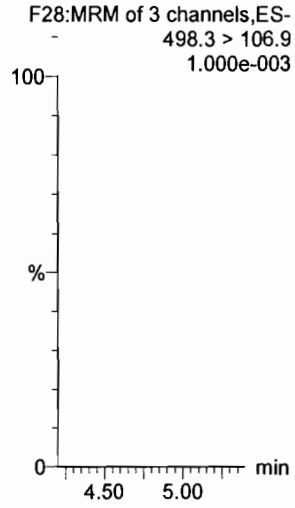
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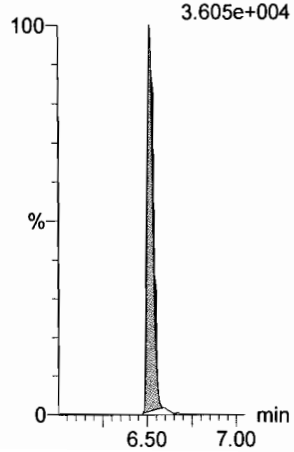
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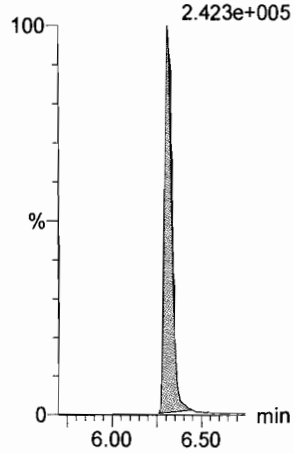
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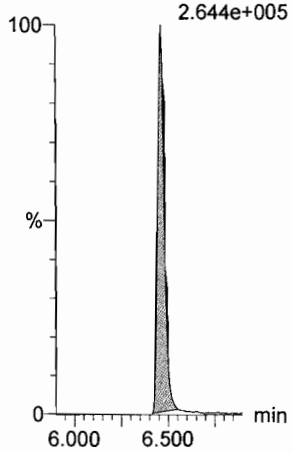
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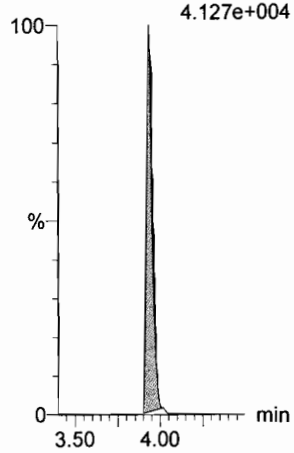
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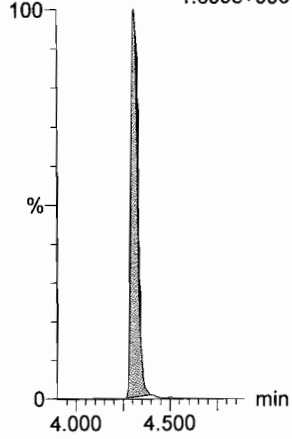
d9-N-EtFOSE



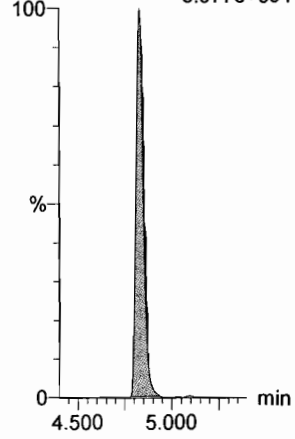
13C3-PFHxS



13C8-PFOA



13C8-PFOS

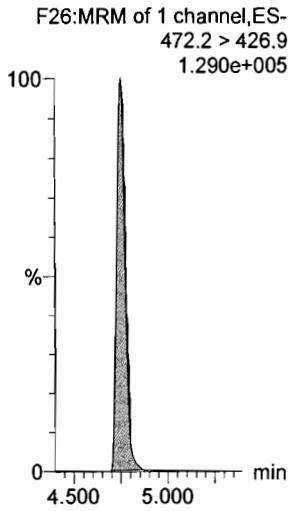


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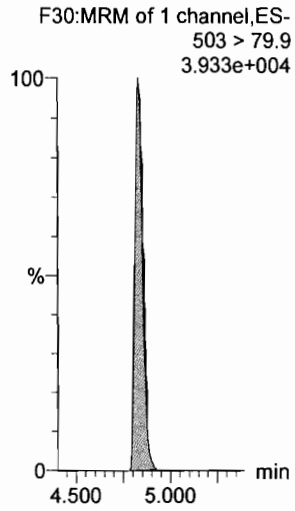
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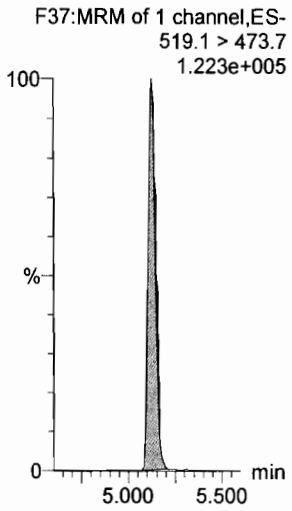
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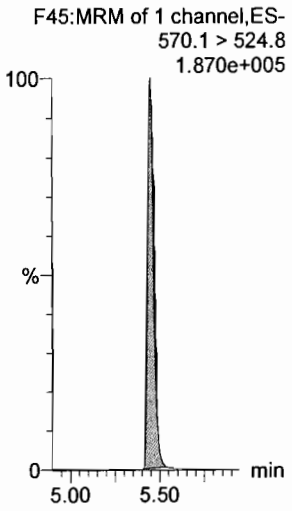
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13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

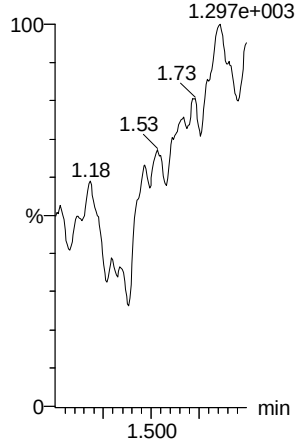
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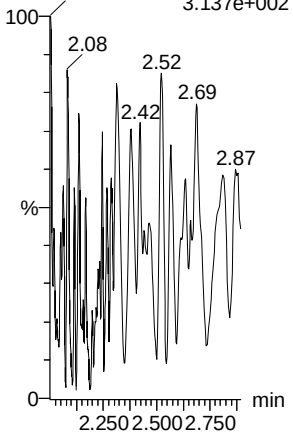
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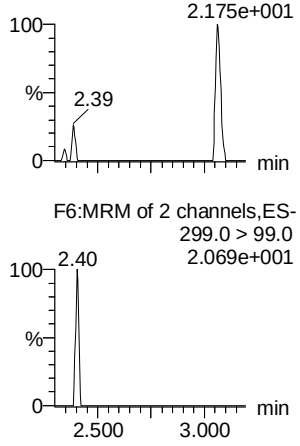
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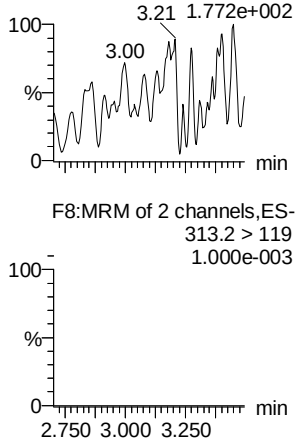
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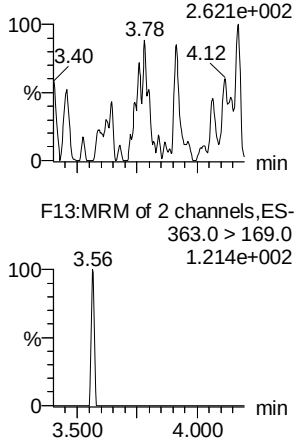
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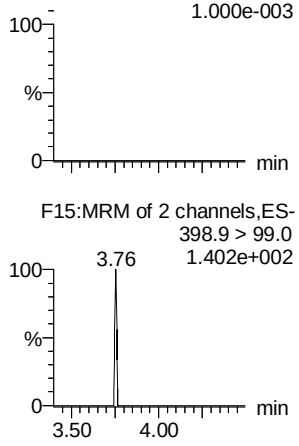
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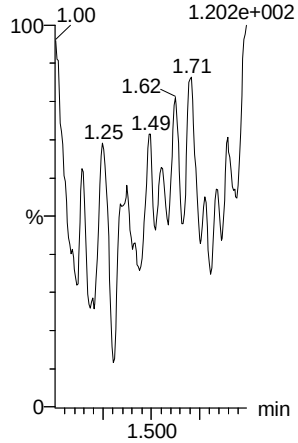
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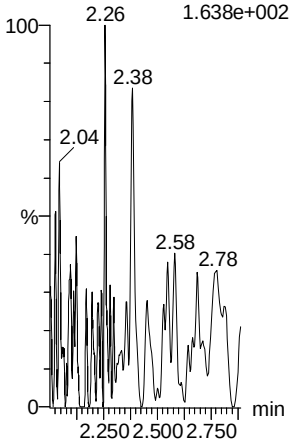
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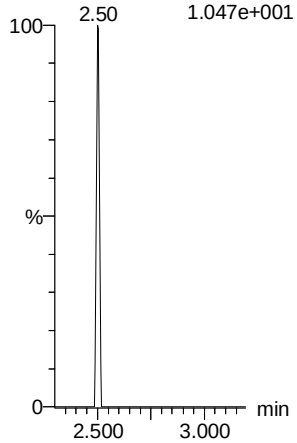
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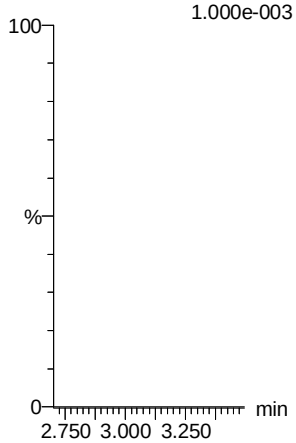
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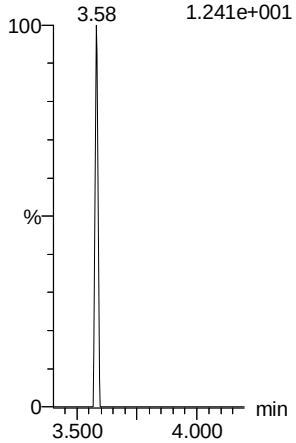
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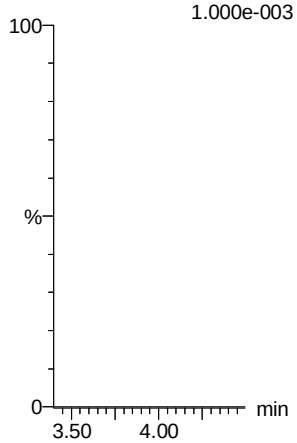
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13C4-PFHpA



18O2-PFHxS



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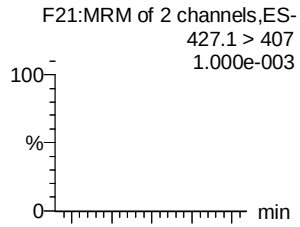
Vista Analytical Laboratory

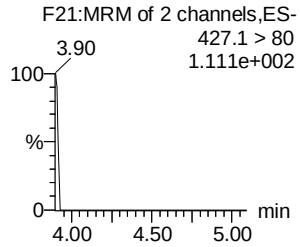
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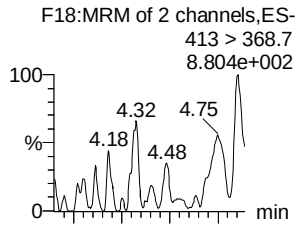
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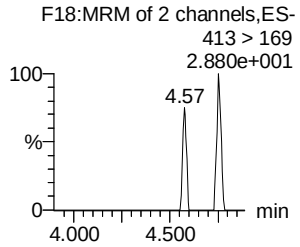
6:2 FTS



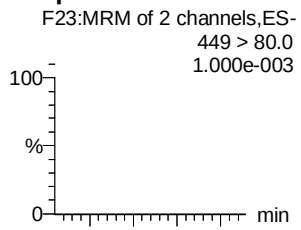


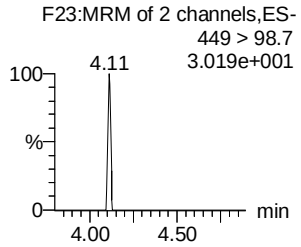
L-PFOA



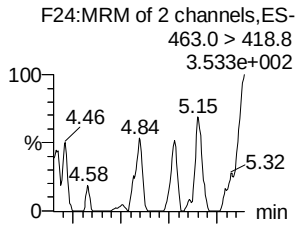


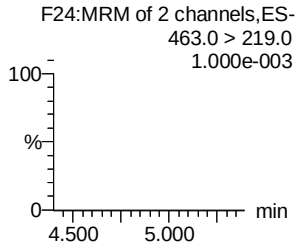
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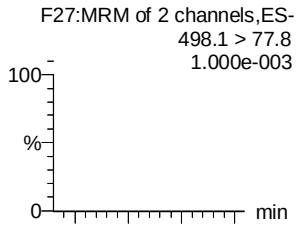


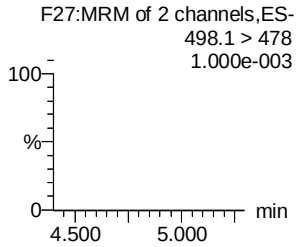
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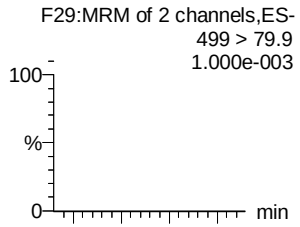


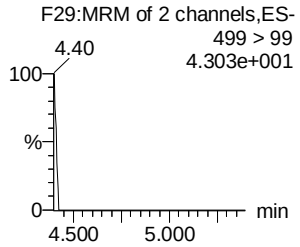
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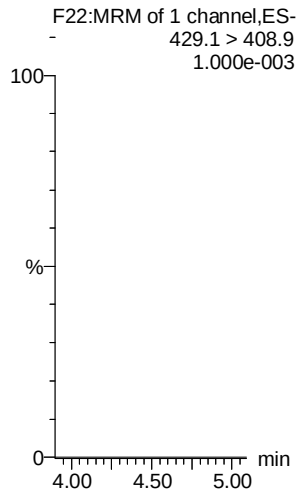


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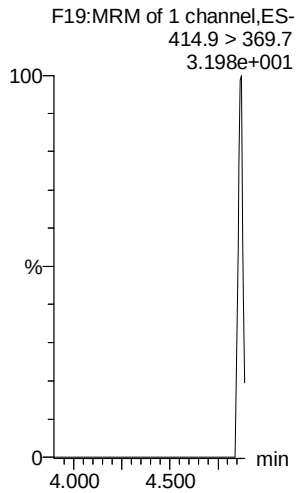




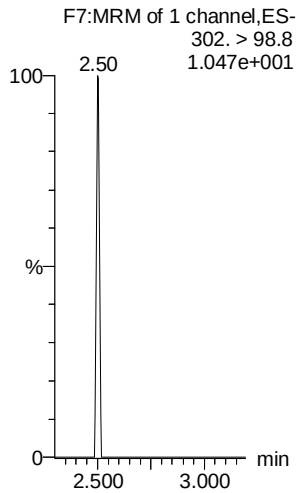
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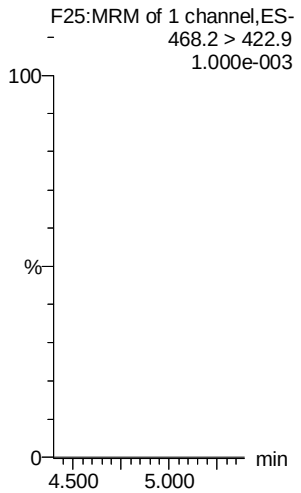
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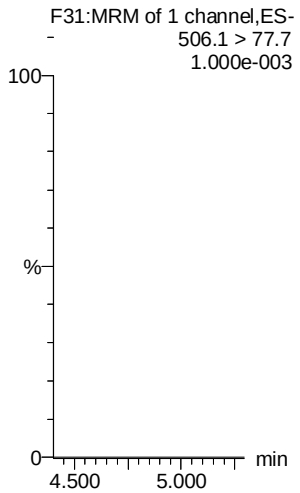
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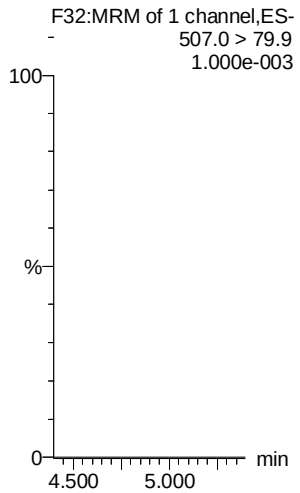
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13C8-PFOSA



13C8-PFOS



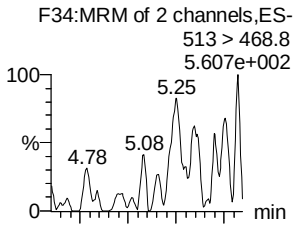
AC 1/9/2018

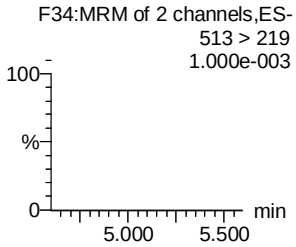
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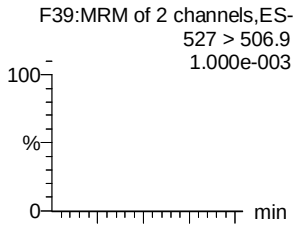
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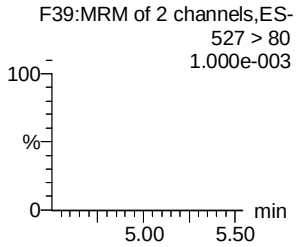
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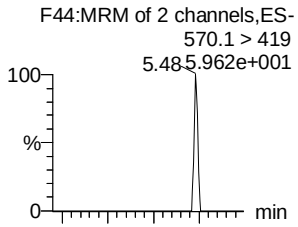


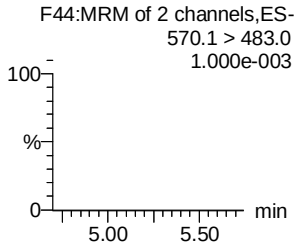
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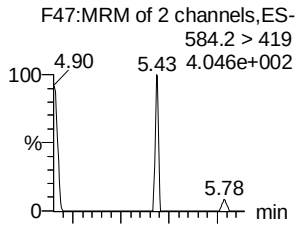


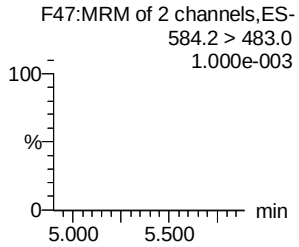
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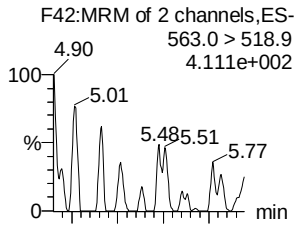


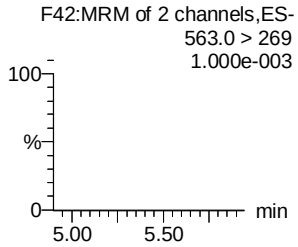
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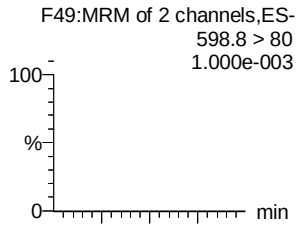


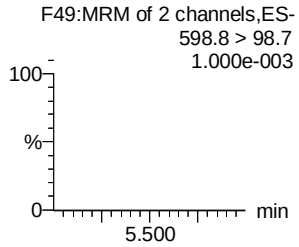
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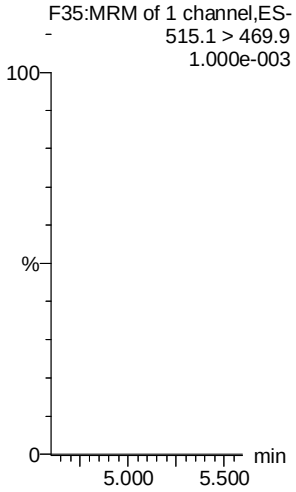


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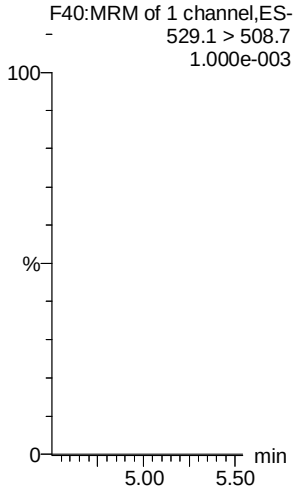




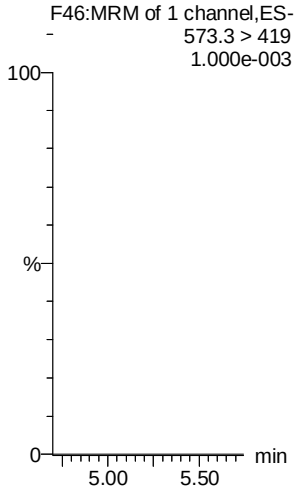
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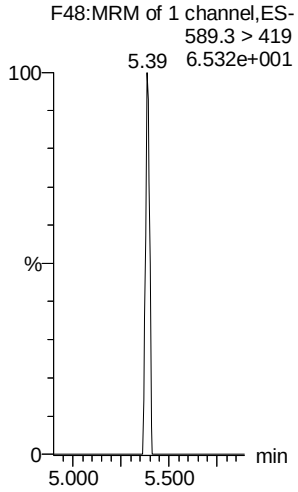
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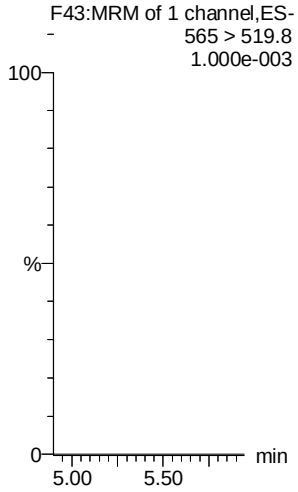
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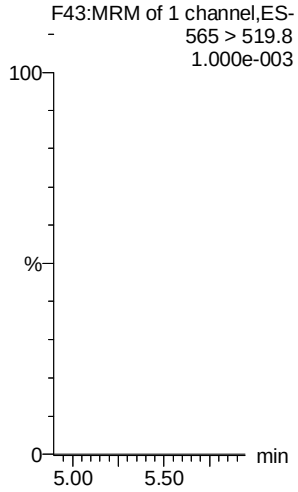
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA



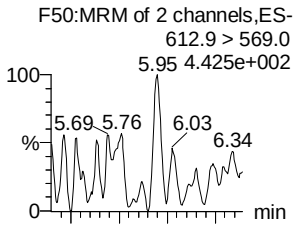
AC 1/9/2018

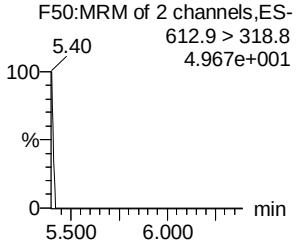
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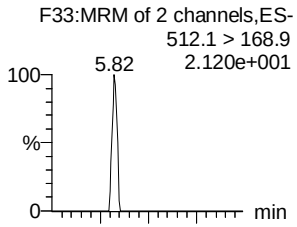
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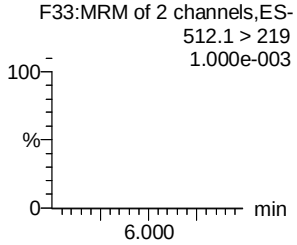
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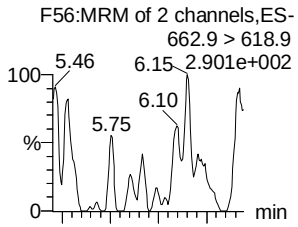


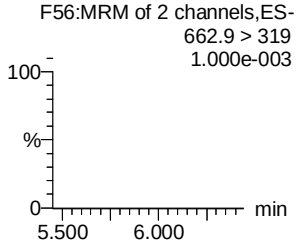
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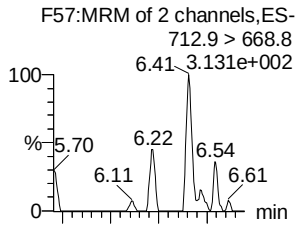


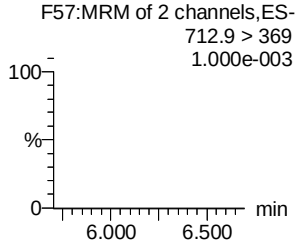
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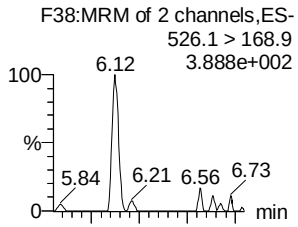


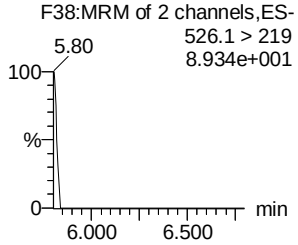
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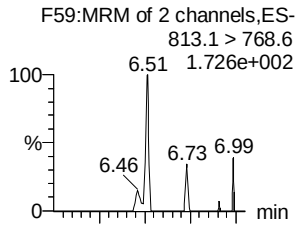


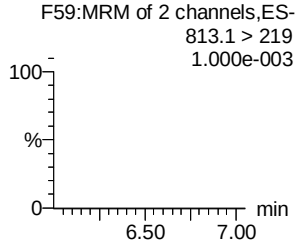
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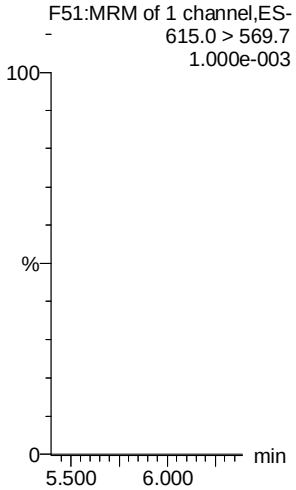


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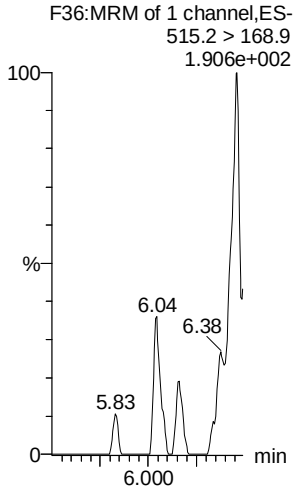




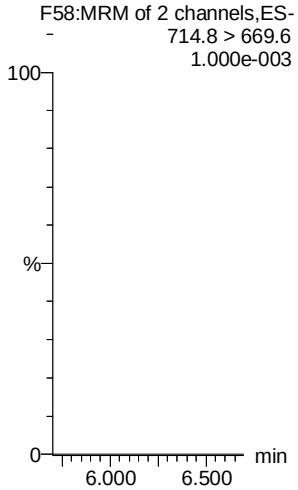
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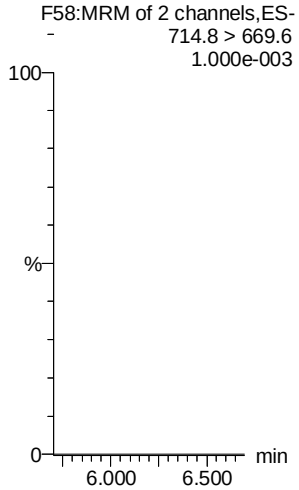
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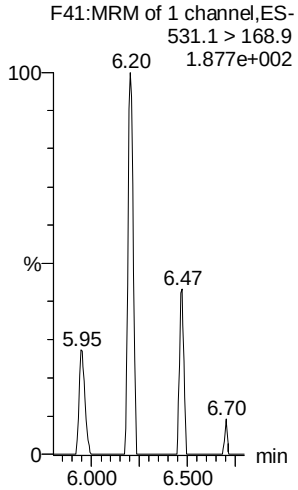
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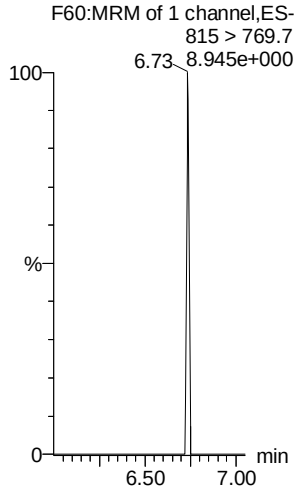
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d5-N-ETFOSA



13C2-PFHxDA



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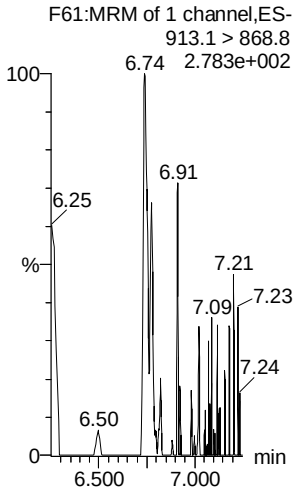
Vista Analytical Laboratory

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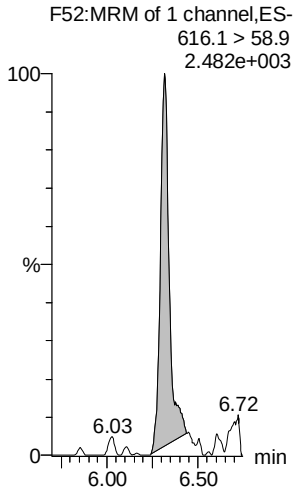
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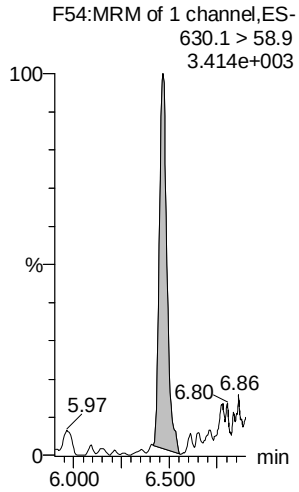
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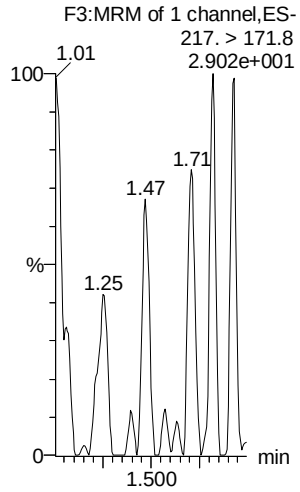
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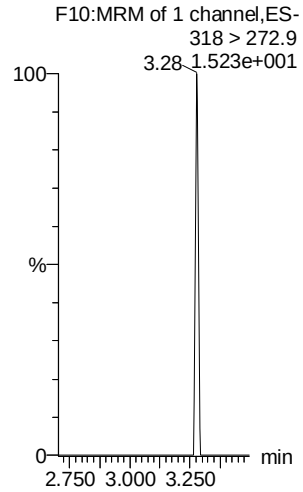
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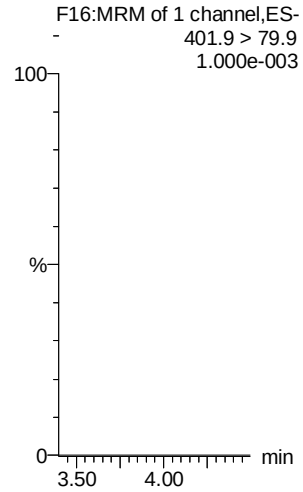
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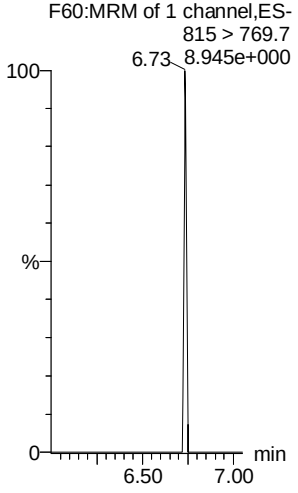
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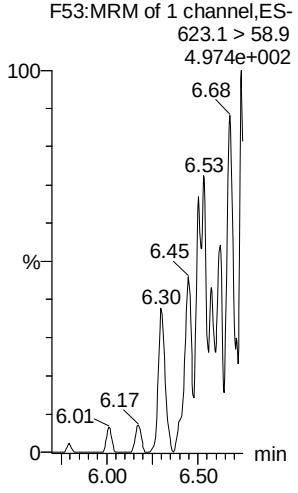
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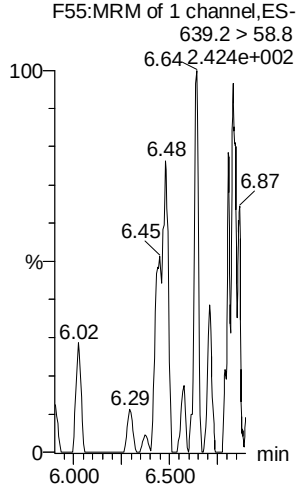
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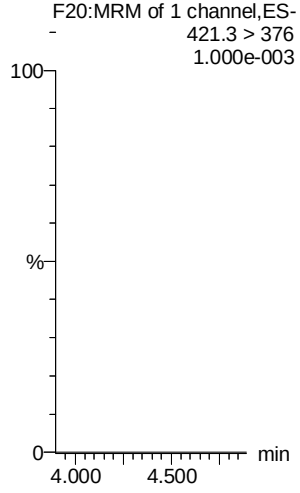
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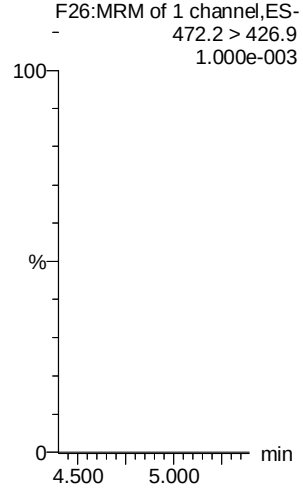
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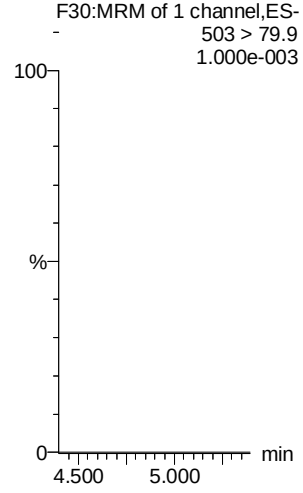
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13C9-PFNA



13C4-PFOS



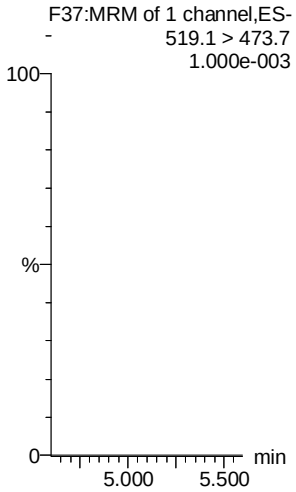
AC 1/9/2018

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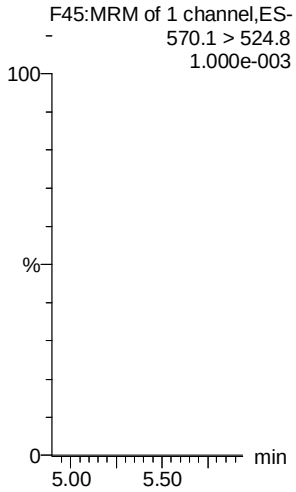
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13C6-PFDA



13C7-PFUdA



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Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:05:37 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

1/13/18

VJA 01/15/2018

Compound name: PFBA
Correlation coefficient: r = 0.999924, r^2 = 0.999848
Calibration curve: 1.17516 * x + 0.0248022
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None

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1	1	180112M3_1	Standard	0.250	1.34	233.275	9643.879	0.302	0.2	-5.5	NO	1.000	NO	bb
2	2	180112M3_2	Standard	0.500	1.33	454.574	8632.702	0.658	0.5	7.8	NO	1.000	NO	bb
3	3	180112M3_3	Standard	1.000	1.33	812.064	9299.708	1.092	0.9	-9.2	NO	1.000	NO	bb
4	4	180112M3_4	Standard	2.000	1.33	1702.951	8950.318	2.378	2.0	0.1	NO	1.000	NO	bb
5	5	180112M3_5	Standard	5.000	1.33	4657.375	9028.021	6.448	5.5	9.3	NO	1.000	NO	bb
6	6	180112M3_6	Standard	10.000	1.33	9978.374	10063.032	12.395	10.5	5.3	NO	1.000	NO	bb
7	7	180112M3_7	Standard	50.000	1.33	42400.188	9053.116	58.544	49.8	-0.4	NO	1.000	NO	bb
8	8	180112M3_8	Standard	100.000	1.33	87827.547	9242.895	118.777	101.1	1.1	NO	1.000	NO	bb
9	9	180112M3_9	Standard	250.000	1.34	210891.828	8904.648	296.042	251.9	0.8	NO	1.000	NO	bb
10	10	180112M3_10	Standard	500.000	1.34	435407.531	9330.891	583.288	496.3	-0.7	NO	1.000	NO	bb

Compound name: PFPeA
Correlation coefficient: r = 0.999754, r^2 = 0.999508
Calibration curve: 1.02744 * x + 0.0410199
Response type: Internal Std (Ref 32), 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	180112M3_1	Standard	0.250	2.29	278.535	11467.582	0.304	0.3	2.2	NO	1.000	NO	bb
2	2	180112M3_2	Standard	0.500	2.30	488.219	10854.084	0.562	0.5	1.5	NO	1.000	NO	bb
3	3	180112M3_3	Standard	1.000	2.30	1004.737	11658.507	1.077	1.0	0.9	NO	1.000	NO	bb
4	4	180112M3_4	Standard	2.000	2.30	1753.143	11232.406	1.951	1.9	-7.1	NO	1.000	NO	bb
5	5	180112M3_5	Standard	5.000	2.30	4572.413	10927.261	5.231	5.1	1.0	NO	1.000	NO	bb
6	6	180112M3_6	Standard	10.000	2.30	9779.161	11721.632	10.429	10.1	1.1	NO	1.000	NO	bb
7	7	180112M3_7	Standard	50.000	2.31	46271.641	11589.604	49.906	48.5	-2.9	NO	1.000	NO	bb
8	8	180112M3_8	Standard	100.000	2.31	90541.531	10805.021	104.745	101.9	1.9	NO	1.000	NO	bb
9	9	180112M3_9	Standard	250.000	2.30	211396.094	9985.239	264.636	257.5	3.0	NO	1.000	NO	bb

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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	180112M3_10	Standard	500.000	2.30	419772.344	10379.484	505.531	492.0	-1.6	NO	1.000	NO	bb

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999626
Calibration curve: -0.000101257 * x^2 + 1.82514 * x + 0.0110843
Response type: Internal Std (Ref 33), 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	180112M3_1	Standard	0.250	2.57	57.125	1444.352	0.494	0.3	5.9	NO	1.000	NO	MM
2	2	180112M3_2	Standard	0.500	2.58	96.847	1401.073	0.864	0.5	-6.5	NO	1.000	NO	bb
3	3	180112M3_3	Standard	1.000	2.58	228.095	1486.683	1.918	1.0	4.5	NO	1.000	NO	bb
4	4	180112M3_4	Standard	2.000	2.58	388.598	1382.649	3.513	1.9	-4.0	NO	1.000	NO	bb
5	5	180112M3_5	Standard	5.000	2.58	1134.888	1496.042	9.482	5.2	3.8	NO	1.000	NO	bb
6	6	180112M3_6	Standard	10.000	2.58	2190.791	1495.902	18.307	10.0	0.3	NO	1.000	NO	bb
7	7	180112M3_7	Standard	50.000	2.59	9844.003	1406.961	87.458	48.0	-3.9	NO	1.000	NO	bb
8	8	180112M3_8	Standard	100.000	2.58	21071.488	1483.003	177.608	97.8	-2.2	NO	1.000	NO	bb
9	9	180112M3_9	Standard	250.000	2.58	46678.520	1262.900	462.017	256.8	2.7	NO	1.000	NO	bb
10	10	180112M3_10	Standard	500.000	2.59	89214.797	1263.846	882.374	497.2	-0.6	NO	1.000	NO	bb

Compound name: PFHxA
Correlation coefficient: r = 0.999857, r^2 = 0.999714
Calibration curve: 1.64937 * x + 0.101208
Response type: Internal Std (Ref 34), 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	180112M3_1	Standard	0.250	3.07	346.916	3588.987	0.483	0.2	-7.3	NO	1.000	NO	bb
2	2	180112M3_2	Standard	0.500	3.08	613.477	3463.414	0.886	0.5	-4.9	NO	1.000	NO	bb
3	3	180112M3_3	Standard	1.000	3.08	1306.944	3588.816	1.821	1.0	4.3	NO	1.000	NO	bb
4	4	180112M3_4	Standard	2.000	3.08	2162.304	3398.115	3.182	1.9	-6.6	NO	1.000	NO	bb
5	5	180112M3_5	Standard	5.000	3.08	6292.082	3546.113	8.872	5.3	6.4	NO	1.000	NO	bb
6	6	180112M3_6	Standard	10.000	3.08	13771.347	3759.980	18.313	11.0	10.4	NO	1.000	NO	bb
7	7	180112M3_7	Standard	50.000	3.08	57566.691	3577.969	80.446	48.7	-2.6	NO	1.000	NO	bb

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Compound name: PFHxA

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
8	8	180112M3_8	Standard	100.000	3.08	115981.867	3466.172	167.305	101.4	1.4	NO	1.000	NO	bb
9	9	180112M3_9	Standard	250.000	3.08	279969.750	3444.628	406.386	246.3	-1.5	NO	1.000	NO	bb
10	10	180112M3_10	Standard	500.000	3.08	517494.813	3122.426	828.674	502.4	0.5	NO	1.000	NO	bb

Compound name: PFHpA
Correlation coefficient: r = 0.999255, r^2 = 0.998511
Calibration curve: 1.27635 * x + 0.0384147
Response type: Internal Std (Ref 35), 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	180112M3_1	Standard	0.250	3.69	247.828	9102.781	0.340	0.2	-5.4	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	3.70	422.138	8570.458	0.616	0.5	-9.5	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	3.70	995.128	8956.404	1.389	1.1	5.8	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	3.71	1821.820	8642.030	2.635	2.0	1.7	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	3.70	4438.195	8719.787	6.362	5.0	-0.9	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	3.70	10968.903	9807.228	13.981	10.9	9.2	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	3.70	48603.809	9529.698	63.753	49.9	-0.2	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	3.70	96058.930	9128.853	131.532	103.0	3.0	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	3.70	211016.625	8796.575	299.856	234.9	-6.0	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	3.70	434493.438	8322.788	652.566	511.2	2.2	NO	0.999	NO	bb

Compound name: L-PFHxS
Correlation coefficient: r = 0.998186, r^2 = 0.996375
Calibration curve: 1.78605 * x + -0.00897311
Response type: Internal Std (Ref 36), 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	180112M3_1	Standard	0.250	3.85	27.982	1138.225	0.307	0.2	-29.2	NO	0.996	NO	MM
2	2	180112M3_2	Standard	0.500	3.85	81.525	1091.680	0.933	0.5	5.5	NO	0.996	NO	MM
3	3	180112M3_3	Standard	1.000	3.85	159.736	1070.768	1.865	1.0	4.9	NO	0.996	NO	MM
4	4	180112M3_4	Standard	2.000	3.85	304.523	1187.784	3.205	1.8	-10.0	NO	0.996	NO	MM
5	5	180112M3_5	Standard	5.000	3.85	822.320	1110.996	9.252	5.2	3.7	NO	0.996	NO	MM

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Compound name: L-PFHxS

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
6	6	180112M3_6	Standard	10.000	3.85	1984.351	1230.666	20.155	11.3	12.9	NO	0.996	NO	MM
7	7	180112M3_7	Standard	50.000	3.85	8464.456	1055.557	100.237	56.1	12.3	NO	0.996	NO	MM
8	8	180112M3_8	Standard	100.000	3.85	15716.564	1130.438	173.788	97.3	-2.7	NO	0.996	NO	MM
9	9	180112M3_9	Standard	250.000	3.85	35190.773	920.090	478.089	267.7	7.1	NO	0.996	NO	MM
10	10	180112M3_10	Standard	500.000	3.85	70391.570	1031.513	853.014	477.6	-4.5	NO	0.996	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998923
Calibration curve: -0.00443937 * x^2 + 2.6695 * x + 0.0716636
Response type: Internal Std (Ref 36), 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	180112M3_1	Standard	0.250	4.15	60.300	1138.225	0.662	0.2	-11.5	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	4.16	154.431	1091.680	1.768	0.6	27.2	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	4.16	238.753	1070.768	2.787	1.0	1.9	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	4.17	434.843	1187.784	4.576	1.7	-15.4	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	4.16	1270.821	1110.996	14.298	5.4	7.5	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	4.16	2648.146	1230.666	26.897	10.2	2.2	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	4.17	10172.495	1055.557	120.464	49.1	-1.8	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	4.17	20214.686	1130.438	223.527	100.5	0.5	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	4.17	51381.309	920.090	698.047			NO	0.999	NO	bbXI
10	10	180112M3_10	Standard	500.000	4.16	81310.227	1031.513	985.327			NO	0.999	NO	bbXI

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999108
Calibration curve: -0.000333792 * x^2 + 1.10149 * x + 0.0577215
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	180112M3_1	Standard	0.250	4.21	412.745	13586.148	0.380	0.3	17.0	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	4.22	515.996	11550.678	0.558	0.5	-9.1	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	4.22	1079.193	11895.254	1.134	1.0	-2.3	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	4.22	1982.093	11772.054	2.105	1.9	-7.0	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	4.22	5682.250	12049.740	5.895	5.3	6.2	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	4.22	10002.446	11141.402	11.222	10.2	1.7	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	4.22	49789.172	12520.966	49.706	45.7	-8.6	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	4.22	103067.602	12109.147	106.394	99.5	-0.5	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	4.22	249802.391	11875.879	262.930	259.0	3.6	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	4.22	406212.875	10949.793	463.722	495.3	-0.9	NO	0.999	NO	bb

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998378
Calibration curve: -0.00012777 * x^2 + 0.272 * x + 0.0146586
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	180112M3_1	Standard	0.250	4.32	57.137	13586.148	0.053	0.1	-44.2	NO	0.998	NO	MMX
2	2	180112M3_2	Standard	0.500	4.33	111.602	11550.678	0.121	0.4	-22.0	NO	0.998	NO	bb
3	3	180112M3_3	Standard	1.000	4.33	258.860	11895.254	0.272	0.9	-5.3	NO	0.998	NO	bb
4	4	180112M3_4	Standard	2.000	4.33	520.229	11772.054	0.552	2.0	-1.1	NO	0.998	NO	bb
5	5	180112M3_5	Standard	5.000	4.33	1511.806	12049.740	1.568	5.7	14.5	NO	0.998	NO	bb
6	6	180112M3_6	Standard	10.000	4.33	2868.643	11141.402	3.218	11.8	18.4	NO	0.998	NO	bb
7	7	180112M3_7	Standard	50.000	4.33	12921.623	12520.966	12.900	48.5	-3.0	NO	0.998	NO	bb
8	8	180112M3_8	Standard	100.000	4.33	24636.072	12109.147	25.431	98.0	-2.0	NO	0.998	NO	bb
9	9	180112M3_9	Standard	250.000	4.33	57276.719	11875.879	60.287	251.2	0.5	NO	0.998	NO	bb
10	10	180112M3_10	Standard	500.000	4.33	104523.055	10949.793	119.321	618.1	23.6	NO	0.998	NO	bbX

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Compound name: PFNA
Coefficient of Determination: R^2 = 0.996648
Calibration curve: -0.00033072 * x^2 + 1.28247 * x + 0.0192318
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	180112M3_1	Standard	0.250	4.64	394.288	12794.425	0.385	0.3	14.2	NO	0.997	NO	bb
2	2	180112M3_2	Standard	0.500	4.65	620.225	10816.813	0.717	0.5	8.8	NO	0.997	NO	bb
3	3	180112M3_3	Standard	1.000	4.65	1051.636	13058.794	1.007	0.8	-23.0	NO	0.997	NO	bb
4	4	180112M3_4	Standard	2.000	4.65	2357.545	11614.502	2.537	2.0	-1.8	NO	0.997	NO	bb
5	5	180112M3_5	Standard	5.000	4.65	6406.625	10794.973	7.419	5.8	15.6	NO	0.997	NO	bb
6	6	180112M3_6	Standard	10.000	4.65	11043.009	10995.729	12.554	9.8	-2.0	NO	0.997	NO	bb
7	7	180112M3_7	Standard	50.000	4.65	51103.148	11688.381	54.652	43.1	-13.8	NO	0.997	NO	bb
8	8	180112M3_8	Standard	100.000	4.65	109005.047	11325.495	120.309	96.2	-3.8	NO	0.997	NO	bb
9	9	180112M3_9	Standard	250.000	4.65	243597.719	9456.107	322.011	269.9	7.9	NO	0.997	NO	bb
10	10	180112M3_10	Standard	500.000	4.66	412378.781	9383.431	549.344	490.3	-1.9	NO	0.997	NO	bb

Compound name: PFOSA
Correlation coefficient: r = 0.999756, r^2 = 0.999511
Calibration curve: 1.11606 * x + -0.0204597
Response type: Internal Std (Ref 40), 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	180112M3_1	Standard	0.250	4.71	62.536	3044.767	0.257	0.2	-0.7	NO	1.000	NO	bb
2	2	180112M3_2	Standard	0.500	4.71	125.774	2919.915	0.538	0.5	0.2	NO	1.000	NO	bb
3	3	180112M3_3	Standard	1.000	4.71	301.772	2852.223	1.323	1.2	20.3	NO	1.000	NO	bb
4	4	180112M3_4	Standard	2.000	4.72	385.308	2423.439	1.987	1.8	-10.0	NO	1.000	NO	bb
5	5	180112M3_5	Standard	5.000	4.72	1294.455	2861.321	5.655	5.1	1.7	NO	1.000	NO	bb
6	6	180112M3_6	Standard	10.000	4.72	2726.235	3170.243	10.749	9.6	-3.5	NO	1.000	NO	bb
7	7	180112M3_7	Standard	50.000	4.72	11652.947	2815.174	51.742	46.4	-7.2	NO	1.000	NO	bb
8	8	180112M3_8	Standard	100.000	4.71	23636.928	2697.858	109.517	98.1	-1.9	NO	1.000	NO	bb
9	9	180112M3_9	Standard	250.000	4.72	59136.383	2651.824	278.753	249.8	-0.1	NO	1.000	NO	bb
10	10	180112M3_10	Standard	500.000	4.72	104202.336	2306.769	564.655	506.0	1.2	NO	1.000	NO	bb

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Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.996021
Calibration curve: -0.000432795 * x^2 + 1.1957 * x + -0.10005
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	180112M3_1	Standard	0.250	4.72	68.582	3191.616	0.269	0.3	23.3	NO	0.996	NO	MM
2	2	180112M3_2	Standard	0.500	4.74	135.604	2961.859	0.572	0.6	12.5	NO	0.996	NO	MM
3	3	180112M3_3	Standard	1.000	4.74	244.320	2922.072	1.045	1.0	-4.2	NO	0.996	NO	MM
4	4	180112M3_4	Standard	2.000	4.74	487.968	2842.648	2.146	1.9	-6.0	NO	0.996	NO	MM
5	5	180112M3_5	Standard	5.000	4.74	1425.989	3398.177	5.245	4.5	-10.4	NO	0.996	NO	MM
6	6	180112M3_6	Standard	10.000	4.74	2834.756	3115.317	11.374	9.6	-3.7	NO	0.996	NO	MM
7	7	180112M3_7	Standard	50.000	4.74	12591.990	3250.293	48.426	41.2	-17.6	NO	0.996	NO	MM
8	8	180112M3_8	Standard	100.000	4.74	27240.164	2945.822	115.588	100.4	0.4	NO	0.996	NO	MM
9	9	180112M3_9	Standard	250.000	4.74	63788.715	2734.680	291.573	270.4	8.2	NO	0.996	NO	MM
10	10	180112M3_10	Standard	500.000	4.74	101986.539	2652.588	480.599	488.3	-2.3	NO	0.996	NO	MM

Compound name: PFDA
Coefficient of Determination: R^2 = 0.994815
Calibration curve: -0.00294809 * x^2 + 1.44414 * x + 0.0161932
Response type: Internal Std (Ref 42), 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	180112M3_1	Standard	0.250	5.02	304.995	11840.349	0.322	0.2	-15.3	NO	0.995	NO	MM
2	2	180112M3_2	Standard	0.500	5.02	542.062	8198.120	0.827	0.6	12.3	NO	0.995	NO	MM
3	3	180112M3_3	Standard	1.000	5.02	1182.656	11413.683	1.295	0.9	-11.3	NO	0.995	NO	MM
4	4	180112M3_4	Standard	2.000	5.02	2140.852	8993.626	2.976	2.1	2.9	NO	0.995	NO	MM
5	5	180112M3_5	Standard	5.000	5.02	6198.806	8374.505	9.252	6.5	29.6	NO	0.995	NO	MM
6	6	180112M3_6	Standard	10.000	5.03	10609.142	10742.175	12.345	8.7	-13.1	NO	0.995	NO	MM
7	7	180112M3_7	Standard	50.000	5.03	53245.199	10359.620	64.246	49.5	-1.1	NO	0.995	NO	MM
8	8	180112M3_8	Standard	100.000	5.03	93859.227	10172.976	115.329	100.4	0.4	NO	0.995	NO	bb
9	9	180112M3_9	Standard	250.000	5.03	189935.250	7900.604	300.507			NO	0.995	NO	bbXI
10	10	180112M3_10	Standard	500.000	5.02	483172.875	9355.357	645.583			NO	0.995	NO	bbXI

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Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.995197
Calibration curve: 4.82428e-007 * x^2 + 0.258414 * x + 0.00992173
Response type: Internal Std (Ref 42), 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	180112M3_1	Standard	0.250	4.99	80.279	11840.349	0.085	0.3	15.8	NO	0.995	NO	bb
2	2	180112M3_2	Standard	0.500	5.00	91.432	8198.120	0.139	0.5	0.2	NO	0.995	NO	bb
3	3	180112M3_3	Standard	1.000	5.00	210.751	11413.683	0.231	0.9	-14.5	NO	0.995	NO	bb
4	4	180112M3_4	Standard	2.000	5.00	436.706	8993.626	0.607	2.3	15.5	NO	0.995	NO	bb
5	5	180112M3_5	Standard	5.000	5.00	986.525	8374.505	1.473	5.7	13.2	NO	0.995	NO	bb
6	6	180112M3_6	Standard	10.000	5.00	2145.028	10742.175	2.496	9.6	-3.8	NO	0.995	NO	bb
7	7	180112M3_7	Standard	50.000	5.00	9958.353	10359.620	12.016	46.5	-7.1	NO	0.995	NO	bb
8	8	180112M3_8	Standard	100.000	5.00	18548.066	10172.976	22.791	88.1	-11.9	NO	0.995	NO	bb
9	9	180112M3_9	Standard	250.000	5.00	44840.914	7900.604	70.945	274.4	9.7	NO	0.995	NO	bb
10	10	180112M3_10	Standard	500.000	5.00	94968.898	9355.357	126.891	490.6	-1.9	NO	0.995	NO	bb

Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.997364
Calibration curve: -0.00060034 * x^2 + 1.73492 * x + -0.104075
Response type: Internal Std (Ref 44), 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	180112M3_1	Standard	0.250	5.17	113.028	4578.172	0.309	0.2	-4.8	NO	0.997	NO	bb
2	2	180112M3_2	Standard	0.500	5.18	273.865	4479.246	0.764	0.5	0.1	NO	0.997	NO	bb
3	3	180112M3_3	Standard	1.000	5.18	482.144	4148.605	1.453	0.9	-10.2	NO	0.997	NO	bb
4	4	180112M3_4	Standard	2.000	5.18	1029.080	4221.229	3.047	1.8	-9.1	NO	0.997	NO	bb
5	5	180112M3_5	Standard	5.000	5.18	3148.309	4679.941	8.409	4.9	-1.7	NO	0.997	NO	bb
6	6	180112M3_6	Standard	10.000	5.18	6267.744	4150.196	18.878	11.0	9.8	NO	0.997	NO	bb
7	7	180112M3_7	Standard	50.000	5.18	26103.436	4076.322	80.046	47.0	-6.1	NO	0.997	NO	bb
8	8	180112M3_8	Standard	100.000	5.18	54752.113	4414.855	155.022	92.4	-7.6	NO	0.997	NO	bb
9	9	180112M3_9	Standard	250.000	5.18	119005.586	3516.300	423.050	268.9	7.6	NO	0.997	NO	bb
10	10	180112M3_10	Standard	500.000	5.18	246238.672	4355.138	706.748	490.8	-1.8	NO	0.997	NO	bb

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Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.999492
Calibration curve: -0.000230523 * x^2 + 1.07268 * x + -0.0254089
Response type: Internal Std (Ref 45), 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	180112M3_1	Standard	0.250	5.32	88.409	5593.976	0.198	0.2	-16.9	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	5.33	195.796	4492.496	0.545	0.5	6.3	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	5.33	486.260	5478.088	1.110	1.1	5.8	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	5.33	703.173	4411.942	1.992	1.9	-5.9	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	5.33	2171.914	5054.803	5.371	5.0	0.7	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	5.33	4406.764	5386.214	10.227	9.6	-4.2	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	5.33	20422.609	4474.004	57.059	53.8	7.7	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	5.33	40212.152	4899.659	102.589	97.7	-2.3	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	5.33	94647.492	4709.659	251.206	247.4	-1.1	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	5.33	180547.938	4701.503	480.027	501.6	0.3	NO	0.999	NO	bb

Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999551
Calibration curve: -0.000301547 * x^2 + 1.14216 * x + 0.13346
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	180112M3_1	Standard	0.250	5.34	406.770	14971.105	0.340	0.2	-27.8	NO	1.000	NO	bbX
2	2	180112M3_2	Standard	0.500	5.35	560.950	11016.060	0.637	0.4	-11.9	NO	1.000	NO	bb
3	3	180112M3_3	Standard	1.000	5.35	1154.768	11092.744	1.301	1.0	2.3	NO	1.000	NO	bb
4	4	180112M3_4	Standard	2.000	5.35	2040.896	10221.989	2.496	2.1	3.5	NO	1.000	NO	bb
5	5	180112M3_5	Standard	5.000	5.35	5931.341	12021.561	6.167	5.3	5.8	NO	1.000	NO	bb
6	6	180112M3_6	Standard	10.000	5.35	10395.389	11655.509	11.149	9.7	-3.3	NO	1.000	NO	bb
7	7	180112M3_7	Standard	50.000	5.35	47874.348	9931.740	60.254	53.4	6.8	NO	1.000	NO	bb
8	8	180112M3_8	Standard	100.000	5.35	95397.719	10964.943	108.753	97.6	-2.4	NO	1.000	NO	MM
9	9	180112M3_9	Standard	250.000	5.35	211531.391	10008.643	264.186	247.3	-1.1	NO	1.000	NO	bb
10	10	180112M3_10	Standard	500.000	5.35	425979.938	10707.508	497.291	501.7	0.3	NO	1.000	NO	bb

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Compound name: PFDS
Coefficient of Determination: R^2 = 0.992543
Calibration curve: -0.000158131 * x^2 + 0.337303 * x + -0.0184942
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	180112M3_1	Standard	0.250	5.39	93.785	14971.105	0.078	0.3	14.8	NO	0.993	NO	bb
2	2	180112M3_2	Standard	0.500	5.40	127.595	11016.060	0.145	0.5	-3.2	NO	0.993	NO	bb
3	3	180112M3_3	Standard	1.000	5.40	280.951	11092.744	0.317	1.0	-0.6	NO	0.993	NO	bb
4	4	180112M3_4	Standard	2.000	5.40	555.113	10221.989	0.679	2.1	3.5	NO	0.993	NO	bb
5	5	180112M3_5	Standard	5.000	5.40	1460.081	12021.561	1.518	4.6	-8.7	NO	0.993	NO	bb
6	6	180112M3_6	Standard	10.000	5.40	3044.137	11655.509	3.265	9.8	-2.2	NO	0.993	NO	bb
7	7	180112M3_7	Standard	50.000	5.40	13747.923	9931.740	17.303	52.7	5.3	NO	0.993	NO	bb
8	8	180112M3_8	Standard	100.000	5.40	23488.068	10964.943	26.776	82.6	-17.4	NO	0.993	NO	bb
9	9	180112M3_9	Standard	250.000	5.40	65524.613	10008.643	81.835	279.2	11.7	NO	0.993	NO	bb
10	10	180112M3_10	Standard	500.000	5.40	108260.094	10707.508	126.383	485.0	-3.0	NO	0.993	NO	bb

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999183
Calibration curve: -0.000455725 * x^2 + 2.46304 * x + -0.336737
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	180112M3_1	Standard	0.250	5.63	484.417	11368.299	0.533	0.4	41.2	NO	0.999	NO	MMX
2	2	180112M3_2	Standard	0.500	5.63	588.960	7004.138	1.051	0.6	12.7	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	5.63	1196.356	6625.417	2.257	1.1	5.3	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	5.63	1881.403	5781.125	4.068	1.8	-10.6	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	5.63	5375.239	5662.008	11.867	5.0	-0.8	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	5.63	12806.919	7602.770	21.056	8.7	-13.0	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	5.63	63526.941	6171.370	128.673	52.9	5.8	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	5.63	111633.664	5619.151	248.333	102.9	2.9	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	5.63	256413.719	5621.278	570.186	242.5	-3.0	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	5.63	535280.250	5954.897	1123.614	503.2	0.6	NO	0.999	NO	bb

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Compound name: N-MeFOSA
Correlation coefficient: r = 0.998441, r^2 = 0.996885
Calibration curve: 0.880263 * x + 0.418615
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: Linear, 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	180112M3_1	Standard	1.250	5.72	211.369	19479.512	1.628	1.4	9.9	NO	0.997	NO	bb
2	2	180112M3_2	Standard	2.500	5.73	228.556	17037.010	2.012	1.8	-27.6	NO	0.997	NO	bb
3	3	180112M3_3	Standard	5.000	5.73	570.397	17039.148	5.021	5.2	4.6	NO	0.997	NO	bb
4	4	180112M3_4	Standard	10.000	5.73	1042.466	16417.920	9.524	10.3	3.4	NO	0.997	NO	bb
5	5	180112M3_5	Standard	25.000	5.73	2863.614	16425.873	26.150	29.2	16.9	NO	0.997	NO	bb
6	6	180112M3_6	Standard	50.000	5.73	6178.347	18426.049	50.296	56.7	13.3	NO	0.997	NO	bb
7	7	180112M3_7	Standard	250.000	5.73	28310.555	17159.449	247.478	280.7	12.3	NO	0.997	NO	bb
8	8	180112M3_8	Standard	500.000	5.73	53701.023	17133.240	470.148	533.6	6.7	NO	0.997	NO	bb
9	9	180112M3_9	Standard	1250.000	5.73	123756.859	16374.768	1133.667	1287.4	3.0	NO	0.997	NO	bb
10	10	180112M3_10	Standard	2500.000	5.73	239416.109	17085.115	2101.971	2387.4	-4.5	NO	0.997	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.997638
Calibration curve: -0.000238393 * x^2 + 2.10003 * x + 0.366519
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	180112M3_1	Standard	0.250	5.87	521.806	11368.299	0.574	0.1	-60.5	NO	0.998	NO	bbX
2	2	180112M3_2	Standard	0.500	5.88	636.420	7004.138	1.136	0.4	-26.7	NO	0.998	NO	bb
3	3	180112M3_3	Standard	1.000	5.88	1218.605	6625.417	2.299	0.9	-8.0	NO	0.998	NO	bb
4	4	180112M3_4	Standard	2.000	5.88	2277.500	5781.125	4.924	2.2	8.5	NO	0.998	NO	bb
5	5	180112M3_5	Standard	5.000	5.88	6127.686	5662.008	13.528	6.3	25.4	NO	0.998	NO	bb
6	6	180112M3_6	Standard	10.000	5.88	11969.368	7602.770	19.679	9.2	-7.9	NO	0.998	NO	bb
7	7	180112M3_7	Standard	50.000	5.88	57474.207	6171.370	116.413	55.6	11.2	NO	0.998	NO	bb
8	8	180112M3_8	Standard	100.000	5.88	95364.172	5619.151	212.141	102.0	2.0	NO	0.998	NO	bb
9	9	180112M3_9	Standard	250.000	5.88	216321.188	5621.278	481.032	235.2	-5.9	NO	0.998	NO	bb
10	10	180112M3_10	Standard	500.000	5.88	478066.719	5954.897	1003.516	506.8	1.4	NO	0.998	NO	bb

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Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.998914
Calibration curve: -0.00156751 * x^2 + 2.14848 * x + 0.288262
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	180112M3_1	Standard	0.250	6.09	273.642	4505.702	0.759	0.2	-12.3	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	6.10	321.302	3152.279	1.274	0.5	-8.2	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	6.10	546.562	2846.668	2.400	1.0	-1.6	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	6.10	1331.939	3355.262	4.962	2.2	8.9	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	6.10	2344.534	2552.797	11.480	5.2	4.6	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	6.10	6704.581	3714.001	22.565	10.4	4.5	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	6.10	28292.648	3143.137	112.518	54.4	8.8	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	6.09	58266.109	3747.025	194.375	97.2	-2.8	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	6.10	98859.508	2882.788	428.663	242.2	-3.1	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	6.10	211633.875	3844.197	688.160	509.7	1.9	NO	0.999	NO	bb

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999922
Calibration curve: -3.07456e-005 * x^2 + 0.896595 * x + 0.0665512
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	180112M3_1	Standard	1.250	6.11	188.158	25249.453	1.118	1.2	-6.2	NO	1.000	NO	bb
2	2	180112M3_2	Standard	2.500	6.13	386.230	25479.150	2.274	2.5	-1.5	NO	1.000	NO	bb
3	3	180112M3_3	Standard	5.000	6.12	801.614	27084.520	4.440	4.9	-2.4	NO	1.000	NO	bb
4	4	180112M3_4	Standard	10.000	6.13	1582.103	25391.936	9.346	10.4	3.5	NO	1.000	NO	bb
5	5	180112M3_5	Standard	25.000	6.12	4145.951	25944.201	23.970	26.7	6.7	NO	1.000	NO	bb
6	6	180112M3_6	Standard	50.000	6.12	8467.227	28099.900	45.199	50.4	0.8	NO	1.000	NO	bb
7	7	180112M3_7	Standard	250.000	6.12	38352.133	25857.027	222.486	250.2	0.1	NO	1.000	NO	bb
8	8	180112M3_8	Standard	500.000	6.12	73441.539	25402.877	433.661	491.9	-1.6	NO	1.000	NO	bb
9	9	180112M3_9	Standard	1250.000	6.13	164267.156	22820.889	1079.716	1258.5	0.7	NO	1.000	NO	bb
10	10	180112M3_10	Standard	2500.000	6.13	310595.063	22756.643	2047.282	2497.2	-0.1	NO	1.000	NO	bb

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Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999401
Calibration curve: -0.00147665 * x^2 + 0.888378 * x + 0.124653
Response type: Internal Std (Ref 51), 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	180112M3_1	Standard	0.250	6.42	175.637	2293.444	0.383	0.3	16.3	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	6.43	253.814	2548.129	0.498	0.4	-15.9	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	6.43	481.510	2480.352	0.971	1.0	-4.6	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	6.43	926.169	2311.516	2.003	2.1	6.1	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	6.43	2359.668	2625.801	4.493	5.0	-0.8	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	6.43	4549.403	2562.900	8.875	10.0	0.2	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	6.43	19775.377	2506.577	39.447	48.1	-3.8	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	6.43	42838.859	2816.444	76.051	103.2	3.2	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	6.43	80567.820	3111.526	129.467	247.0	-1.2	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	6.43	162755.172	4067.885	200.049			NO	0.999	NO	bbXI

Compound name: PFODA
Coefficient of Determination: R^2 = 0.998942
Calibration curve: -0.00071601 * x^2 + 0.799547 * x + 0.0561624
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	180112M3_1	Standard	0.250	6.66	117.897	2293.444	0.257	0.3	0.5	NO	0.999	NO	bb
2	2	180112M3_2	Standard	0.500	6.66	217.686	2548.129	0.427	0.5	-7.2	NO	0.999	NO	bb
3	3	180112M3_3	Standard	1.000	6.67	403.784	2480.352	0.814	0.9	-5.1	NO	0.999	NO	bb
4	4	180112M3_4	Standard	2.000	6.66	883.157	2311.516	1.910	2.3	16.2	NO	0.999	NO	bb
5	5	180112M3_5	Standard	5.000	6.66	2294.808	2625.801	4.370	5.4	8.4	NO	0.999	NO	bb
6	6	180112M3_6	Standard	10.000	6.66	4816.051	2562.900	9.396	11.8	18.1	NO	0.999	NO	bb
7	7	180112M3_7	Standard	50.000	6.66	19091.953	2506.577	38.084	49.8	-0.4	NO	0.999	NO	bb
8	8	180112M3_8	Standard	100.000	6.66	40484.746	2816.444	71.872	98.5	-1.5	NO	0.999	NO	bb
9	9	180112M3_9	Standard	250.000	6.66	95357.836	3111.526	153.233	245.6	-1.8	NO	0.999	NO	bb
10	10	180112M3_10	Standard	500.000	6.66	180602.422	4067.885	221.986	516.1	3.2	NO	0.999	NO	bb

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Compound name: N-MeFOSE
Correlation coefficient: r = 0.999757, r^2 = 0.999514
Calibration curve: 1.03803 * x + 0.0140593
Response type: Internal Std (Ref 52), 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	180112M3_1	Standard	1.250	6.27	146.072	18945.594	1.157	1.1	-12.0	NO	1.000	NO	bb
2	2	180112M3_2	Standard	2.500	6.27	334.962	20978.891	2.395	2.3	-8.3	NO	1.000	NO	bb
3	3	180112M3_3	Standard	5.000	6.27	856.415	25214.846	5.095	4.9	-2.1	NO	1.000	NO	bb
4	4	180112M3_4	Standard	10.000	6.27	1497.470	21106.998	10.642	10.2	2.4	NO	1.000	NO	bb
5	5	180112M3_5	Standard	25.000	6.27	3522.082	18945.273	27.886	26.9	7.4	NO	1.000	NO	bb
6	6	180112M3_6	Standard	50.000	6.27	9949.574	25396.109	58.766	56.6	13.2	NO	1.000	NO	bb
7	7	180112M3_7	Standard	250.000	6.27	39530.746	23674.258	250.467	241.3	-3.5	NO	1.000	NO	bb
8	8	180112M3_8	Standard	500.000	6.27	74876.695	20831.691	539.155	519.4	3.9	NO	1.000	NO	bb
9	9	180112M3_9	Standard	1250.000	6.27	167920.109	19531.029	1289.641	1242.4	-0.6	NO	1.000	NO	bb
10	10	180112M3_10	Standard	2500.000	6.27	335534.813	19482.115	2583.406	2488.7	-0.5	NO	1.000	NO	bb

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999320, r^2 = 0.998641
Calibration curve: 1.17693 * x + -0.0247703
Response type: Internal Std (Ref 53), 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	180112M3_1	Standard	1.250	6.42	203.012	18867.035	1.614	1.4	11.4	NO	0.999	NO	bbX
2	2	180112M3_2	Standard	2.500	6.42	444.996	22759.293	2.933	2.5	0.5	NO	0.999	NO	bb
3	3	180112M3_3	Standard	5.000	6.42	969.691	22138.869	6.570	5.6	12.1	NO	0.999	NO	bb
4	4	180112M3_4	Standard	10.000	6.42	1648.415	21459.803	11.522	9.8	-1.9	NO	0.999	NO	bb
5	5	180112M3_5	Standard	25.000	6.42	4877.133	25764.189	28.395	24.1	-3.4	NO	0.999	NO	bb
6	6	180112M3_6	Standard	50.000	6.42	10674.516	27382.803	58.474	49.7	-0.6	NO	0.999	NO	bb
7	7	180112M3_7	Standard	250.000	6.42	44019.031	24133.248	273.600	232.5	-7.0	NO	0.999	NO	bb
8	8	180112M3_8	Standard	500.000	6.42	88835.867	22109.537	602.698	512.1	2.4	NO	0.999	NO	bb
9	9	180112M3_9	Standard	1250.000	6.42	207865.188	22244.219	1401.703	1191.0	-4.7	NO	0.999	NO	bb
10	10	180112M3_10	Standard	2500.000	6.42	407279.156	20236.264	3018.930	2565.1	2.6	NO	0.999	NO	bb

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Compound name: 13C3-PFBA
Response Factor: 0.888078
RRF SD: 0.0142239, Relative SD: 1.60166
Response type: Internal Std (Ref 54), 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	180112M3_1	Standard	12.500	1.33	9643.879	10808.706	11.153	12.6	0.5	NO		NO	bb
2	2	180112M3_2	Standard	12.500	1.33	8632.702	9934.981	10.861	12.2	-2.2	NO		NO	bb
3	3	180112M3_3	Standard	12.500	1.33	9299.708	10402.260	11.175	12.6	0.7	NO		NO	bb
4	4	180112M3_4	Standard	12.500	1.33	8950.318	9885.952	11.317	12.7	1.9	NO		NO	bb
5	5	180112M3_5	Standard	12.500	1.33	9028.021	10004.417	11.280	12.7	1.6	NO		NO	bb
6	6	180112M3_6	Standard	12.500	1.33	10063.032	11264.720	11.167	12.6	0.6	NO		NO	bb
7	7	180112M3_7	Standard	12.500	1.33	9053.116	10142.639	11.157	12.6	0.5	NO		NO	bb
8	8	180112M3_8	Standard	12.500	1.33	9242.895	10417.820	11.090	12.5	-0.1	NO		NO	bb
9	9	180112M3_9	Standard	12.500	1.33	8904.648	10365.864	10.738	12.1	-3.3	NO		NO	bb
10	10	180112M3_10	Standard	12.500	1.33	9330.891	10535.071	11.071	12.5	-0.3	NO		NO	bb

Compound name: 13C3-PFPeA
Response Factor: 0.874637
RRF SD: 0.0413881, Relative SD: 4.73203
Response type: Internal Std (Ref 55), 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	180112M3_1	Standard	12.500	2.29	11467.582	12803.078	11.196	12.8	2.4	NO		NO	bb
2	2	180112M3_2	Standard	12.500	2.30	10854.084	13515.780	10.038	11.5	-8.2	NO		NO	bb
3	3	180112M3_3	Standard	12.500	2.30	11658.507	12966.456	11.239	12.9	2.8	NO		NO	bb
4	4	180112M3_4	Standard	12.500	2.30	11232.406	11888.771	11.810	13.5	8.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	2.30	10927.261	12371.610	11.041	12.6	1.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	2.30	11721.632	13853.085	10.577	12.1	-3.3	NO		NO	bb
7	7	180112M3_7	Standard	12.500	2.30	11589.604	13385.722	10.823	12.4	-1.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	2.30	10805.021	12231.548	11.042	12.6	1.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	2.30	9985.239	12120.343	10.298	11.8	-5.8	NO		NO	bb
10	10	180112M3_10	Standard	12.500	2.30	10379.484	11516.518	11.266	12.9	3.0	NO		NO	bb

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Compound name: 13C3-PFBS
Response Factor: 0.111663
RRF SD: 0.00657694, Relative SD: 5.88999
Response type: Internal Std (Ref 55), 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	180112M3_1	Standard	12.500	2.57	1444.352	12803.078	1.410	12.6	1.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	2.58	1401.073	13515.780	1.296	11.6	-7.2	NO		NO	bb
3	3	180112M3_3	Standard	12.500	2.58	1486.683	12966.456	1.433	12.8	2.7	NO		NO	bb
4	4	180112M3_4	Standard	12.500	2.58	1382.649	11888.771	1.454	13.0	4.2	NO		NO	bb
5	5	180112M3_5	Standard	12.500	2.58	1496.042	12371.610	1.512	13.5	8.3	NO		NO	bb
6	6	180112M3_6	Standard	12.500	2.58	1495.902	13853.085	1.350	12.1	-3.3	NO		NO	bb
7	7	180112M3_7	Standard	12.500	2.58	1406.961	13385.722	1.314	11.8	-5.9	NO		NO	bb
8	8	180112M3_8	Standard	12.500	2.58	1483.003	12231.548	1.516	13.6	8.6	NO		NO	bb
9	9	180112M3_9	Standard	12.500	2.58	1262.900	12120.343	1.302	11.7	-6.7	NO		NO	bb
10	10	180112M3_10	Standard	12.500	2.58	1263.846	11516.518	1.372	12.3	-1.7	NO		NO	bb

Compound name: 13C2-PFHxA
Response Factor: 0.690808
RRF SD: 0.0244402, Relative SD: 3.53791
Response type: Internal Std (Ref 55), 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	180112M3_1	Standard	5.000	3.07	3588.987	12803.078	3.504	5.1	1.4	NO		NO	bb
2	2	180112M3_2	Standard	5.000	3.08	3463.414	13515.780	3.203	4.6	-7.3	NO		NO	bb
3	3	180112M3_3	Standard	5.000	3.08	3588.816	12966.456	3.460	5.0	0.2	NO		NO	bb
4	4	180112M3_4	Standard	5.000	3.08	3398.115	11888.771	3.573	5.2	3.4	NO		NO	bb
5	5	180112M3_5	Standard	5.000	3.08	3546.113	12371.610	3.583	5.2	3.7	NO		NO	bb
6	6	180112M3_6	Standard	5.000	3.08	3759.980	13853.085	3.393	4.9	-1.8	NO		NO	bb
7	7	180112M3_7	Standard	5.000	3.08	3577.969	13385.722	3.341	4.8	-3.3	NO		NO	bb
8	8	180112M3_8	Standard	5.000	3.08	3466.172	12231.548	3.542	5.1	2.6	NO		NO	bb
9	9	180112M3_9	Standard	5.000	3.08	3444.628	12120.343	3.553	5.1	2.9	NO		NO	bb
10	10	180112M3_10	Standard	5.000	3.08	3122.426	11516.518	3.389	4.9	-1.9	NO		NO	bb

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Compound name: 13C4-PFHpA
Response Factor: 0.708222
RRF SD: 0.0300935, Relative SD: 4.24917
Response type: Internal Std (Ref 55), 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 180112M3_1	Standard	12.500	3.69	9102.781	12803.078	8.887	12.5	0.4	NO		NO	bb
2	2 180112M3_2	Standard	12.500	3.70	8570.458	13515.780	7.926	11.2	-10.5	NO		NO	bb
3	3 180112M3_3	Standard	12.500	3.70	8956.404	12966.456	8.634	12.2	-2.5	NO		NO	bb
4	4 180112M3_4	Standard	12.500	3.70	8642.030	11888.771	9.086	12.8	2.6	NO		NO	bb
5	5 180112M3_5	Standard	12.500	3.70	8719.787	12371.610	8.810	12.4	-0.5	NO		NO	bb
6	6 180112M3_6	Standard	12.500	3.70	9807.228	13853.085	8.849	12.5	-0.0	NO		NO	bb
7	7 180112M3_7	Standard	12.500	3.70	9529.698	13385.722	8.899	12.6	0.5	NO		NO	bb
8	8 180112M3_8	Standard	12.500	3.70	9128.853	12231.548	9.329	13.2	5.4	NO		NO	bb
9	9 180112M3_9	Standard	12.500	3.70	8796.575	12120.343	9.072	12.8	2.5	NO		NO	bb
10	10 180112M3_10	Standard	12.500	3.70	8322.788	11516.518	9.034	12.8	2.0	NO		NO	bb

Compound name: 18O2-PFHxS
Response Factor: 0.352896
RRF SD: 0.0236985, Relative SD: 6.71544
Response type: Internal Std (Ref 56), 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 180112M3_1	Standard	12.500	3.84	1138.225	3295.114	4.318	12.2	-2.1	NO		NO	bb
2	2 180112M3_2	Standard	12.500	3.85	1091.680	3348.640	4.075	11.5	-7.6	NO		NO	bb
3	3 180112M3_3	Standard	12.500	3.85	1070.768	3067.346	4.364	12.4	-1.1	NO		NO	bb
4	4 180112M3_4	Standard	12.500	3.85	1187.784	3048.132	4.871	13.8	10.4	NO		NO	bb
5	5 180112M3_5	Standard	12.500	3.85	1110.996	2937.274	4.728	13.4	7.2	NO		NO	bb
6	6 180112M3_6	Standard	12.500	3.84	1230.666	3491.333	4.406	12.5	-0.1	NO		NO	bb
7	7 180112M3_7	Standard	12.500	3.85	1055.557	3348.468	3.940	11.2	-10.7	NO		NO	bb
8	8 180112M3_8	Standard	12.500	3.85	1130.438	3321.117	4.255	12.1	-3.5	NO		NO	bb
9	9 180112M3_9	Standard	12.500	3.85	920.090	2604.742	4.415	12.5	0.1	NO		NO	bb
10	10 180112M3_10	Standard	12.500	3.85	1031.513	2720.370	4.740	13.4	7.4	NO		NO	bb

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Compound name: 13C2-6:2 FTS
Response Factor: 0.284767
RRF SD: 0.129226, Relative SD: 45.3796 Not used
Response type: Internal Std (Ref 57), 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	180112M3_1	Standard	12.500	4.15	3224.894	12600.635	3.199	11.2	-10.1	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.16	2794.883	11736.022	2.977	10.5	-16.4	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.17	2347.654	11991.001	2.447	8.6	-31.2	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.16	2068.554	12060.161	2.144	7.5	-39.8	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.16	2478.051	12161.116	2.547	8.9	-28.4	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.16	2596.789	11322.669	2.867	10.1	-19.5	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.17	2712.263	11689.442	2.900	10.2	-18.5	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.16	3337.355	10352.454	4.030	14.2	13.2	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.17	4273.233	10739.092	4.974	17.5	39.7	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.16	5781.076	9621.300	7.511	26.4	111.0	NO		NO	bb

Compound name: 13C2-PFOA
Response Factor: 1.04901
RRF SD: 0.0726049, Relative SD: 6.92125
Response type: Internal Std (Ref 57), 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	180112M3_1	Standard	12.500	4.21	13586.148	12600.635	13.478	12.8	2.8	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.22	11550.678	11736.022	12.303	11.7	-6.2	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.22	11895.254	11991.001	12.400	11.8	-5.4	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.22	11772.054	12060.161	12.201	11.6	-6.9	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.22	12049.740	12161.116	12.386	11.8	-5.5	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.22	11141.402	11322.669	12.300	11.7	-6.2	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.22	12520.966	11689.442	13.389	12.8	2.1	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.22	12109.147	10352.454	14.621	13.9	11.5	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.22	11875.879	10739.092	13.823	13.2	5.4	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.22	10949.793	9621.300	14.226	13.6	8.5	NO		NO	bb

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Compound name: 13C5-PFNA
Response Factor: 0.910037
RRF SD: 0.0781082, Relative SD: 8.58297
Response type: Internal Std (Ref 58), 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	180112M3_1	Standard	12.500	4.64	12794.425	13761.062	11.622	12.8	2.2	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.65	10816.813	12074.913	11.198	12.3	-1.6	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.65	13058.794	12095.991	13.495	14.8	18.6	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.65	11614.502	12808.122	11.335	12.5	-0.4	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.65	10794.973	12650.281	10.667	11.7	-6.2	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.65	10995.729	13681.940	10.046	11.0	-11.7	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.65	11688.381	13136.934	11.122	12.2	-2.2	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.65	11325.495	11578.706	12.227	13.4	7.5	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.66	9456.107	10183.667	11.607	12.8	2.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.66	9383.431	11238.003	10.437	11.5	-8.2	NO		NO	bb

Compound name: 13C8-PFOSA
Response Factor: 0.251659
RRF SD: 0.0397585, Relative SD: 15.7986
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	180112M3_1	Standard	12.500	4.71	3044.767	12956.290	2.938	11.7	-6.6	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.72	2919.915	12184.508	2.996	11.9	-4.8	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.72	2852.223	12302.788	2.898	11.5	-7.9	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.71	2423.439	11601.501	2.611	10.4	-17.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.72	2861.321	11472.781	3.118	12.4	-0.9	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.71	3170.243	9229.500	4.294	17.1	36.5	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.72	2815.174	9708.751	3.625	14.4	15.2	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.72	2697.858	10886.688	3.098	12.3	-1.5	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.72	2651.824	10238.646	3.238	12.9	2.9	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.72	2306.769	10904.102	2.644	10.5	-15.9	NO		NO	bb

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Compound name: 13C8-PFOS
Response Factor: 0.987371
RRF SD: 0.0932548, Relative SD: 9.44476
Response type: Internal Std (Ref 59), 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	180112M3_1	Standard	12.500	4.73	3191.616	2877.050	13.867	14.0	12.4	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.74	2961.859	3334.549	11.103	11.2	-10.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.74	2922.072	3084.822	11.841	12.0	-4.1	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.74	2842.648	3067.264	11.585	11.7	-6.1	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.74	3398.177	3188.867	13.320	13.5	7.9	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.74	3115.317	3430.704	11.351	11.5	-8.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.74	3250.293	3059.901	13.278	13.4	7.6	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.74	2945.822	3427.029	10.745	10.9	-12.9	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.74	2734.680	2475.960	13.806	14.0	11.9	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.74	2652.588	2646.966	12.527	12.7	1.5	NO		NO	bb

Compound name: 13C2-PFDA
Response Factor: 1.31069
RRF SD: 0.154424, Relative SD: 11.7819
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	180112M3_1	Standard	12.500	5.02	11840.349	10883.691	13.599	10.4	-17.0	NO		NO	MM
2	2	180112M3_2	Standard	12.500	5.02	8198.120	6820.778	15.024	11.5	-8.3	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.02	11413.683	8798.779	16.215	12.4	-1.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.02	8993.626	6414.435	17.526	13.4	7.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.02	8374.505	7223.858	14.491	11.1	-11.6	NO		NO	MM
6	6	180112M3_6	Standard	12.500	5.02	10742.175	7491.244	17.925	13.7	9.4	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.03	10359.620	6956.624	18.615	14.2	13.6	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.03	10172.976	7085.407	17.947	13.7	9.5	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.03	7900.604	7001.764	14.105	10.8	-13.9	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.02	9355.357	6359.046	18.390	14.0	12.2	NO		NO	bb

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Compound name: 13C2-8:2 FTS
Response Factor: 0.141392
RRF SD: 0.0882708, Relative SD: 62.4299 Not used
Response type: Internal Std (Ref 55), 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	180112M3_1	Standard	12.500	4.99	2625.345	12803.078	2.563	18.1	45.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	5.00	935.824	13515.780	0.865	6.1	-51.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.00	1087.594	12966.456	1.048	7.4	-40.7	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.00	999.703	11888.771	1.051	7.4	-40.5	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.00	996.118	12371.610	1.006	7.1	-43.1	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.00	1381.043	13853.085	1.246	8.8	-29.5	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.00	1450.471	13385.722	1.354	9.6	-23.4	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.00	1492.542	12231.548	1.525	10.8	-13.7	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.00	2603.347	12120.343	2.685	19.0	51.9	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.00	3987.862	11516.518	4.328	30.6	144.9	NO		NO	bb

Compound name: d3-N-MeFOSAA
Response Factor: 0.384784
RRF SD: 0.0369881, Relative SD: 9.61269
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	180112M3_1	Standard	12.500	5.16	4578.172	12956.290	4.417	11.5	-8.2	NO		NO	bb
2	2	180112M3_2	Standard	12.500	5.17	4479.246	12184.508	4.595	11.9	-4.5	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.17	4148.605	12302.788	4.215	11.0	-12.4	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.17	4221.229	11601.501	4.548	11.8	-5.4	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.17	4679.941	11472.781	5.099	13.3	6.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.17	4150.196	9229.500	5.621	14.6	16.9	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.17	4076.322	9708.751	5.248	13.6	9.1	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.18	4414.855	10886.688	5.069	13.2	5.4	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.18	3516.300	10238.646	4.293	11.2	-10.7	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.17	4355.138	10904.102	4.993	13.0	3.8	NO		NO	bb

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Compound name: d5-N-EtFOSAA
Response Factor: 0.445224
RRF SD: 0.0578319, Relative SD: 12.9894
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	180112M3_1	Standard	12.500	5.32	5593.976	12956.290	5.397	12.1	-3.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	5.33	4492.496	12184.508	4.609	10.4	-17.2	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.33	5478.088	12302.788	5.566	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.33	4411.942	11601.501	4.754	10.7	-14.6	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.33	5054.803	11472.781	5.507	12.4	-1.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.33	5386.214	9229.500	7.295	16.4	31.1	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.33	4474.004	9708.751	5.760	12.9	3.5	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.33	4899.659	10886.688	5.626	12.6	1.1	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.33	4709.659	10238.646	5.750	12.9	3.3	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.33	4701.503	10904.102	5.390	12.1	-3.2	NO		NO	bb

Compound name: 13C2-PFUdA
Response Factor: 1.01427
RRF SD: 0.119231, Relative SD: 11.7554
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	180112M3_1	Standard	12.500	5.34	14971.105	12956.290	14.444	14.2	13.9	NO		NO	bb
2	2	180112M3_2	Standard	12.500	5.35	11016.060	12184.508	11.301	11.1	-10.9	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.35	11092.744	12302.788	11.271	11.1	-11.1	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.35	10221.989	11601.501	11.014	10.9	-13.1	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.35	12021.561	11472.781	13.098	12.9	3.3	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.35	11655.509	9229.500	15.786	15.6	24.5	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.35	9931.740	9708.751	12.787	12.6	0.9	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.35	10964.943	10886.688	12.590	12.4	-0.7	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.35	10008.643	10238.646	12.219	12.0	-3.6	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.35	10707.508	10904.102	12.275	12.1	-3.2	NO		NO	bb

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Compound name: 13C2-PFDoA
Response Factor: 0.575098
RRF SD: 0.102699, Relative SD: 17.8577
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	180112M3_1	Standard	12.500	5.62	11368.299	12956.290	10.968	19.1	52.6	NO		NO	bbX
2	2	180112M3_2	Standard	12.500	5.63	7004.138	12184.508	7.185	12.5	-0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.63	6625.417	12302.788	6.732	11.7	-6.4	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.63	5781.125	11601.501	6.229	10.8	-13.4	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.63	5662.008	11472.781	6.169	10.7	-14.2	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.63	7602.770	9229.500	10.297	17.9	43.2	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.63	6171.370	9708.751	7.946	13.8	10.5	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.63	5619.151	10886.688	6.452	11.2	-10.3	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.63	5621.278	10238.646	6.863	11.9	-4.5	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.63	5954.897	10904.102	6.826	11.9	-5.0	NO		NO	bb

Compound name: d3-N-MeFOSA
Response Factor: 0.130312
RRF SD: 0.0160189, Relative SD: 12.2928
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	180112M3_1	Standard	150.000	5.74	19479.512	12956.290	18.793	144.2	-3.9	NO		NO	bb
2	2	180112M3_2	Standard	150.000	5.75	17037.010	12184.508	17.478	134.1	-10.6	NO		NO	bb
3	3	180112M3_3	Standard	150.000	5.75	17039.148	12302.788	17.312	132.9	-11.4	NO		NO	bb
4	4	180112M3_4	Standard	150.000	5.75	16417.920	11601.501	17.689	135.7	-9.5	NO		NO	bb
5	5	180112M3_5	Standard	150.000	5.75	16425.873	11472.781	17.897	137.3	-8.4	NO		NO	bb
6	6	180112M3_6	Standard	150.000	5.75	18426.049	9229.500	24.955	191.5	27.7	NO		NO	bb
7	7	180112M3_7	Standard	150.000	5.75	17159.449	9708.751	22.093	169.5	13.0	NO		NO	bb
8	8	180112M3_8	Standard	150.000	5.75	17133.240	10886.688	19.672	151.0	0.6	NO		NO	bb
9	9	180112M3_9	Standard	150.000	5.75	16374.768	10238.646	19.991	153.4	2.3	NO		NO	bb
10	10	180112M3_10	Standard	150.000	5.75	17085.115	10904.102	19.586	150.3	0.2	NO		NO	bb

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Compound name: 13C2-PFTeDA
Response Factor: 0.305401
RRF SD: 0.0583357, Relative SD: 19.1013
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	180112M3_1	Standard	12.500	6.09	4505.702	12956.290	4.347	14.2	13.9	NO		NO	bb
2	2	180112M3_2	Standard	12.500	6.10	3152.279	12184.508	3.234	10.6	-15.3	NO		NO	bb
3	3	180112M3_3	Standard	12.500	6.09	2846.668	12302.788	2.892	9.5	-24.2	NO		NO	bb
4	4	180112M3_4	Standard	12.500	6.10	3355.262	11601.501	3.615	11.8	-5.3	NO		NO	bb
5	5	180112M3_5	Standard	12.500	6.10	2552.797	11472.781	2.781	9.1	-27.1	NO		NO	bb
6	6	180112M3_6	Standard	12.500	6.10	3714.001	9229.500	5.030	16.5	31.8	NO		NO	bb
7	7	180112M3_7	Standard	12.500	6.10	3143.137	9708.751	4.047	13.3	6.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	6.10	3747.025	10886.688	4.302	14.1	12.7	NO		NO	bb
9	9	180112M3_9	Standard	12.500	6.10	2882.788	10238.646	3.519	11.5	-7.8	NO		NO	bb
10	10	180112M3_10	Standard	12.500	6.10	3844.197	10904.102	4.407	14.4	15.4	NO		NO	bb

Compound name: d5-N-ETFOSA
Response Factor: 0.192072
RRF SD: 0.0267623, Relative SD: 13.9335
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	180112M3_1	Standard	150.000	6.13	25249.453	12956.290	24.360	126.8	-15.4	NO		NO	bb
2	2	180112M3_2	Standard	150.000	6.14	25479.150	12184.508	26.139	136.1	-9.3	NO		NO	bb
3	3	180112M3_3	Standard	150.000	6.14	27084.520	12302.788	27.519	143.3	-4.5	NO		NO	bb
4	4	180112M3_4	Standard	150.000	6.14	25391.936	11601.501	27.358	142.4	-5.0	NO		NO	bb
5	5	180112M3_5	Standard	150.000	6.14	25944.201	11472.781	28.267	147.2	-1.9	NO		NO	bb
6	6	180112M3_6	Standard	150.000	6.14	28099.900	9229.500	38.057	198.1	32.1	NO		NO	bb
7	7	180112M3_7	Standard	150.000	6.14	25857.027	9708.751	33.291	173.3	15.6	NO		NO	bb
8	8	180112M3_8	Standard	150.000	6.14	25402.877	10886.688	29.167	151.9	1.2	NO		NO	bb
9	9	180112M3_9	Standard	150.000	6.14	22820.889	10238.646	27.861	145.1	-3.3	NO		NO	bb
10	10	180112M3_10	Standard	150.000	6.14	22756.643	10904.102	26.087	135.8	-9.5	NO		NO	bb

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Compound name: 13C2-PFHxDA
Response Factor: 0.587315
RRF SD: 0.105071, Relative SD: 17.8901
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	180112M3_1	Standard	5.000	6.42	2293.444	12956.290	2.213	3.8	-24.7	NO		NO	bb
2	2	180112M3_2	Standard	5.000	6.43	2548.129	12184.508	2.614	4.5	-11.0	NO		NO	bb
3	3	180112M3_3	Standard	5.000	6.43	2480.352	12302.788	2.520	4.3	-14.2	NO		NO	bb
4	4	180112M3_4	Standard	5.000	6.43	2311.516	11601.501	2.491	4.2	-15.2	NO		NO	bb
5	5	180112M3_5	Standard	5.000	6.43	2625.801	11472.781	2.861	4.9	-2.6	NO		NO	bb
6	6	180112M3_6	Standard	5.000	6.43	2562.900	9229.500	3.471	5.9	18.2	NO		NO	bb
7	7	180112M3_7	Standard	5.000	6.43	2506.577	9708.751	3.227	5.5	9.9	NO		NO	bb
8	8	180112M3_8	Standard	5.000	6.43	2816.444	10886.688	3.234	5.5	10.1	NO		NO	bb
9	9	180112M3_9	Standard	5.000	6.43	3111.526	10238.646	3.799	6.5	29.4	NO		NO	bb
10	10	180112M3_10	Standard	5.000	6.43	4067.885	10904.102	4.663	7.9	58.8	NO		NO	bbX

Compound name: d7-N-MeFOSE
Response Factor: 0.162517
RRF SD: 0.0318797, Relative SD: 19.6162
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	180112M3_1	Standard	150.000	6.25	18945.594	12956.290	18.278	112.5	-25.0	NO		NO	bb
2	2	180112M3_2	Standard	150.000	6.26	20978.891	12184.508	21.522	132.4	-11.7	NO		NO	bb
3	3	180112M3_3	Standard	150.000	6.26	25214.846	12302.788	25.619	157.6	5.1	NO		NO	bb
4	4	180112M3_4	Standard	150.000	6.26	21106.998	11601.501	22.742	139.9	-6.7	NO		NO	bb
5	5	180112M3_5	Standard	150.000	6.26	18945.273	11472.781	20.642	127.0	-15.3	NO		NO	bb
6	6	180112M3_6	Standard	150.000	6.26	25396.109	9229.500	34.395	211.6	41.1	NO		NO	bb
7	7	180112M3_7	Standard	150.000	6.26	23674.258	9708.751	30.481	187.6	25.0	NO		NO	bb
8	8	180112M3_8	Standard	150.000	6.26	20831.691	10886.688	23.919	147.2	-1.9	NO		NO	bb
9	9	180112M3_9	Standard	150.000	6.26	19531.029	10238.646	23.845	146.7	-2.2	NO		NO	bb
10	10	180112M3_10	Standard	150.000	6.26	19482.115	10904.102	22.333	137.4	-8.4	NO		NO	bb

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Compound name: d9-N-EtFOSE
Response Factor: 0.178469
RRF SD: 0.0320366, Relative SD: 17.9507
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	180112M3_1	Standard	150.000	6.41	18867.035	12956.290	18.203	102.0	-32.0	NO		NO	bbX
2	2	180112M3_2	Standard	150.000	6.41	22759.293	12184.508	23.349	130.8	-12.8	NO		NO	bb
3	3	180112M3_3	Standard	150.000	6.41	22138.869	12302.788	22.494	126.0	-16.0	NO		NO	bb
4	4	180112M3_4	Standard	150.000	6.41	21459.803	11601.501	23.122	129.6	-13.6	NO		NO	bb
5	5	180112M3_5	Standard	150.000	6.41	25764.189	11472.781	28.071	157.3	4.9	NO		NO	bb
6	6	180112M3_6	Standard	150.000	6.41	27382.803	9229.500	37.086	207.8	38.5	NO		NO	bb
7	7	180112M3_7	Standard	150.000	6.41	24133.248	9708.751	31.072	174.1	16.1	NO		NO	bb
8	8	180112M3_8	Standard	150.000	6.41	22109.537	10886.688	25.386	142.2	-5.2	NO		NO	bb
9	9	180112M3_9	Standard	150.000	6.41	22244.219	10238.646	27.157	152.2	1.4	NO		NO	bb
10	10	180112M3_10	Standard	150.000	6.41	20236.264	10904.102	23.198	130.0	-13.3	NO		NO	bb

Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 54), 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	180112M3_1	Standard	12.500	1.33	10808.706	10808.706	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	1.33	9934.981	9934.981	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	1.33	10402.260	10402.260	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	1.33	9885.952	9885.952	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	1.33	10004.417	10004.417	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	1.33	11264.720	11264.720	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	1.33	10142.639	10142.639	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	1.33	10417.820	10417.820	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	1.33	10365.864	10365.864	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	1.33	10535.071	10535.071	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 55), 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	180112M3_1	Standard	12.500	3.07	12803.078	12803.078	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	3.08	13515.780	13515.780	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	3.08	12966.456	12966.456	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	3.08	11888.771	11888.771	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	3.08	12371.610	12371.610	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	3.08	13853.085	13853.085	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	3.08	13385.722	13385.722	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	3.08	12231.548	12231.548	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	3.08	12120.343	12120.343	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	3.08	11516.518	11516.518	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C3-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 56), 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	180112M3_1	Standard	12.500	3.84	3295.114	3295.114	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	3.85	3348.640	3348.640	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	3.85	3067.346	3067.346	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	3.85	3048.132	3048.132	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	3.85	2937.274	2937.274	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	3.85	3491.333	3491.333	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	3.85	3348.468	3348.468	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	3.85	3321.117	3321.117	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	3.85	2604.742	2604.742	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	3.85	2720.370	2720.370	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 57), 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	180112M3_1	Standard	12.500	4.21	12600.635	12600.635	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.22	11736.022	11736.022	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.22	11991.001	11991.001	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.22	12060.161	12060.161	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.22	12161.116	12161.116	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.22	11322.669	11322.669	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.22	11689.442	11689.442	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.22	10352.454	10352.454	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.22	10739.092	10739.092	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.22	9621.300	9621.300	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 58), 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	180112M3_1	Standard	12.500	4.64	13761.062	13761.062	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.65	12074.913	12074.913	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.65	12095.991	12095.991	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.65	12808.122	12808.122	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.65	12650.281	12650.281	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.65	13681.940	13681.940	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.65	13136.934	13136.934	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.65	11578.706	11578.706	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.66	10183.667	10183.667	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.66	11238.003	11238.003	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 59), 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	180112M3_1	Standard	12.500	4.73	2877.050	2877.050	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	4.74	3334.549	3334.549	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	4.74	3084.822	3084.822	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	4.74	3067.264	3067.264	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	4.74	3188.867	3188.867	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	4.74	3430.704	3430.704	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	4.74	3059.901	3059.901	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	4.74	3427.029	3427.029	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	4.74	2475.960	2475.960	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	4.74	2646.966	2646.966	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C6-PFDA
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	180112M3_1	Standard	12.500	5.02	10883.691	10883.691	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	5.02	6820.778	6820.778	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.02	8798.779	8798.779	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.02	6414.435	6414.435	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.03	7223.858	7223.858	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.02	7491.244	7491.244	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.03	6956.624	6956.624	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.03	7085.407	7085.407	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.03	7001.764	7001.764	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.03	6359.046	6359.046	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 0, Relative SD: 0
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	180112M3_1	Standard	12.500	5.34	12956.290	12956.290	12.500	12.5	0.0	NO		NO	bb
2	2	180112M3_2	Standard	12.500	5.35	12184.508	12184.508	12.500	12.5	0.0	NO		NO	bb
3	3	180112M3_3	Standard	12.500	5.35	12302.788	12302.788	12.500	12.5	0.0	NO		NO	bb
4	4	180112M3_4	Standard	12.500	5.35	11601.501	11601.501	12.500	12.5	0.0	NO		NO	bb
5	5	180112M3_5	Standard	12.500	5.35	11472.781	11472.781	12.500	12.5	0.0	NO		NO	bb
6	6	180112M3_6	Standard	12.500	5.35	9229.500	9229.500	12.500	12.5	0.0	NO		NO	bb
7	7	180112M3_7	Standard	12.500	5.35	9708.751	9708.751	12.500	12.5	0.0	NO		NO	bb
8	8	180112M3_8	Standard	12.500	5.35	10886.688	10886.688	12.500	12.5	0.0	NO		NO	bb
9	9	180112M3_9	Standard	12.500	5.35	10238.646	10238.646	12.500	12.5	0.0	NO		NO	bb
10	10	180112M3_10	Standard	12.500	5.35	10904.102	10904.102	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:05:37 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_1, Date: 12-Jan-2018, Time: 13:35:39, ID: ST180112M3-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

	#	Name	CoD	CoD Flag	%RSD
1	1	PFBA	0.9998	NO	
2	2	PFPeA	0.9995	NO	
3	3	PFBS	0.9996	NO	
4	4	PFHxA	0.9997	NO	
5	5	PFHpA	0.9985	NO	
6	6	L-PFHxS	0.9964	NO	
7	8	6:2 FTS	0.9989	NO	
8	9	L-PFOA	0.9991	NO	
9	11	PFHpS	0.9984	NO	
10	12	PFNA	0.9966	NO	
11	13	PFOSA	0.9995	NO	
12	14	L-PFOS	0.9960	NO	
13	16	PFDA	0.9948	NO	
14	17	8:2 FTS	0.9952	NO	
15	18	N-MeFOSAA	0.9974	NO	
16	19	N-EtFOSAA	0.9995	NO	
17	20	PFUdA	0.9996	NO	
18	21	PFDS	0.9925	NO	
19	22	PFDoA	0.9992	NO	
20	23	N-MeFOSA	0.9969	NO	
21	24	PFTrDA	0.9976	NO	
22	25	PFTeDA	0.9989	NO	
23	26	N-EtFOSA	0.9999	NO	
24	27	PFHxDA	0.9994	NO	
25	28	PFODA	0.9989	NO	
26	29	N-MeFOSE	0.9995	NO	
27	30	N-EtFOSE	0.9986	NO	
28	31	13C3-PFBA		NO	1.602
29	32	13C3-PFPeA		NO	4.732
30	33	13C3-PFBS		NO	5.890
31	34	13C2-PFHxA		NO	3.538

Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:05:37 Pacific Standard Time

Name: 180112M3_1, Date: 12-Jan-2018, Time: 13:35:39, ID: ST180112M3-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

	#	Name	CoD	CoD Flag	%RSD	
32	35	13C4-PFHpA		NO	4.249	
33	36	18O2-PFHxS		NO	6.715	
34	37	13C2-6:2 FTS		NO	45.380	Not used
35	38	13C2-PFOA		NO	6.921	
36	39	13C5-PFNA		NO	8.583	
37	40	13C8-PFOSA		NO	15.799	
38	41	13C8-PFOS		NO	9.445	
39	42	13C2-PFDA		NO	11.782	
40	43	13C2-8:2 FTS		NO	62.430	Not used
41	44	d3-N-MeFOSAA		NO	9.613	
42	45	d5-N-EtFOSAA		NO	12.989	
43	46	13C2-PFUdA		NO	11.755	
44	47	13C2-PFDoA		NO	17.858	
45	48	d3-N-MeFOSA		NO	12.293	
46	49	13C2-PFTeDA		NO	19.101	
47	50	d5-N-ETFOSA		NO	13.933	
48	51	13C2-PFHxDA		NO	17.890	
49	52	d7-N-MeFOSE		NO	19.616	
50	53	d9-N-EtFOSE		NO	17.951	
51	54	13C4-PFBA		NO	0.000	
52	55	13C5-PFHxA		NO	0.000	
53	56	13C3-PFHxS		NO	0.000	
54	57	13C8-PFOA		NO	0.000	
55	58	13C9-PFNA		NO	0.000	
56	59	13C4-PFOS		NO	0.000	
57	60	13C6-PFDA		NO	0.000	
58	61	13C7-PFUdA		NO	0.000	

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, January 13, 2018 17:17:14 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:17:36 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
1	180112M3_1	ST180112M3-1 PFC CS-2 18A0806	12-Jan-18	13:35:39
2	180112M3_2	ST180112M3-2 PFC CS-1 18A0807	12-Jan-18	13:47:17
3	180112M3_3	ST180112M3-3 PFC CS0 18A0808	12-Jan-18	13:58:52
4	180112M3_4	ST180112M3-4 PFC CS1 18A0809	12-Jan-18	14:10:20
5	180112M3_5	ST180112M3-5 PFC CS2 18A0810	12-Jan-18	14:21:50
6	180112M3_6	ST180112M3-6 PFC CS3 18A0811	12-Jan-18	14:33:24
7	180112M3_7	ST180112M3-7 PFC CS4 18A0812	12-Jan-18	14:44:53
8	180112M3_8	ST180112M3-8 PFC CS5 18A0813	12-Jan-18	14:56:24
9	180112M3_9	ST180112M3-9 PFC CS6 18A0814	12-Jan-18	15:07:57
10	180112M3_10	ST180112M3-10 PFC CS7 18A0815	12-Jan-18	15:19:28
11	180112M3_11	IPA	12-Jan-18	15:30:56
12	180112M3_12	ICV180112M3-1 PFC ICV 18A0805	12-Jan-18	15:42:29
13	180112M3_13	IPA	12-Jan-18	15:54:01
14	180112M3_14	B7L0218-BS1 OPR 0.25	12-Jan-18	16:05:31
15	180112M3_15	B7L0218-BSD1 LCSD 0.25	12-Jan-18	16:17:07
16	180112M3_16	B7L0218-BLK1 Method Blank 0.25	12-Jan-18	16:28:41
17	180112M3_17	B7L0188-MS1 Matrix Spike 0.24896	12-Jan-18	16:40:14
18	180112M3_18	B7L0188-MSD1 Matrix Spike Dup 0.23749	12-Jan-18	16:51:42
19	180112M3_19	1701970-01 FT-PZ458S-20171214 0.25998	12-Jan-18	17:03:12
20	180112M3_20	1701970-02 FT-PZ458I-20171214 0.25291	12-Jan-18	17:15:53
21	180112M3_21	1701970-03 SA-MW132S-20171214 0.25764	12-Jan-18	17:27:26
22	180112M3_22	1701970-04 SA-MW132S-FRB-20171214 0.2...	12-Jan-18	17:39:06
23	180112M3_23	1701970-05 SA-MW132I-20171214 0.23441	12-Jan-18	17:52:40
24	180112M3_24	1701970-06 FT-PZ459S-20171214 0.25318	12-Jan-18	18:04:06
25	180112M3_25	1701970-07 FT-PZ459I-20171214 0.2457	12-Jan-18	18:15:15
26	180112M3_26	1701970-08 FT-PZ463S-20171214 0.25736	12-Jan-18	18:26:25
27	180112M3_27	1701970-09 FT-PZ463I-20171214 0.26165	12-Jan-18	18:37:36
28	180112M3_28	1701970-10 CV-TANK-20171214 0.25889	12-Jan-18	18:48:47
29	180112M3_29	IPA	12-Jan-18	18:59:58
30	180112M3_30	ST180112M3-11 PFC CS3 18A0811	12-Jan-18	19:11:09
31	180112M3_31	IPA	12-Jan-18	19:22:19

Dataset: Untitled

Last Altered: Saturday, January 13, 2018 17:17:14 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:17:36 Pacific Standard Time

Compound name: PFBA

	Name	ID	Acq.Date	Acq.Time
32	180112M3_34	1702013-01 WI-CV-1RW14-1217 0.26251	12-Jan-18	19:33:30
33	180112M3_35	1702013-02 WI-CV-1FB14-1217 0.25636	12-Jan-18	19:44:40
34	180112M3_36	1701997-01 MTBE_8323 0.25626	12-Jan-18	19:55:51
35	180112M3_37	1701998-01 MTBE_8322 0.25742	12-Jan-18	20:07:04
36	180112M3_38	1701998-02 MTBE_8322 DUP 0.26171	12-Jan-18	20:18:13
37	180112M3_39	1701998-03 FIELD BLANK 0.25674	12-Jan-18	20:29:24
38	180112M3_40	1701954-01 WURTS_MSPTS_Eff-171214 0.4...	12-Jan-18	20:40:34
39	180112M3_41	1701954-02 WURTS_Outfall002-171214 0.49...	12-Jan-18	20:51:45
40	180112M3_42	IPA	12-Jan-18	21:02:56
41	180112M3_43	ST180112M3-12 PFC CS3 18A0811	12-Jan-18	21:14:07
42	180112M3_44	IPA	12-Jan-18	21:25:18
43	180112M3_45	1702012-01 GW1721171218RAP 0.26166	12-Jan-18	21:36:28
44	180112M3_46	1702012-02 GW2731171218RAP 0.26149	12-Jan-18	21:47:39
45	180112M3_47	1702012-03 GW3741171218RAP 0.25614	12-Jan-18	21:58:50
46	180112M3_48	1702012-04 GW4751171219RAP 0.26075	12-Jan-18	22:10:00
47	180112M3_49	1702012-05 GW5761171219RAP 0.24934	12-Jan-18	22:21:11
48	180112M3_50	1702012-06 GW1115171219RAP 0.26005	12-Jan-18	22:32:21
49	180112M3_51	1702012-07 GW2125171220RAP 0.2545	12-Jan-18	22:43:32
50	180112M3_52	1702012-08 GW3135171220RAP 0.24266	12-Jan-18	22:54:43
51	180112M3_53	1702012-09 GW4145171220RAP 0.25823	12-Jan-18	23:05:54
52	180112M3_54	1702012-10 GW5155171220RAP 0.24026	12-Jan-18	23:17:05
53	180112M3_55	B7L0208-BS1 OPR 0.25	12-Jan-18	23:28:18
54	180112M3_56	B7L0208-BLK1 Method Blank 0.25	12-Jan-18	23:39:28
55	180112M3_57	IPA	12-Jan-18	23:50:39
56	180112M3_58	ST180112M3-13 PFC CS3 18A0811	13-Jan-18	00:01:50
57	180112M3_59	IPA	13-Jan-18	00:13:00
58	180112M3_60	B7L0208-BS1 OPR 0.25		
59	180112M3_61	B7L0208-BLK1 Method Blank 0.25		

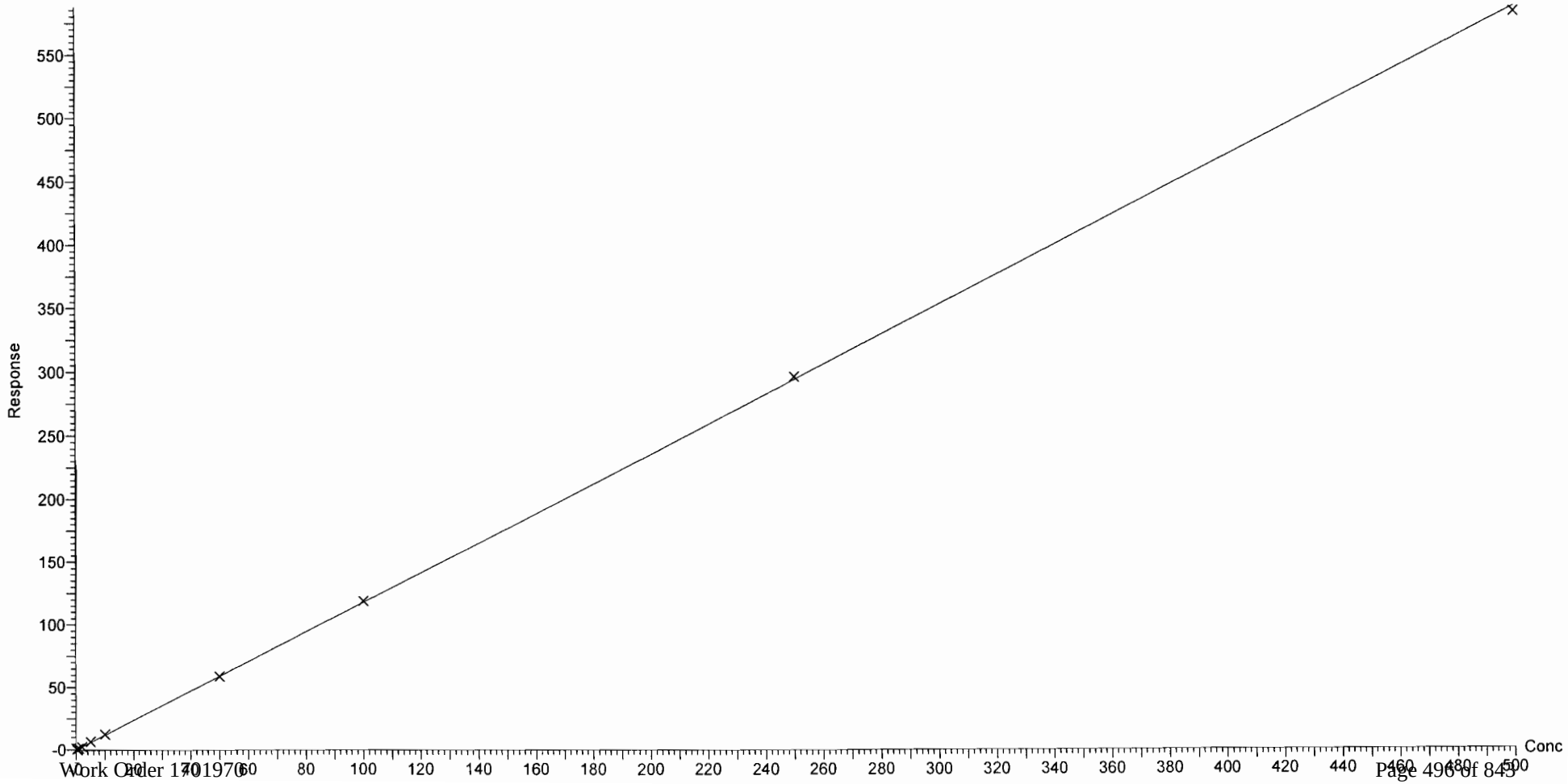
Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

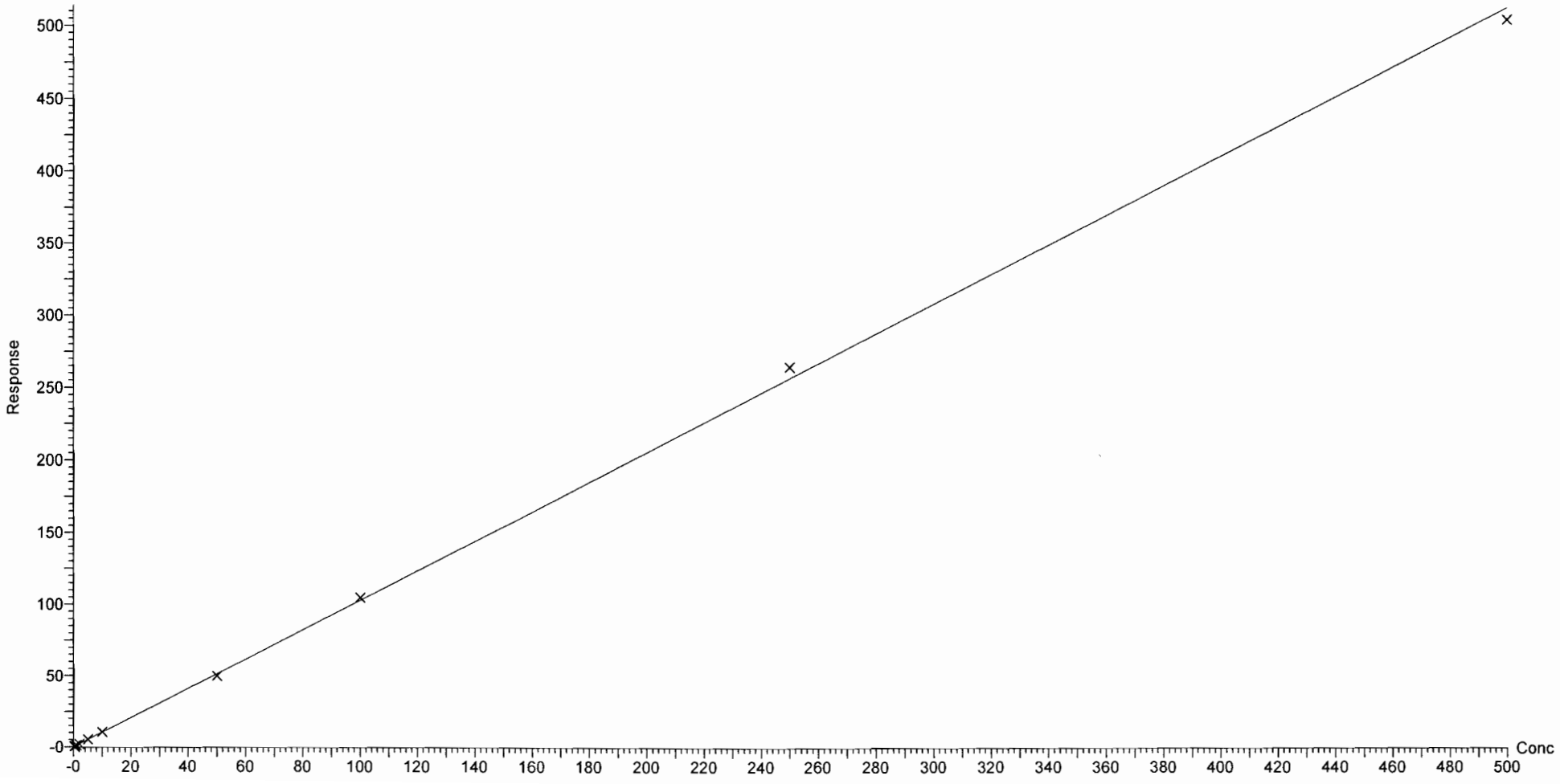
Compound name: PFBA
Correlation coefficient: r = 0.999924, r^2 = 0.999848
Calibration curve: 1.17516 * x + 0.0248022
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

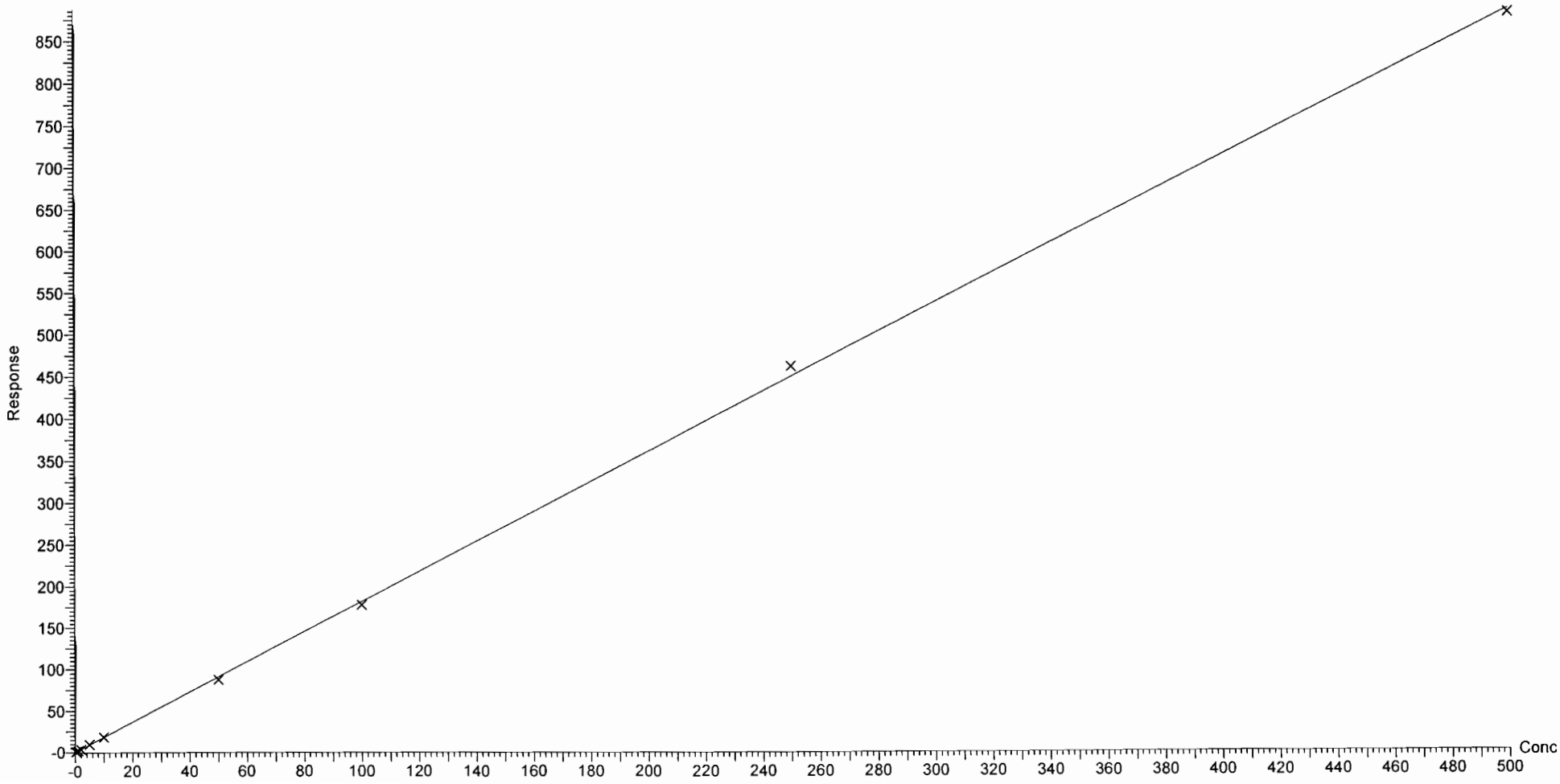
Compound name: PFPeA
Correlation coefficient: r = 0.999754, r^2 = 0.999508
Calibration curve: 1.02744 * x + 0.0410199
Response type: Internal Std (Ref 32), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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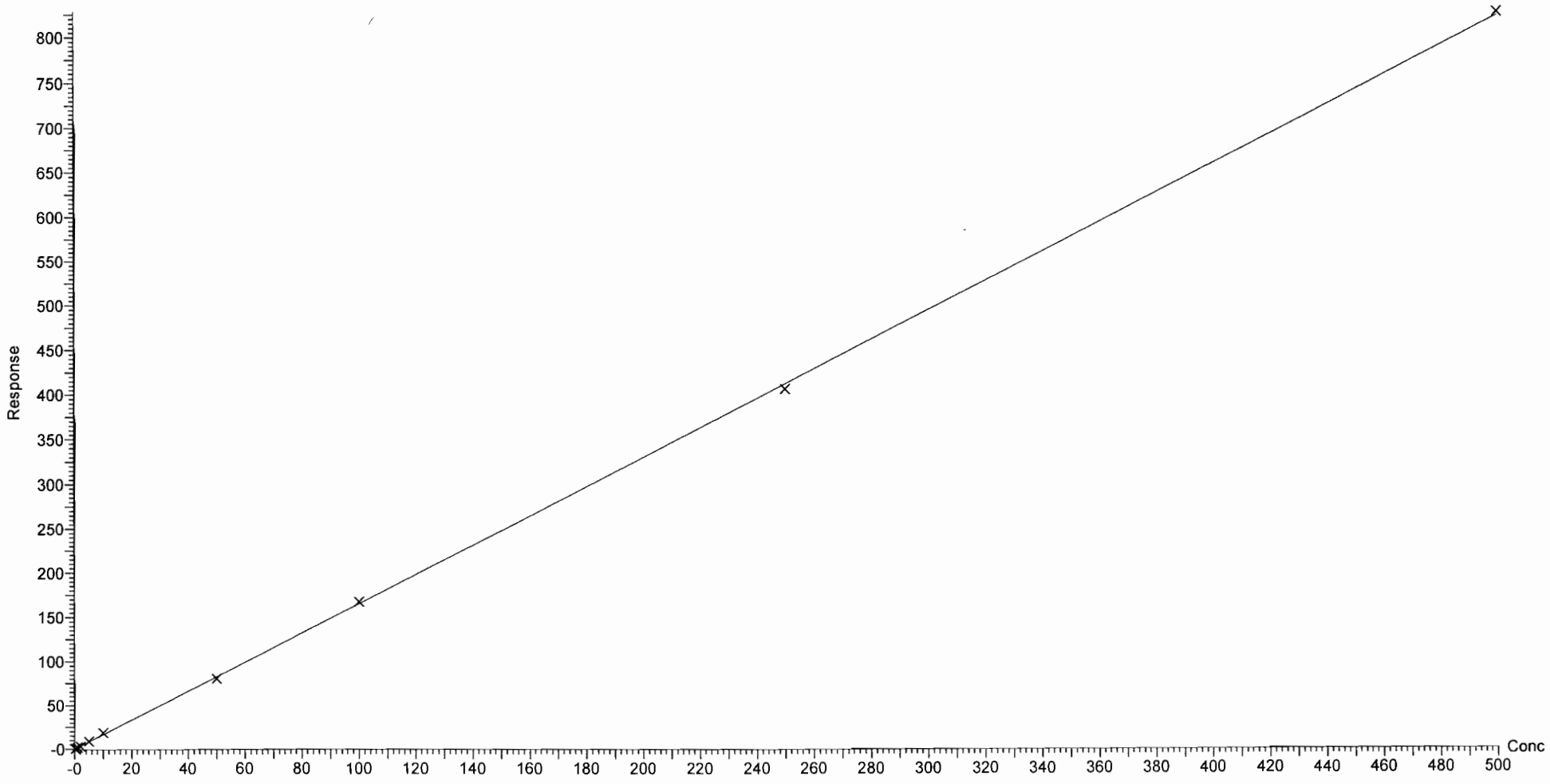
Compound name: PFBS
Coefficient of Determination: R^2 = 0.999626
Calibration curve: -0.000101257 * x^2 + 1.82514 * x + 0.0110843
Response type: Internal Std (Ref 33), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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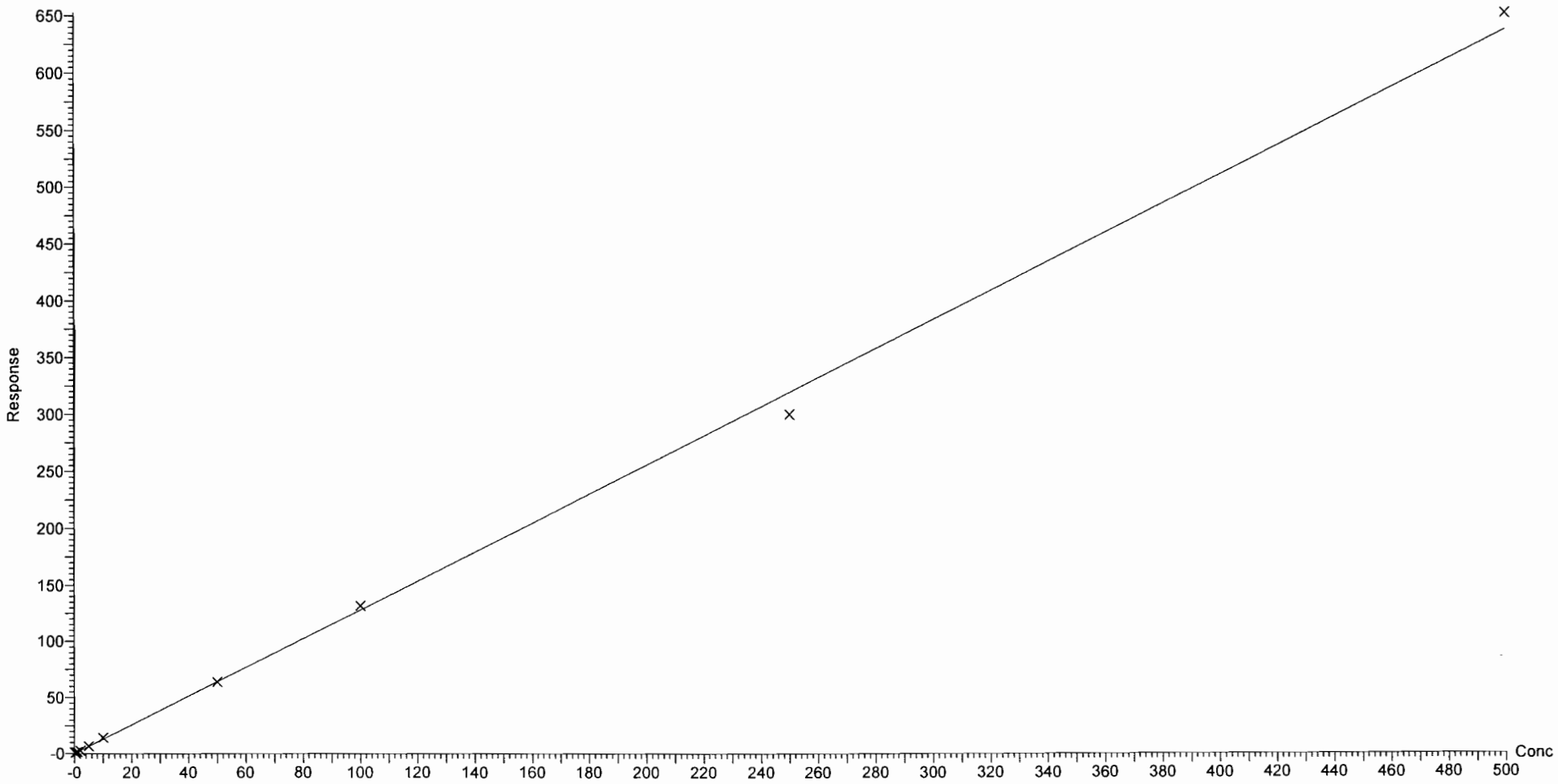
Compound name: PFHxA
Correlation coefficient: r = 0.999857, r^2 = 0.999714
Calibration curve: 1.64937 * x + 0.101208
Response type: Internal Std (Ref 34), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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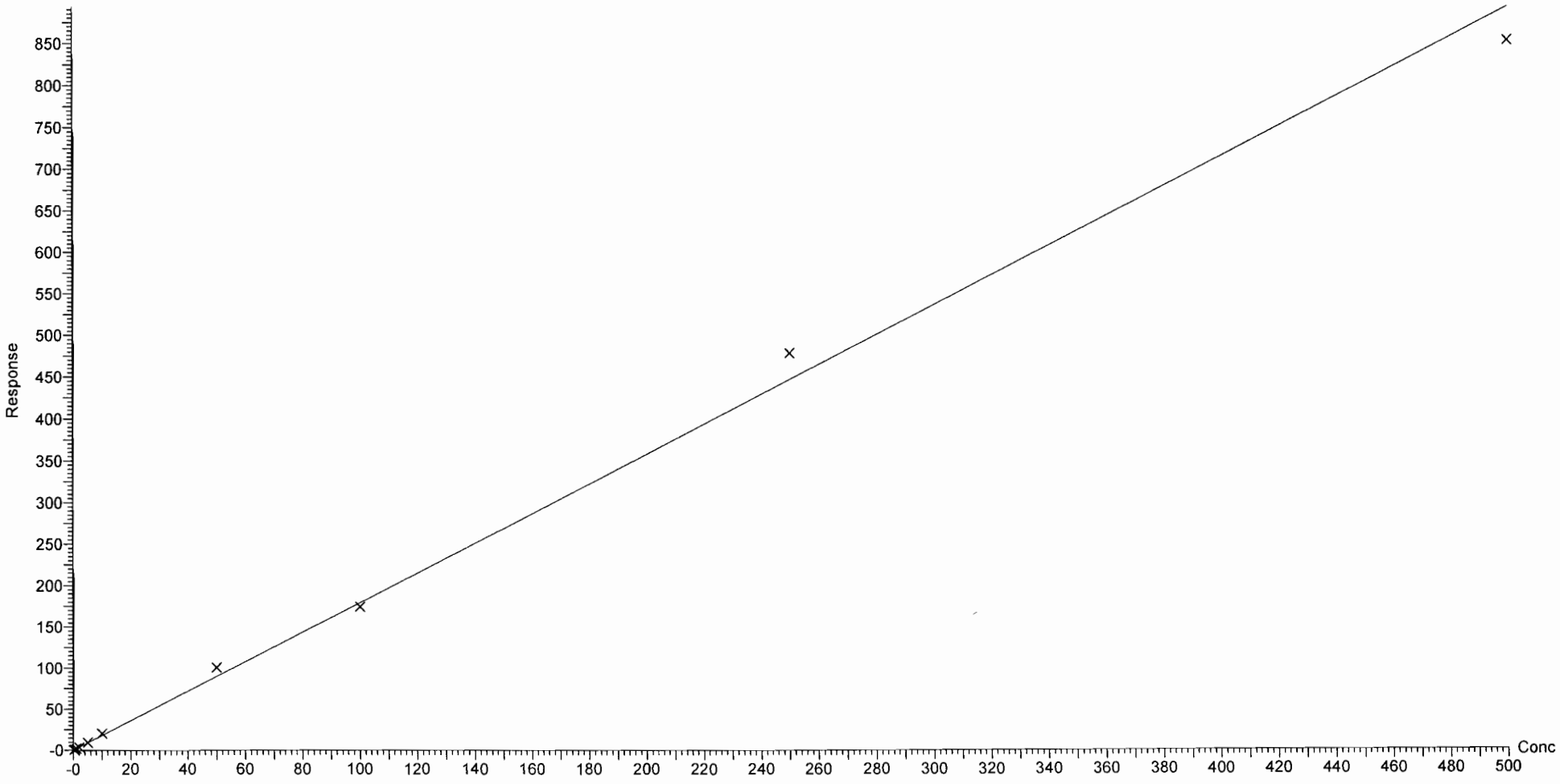
Compound name: PFHpA
Correlation coefficient: r = 0.999255, r^2 = 0.998511
Calibration curve: 1.27635 * x + 0.0384147
Response type: Internal Std (Ref 35), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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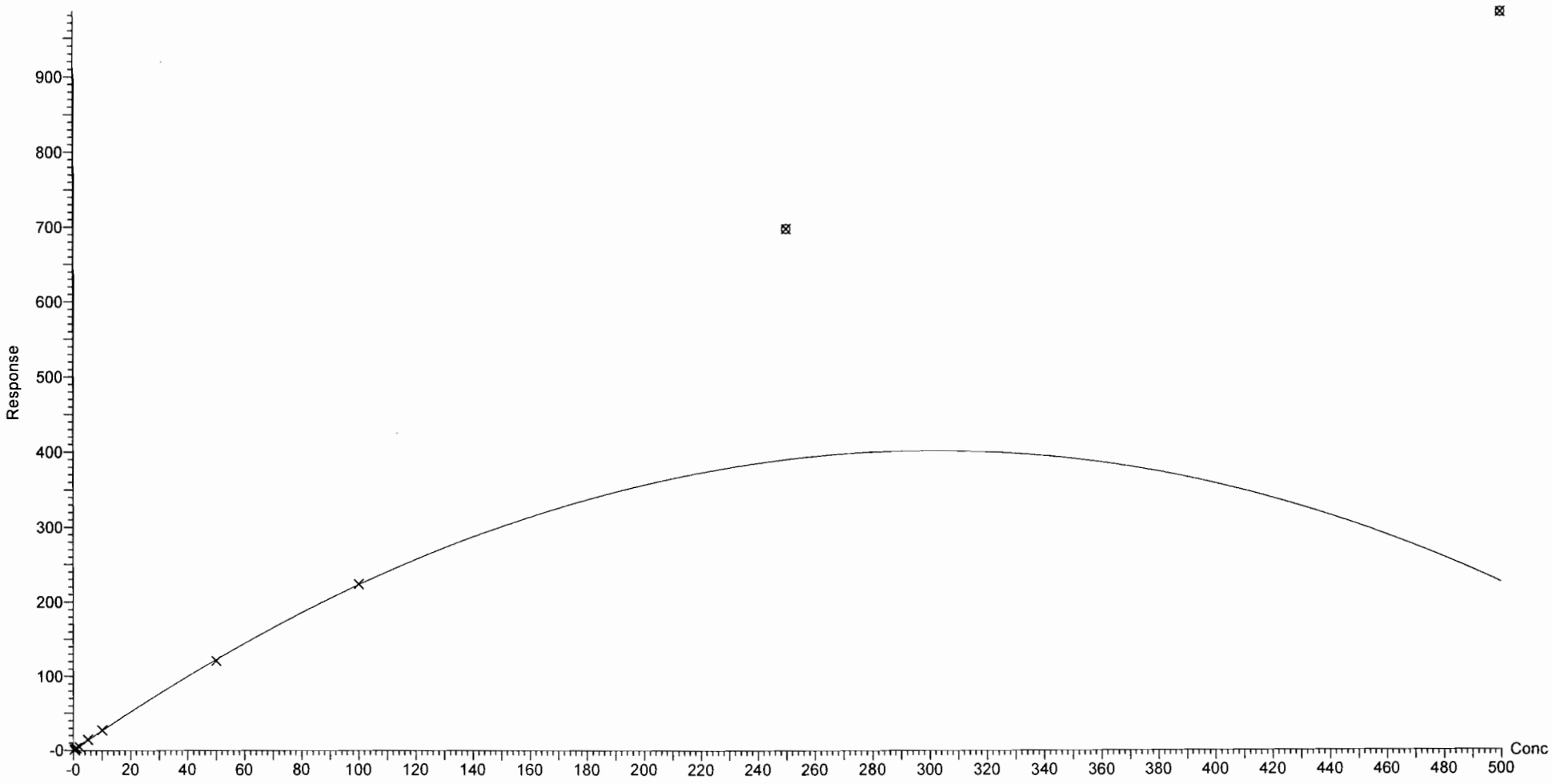
Compound name: L-PFHxS
Correlation coefficient: r = 0.998186, r^2 = 0.996375
Calibration curve: 1.78605 * x + -0.00897311
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

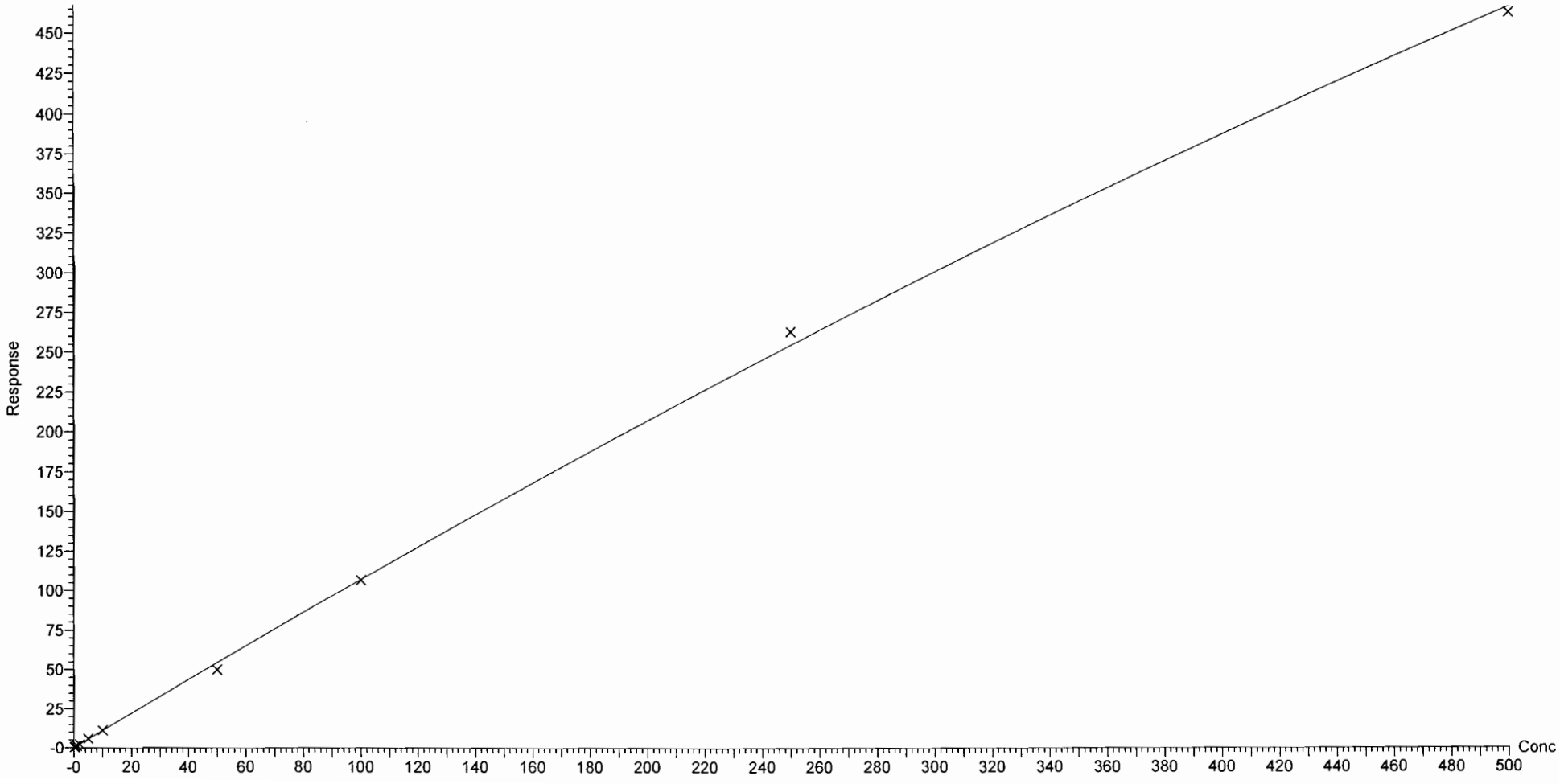
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998923
Calibration curve: -0.00443937 * x^2 + 2.6695 * x + 0.0716636
Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

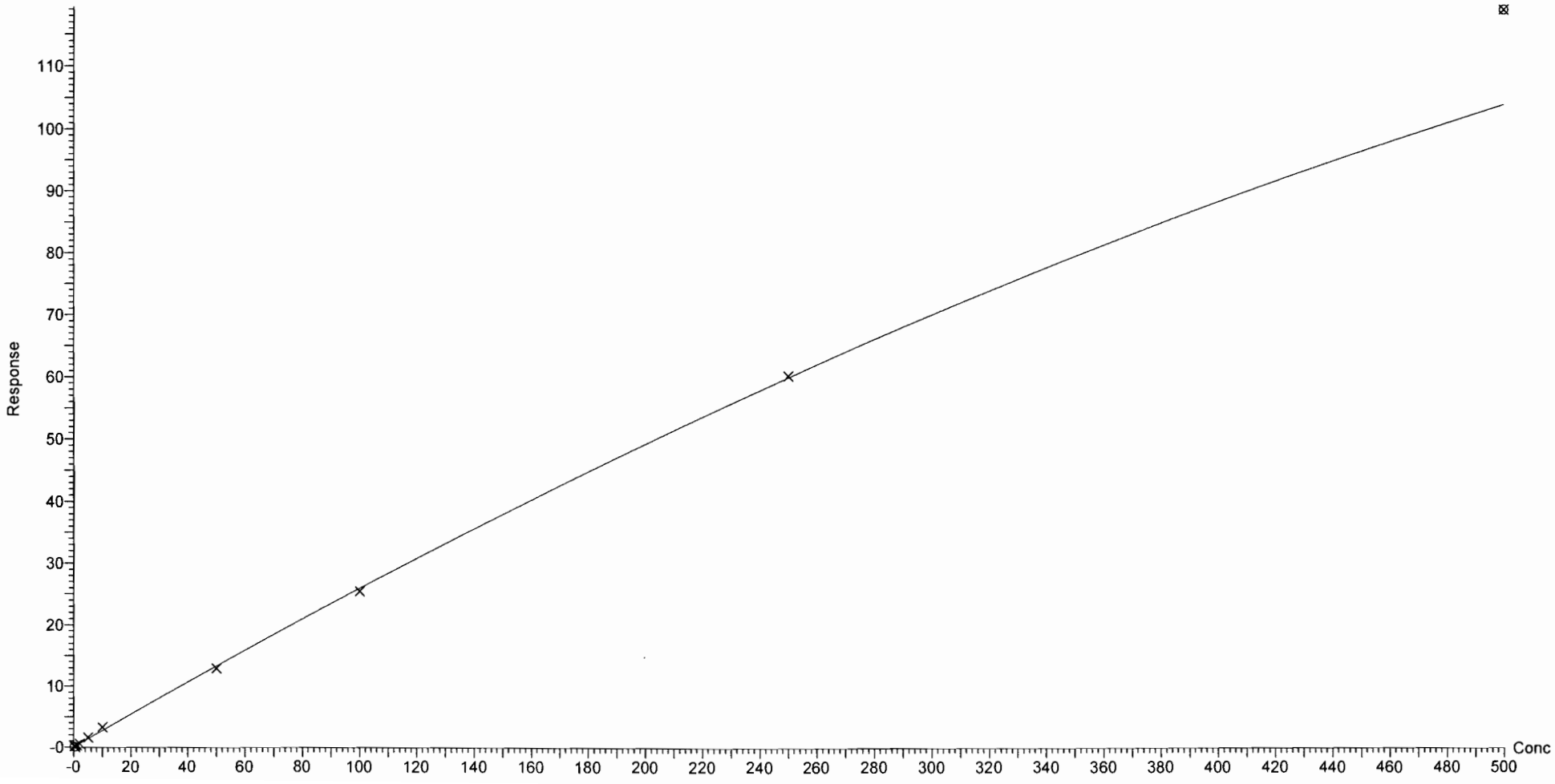
Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999108
Calibration curve: -0.000333792 * x^2 + 1.10149 * x + 0.0577215
Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

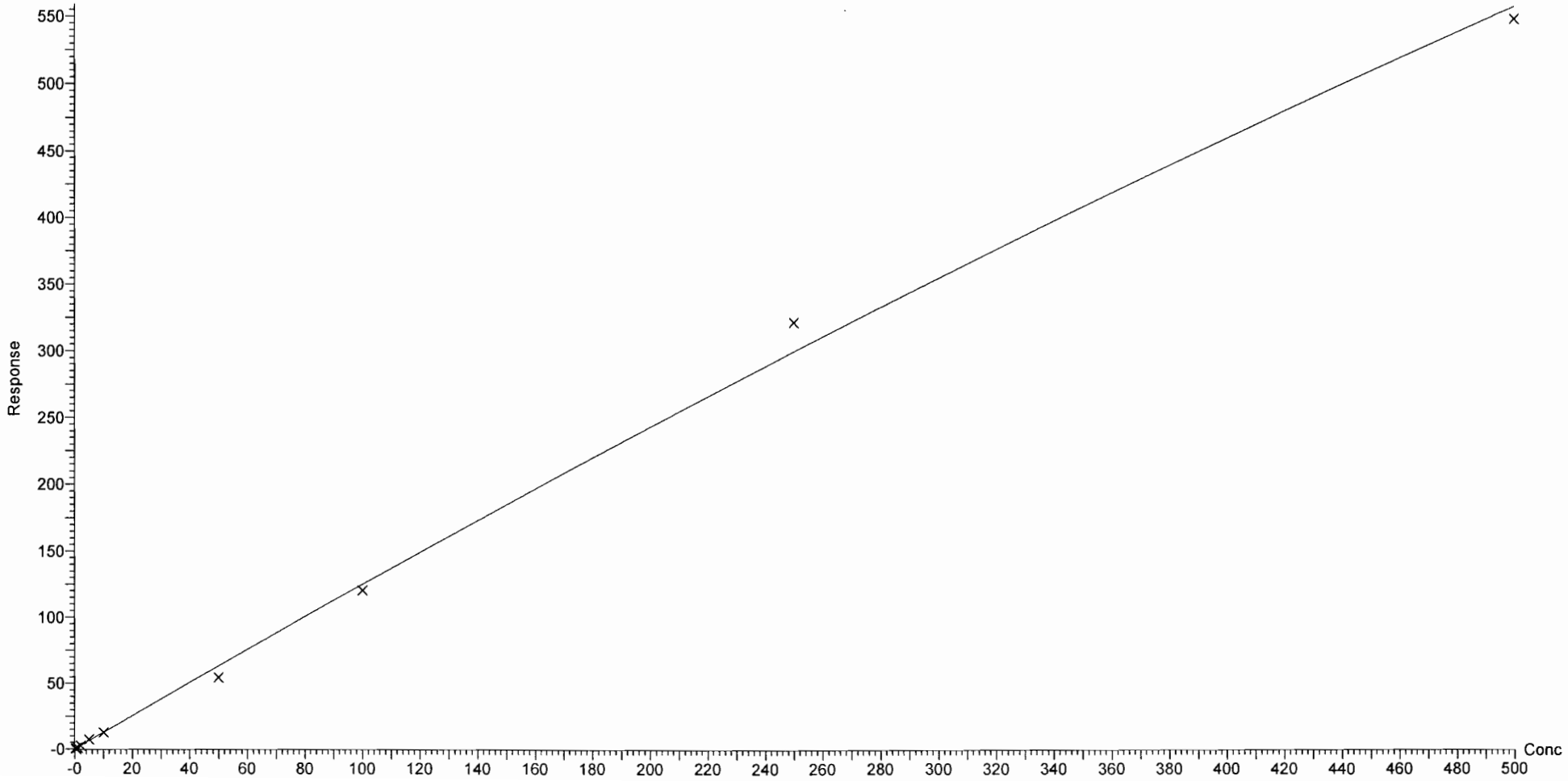
Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998378
Calibration curve: -0.00012777 * x^2 + 0.272 * x + 0.0146586
Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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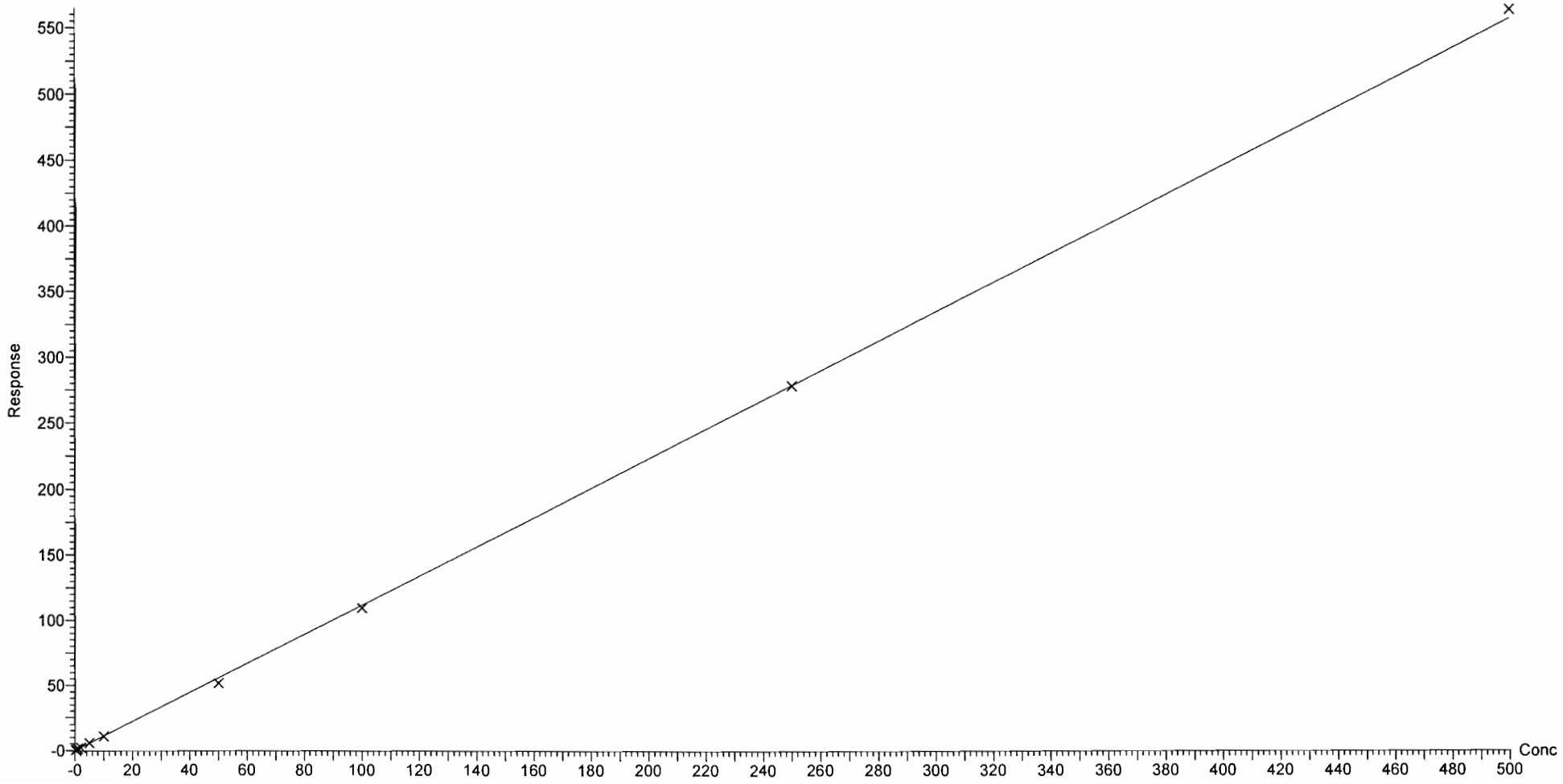
Compound name: PFNA
Coefficient of Determination: R^2 = 0.996648
Calibration curve: -0.00033072 * x^2 + 1.28247 * x + 0.0192318
Response type: Internal Std (Ref 39), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

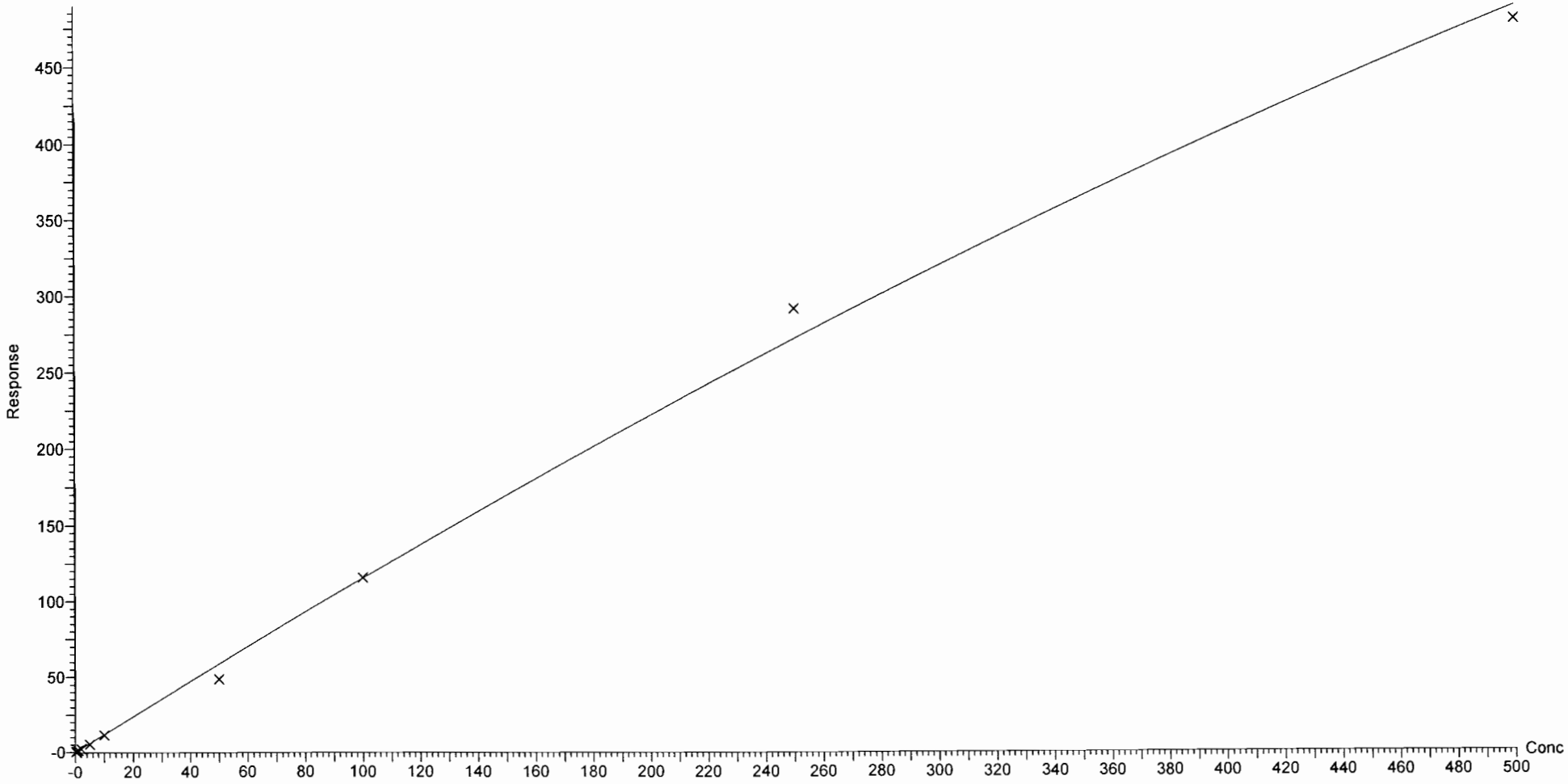
Compound name: PFOSA
Correlation coefficient: r = 0.999756, r^2 = 0.999511
Calibration curve: 1.11606 * x + -0.0204597
Response type: Internal Std (Ref 40), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

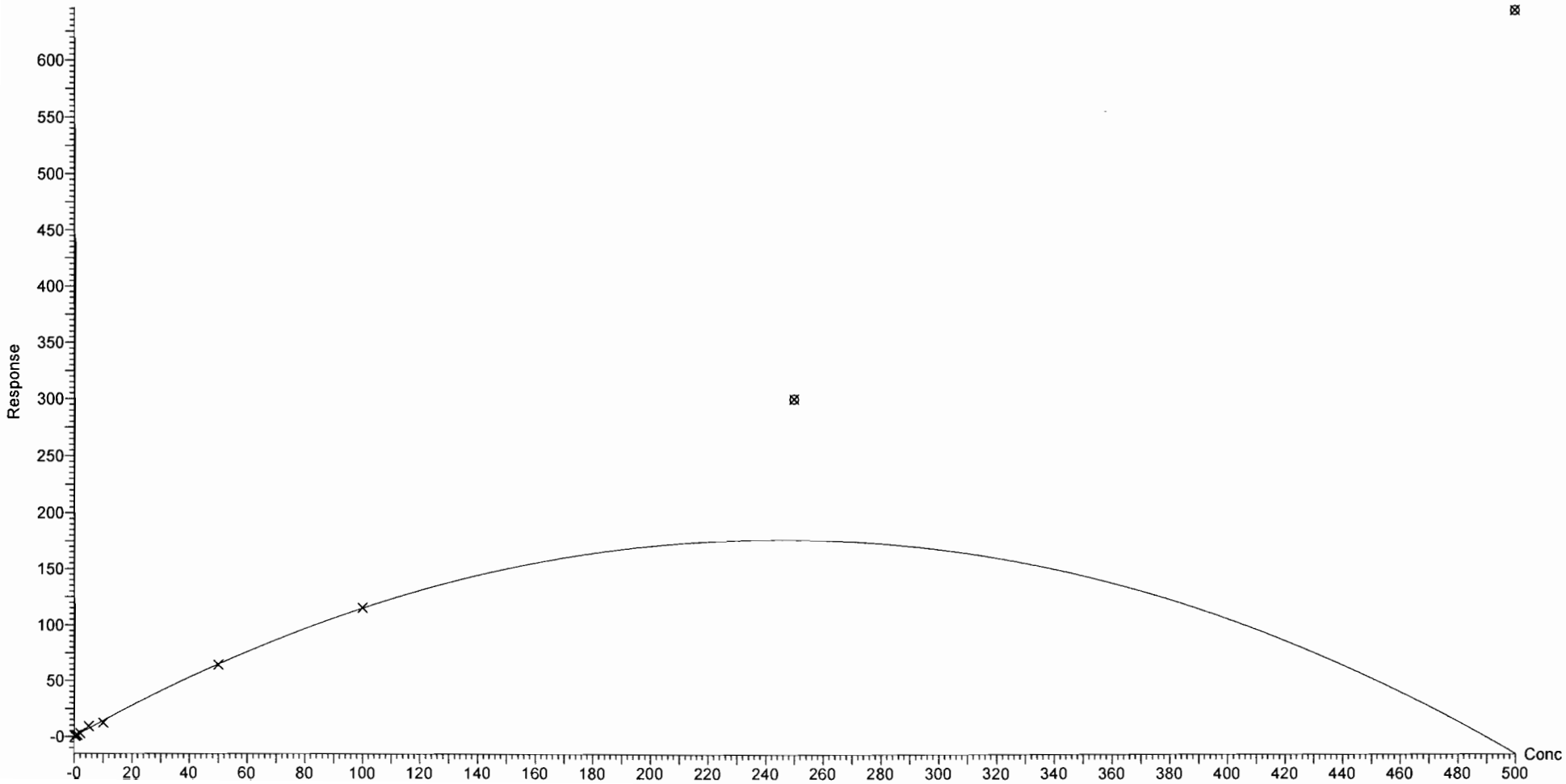
Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.996021
Calibration curve: -0.000432795 * x^2 + 1.1957 * x + -0.10005
Response type: Internal Std (Ref 41), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

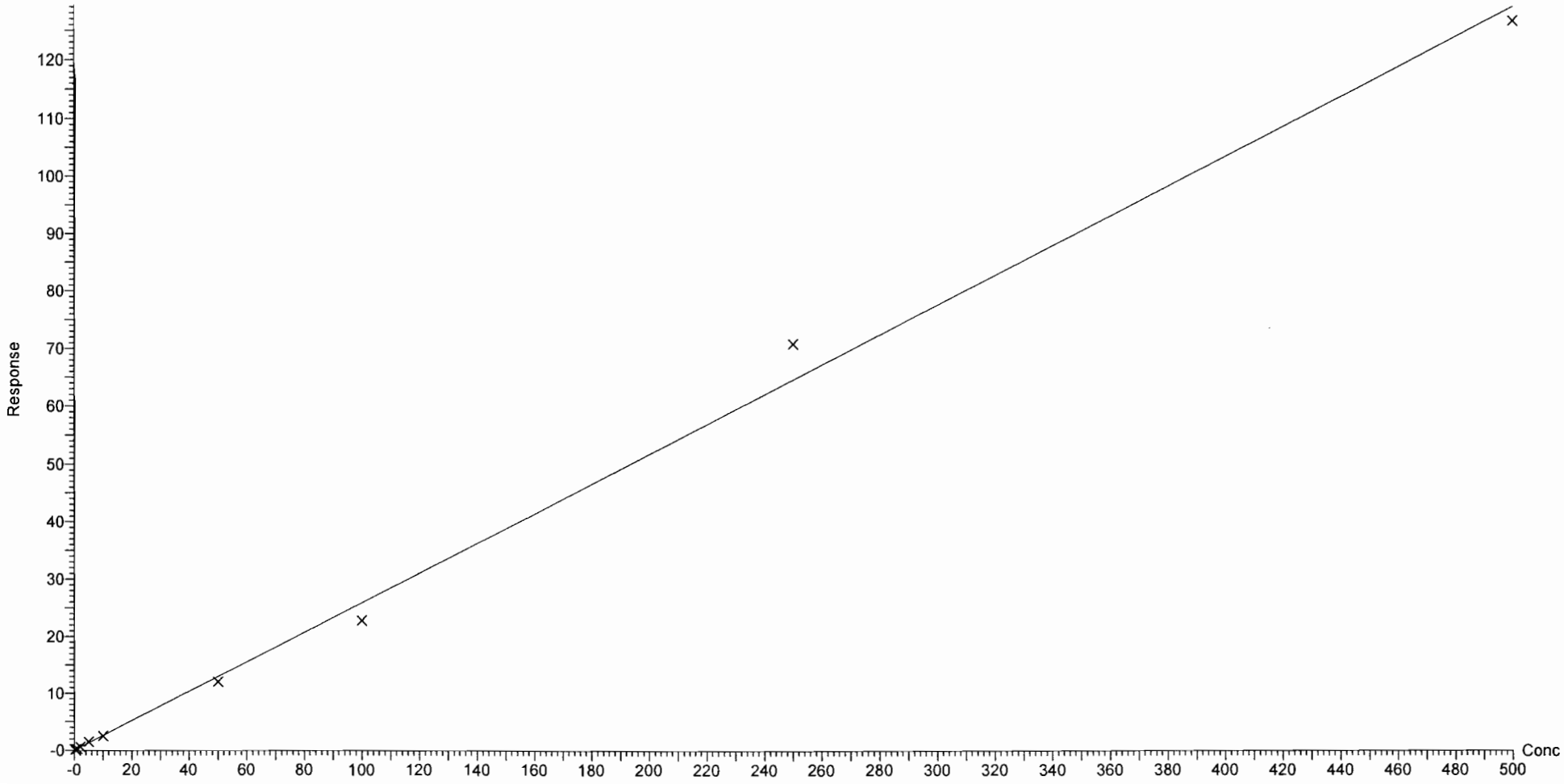
Compound name: PFDA
Coefficient of Determination: R^2 = 0.994815
Calibration curve: -0.00294809 * x^2 + 1.44414 * x + 0.0161932
Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

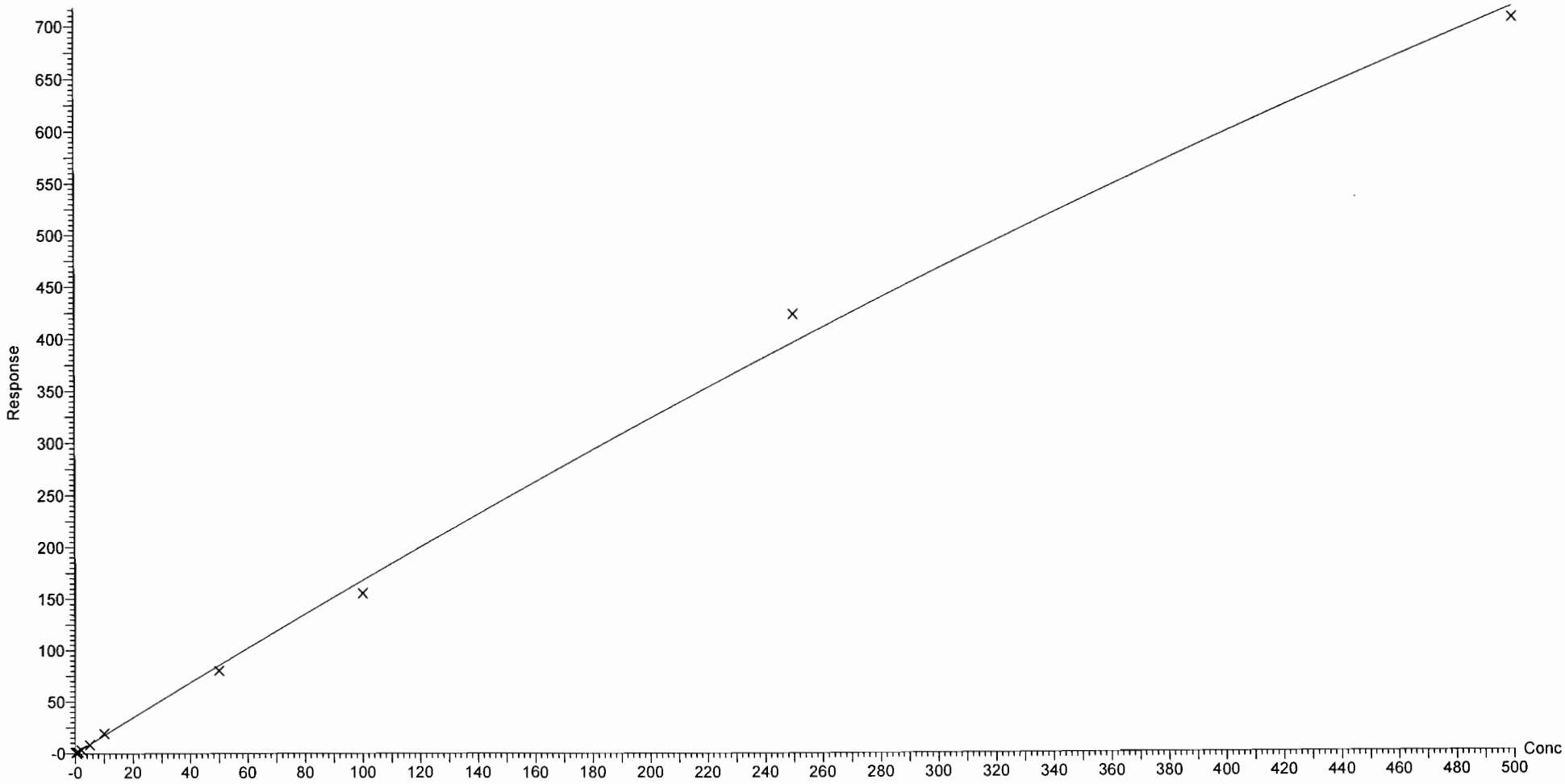
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.995197
Calibration curve: 4.82428e-007 * x^2 + 0.258414 * x + 0.00992173
Response type: Internal Std (Ref 42), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

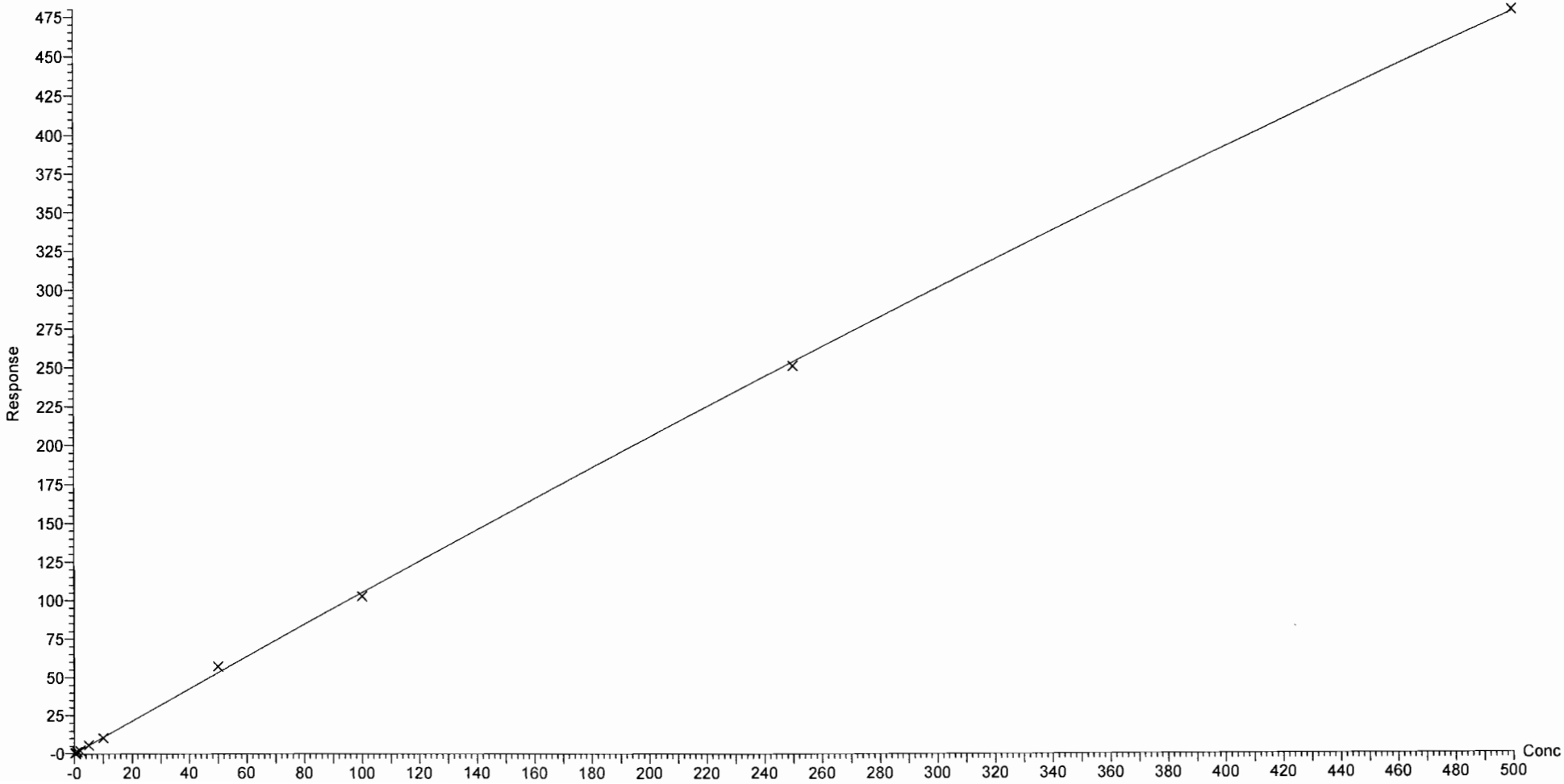
Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.997364
Calibration curve: -0.00060034 * x^2 + 1.73492 * x + -0.104075
Response type: Internal Std (Ref 44), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

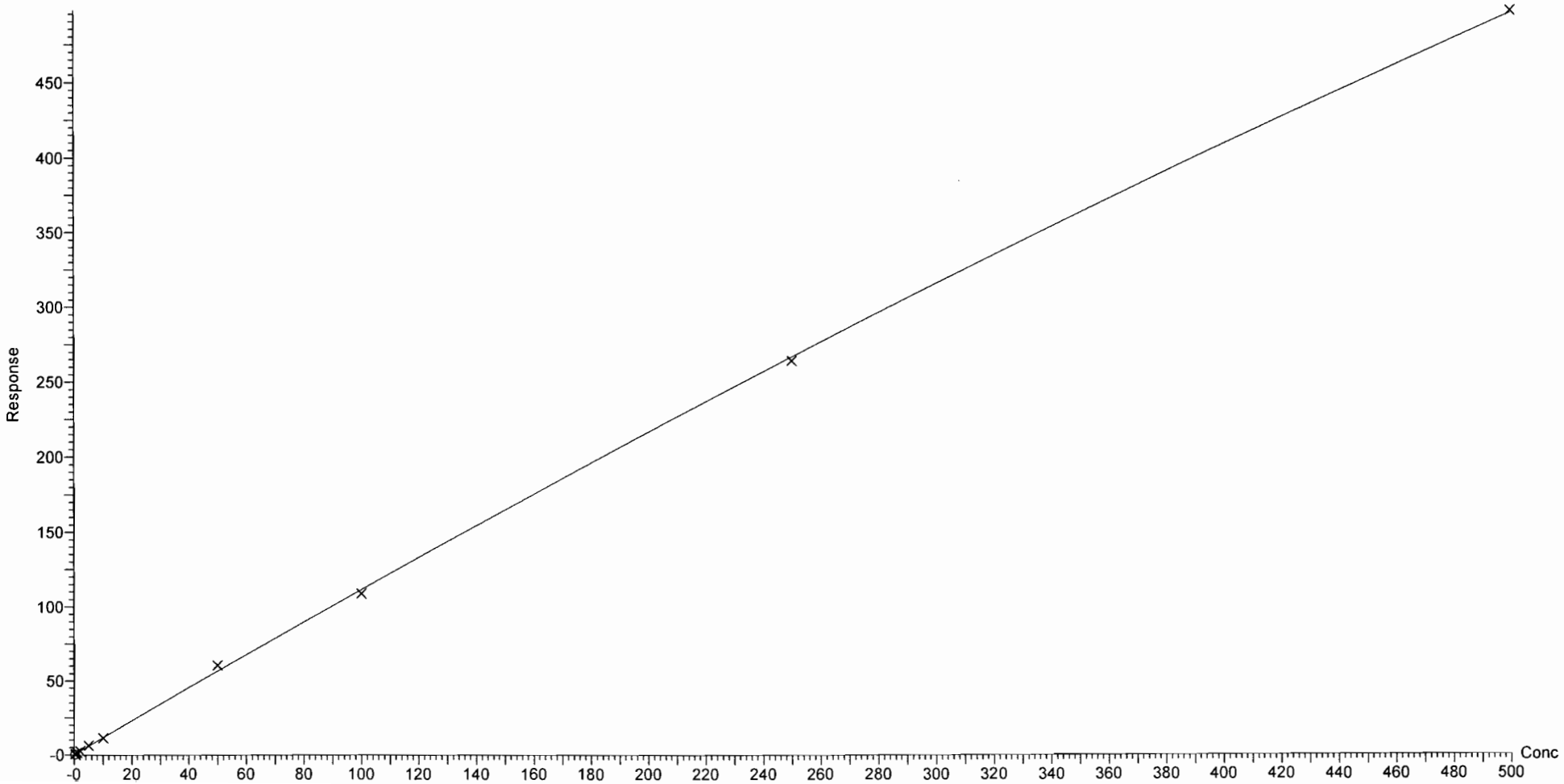
Compound name: N-EtFOSAA
Coefficient of Determination: R^2 = 0.999492
Calibration curve: -0.000230523 * x^2 + 1.07268 * x + -0.0254089
Response type: Internal Std (Ref 45), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

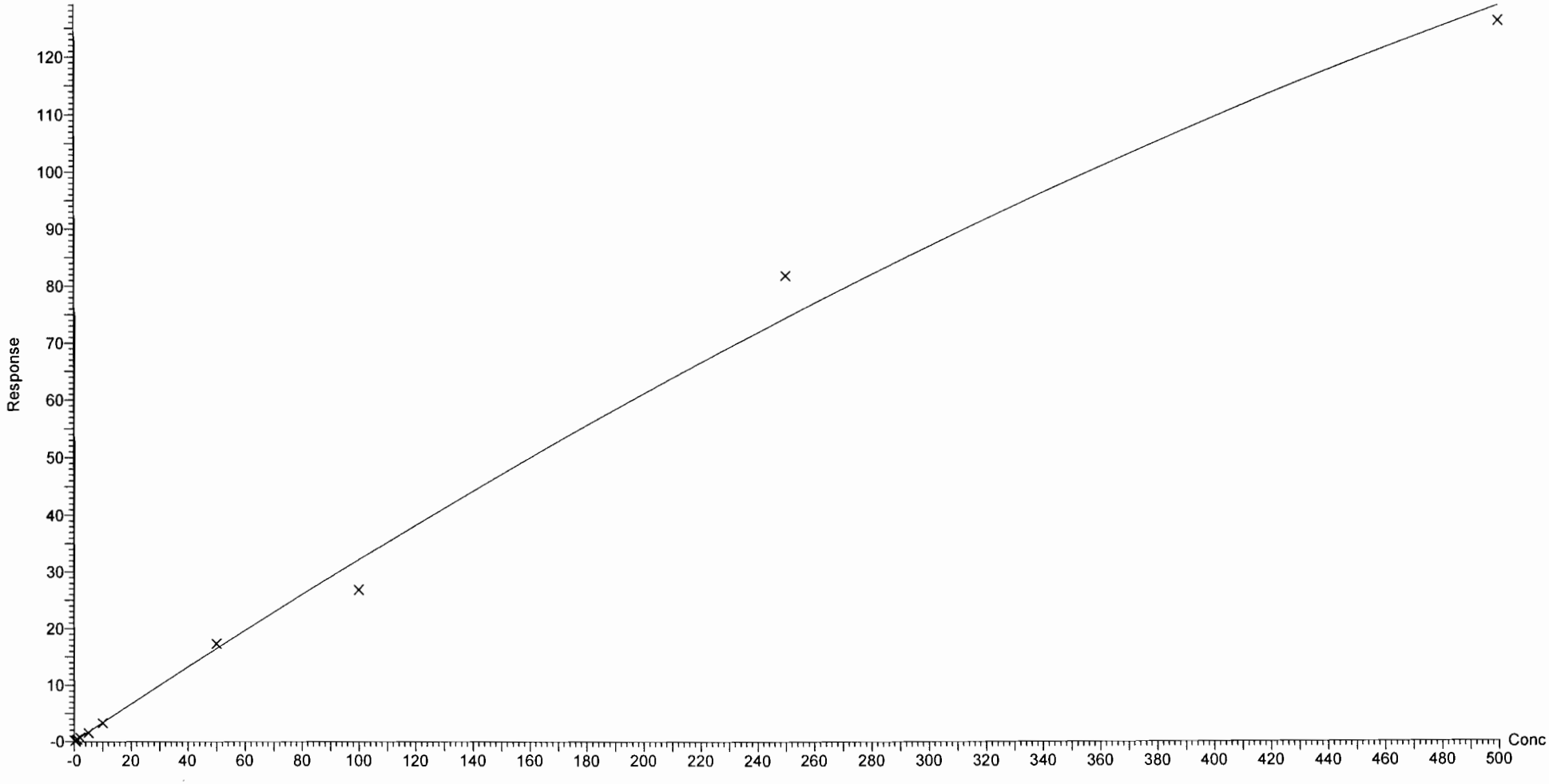
Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999551
Calibration curve: -0.000301547 * x^2 + 1.14216 * x + 0.13346
Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

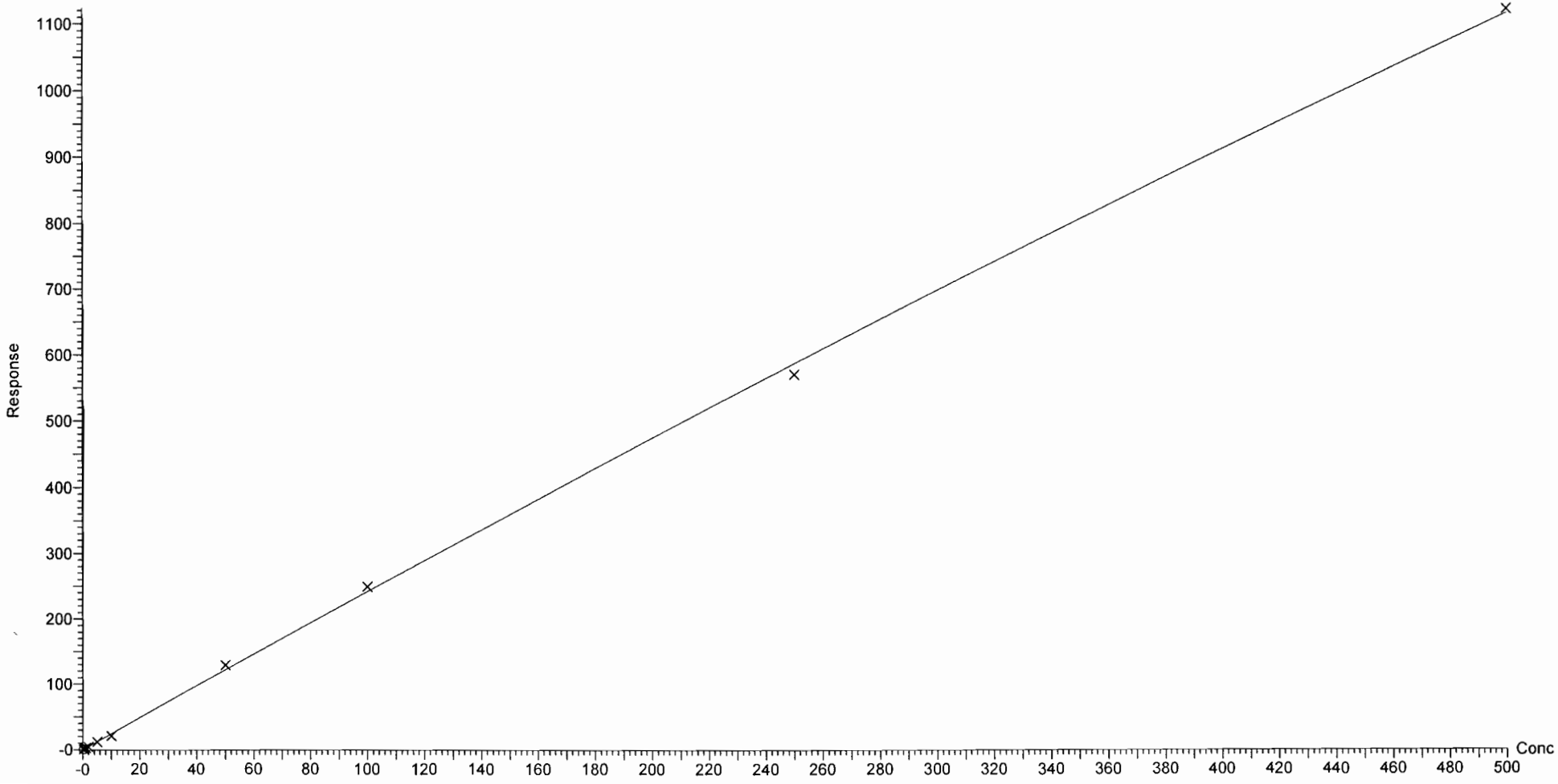
Compound name: PFDS
Coefficient of Determination: R^2 = 0.992543
Calibration curve: -0.000158131 * x^2 + 0.337303 * x + -0.0184942
Response type: Internal Std (Ref 46), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

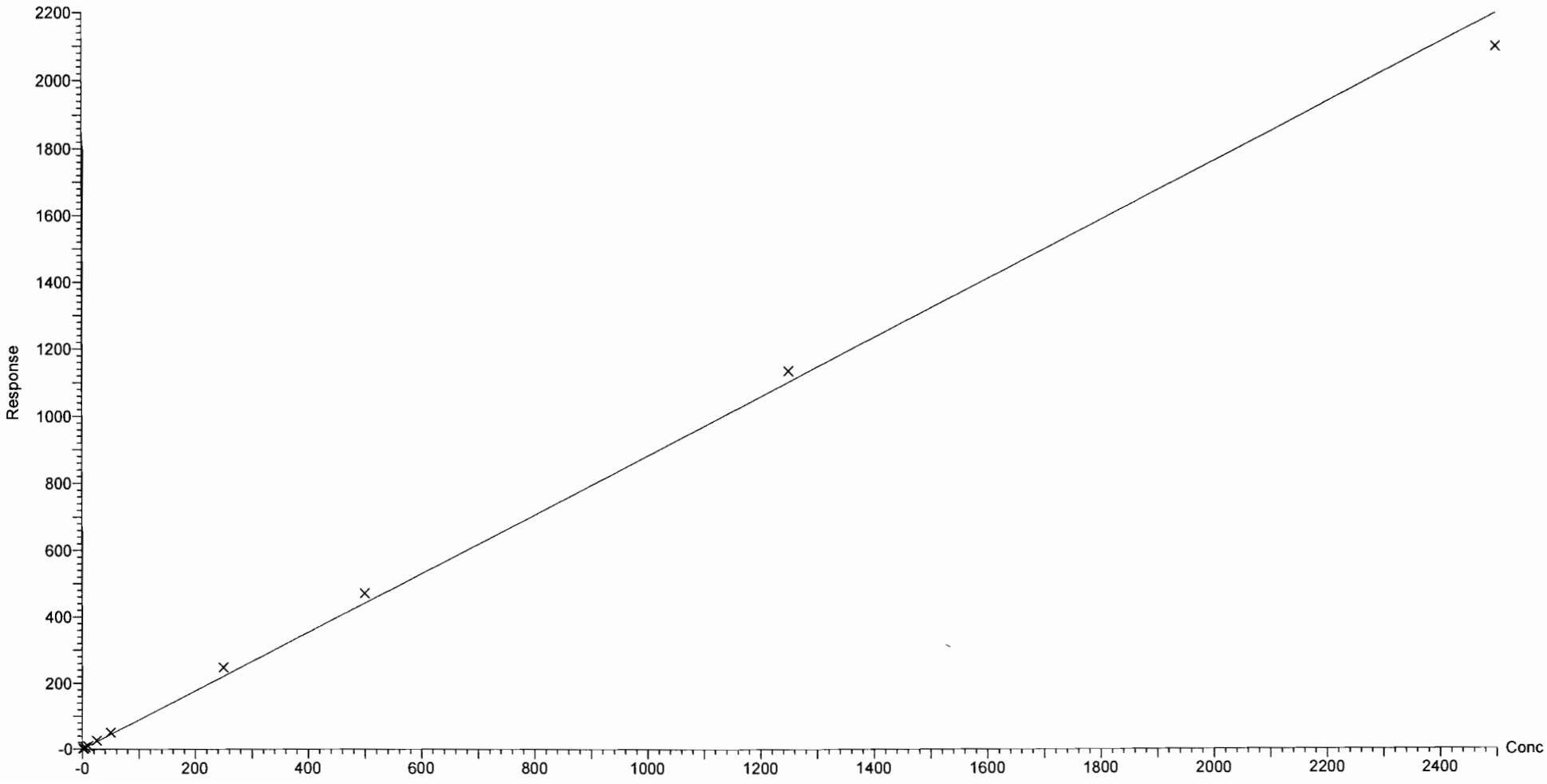
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999183
Calibration curve: -0.000455725 * x^2 + 2.46304 * x + -0.336737
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

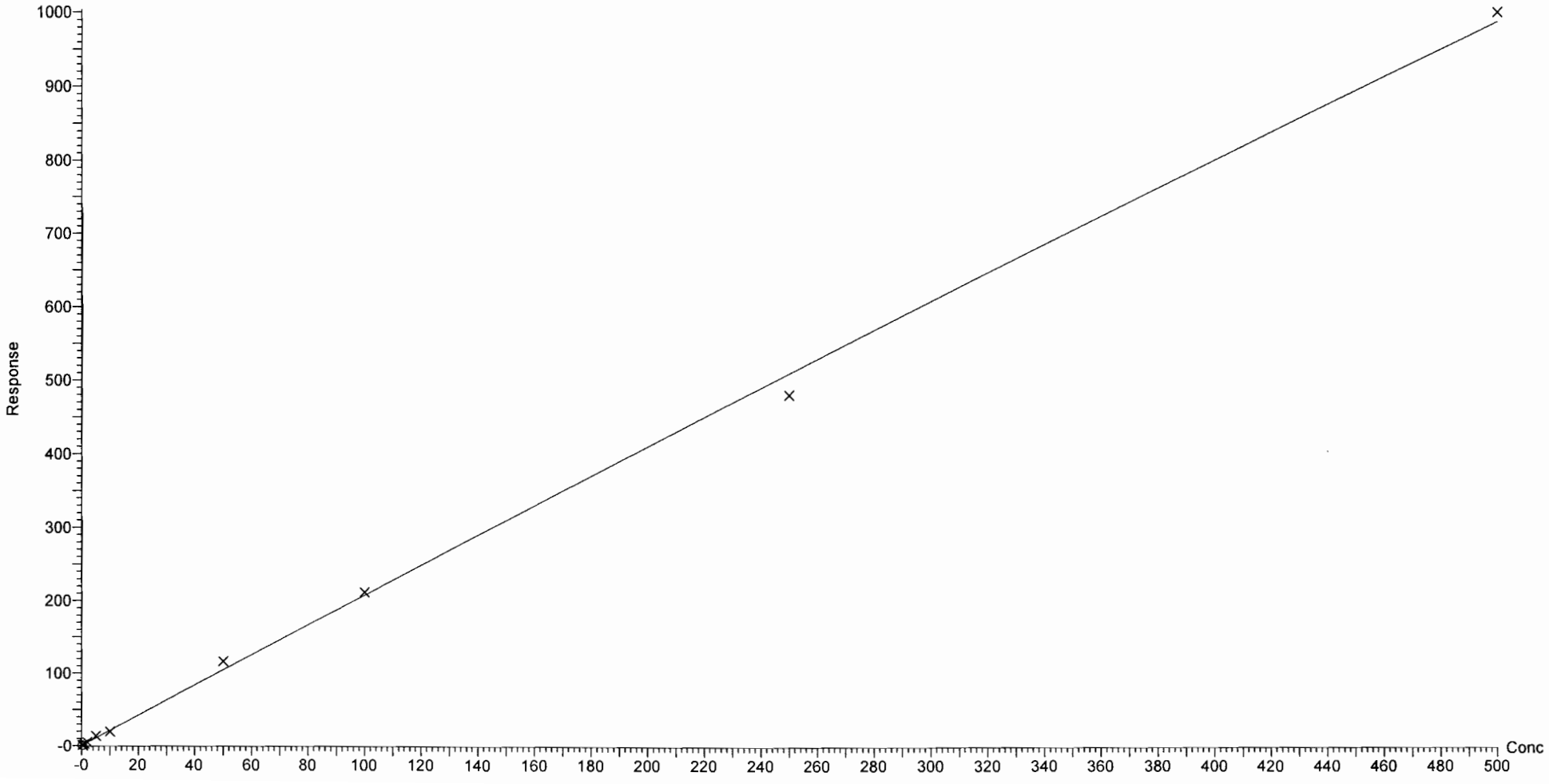
Compound name: N-MeFOSA
Correlation coefficient: r = 0.998441, r^2 = 0.996885
Calibration curve: 0.880263 * x + 0.418615
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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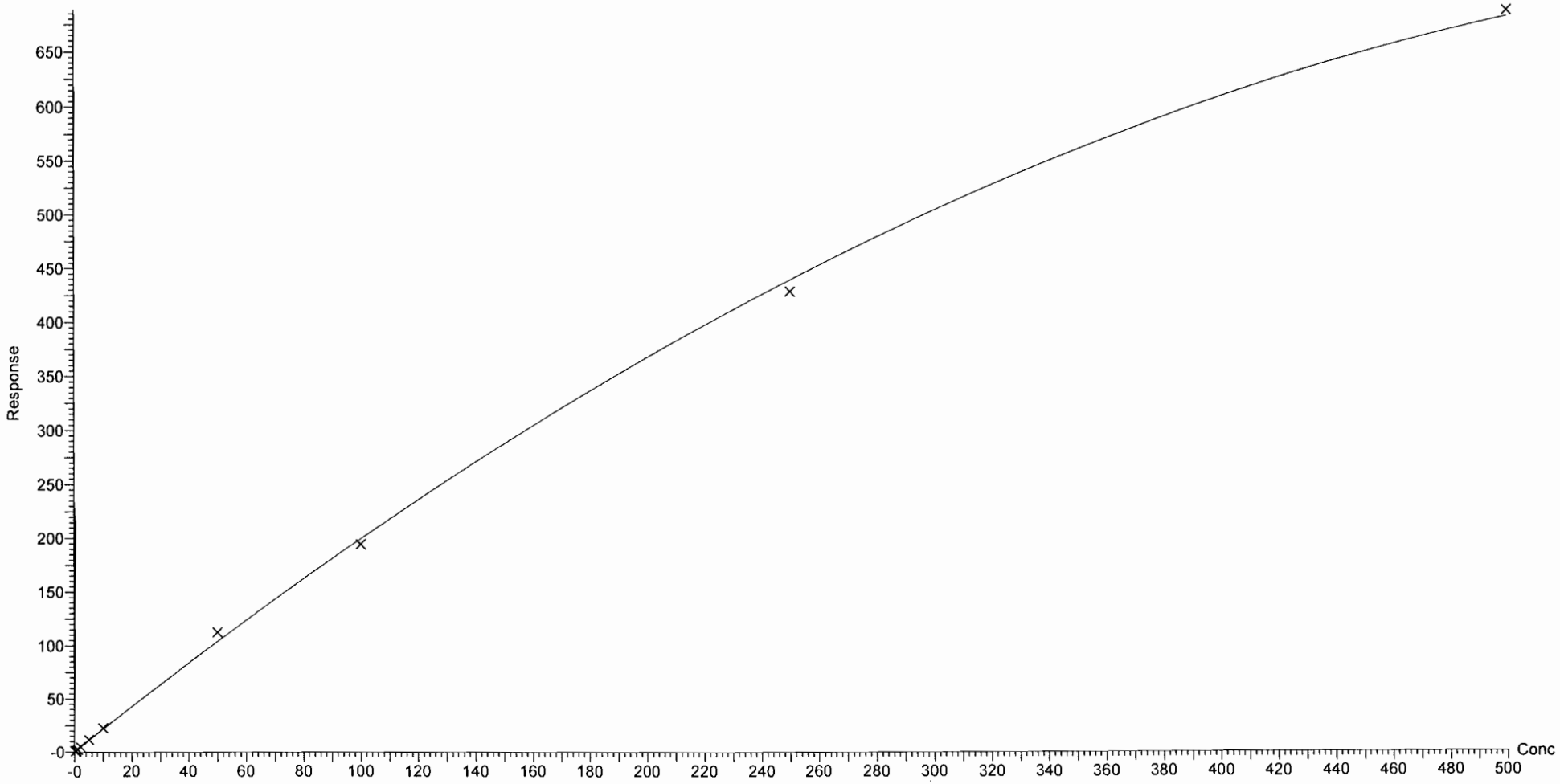
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.997638
Calibration curve: -0.000238393 * x^2 + 2.10003 * x + 0.366519
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

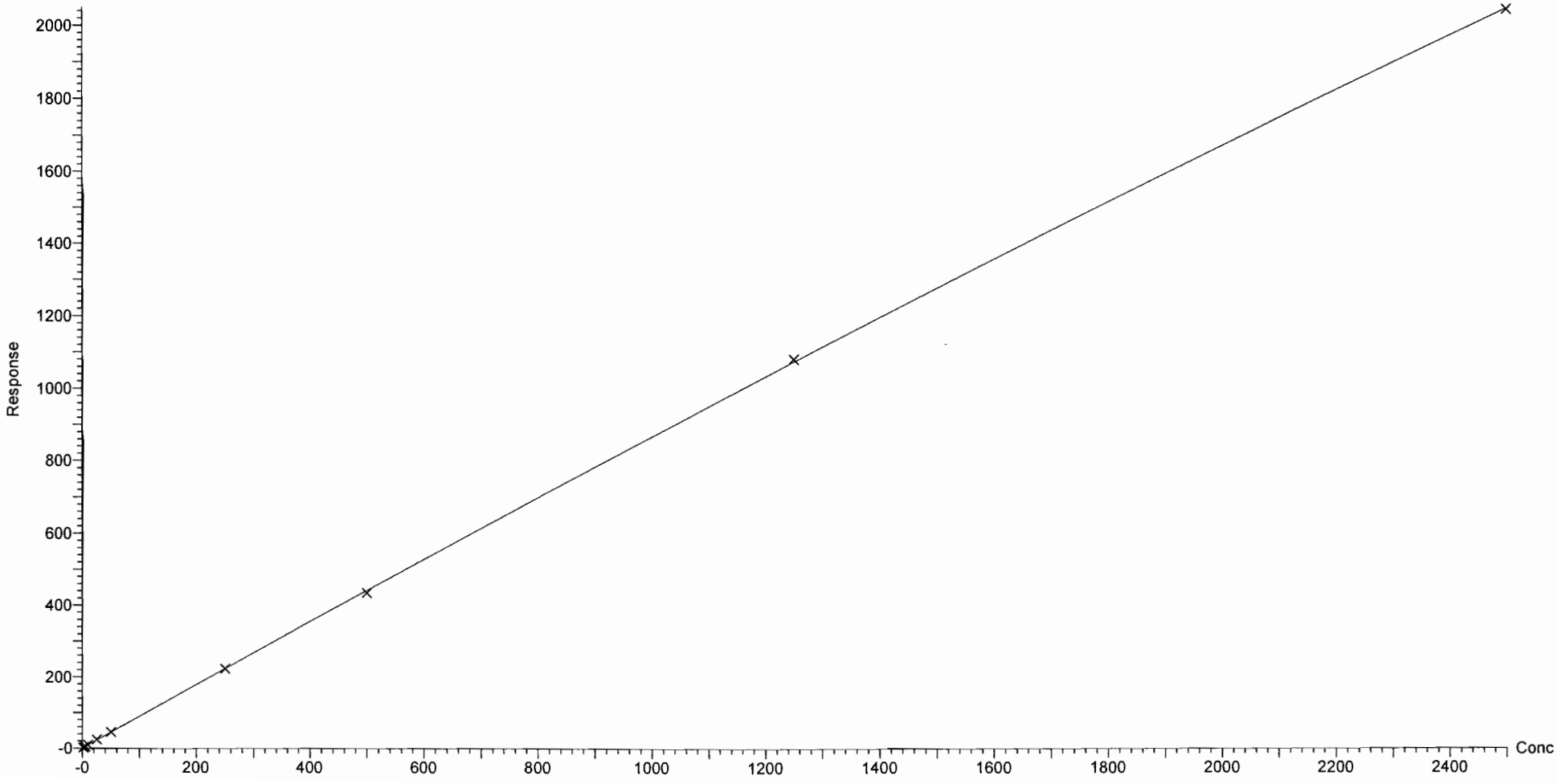
Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.998914
Calibration curve: -0.00156751 * x^2 + 2.14848 * x + 0.288262
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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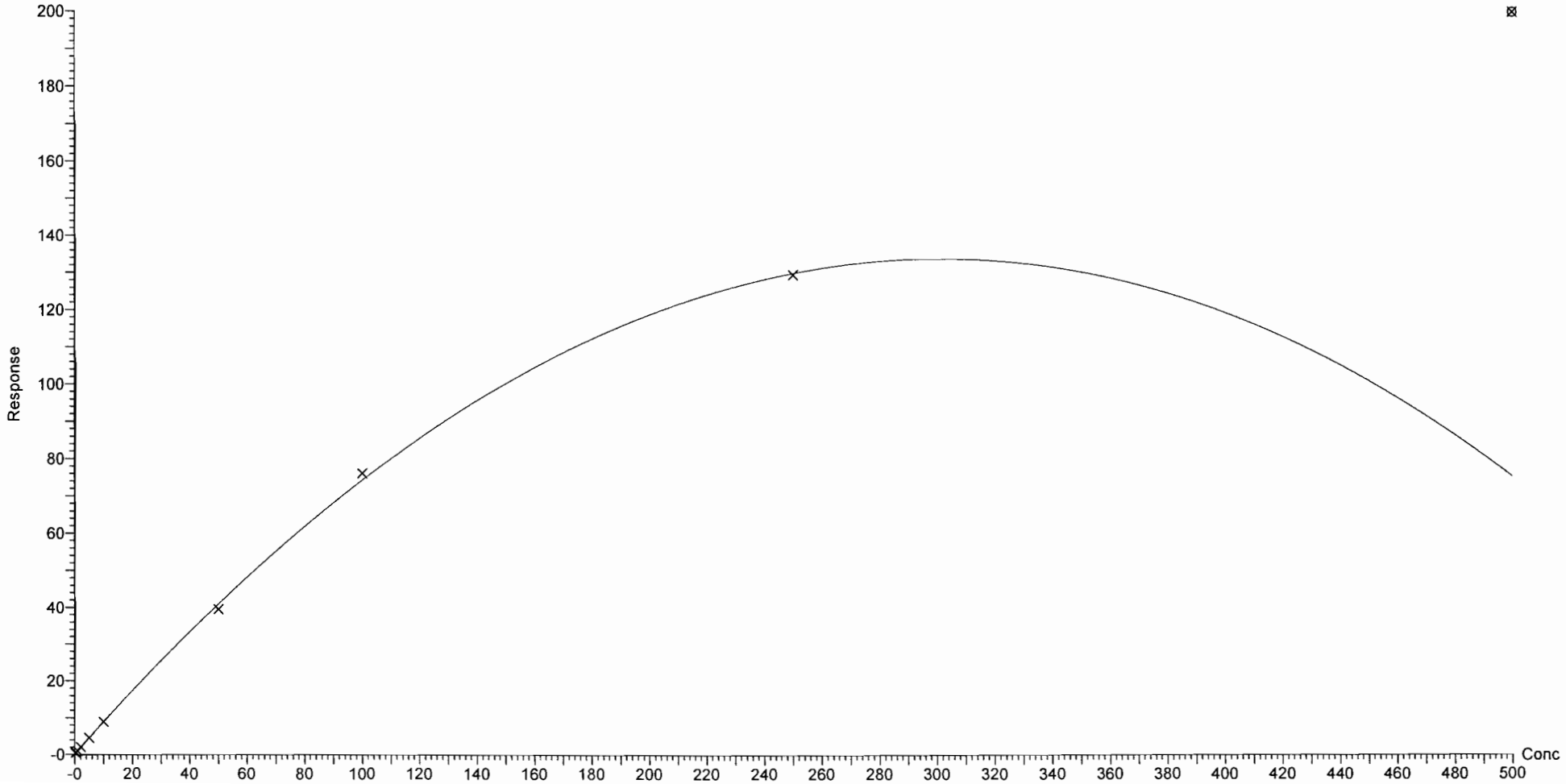
Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999922
Calibration curve: -3.07456e-005 * x^2 + 0.896595 * x + 0.0665512
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

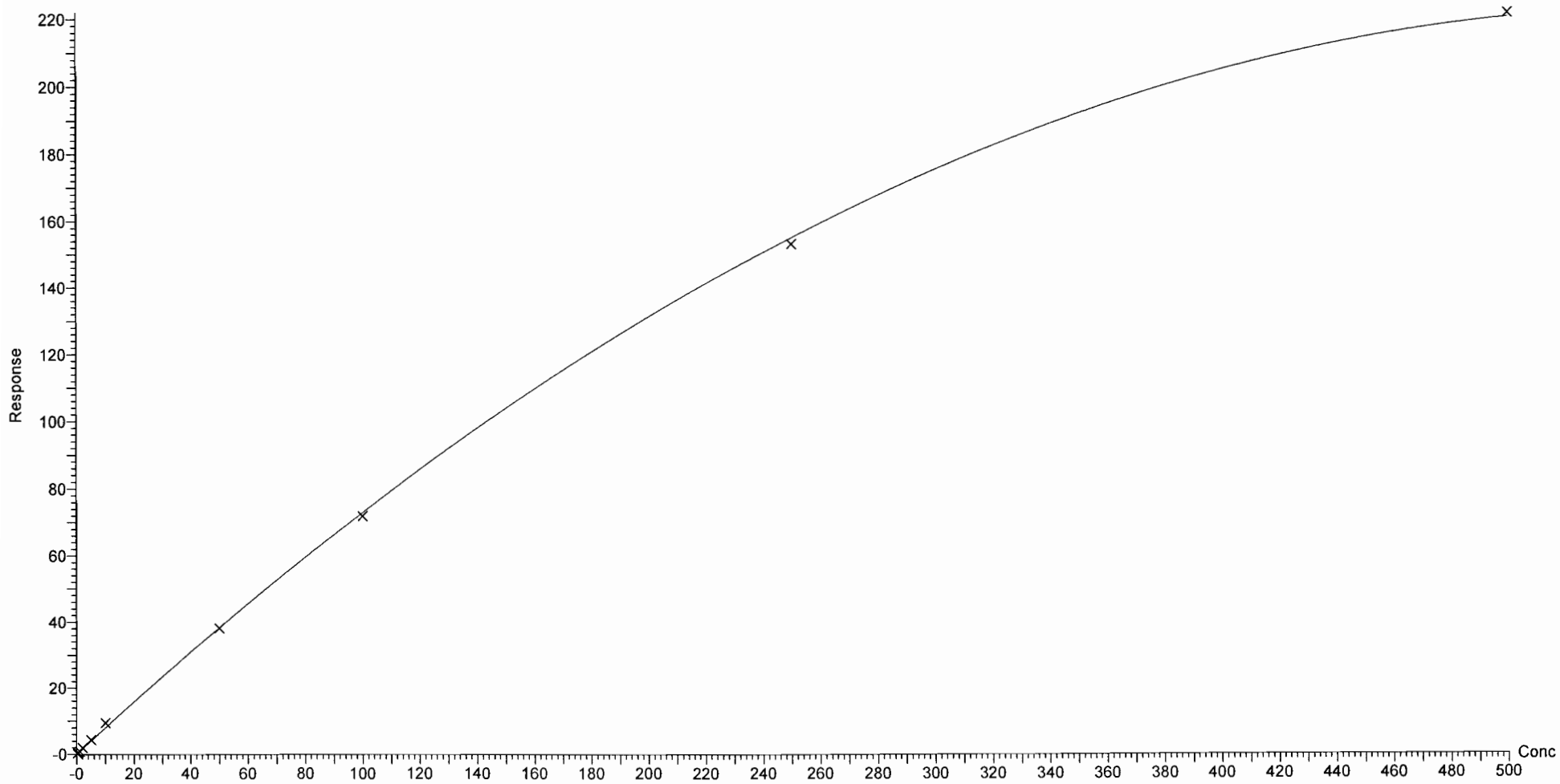
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999401
Calibration curve: -0.00147665 * x^2 + 0.888378 * x + 0.124653
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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Compound name: PFODA
Coefficient of Determination: R^2 = 0.998942
Calibration curve: -0.00071601 * x^2 + 0.799547 * x + 0.0561624
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

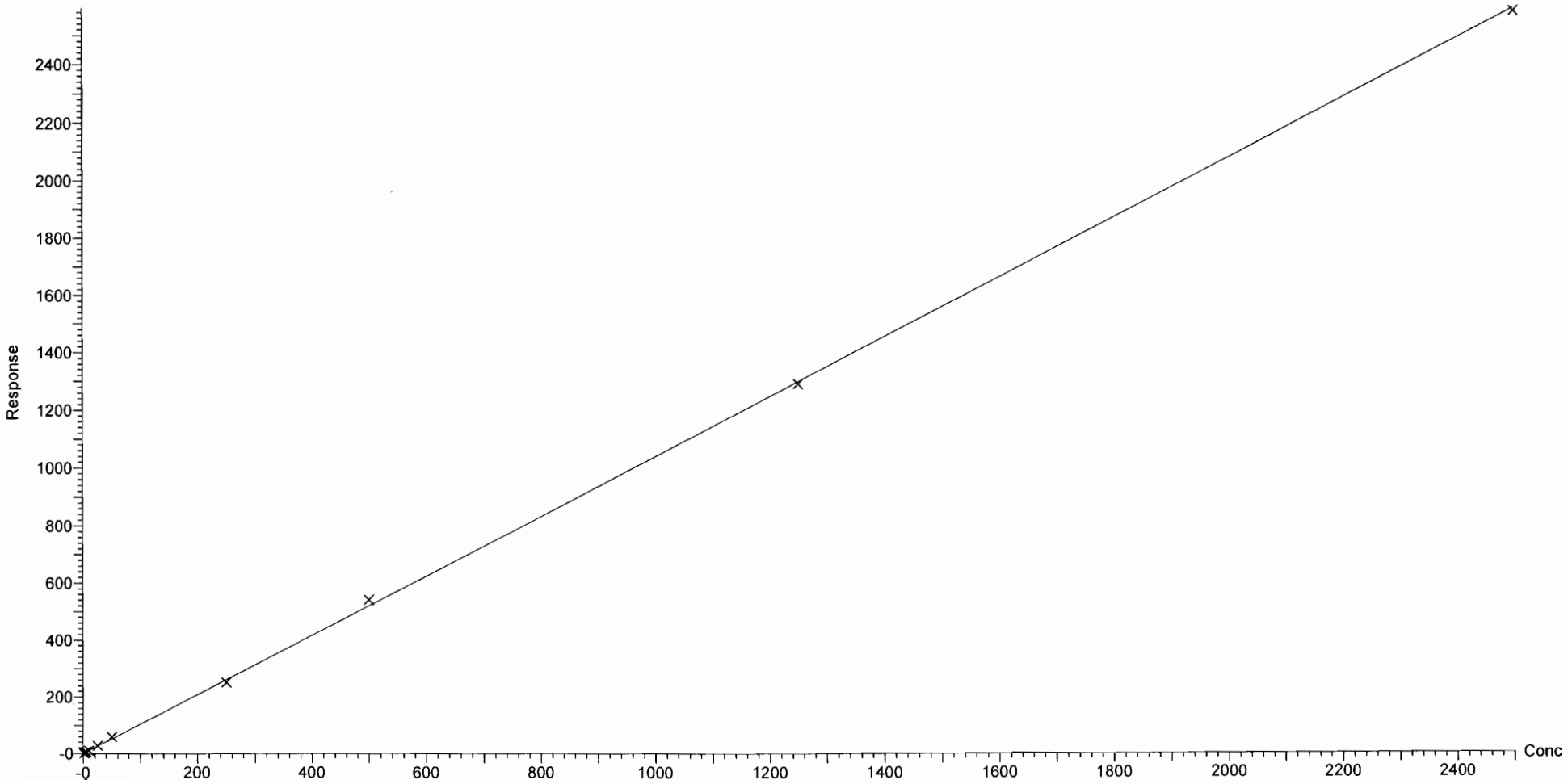


Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

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Printed: Saturday, January 13, 2018 17:06:15 Pacific Standard Time

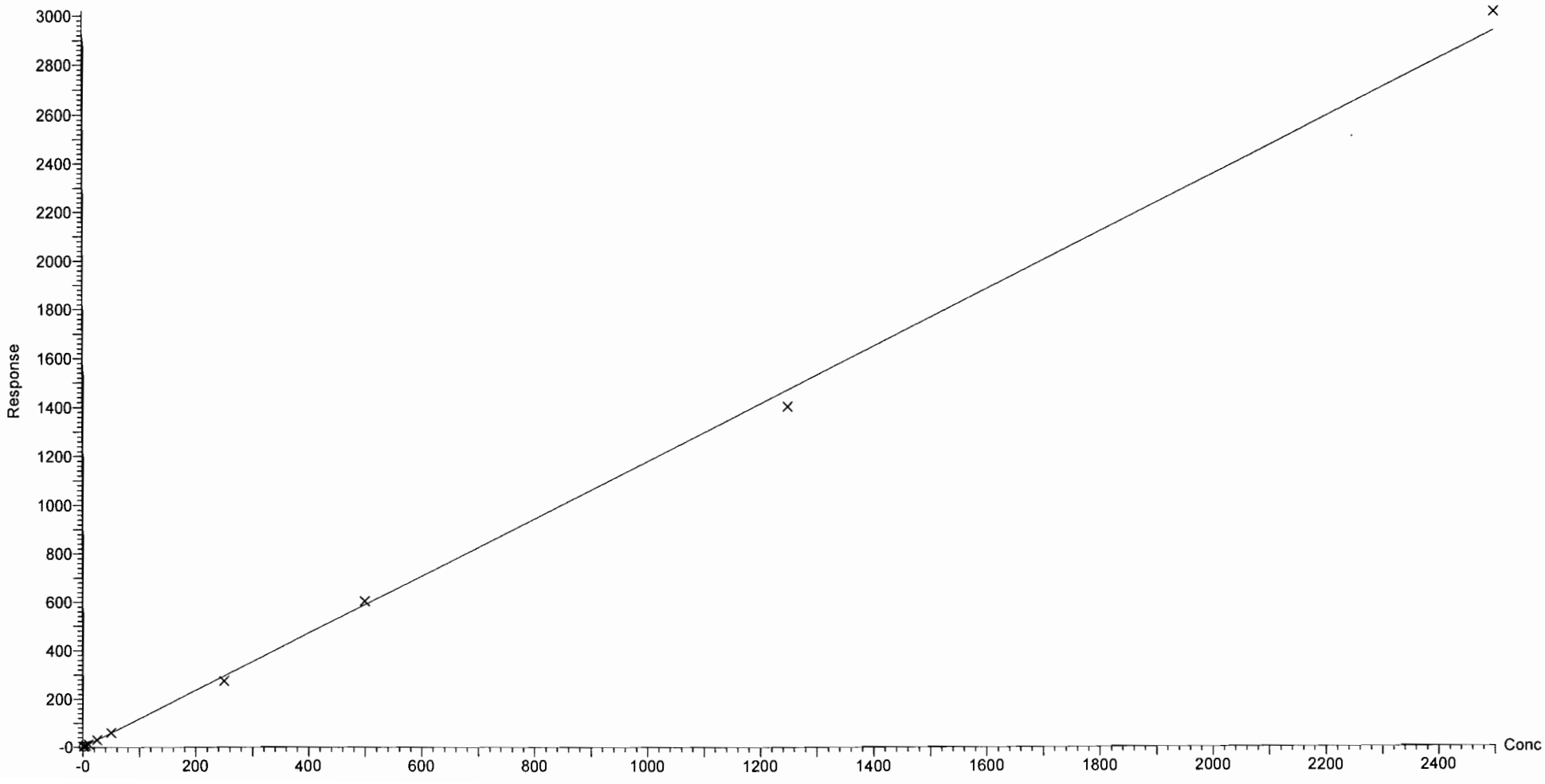
Compound name: N-MeFOSE
Correlation coefficient: r = 0.999757, r^2 = 0.999514
Calibration curve: 1.03803 * x + 0.0140593
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
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Compound name: N-EtFOSE
Correlation coefficient: r = 0.999320, r^2 = 0.998641
Calibration curve: 1.17693 * x + -0.0247703
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



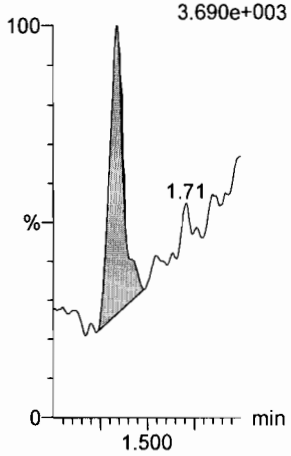
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Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:32 Pacific Standard Time

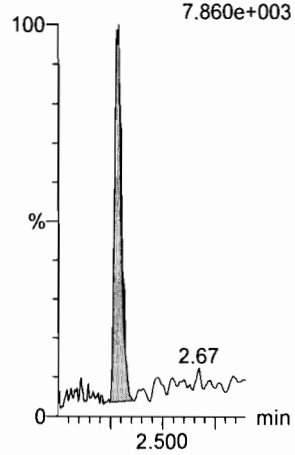
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Name: 180112M3_1, Date: 12-Jan-2018, Time: 13:35:39, ID: ST180112M3-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

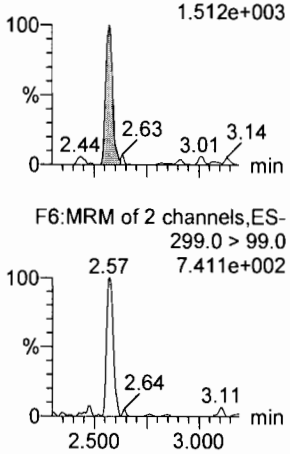
PFBA



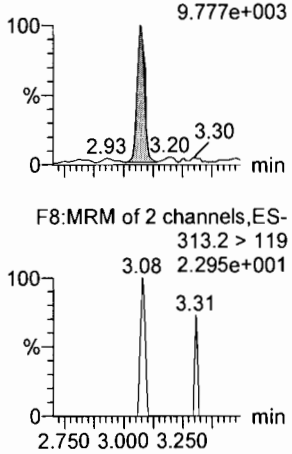
PFPeA



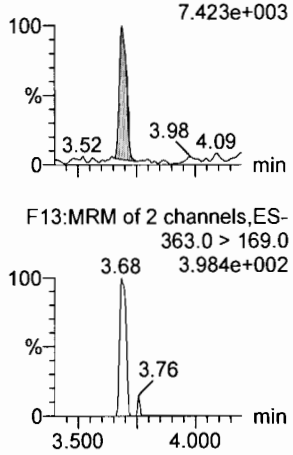
PFBS



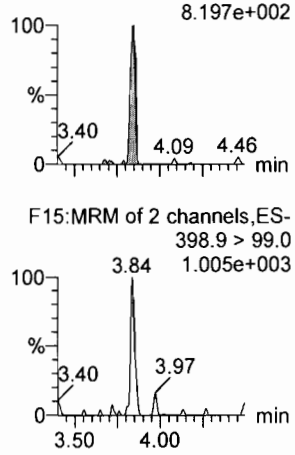
PFHxA



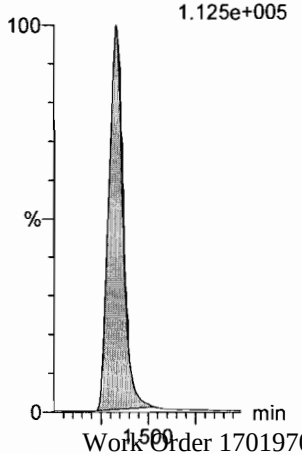
PFHpA



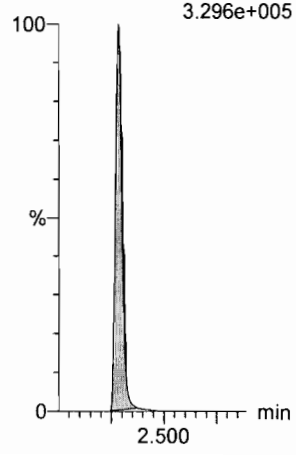
L-PFHxS



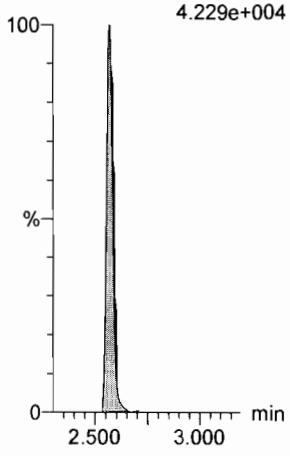
13C3-PFBA



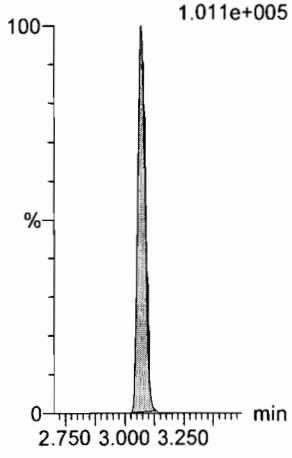
13C3-PFPeA



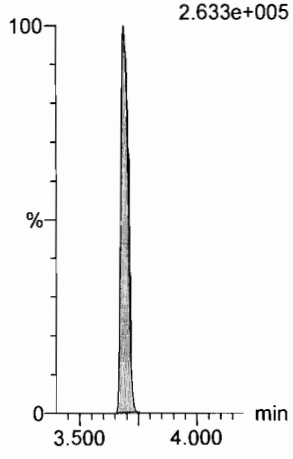
13C3-PFBS



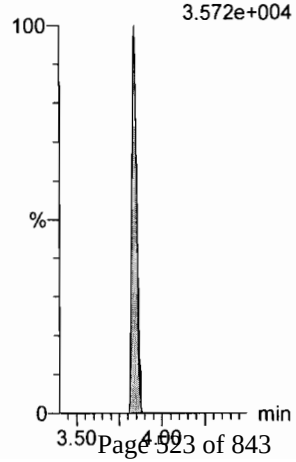
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

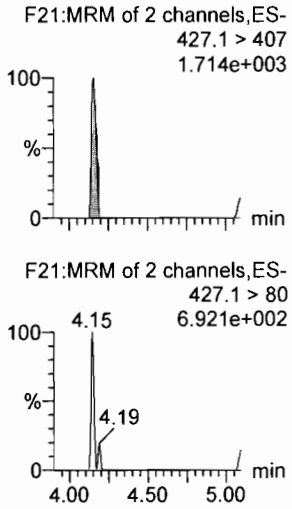


Dataset: U:\Q4.PRO\results\180112M3\180112M3_crv.qld

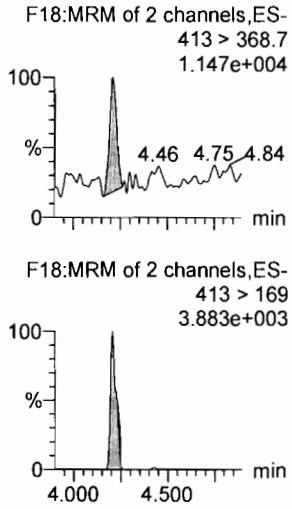
Last Altered: Saturday, January 13, 2018 14:58:25 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:06:32 Pacific Standard Time

Name: 180112M3_1, Date: 12-Jan-2018, Time: 13:35:39, ID: ST180112M3-1 PFC CS-2 18A0806, Description: ST180108M2-1 PFC CS-2 18A0806

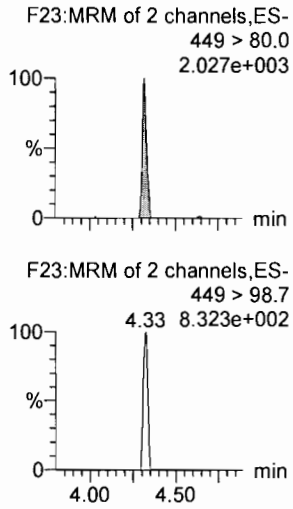
6:2 FTS



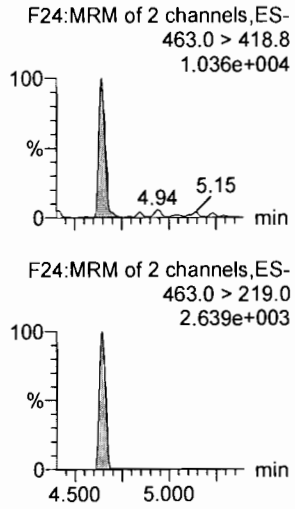
L-PFOA



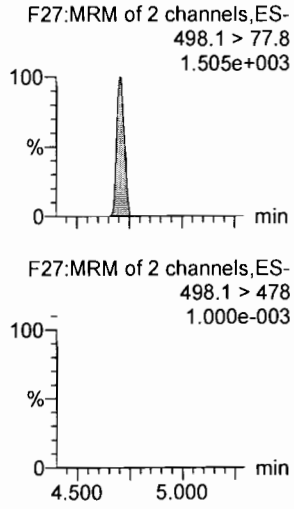
PFHpS



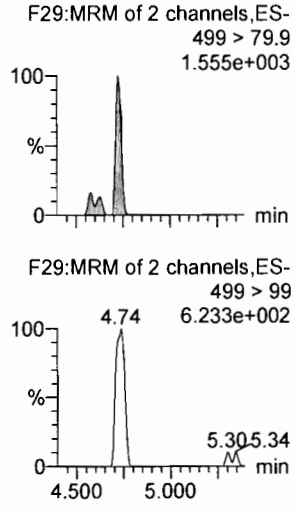
PFNA



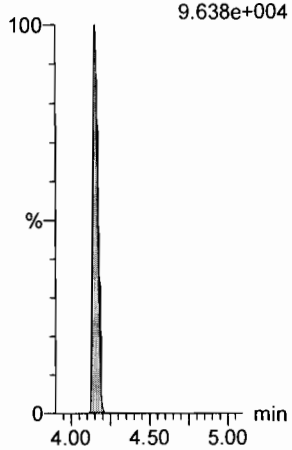
PFOSA



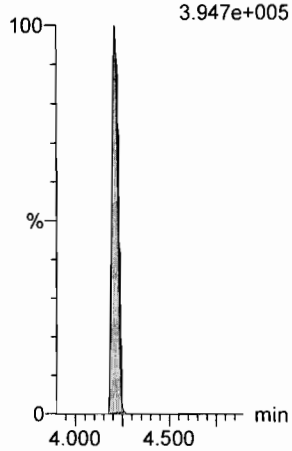
L-PFOS



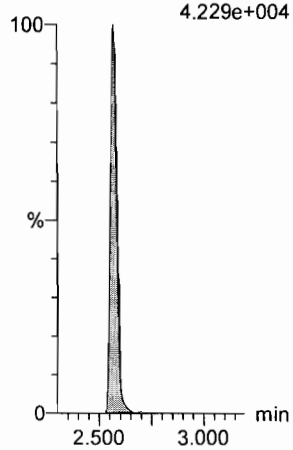
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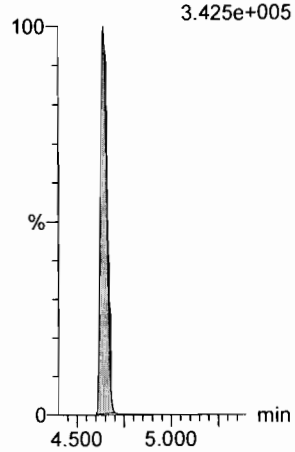
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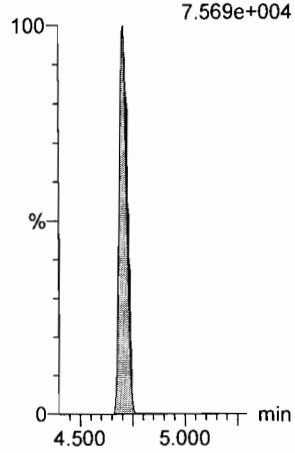
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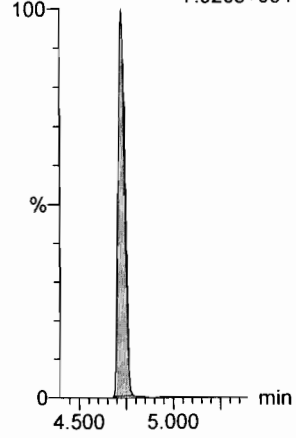
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13C8-PFOSA



13C8-PFOS

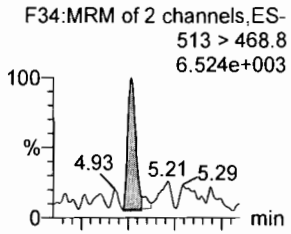


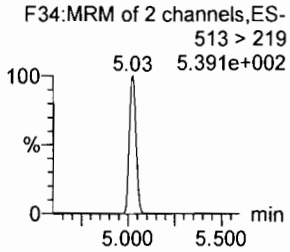
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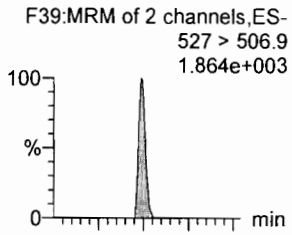
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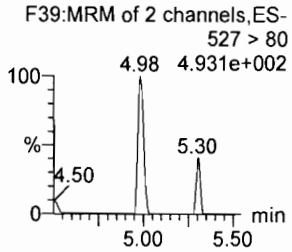
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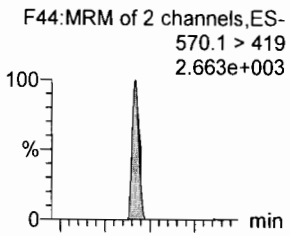


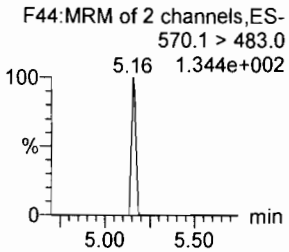
8:2 FTS



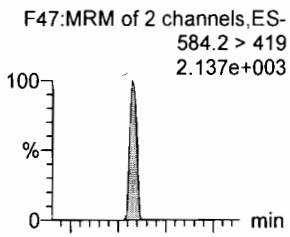


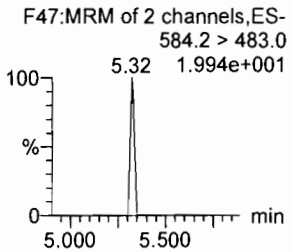
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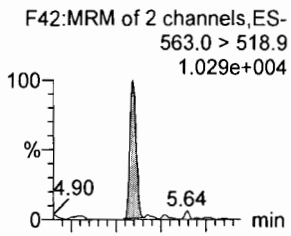


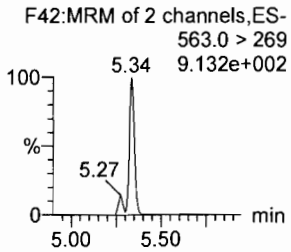
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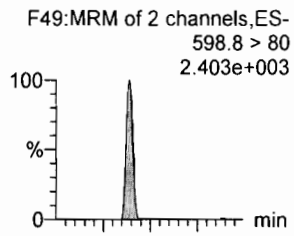


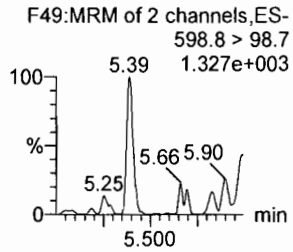
PFUdA



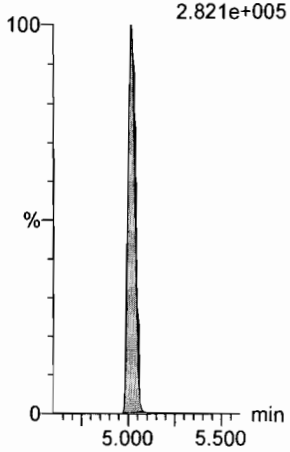


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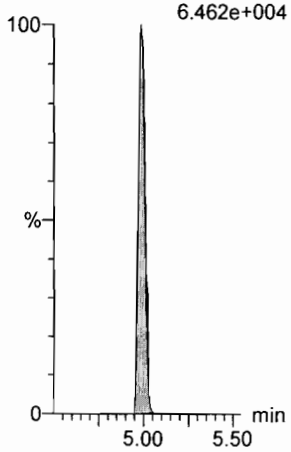




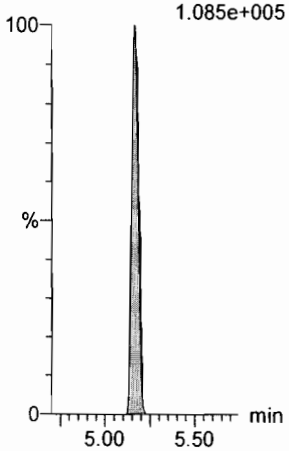
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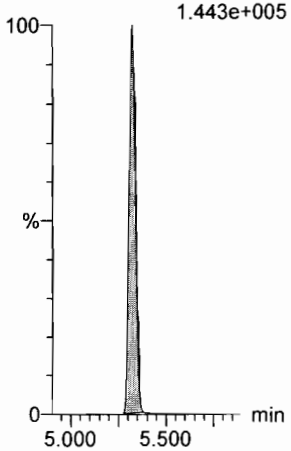
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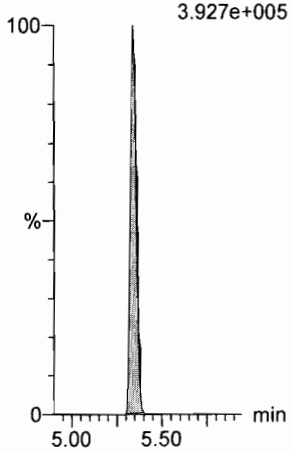
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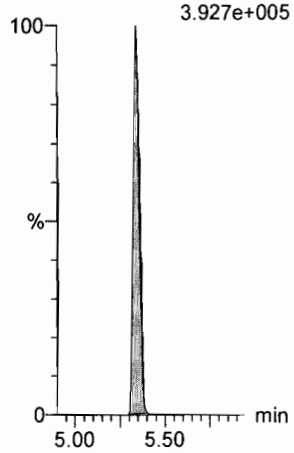
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

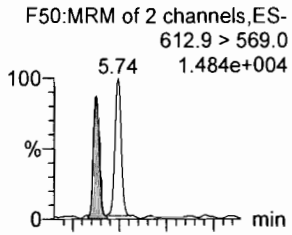


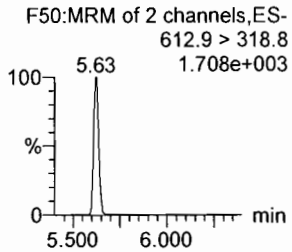
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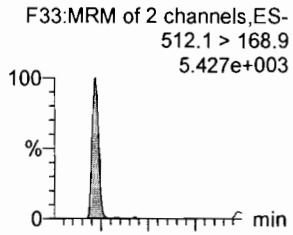
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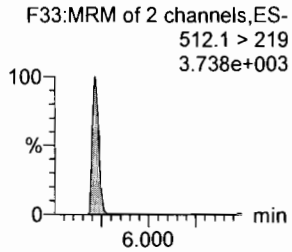
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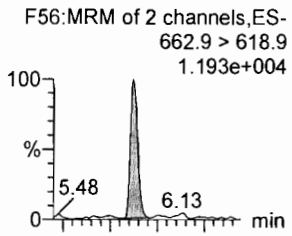


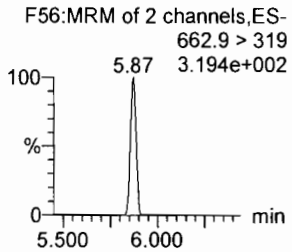
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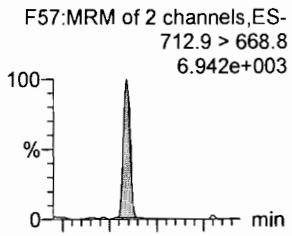


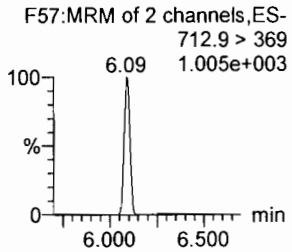
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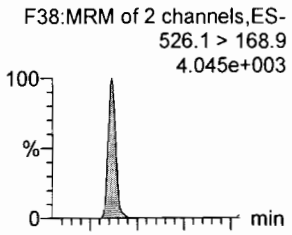


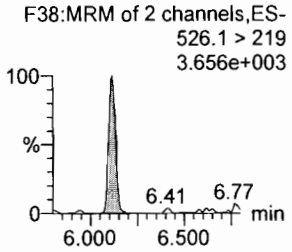
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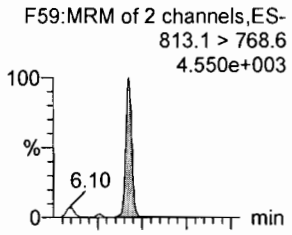


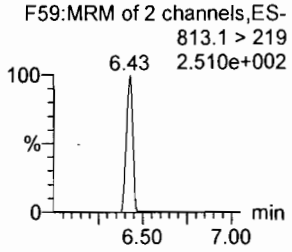
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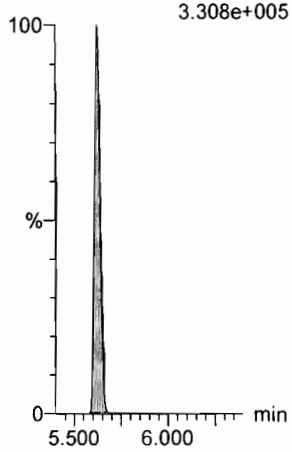


PFHxDA

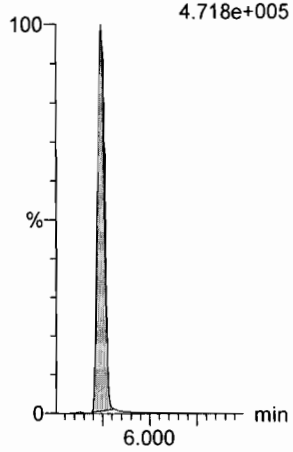




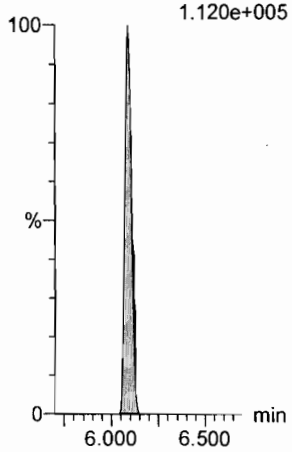
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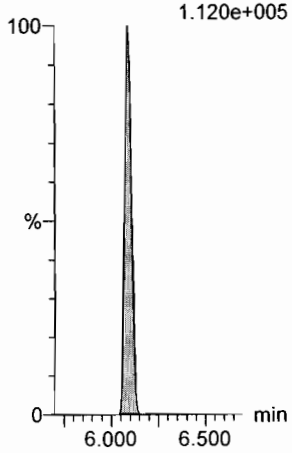
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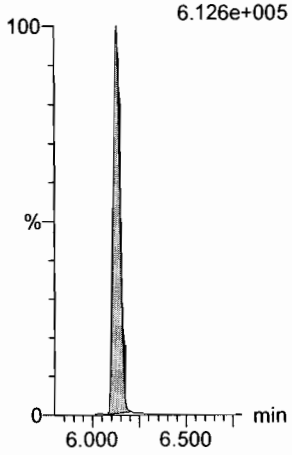
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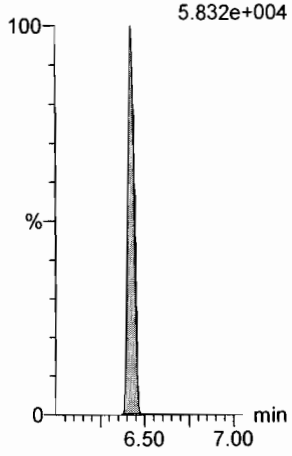
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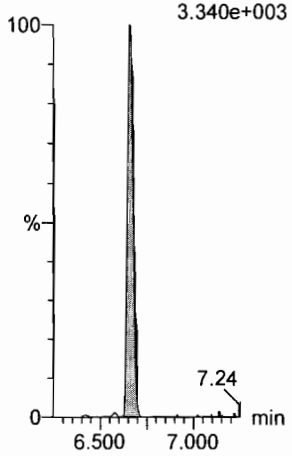


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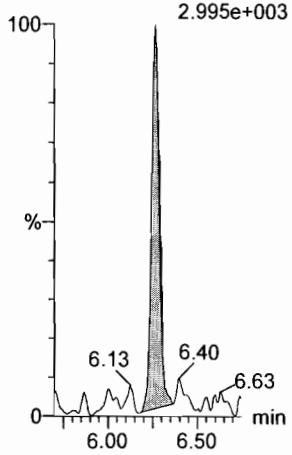
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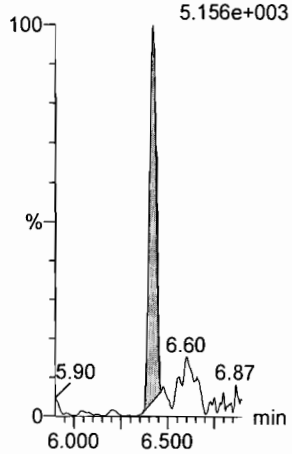
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3.340e+003



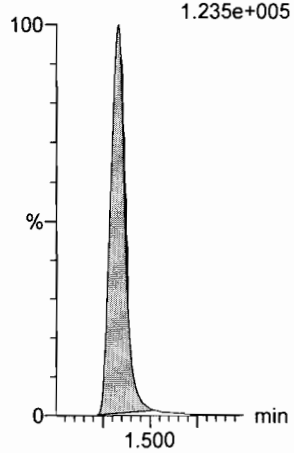
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F52:MRM of 1 channel,ES-
616.1 > 58.9
2.995e+003



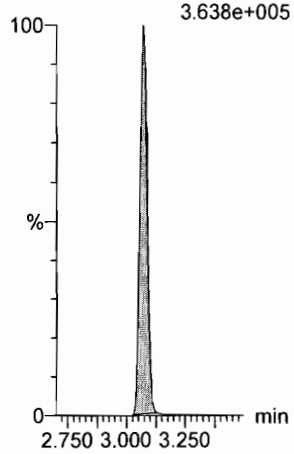
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
5.156e+003



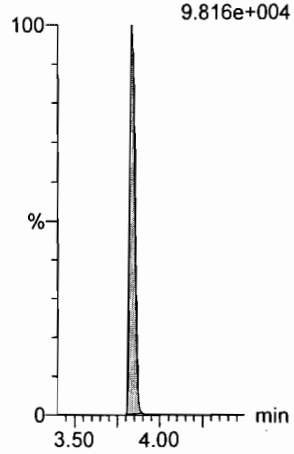
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.235e+005



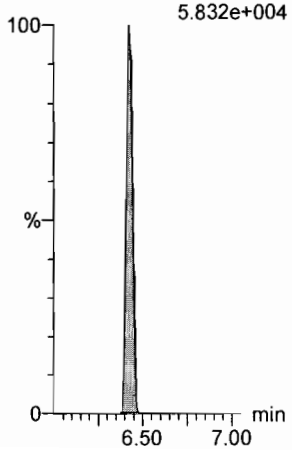
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F10:MRM of 1 channel,ES-
318 > 272.9
3.638e+005



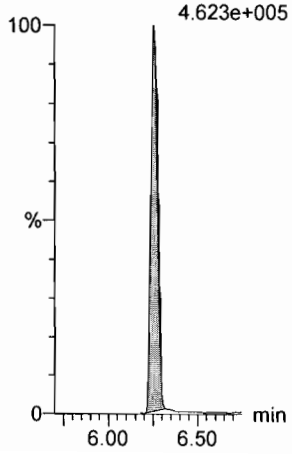
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
9.816e+004



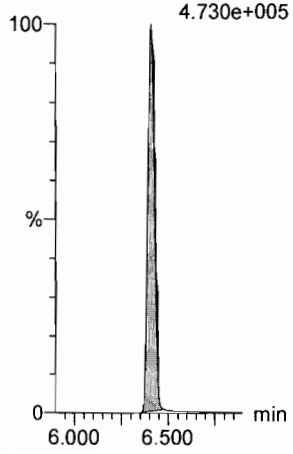
13C2-PFHxDA
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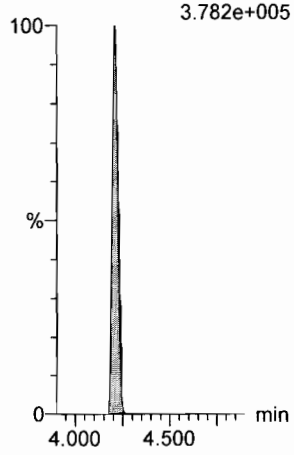
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
4.623e+005



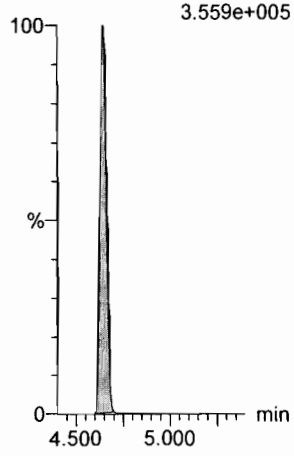
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
4.730e+005



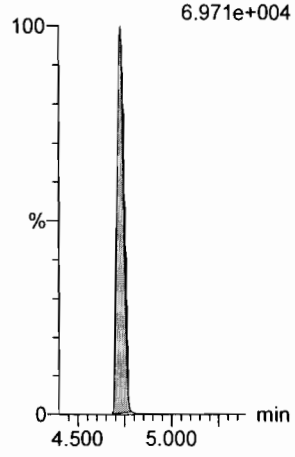
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.782e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.559e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
6.971e+004

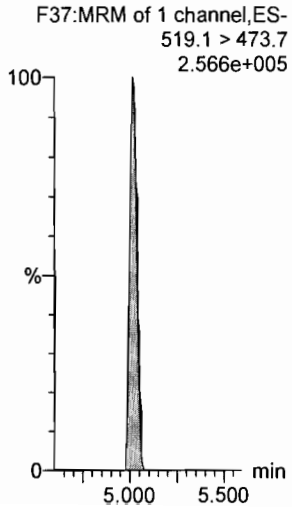


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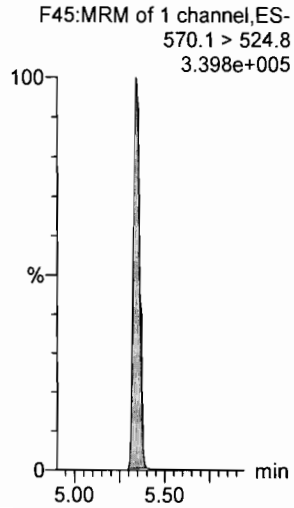
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13C6-PFDA



13C7-PFUdA

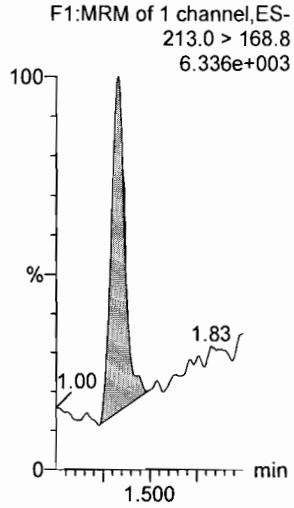


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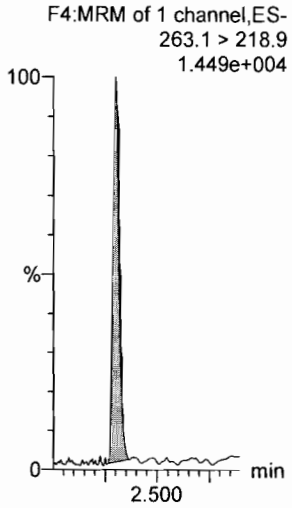
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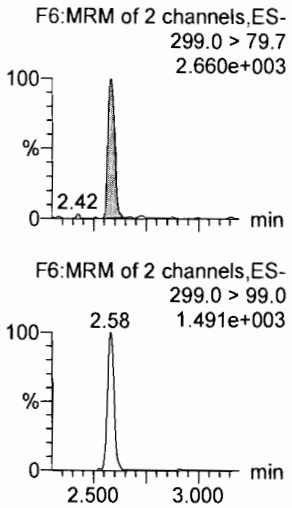
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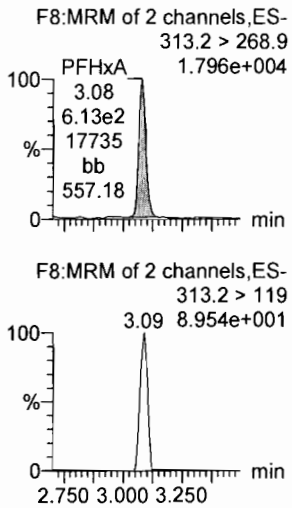
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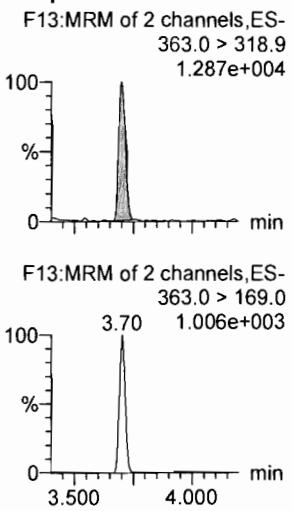
PFBS



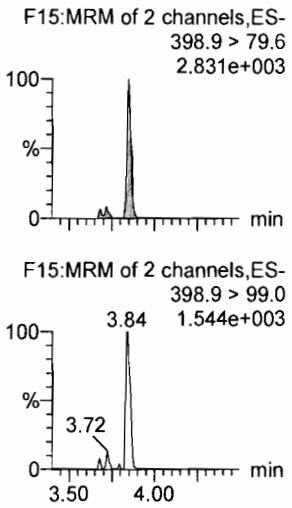
PFHxA



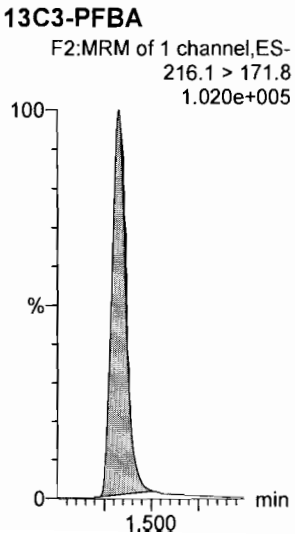
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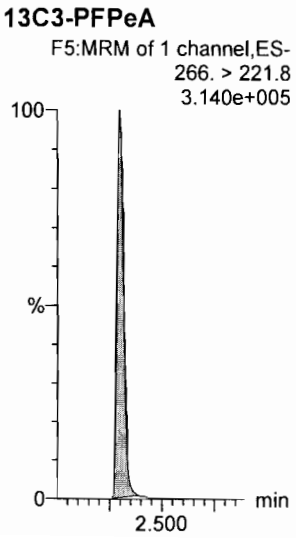
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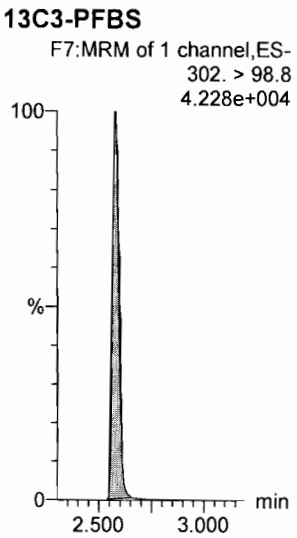
13C3-PFBA



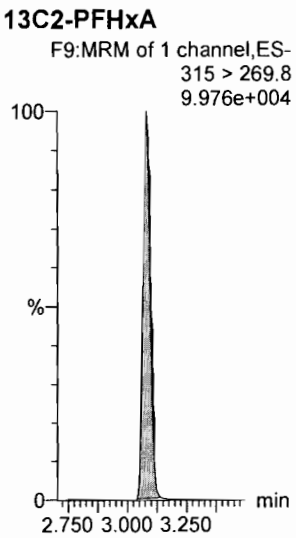
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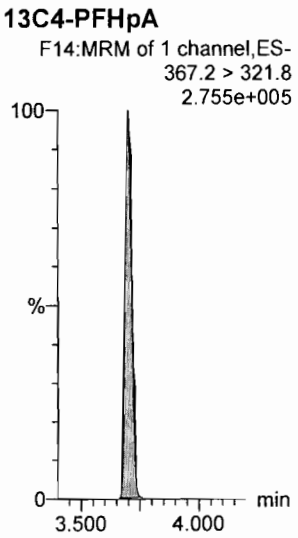
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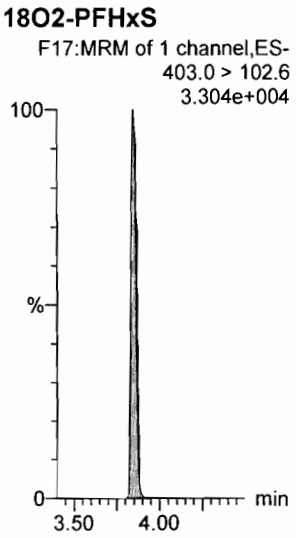
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13C4-PFHpA



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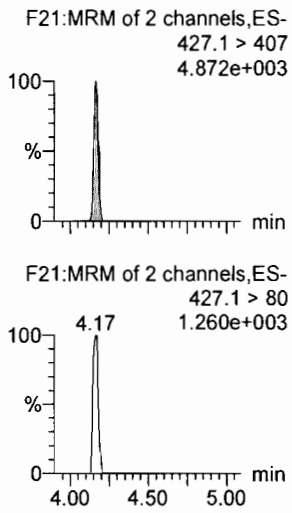


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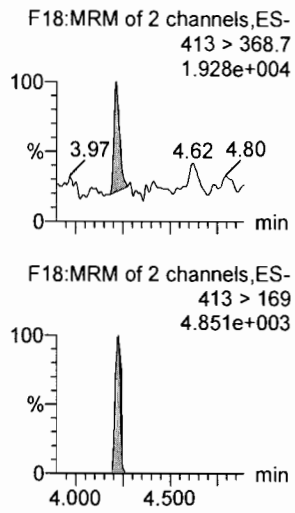
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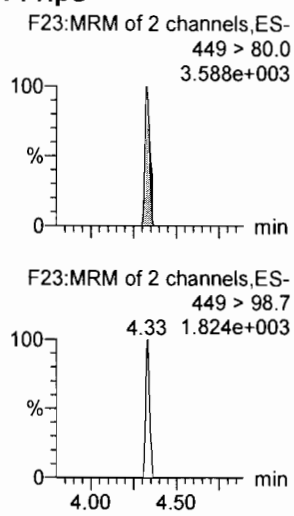
6:2 FTS



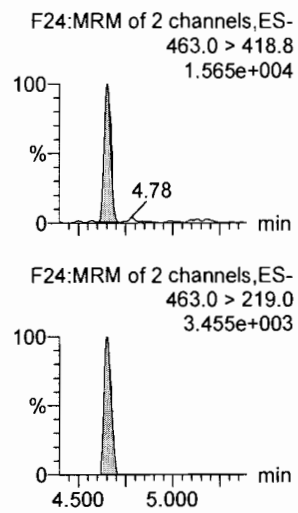
L-PFOA



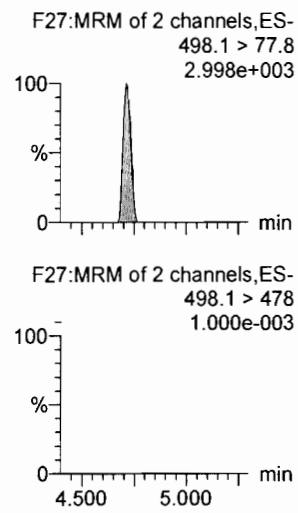
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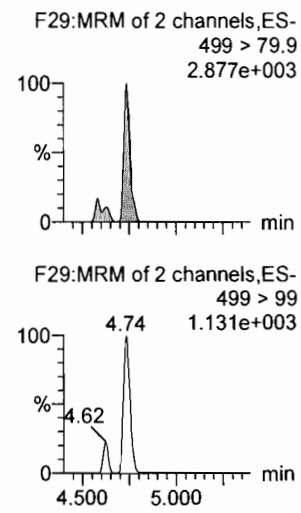
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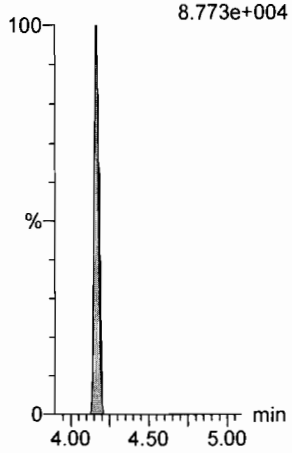
PFOSA



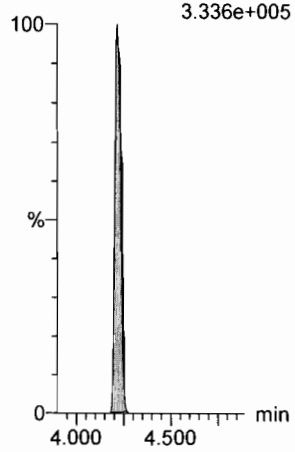
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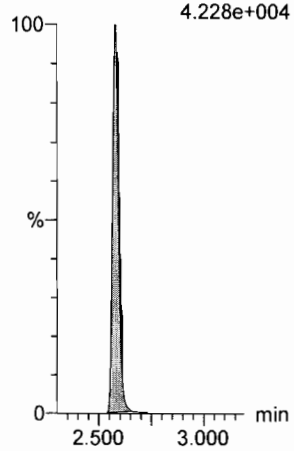
13C2-6:2 FTS



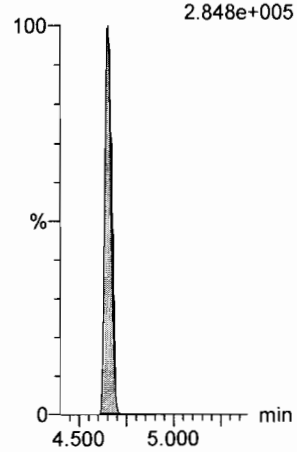
13C2-PFOA



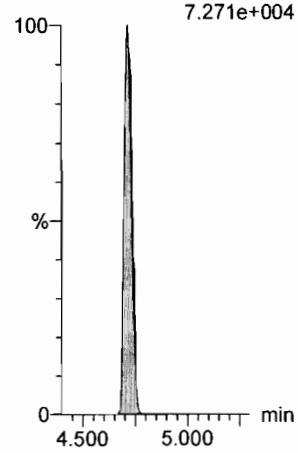
13C3-PFBS



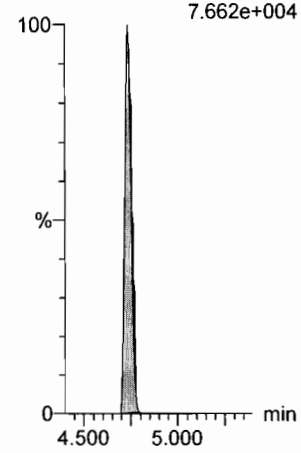
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13C8-PFOSA



13C8-PFOS

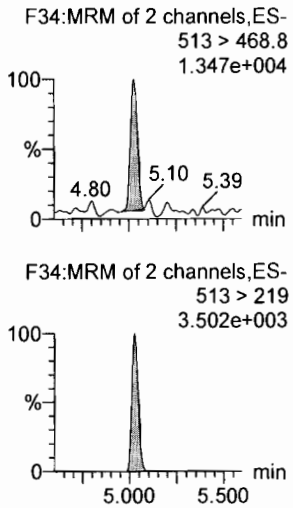


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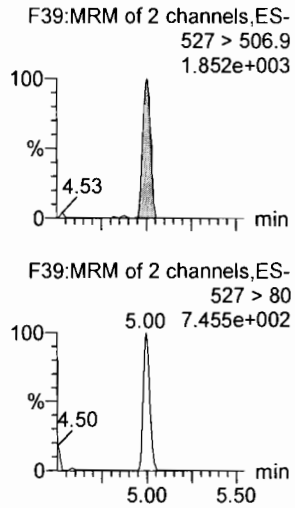
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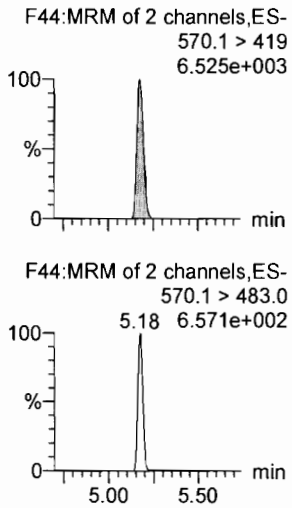
PFDA



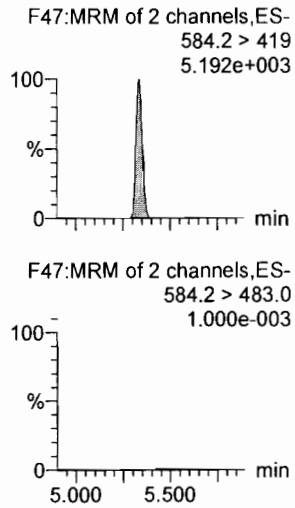
8:2 FTS



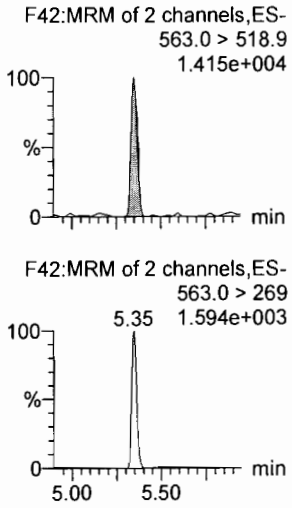
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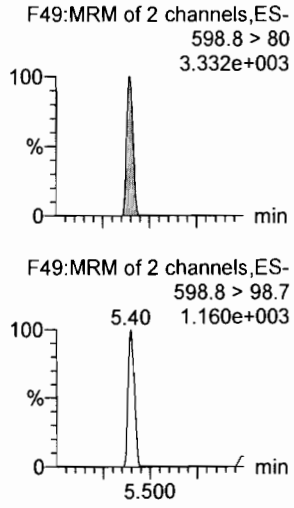
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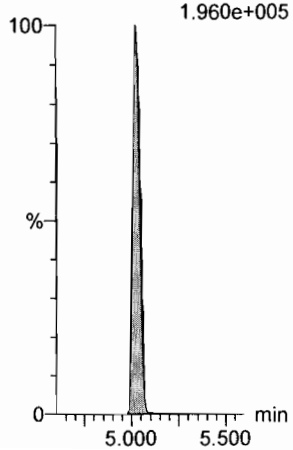
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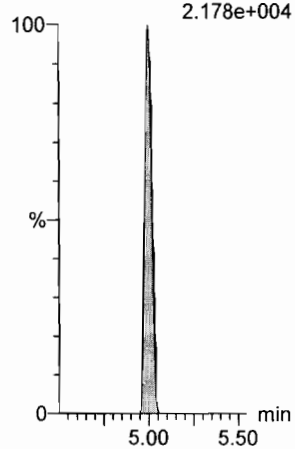
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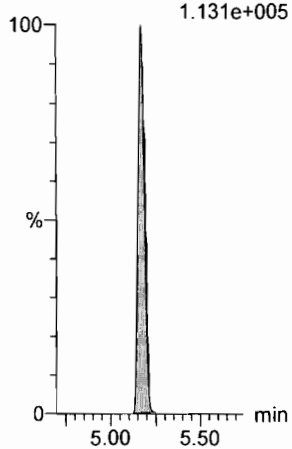
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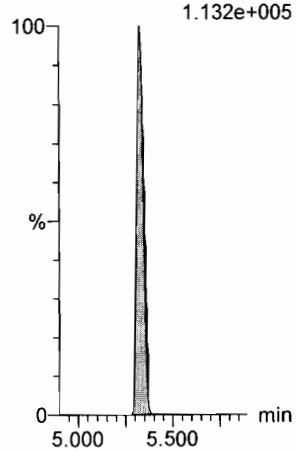
13C2-8:2 FTS



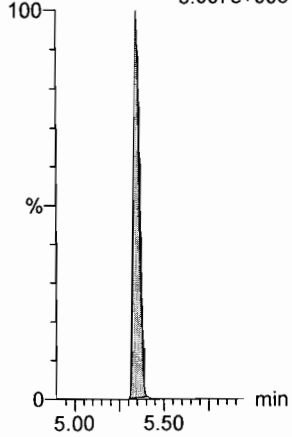
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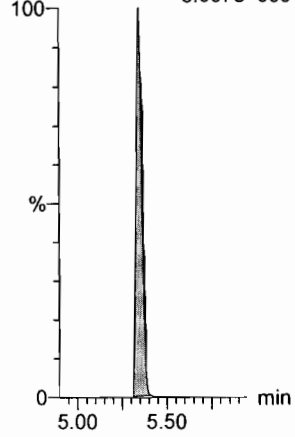
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13C2-PFUdA



13C2-PFUdA

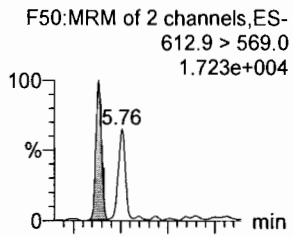


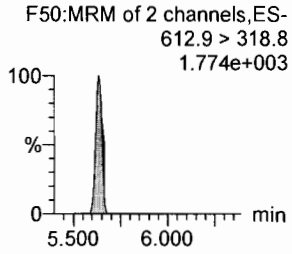
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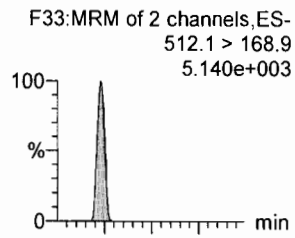
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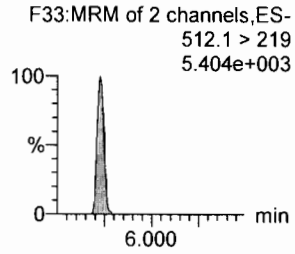
PFDoA



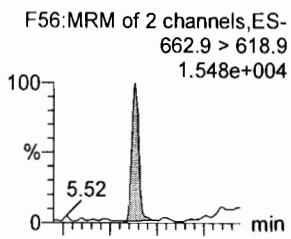


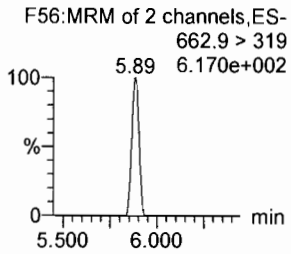
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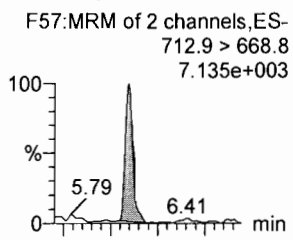


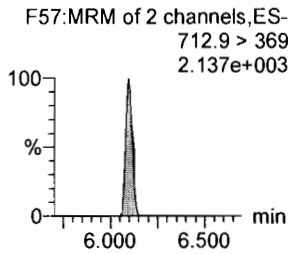
PFTrDA



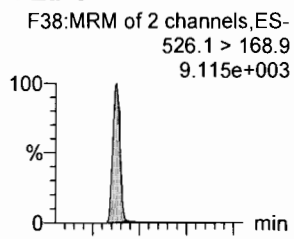


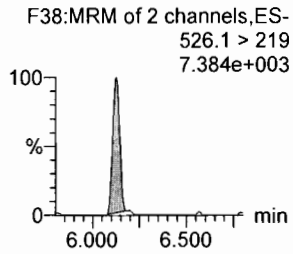
PFTeDA



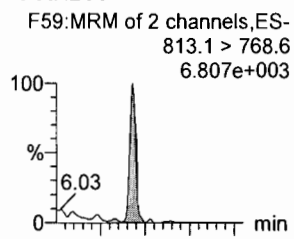


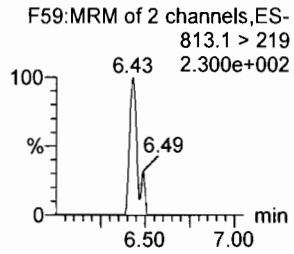
N-EtFOSA



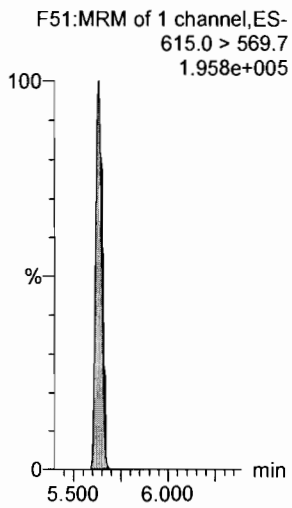


PFHxDA

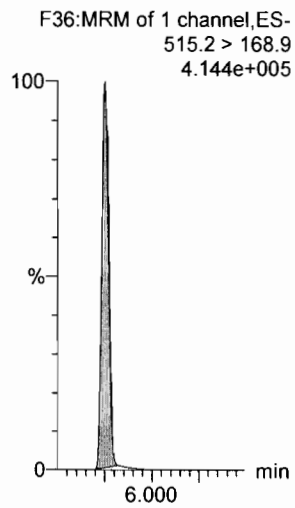




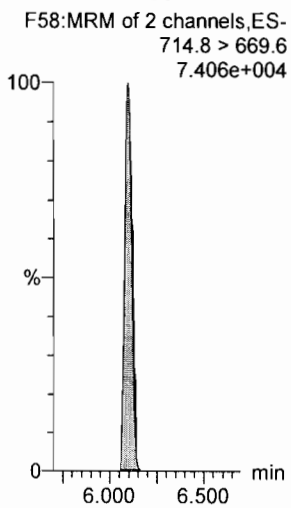
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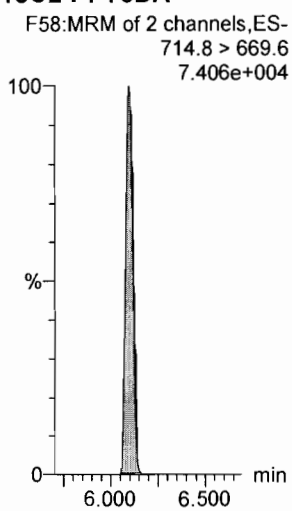
d3-N-MeFOSA



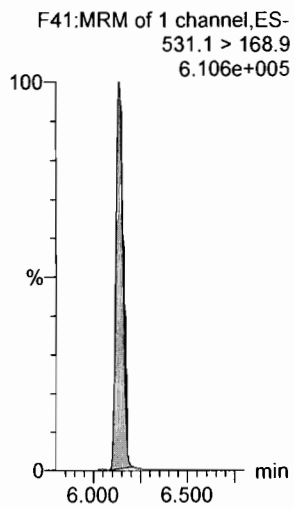
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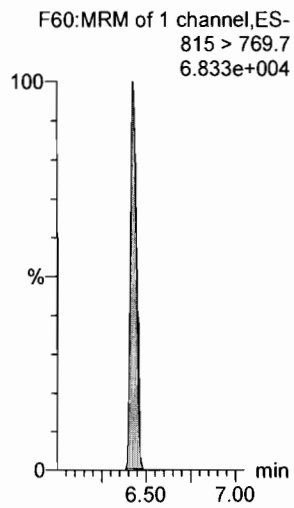
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d5-N-ETFOSA



13C2-PFHxDA

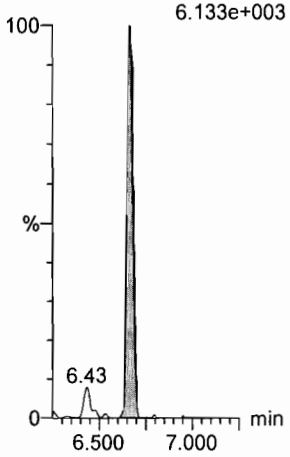


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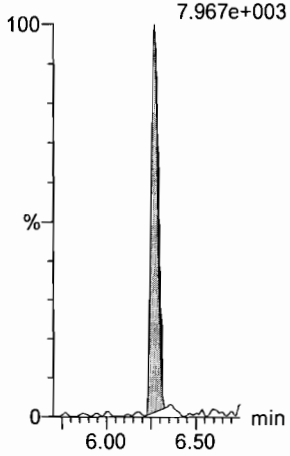
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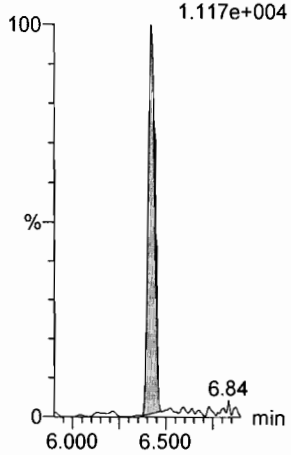
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
6.133e+003



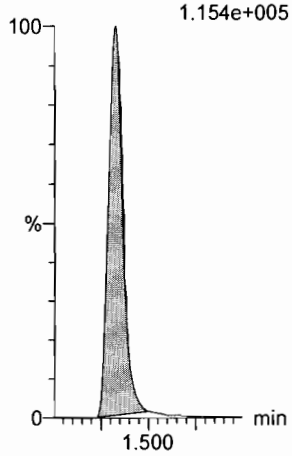
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
7.967e+003



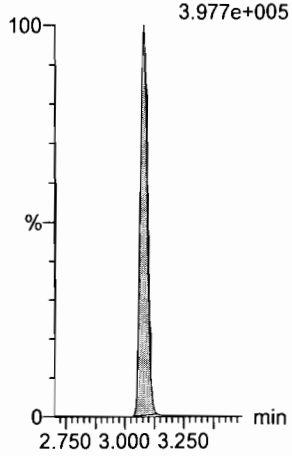
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
1.117e+004



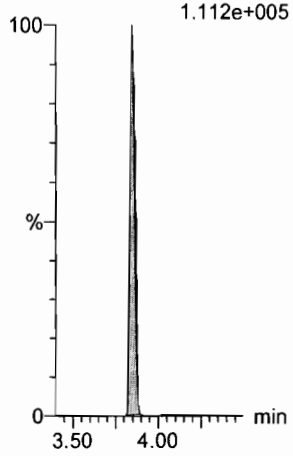
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.154e+005



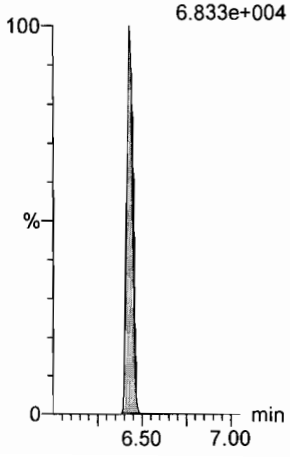
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
3.977e+005



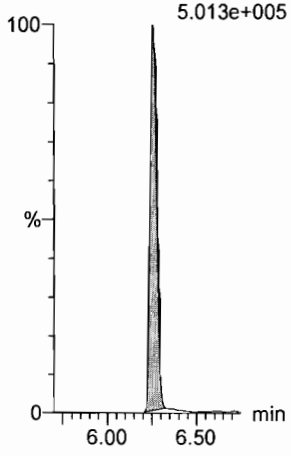
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
1.112e+005



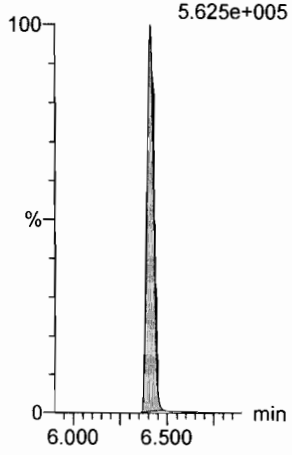
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
6.833e+004



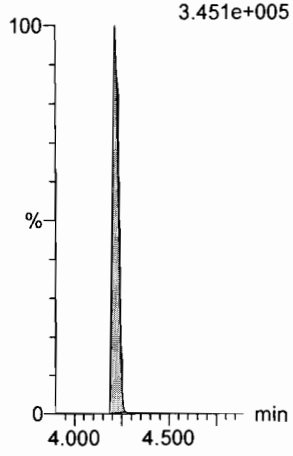
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
5.013e+005



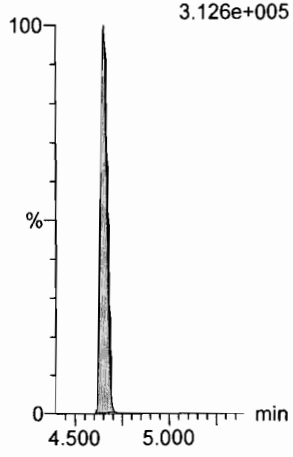
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
5.625e+005



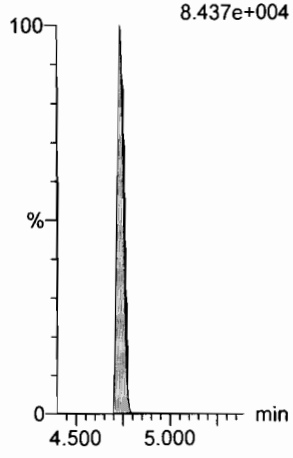
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.451e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.126e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
8.437e+004

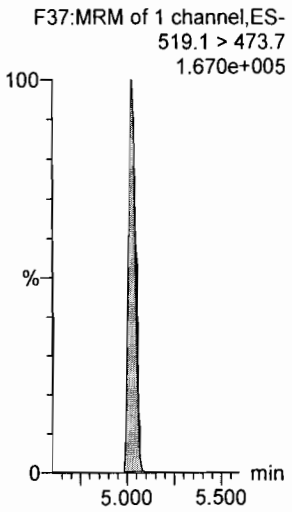


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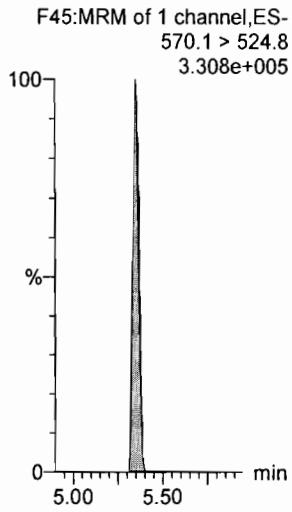
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Name: 180112M3_2, Date: 12-Jan-2018, Time: 13:47:17, ID: ST180112M3-2 PFC CS-1 18A0807, Description: ST180108M2-2 PFC CS-1 18A0807

13C6-PFDA



13C7-PFUdA

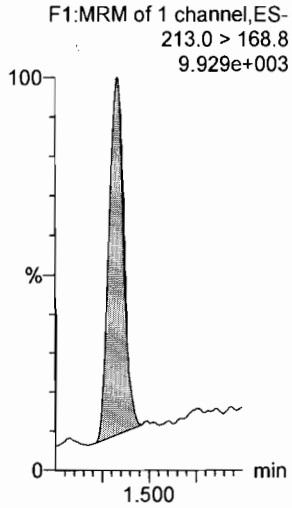


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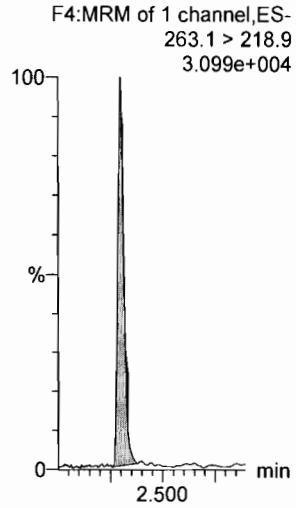
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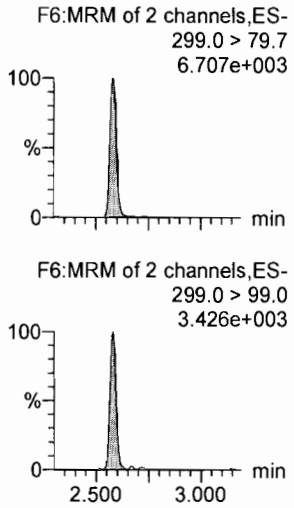
PFBA



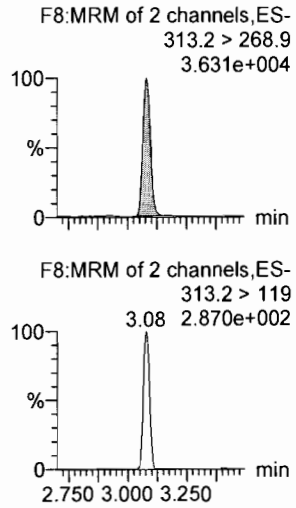
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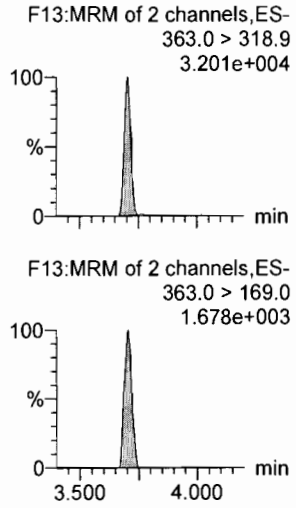
PFBS



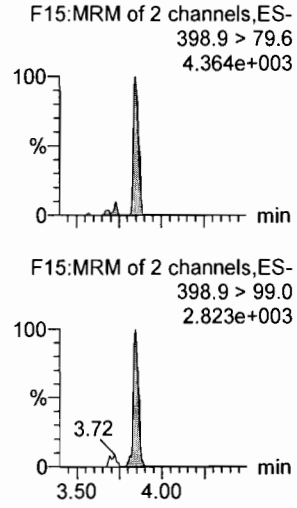
PFHxA



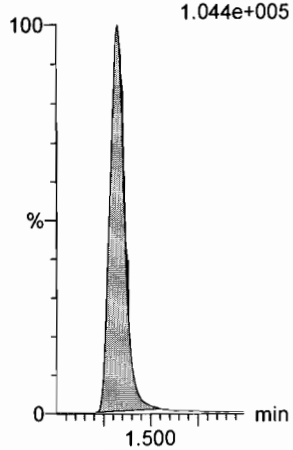
PFHpA



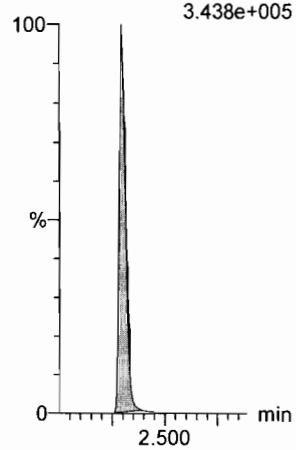
L-PFHxS



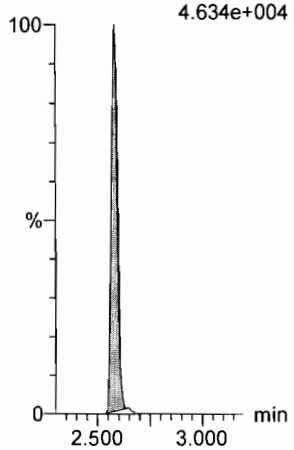
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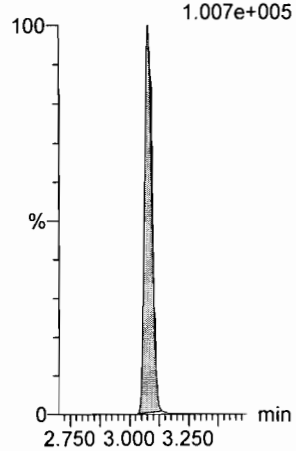
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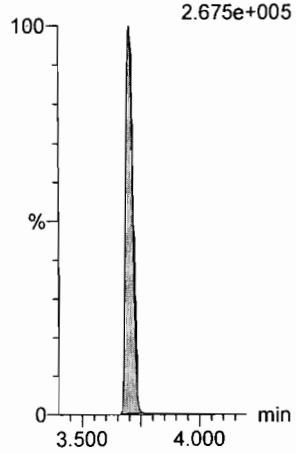
13C3-PFBS



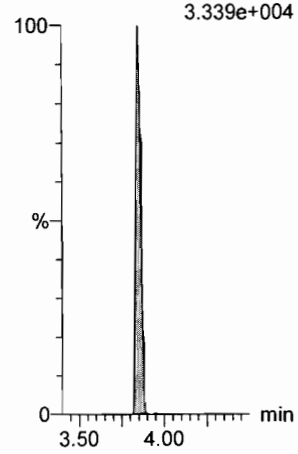
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13C4-PFHpA



18O2-PFHxS

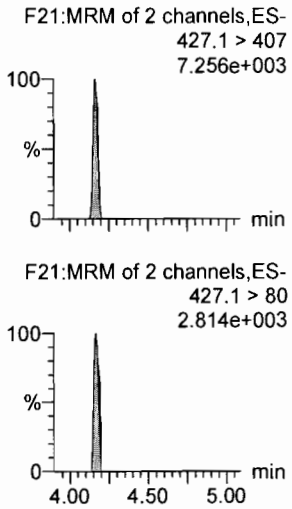


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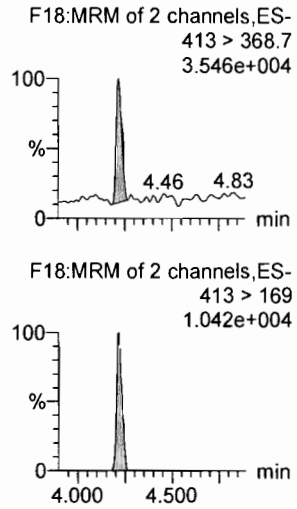
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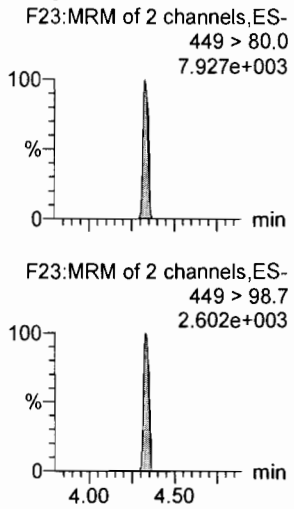
6:2 FTS



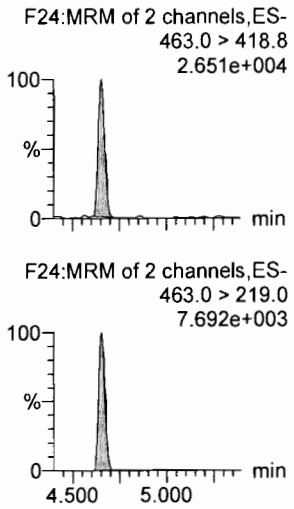
L-PFOA



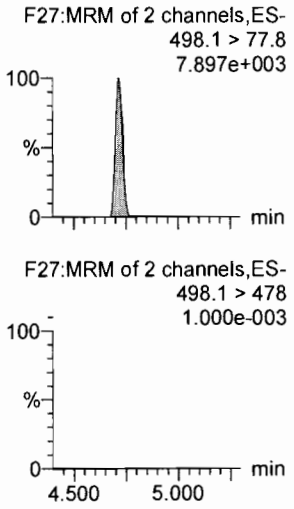
PFHpS



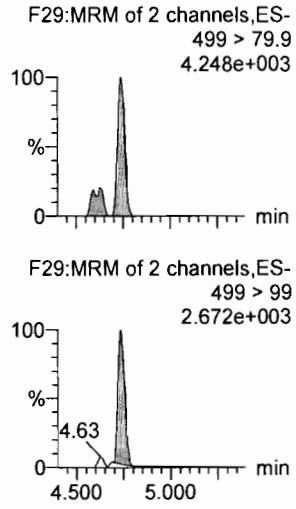
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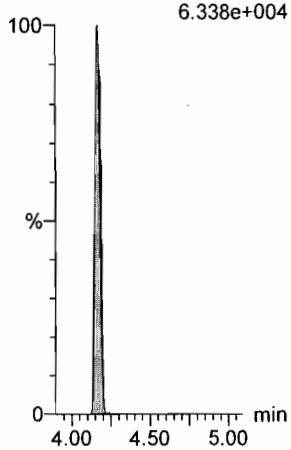
PFOSA



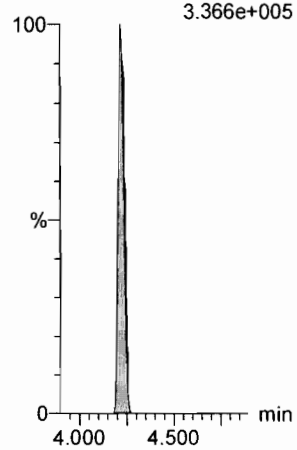
L-PFOS



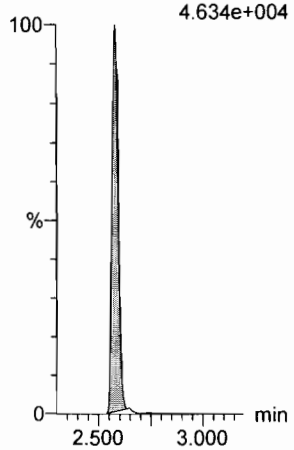
13C2-6:2 FTS



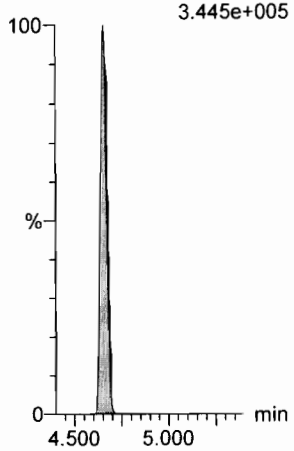
13C2-PFOA



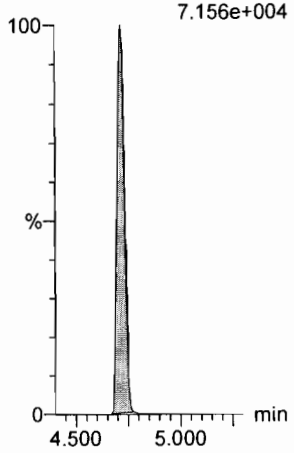
13C3-PFBS



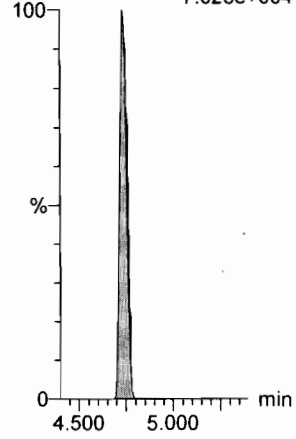
13C5-PFNA



13C8-PFOSA



13C8-PFOS

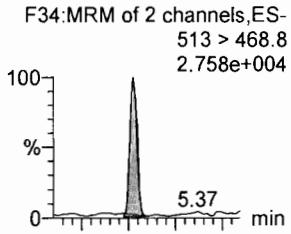


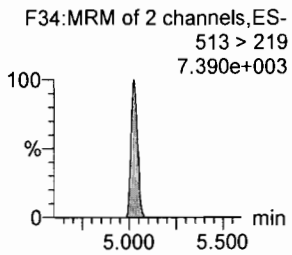
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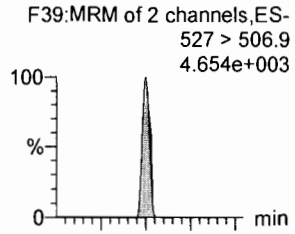
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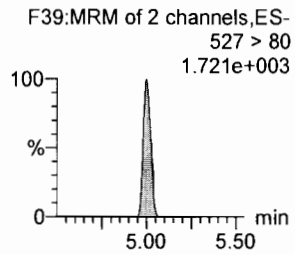
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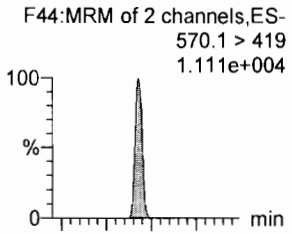


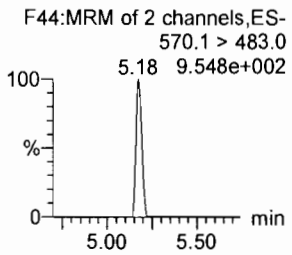
8:2 FTS



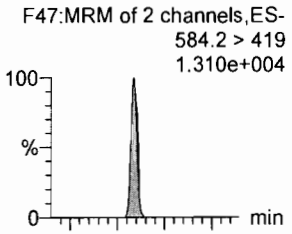


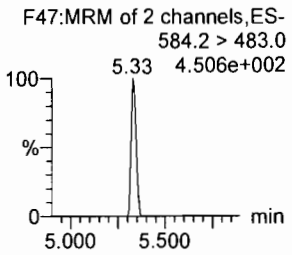
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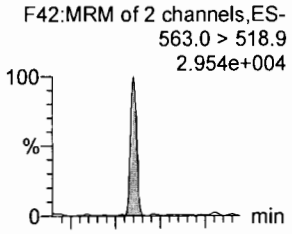


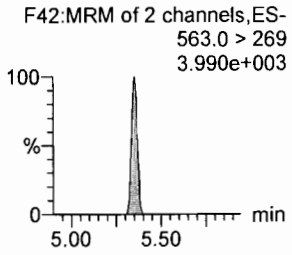
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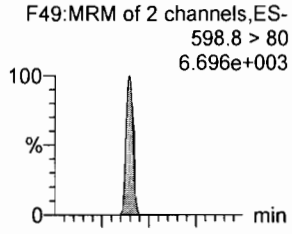


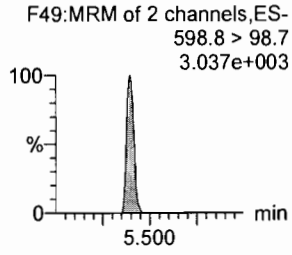
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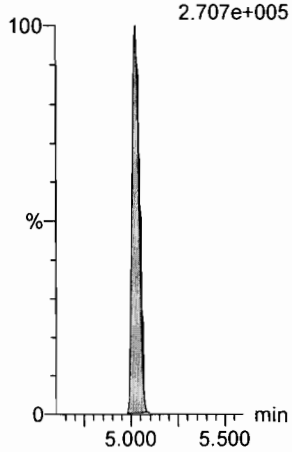


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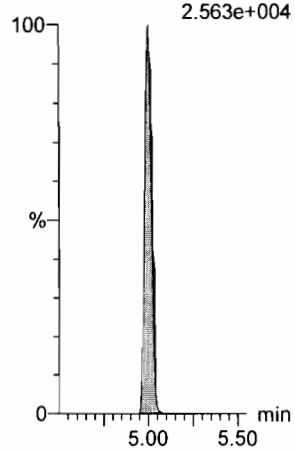




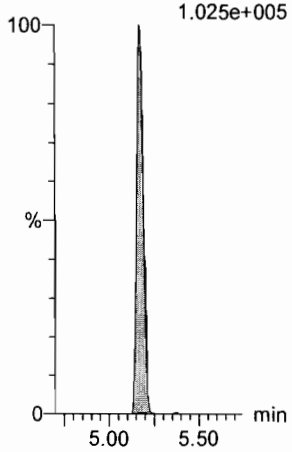
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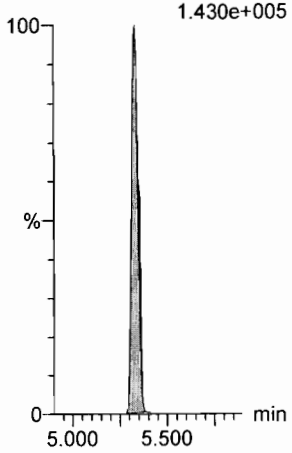
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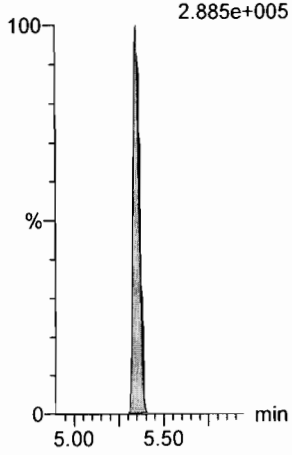
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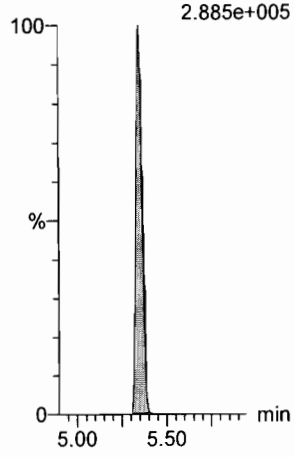
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13C2-PFUdA



13C2-PFUdA

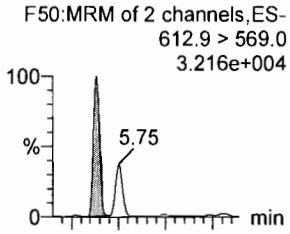


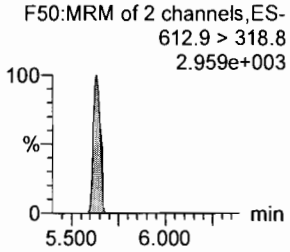
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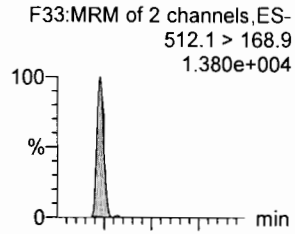
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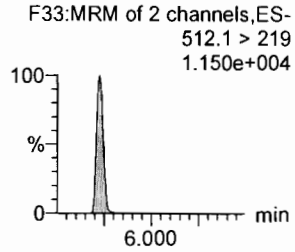
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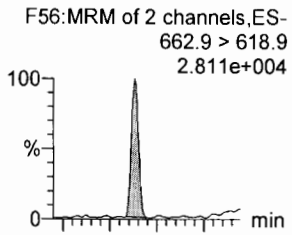


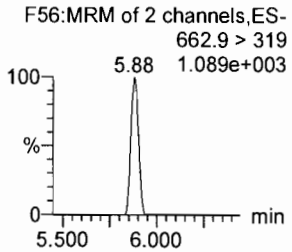
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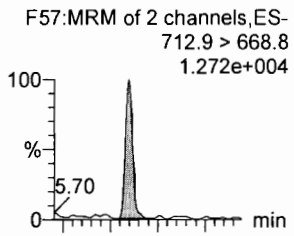


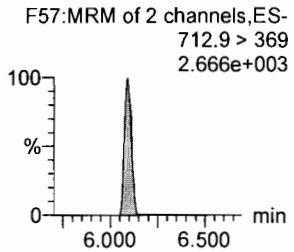
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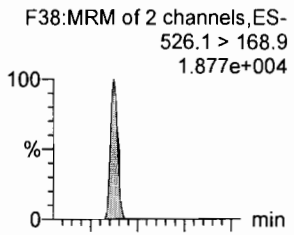


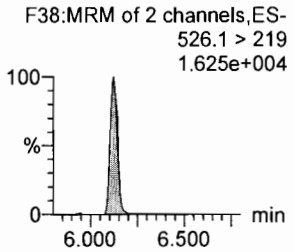
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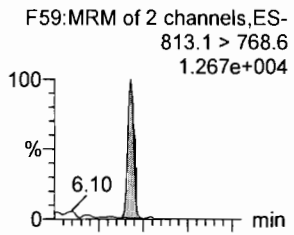


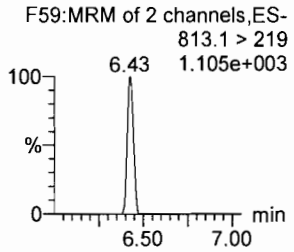
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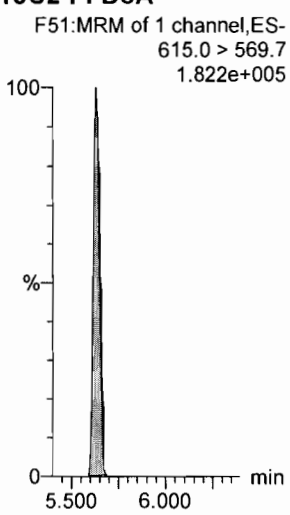


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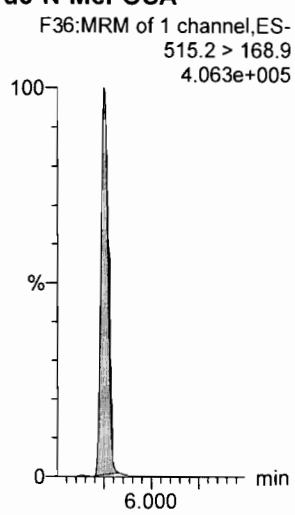




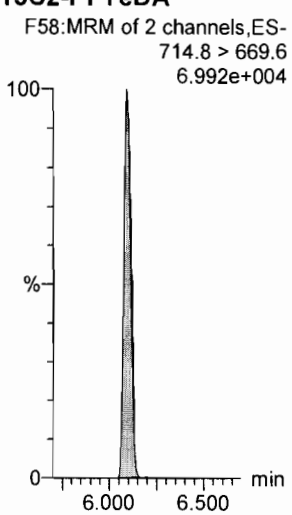
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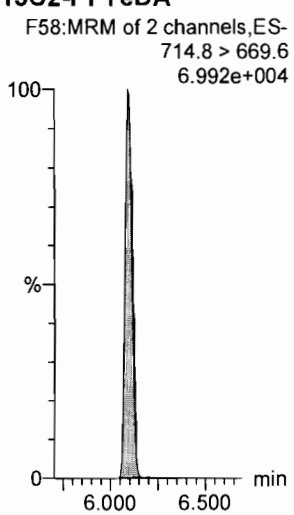
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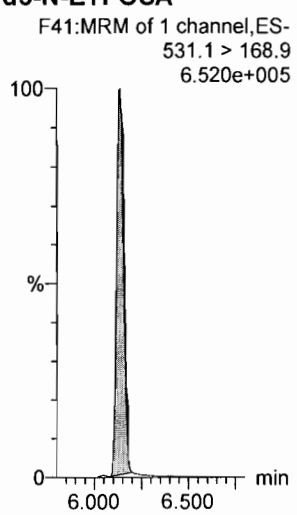
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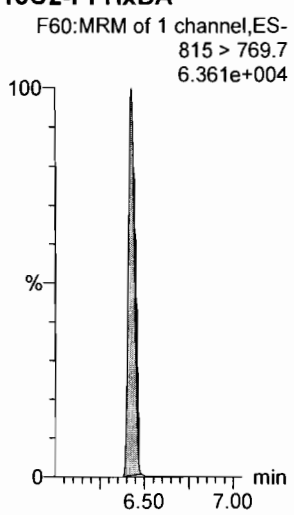
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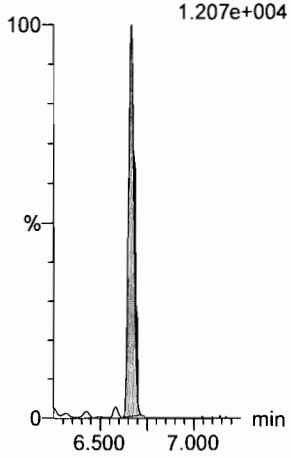


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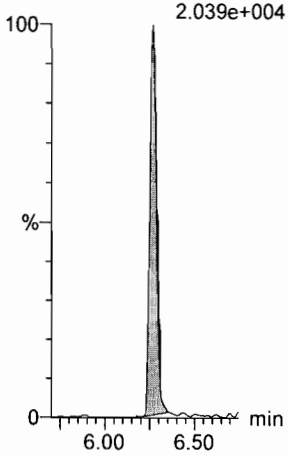
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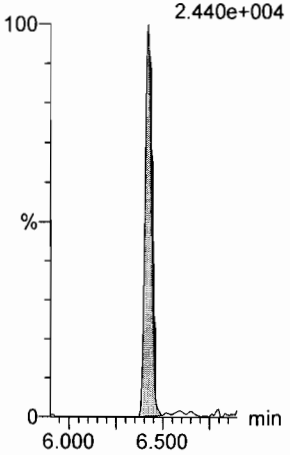
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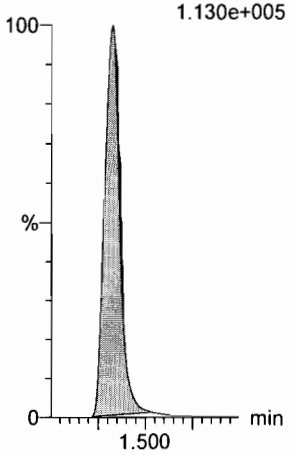
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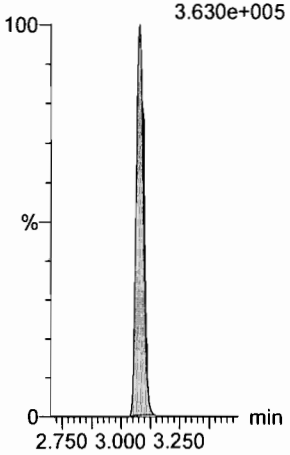
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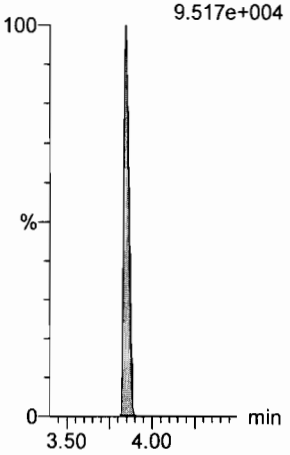
13C4-PFBA
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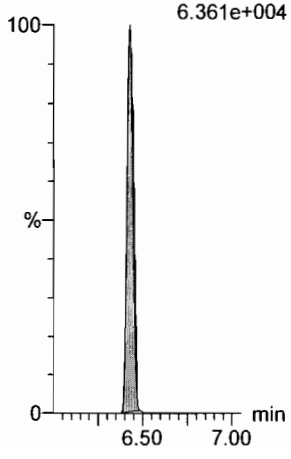
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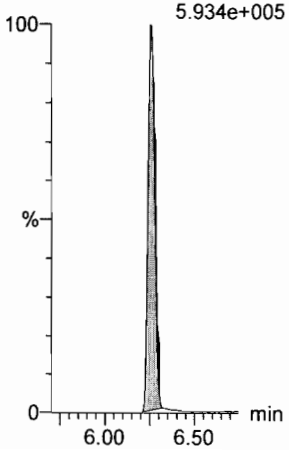
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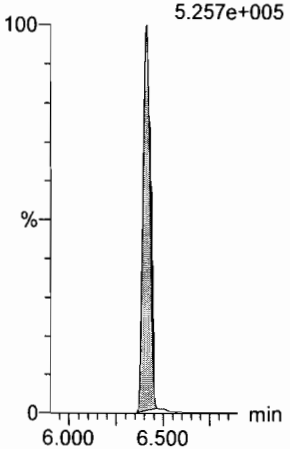
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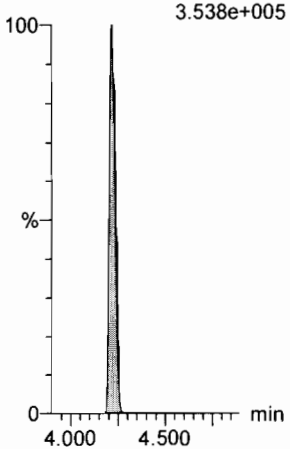
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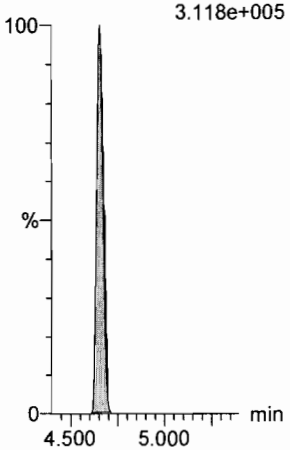
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5.257e+005



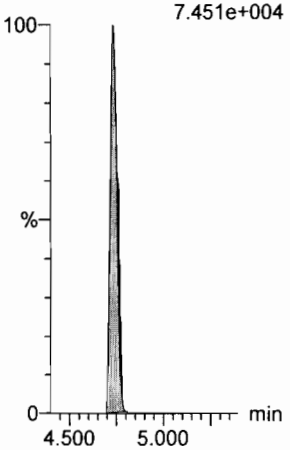
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F20:MRM of 1 channel,ES-
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3.538e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.118e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
7.451e+004

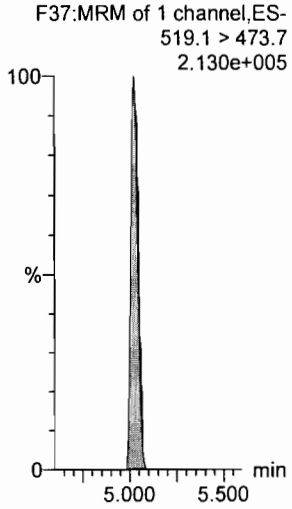


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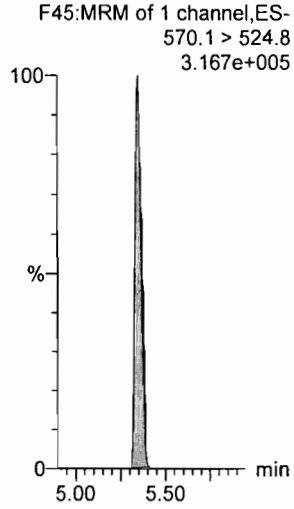
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13C6-PFDA



13C7-PFUdA

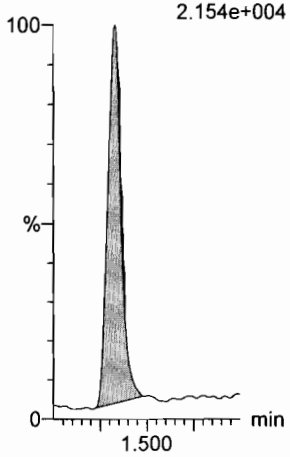


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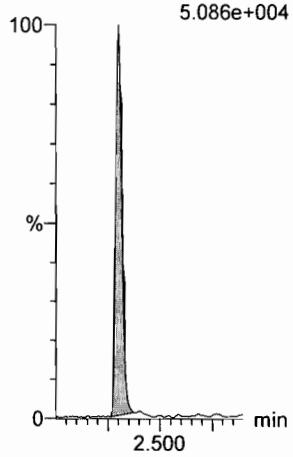
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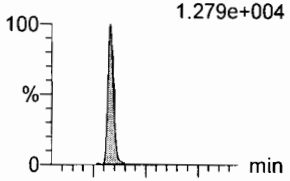
PFBA
F1:MRM of 1 channel,ES-
213.0 > 168.8
2.154e+004



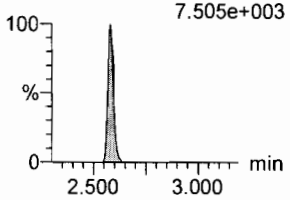
PFPeA
F4:MRM of 1 channel,ES-
263.1 > 218.9
5.086e+004



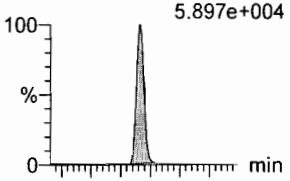
PFBS
F6:MRM of 2 channels,ES-
299.0 > 79.7
1.279e+004



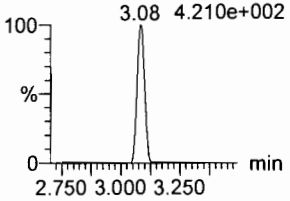
F6:MRM of 2 channels,ES-
299.0 > 99.0
7.505e+003



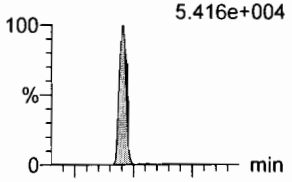
PFHxA
F8:MRM of 2 channels,ES-
313.2 > 268.9
5.897e+004



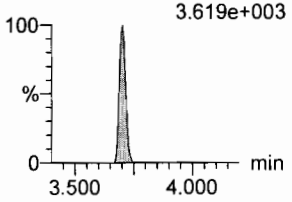
F8:MRM of 2 channels,ES-
313.2 > 119
3.08 4.210e+002



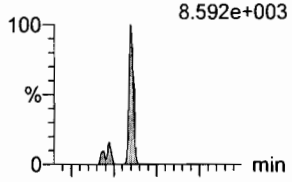
PFHpA
F13:MRM of 2 channels,ES-
363.0 > 318.9
5.416e+004



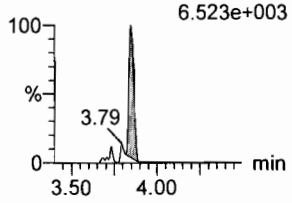
F13:MRM of 2 channels,ES-
363.0 > 169.0
3.619e+003



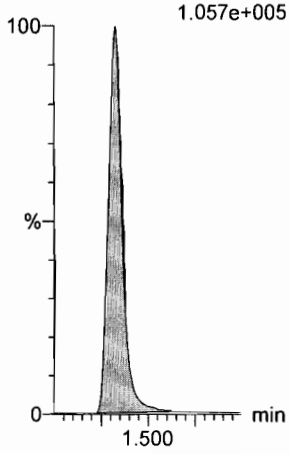
L-PFHxS
F15:MRM of 2 channels,ES-
398.9 > 79.6
8.592e+003



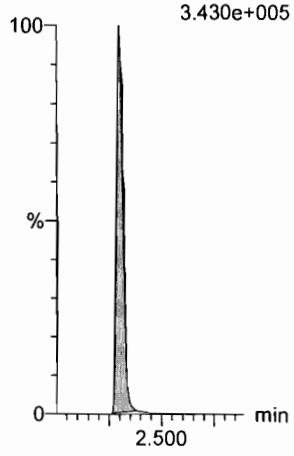
F15:MRM of 2 channels,ES-
398.9 > 99.0
6.523e+003



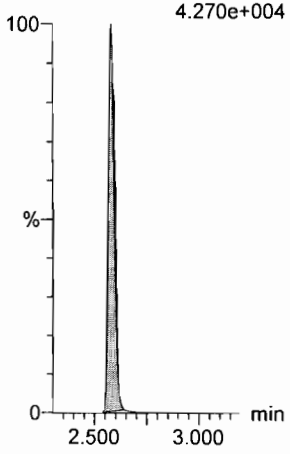
13C3-PFBA
F2:MRM of 1 channel,ES-
216.1 > 171.8
1.057e+005



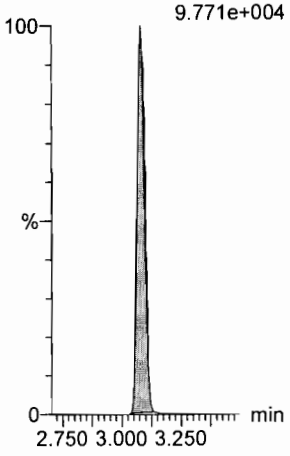
13C3-PFPeA
F5:MRM of 1 channel,ES-
266. > 221.8
3.430e+005



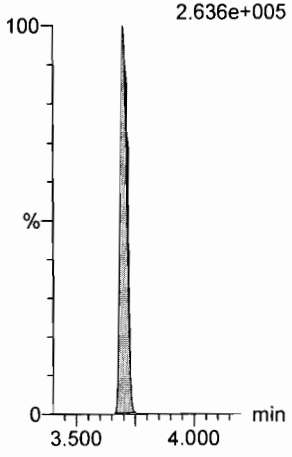
13C3-PFBS
F7:MRM of 1 channel,ES-
302. > 98.8
4.270e+004



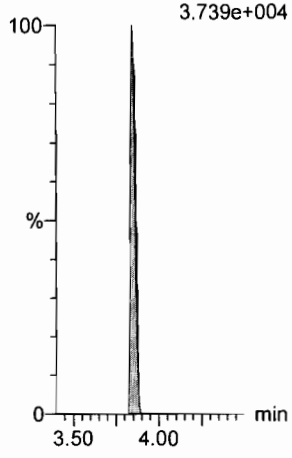
13C2-PFHxA
F9:MRM of 1 channel,ES-
315 > 269.8
9.771e+004



13C4-PFHpA
F14:MRM of 1 channel,ES-
367.2 > 321.8
2.636e+005



18O2-PFHxS
F17:MRM of 1 channel,ES-
403.0 > 102.6
3.739e+004

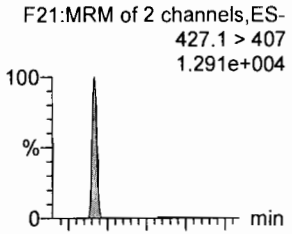


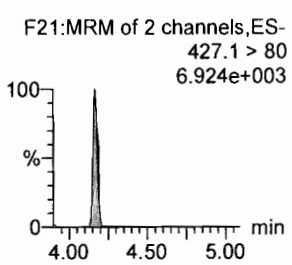
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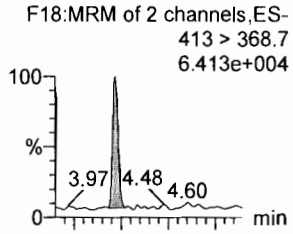
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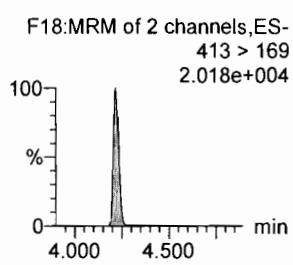
6:2 FTS



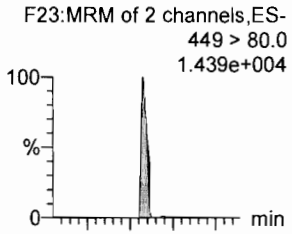


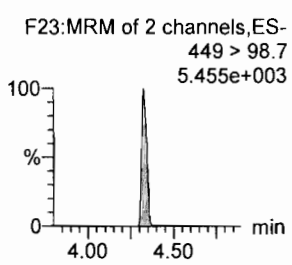
L-PFOA



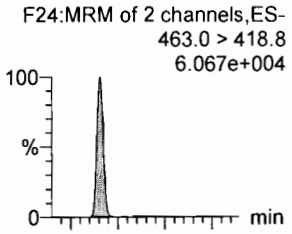


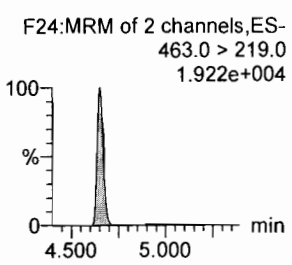
PFHpS



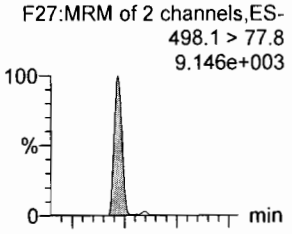


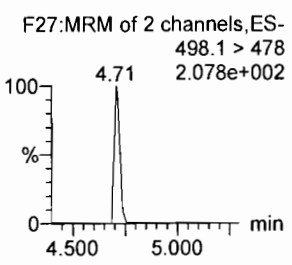
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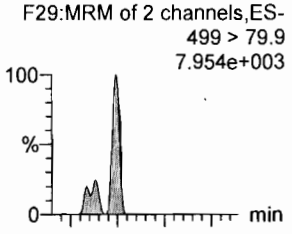


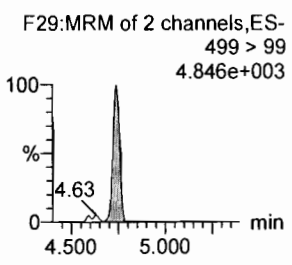
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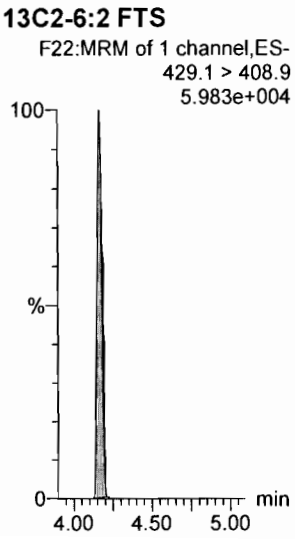


L-PFOS

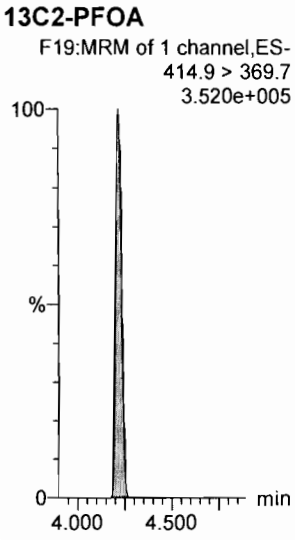




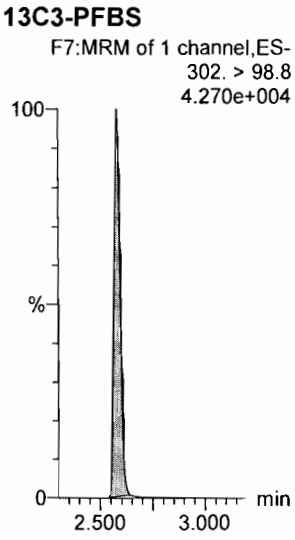
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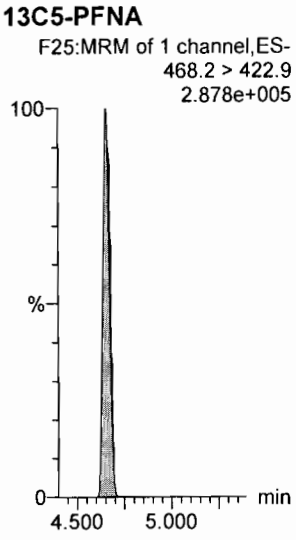
13C2-PFOA



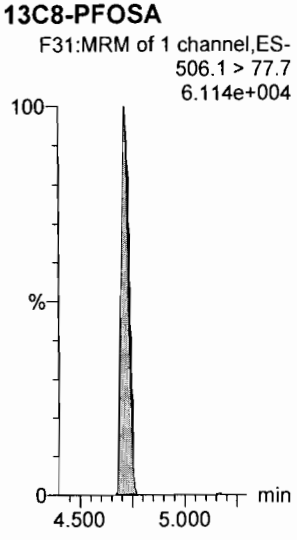
13C3-PFBS



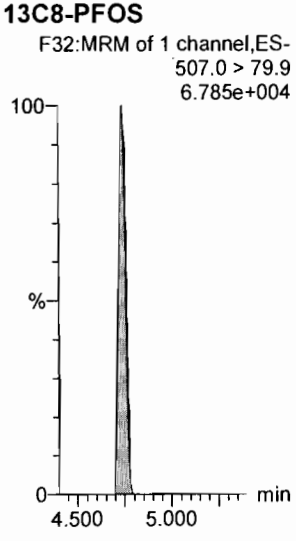
13C5-PFNA



13C8-PFOSA



13C8-PFOS

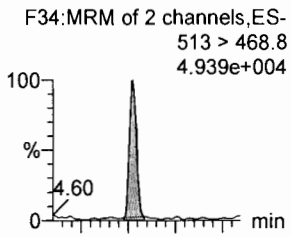


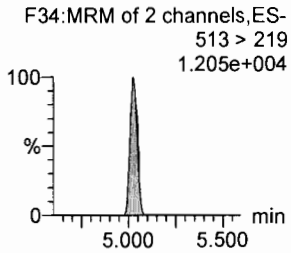
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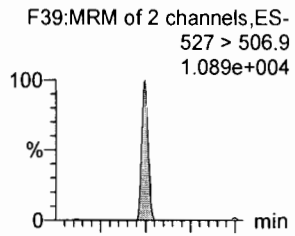
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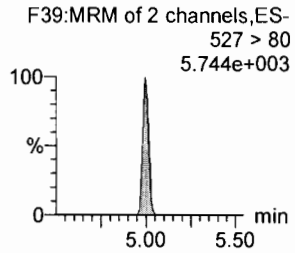
PFDA



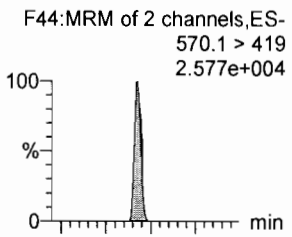


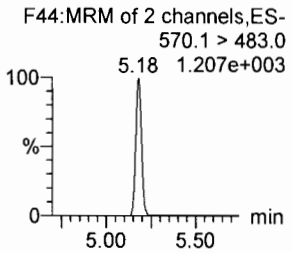
8:2 FTS



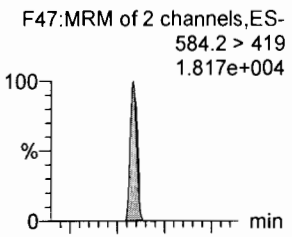


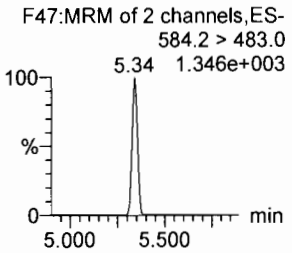
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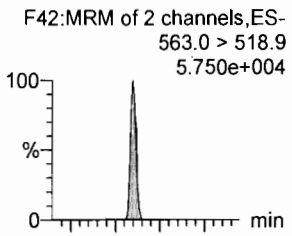


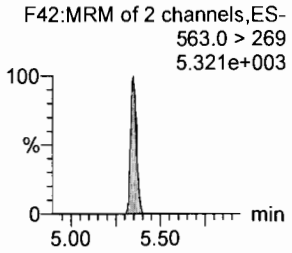
N-EtFOSAA



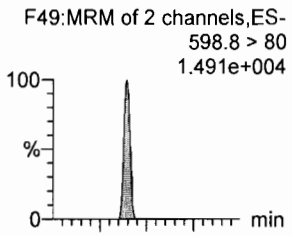


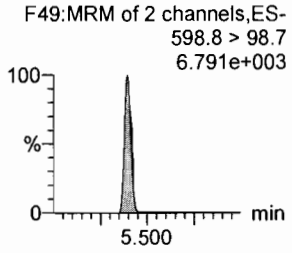
PFUdA



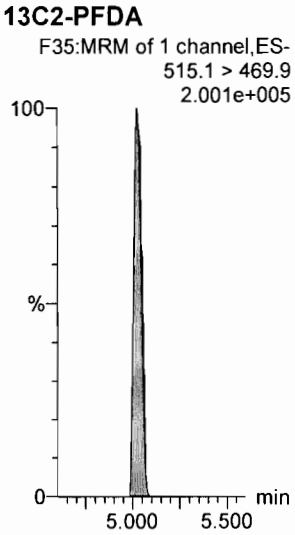


PFDS

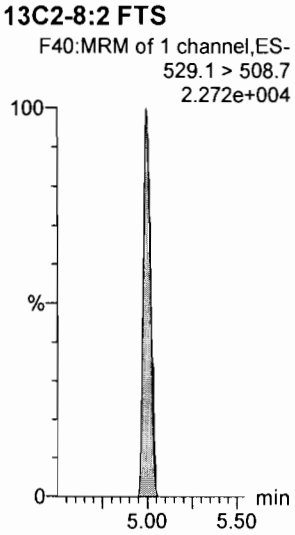




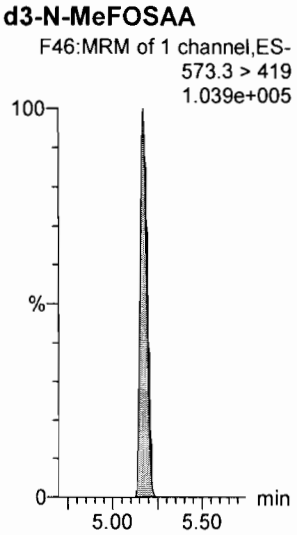
13C2-PFDA



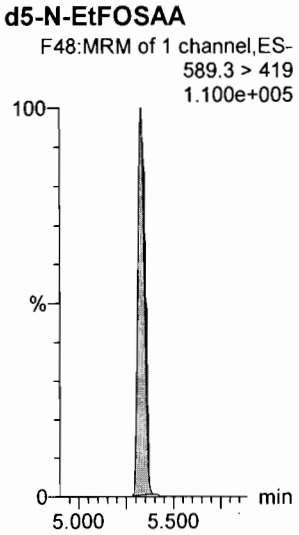
13C2-8:2 FTS



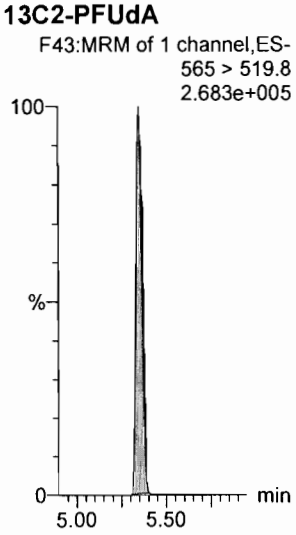
d3-N-MeFOSAA



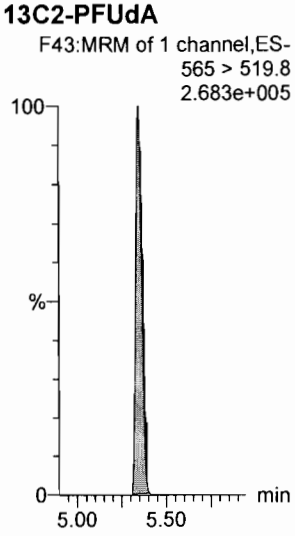
d5-N-EtFOSAA



13C2-PFUdA



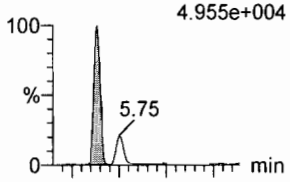
13C2-PFUdA

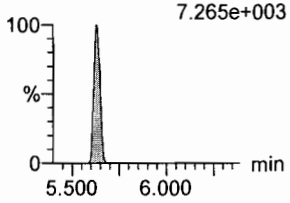


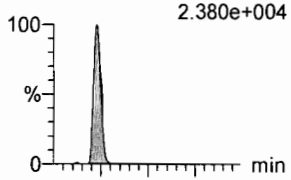
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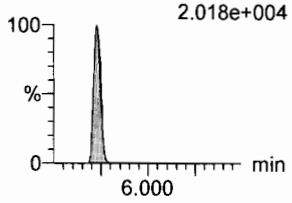
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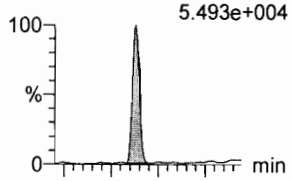
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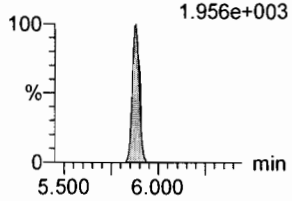
PFDoA
F50:MRM of 2 channels,ES-
612.9 > 569.0
4.955e+004


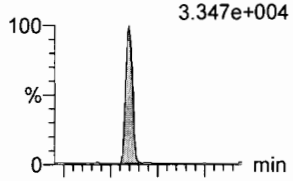
F50:MRM of 2 channels,ES-
612.9 > 318.8
7.265e+003


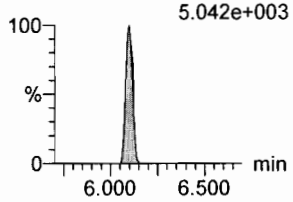
N-MeFOSA
F33:MRM of 2 channels,ES-
512.1 > 168.9
2.380e+004


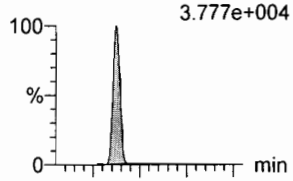
F33:MRM of 2 channels,ES-
512.1 > 219
2.018e+004


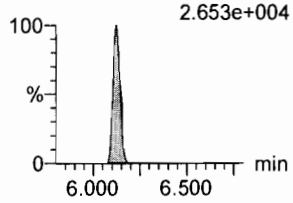
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
5.493e+004


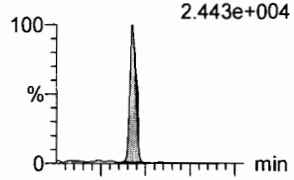
F56:MRM of 2 channels,ES-
662.9 > 319
1.956e+003


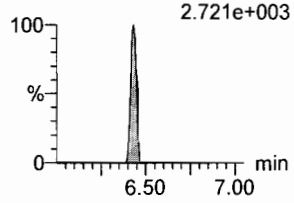
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
3.347e+004


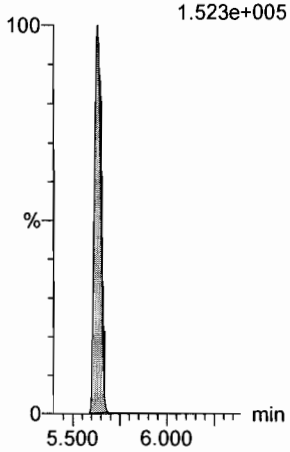
F57:MRM of 2 channels,ES-
712.9 > 369
5.042e+003


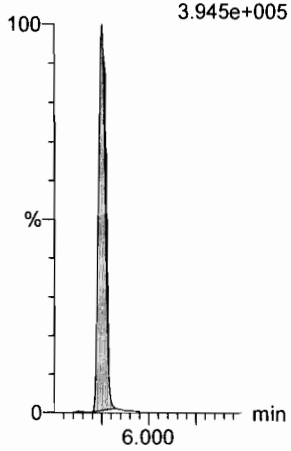
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
3.777e+004


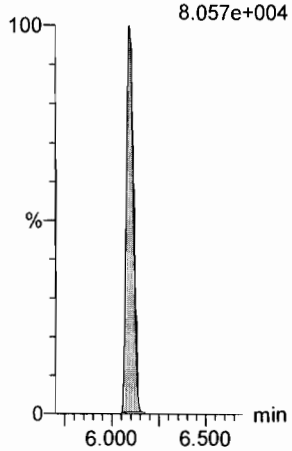
F38:MRM of 2 channels,ES-
526.1 > 219
2.653e+004


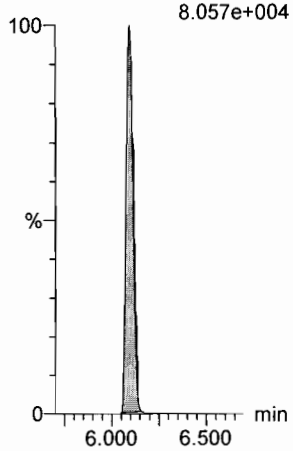
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
2.443e+004


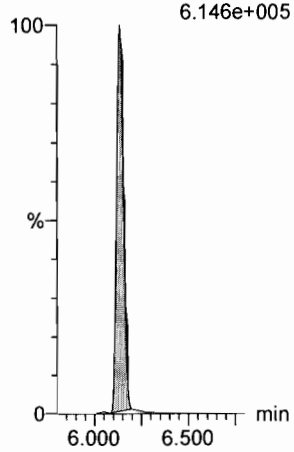
F59:MRM of 2 channels,ES-
813.1 > 219
2.721e+003


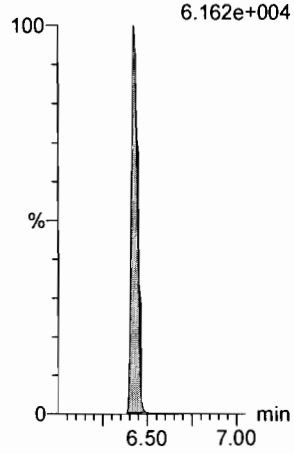
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
1.523e+005


d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
3.945e+005


13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
8.057e+004


13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
8.057e+004


d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
6.146e+005


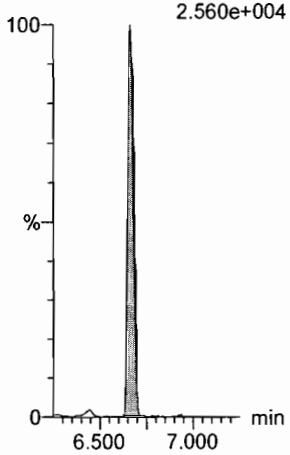
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
6.162e+004


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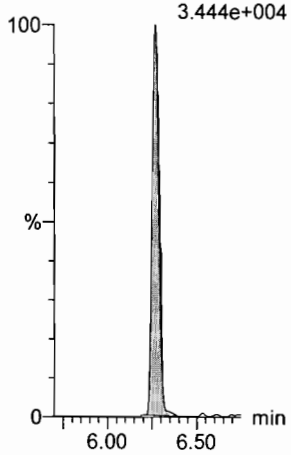
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Name: 180112M3_4, Date: 12-Jan-2018, Time: 14:10:20, ID: ST180112M3-4 PFC CS1 18A0809, Description: ST180108M2-4 PFC CS1 18A0809

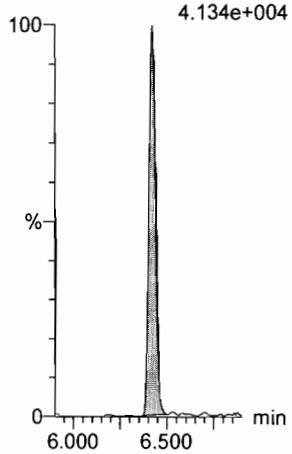
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
2.560e+004



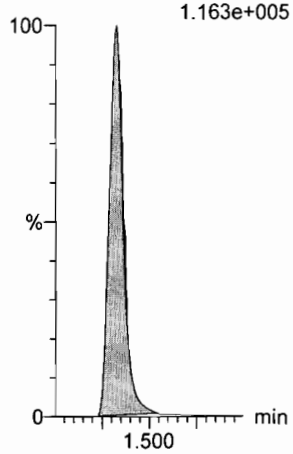
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
3.444e+004



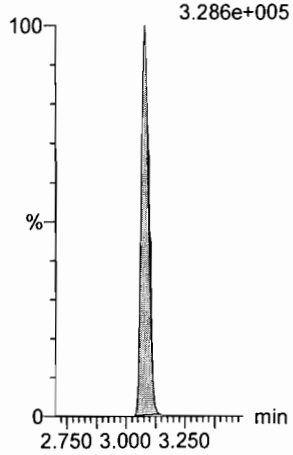
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
4.134e+004



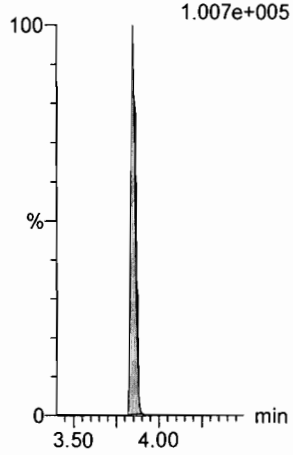
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.163e+005



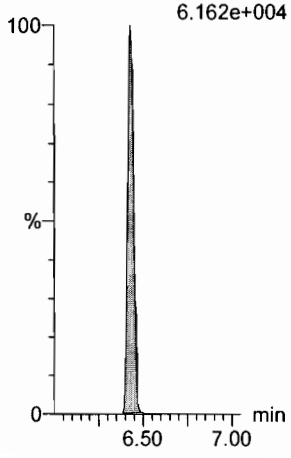
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
3.286e+005



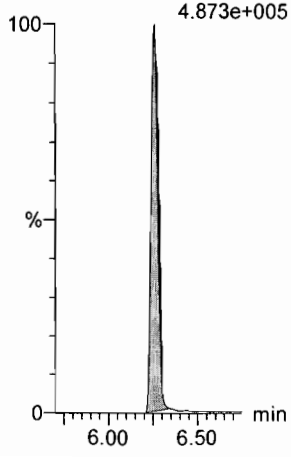
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
1.007e+005



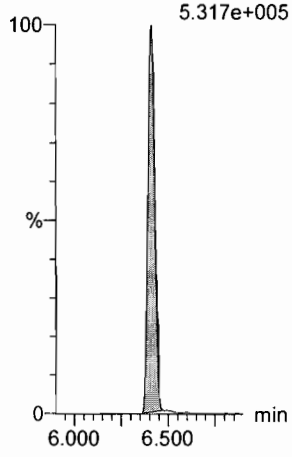
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
6.162e+004



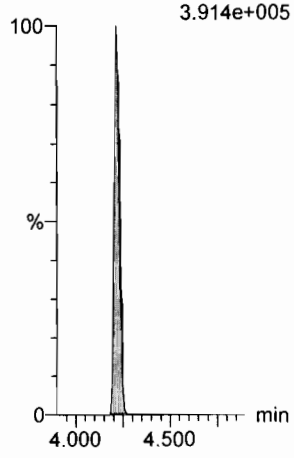
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
4.873e+005



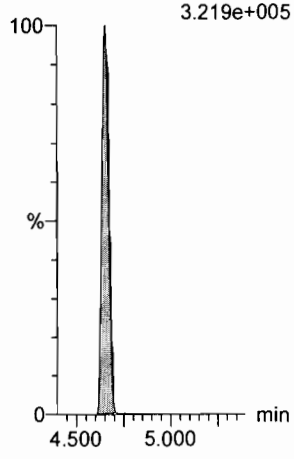
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
5.317e+005



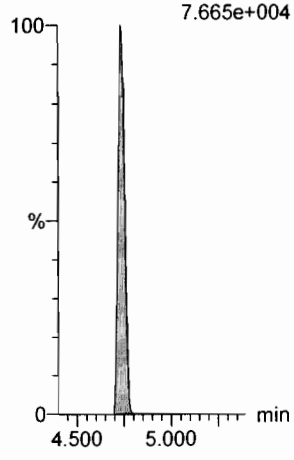
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.914e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.219e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
7.665e+004

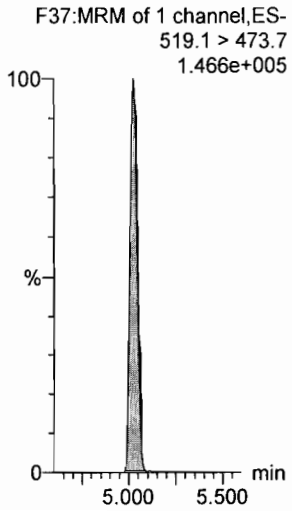


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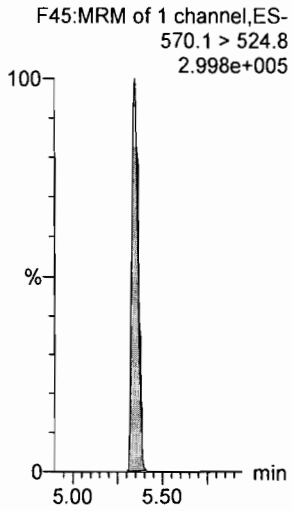
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Name: 180112M3_4, Date: 12-Jan-2018, Time: 14:10:20, ID: ST180112M3-4 PFC CS1 18A0809, Description: ST180108M2-4 PFC CS1 18A0809

13C6-PFDA



13C7-PFUdA

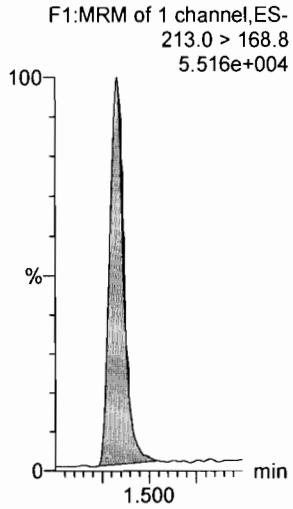


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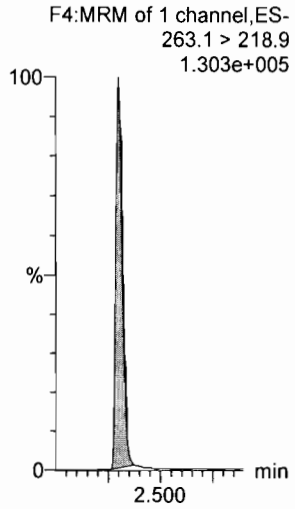
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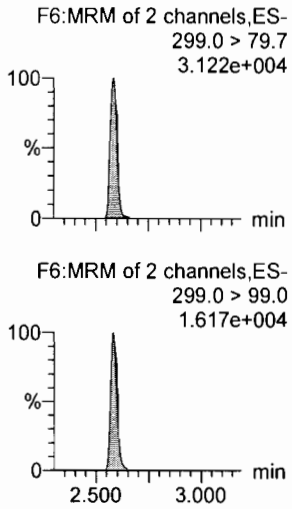
PFBA



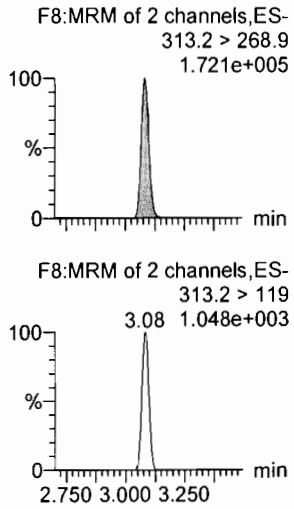
PFPeA



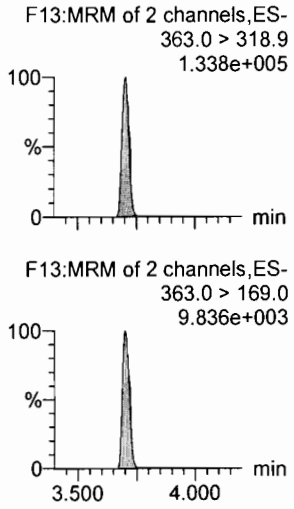
PFBS



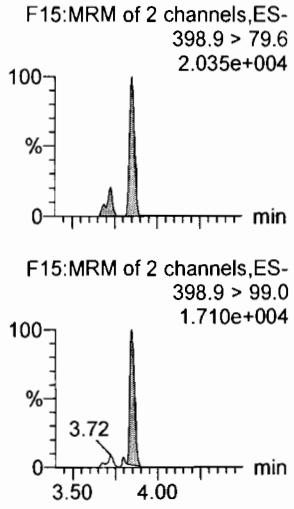
PFHxA



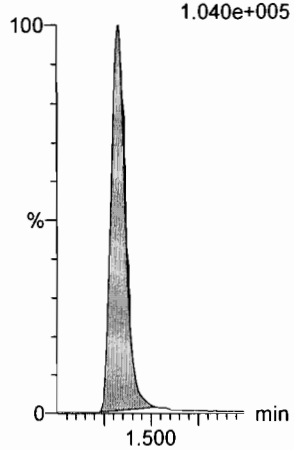
PFHpA



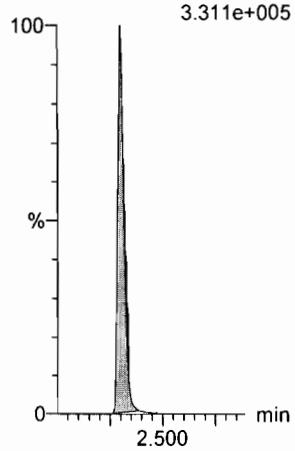
L-PFHxS



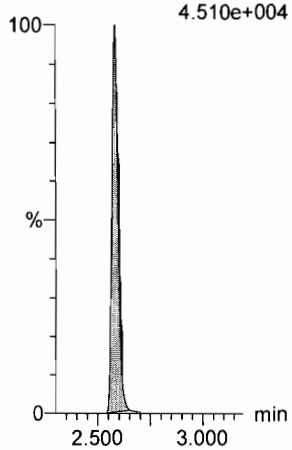
13C3-PFBA



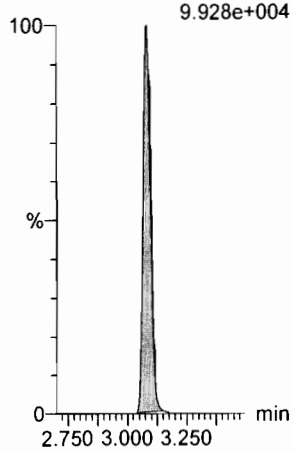
13C3-PFPeA



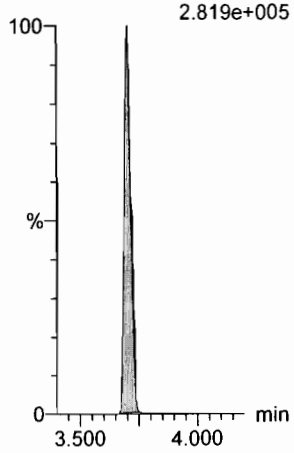
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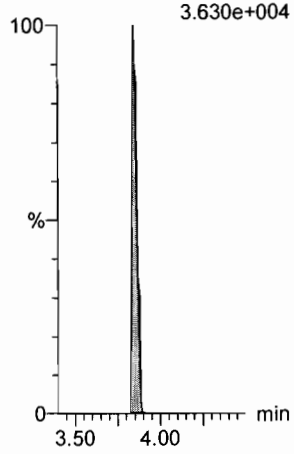
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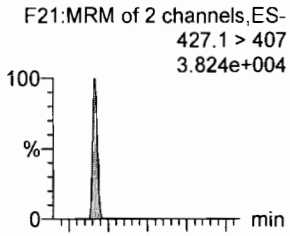


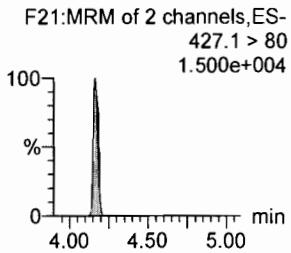
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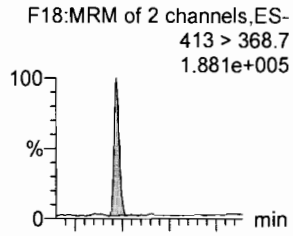
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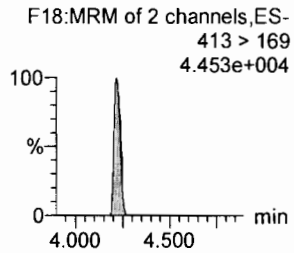
6:2 FTS



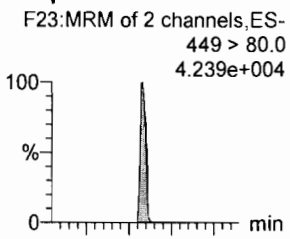


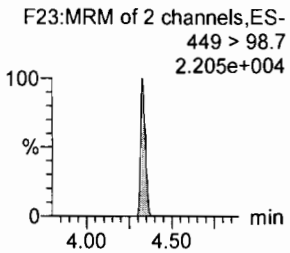
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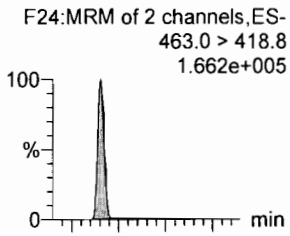


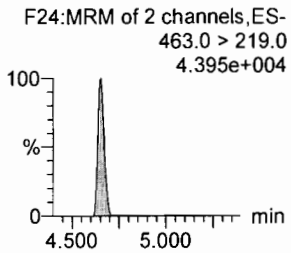
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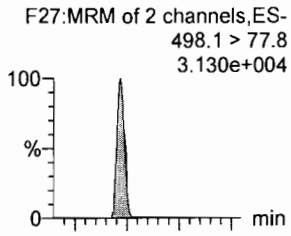


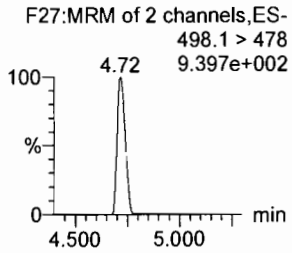
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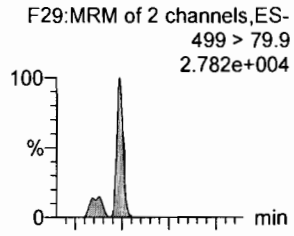


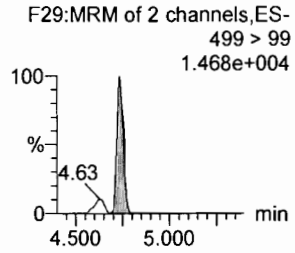
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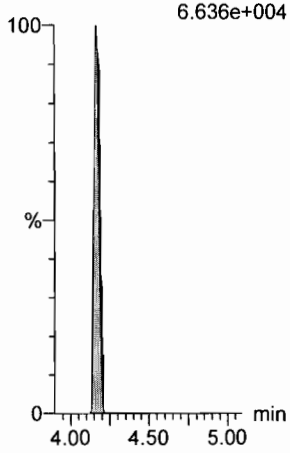


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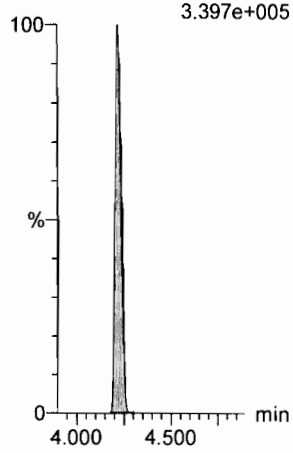




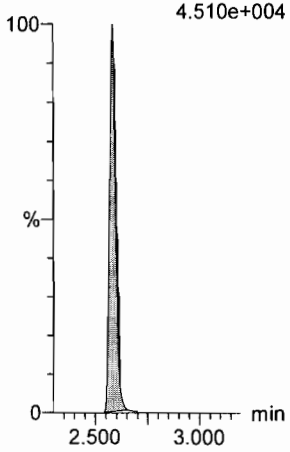
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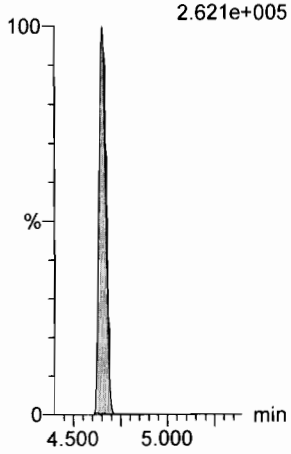
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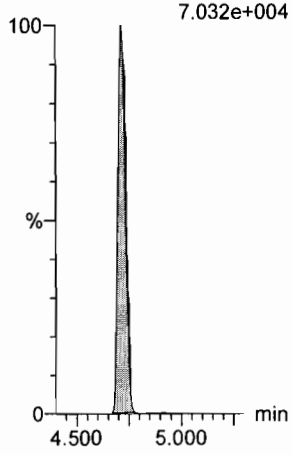
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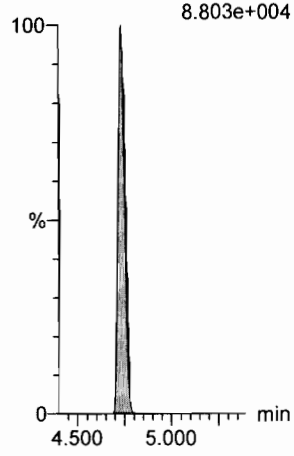
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13C8-PFOSA



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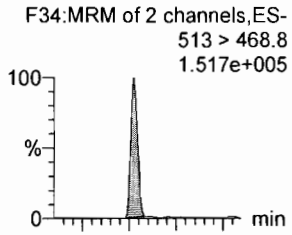


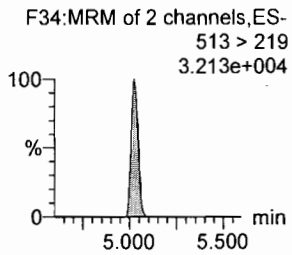
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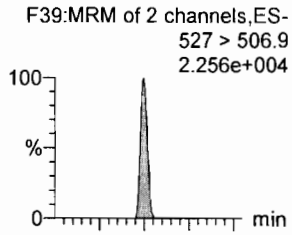
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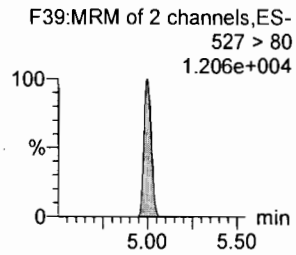
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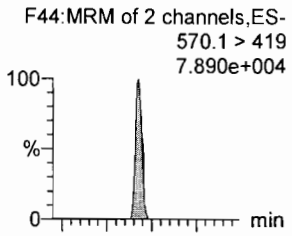


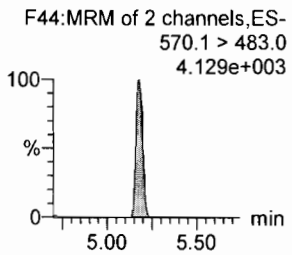
8:2 FTS



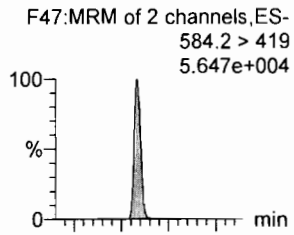


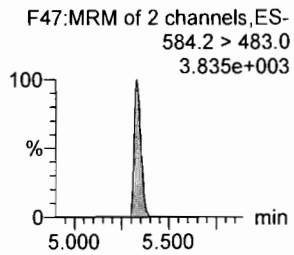
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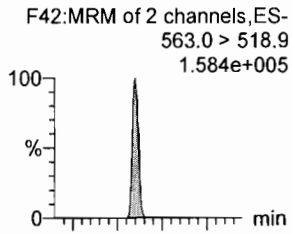


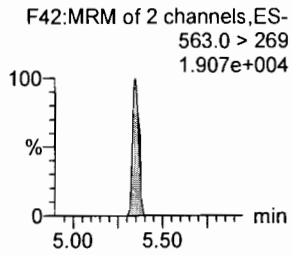
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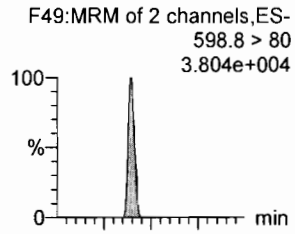


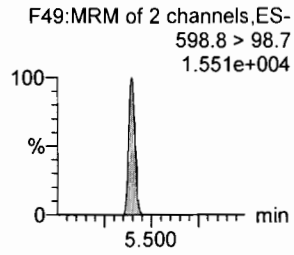
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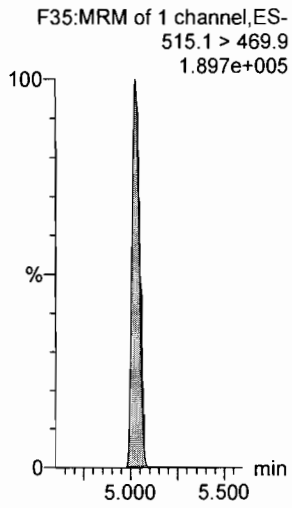


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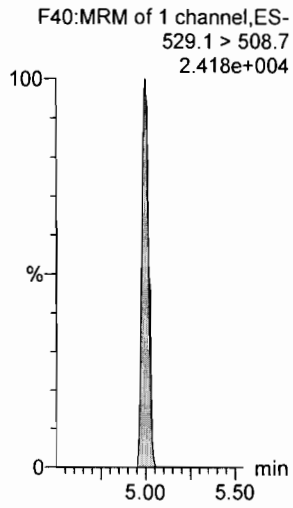




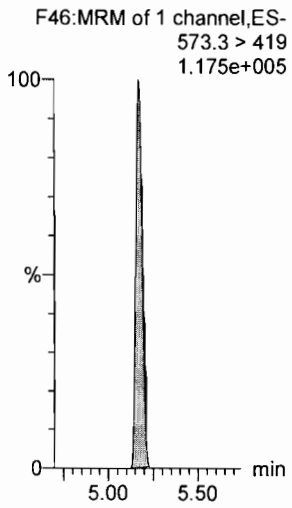
13C2-PFDA



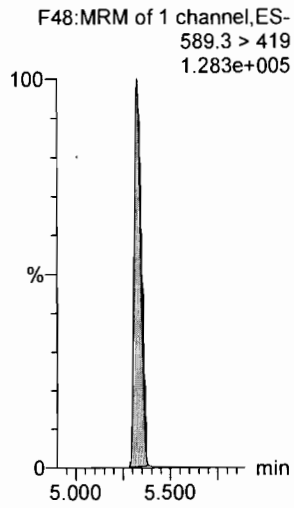
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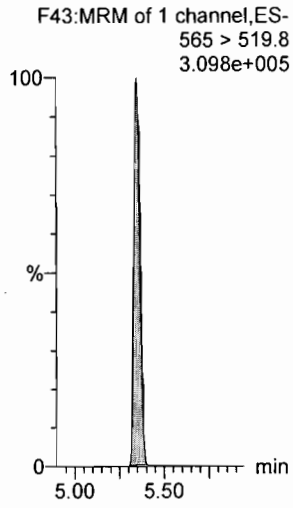
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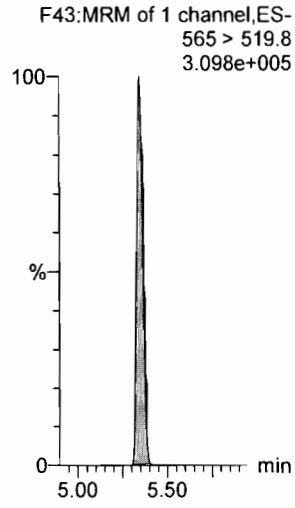
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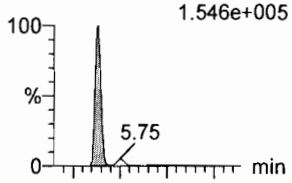
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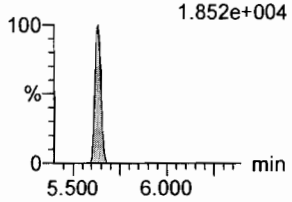


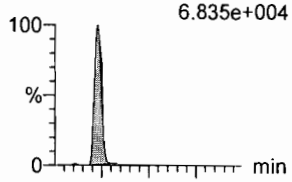
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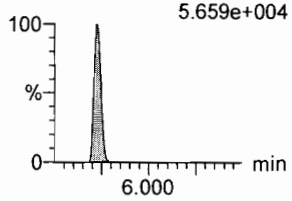
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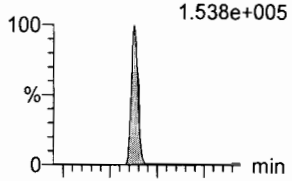
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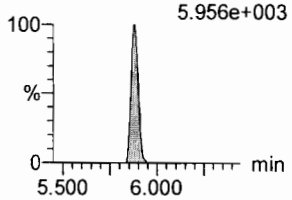
PFDoA
F50:MRM of 2 channels,ES-
612.9 > 569.0
1.546e+005


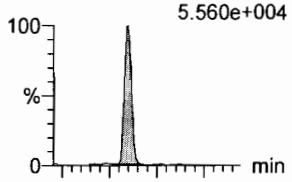
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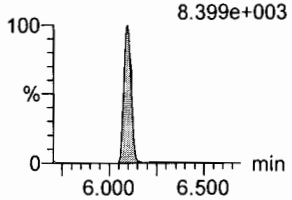
N-MeFOSA
F33:MRM of 2 channels,ES-
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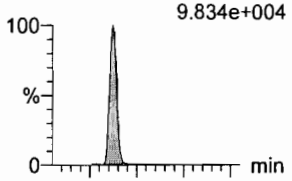
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5.659e+004


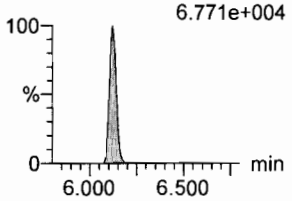
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
1.538e+005


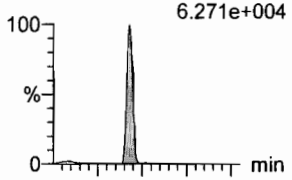
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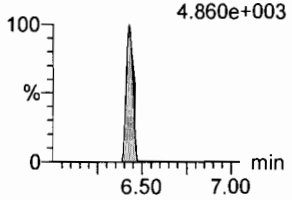
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
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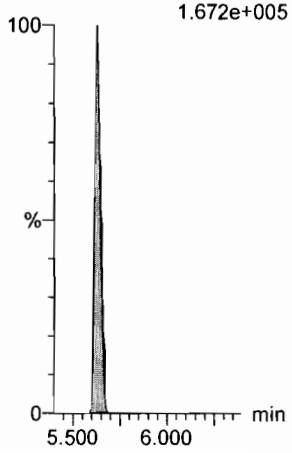
F57:MRM of 2 channels,ES-
712.9 > 369
8.399e+003


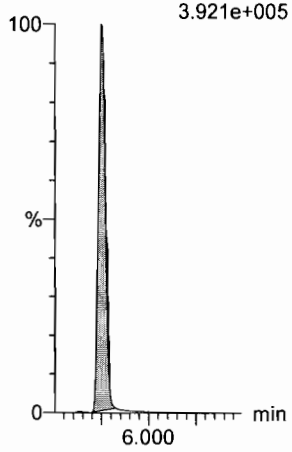
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
9.834e+004


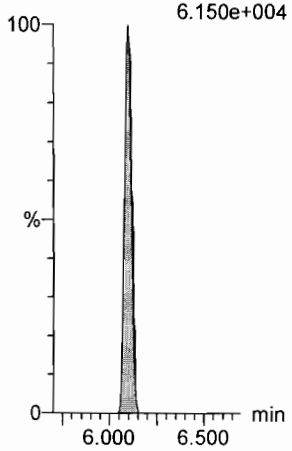
F38:MRM of 2 channels,ES-
526.1 > 219
6.771e+004


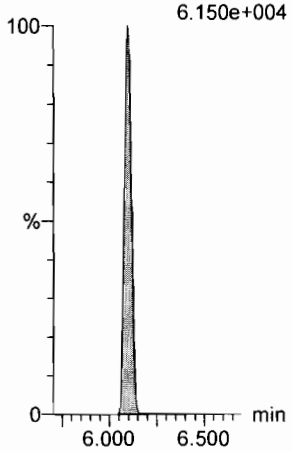
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
6.271e+004


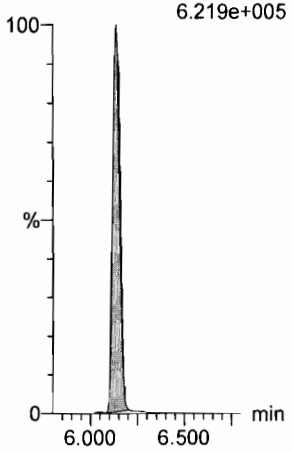
F59:MRM of 2 channels,ES-
813.1 > 219
4.860e+003


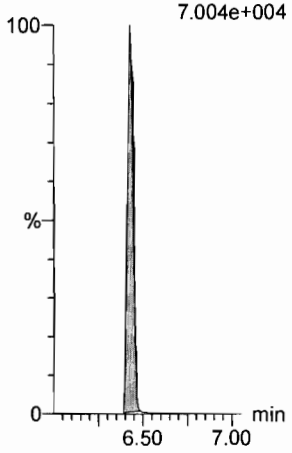
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
1.672e+005


d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
3.921e+005


13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
6.150e+004


13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
6.150e+004


d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
6.219e+005


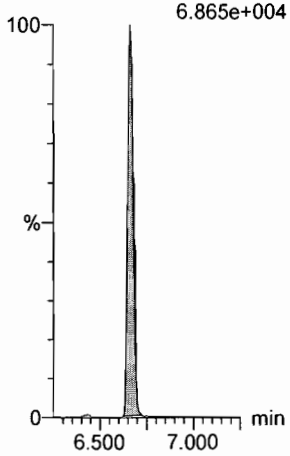
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
7.004e+004


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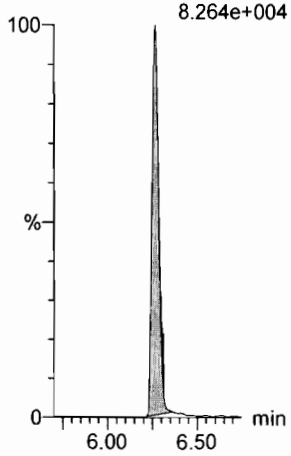
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Name: 180112M3_5, Date: 12-Jan-2018, Time: 14:21:50, ID: ST180112M3-5 PFC CS2 18A0810, Description: ST180108M2-5 PFC CS2 18A0810

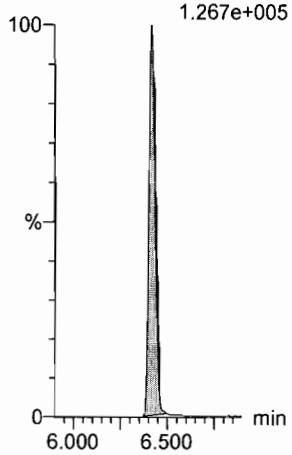
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
6.865e+004



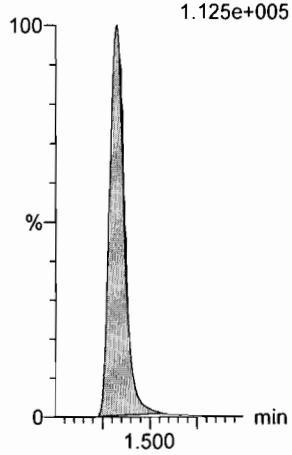
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
8.264e+004



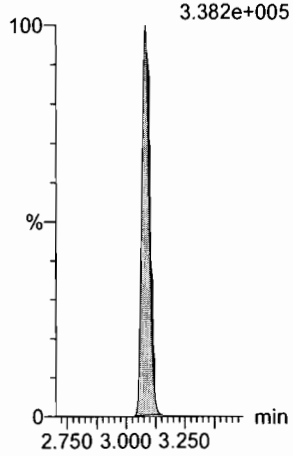
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
1.267e+005



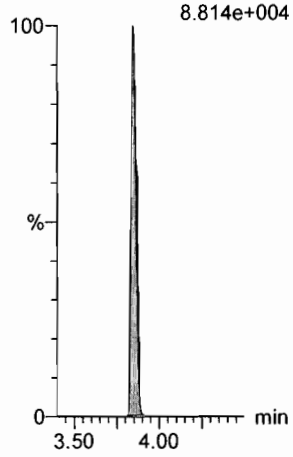
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.125e+005



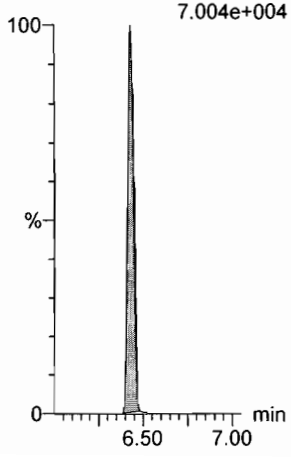
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
3.382e+005



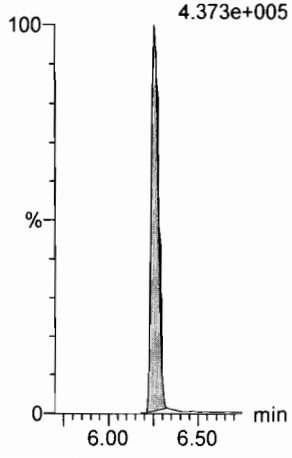
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
8.814e+004



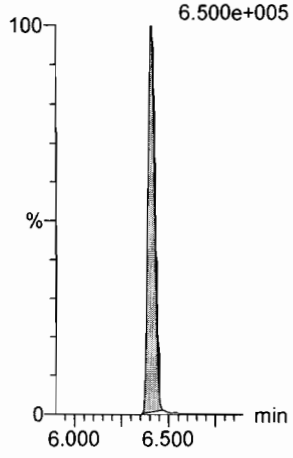
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
7.004e+004



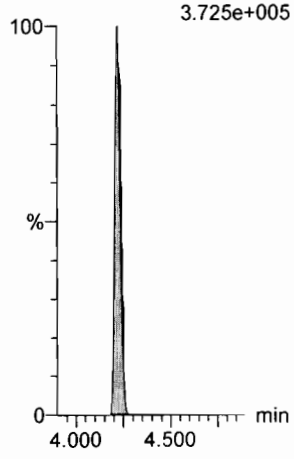
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
4.373e+005



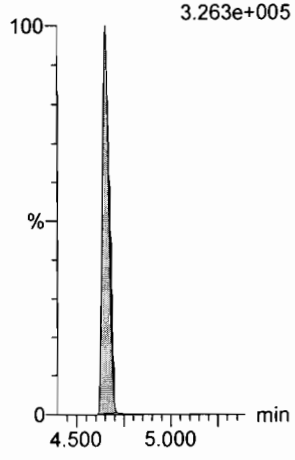
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
6.500e+005



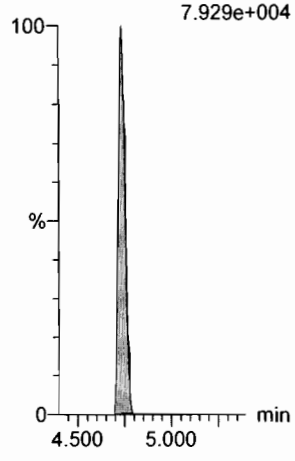
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.725e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.263e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
7.929e+004

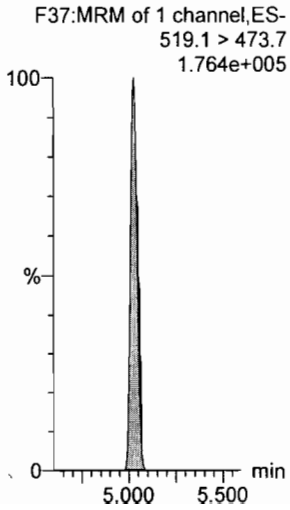


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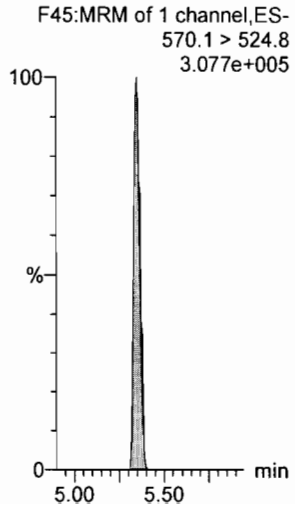
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Printed: Saturday, January 13, 2018 17:06:32 Pacific Standard Time

Name: 180112M3_5, Date: 12-Jan-2018, Time: 14:21:50, ID: ST180112M3-5 PFC CS2 18A0810, Description: ST180108M2-5 PFC CS2 18A0810

13C6-PFDA



13C7-PFUdA

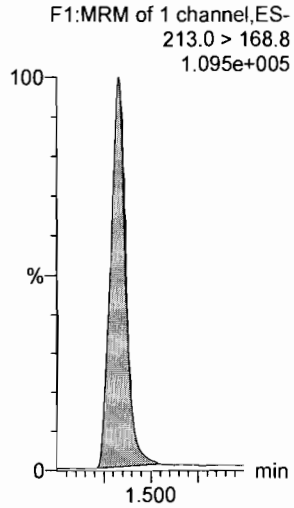


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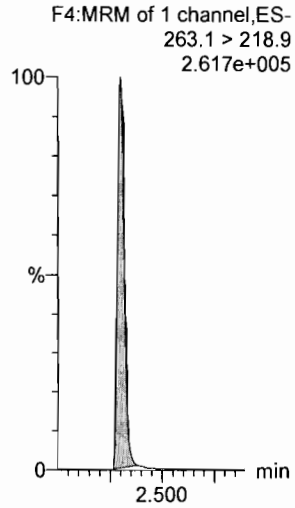
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Name: 180112M3_6, Date: 12-Jan-2018, Time: 14:33:24, ID: ST180112M3-6 PFC CS3 18A0811, Description: ST180108M2-6 PFC CS3 18A0811

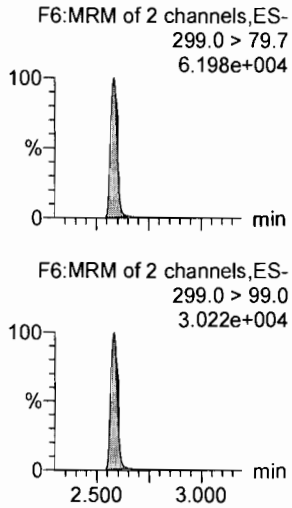
PFBA



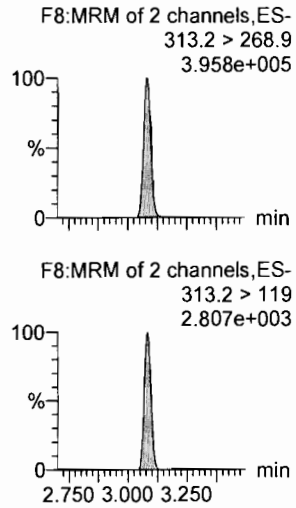
PFPeA



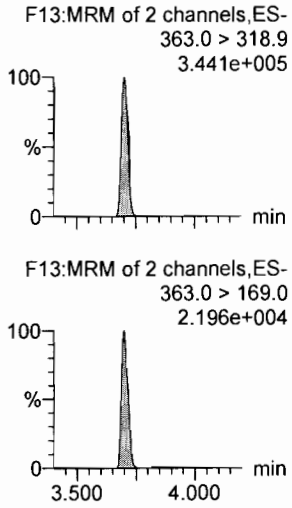
PFBS



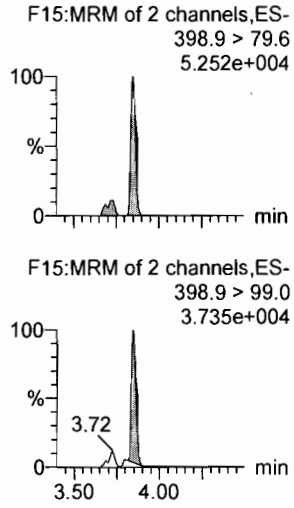
PFHxA



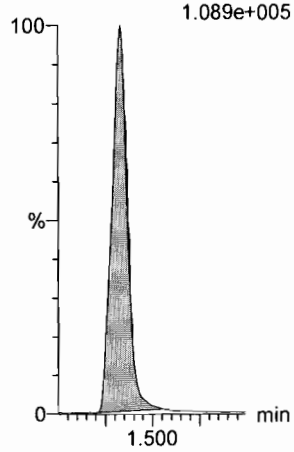
PFHpA



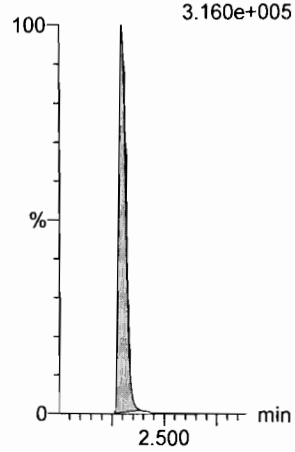
L-PFHxS



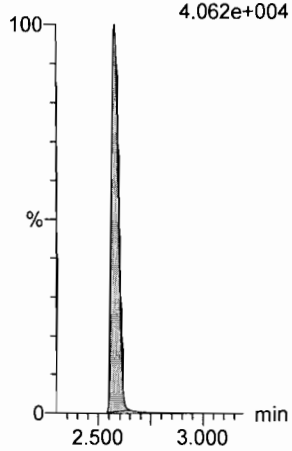
13C3-PFBA



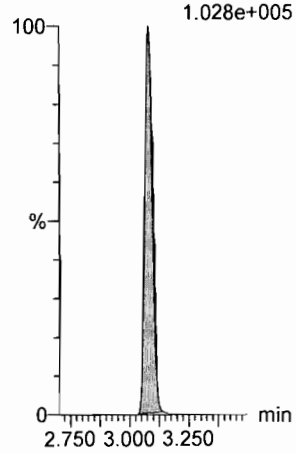
13C3-PFPeA



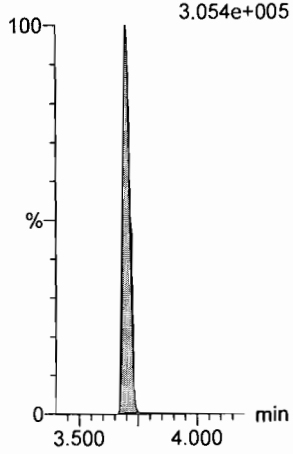
13C3-PFBS



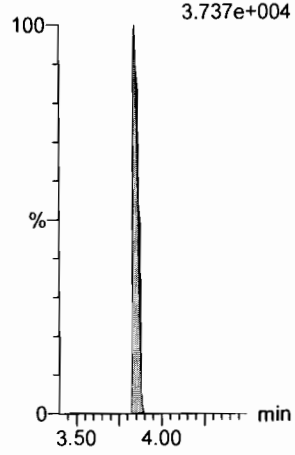
13C2-PFHxA



13C4-PFHpA



18O2-PFHxS

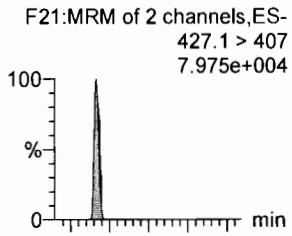


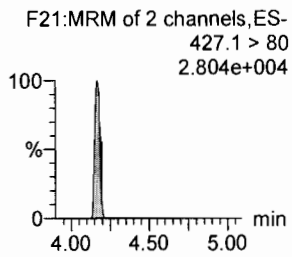
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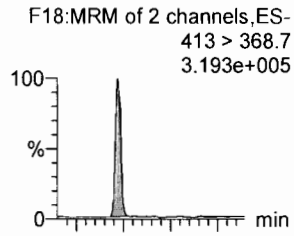
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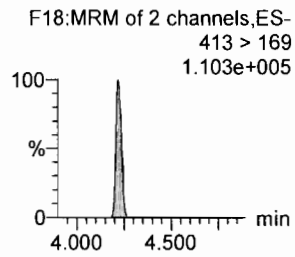
6:2 FTS



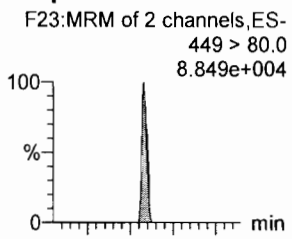


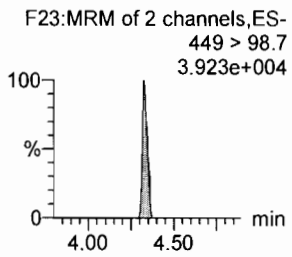
L-PFOA



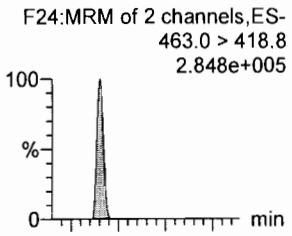


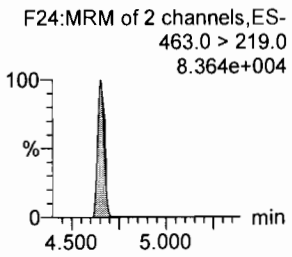
PFHpS



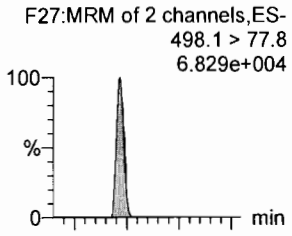


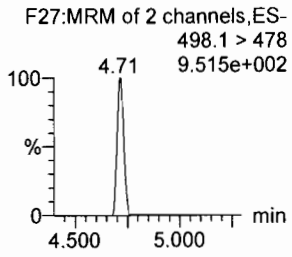
PFNA



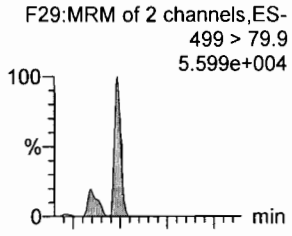


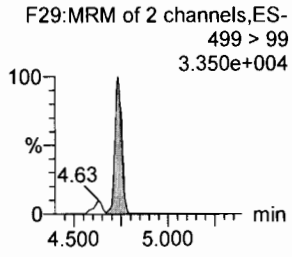
PFOSA



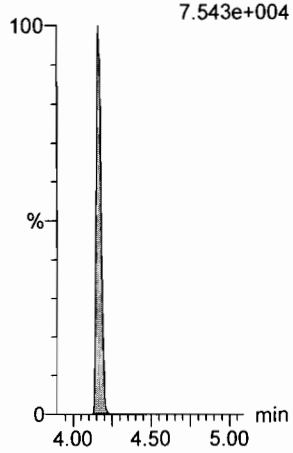


L-PFOS

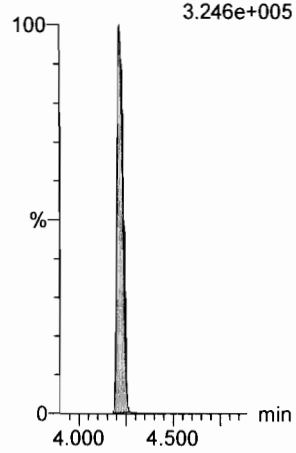




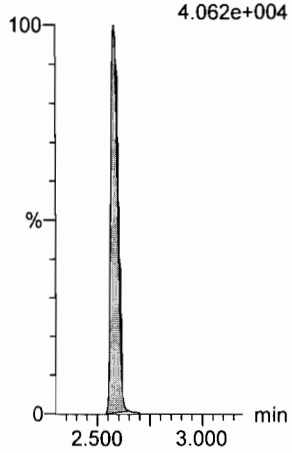
13C2-6:2 FTS



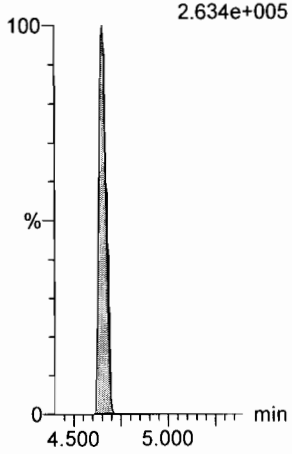
13C2-PFOA



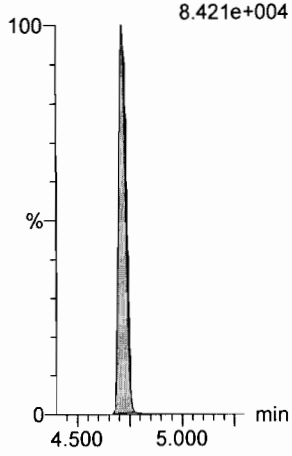
13C3-PFBS



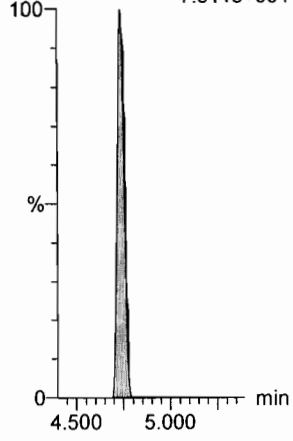
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13C8-PFOSA



13C8-PFOS

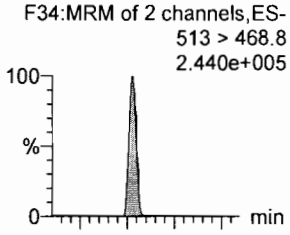


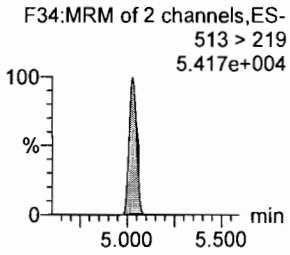
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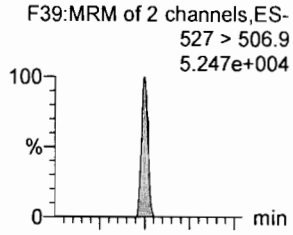
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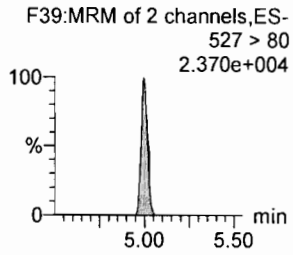
PFDA



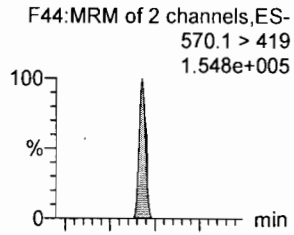


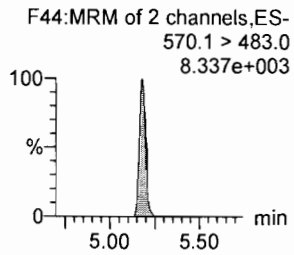
8:2 FTS



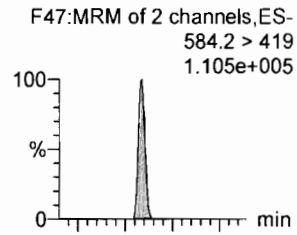


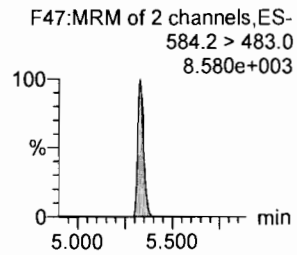
N-MeFOSAA



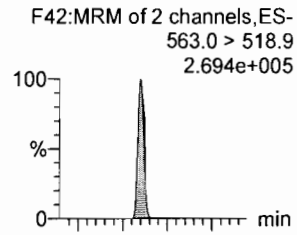


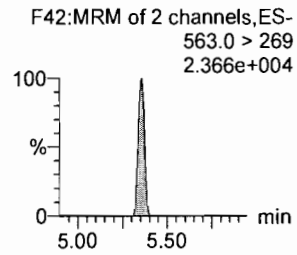
N-EtFOSAA



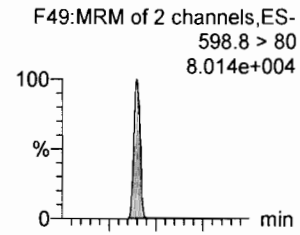


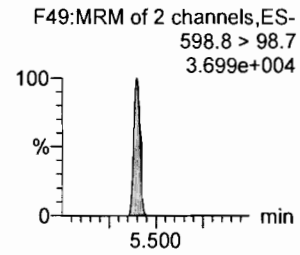
PFUdA



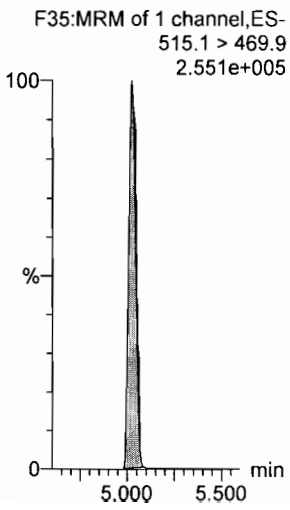


PFDS

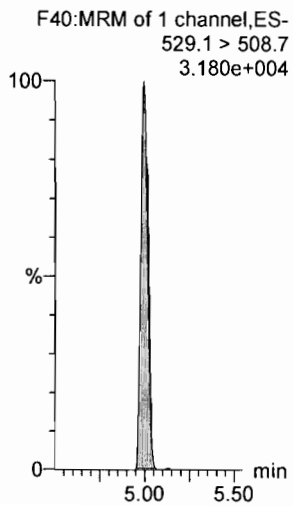




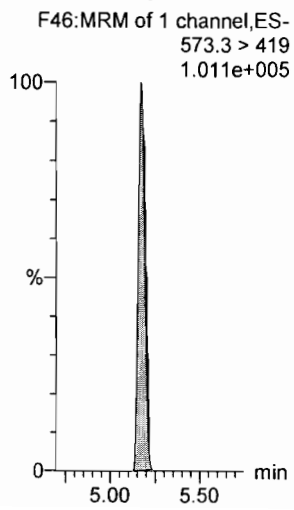
13C2-PFDA



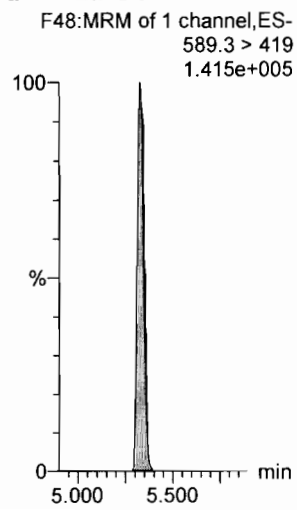
13C2-8:2 FTS



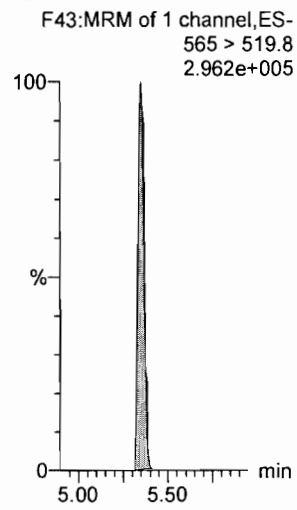
d3-N-MeFOSAA



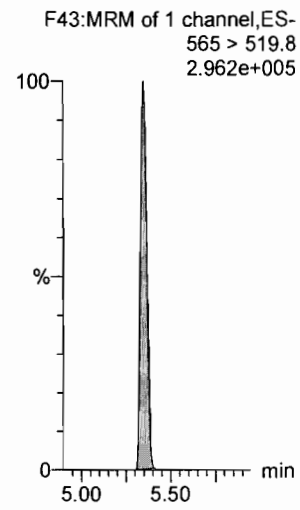
d5-N-EtFOSAA



13C2-PFUdA



13C2-PFUdA

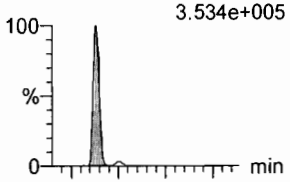


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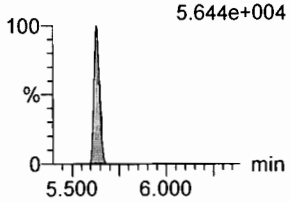
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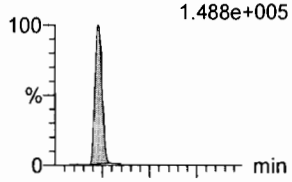
PFDoA
F50:MRM of 2 channels,ES-
612.9 > 569.0
3.534e+005



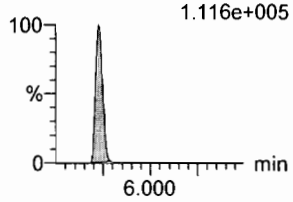
F50:MRM of 2 channels,ES-
612.9 > 318.8
5.644e+004



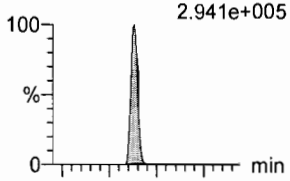
N-MeFOSA
F33:MRM of 2 channels,ES-
512.1 > 168.9
1.488e+005



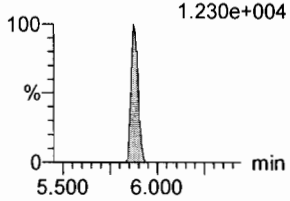
F33:MRM of 2 channels,ES-
512.1 > 219
1.116e+005



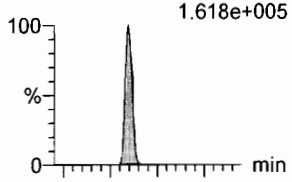
PFTrDA
F56:MRM of 2 channels,ES-
662.9 > 618.9
2.941e+005



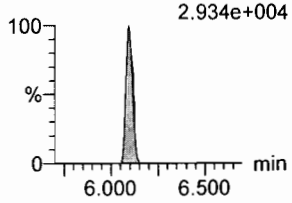
F56:MRM of 2 channels,ES-
662.9 > 319
1.230e+004



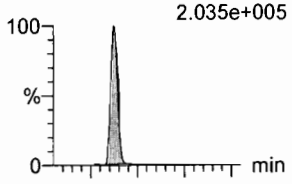
PFTeDA
F57:MRM of 2 channels,ES-
712.9 > 668.8
1.618e+005



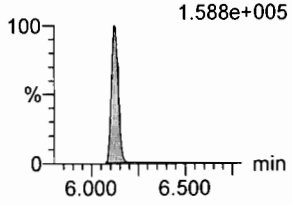
F57:MRM of 2 channels,ES-
712.9 > 369
2.934e+004



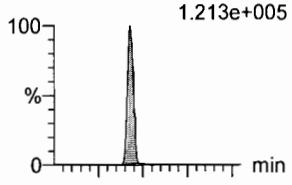
N-EtFOSA
F38:MRM of 2 channels,ES-
526.1 > 168.9
2.035e+005



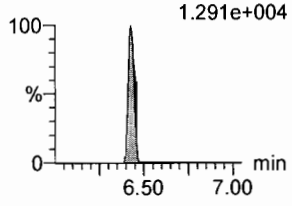
F38:MRM of 2 channels,ES-
526.1 > 219
1.588e+005



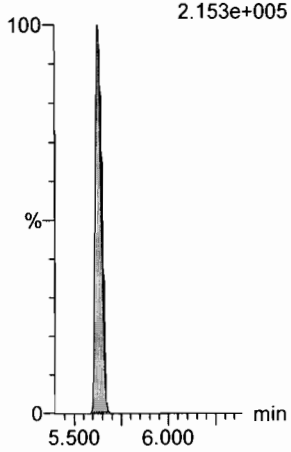
PFHxDA
F59:MRM of 2 channels,ES-
813.1 > 768.6
1.213e+005



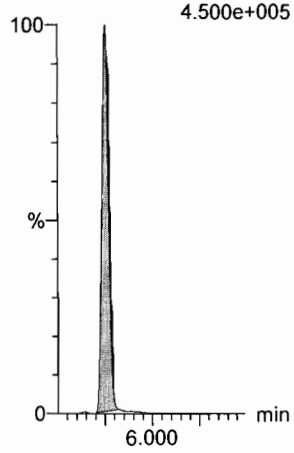
F59:MRM of 2 channels,ES-
813.1 > 219
1.291e+004



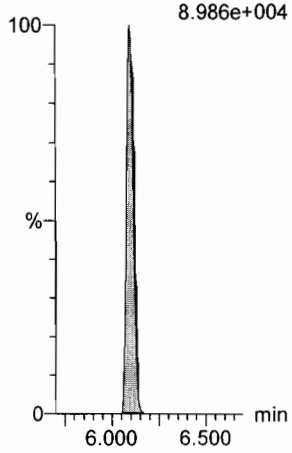
13C2-PFDoA
F51:MRM of 1 channel,ES-
615.0 > 569.7
2.153e+005



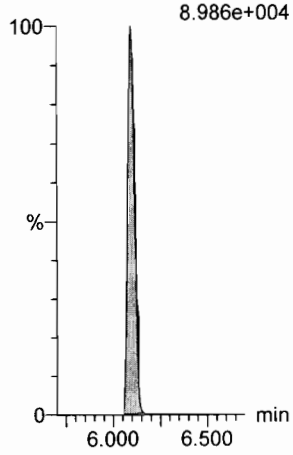
d3-N-MeFOSA
F36:MRM of 1 channel,ES-
515.2 > 168.9
4.500e+005



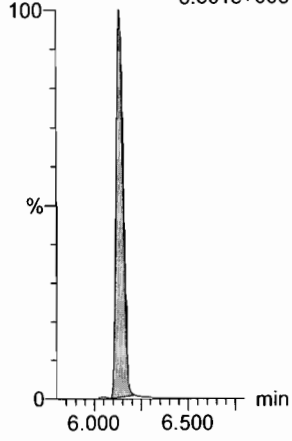
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
8.986e+004



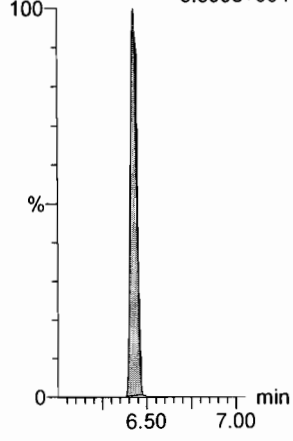
13C2-PFTeDA
F58:MRM of 2 channels,ES-
714.8 > 669.6
8.986e+004



d5-N-ETFOSA
F41:MRM of 1 channel,ES-
531.1 > 168.9
6.801e+005



13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
6.699e+004

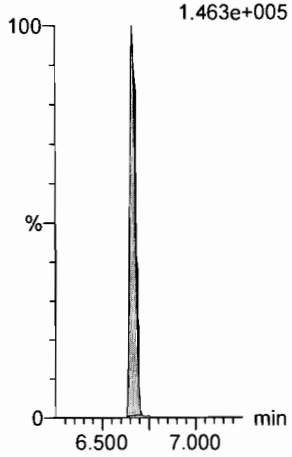


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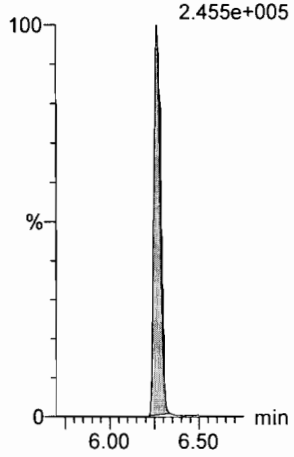
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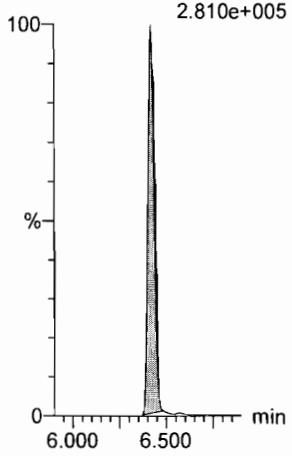
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
1.463e+005



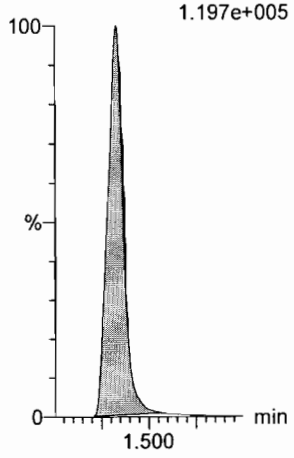
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
2.455e+005



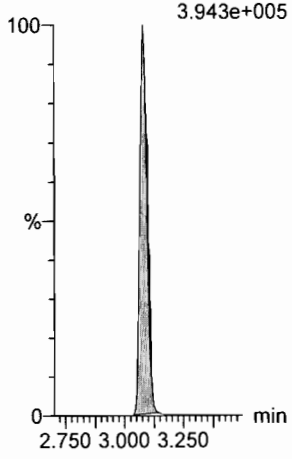
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
2.810e+005



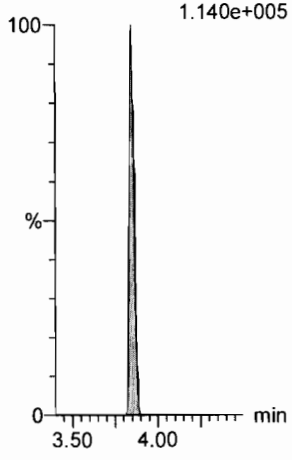
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.197e+005



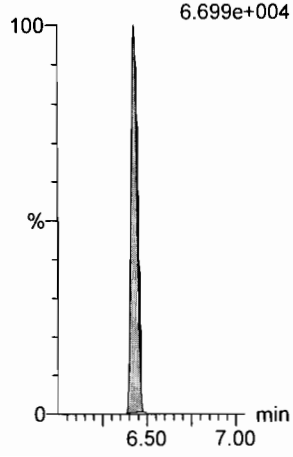
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
3.943e+005



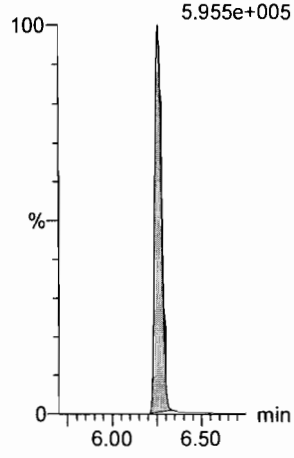
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
1.140e+005



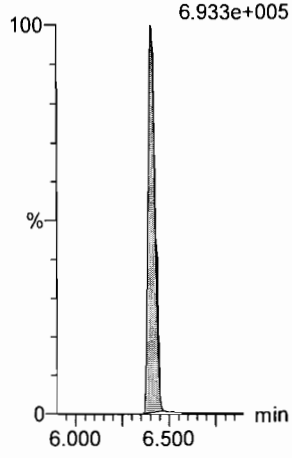
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
6.699e+004



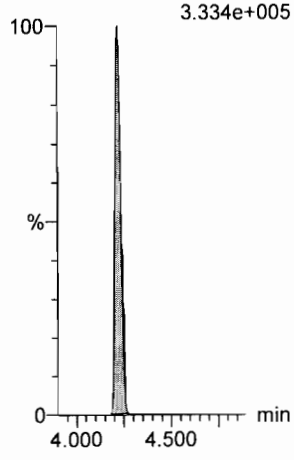
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
5.955e+005



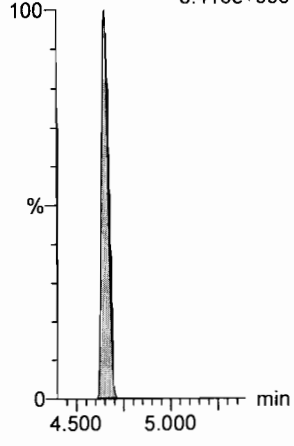
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
6.933e+005



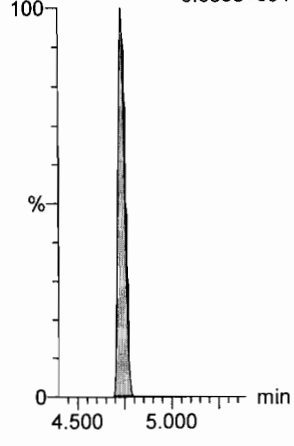
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.334e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.416e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
8.685e+004

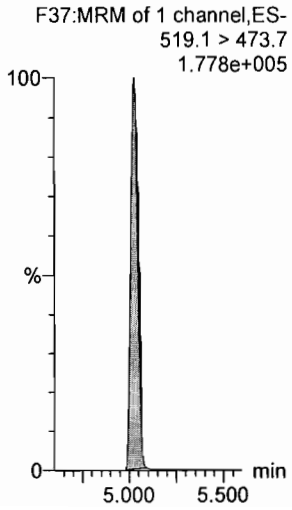


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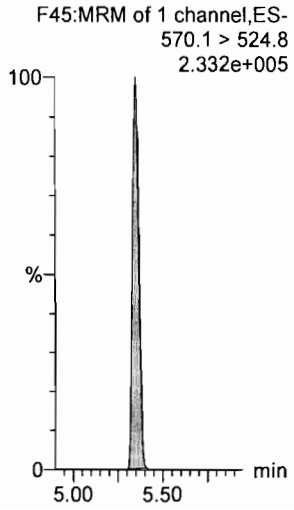
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13C6-PFDA



13C7-PFUdA

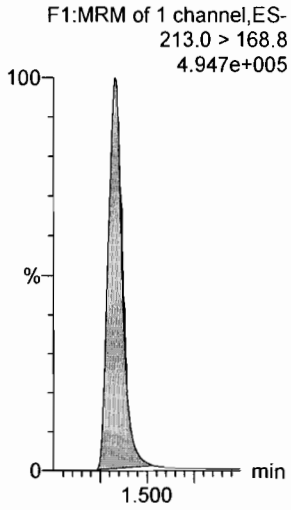


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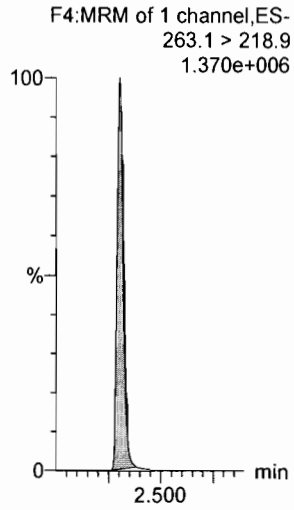
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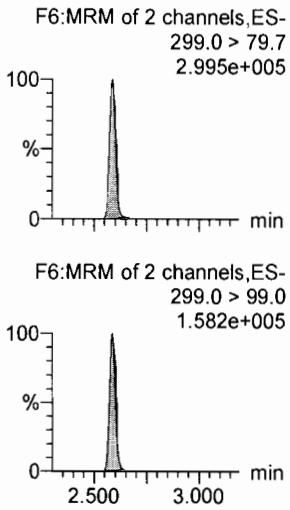
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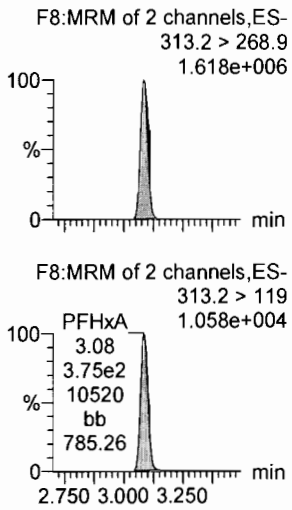
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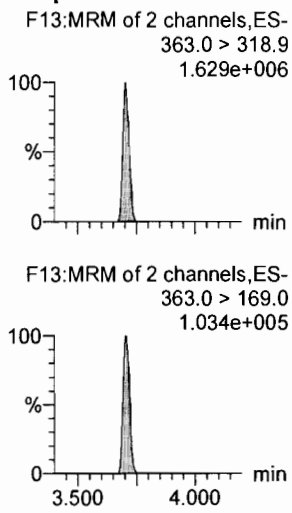
PFBS



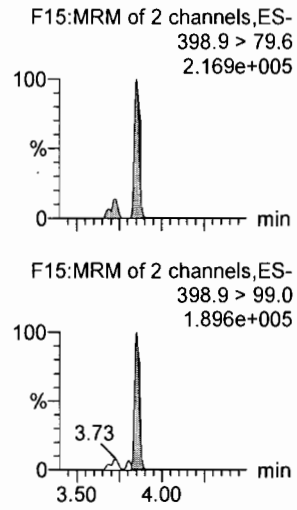
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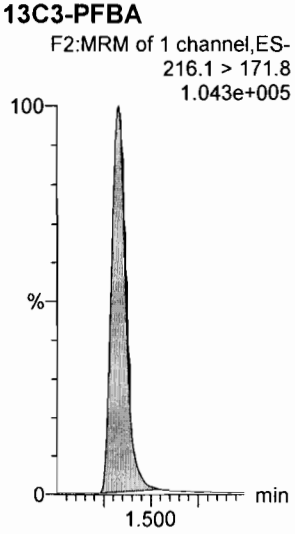
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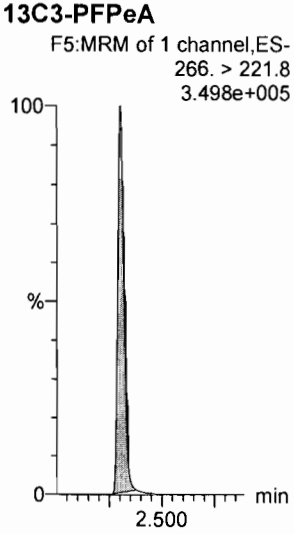
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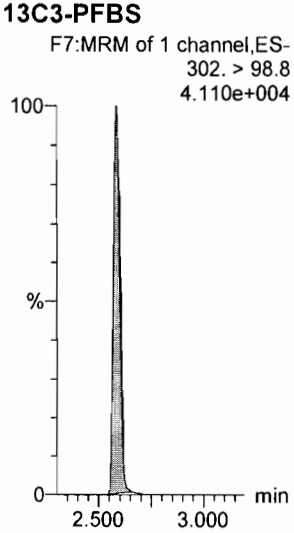
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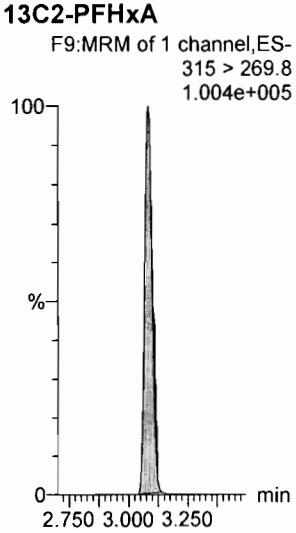
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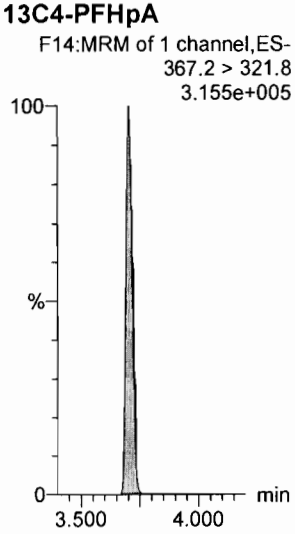
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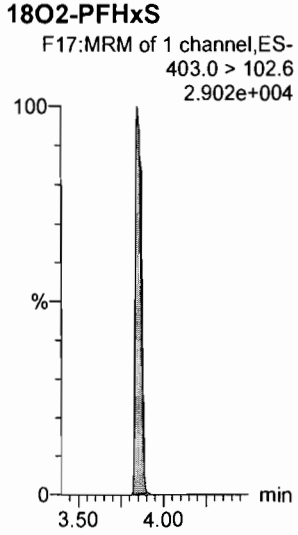
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13C4-PFHpA



18O2-PFHxS

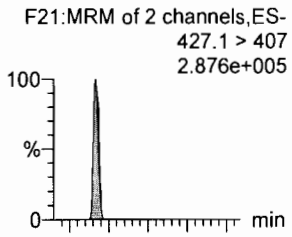


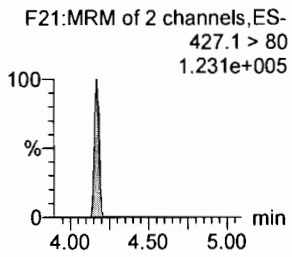
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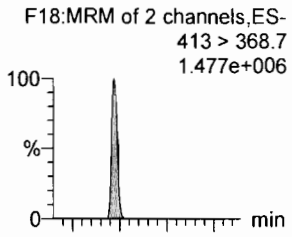
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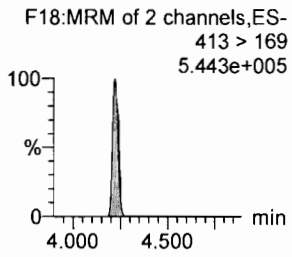
6:2 FTS



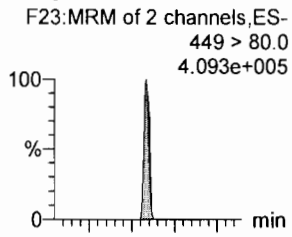


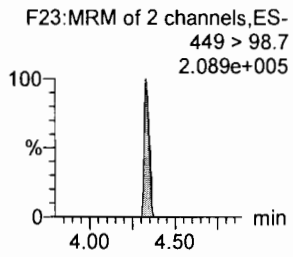
L-PFOA



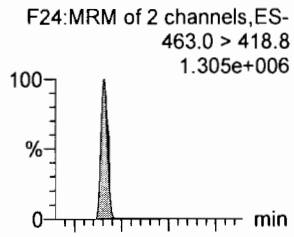


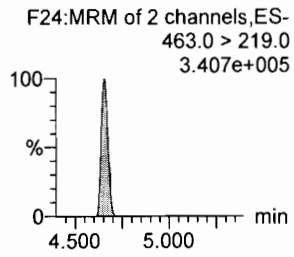
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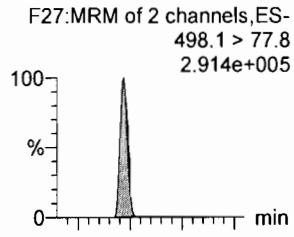


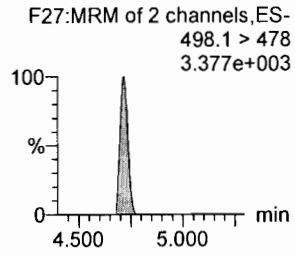
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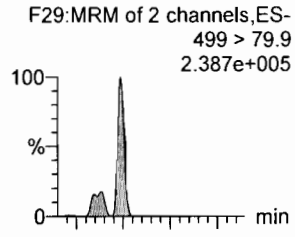


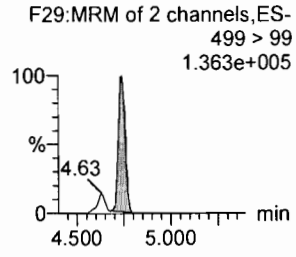
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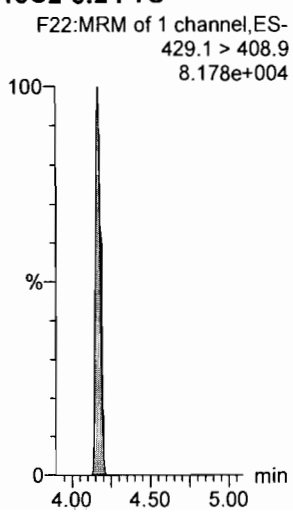


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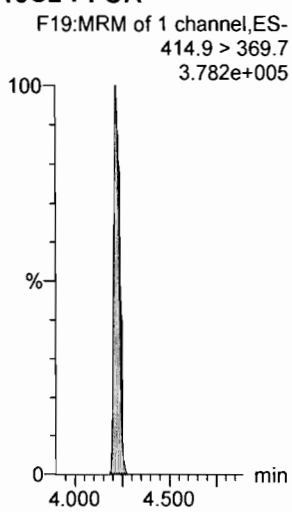




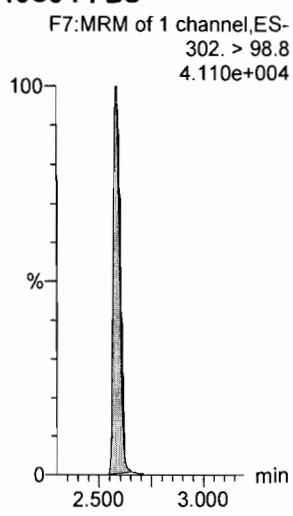
13C2-6:2 FTS



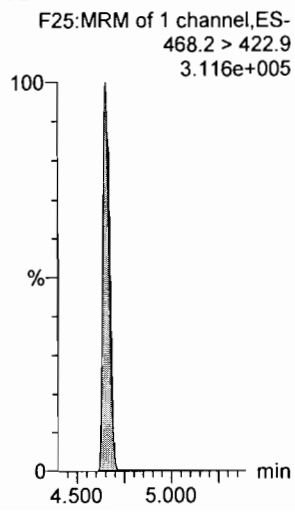
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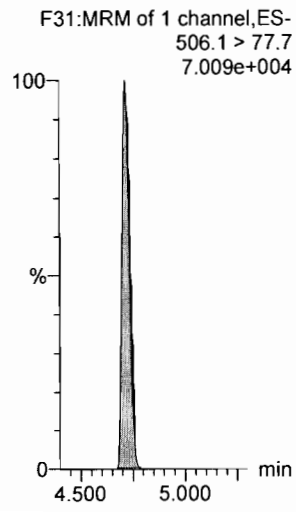
13C3-PFBS



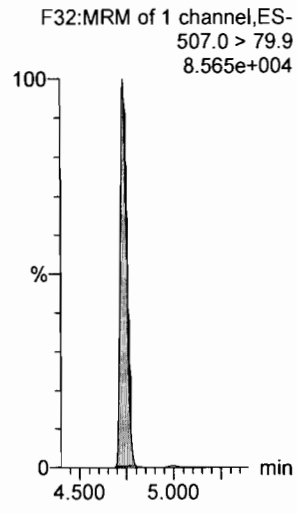
13C5-PFNA



13C8-PFOSA



13C8-PFOS

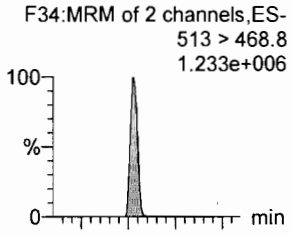


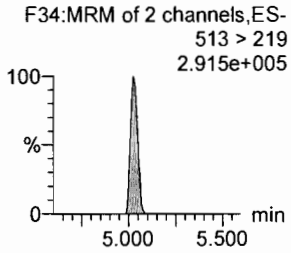
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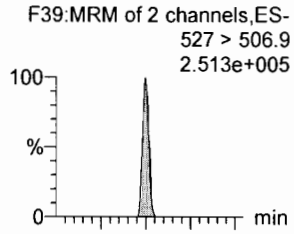
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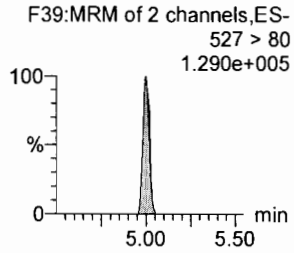
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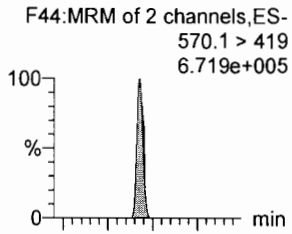


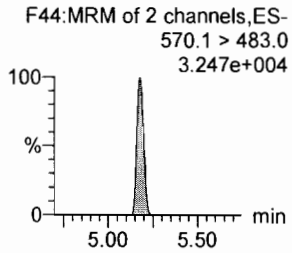
8:2 FTS



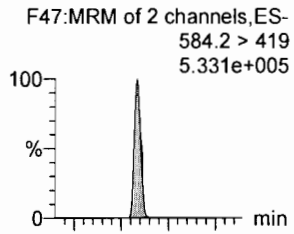


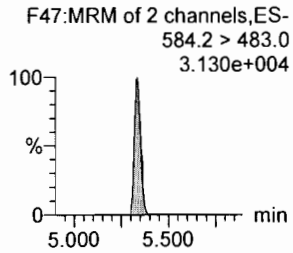
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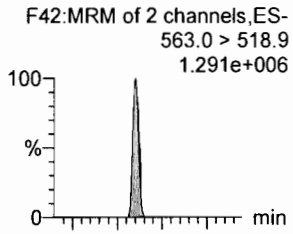


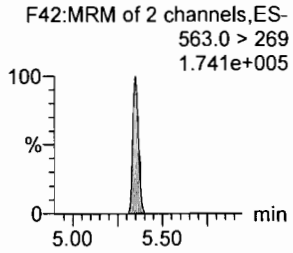
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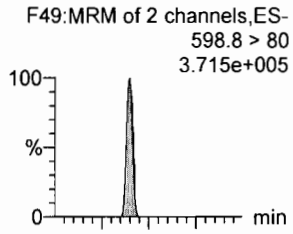


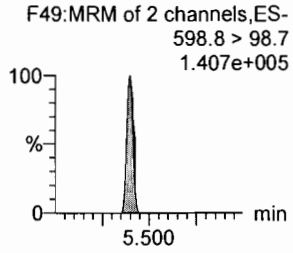
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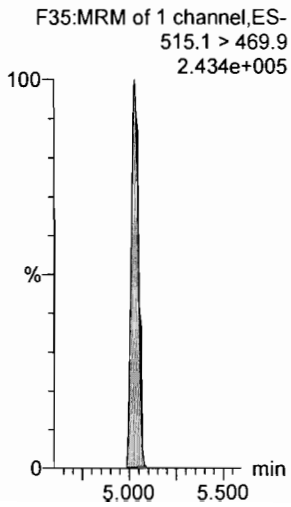


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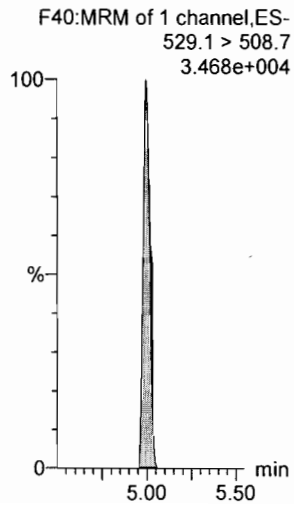




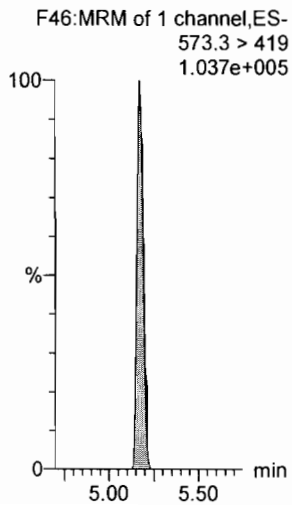
13C2-PFDA



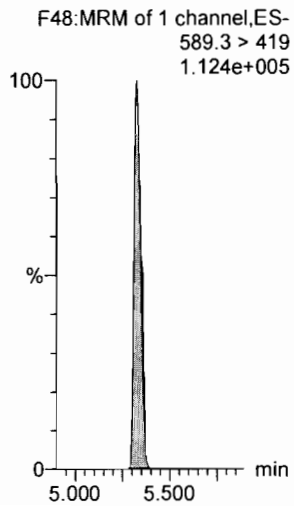
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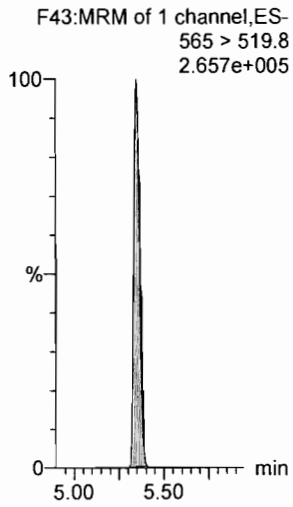
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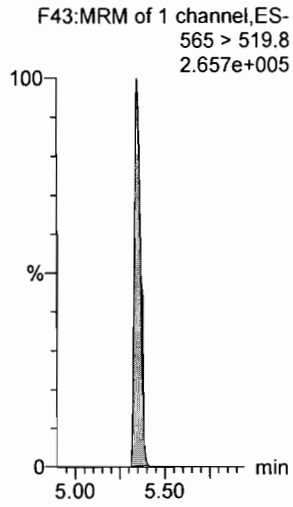
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13C2-PFUdA



13C2-PFUdA

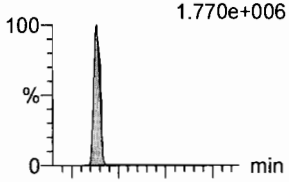


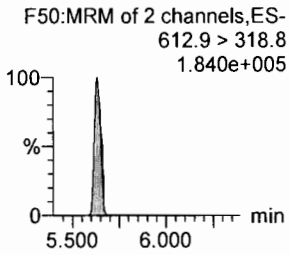
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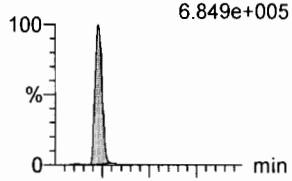
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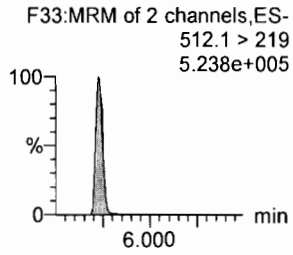
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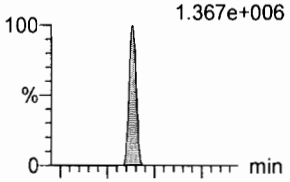


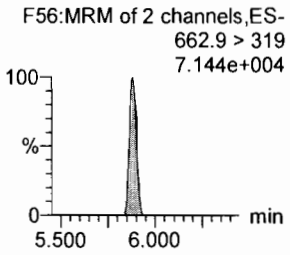
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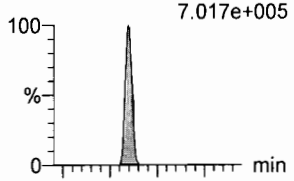


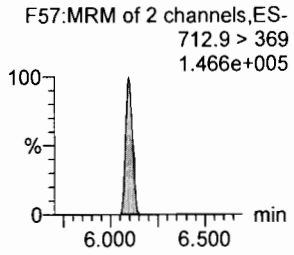
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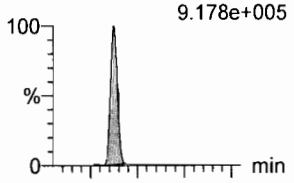


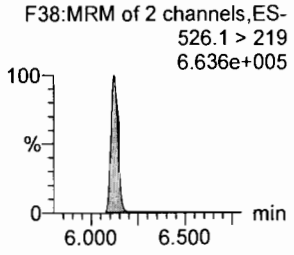
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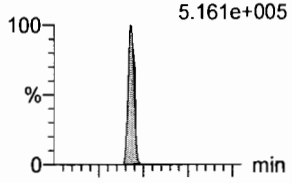


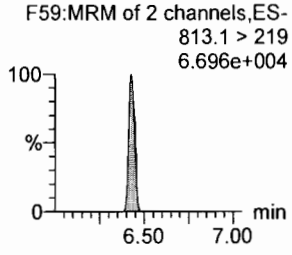
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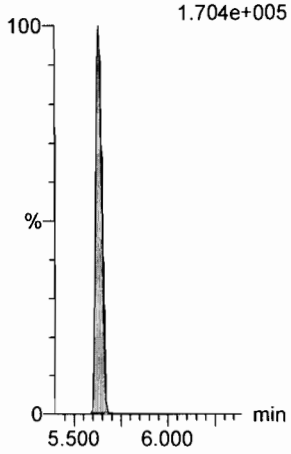


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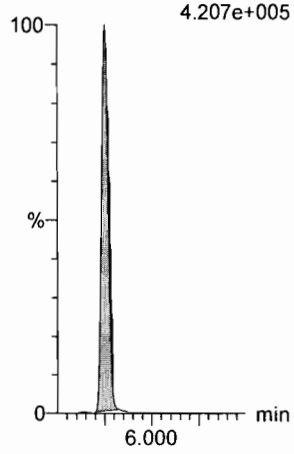




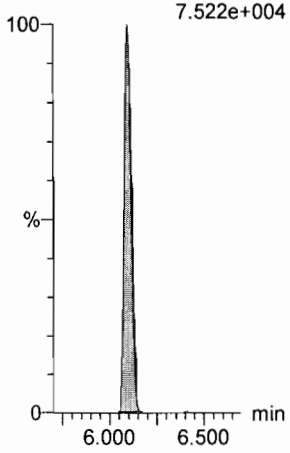
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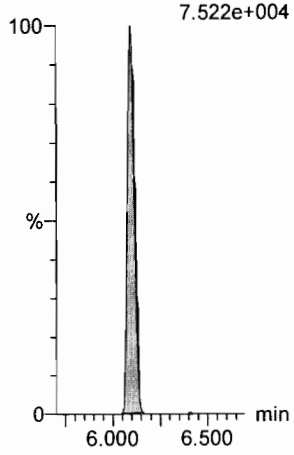
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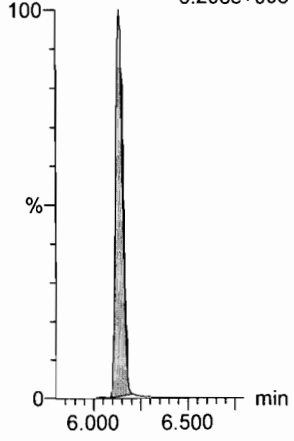
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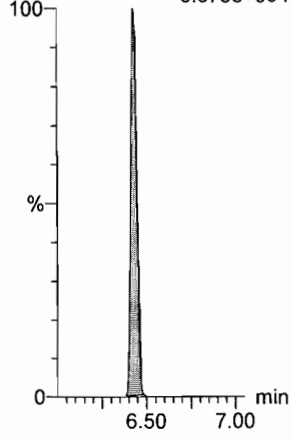
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d5-N-ETFOSA



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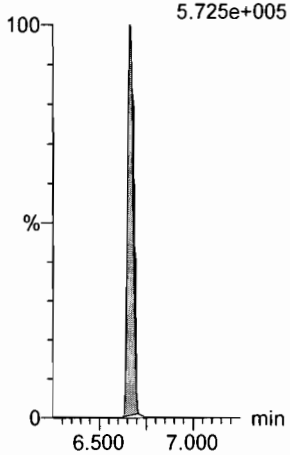


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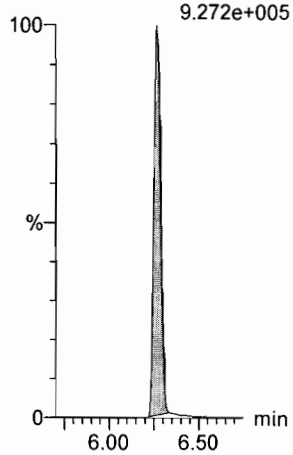
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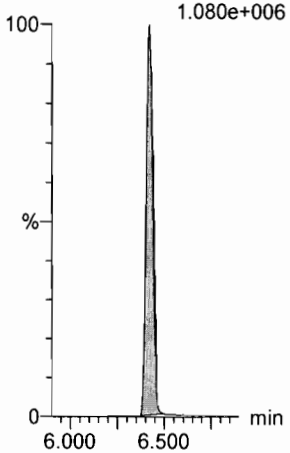
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
5.725e+005



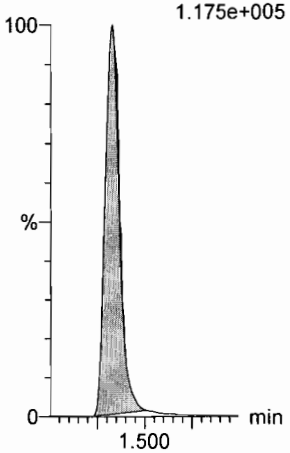
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F52:MRM of 1 channel,ES-
616.1 > 58.9
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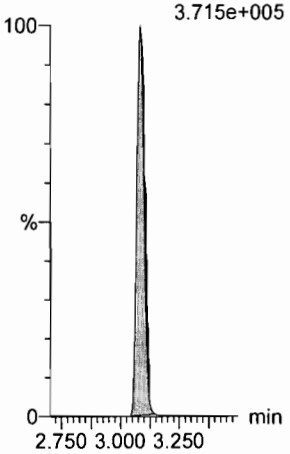
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F54:MRM of 1 channel,ES-
630.1 > 58.9
1.080e+006



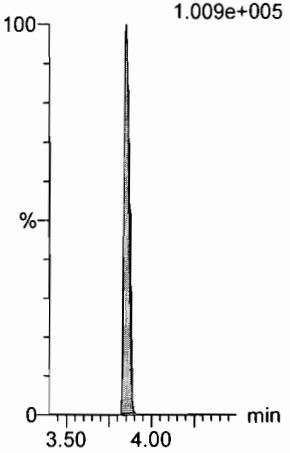
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F3:MRM of 1 channel,ES-
217. > 171.8
1.175e+005



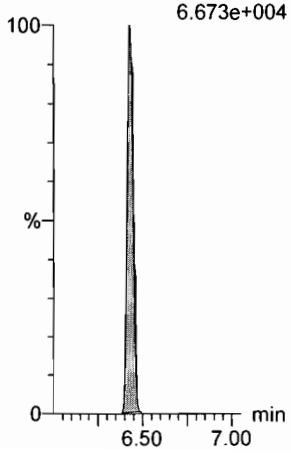
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F10:MRM of 1 channel,ES-
318 > 272.9
3.715e+005



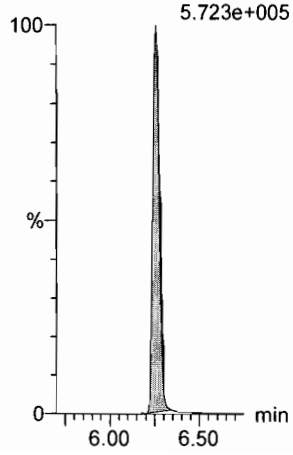
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
1.009e+005



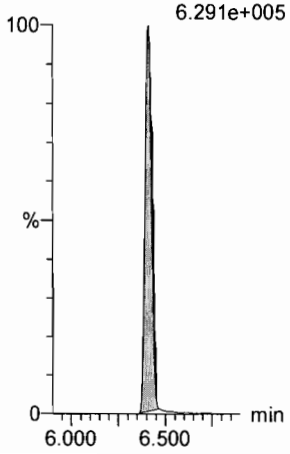
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F60:MRM of 1 channel,ES-
815 > 769.7
6.673e+004



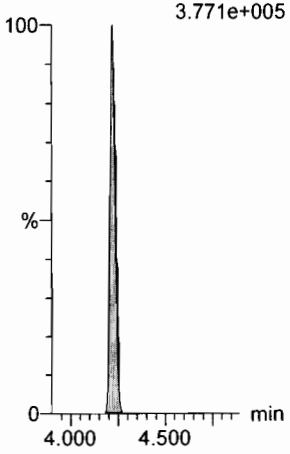
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F53:MRM of 1 channel,ES-
623.1 > 58.9
5.723e+005



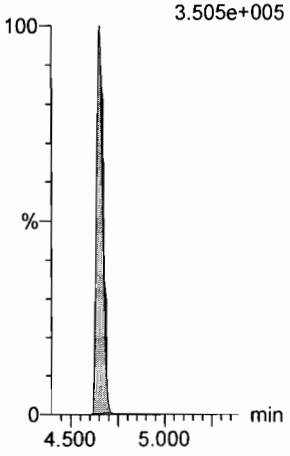
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
6.291e+005



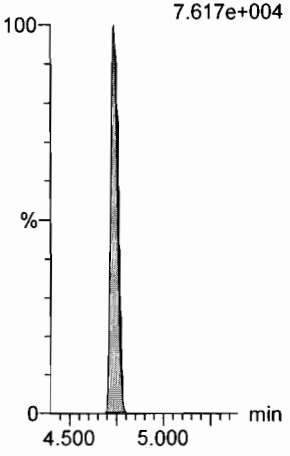
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.771e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
3.505e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
7.617e+004

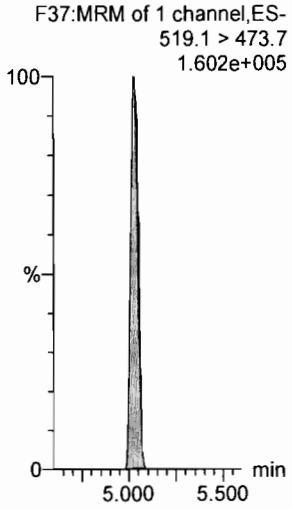


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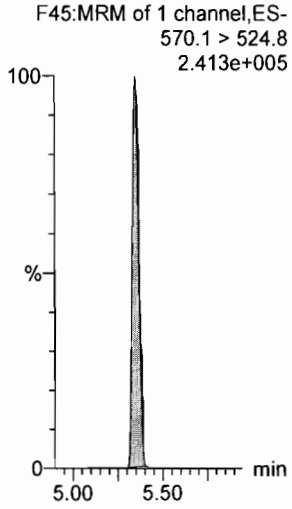
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13C6-PFDA



13C7-PFUdA

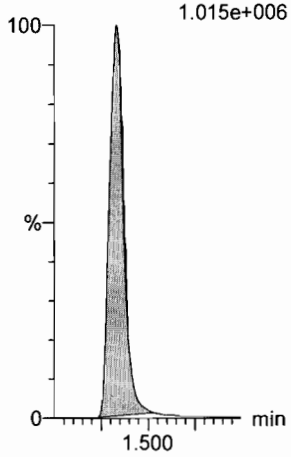


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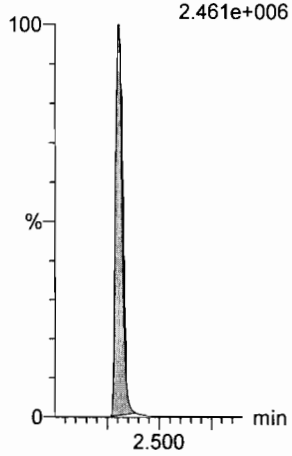
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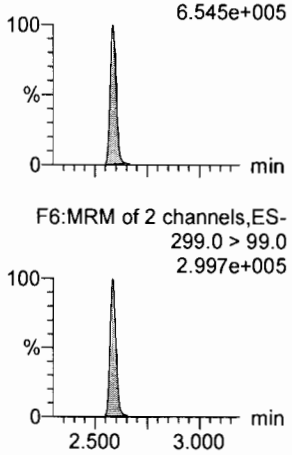
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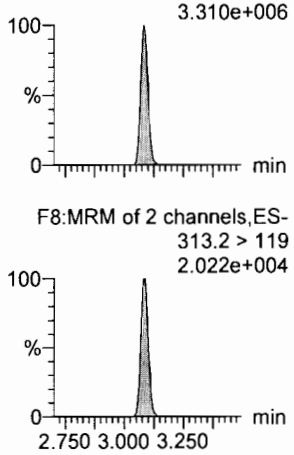
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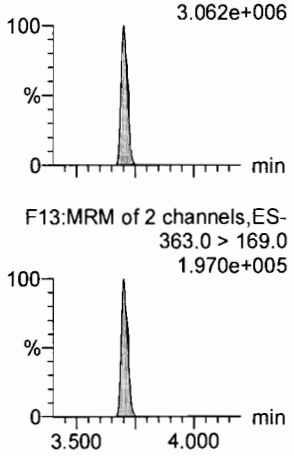
PFBS



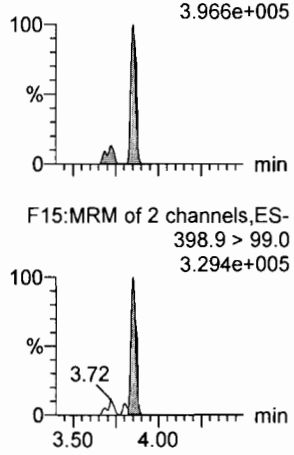
PFHxA



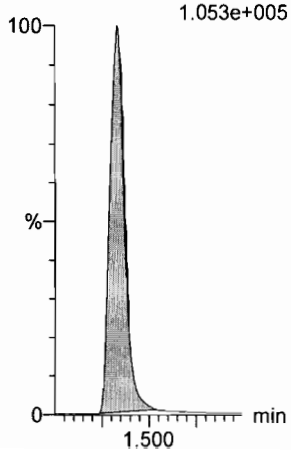
PFHpA



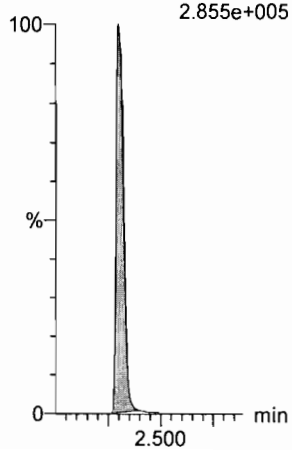
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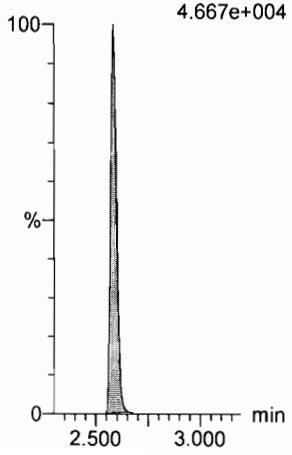
13C3-PFBA



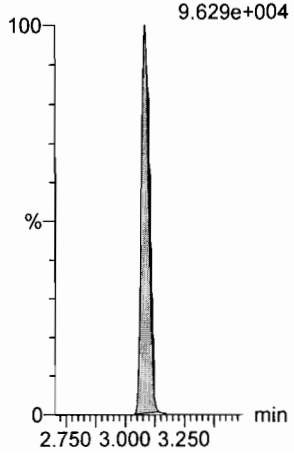
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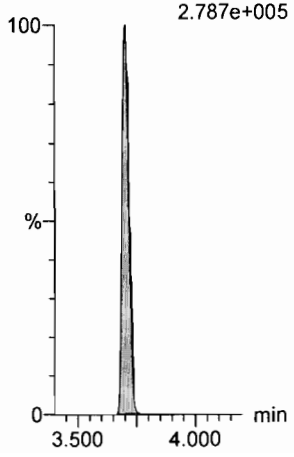
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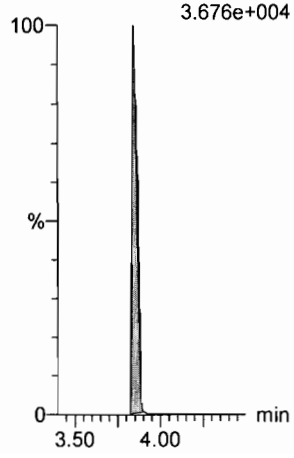
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13C4-PFHpA



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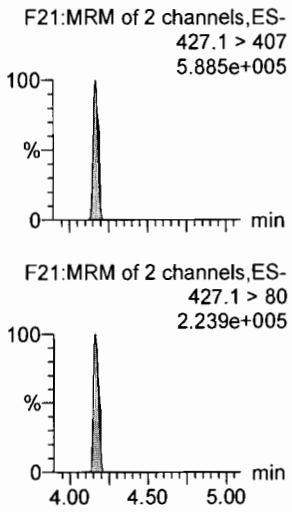


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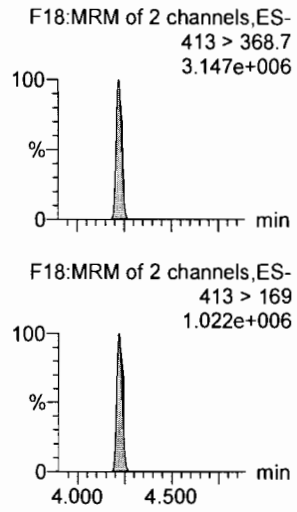
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Name: 180112M3_8, Date: 12-Jan-2018, Time: 14:56:24, ID: ST180112M3-8 PFC CS5 18A0813, Description: ST180108M2-8 PFC CS5 18A0813

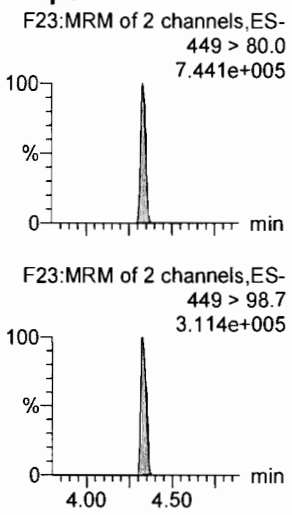
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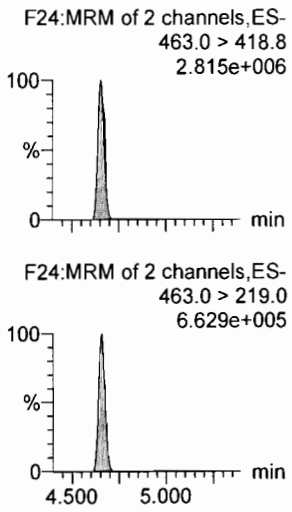
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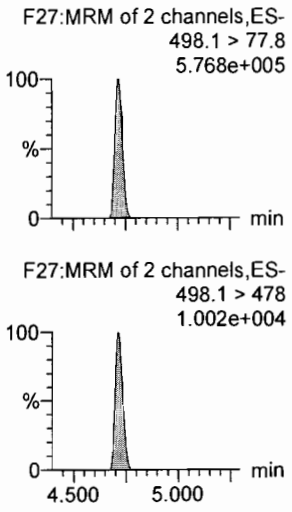
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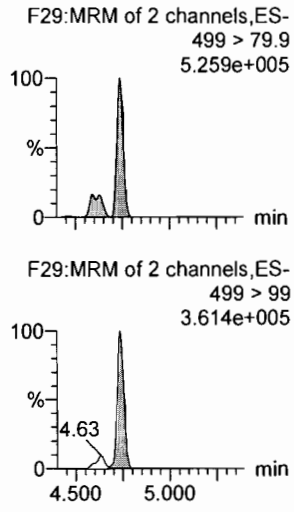
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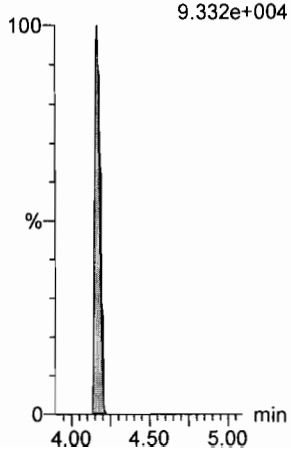
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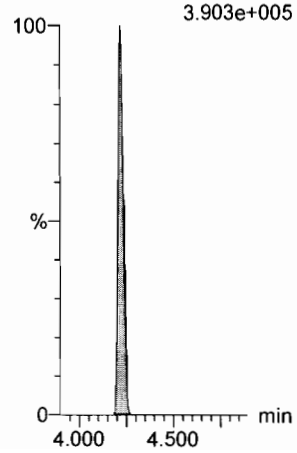
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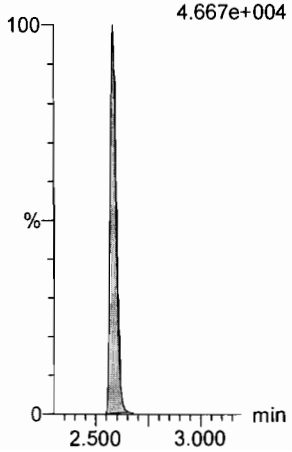
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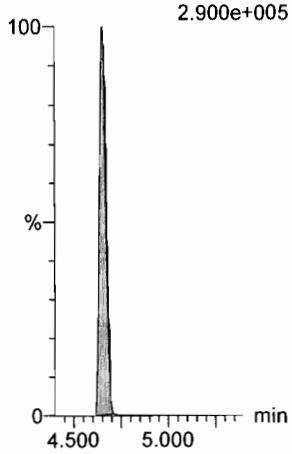
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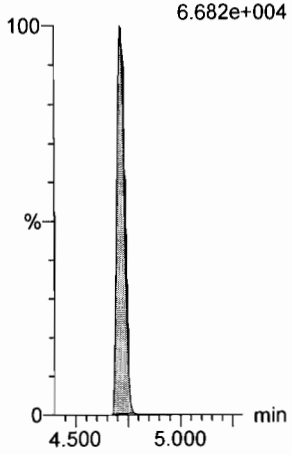
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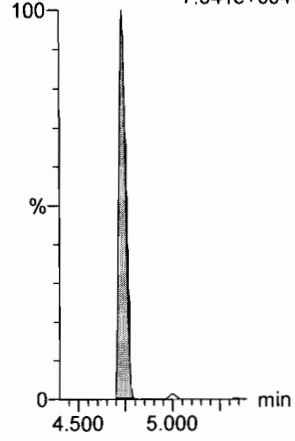
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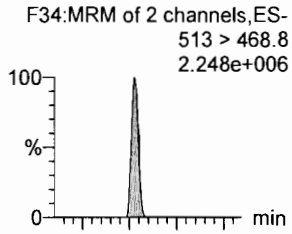


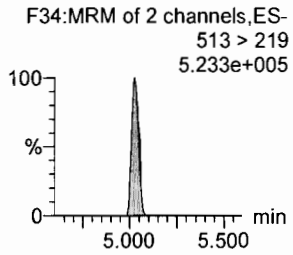
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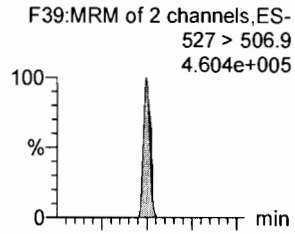
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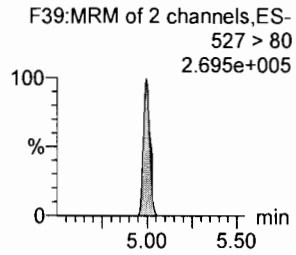
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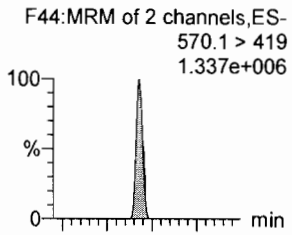


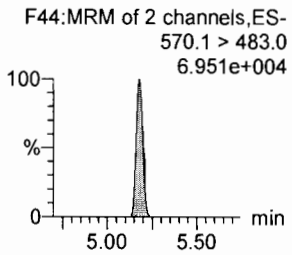
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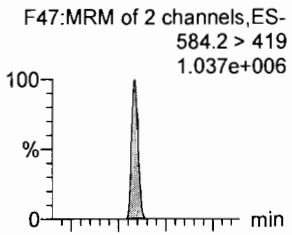


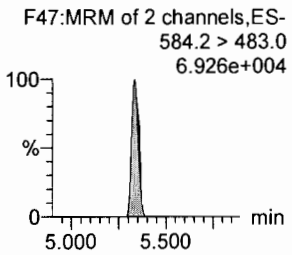
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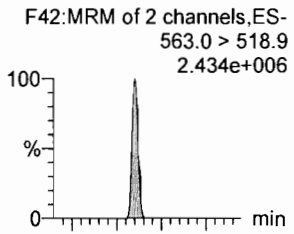


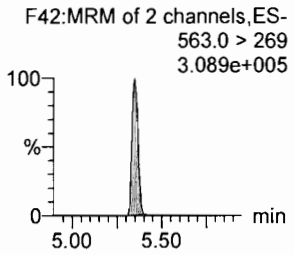
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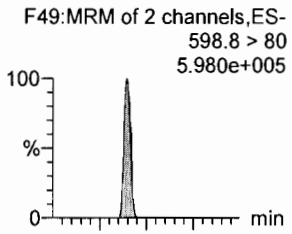


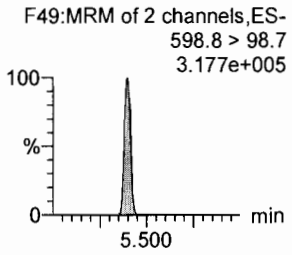
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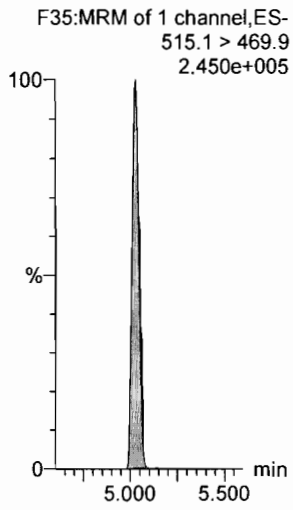


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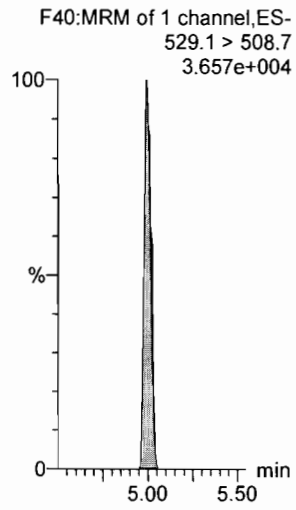




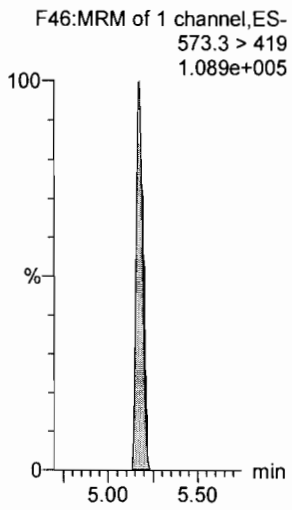
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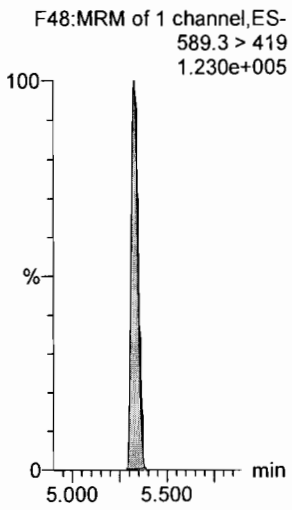
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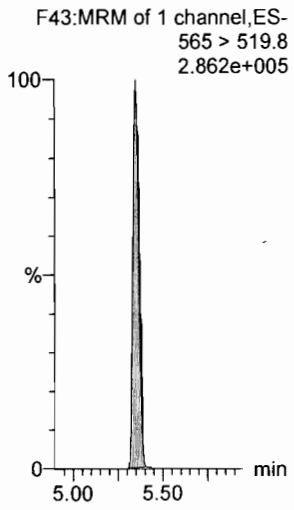
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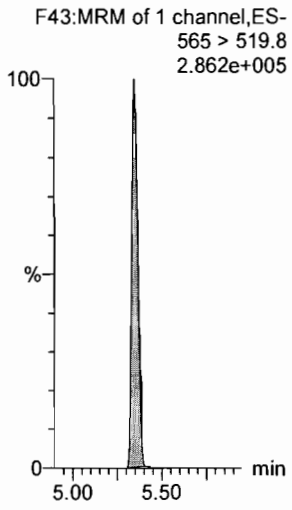
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13C2-PFUdA

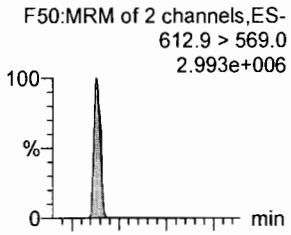


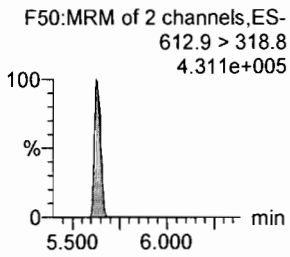
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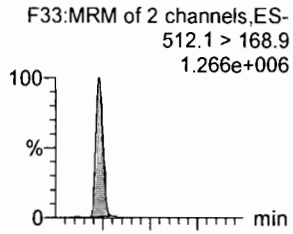
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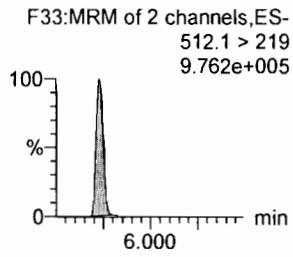
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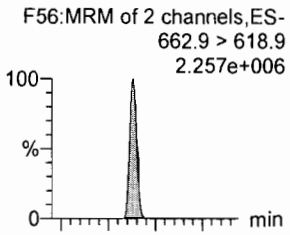


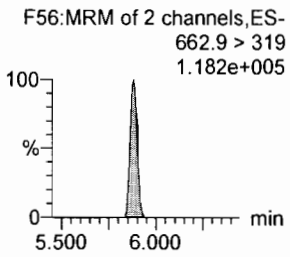
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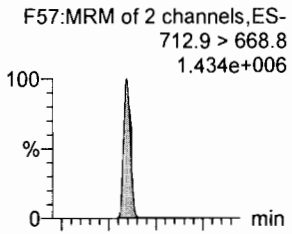


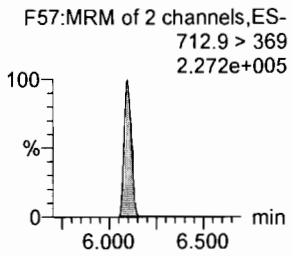
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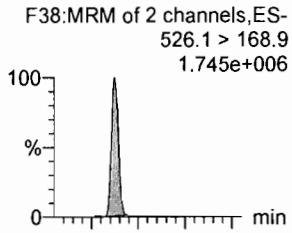


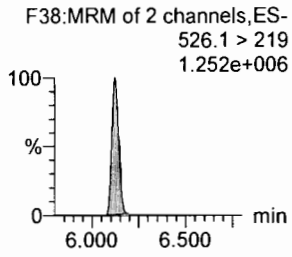
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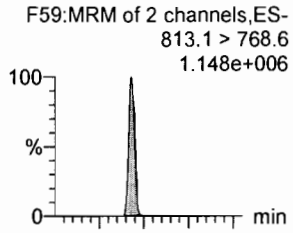


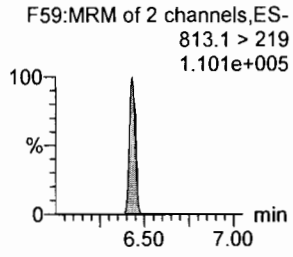
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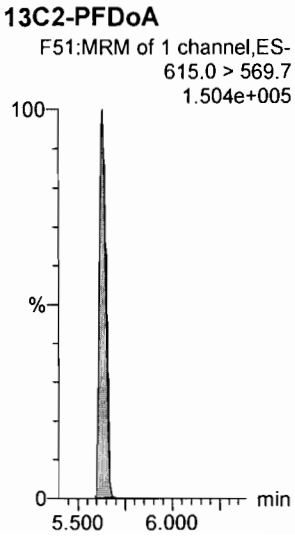


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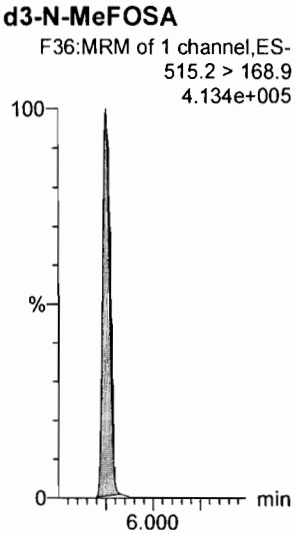




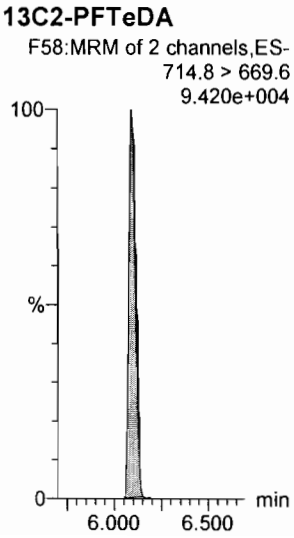
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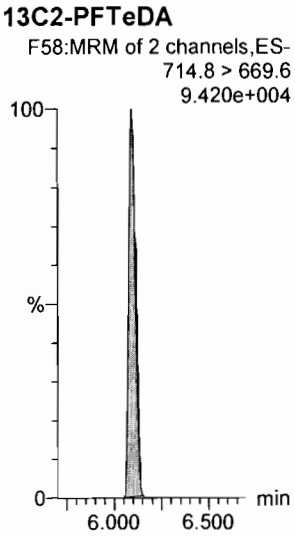
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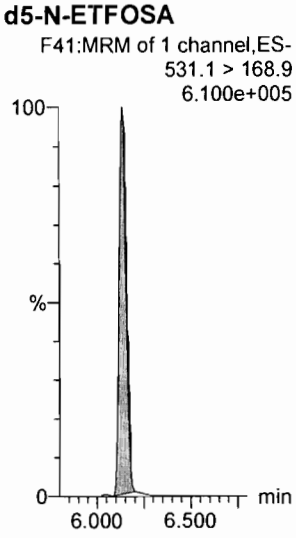
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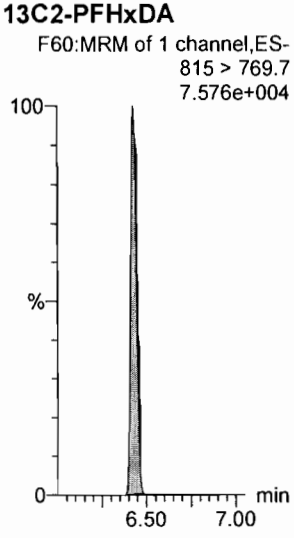
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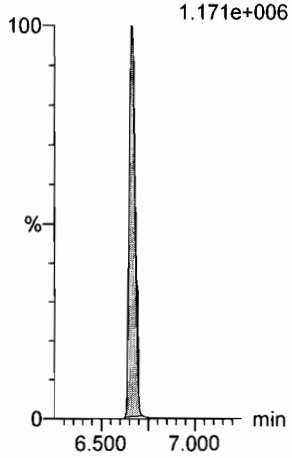


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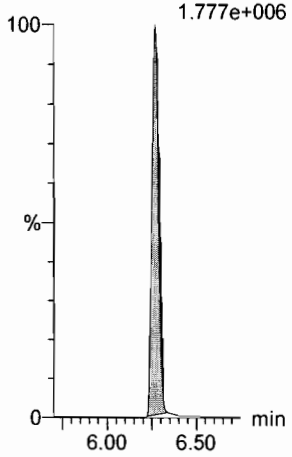
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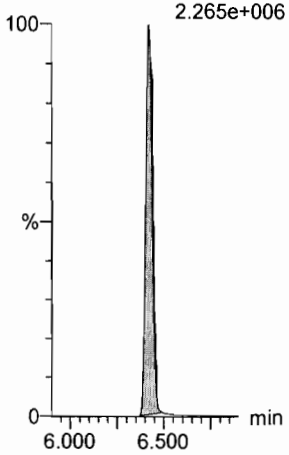
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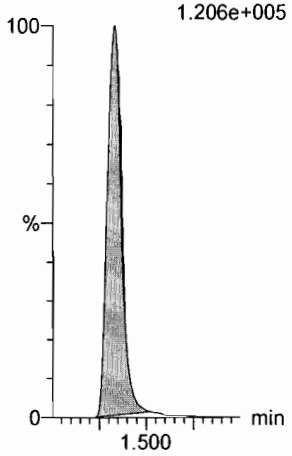
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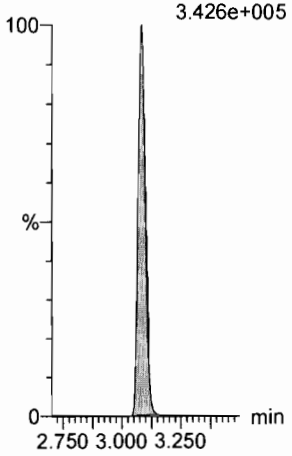
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630.1 > 58.9
2.265e+006



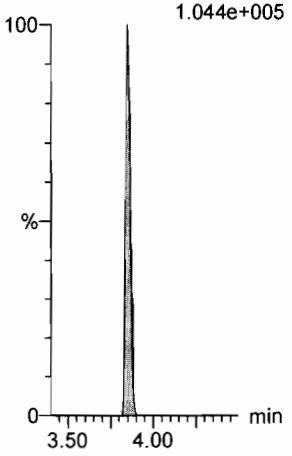
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.206e+005



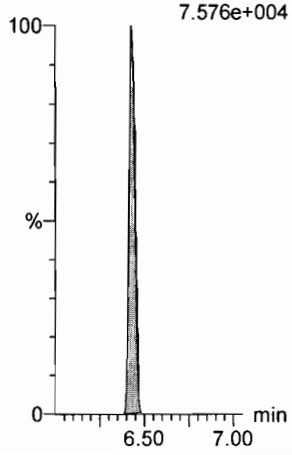
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F10:MRM of 1 channel,ES-
318 > 272.9
3.426e+005



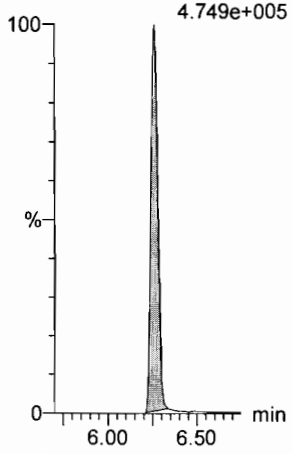
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F16:MRM of 1 channel,ES-
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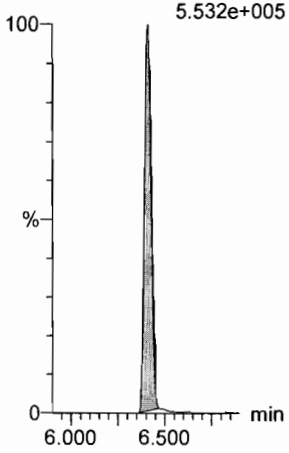
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F60:MRM of 1 channel,ES-
815 > 769.7
7.576e+004



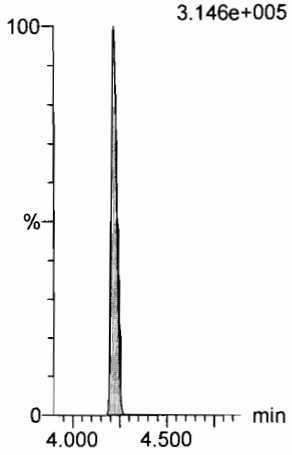
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
4.749e+005



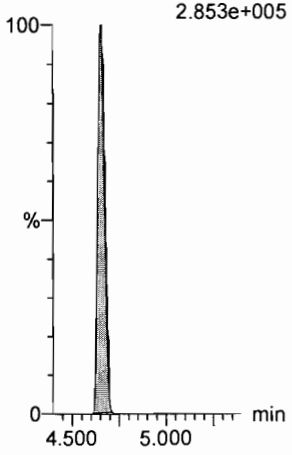
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
5.532e+005



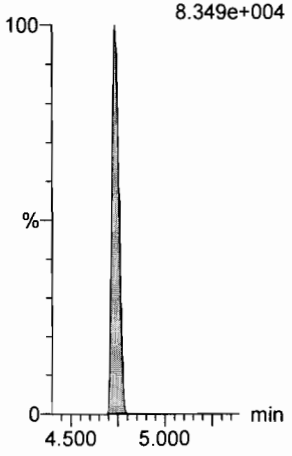
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.146e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
2.853e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
8.349e+004

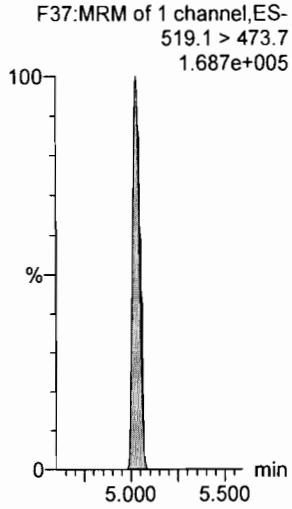


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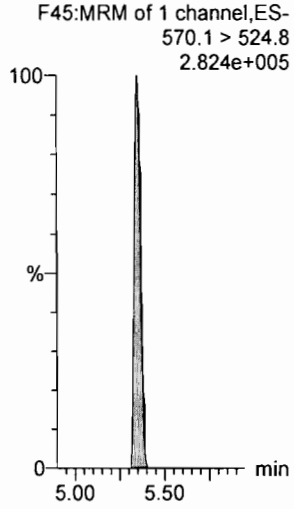
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13C6-PFDA



13C7-PFUdA

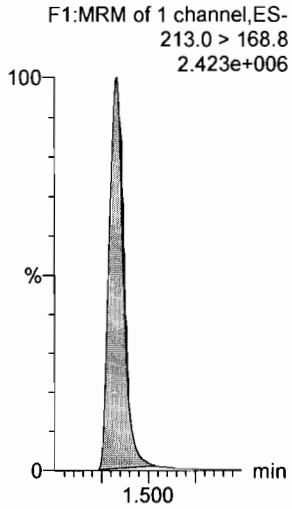


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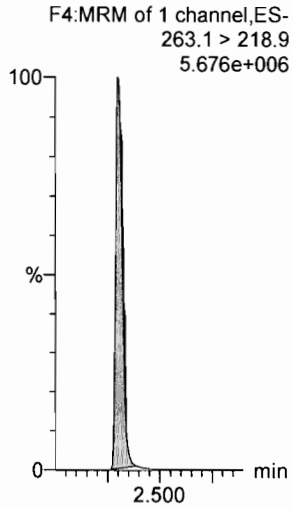
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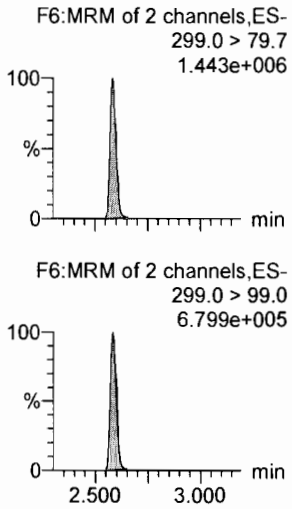
PFBA



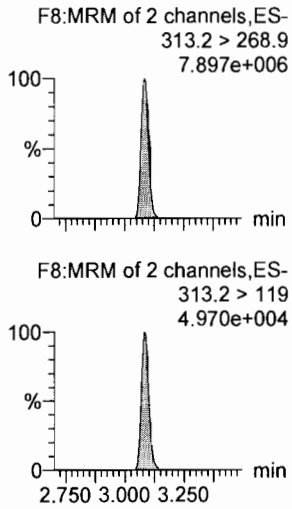
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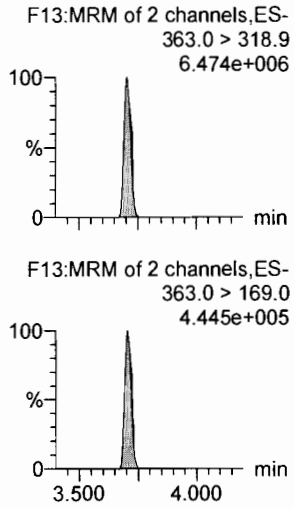
PFBS



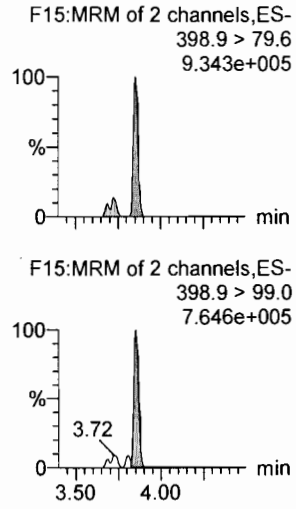
PFHxA



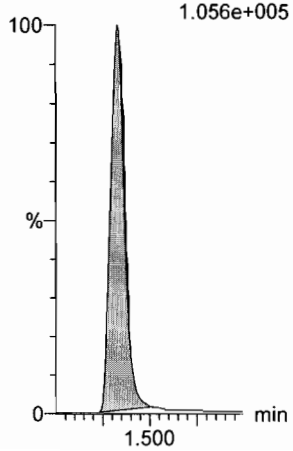
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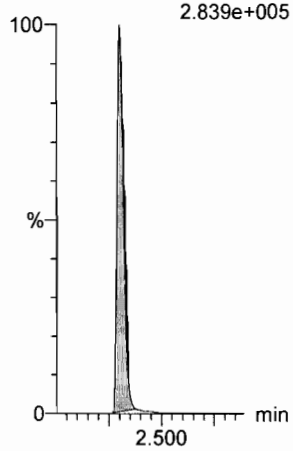
L-PFHxS



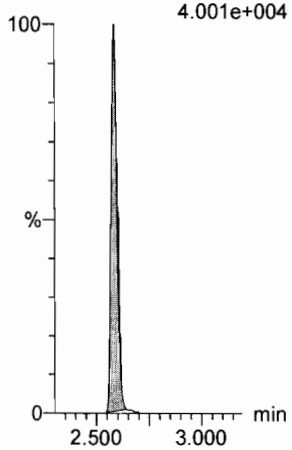
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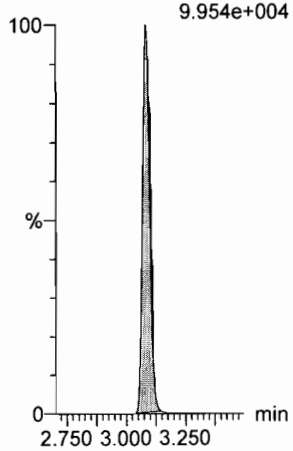
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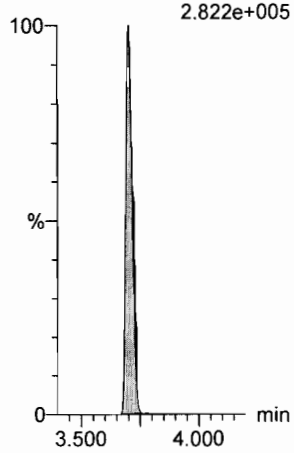
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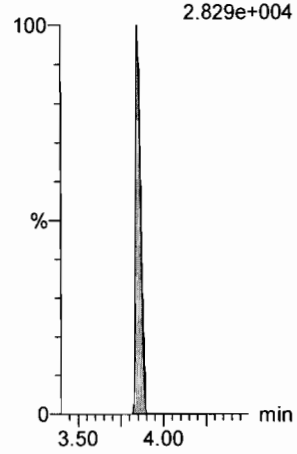
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13C4-PFHpA



18O2-PFHxS

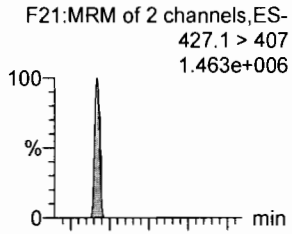


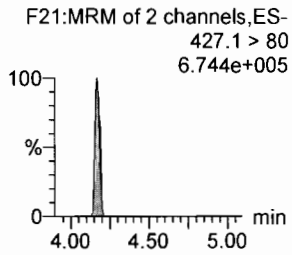
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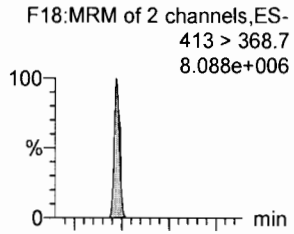
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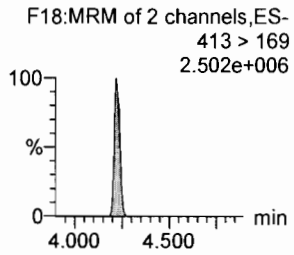
6:2 FTS



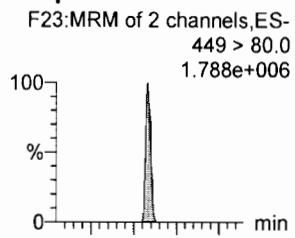


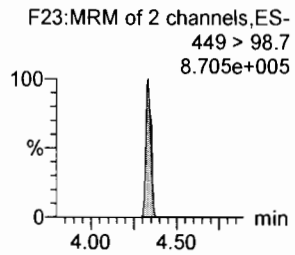
L-PFOA



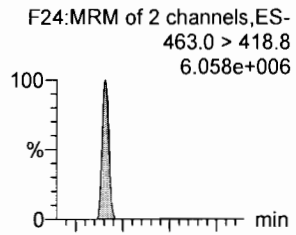


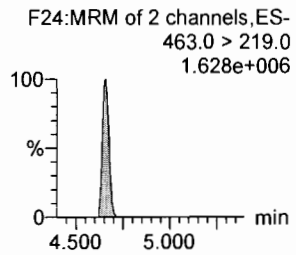
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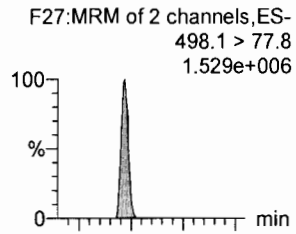


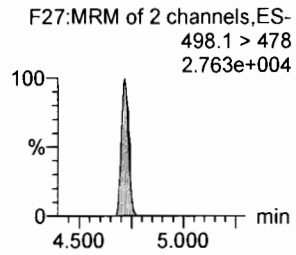
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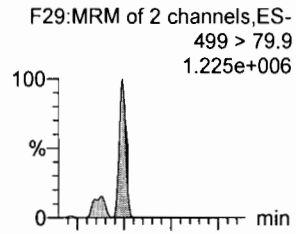


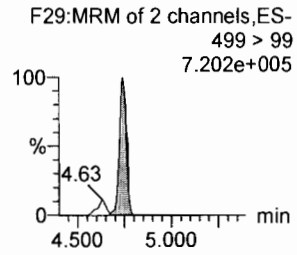
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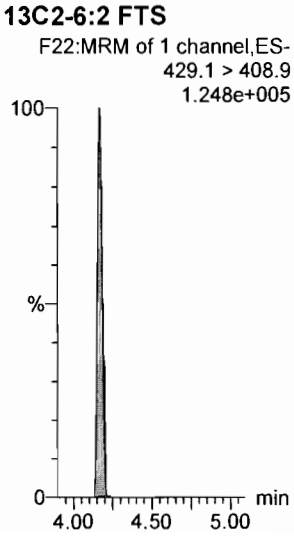


L-PFOS

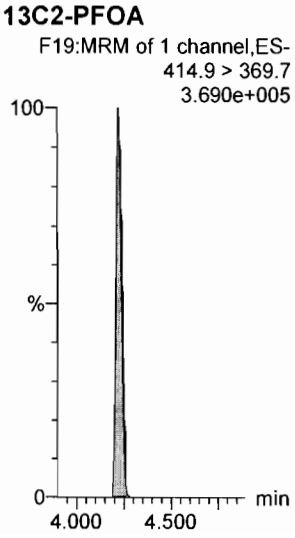




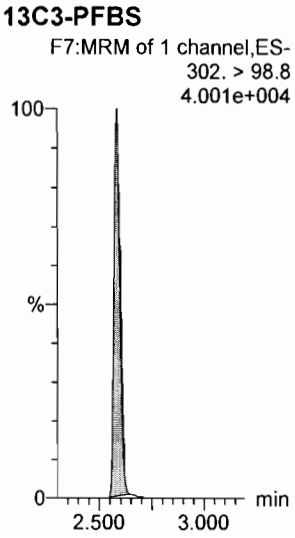
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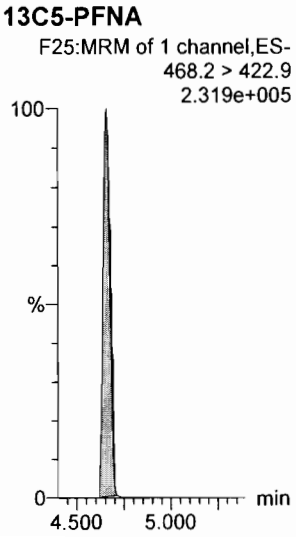
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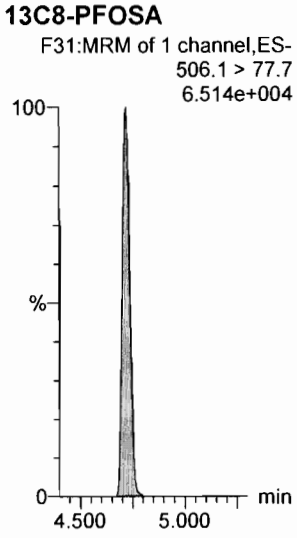
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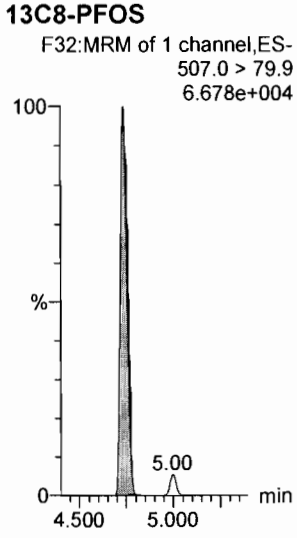
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13C8-PFOSA



13C8-PFOS

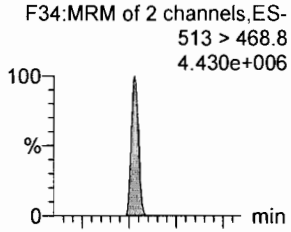


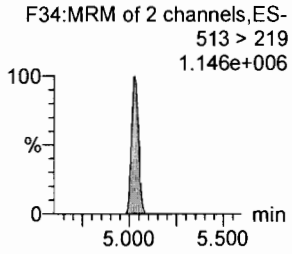
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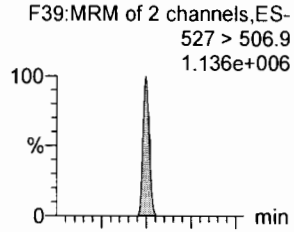
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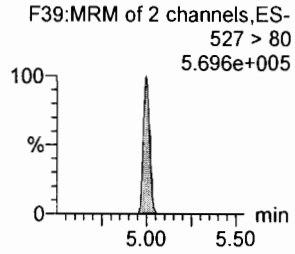
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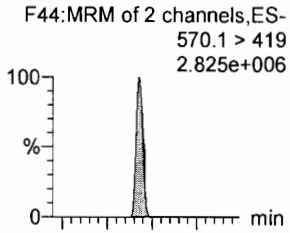


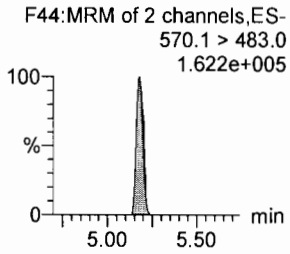
8:2 FTS



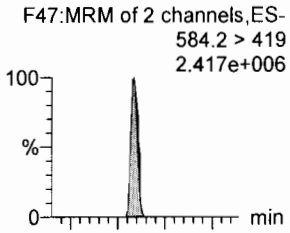


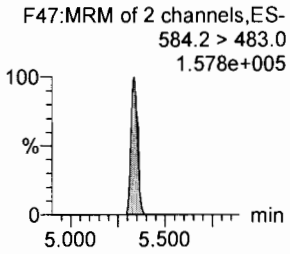
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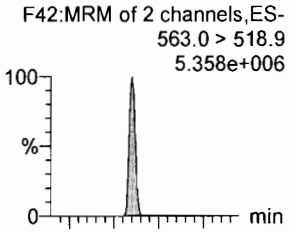


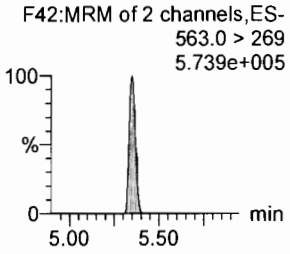
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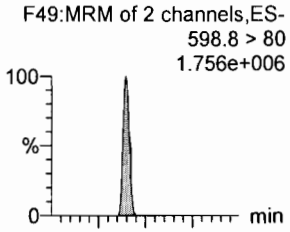


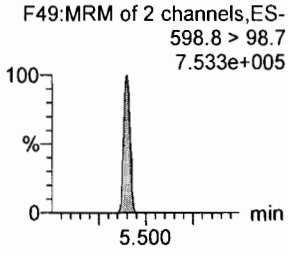
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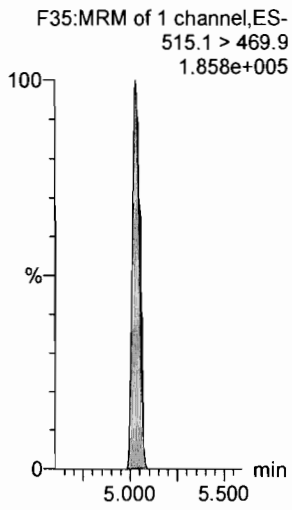


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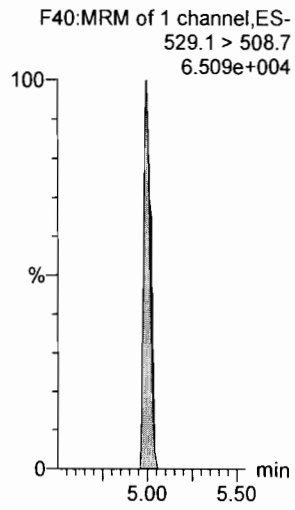




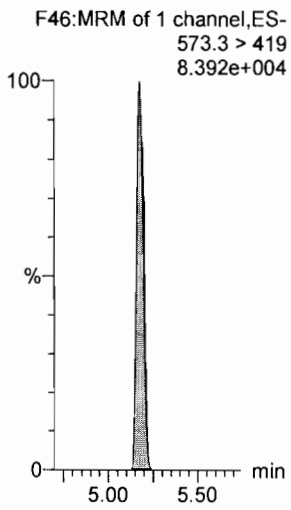
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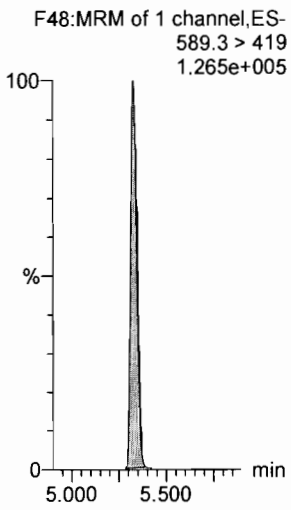
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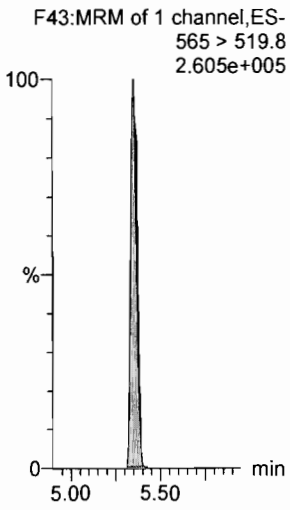
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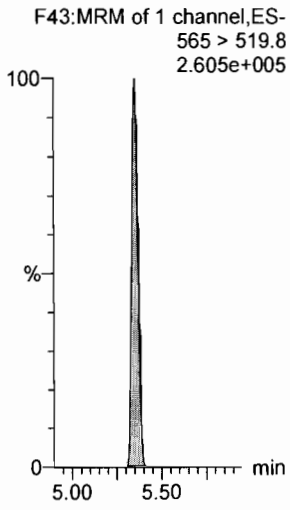
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13C2-PFUdA



13C2-PFUdA

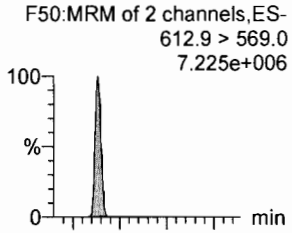


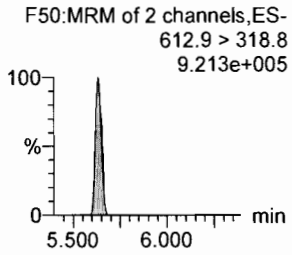
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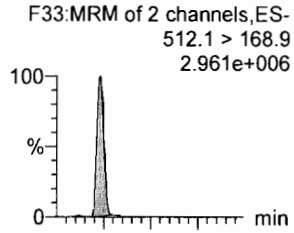
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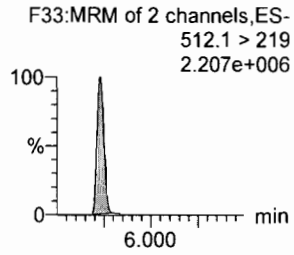
PFDoA



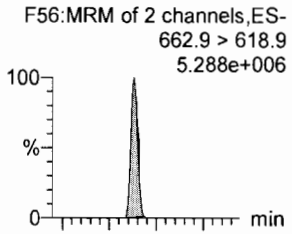


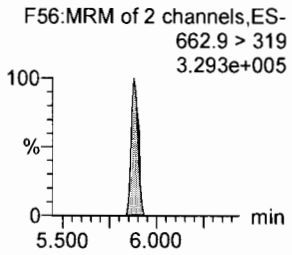
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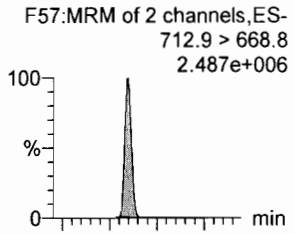


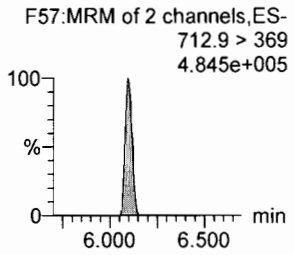
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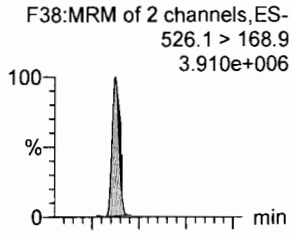


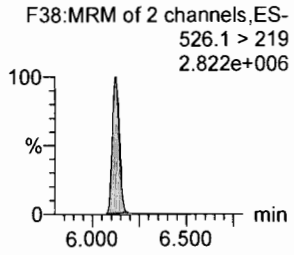
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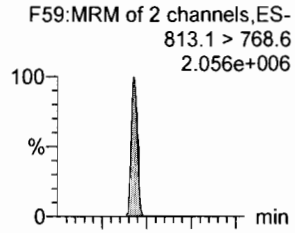


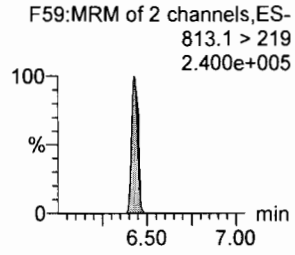
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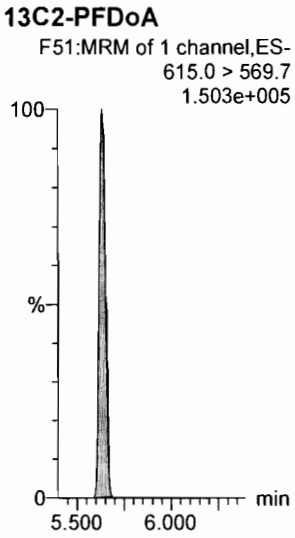


PFHxDA

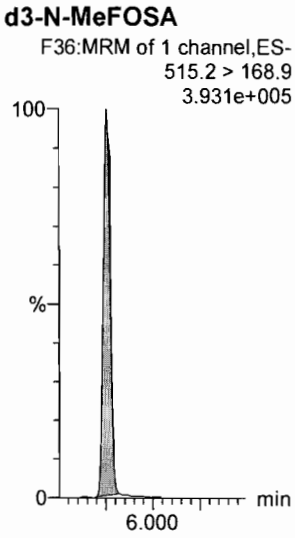




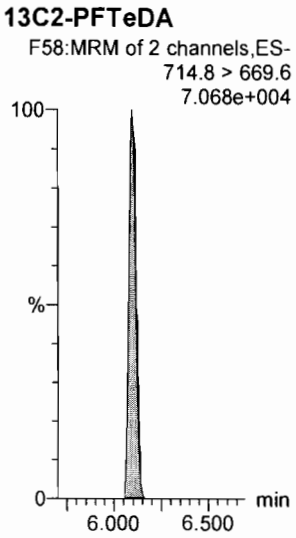
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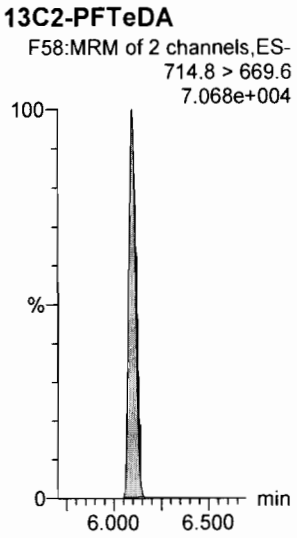
d3-N-MeFOSA



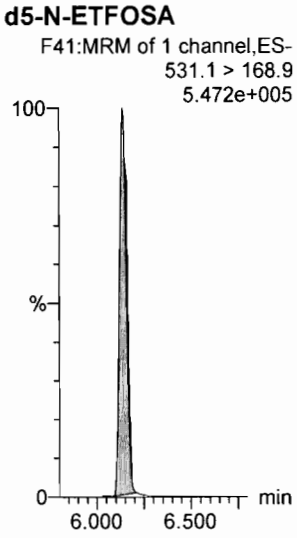
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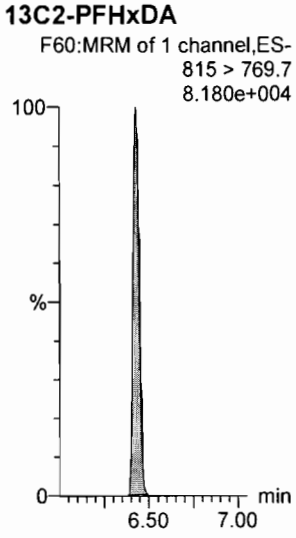
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d5-N-ETFOSA



13C2-PFHxDA

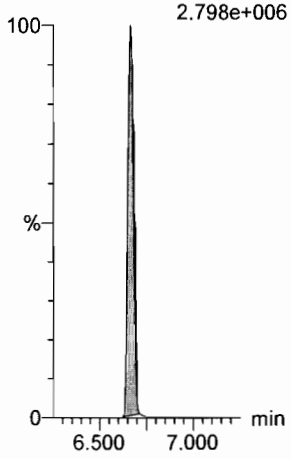


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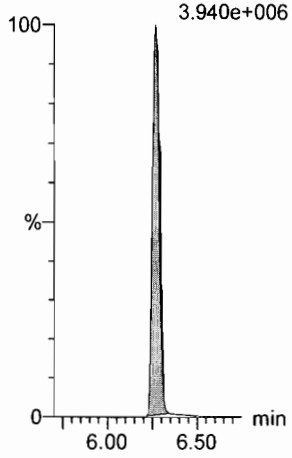
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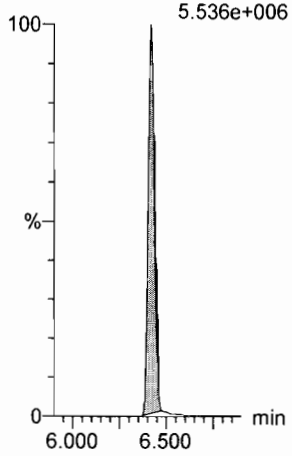
PFODA
F61:MRM of 1 channel,ES-
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2.798e+006



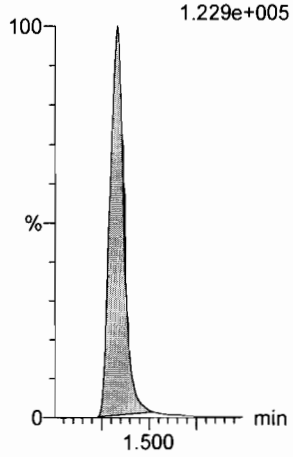
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F52:MRM of 1 channel,ES-
616.1 > 58.9
3.940e+006



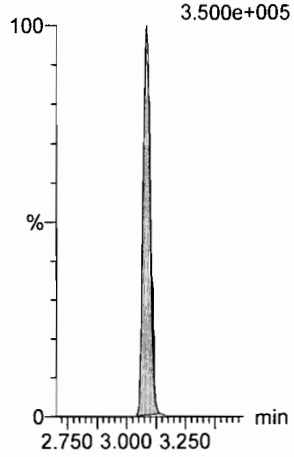
N-EtFOSE
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630.1 > 58.9
5.536e+006



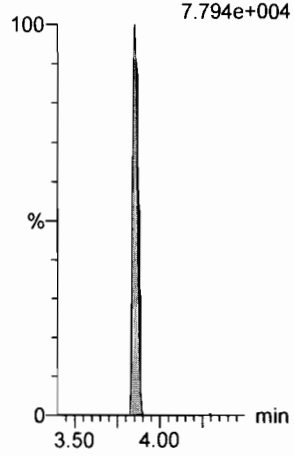
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.229e+005



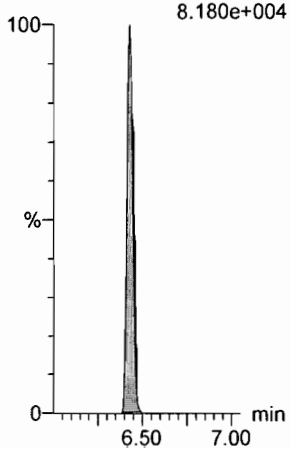
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F10:MRM of 1 channel,ES-
318 > 272.9
3.500e+005



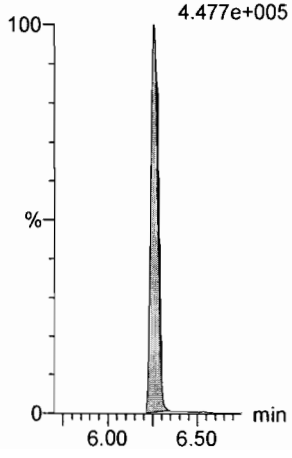
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
7.794e+004



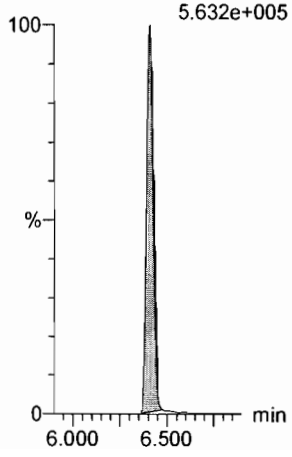
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F60:MRM of 1 channel,ES-
815 > 769.7
8.180e+004



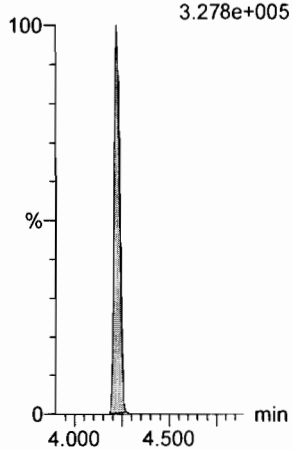
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
4.477e+005



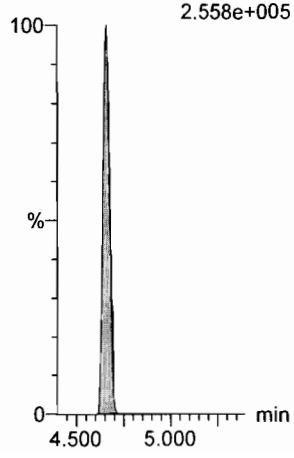
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
5.632e+005



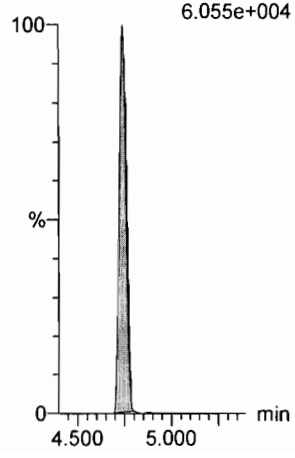
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
3.278e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
2.558e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
6.055e+004

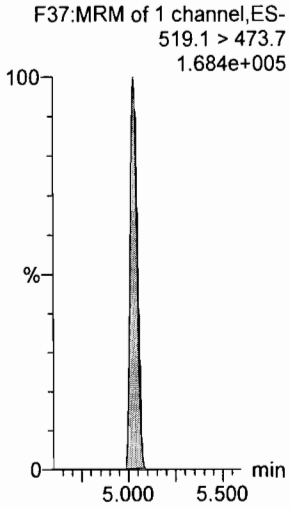


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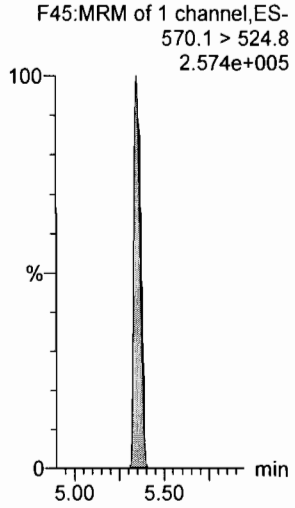
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13C6-PFDA



13C7-PFUdA

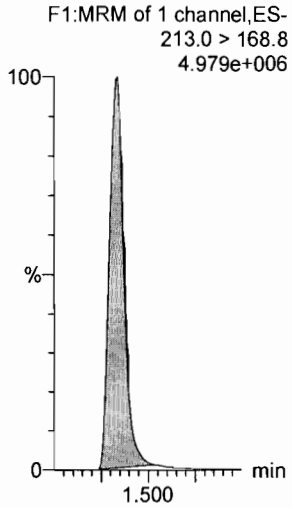


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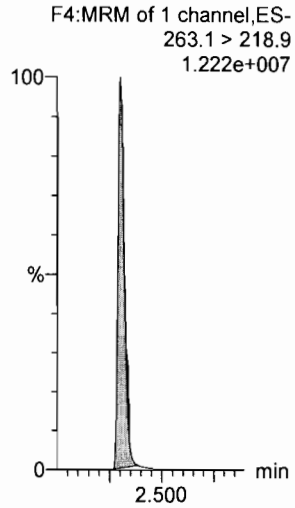
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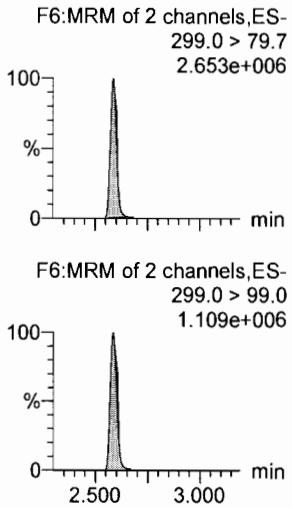
PFBA



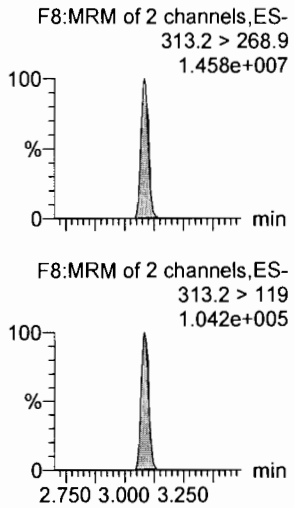
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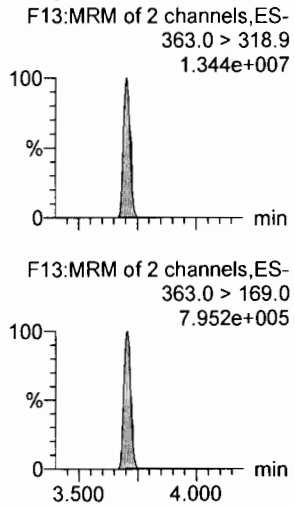
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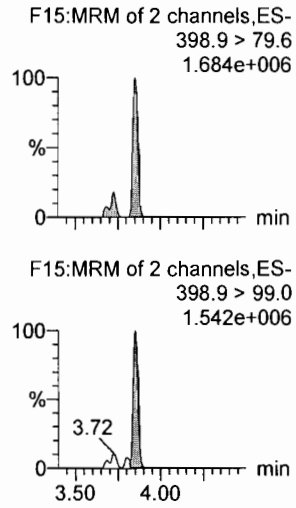
PFHxA



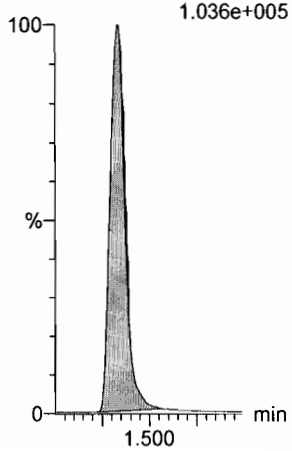
PFHpA



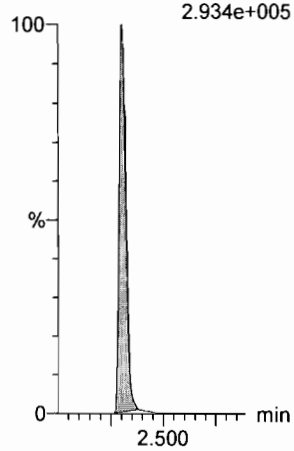
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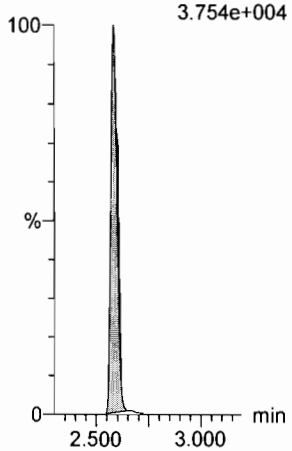
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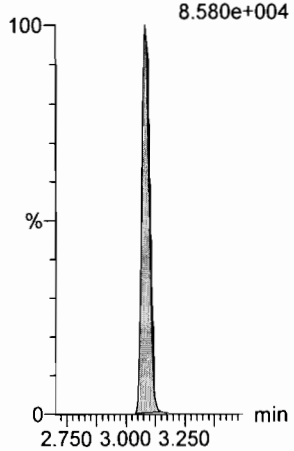
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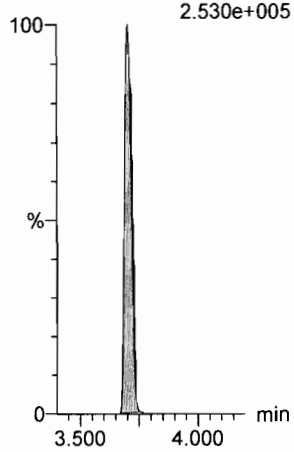
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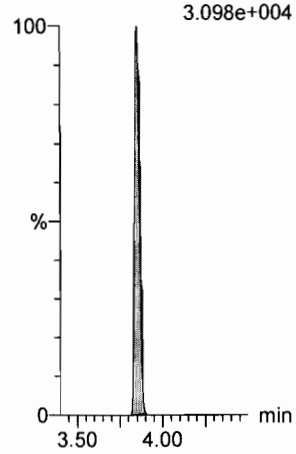
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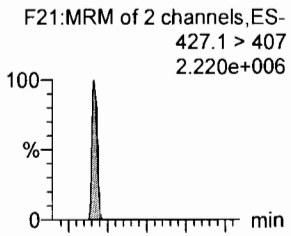


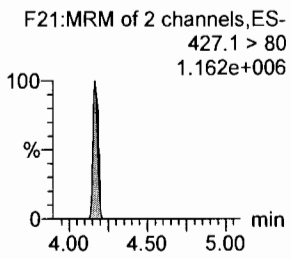
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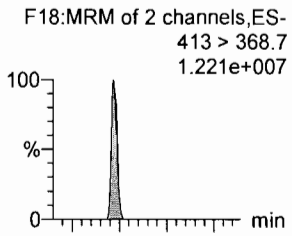
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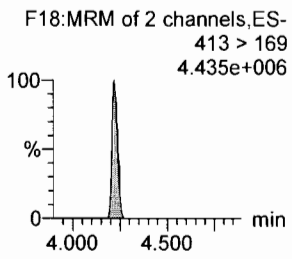
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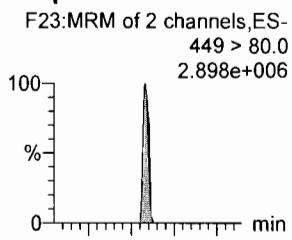


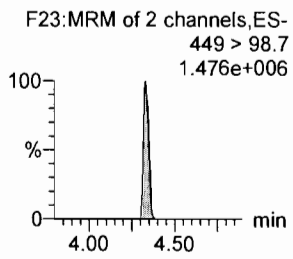
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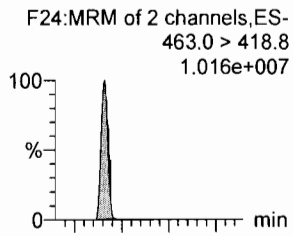


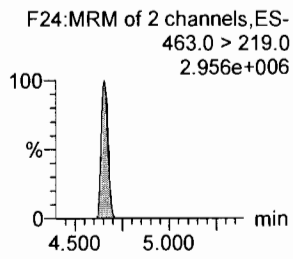
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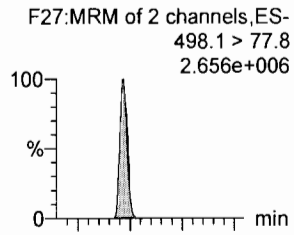


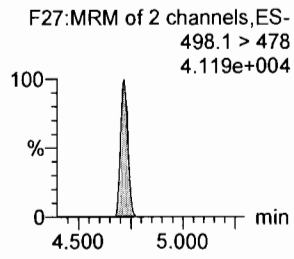
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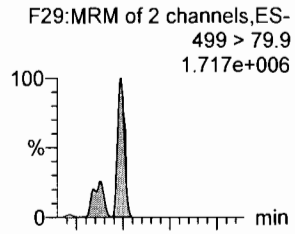


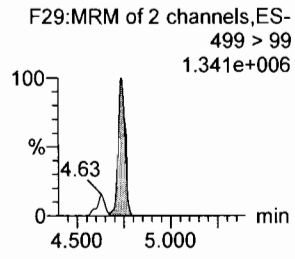
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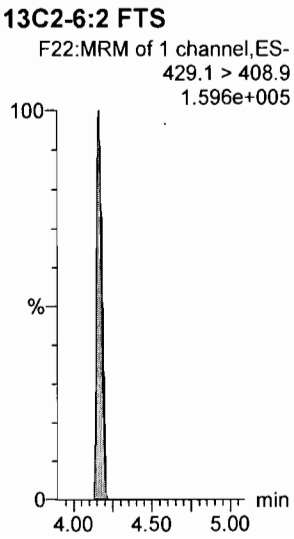


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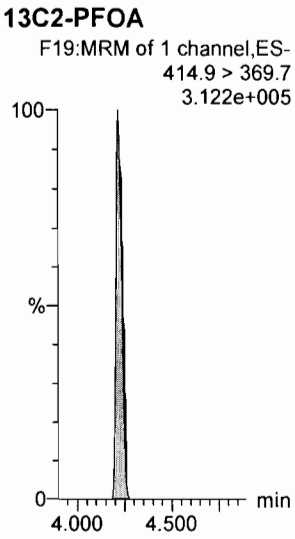




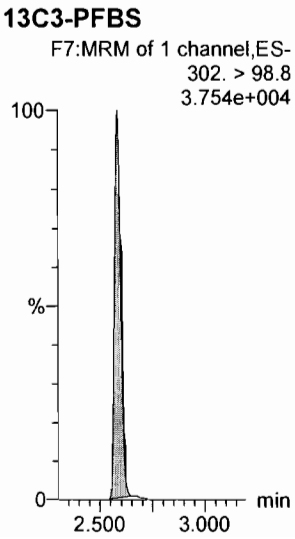
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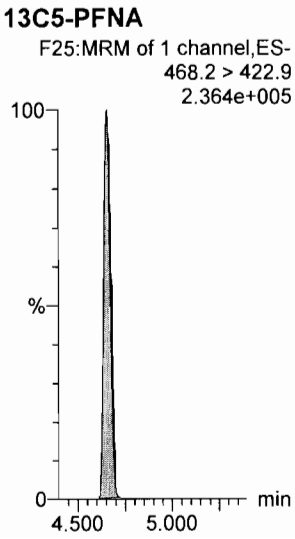
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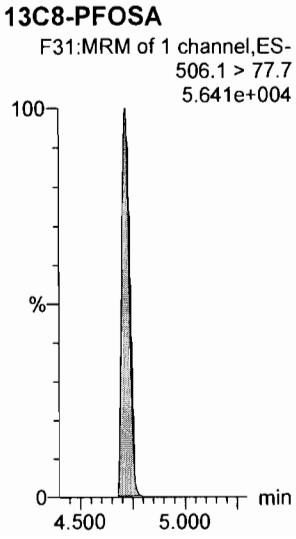
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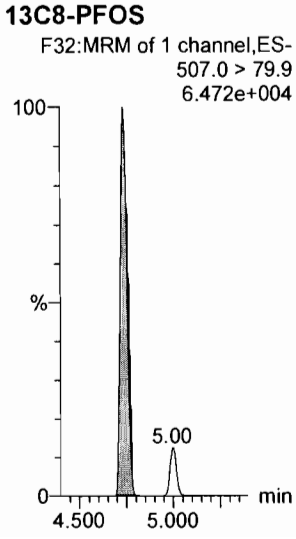
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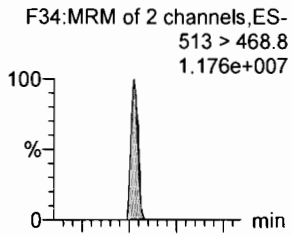


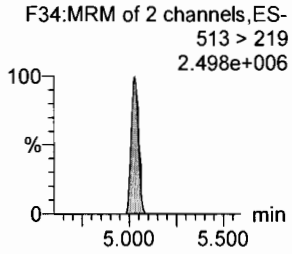
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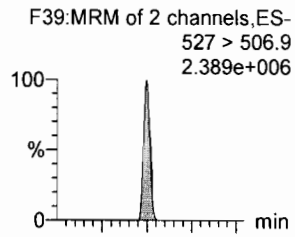
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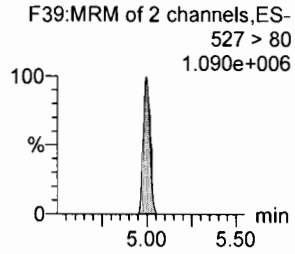
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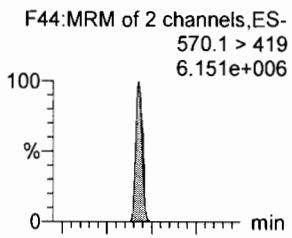


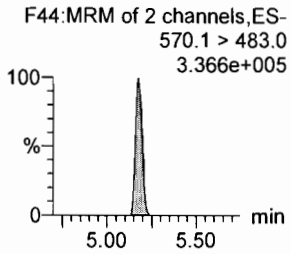
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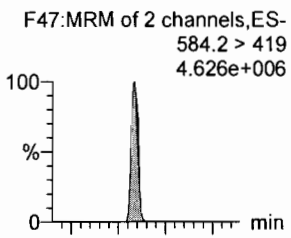


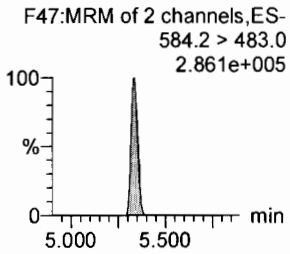
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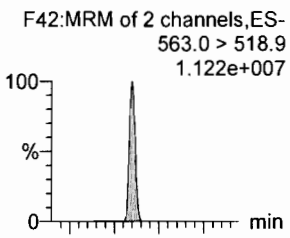


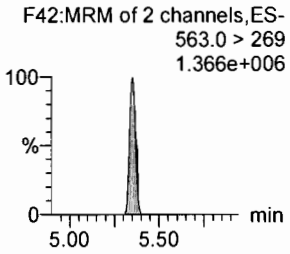
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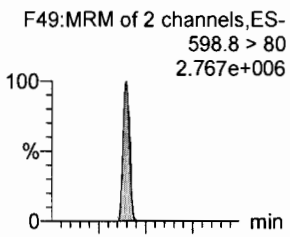


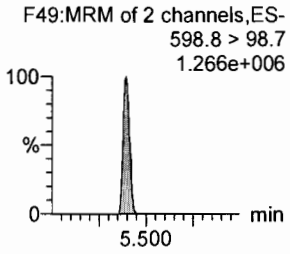
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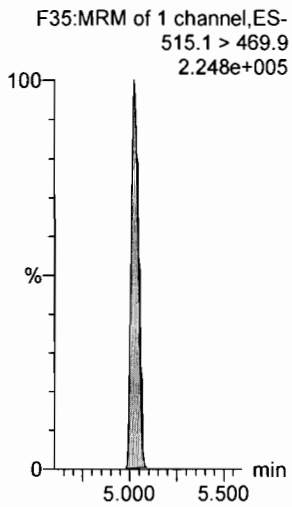


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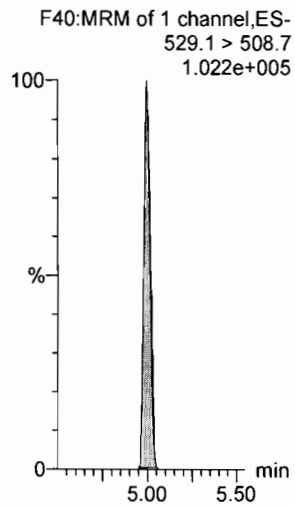




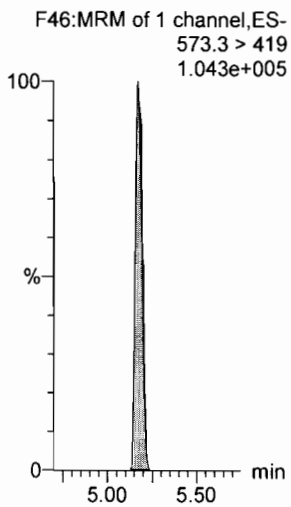
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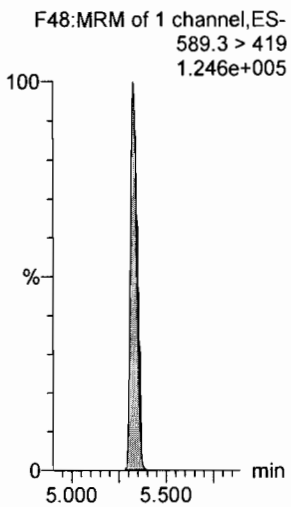
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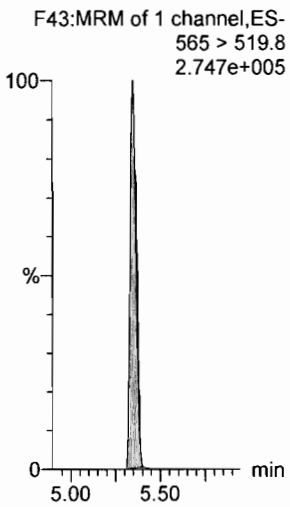
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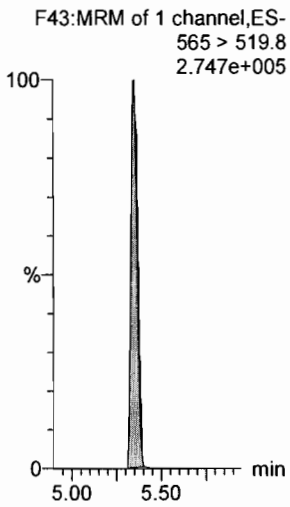
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13C2-PFUdA



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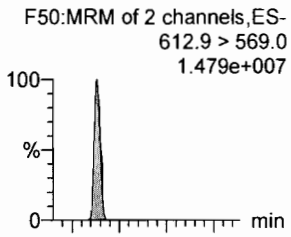


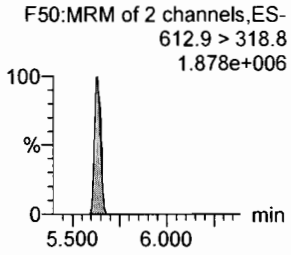
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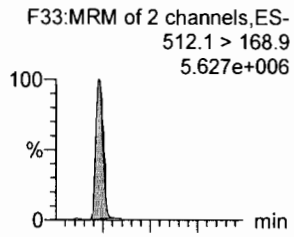
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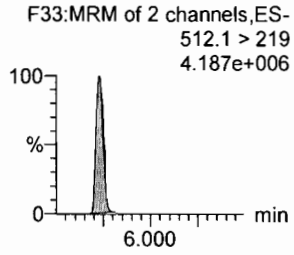
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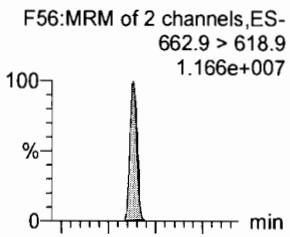


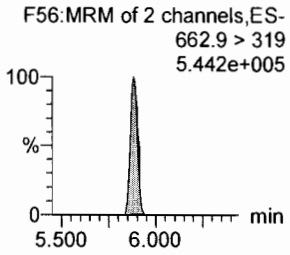
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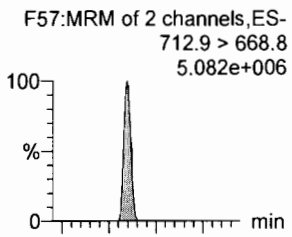


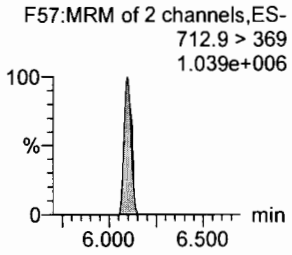
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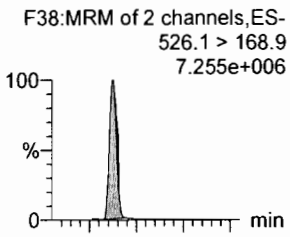


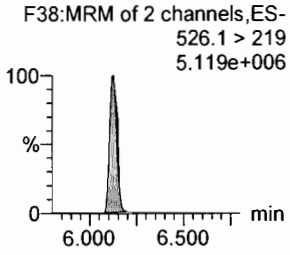
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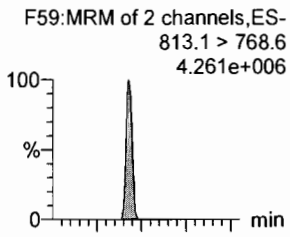


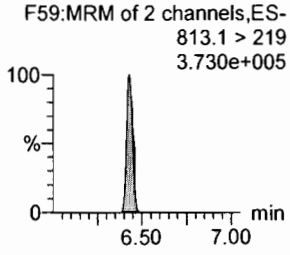
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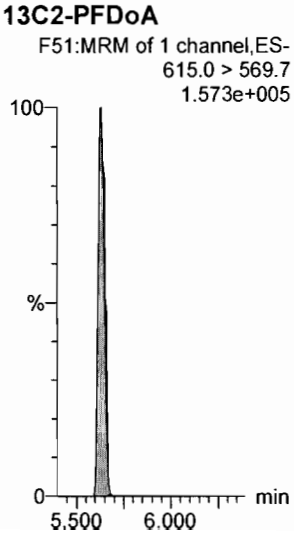


PFHxDA

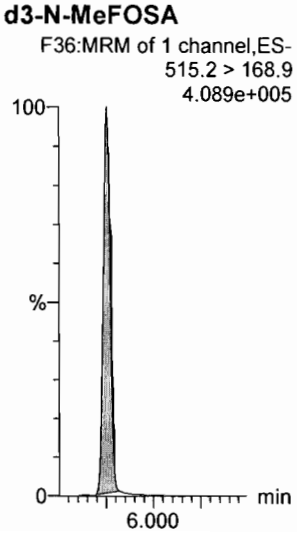




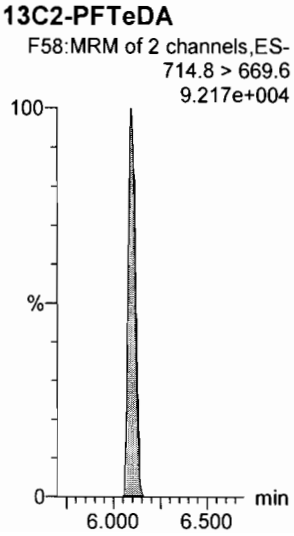
13C2-PFDoA



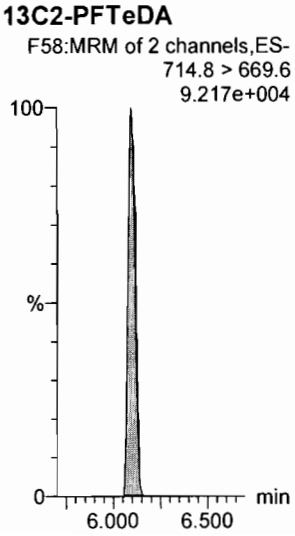
d3-N-MeFOSA



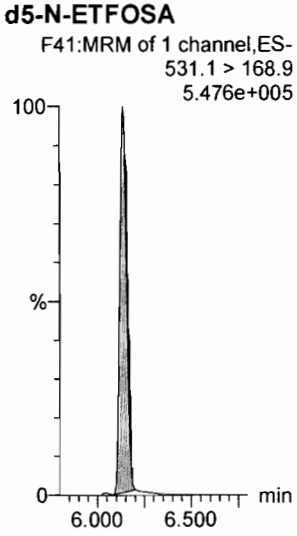
13C2-PFTeDA



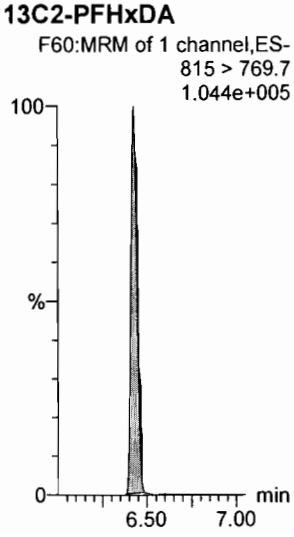
13C2-PFTeDA



d5-N-ETFOSA



13C2-PFHxDA

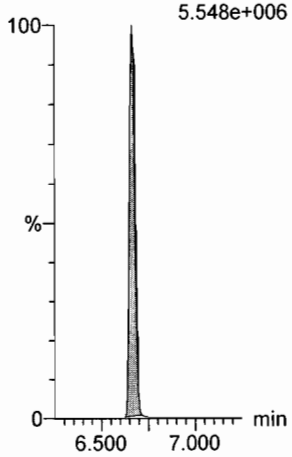


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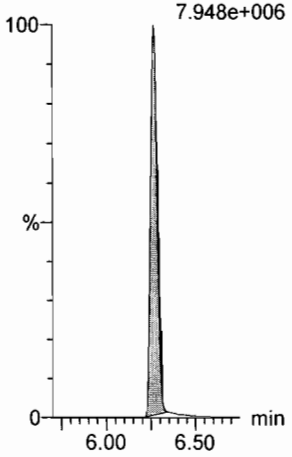
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Printed: Saturday, January 13, 2018 17:06:32 Pacific Standard Time

Name: 180112M3_10, Date: 12-Jan-2018, Time: 15:19:28, ID: ST180112M3-10 PFC CS7 18A0815, Description: ST180108M2-10 PFC CS7 18A0815

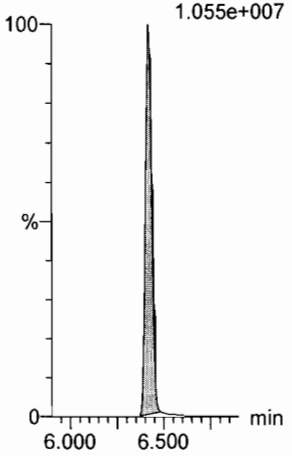
PFODA
F61:MRM of 1 channel,ES-
913.1 > 868.8
5.548e+006



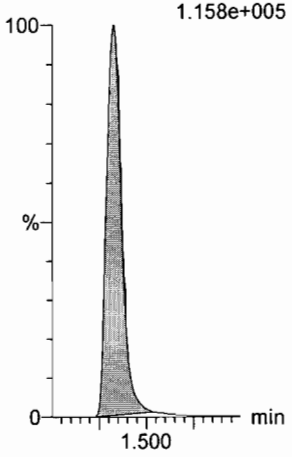
N-MeFOSE
F52:MRM of 1 channel,ES-
616.1 > 58.9
7.948e+006



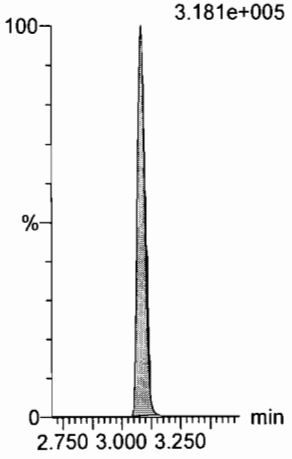
N-EtFOSE
F54:MRM of 1 channel,ES-
630.1 > 58.9
1.055e+007



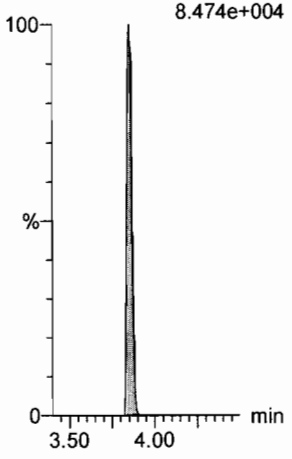
13C4-PFBA
F3:MRM of 1 channel,ES-
217. > 171.8
1.158e+005



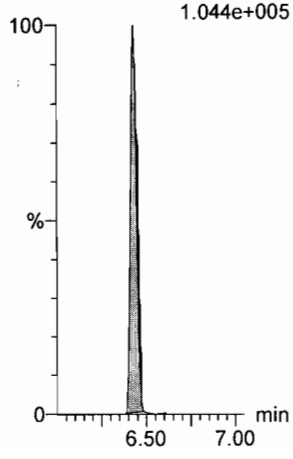
13C5-PFHxA
F10:MRM of 1 channel,ES-
318 > 272.9
3.181e+005



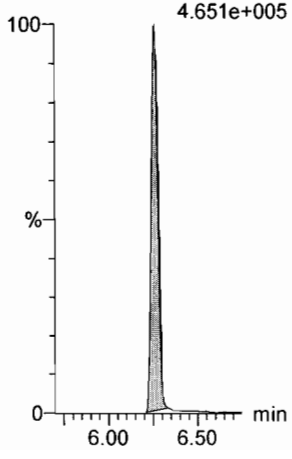
13C3-PFHxS
F16:MRM of 1 channel,ES-
401.9 > 79.9
8.474e+004



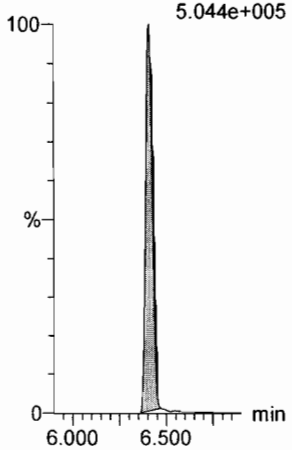
13C2-PFHxDA
F60:MRM of 1 channel,ES-
815 > 769.7
1.044e+005



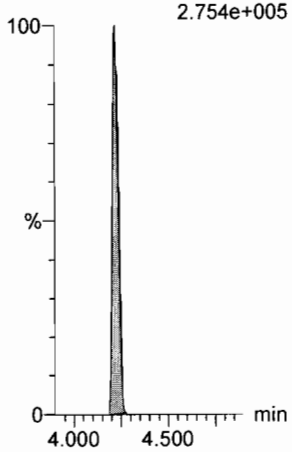
d7-N-MeFOSE
F53:MRM of 1 channel,ES-
623.1 > 58.9
4.651e+005



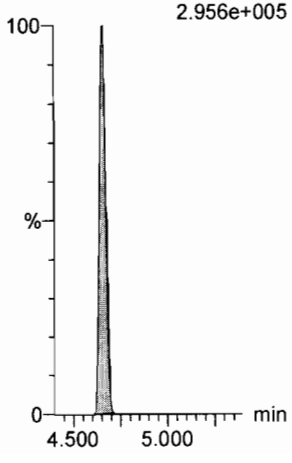
d9-N-EtFOSE
F55:MRM of 1 channel,ES-
639.2 > 58.8
5.044e+005



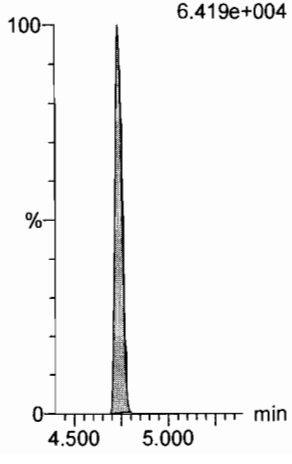
13C8-PFOA
F20:MRM of 1 channel,ES-
421.3 > 376
2.754e+005



13C9-PFNA
F26:MRM of 1 channel,ES-
472.2 > 426.9
2.956e+005



13C4-PFOS
F30:MRM of 1 channel,ES-
503 > 79.9
6.419e+004

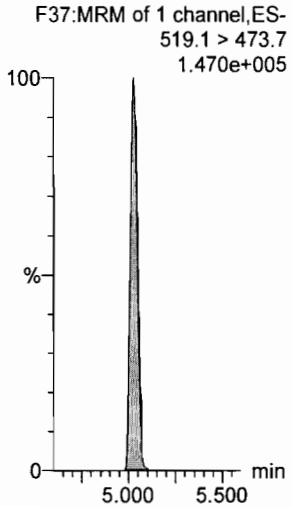


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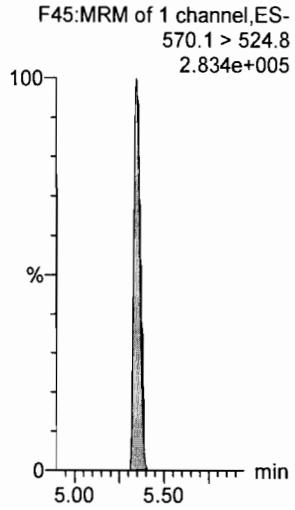
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Name: 180112M3_10, Date: 12-Jan-2018, Time: 15:19:28, ID: ST180112M3-10 PFC CS7 18A0815, Description: ST180108M2-10 PFC CS7 18A0815

13C6-PFDA



13C7-PFUdA



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Dataset: U:\Q4.PRO\results\180112M3\180112M3_12.qld

Last Altered: Saturday, January 13, 2018 16:17:30 Pacific Standard Time
Printed: Saturday, January 13, 2018 17:19:43 Pacific Standard Time

(4) Not present in SS

Method: U:\Q4.PRO\MethDB\PFAS_FULL_80C_010818C.mdb 11 Jan 2018 15:33:36
Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

1/13/18 ✓ JA. 01/15/2018

Name: 180112M3_12, Date: 12-Jan-2018, Time: 15:42:29, ID: ICV180112M3-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

	#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out
1	1	PFBA	213.0 > 168.8	8.82e3	9.56e3		1.38	1.33	11.5	9.79	97.9	NO
2	2	PFPeA	263.1 > 218.9	9.13e3	1.19e4		2.37	2.31	9.62	9.32	93.2	NO
3	3	PFBS	299.0 > 79.7	1.73e3	1.42e3		2.66	2.59	15.3	8.36	83.6	NO
4	4	PFHxA	313.2 > 268.9	1.08e4	3.90e3		3.15	3.08	13.8	8.30	83.0	NO
5	5	PFHpA	363.0 > 318.9	9.27e3	9.53e3		3.78	3.71	12.2	9.50	95.0	NO
6	6	L-PFHxS	398.9 > 79.6	1.47e3	1.26e3		3.94	3.85	14.6	8.20	82.0	NO
7	8	6:2 FTS	427.1 > 407	2.38e3	1.26e3		4.25	4.17	23.7	8.99	89.9	NO
8	9	L-PFOA	413 > 368.7	1.00e4	1.29e4		4.31	4.22	9.72	8.79	87.9	NO
9	11	PFHpS	449 > 80.0	2.48e3	1.29e4		4.42	4.33	2.41	8.85	88.5	NO
10	12	PFNA	463.0 > 418.8	1.03e4	1.13e4		4.81	4.66	11.3	8.85	88.5	NO
11	13	PFOSA	498.1 > 77.8	2.43e3	2.80e3		4.87	4.72	10.8	9.72	97.2	NO
12	14	L-PFOS	499 > 79.9	2.58e3	3.23e3		4.75	4.74	9.99	8.47	84.7	NO
13	16	PFDA	513 > 468.8	1.07e4	9.63e3		5.18	5.03	13.9	9.82	98.2	NO
14	17	8:2 FTS	527 > 506.9	1.88e3	9.63e3		5.15	5.00	2.44	9.41	94.1	NO
15	18	N-MeFOSAA	570.1 > 419	5.30e3	4.02e3		5.32	5.18	16.5	9.59	95.9	NO
16	19	N-EtFOSAA	584.2 > 419	3.95e3	6.19e3		5.48	5.33	7.98	7.47	74.7	NO
17	20	PFUdA	563.0 > 518.9	1.11e4	1.26e4		5.50	5.35	11.0	9.53	95.3	NO
18	21	PFDS	598.8 > 80	2.58e3	1.26e4		5.54	5.40	2.56	7.67	76.7	NO
19	22	PFDoA	612.9 > 569.0	1.04e4	4.88e3		5.77	5.63	26.8	11.0	110.4	NO
20	23	N-MeFOSA	512.1 > 168.9		1.75e4		5.80				(4)	NO
21	24	PFTrDA	662.9 > 618.9	9.68e3	4.88e3		6.00	5.88	24.8	11.7	116.5	NO
22	25	PFTeDA	712.9 > 668.8	4.94e3	2.83e3		6.22	6.10	21.8	10.1	100.8	NO
23	26	N-EtFOSA	526.1 > 168.9		2.66e4		6.17				(4)	NO
24	27	PFHxDA	813.1 > 768.6		2.63e3		6.53					NO
25	28	PFODA	913.1 > 868.8		2.63e3		6.74					NO
26	29	N-MeFOSE	616.1 > 58.9		2.33e4		6.27					NO
27	30	N-EtFOSE	630.1 > 58.9	8.51e1	2.33e4		6.43	6.42	0.548	0.487	~~1.0~~	YES
28	31	13C3-PFBA	216.1 > 171.8	9.56e3	1.04e4	0.888	1.38	1.34	11.5	12.9	103.1	NO
29	32	13C3-PFPeA	266. > 221.8	1.19e4	1.46e4	0.875	2.37	2.30	10.1	11.6	92.8	NO
30	33	13C3-PFBS	302. > 98.8	1.42e3	1.46e4	0.112	2.77	2.59	1.21	10.8	86.8	NO
31	34	13C2-PFHxA	315 > 269.8	3.90e3	1.46e4	0.691	3.15	3.08	3.33	4.83	96.5	NO

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Dataset: U:\Q4.PRO\results\180112M3\180112M3_12.qld

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Name: 180112M3_12, Date: 12-Jan-2018, Time: 15:42:29, ID: ICV180112M3-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

	#	Name	Trace	Area	IS Area	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec	Recovery Out
32	35	13C4-PFHpA	367.2 > 321.8	9.53e3	1.46e4	0.708	3.78	3.71	8.14	11.5	91.9	NO
33	36	18O2-PFHxS	403.0 > 102.6	1.26e3	3.54e3	0.353	3.94	3.85	4.44	12.6	100.7	NO
34	37	13C2-6:2 FTS	429.1 > 408.9	2.76e3	1.14e4	0.285	4.25	4.17	3.04	10.7	85.4	NO
35	38	13C2-PFOA	414.9 > 369.7	1.29e4	1.14e4	1.049	4.31	4.22	14.2	13.5	108.1	NO
36	39	13C5-PFNA	468.2 > 422.9	1.13e4	9.80e3	0.910	4.81	4.66	14.5	15.9	127.2	NO
37	40	13C8-PFOSA	506.1 > 77.7	2.80e3	1.10e4	0.252	4.87	4.72	3.19	12.7	101.3	NO
38	41	13C8-PFOS	507.0 > 79.9	3.23e3	3.23e3	0.987	4.89	4.74	12.5	12.6	101.2	NO
39	42	13C2-PFDA	515.1 > 469.9	9.63e3	6.97e3	1.311	5.18	5.03	17.3	13.2	105.4	NO
40	43	13C2-8:2 FTS	529.1 > 508.7	1.17e3	1.46e4	0.141	5.15	5.00	0.999	7.07	56.5	NO
41	44	d3-N-MeFOSAA	573.3 > 419	4.02e3	1.10e4	0.385	5.32	5.18	4.57	11.9	95.1	NO
42	45	d5-N-EtFOSAA	589.3 > 419	6.19e3	1.10e4	0.445	5.47	5.33	7.04	15.8	126.5	NO
43	46	13C2-PFUdA	565 > 519.8	1.26e4	1.10e4	1.014	5.49	5.35	14.3	14.1	112.9	NO
44	47	13C2-PFDoA	615.0 > 569.7	4.88e3	1.10e4	0.575	5.77	5.64	5.55	9.64	77.1	NO
45	48	d3-N-MeFOSA	515.2 > 168.9	1.75e4	1.10e4	0.130	5.83	5.75	20.0	153	102.1	NO
46	49	13C2-PFTeDA	714.8 > 669.6	2.83e3	1.10e4	0.305	6.22	6.10	3.22	10.5	84.4	NO
47	50	d5-N-ETFOSA	531.1 > 168.9	2.66e4	1.10e4	0.192	6.18	6.14	30.3	158	105.1	NO
48	51	13C2-PFHxDA	815 > 769.7	2.63e3	1.10e4	0.587	6.53	6.43	2.99	5.08	101.7	NO
49	52	d7-N-MeFOSE	623.1 > 58.9	2.33e4	1.10e4	0.163	6.27	6.26	26.5	163	108.8	NO
50	53	d9-N-EtFOSE	639.2 > 58.8	2.33e4	1.10e4	0.178	6.42	6.41	26.5	149	99.0	NO
51	54	13C4-PFBA	217. > 171.8	1.04e4	1.04e4	1.000	1.38	1.33	12.5	12.5	100.0	NO
52	55	13C5-PFHxA	318 > 272.9	1.46e4	1.46e4	1.000	3.15	3.08	12.5	12.5	100.0	NO
53	56	13C3-PFHxS	401.9 > 79.9	3.54e3	3.54e3	1.000	4.02	3.85	12.5	12.5	100.0	NO
54	57	13C8-PFOA	421.3 > 376	1.14e4	1.14e4	1.000	4.38	4.22	12.5	12.5	100.0	NO
55	58	13C9-PFNA	472.2 > 426.9	9.80e3	9.80e3	1.000	4.81	4.65	12.5	12.5	100.0	NO
56	59	13C4-PFOS	503 > 79.9	3.23e3	3.23e3	1.000	4.89	4.74	12.5	12.5	100.0	NO
57	60	13C6-PFDA	519.1 > 473.7	6.97e3	6.97e3	1.000	5.18	5.03	12.5	12.5	100.0	NO
58	61	13C7-PFUdA	570.1 > 524.8	1.10e4	1.10e4	1.000	5.49	5.35	12.5	12.5	100.0	NO

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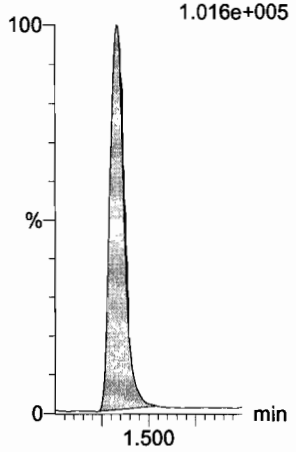
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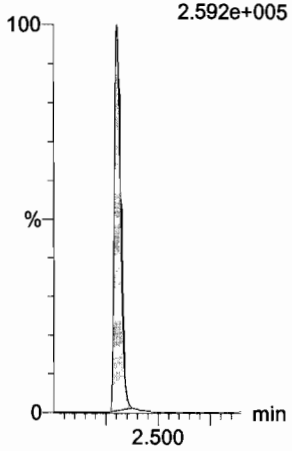
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Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_01-12-18-FULL.cdb 13 Jan 2018 14:58:25

Name: 180112M3_12, Date: 12-Jan-2018, Time: 15:42:29, ID: ICV180112M3-1 PFC ICV 18A0805, Description: ICV180108M2-1 PFC ICV 18A0805

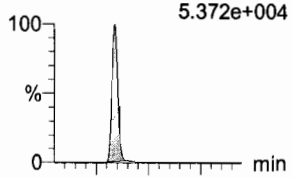
PFBA
F1:MRM of 1 channel,ES-
213.0 > 168.8
1.016e+005



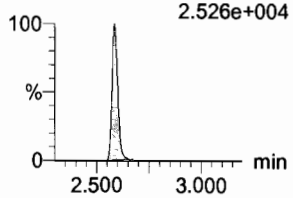
PFPeA
F4:MRM of 1 channel,ES-
263.1 > 218.9
2.592e+005



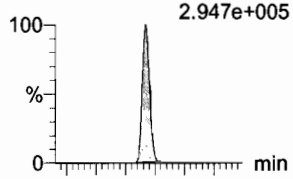
PFBS
F6:MRM of 2 channels,ES-
299.0 > 79.7
5.372e+004



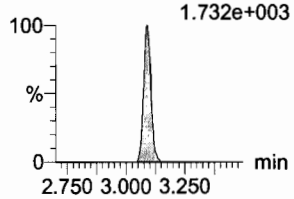
F6:MRM of 2 channels,ES-
299.0 > 99.0
2.526e+004



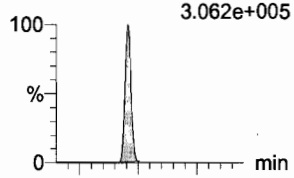
PFHxA
F8:MRM of 2 channels,ES-
313.2 > 268.9
2.947e+005



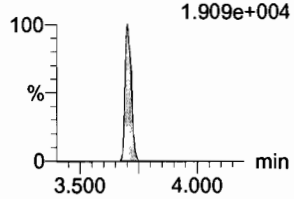
F8:MRM of 2 channels,ES-
313.2 > 119
1.732e+003



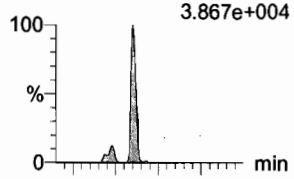
PFHpA
F13:MRM of 2 channels,ES-
363.0 > 318.9
3.062e+005



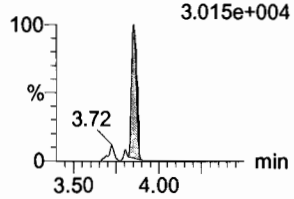
F13:MRM of 2 channels,ES-
363.0 > 169.0
1.909e+004



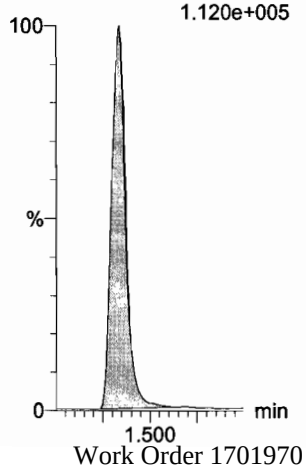
L-PFHxS
F15:MRM of 2 channels,ES-
398.9 > 79.6
3.867e+004



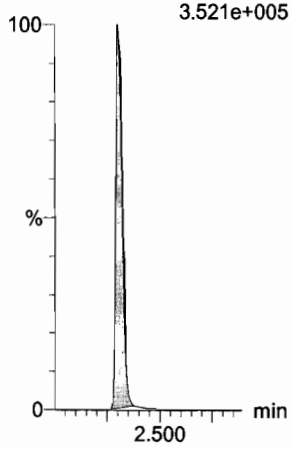
F15:MRM of 2 channels,ES-
398.9 > 99.0
3.015e+004



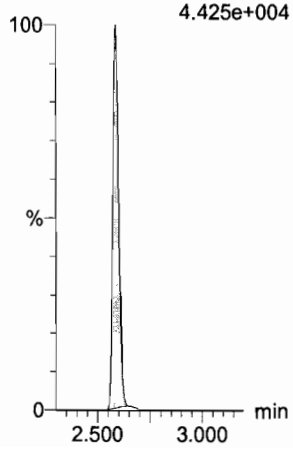
13C3-PFBA
F2:MRM of 1 channel,ES-
216.1 > 171.8
1.120e+005



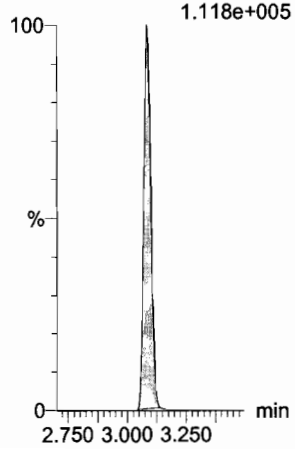
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F5:MRM of 1 channel,ES-
266. > 221.8
3.521e+005



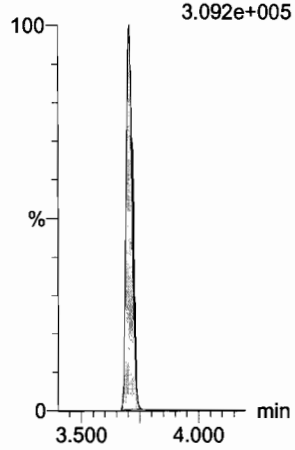
13C3-PFBS
F7:MRM of 1 channel,ES-
302. > 98.8
4.425e+004



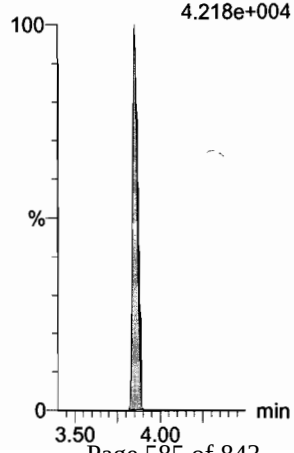
13C2-PFHxA
F9:MRM of 1 channel,ES-
315 > 269.8
1.118e+005



13C4-PFHpA
F14:MRM of 1 channel,ES-
367.2 > 321.8
3.092e+005



18O2-PFHxS
F17:MRM of 1 channel,ES-
403.0 > 102.6
4.218e+004

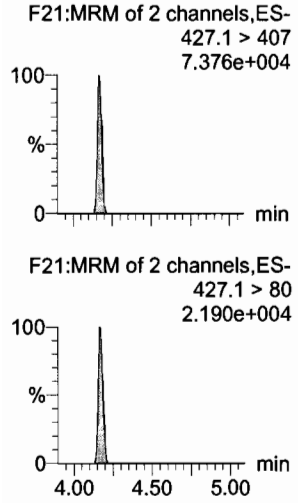


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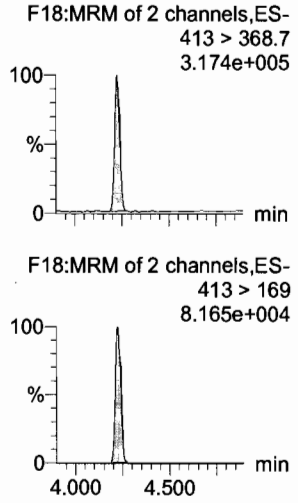
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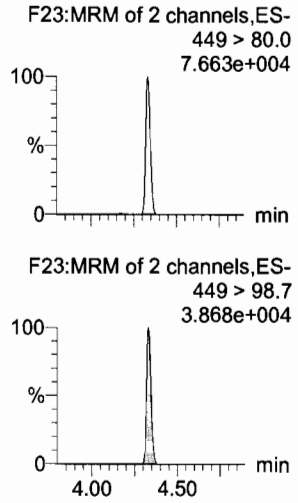
6:2 FTS



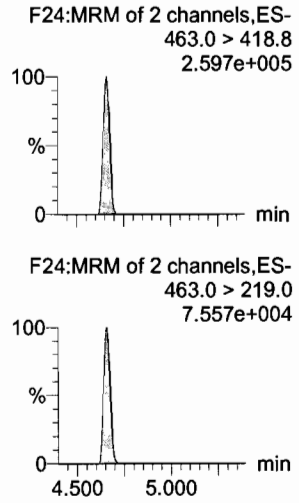
L-PFOA



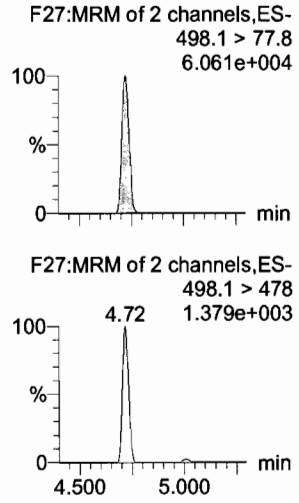
PFHpS



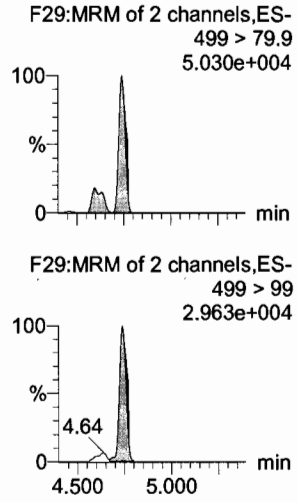
PFNA



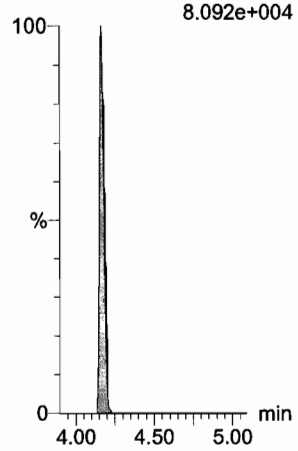
PFOSA



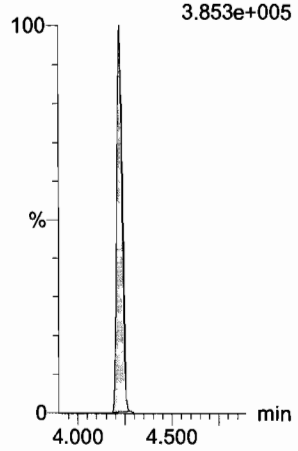
L-PFOS



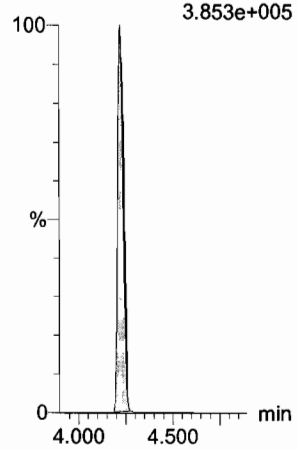
13C2-6:2 FTS



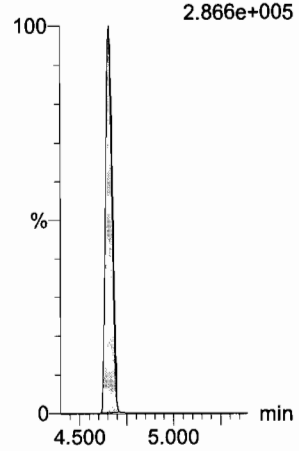
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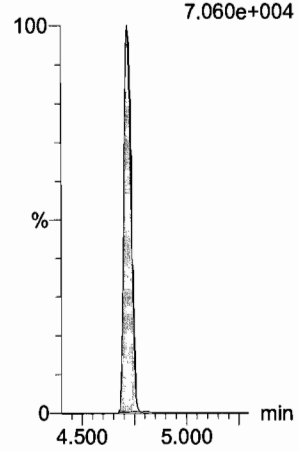
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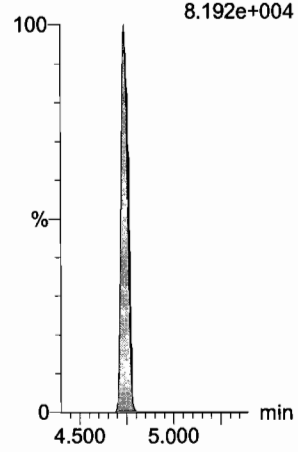
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13C8-PFOSA



13C8-PFOS

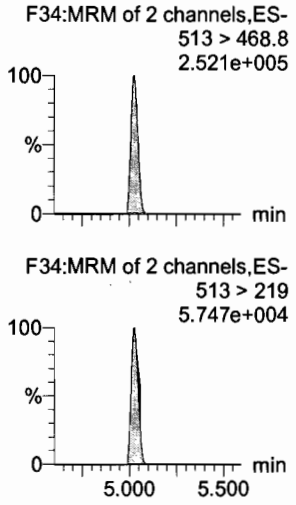


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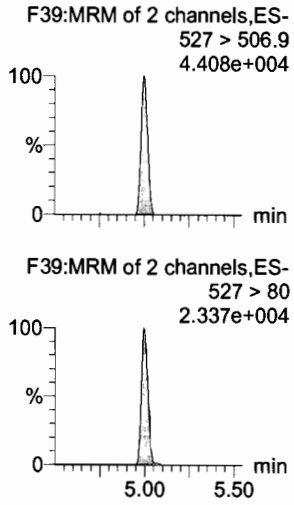
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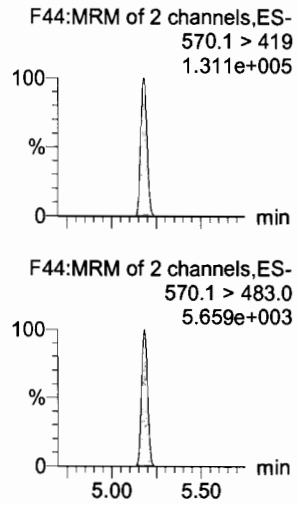
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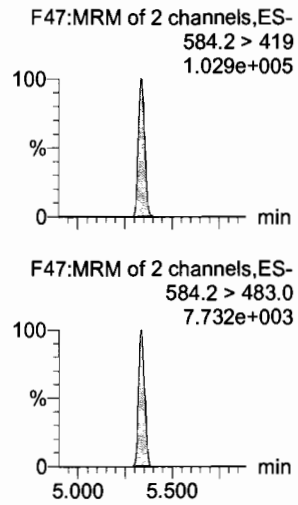
8:2 FTS



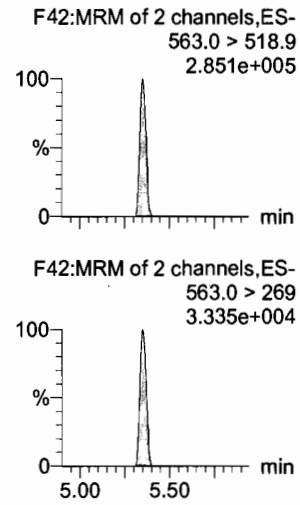
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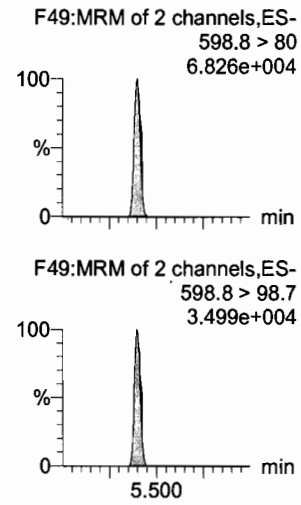
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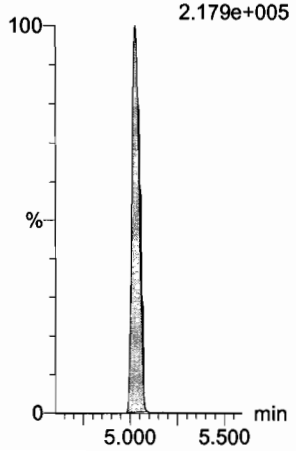
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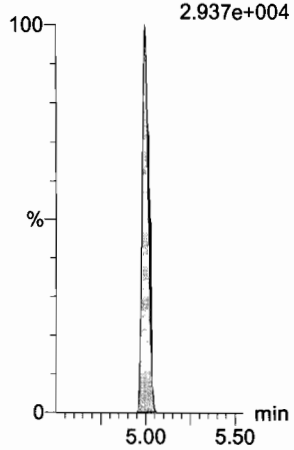
PFDS



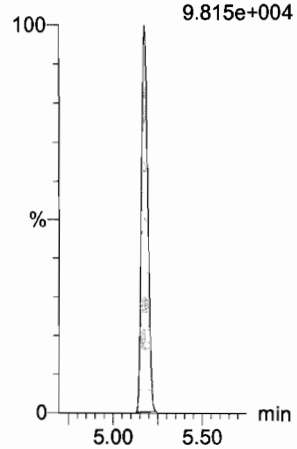
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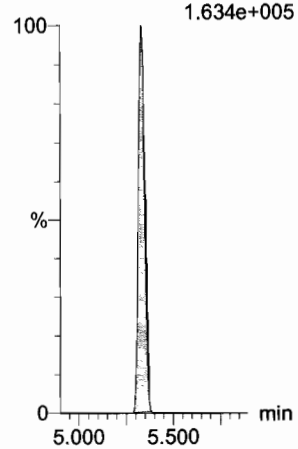
13C2-8:2 FTS



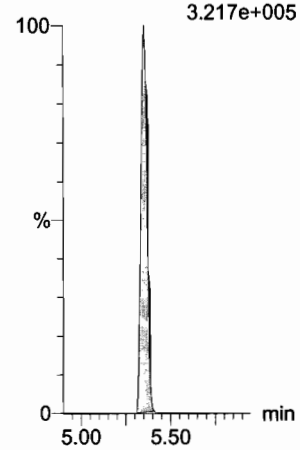
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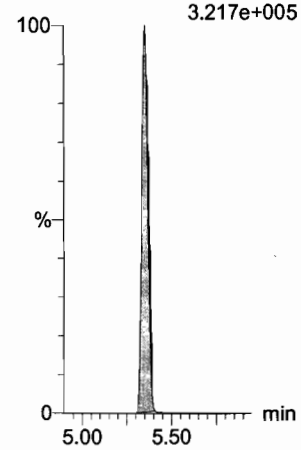
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13C2-PFUdA



13C2-PFUdA

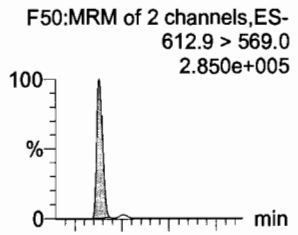


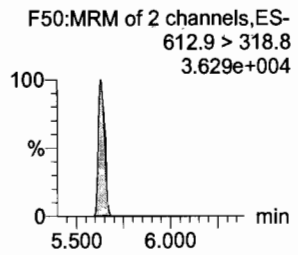
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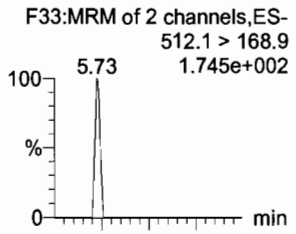
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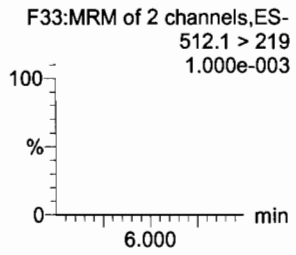
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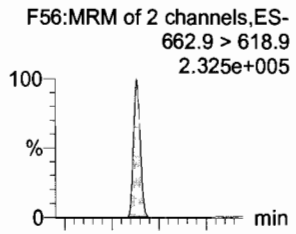


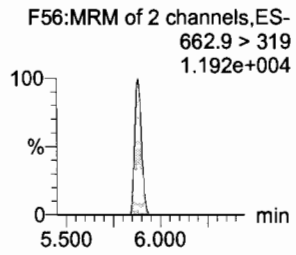
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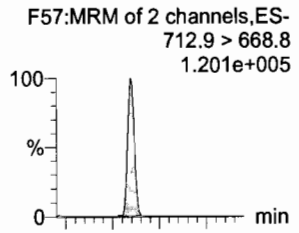


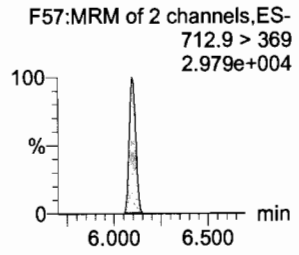
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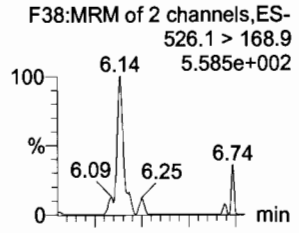


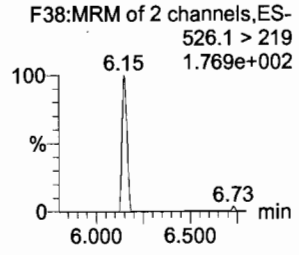
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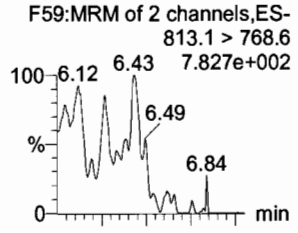


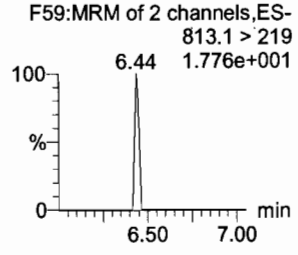
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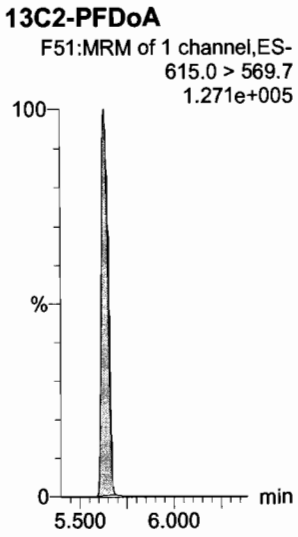


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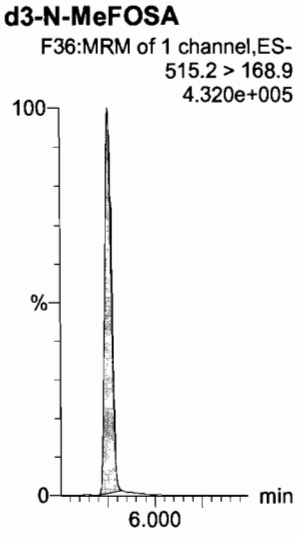




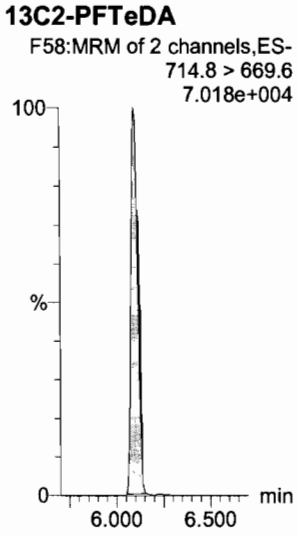
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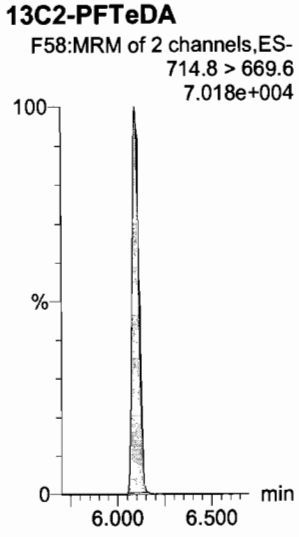
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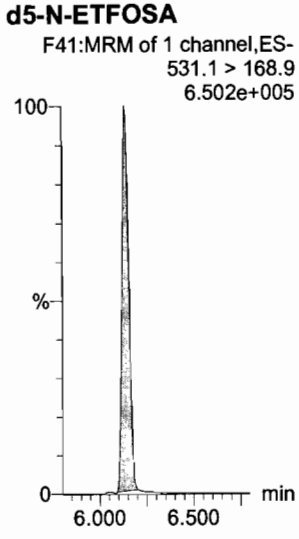
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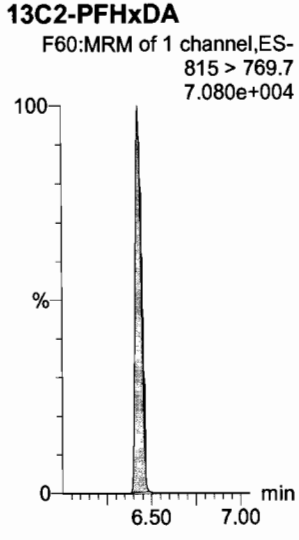
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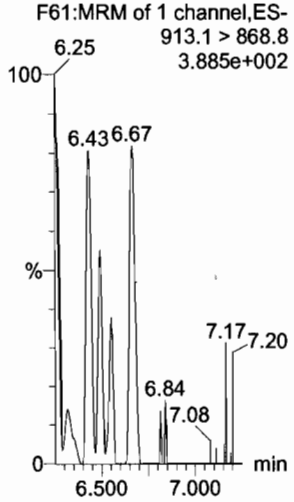


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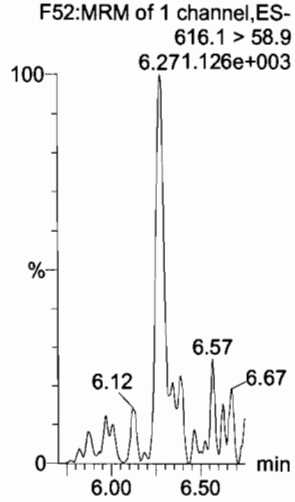
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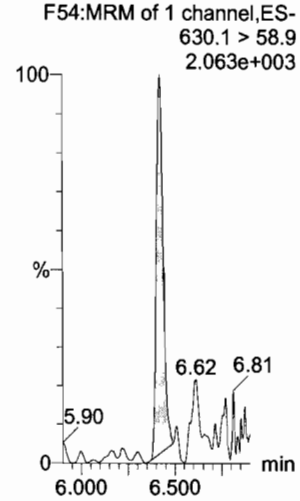
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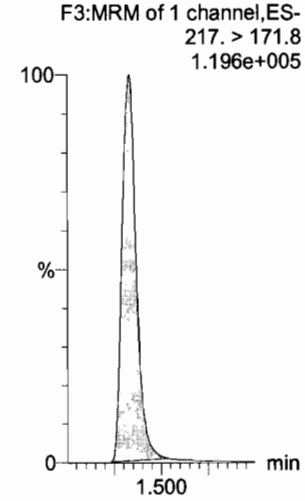
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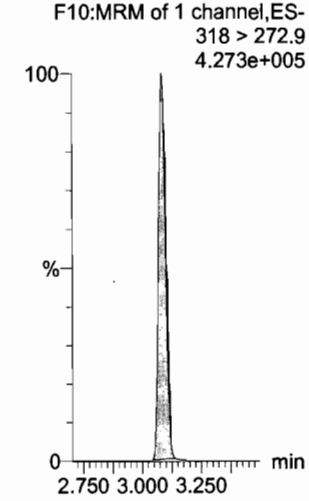
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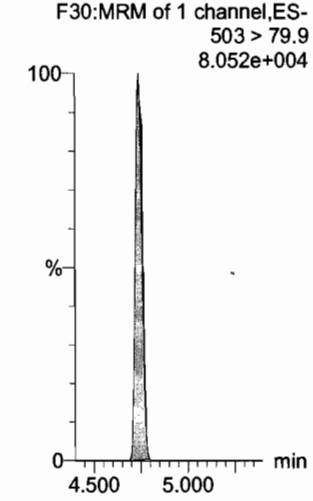
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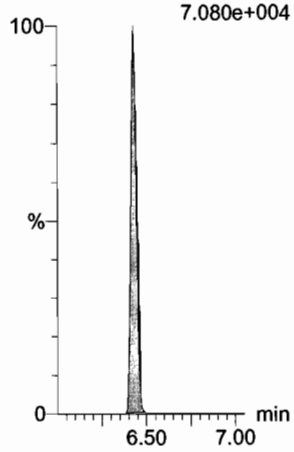
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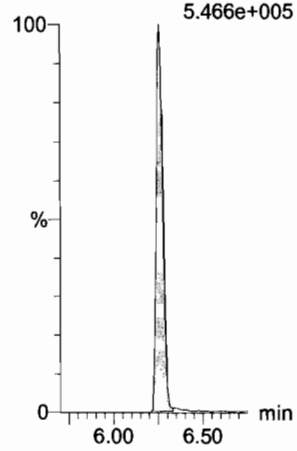
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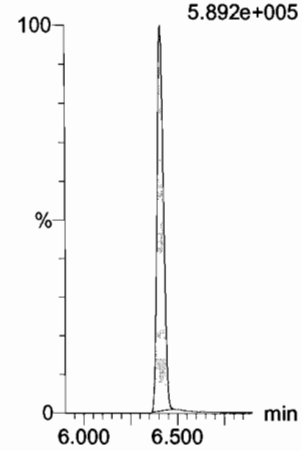
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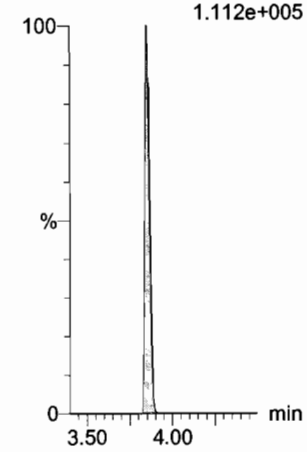
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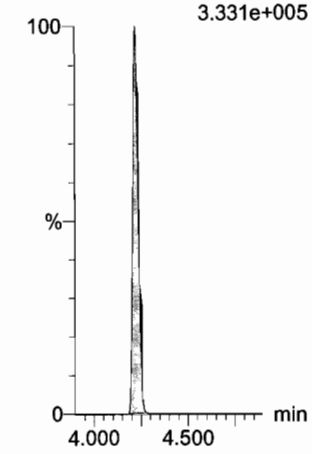
d9-N-EtFOSE



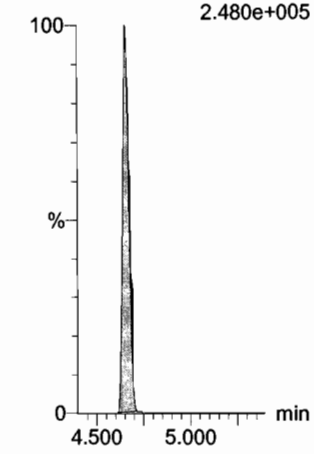
13C3-PFHxS



13C8-PFOA



13C9-PFNA

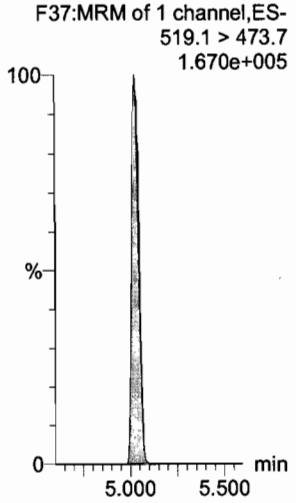


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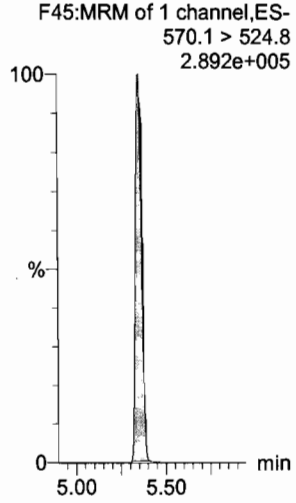
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13C6-PFDA



13C7-PFUdA



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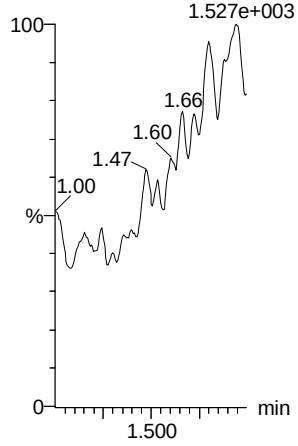
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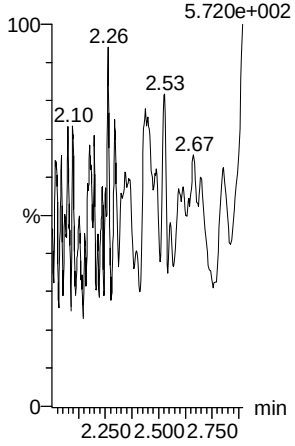
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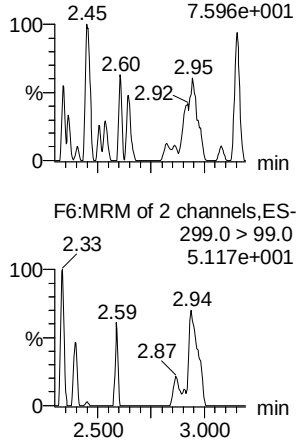
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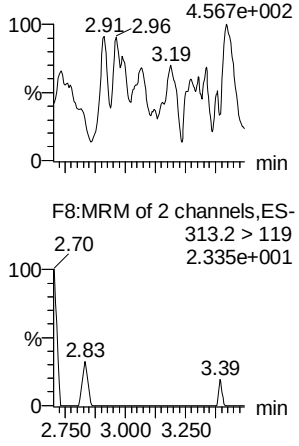
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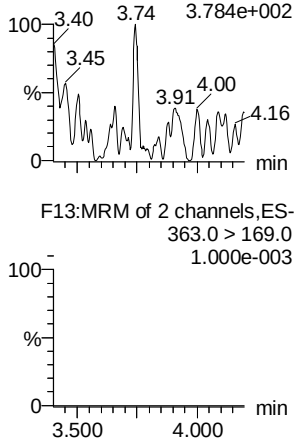
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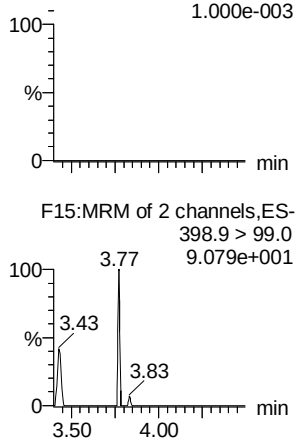
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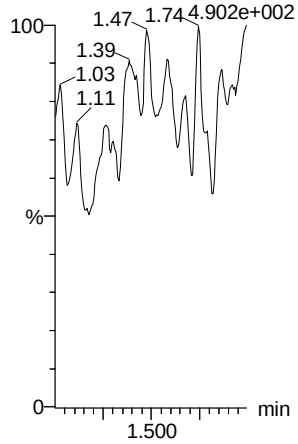
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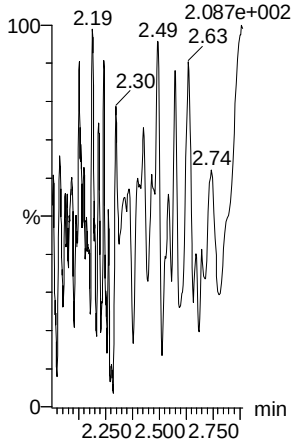
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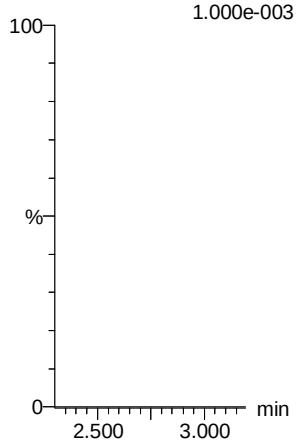
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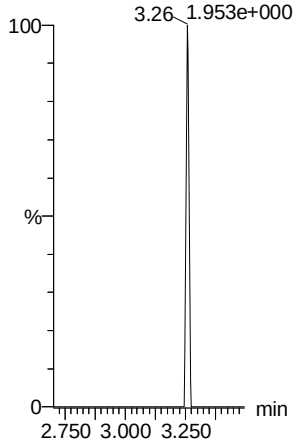
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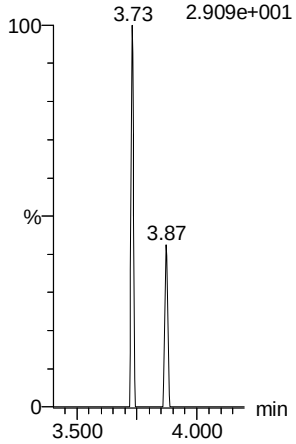
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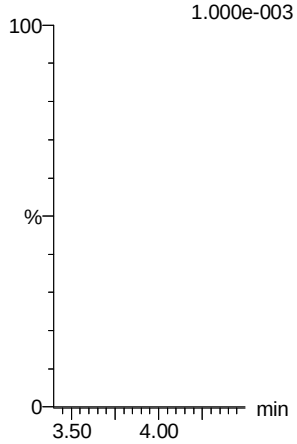
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13C4-PFHpA



18O2-PFHxS



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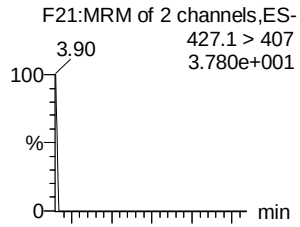
Vista Analytical Laboratory

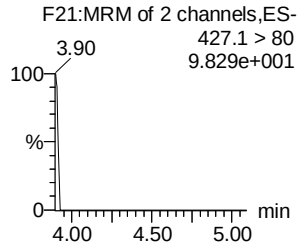
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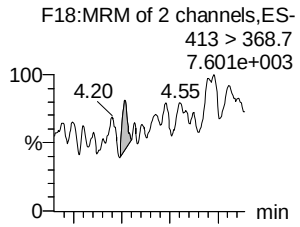
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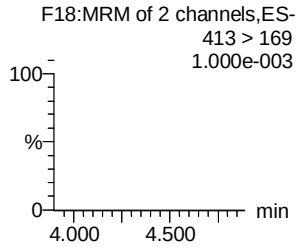
6:2 FTS



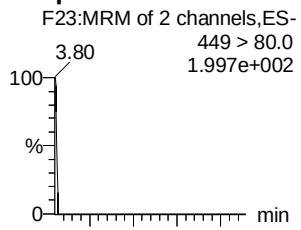


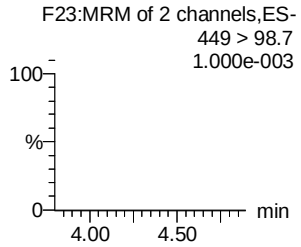
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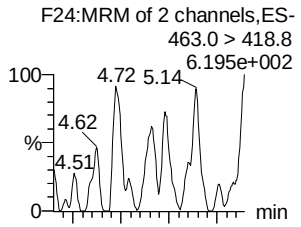


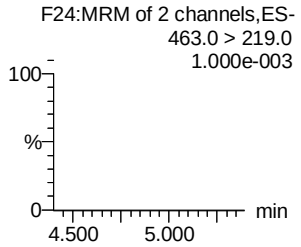
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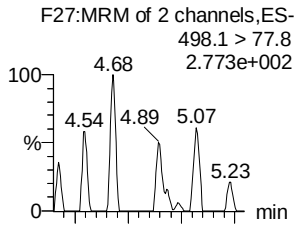


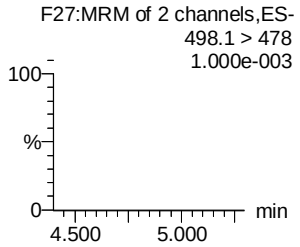
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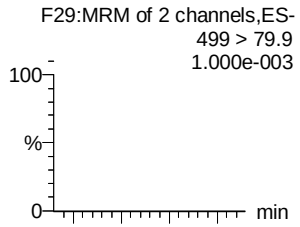


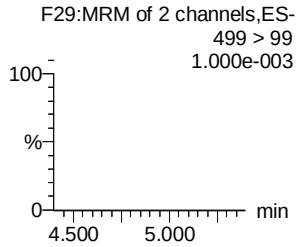
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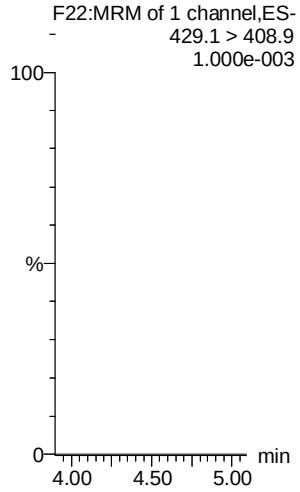


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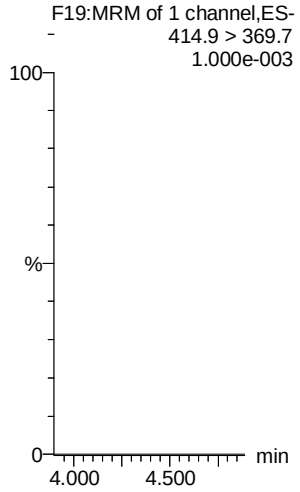




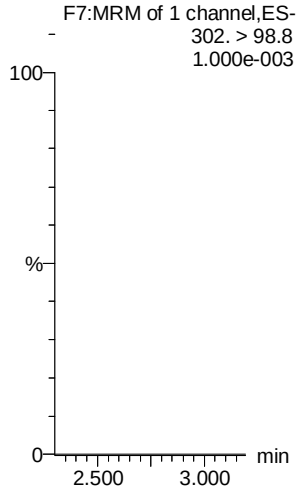
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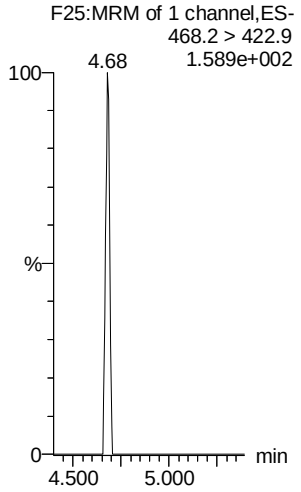
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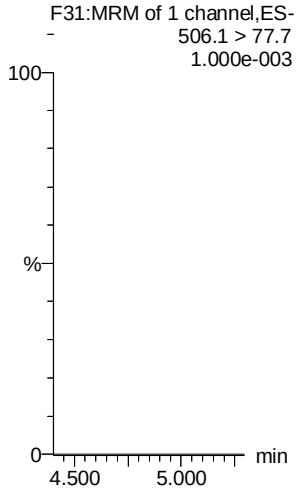
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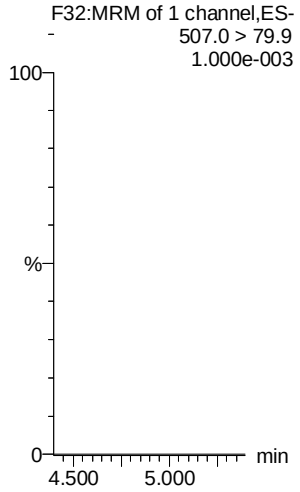
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13C8-PFOSA



13C8-PFOS



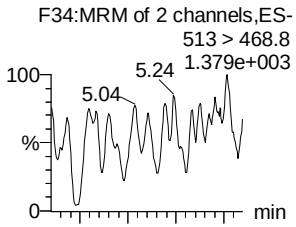
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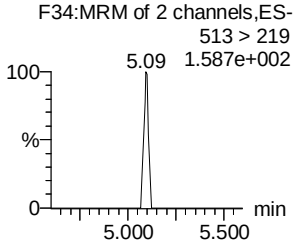
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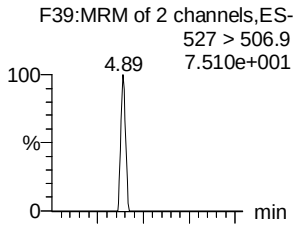
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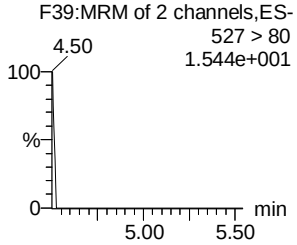
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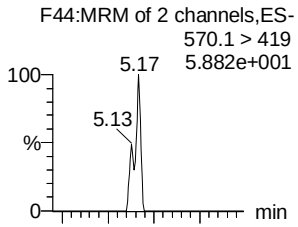


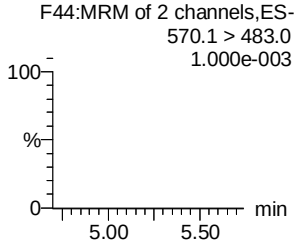
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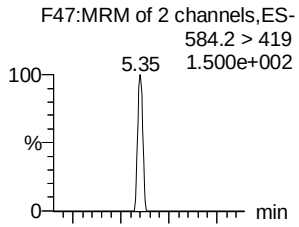


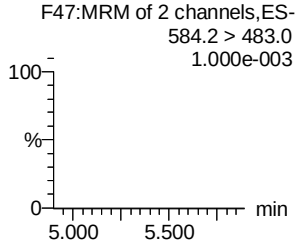
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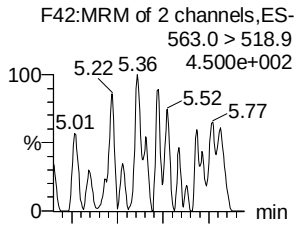


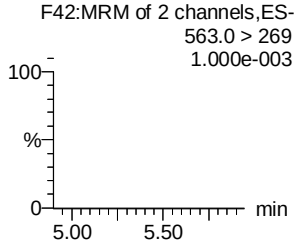
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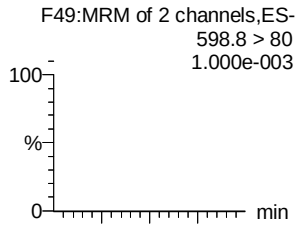


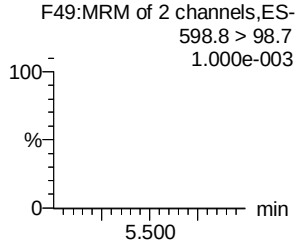
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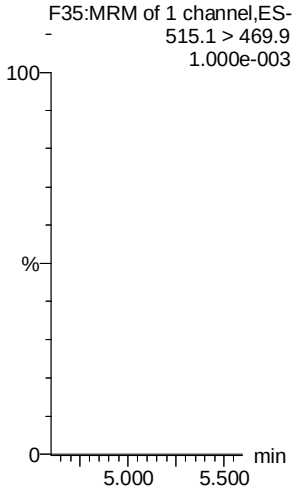


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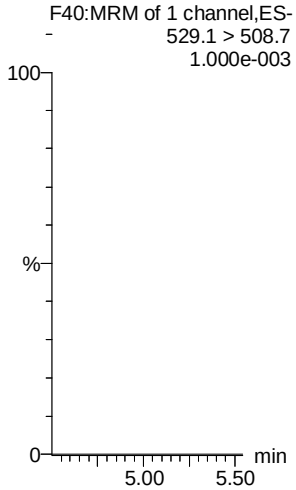




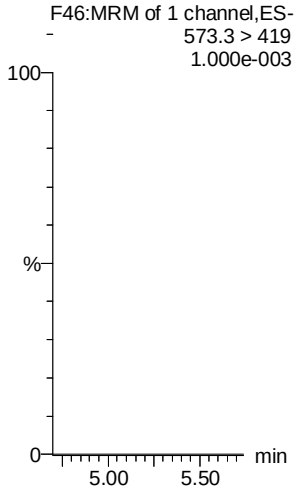
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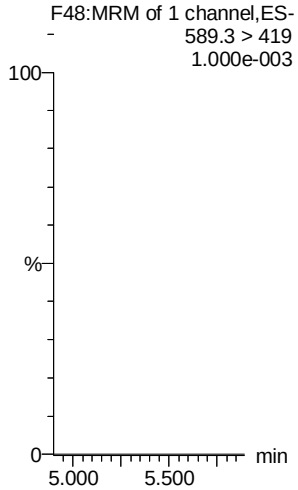
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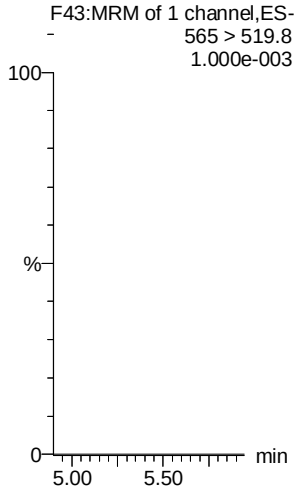
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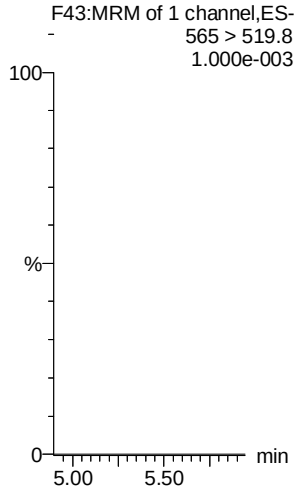
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13C2-PFUdA



13C2-PFUdA



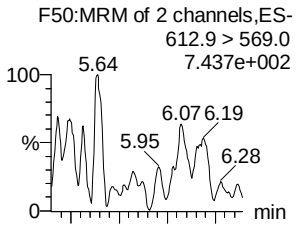
ANP 1/13/2018

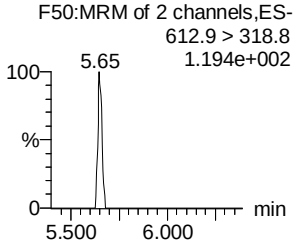
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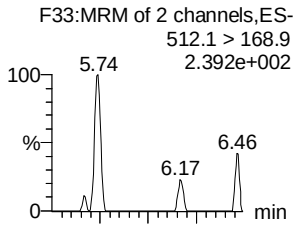
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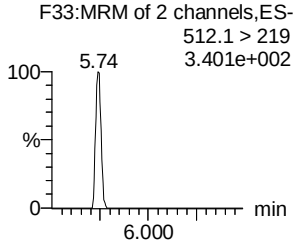
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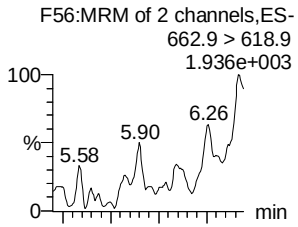


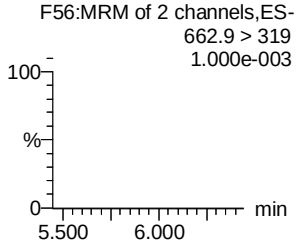
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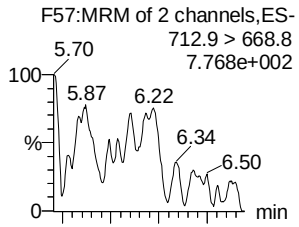


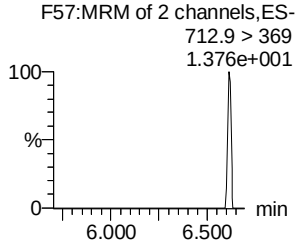
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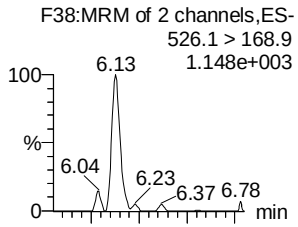


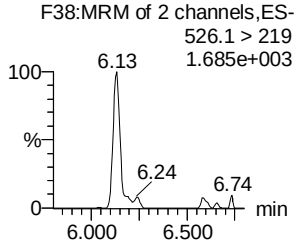
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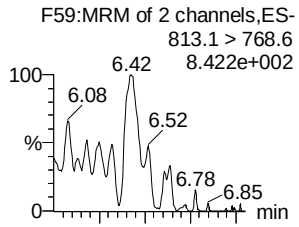


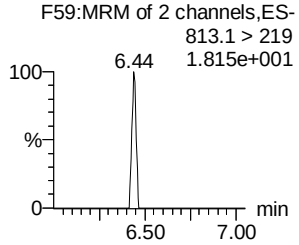
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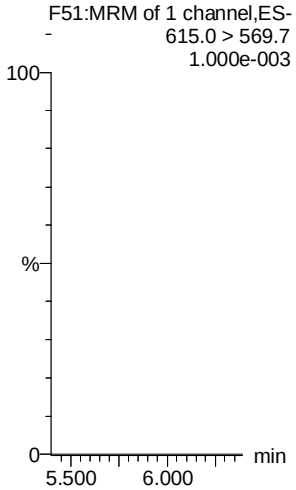


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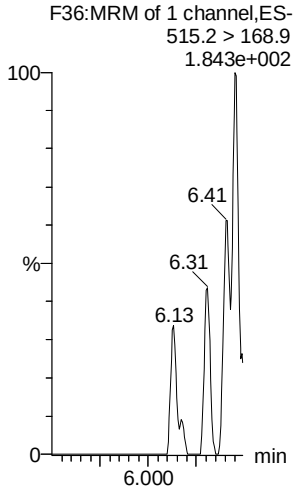




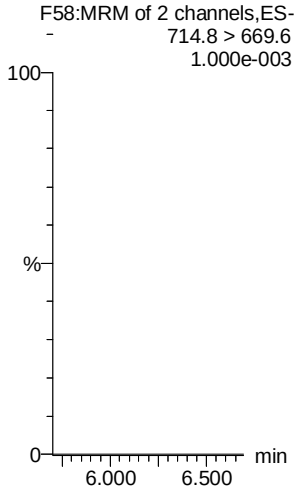
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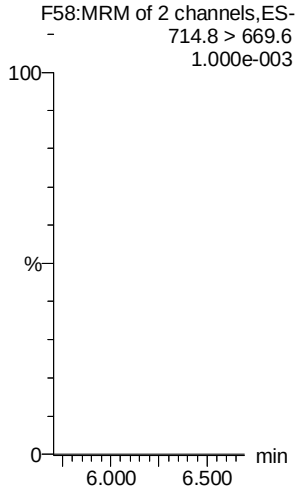
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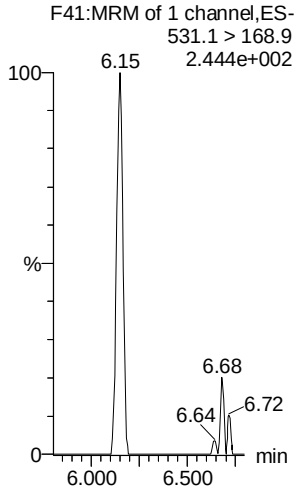
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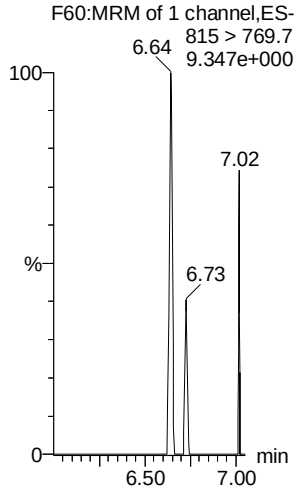
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d5-N-ETFOSA



13C2-PFHxDA



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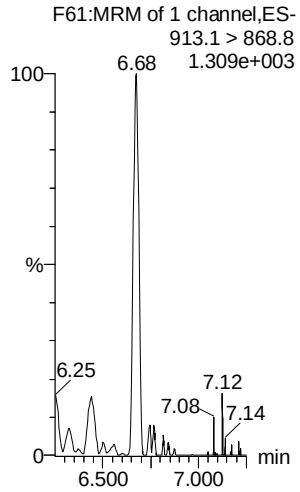
Vista Analytical Laboratory

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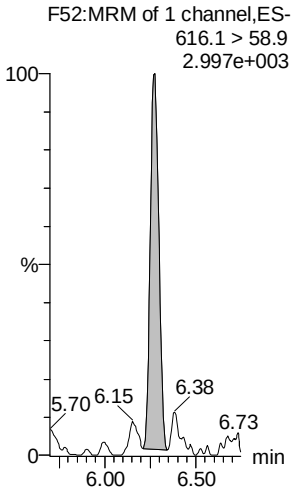
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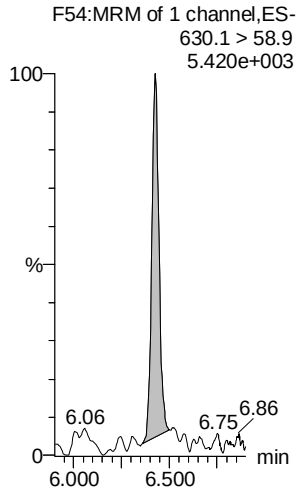
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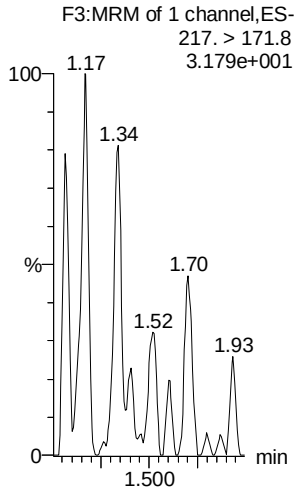
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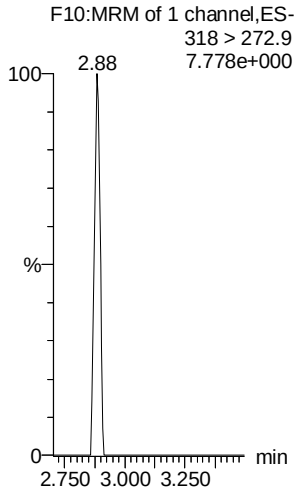
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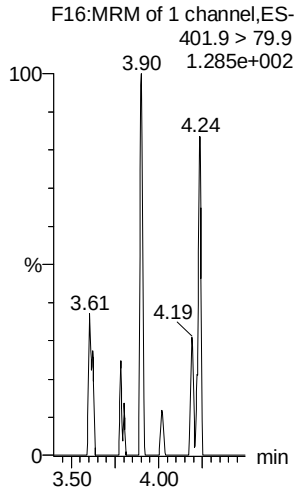
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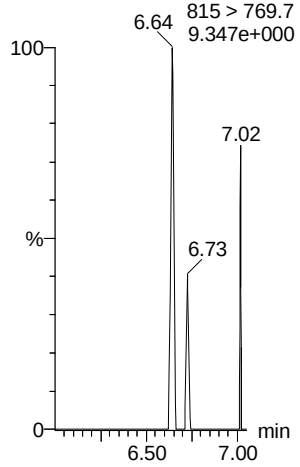
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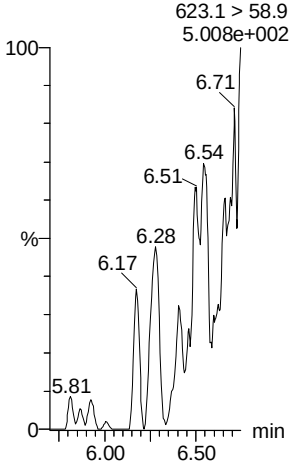
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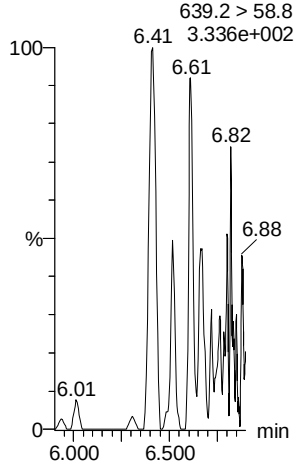
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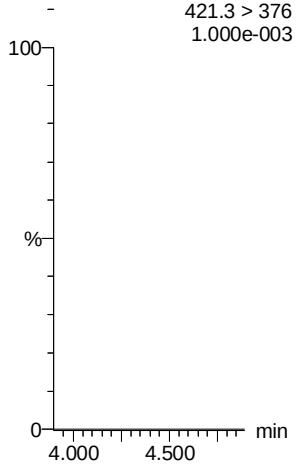
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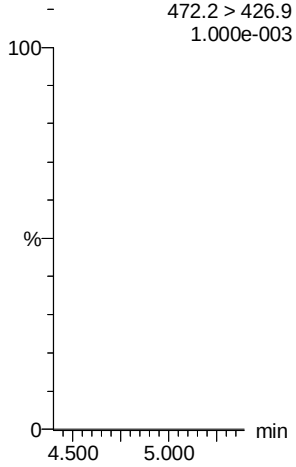
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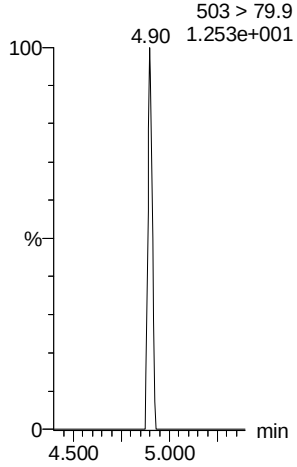
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13C4-PFOS



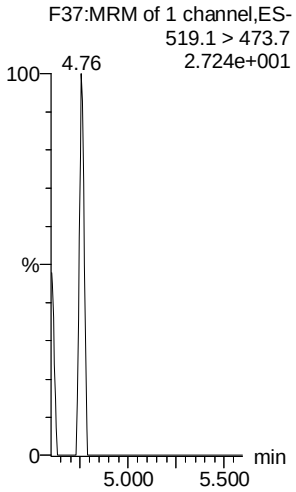
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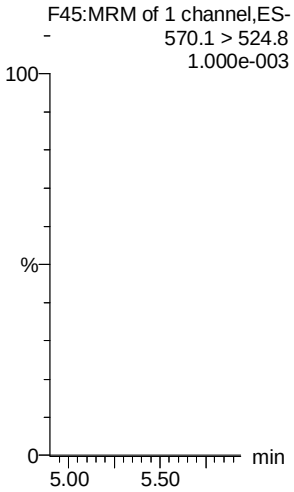
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13C6-PFDA



13C7-PFUdA



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Analytical Standard Record

Vista Analytical Laboratory

17L2601

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
17L2310	13C2-4:2 FTS	23-Dec-17	** Vendor **	01-Sep-22	1.07
17L2311	13C2-PFHxDA	23-Dec-17	** Vendor **	13-Jul-22	0.4
17L2312	13C2-PFHxA	23-Dec-17	** Vendor **	27-Oct-22	0.4
17L2313	d5-N-EtFOSAA	23-Dec-17	** Vendor **	08-Nov-22	1
17L2314	d3-N-Me-FOSAA	23-Dec-17	** Vendor **	08-Nov-22	1
17L2315	13C3-PFBA	23-Dec-17	** Vendor **	27-May-21	1
17L2316	13C2-PFDA	23-Dec-17	** Vendor **	13-Jul-22	1
17L2317	13C2-8:2 FTS	23-Dec-17	** Vendor **	05-Jul-22	1.044
17L2318	13C2-6:2 FTS	23-Dec-17	** Vendor **	17-Feb-22	1.05
17L2319	13C2-PFUdA	23-Dec-17	** Vendor **	22-Nov-21	1
17L2320	13C2-PFTeDA	23-Dec-17	** Vendor **	30-Nov-22	1
17L2321	13C5-PFNA	23-Dec-17	** Vendor **	30-Sep-21	1
17L2322	13C2-PFDoA	23-Dec-17	** Vendor **	23-May-22	1
17L2323	13C4-PFHpA	23-Dec-17	** Vendor **	03-May-22	1
17L2324	13C3-PFBS	23-Dec-17	** Vendor **	24-May-22	1.076
17L2325	13C8-PFOS	23-Dec-17	** Vendor **	08-Nov-22	1.05
17L2326	18O2-PFHxS	23-Dec-17	** Vendor **	17-Feb-22	1.058
17L2327	13C8-FOSA-I	23-Dec-17	** Vendor **	11-Oct-22	1
17L2328	13C3-PFPeA	23-Dec-17	** Vendor **	20-Apr-22	1
17L2329	13C2-PFOA	23-Dec-17	** Vendor **	26-Oct-22	1

Description:	PFC - IS	Expires:	26-Dec-19
Standard Type:	Reagent	Prepared:	26-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	26-Dec-17 09:43 by INJ

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

17L2601

Description:	PFC - IS	Expires:	26-Dec-19
Standard Type:	Reagent	Prepared:	26-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	26-Dec-17 09:43 by INJ

Analyte	CAS Number	Concentration	Units
13C4-PFHpA		1.25	ug/mL
13C5-PFNA		1.25	ug/mL
13C8-PFOS		1.25	ug/mL
13C8-PFOSA		1.25	ug/mL
18O2-PFHxS		1.25	ug/mL
d3-MeFOSAA		1.25	ug/mL
13C2-PFTeDA		1.25	ug/mL

17L2310

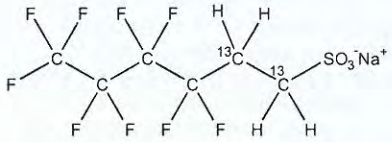
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-4:2FTS **LOT NUMBER:** M242FTS0817

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]hexane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_4H_4F_9SO_3Na$	**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% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	09/01/2017		
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 ^{34}S (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: _____ **Date:** 09/29/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2310

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:

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

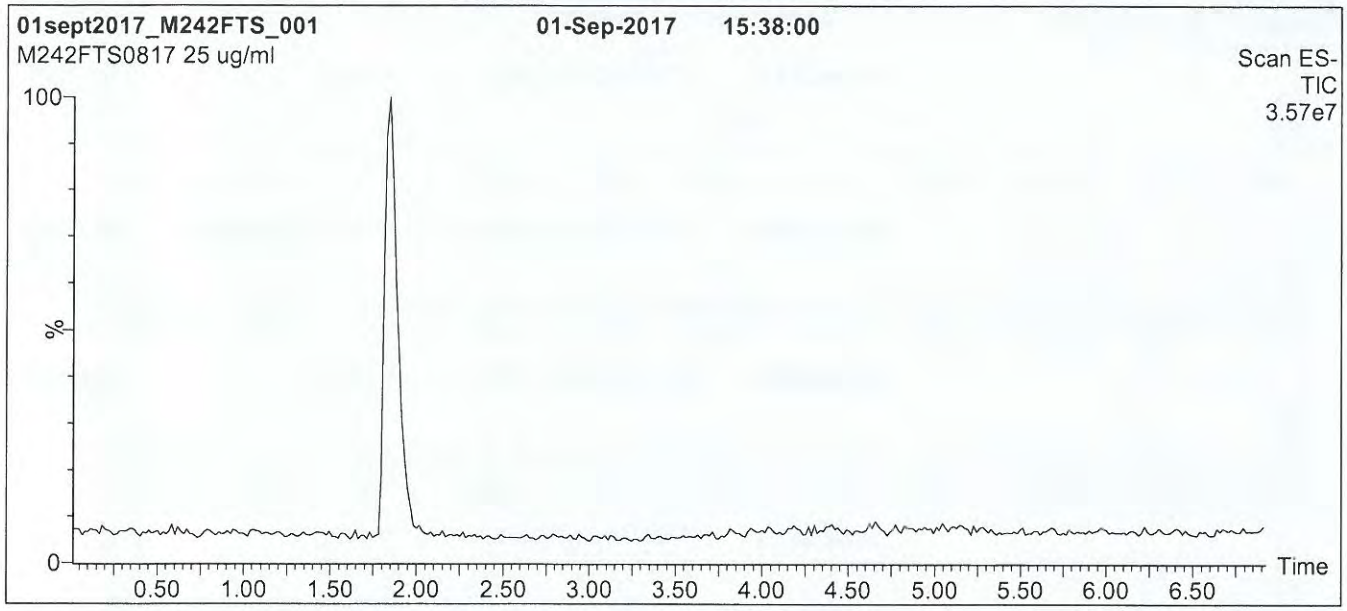
CALA

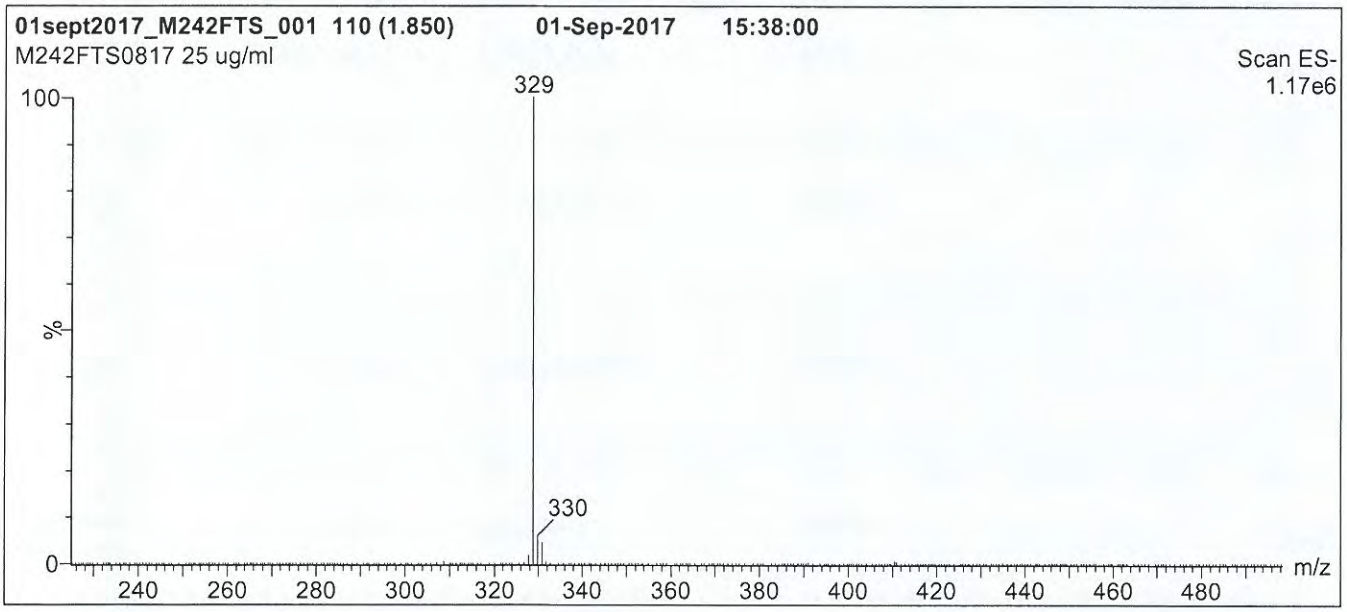
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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2310

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

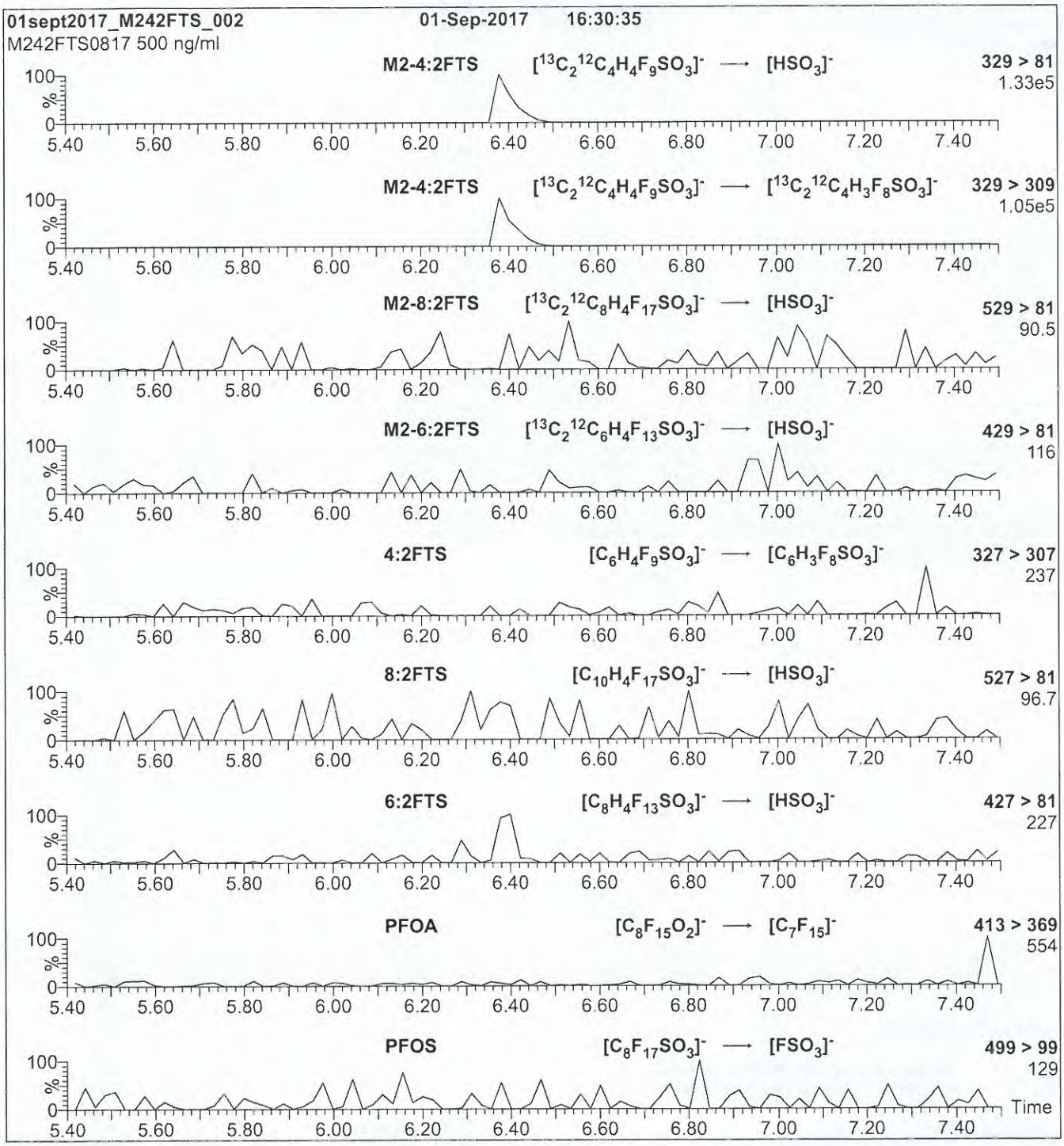
MS Parameters

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

1712310

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 25

17L2311

WELLINGTON LABORATORIES

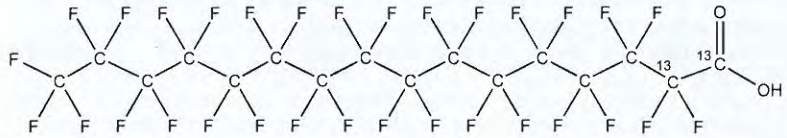
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFHxDA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]hexadecanoic acid

LOT NUMBER: M2PFHxDA0717

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{14}HF_{31}O_2$	**MOLECULAR WEIGHT:**	816.11
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
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 ~ 0.3% of native perfluoro-n-hexadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2311

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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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.

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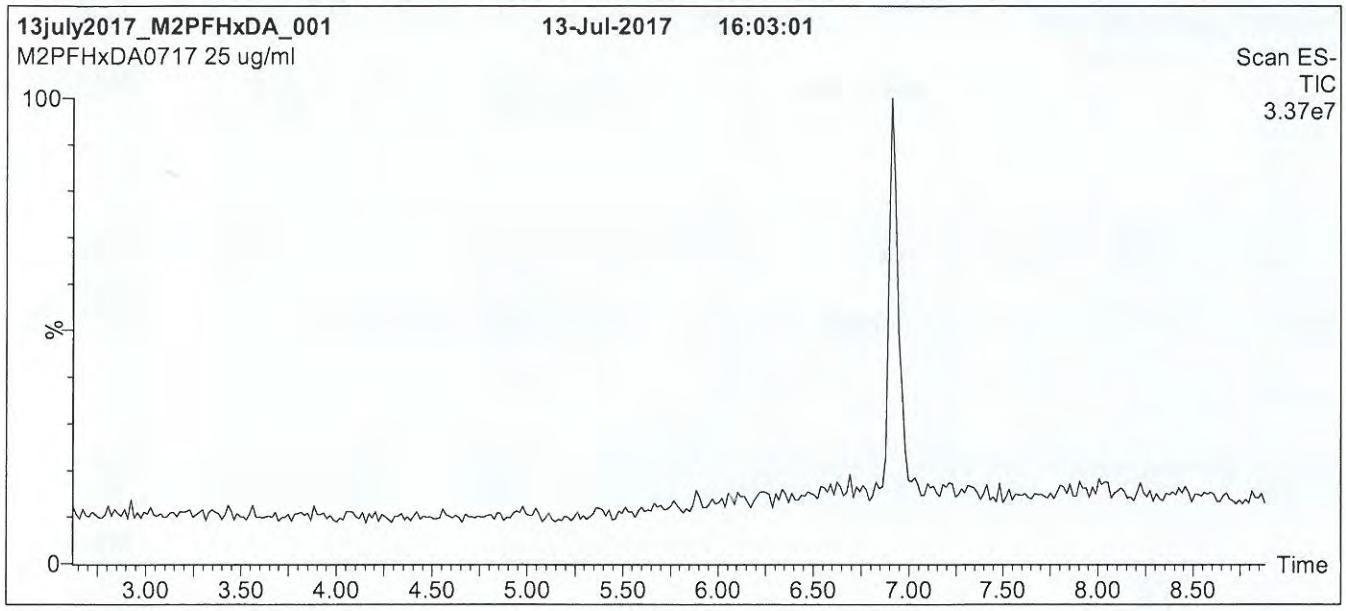
CALA

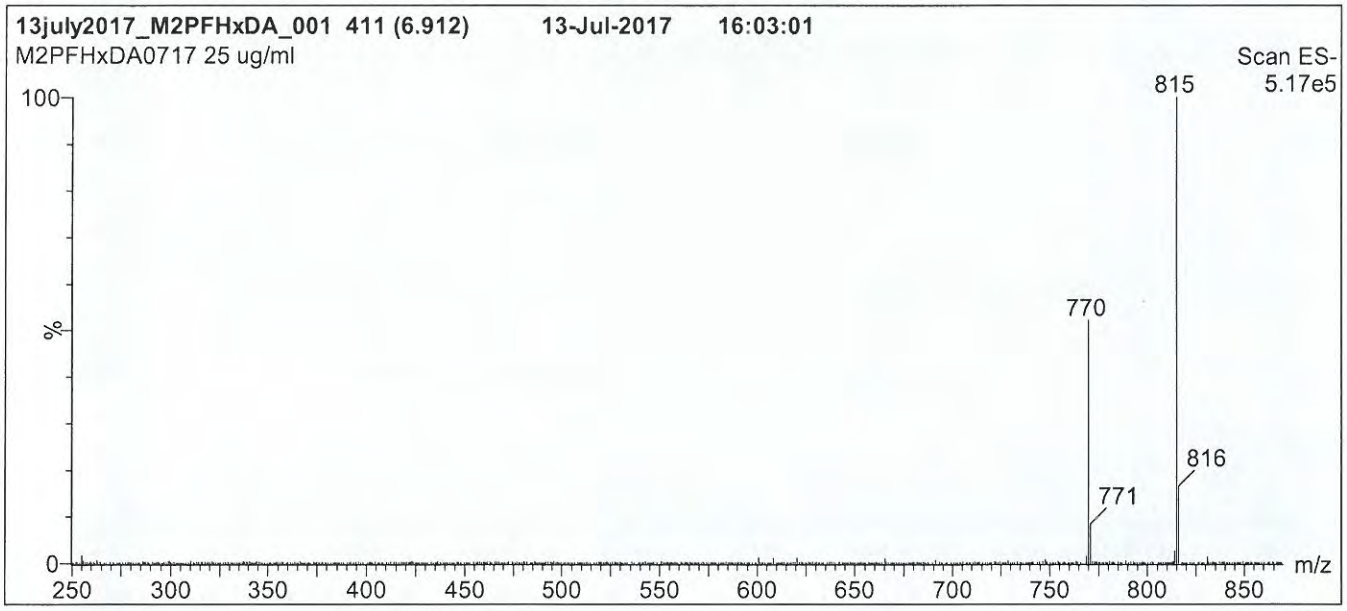
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17L2311

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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

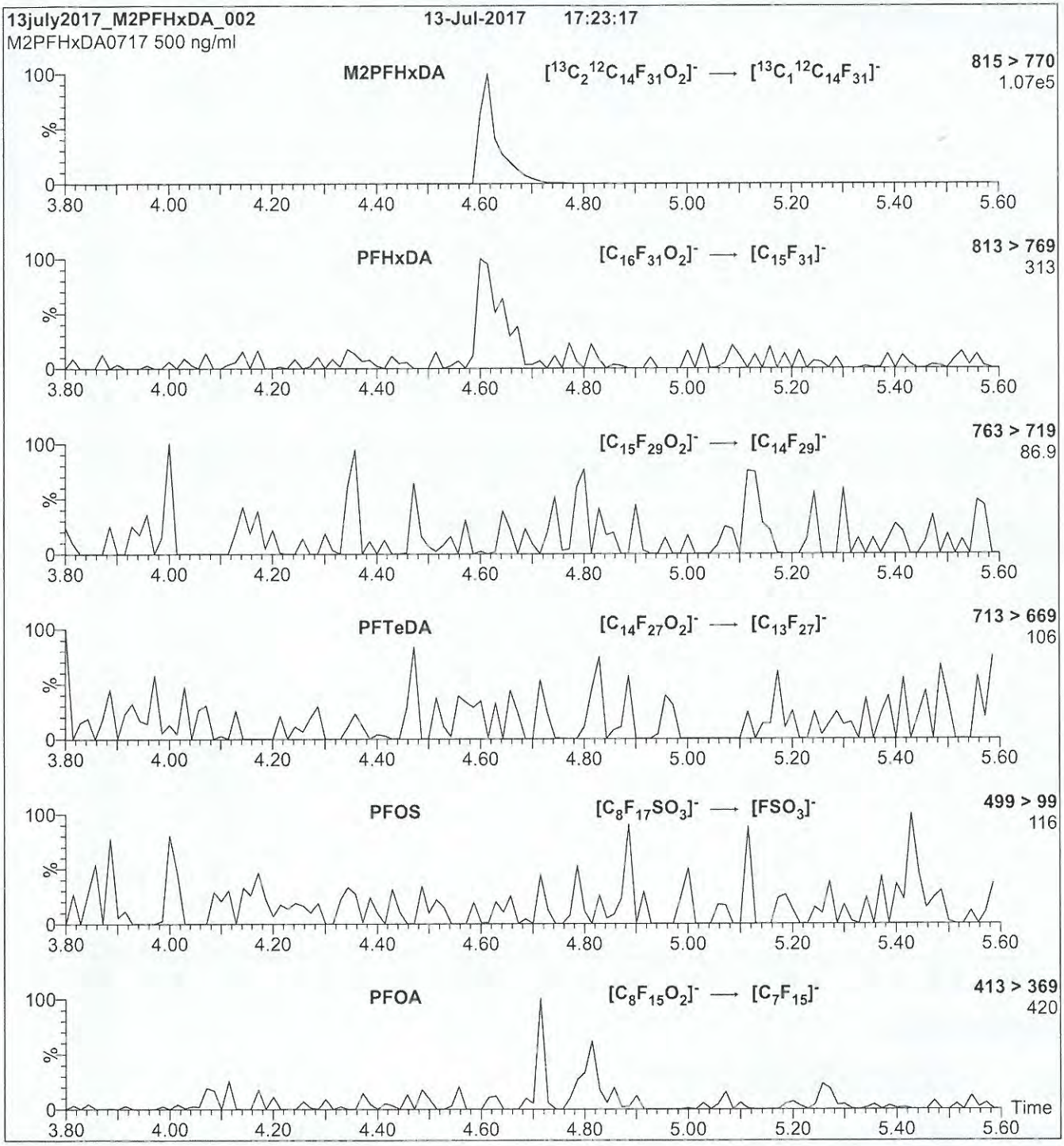
MS Parameters

Experiment: 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

1712311

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 µl/min

MS Parameters

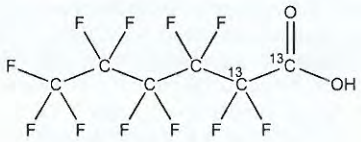
Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 15

1712312

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFHxA	**LOT NUMBER:**	MPFHxA1017
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_4HF_{11}O_2$	**MOLECULAR WEIGHT:**	316.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2-$^{13}C_2$)
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: _____ **Date:** 10/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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17L2312

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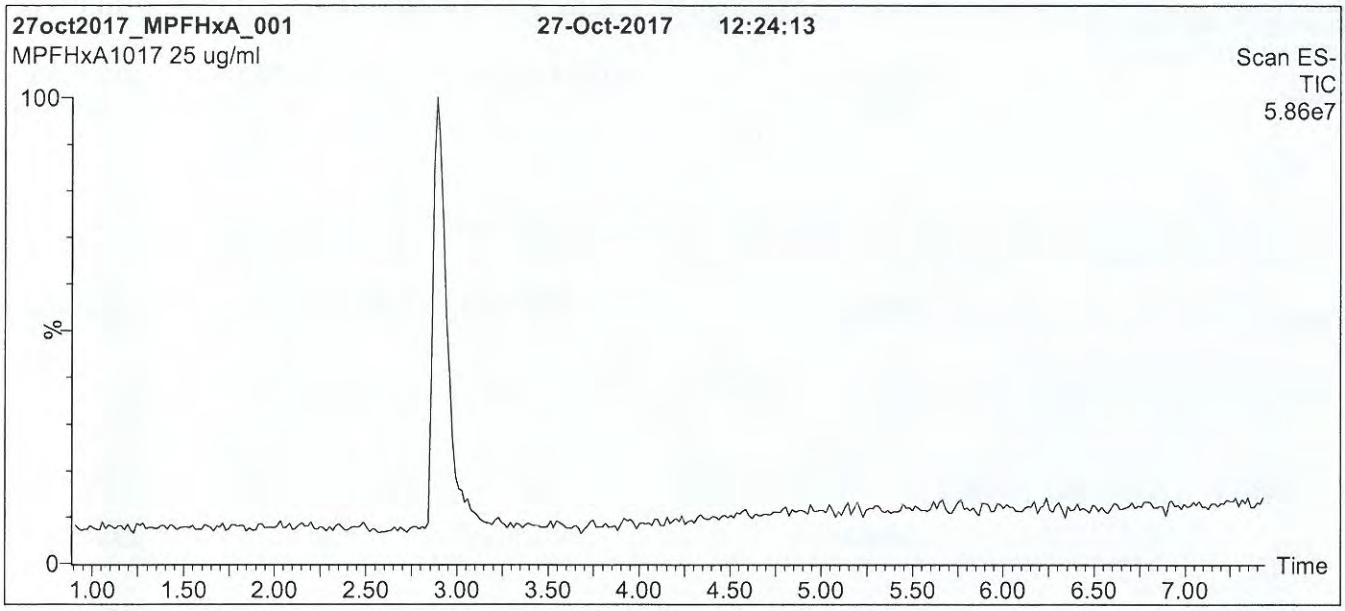
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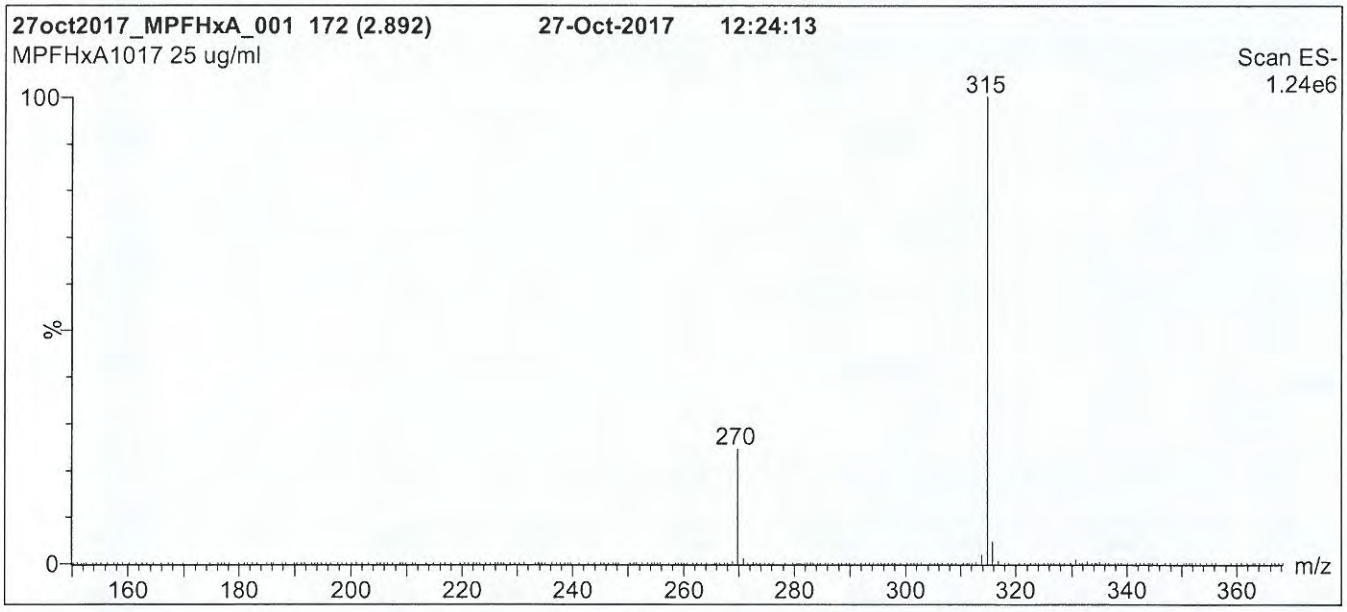
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17L2312

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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 µl/min

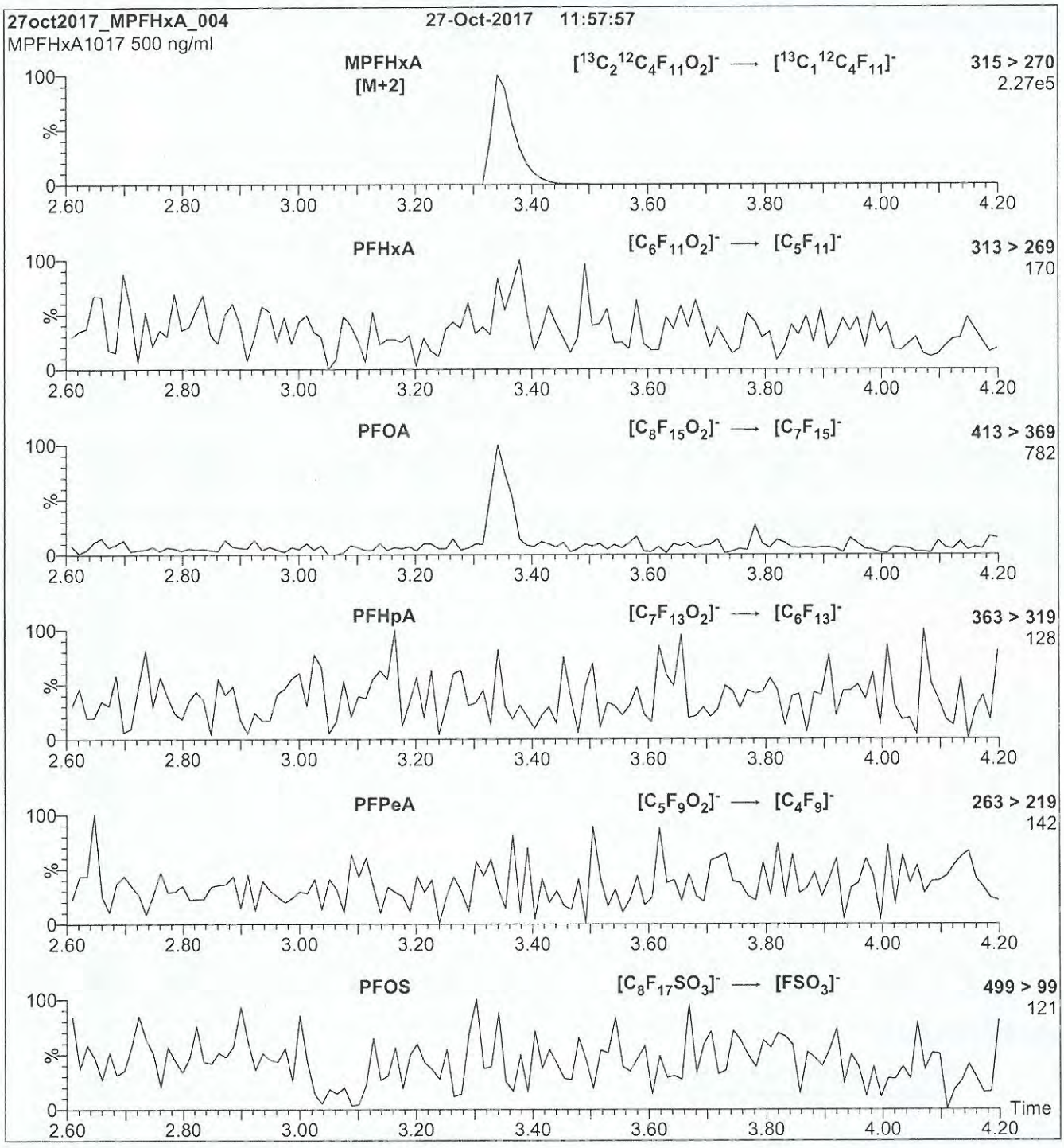
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1712312

Figure 2: **MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.58e-3
Collision Energy (eV) = 10

17L2313

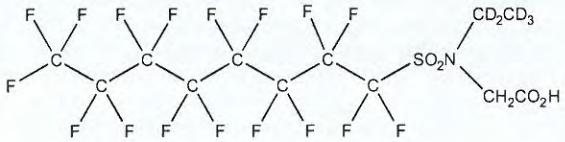
WELLINGTON LABORATORIES

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:	$C_{12}D_5H_3F_{17}NO_4S$	**MOLECULAR WEIGHT:**	590.26
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_5$
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 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2313

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

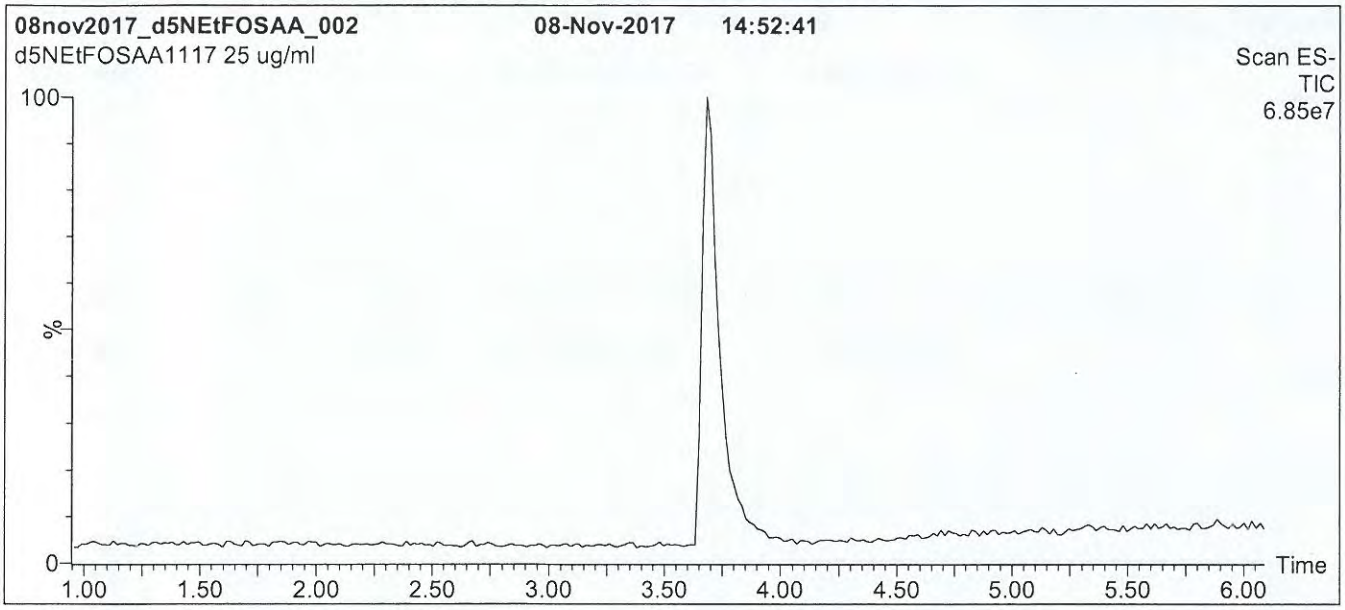
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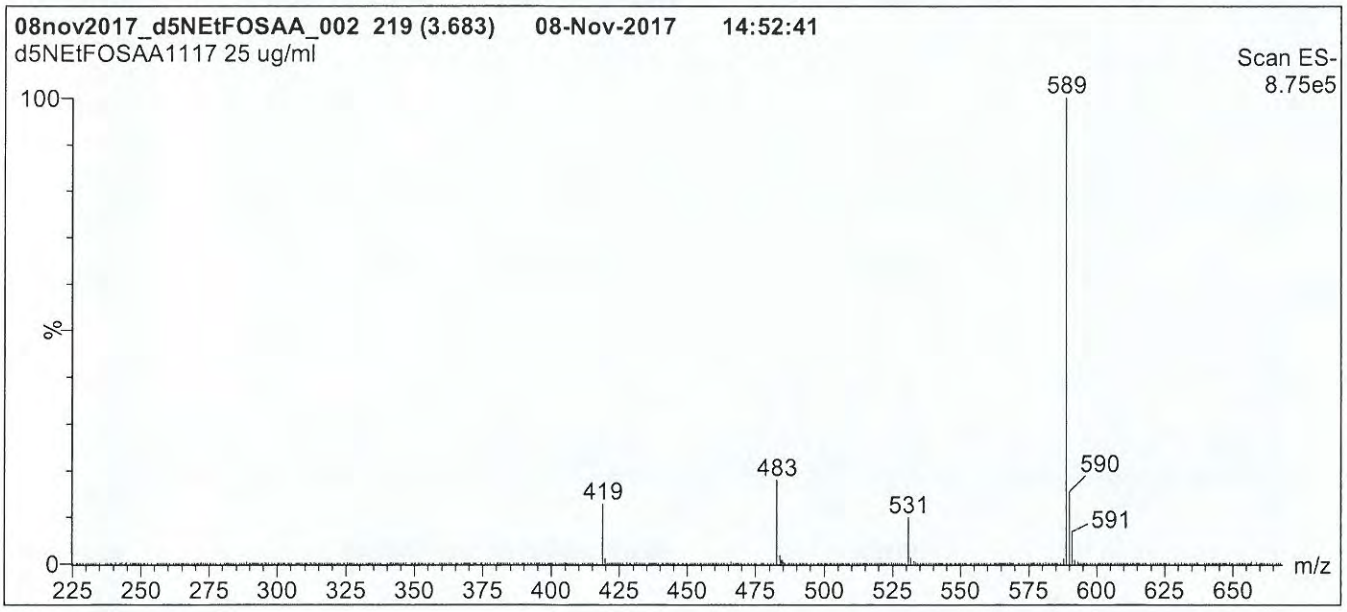
ANAB ACCREDITED

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17L2313

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

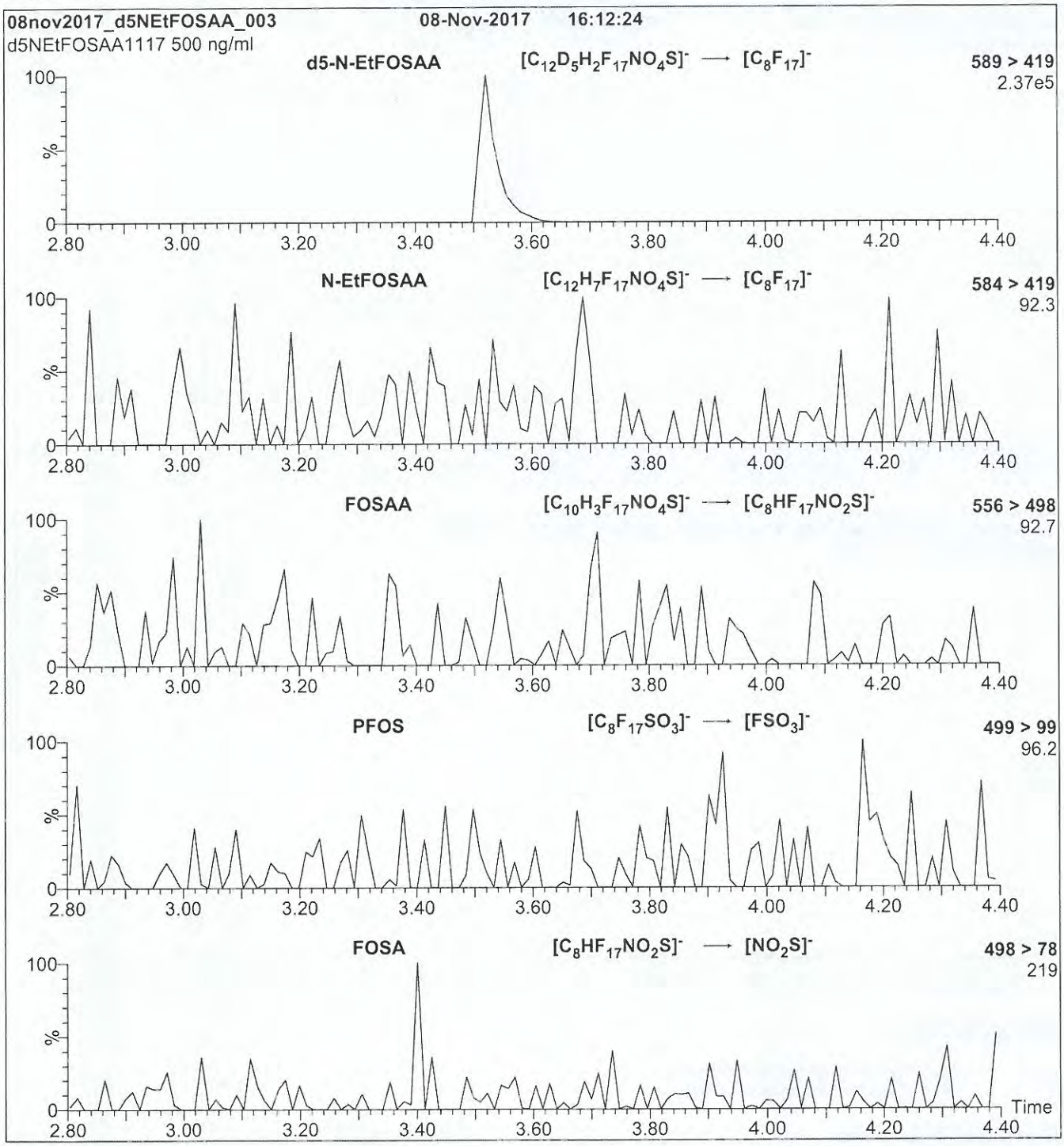
MS Parameters

Experiment: Full Scan (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

17L2313

Figure 2: **d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml d5-N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 20

17L2314

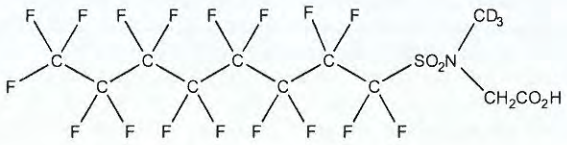
WELLINGTON LABORATORIES

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:	$C_{11}D_3H_3F_{17}NO_4S$	**MOLECULAR WEIGHT:**	574.23
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_3$
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 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2314

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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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:

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QUALITY MANAGEMENT:

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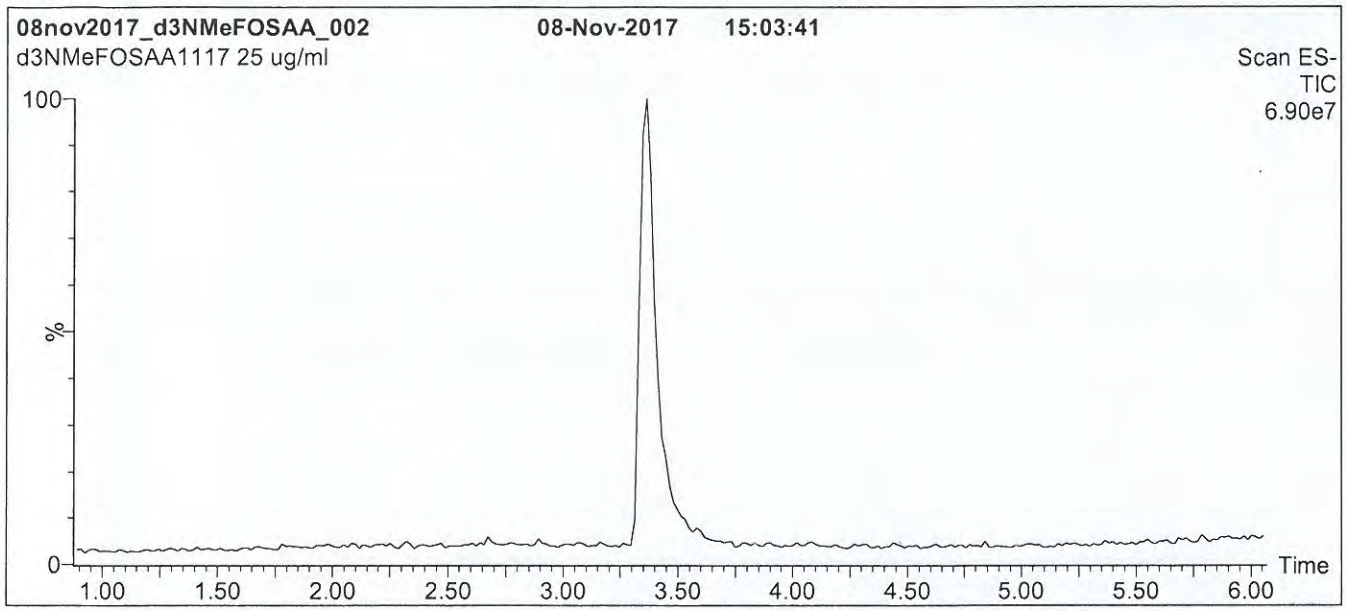
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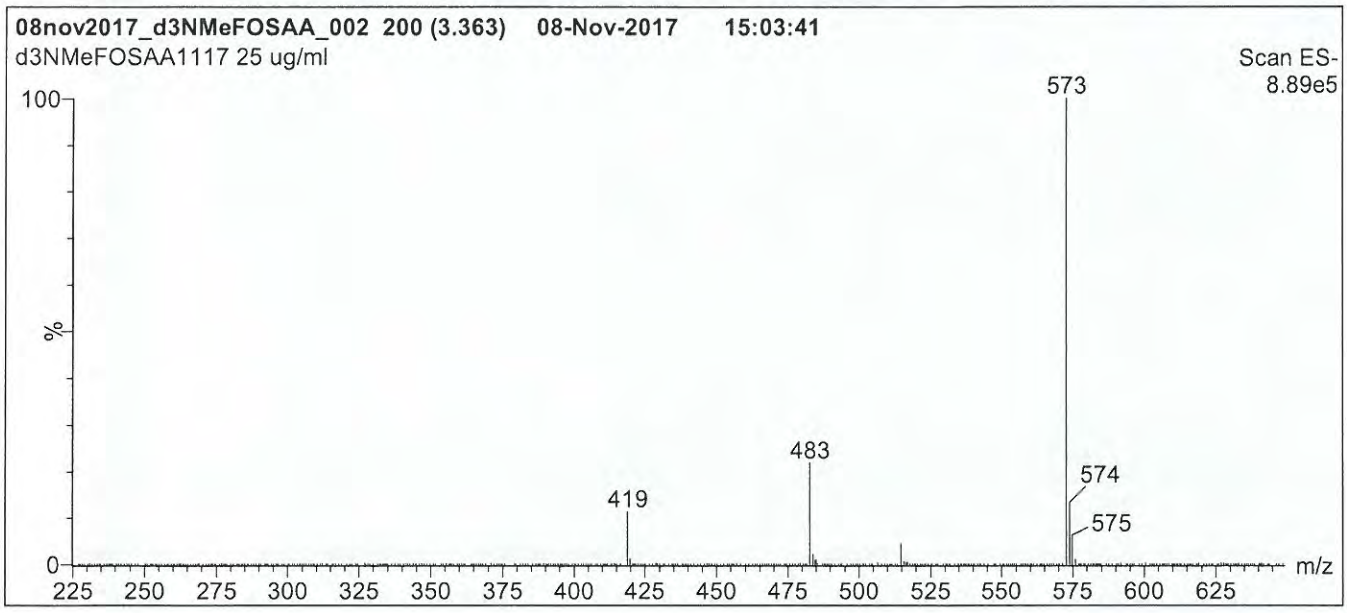
ANAB ACCREDITED

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

17L2314

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

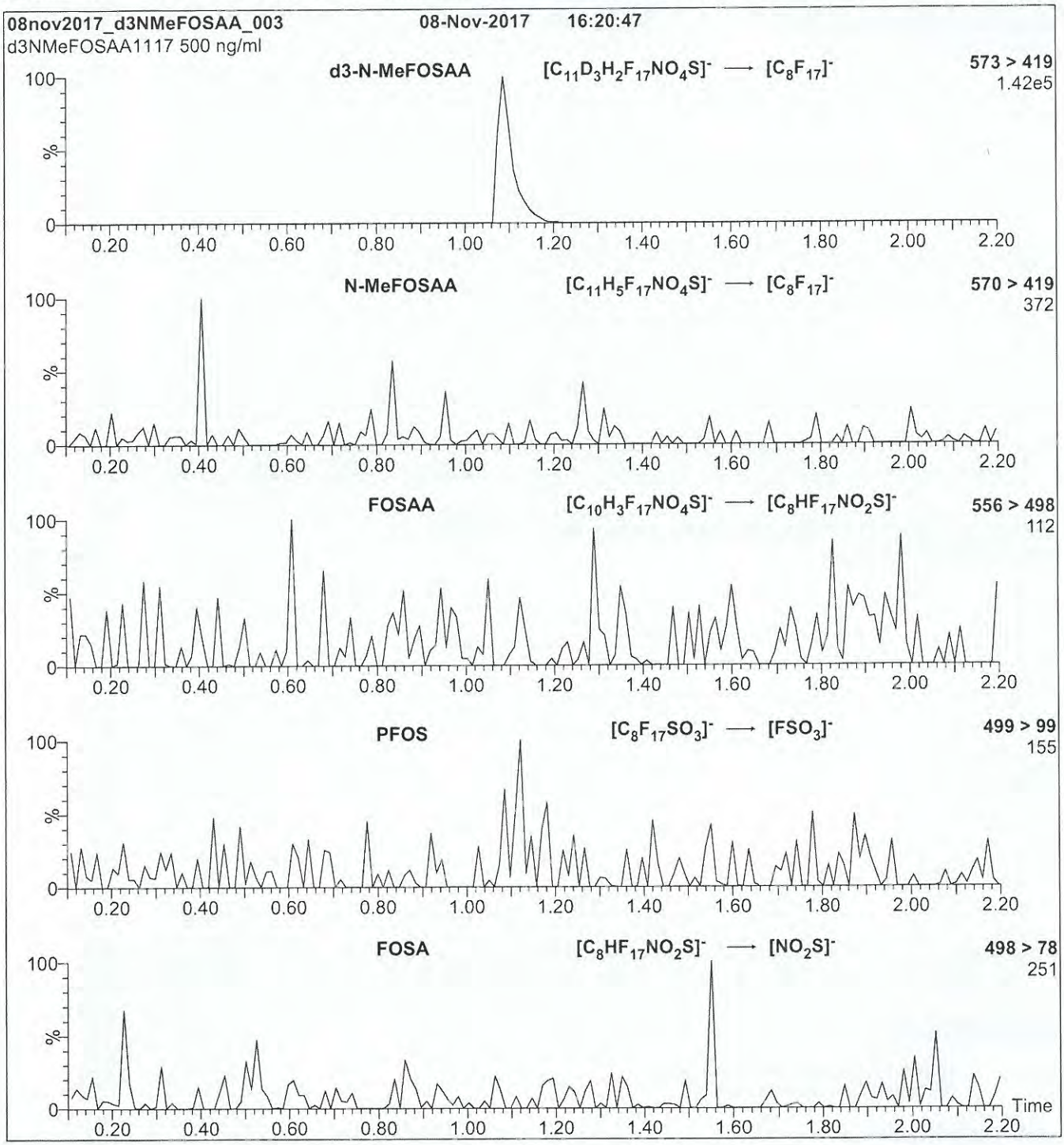
MS Parameters

Experiment: Full Scan (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

17L2314

Figure 2: **d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml d3-N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 20

17L2315

WELLINGTON LABORATORIES

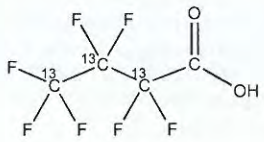
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFBA
COMPOUND: Perfluoro-n-[2,3,4-$^{13}C_3$]butanoic acid

LOT NUMBER: M3PFBA0516

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}CHF_7O_2$	**MOLECULAR WEIGHT:**	217.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($2,3,4\text{-}^{13}C_3$)
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-[$^{13}C_3$]propanoic acid and also contains ~ 1.0% of perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid due to the naturally occurring isotopic abundance of ^{13}C 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

17L2315

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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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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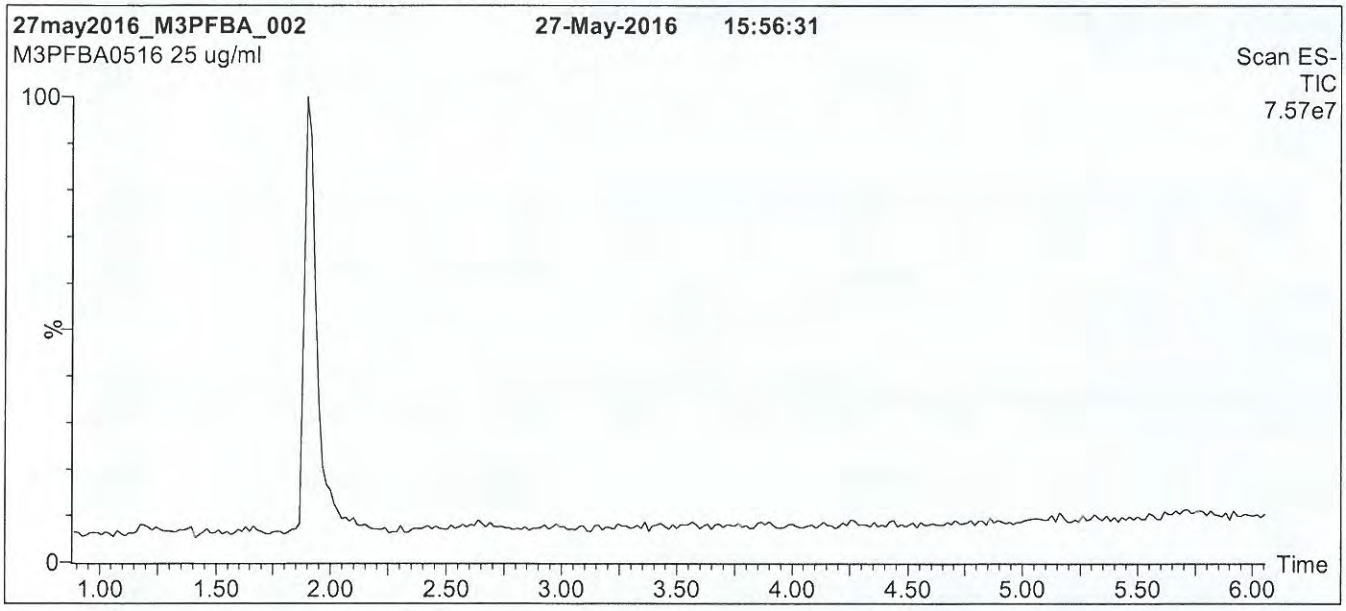
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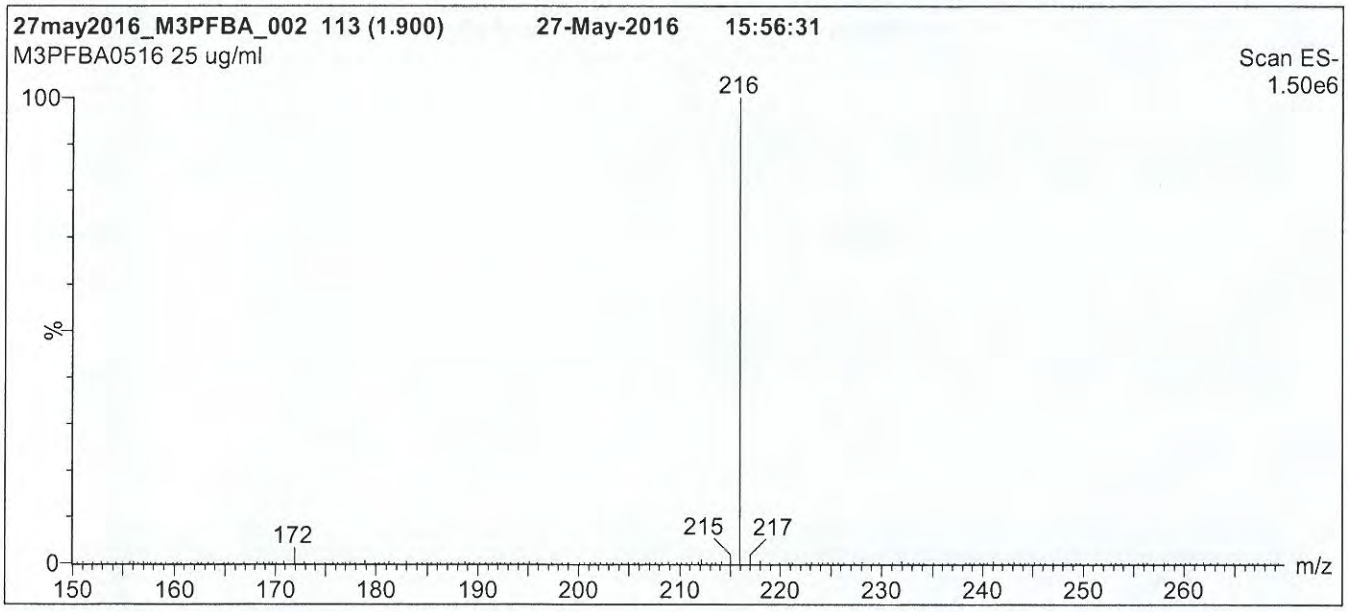
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

17L2315

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc 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

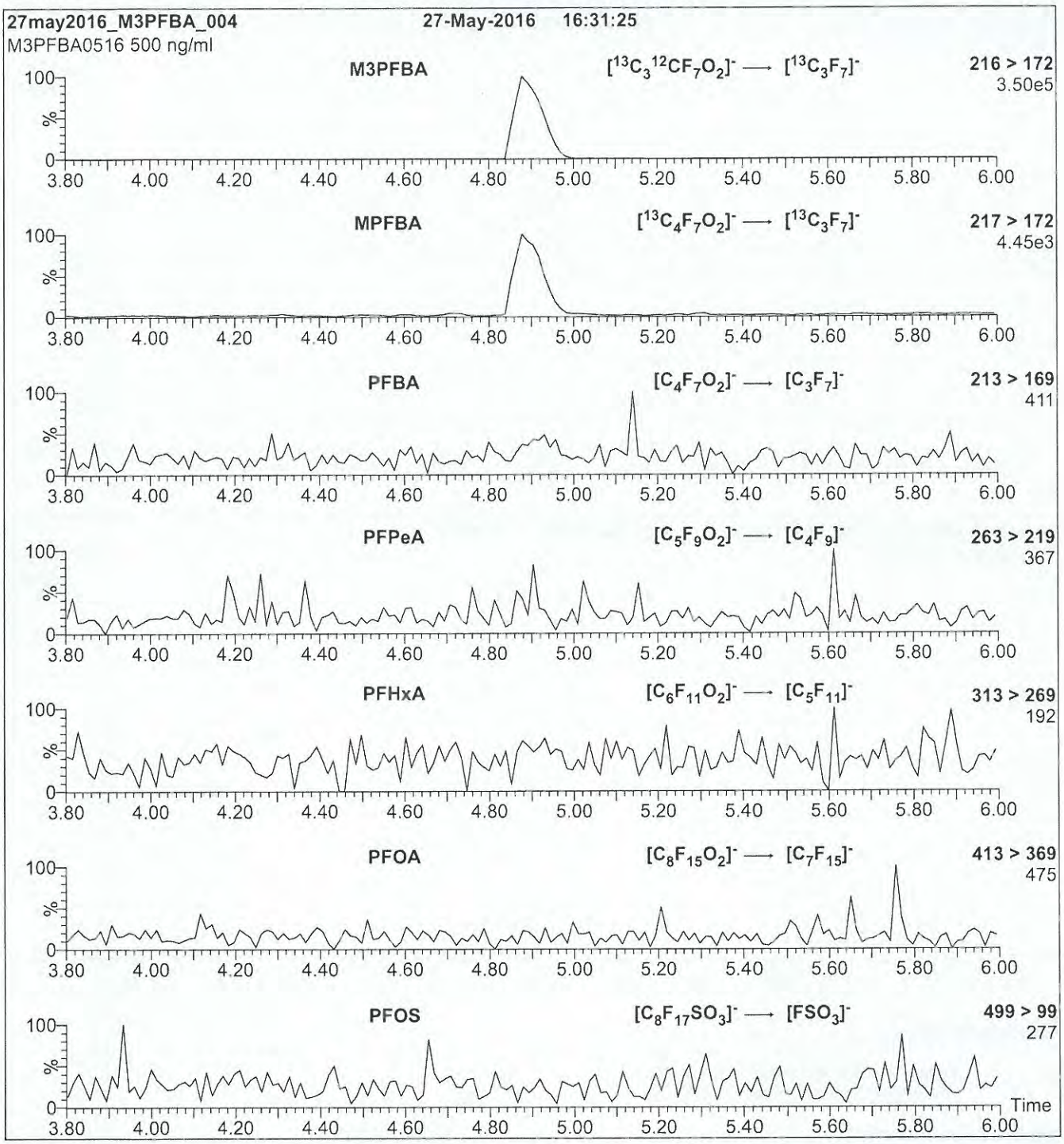
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2315

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3
Collision Energy (eV) = 10

17L2316

WELLINGTON LABORATORIES

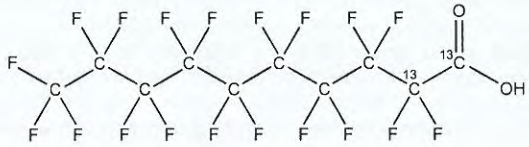
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid

LOT NUMBER: MPFDA0717

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_8HF_{19}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 516.07
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

ISOTOPIC PURITY: ≥99% ^{13}C ($1,2\text{-}^{13}C_2$)

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 $^{13}C_1$-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2316

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

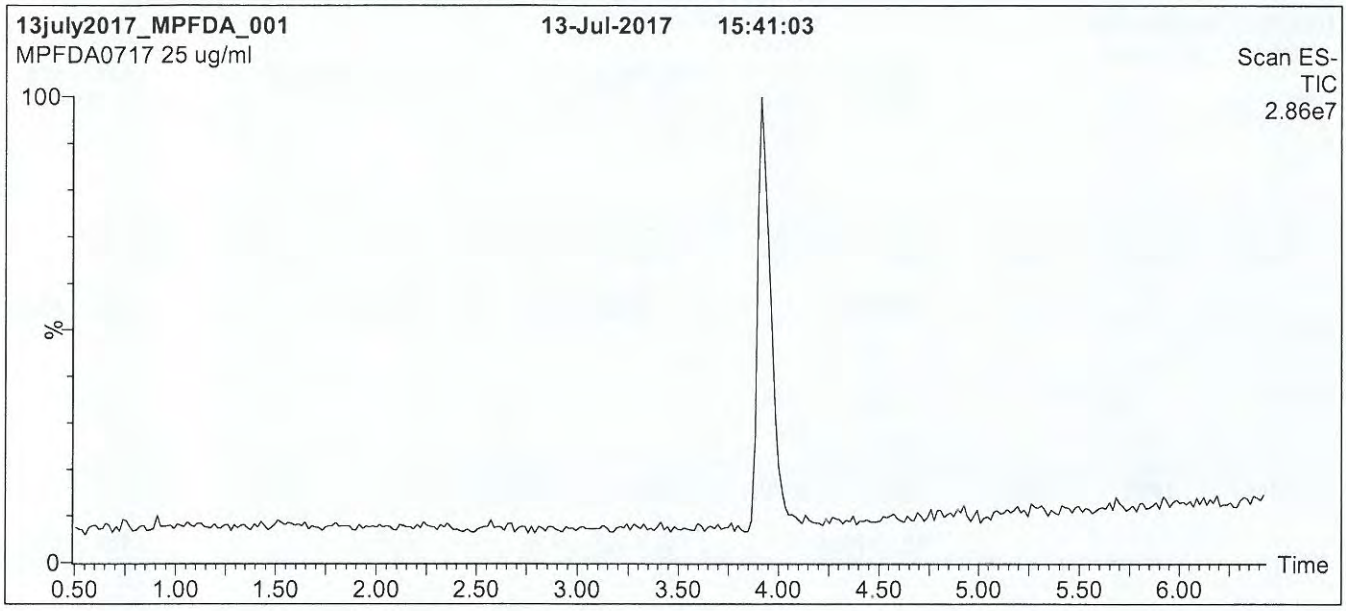
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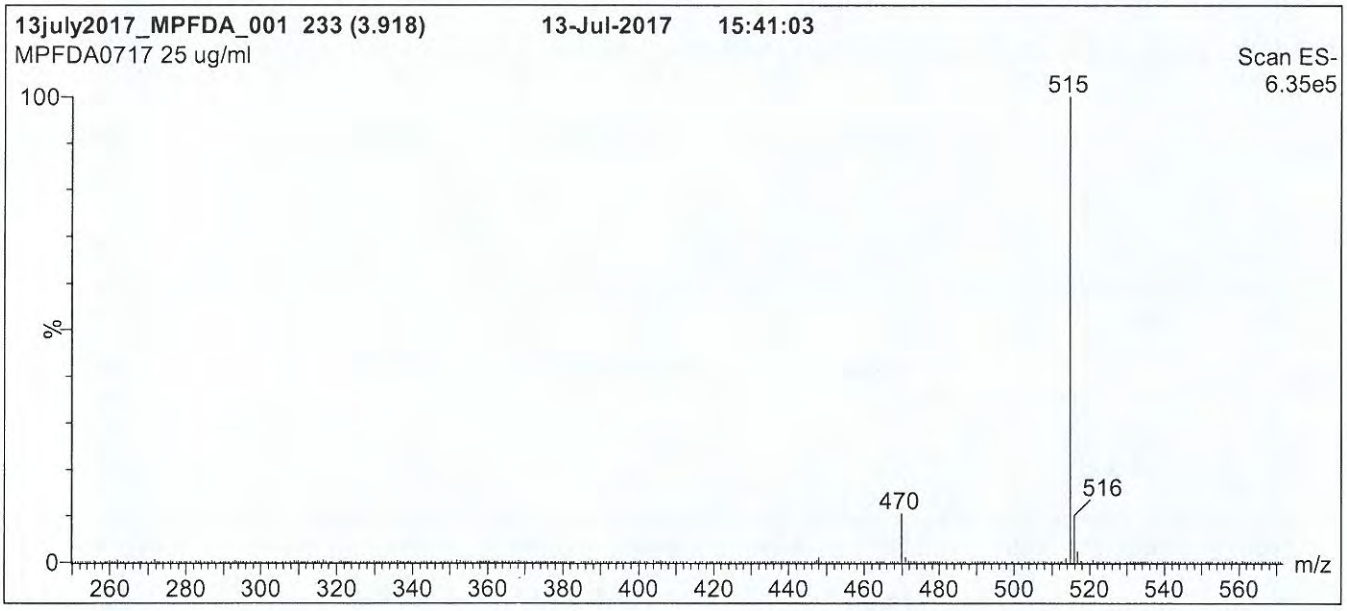
ANAB ACCREDITED

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

17L2316

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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

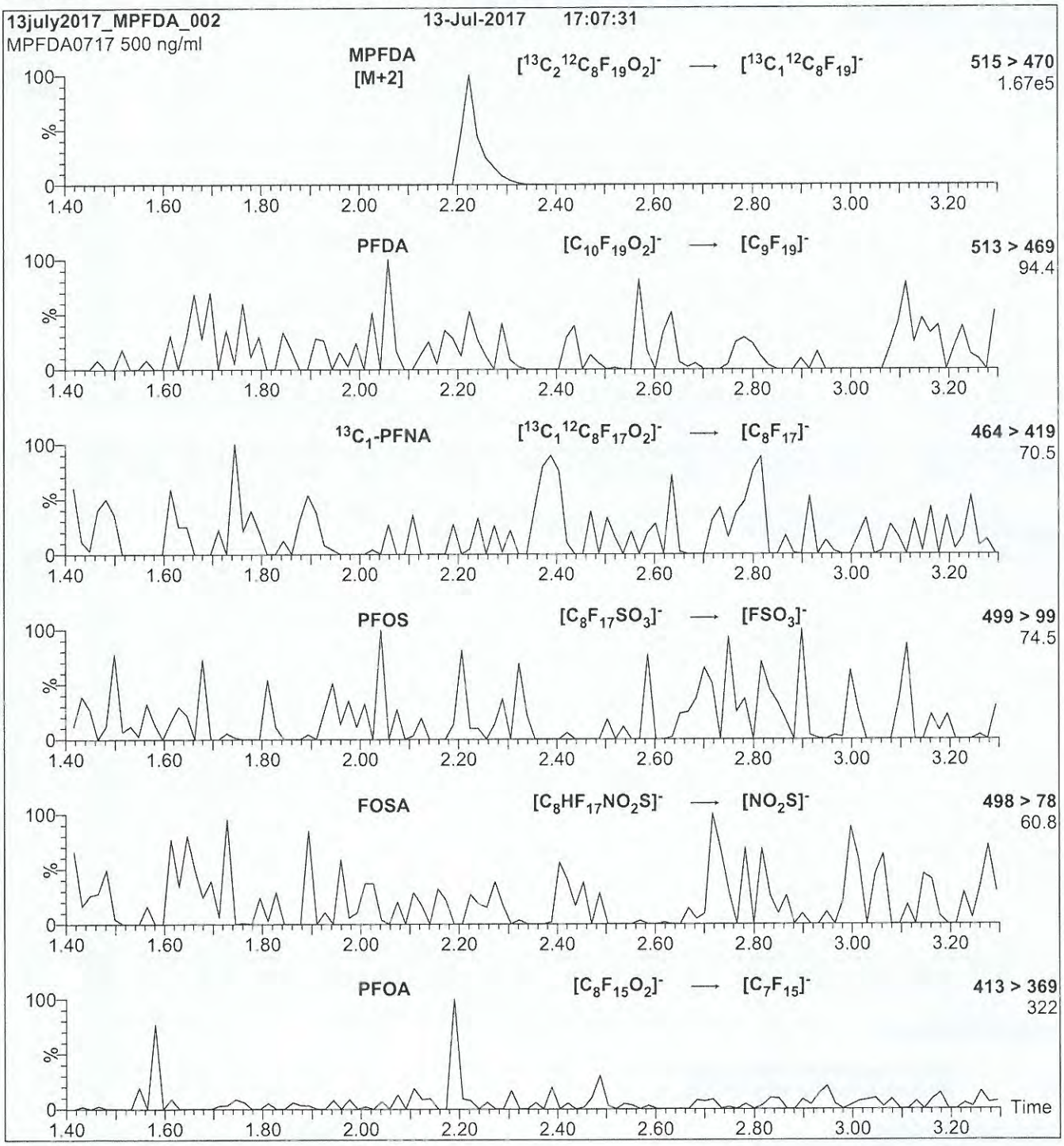
MS Parameters

Experiment: 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

17L2316

Figure 2: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 13

1712317

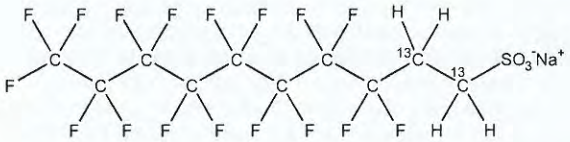
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS0717

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]decane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_4F_{17}SO_3Na$	**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% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	07/05/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2022		
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 8:2FTS contains 4.22% of ^{34}S (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: _____ **Date:** 07/07/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2317

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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$$u_c\left(y(x_1, x_2, \ldots x_n)\right) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

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QUALITY MANAGEMENT:

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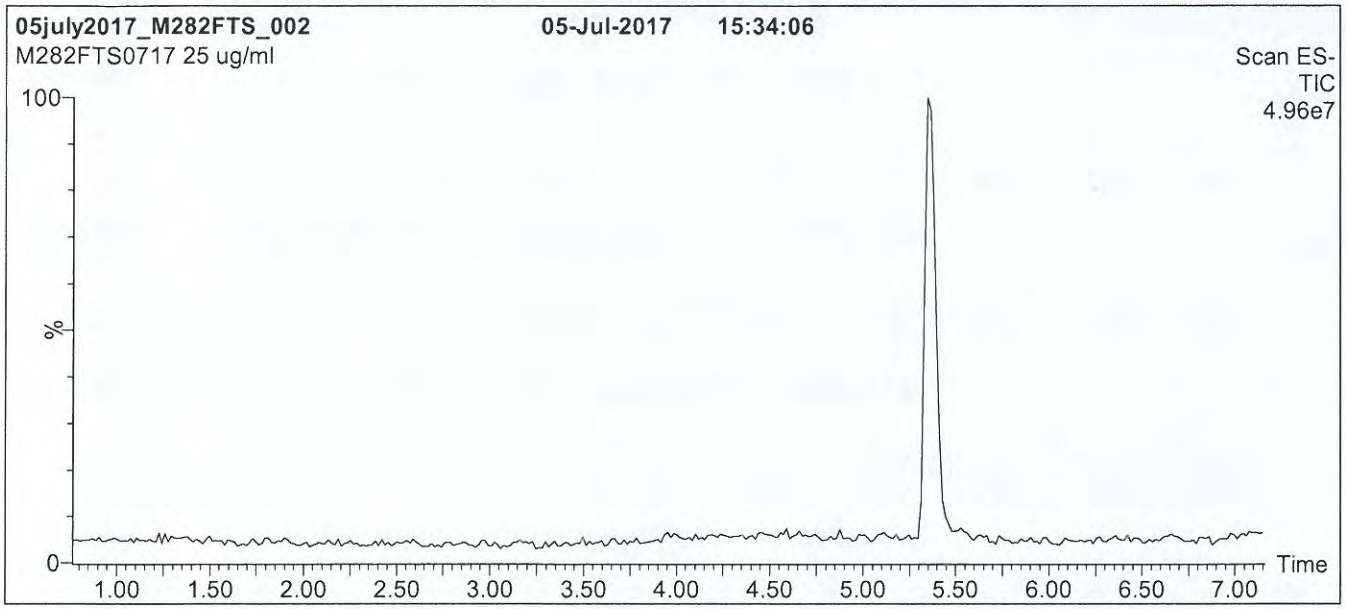
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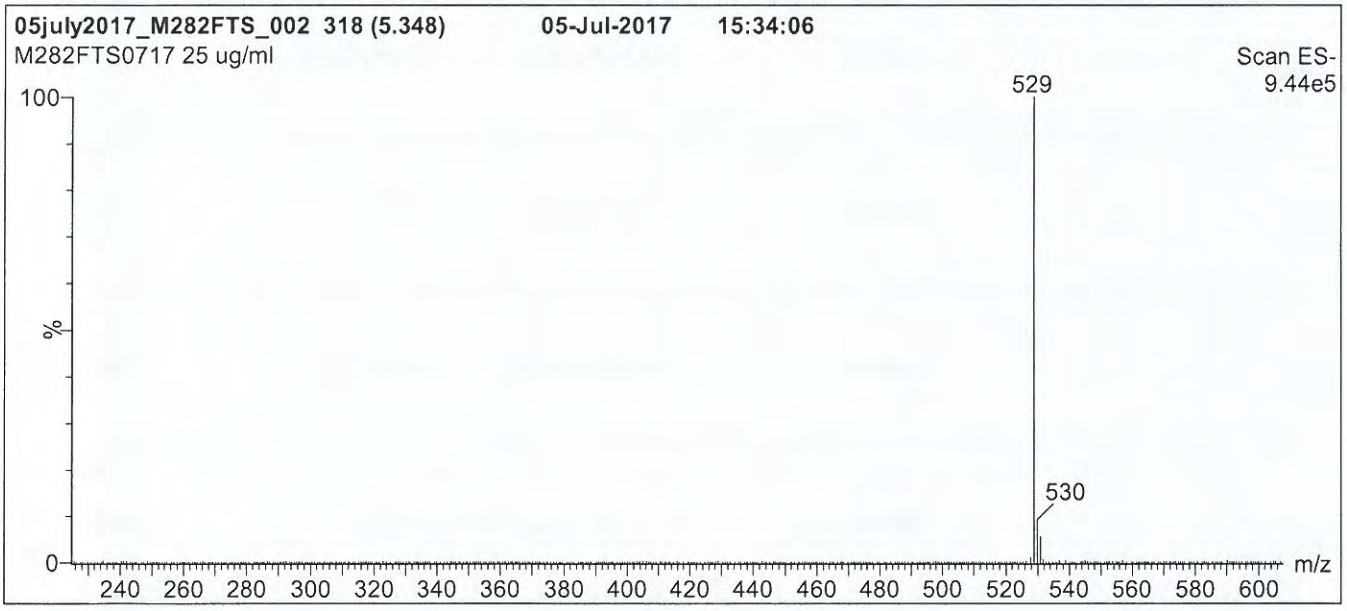
ANAB ACCREDITED

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

1712317

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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 µl/min

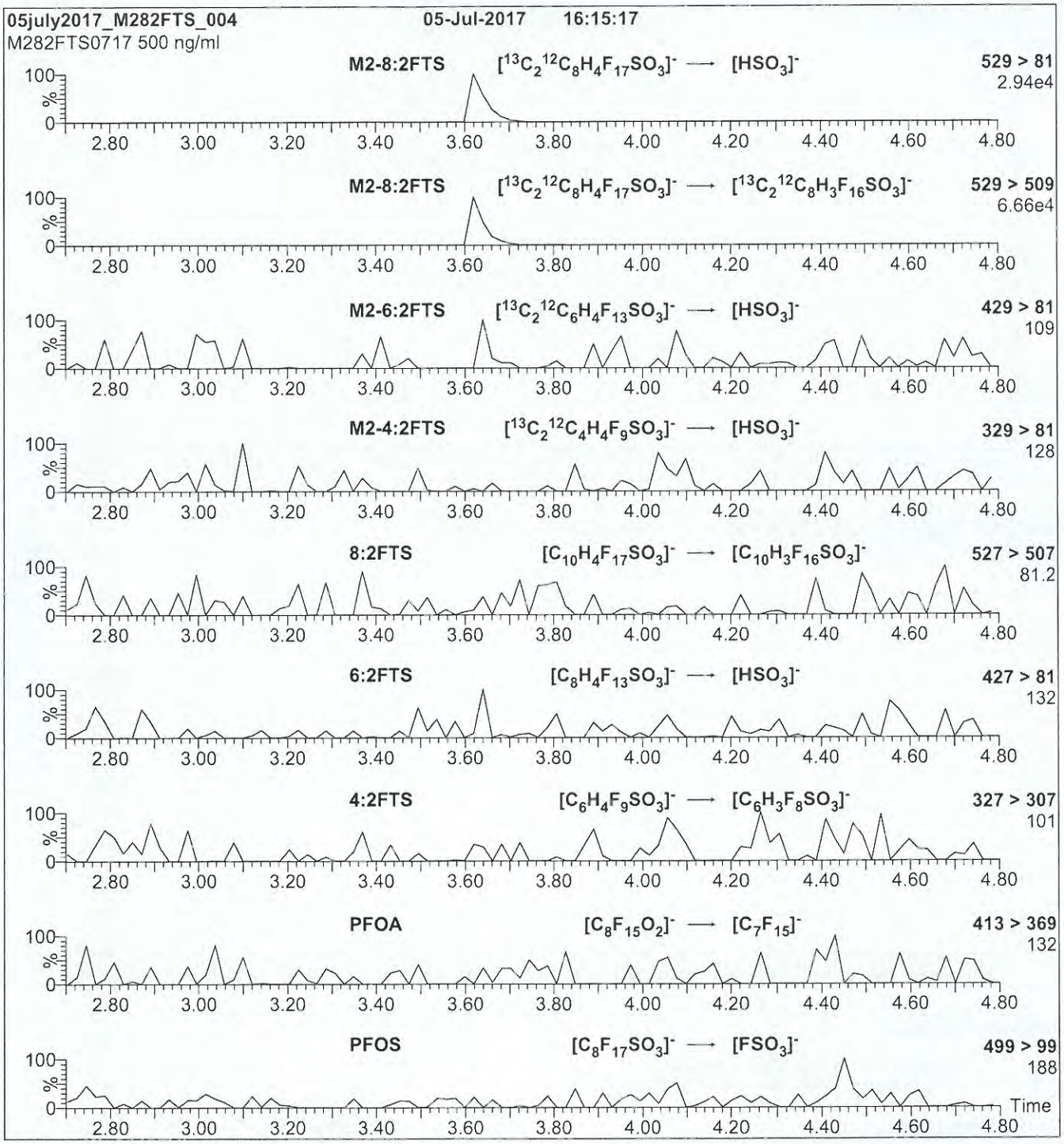
MS Parameters

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

17L2317

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 30

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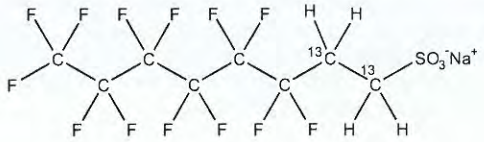
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS0217

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]octane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_6H_4F_{13}SO_3Na$	**MOLECULAR WEIGHT:**	452.13
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.5 ± 2.4 µg/ml (M2-6:2FTS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	02/17/2017		
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 ^{34}S (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

17L2318

INTENDED USE:

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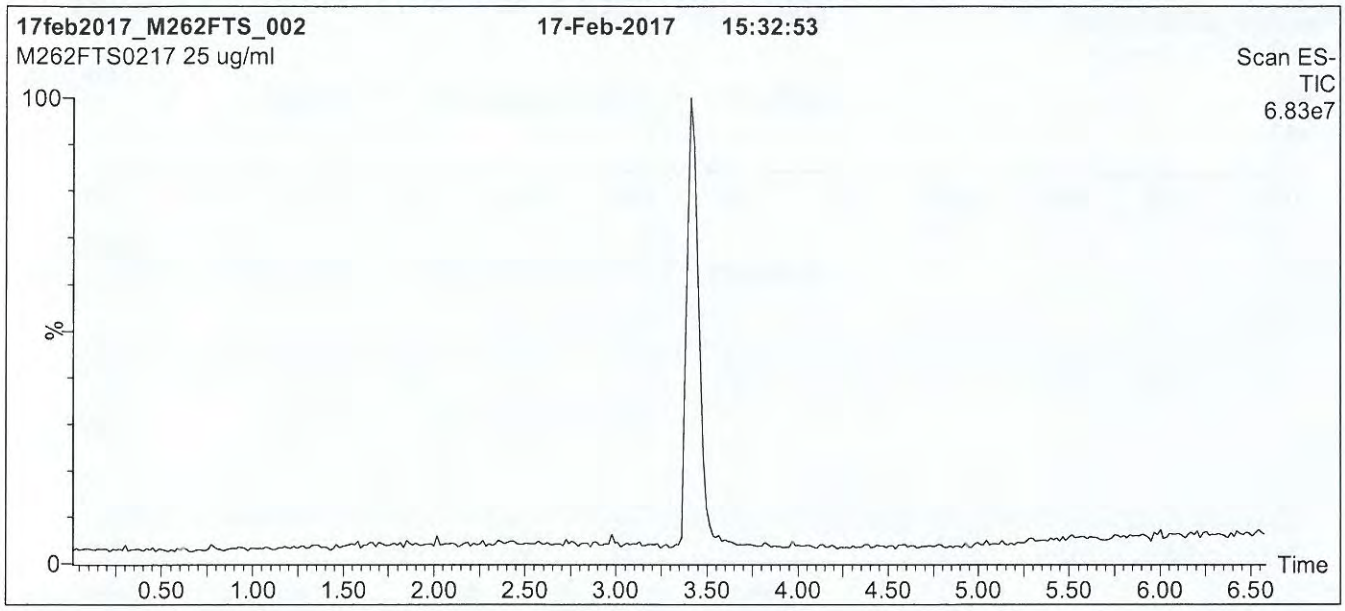
CALA

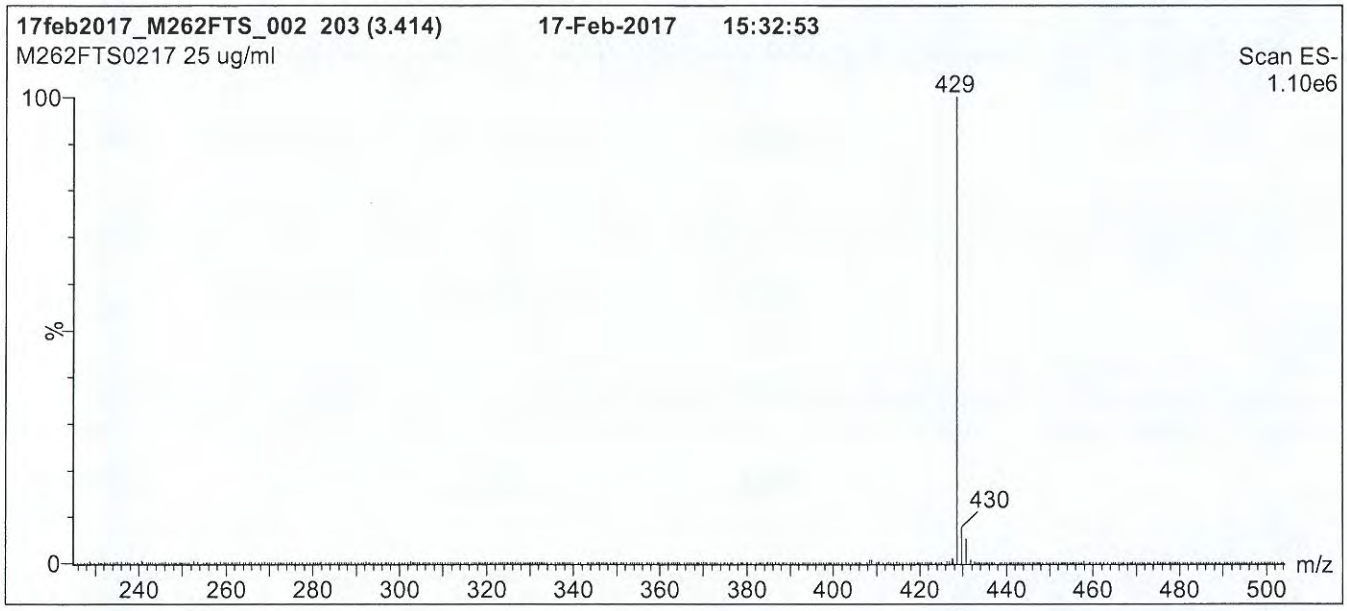
ANAB ACCREDITED

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

17L2318

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

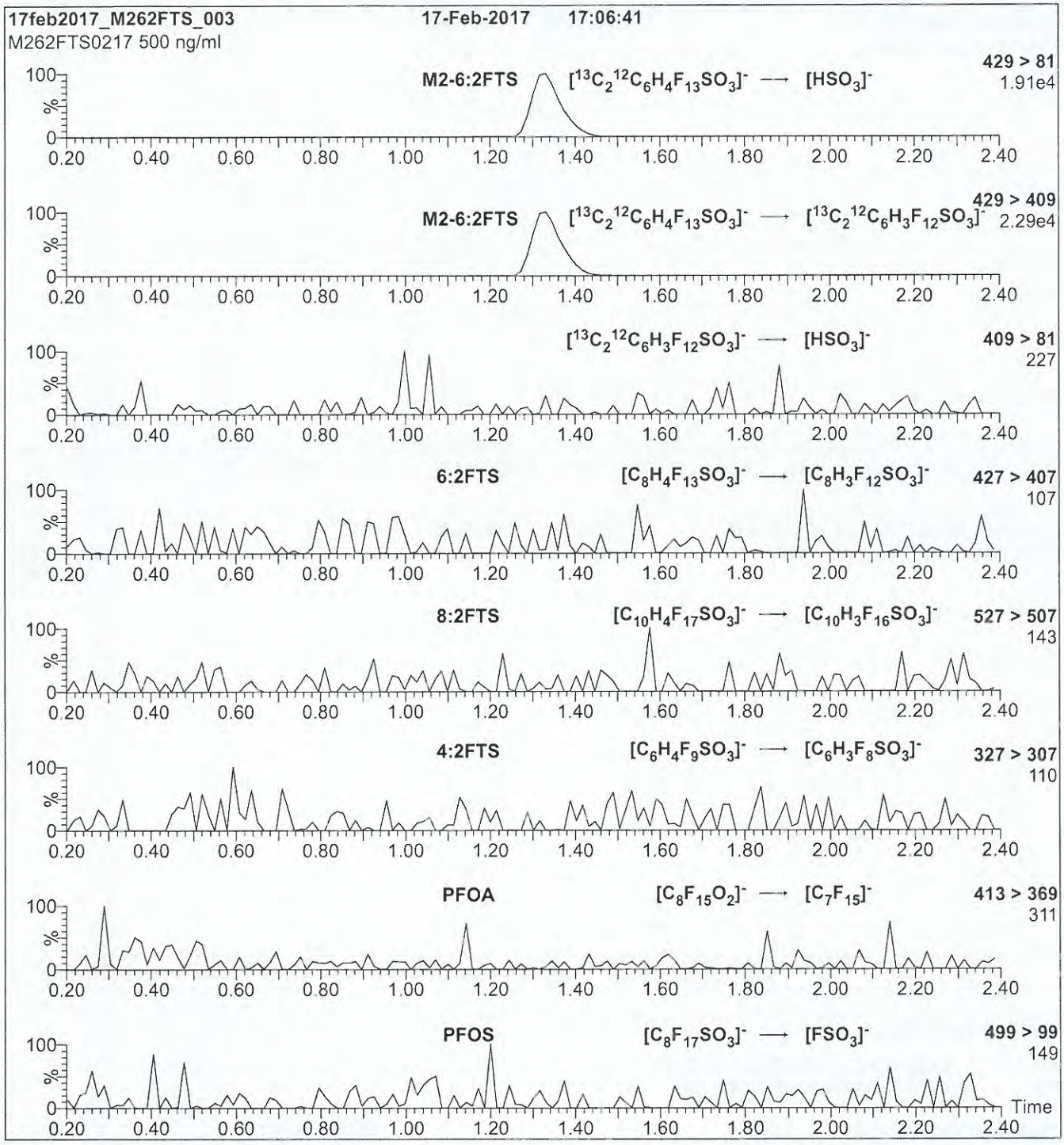
MS Parameters

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

1712318

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 µl/min

MS Parameters

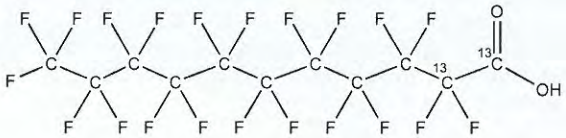
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

1701970

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFUdA	**LOT NUMBER:**	MPFUdA1116
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]undecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_9HF_{21}O_2$	**MOLECULAR WEIGHT:**	566.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
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-$^{13}C_1$-PFUdA (~1%; see Figure 2), 2-$^{13}C_1$-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ^{13}C-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

17L2319

INTENDED USE:

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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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

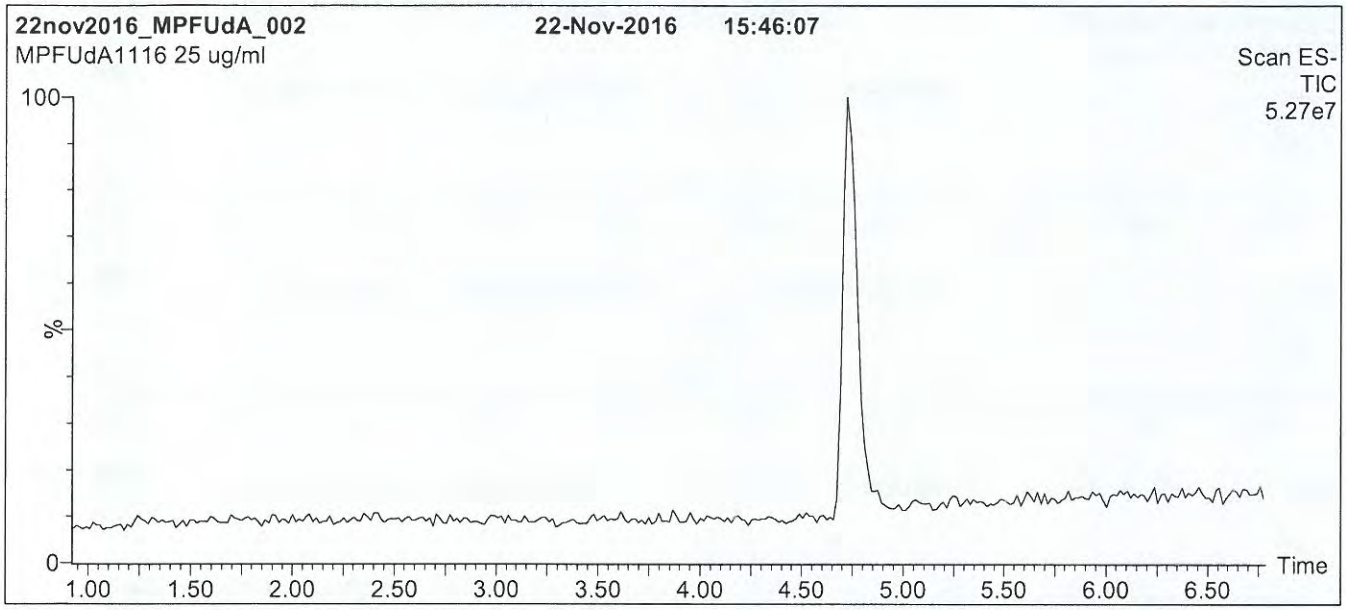
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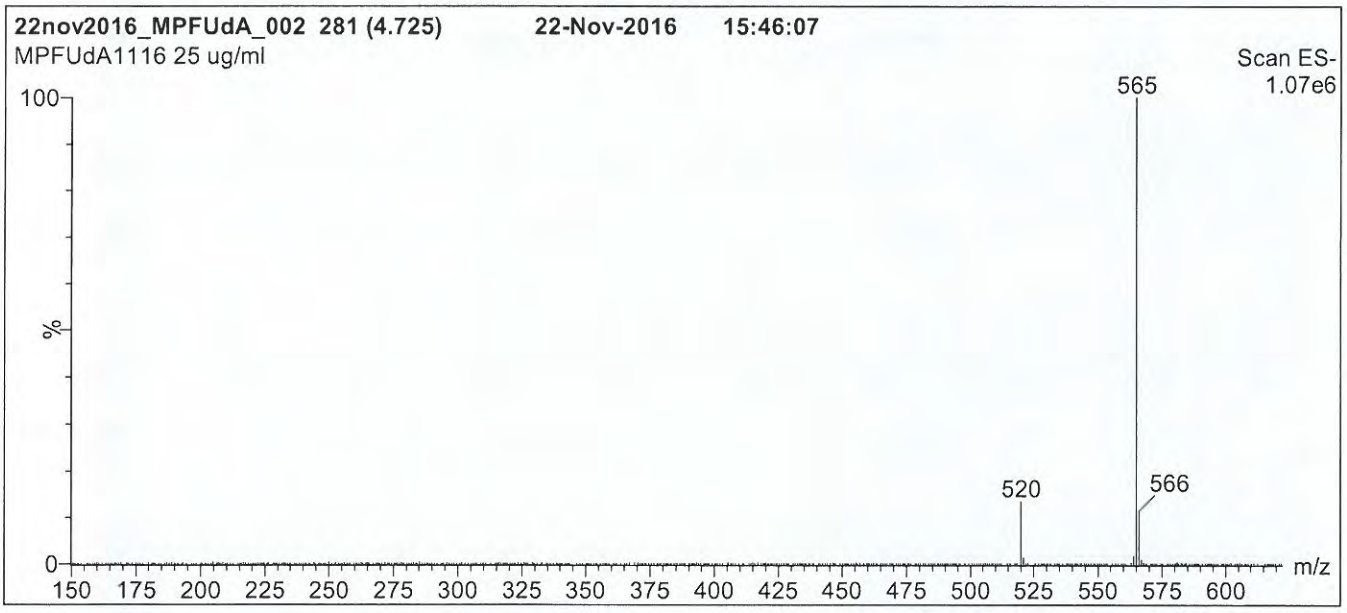
ANAB ACCREDITED

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

17L2319

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

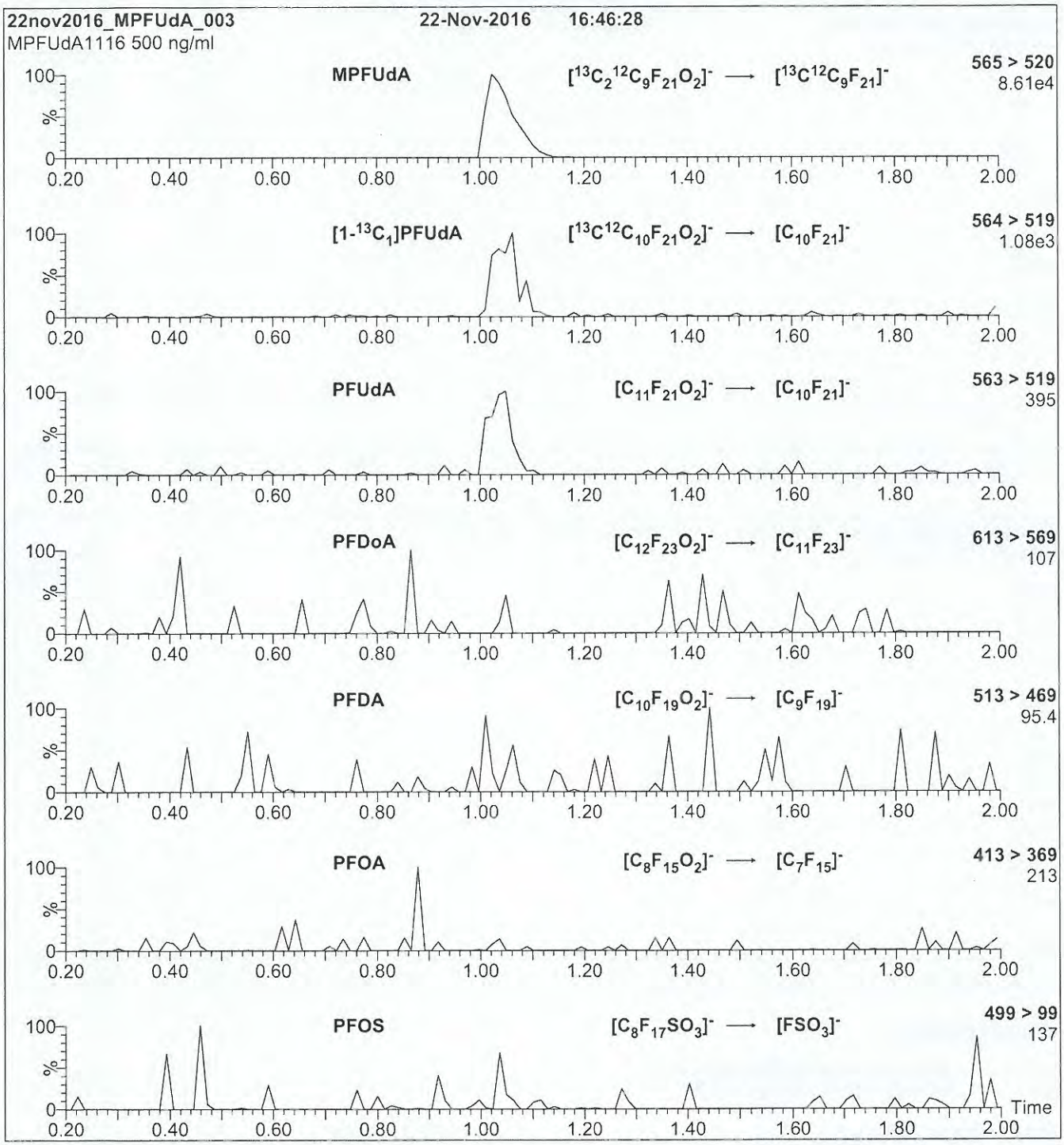
MS Parameters

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

17L2319

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 µl/min

MS Parameters

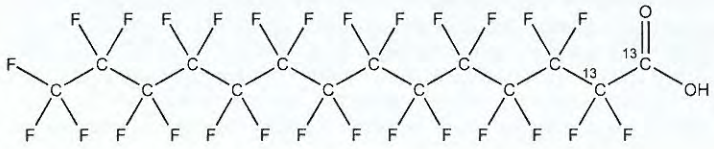
Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 11

17L2320

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M2PFTeDA	**LOT NUMBER:**	M2PFTeDA1117
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]tetradecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{12}HF_{27}O_2$	**MOLECULAR WEIGHT:**	716.10
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
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: _____ **Date:** 12/01/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1712320

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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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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

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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).

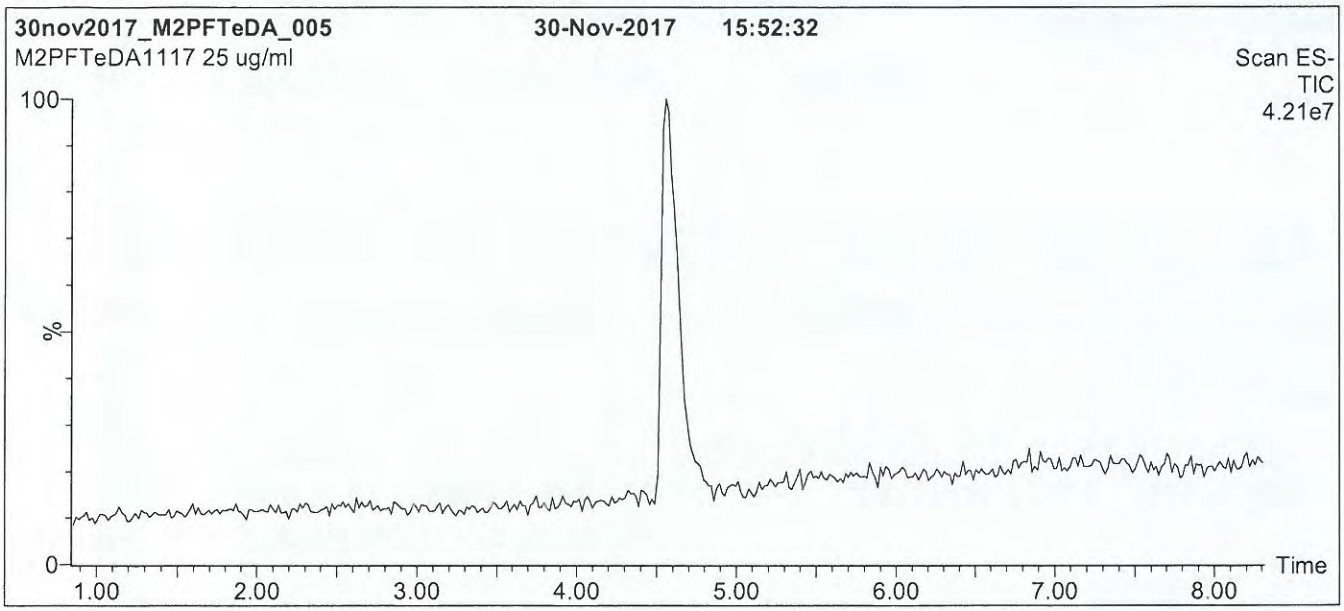
CALA

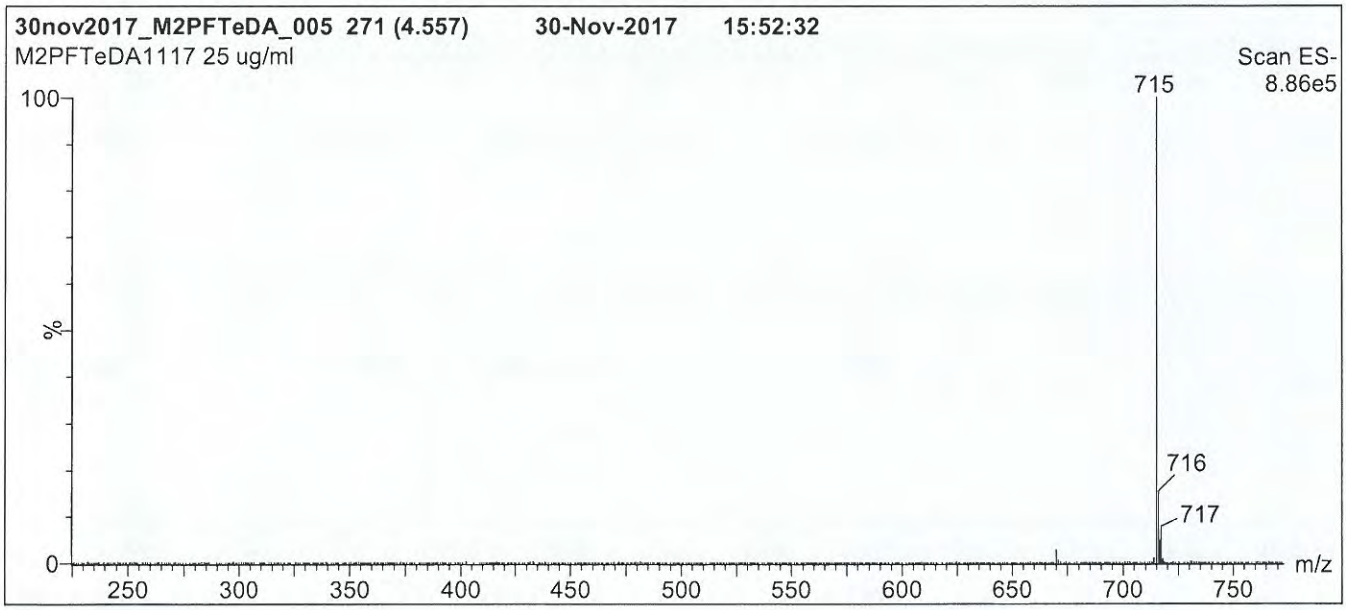
ANAB ACCREDITED

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

17L2320

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% (80:20 MeOH:ACN) / 35% H_2O
(both with 10 mM NH_4OAc 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 µl/min

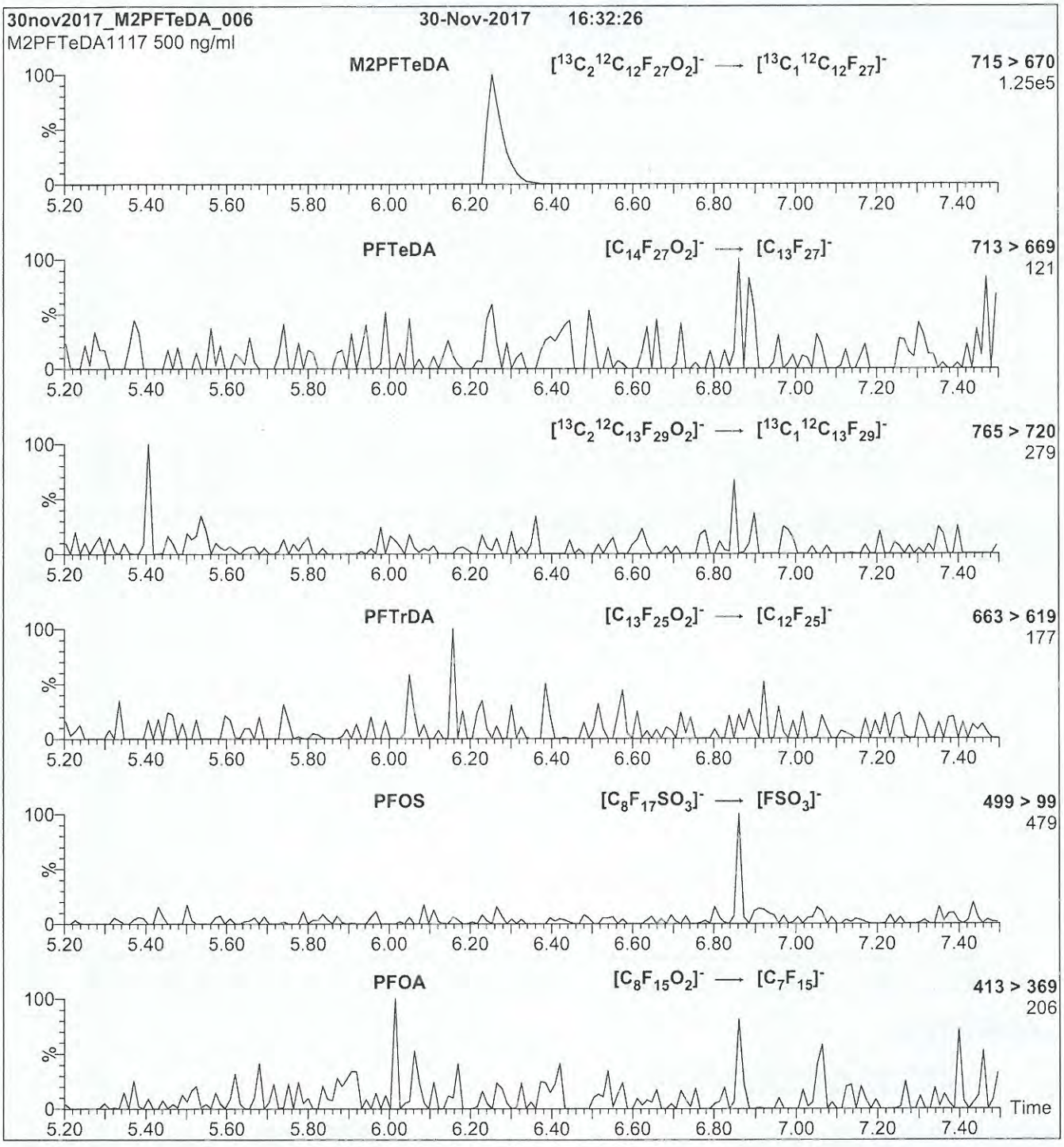
MS Parameters

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

1712320

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 µl/min

MS Parameters

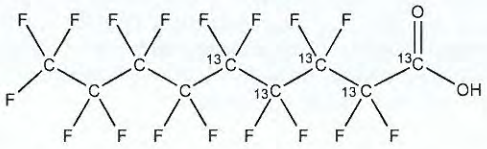
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 14

1712321

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFNA	**LOT NUMBER:**	MPFNA0916
COMPOUND:	Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]nonanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_4HF_{17}O_2$	**MOLECULAR WEIGHT:**	469.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4,5-$^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	09/30/2016		
EXPIRY DATE: (mm/dd/yyyy)	09/30/2021		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/11/2016 (mm/dd/yyyy)
B.G. Chittim

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2321

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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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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

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QUALITY MANAGEMENT:

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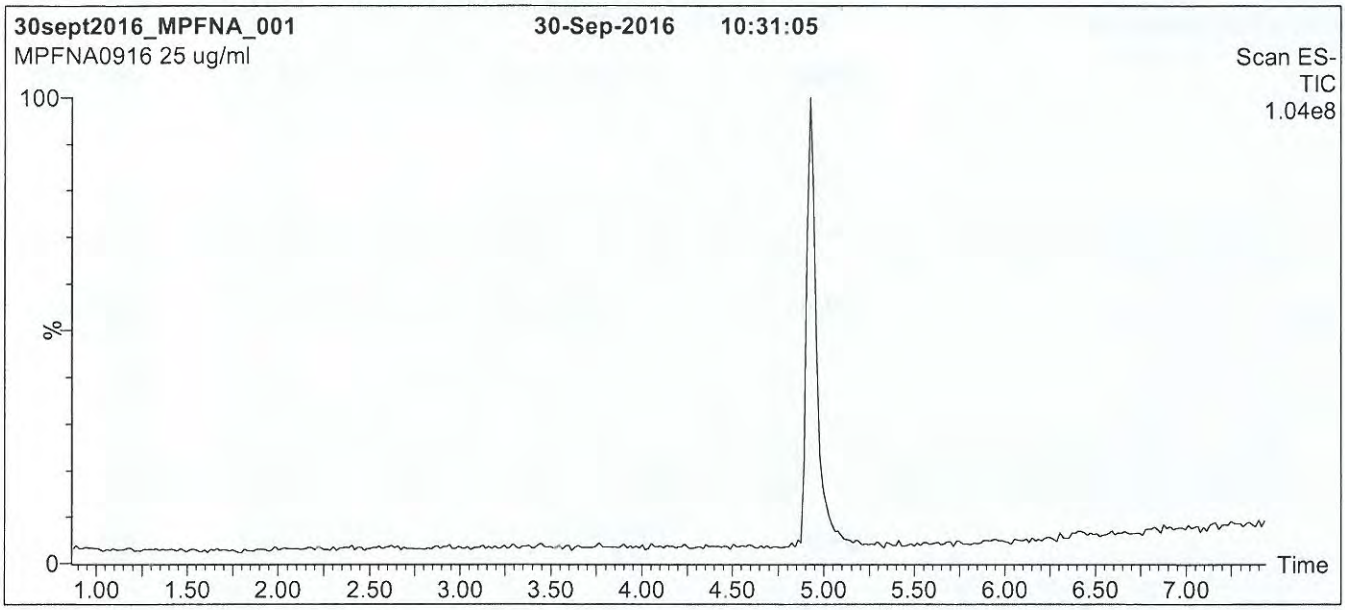
CALA

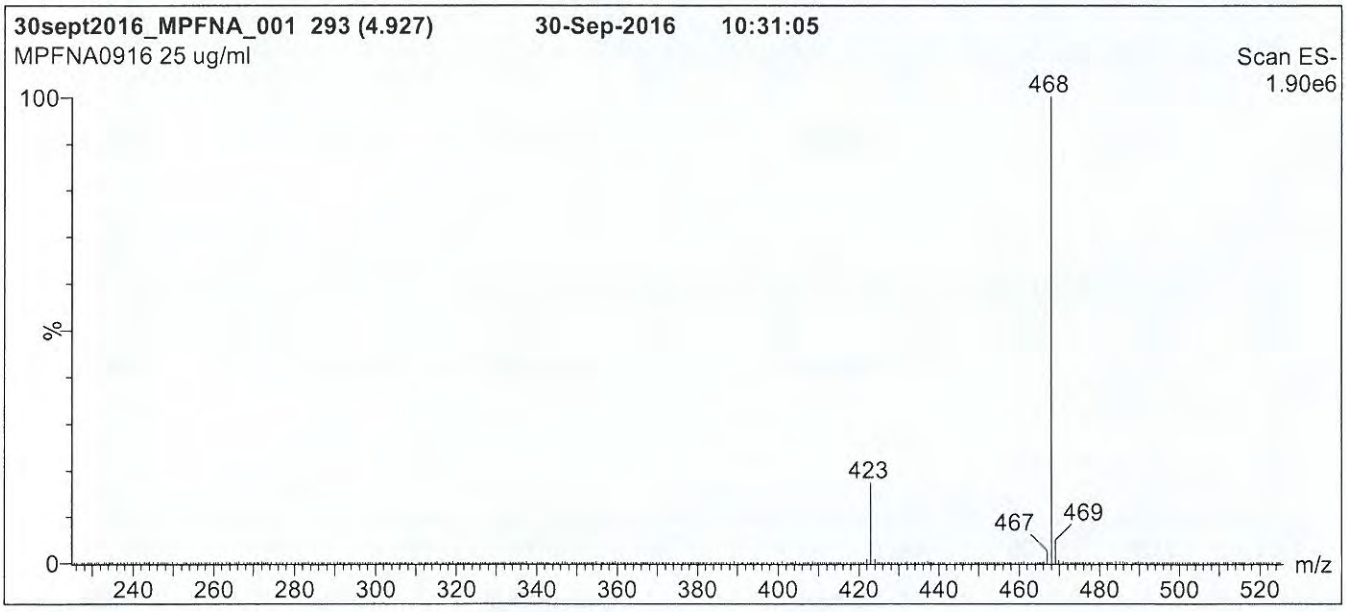
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

1712321

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

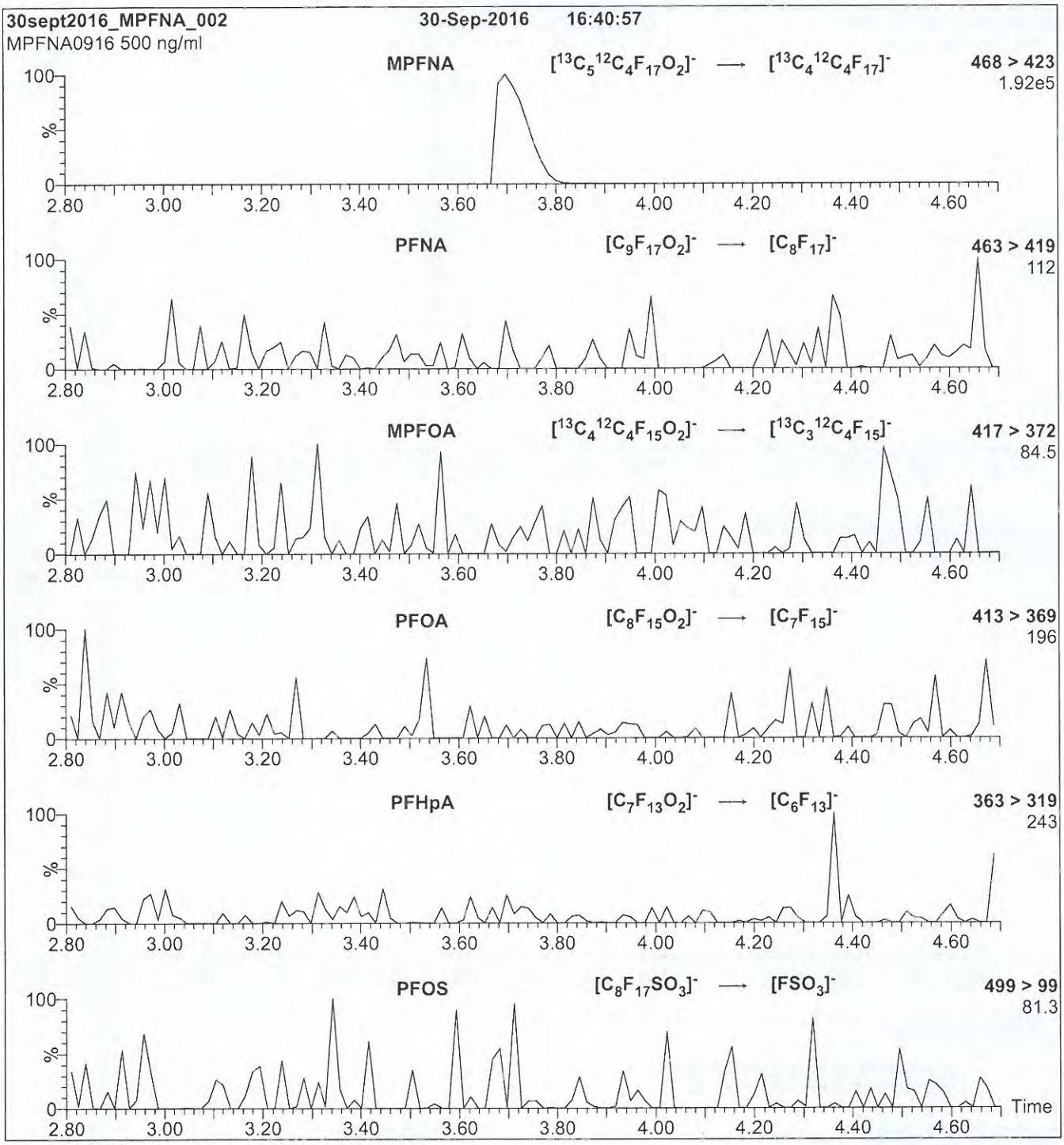
MS Parameters

Experiment: Full Scan (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

1712321

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 11

17L2322

WELLINGTON LABORATORIES

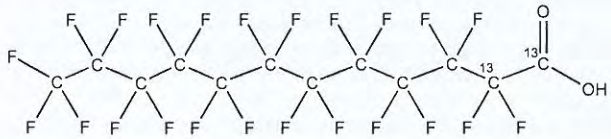
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDoA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid

LOT NUMBER: MPFDoA0517

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{10}HF_{23}O_2$	**MOLECULAR WEIGHT:**	616.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	05/23/2017		
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: _____ **Date:** 05/26/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2322

INTENDED USE:

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HAZARDS:

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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).

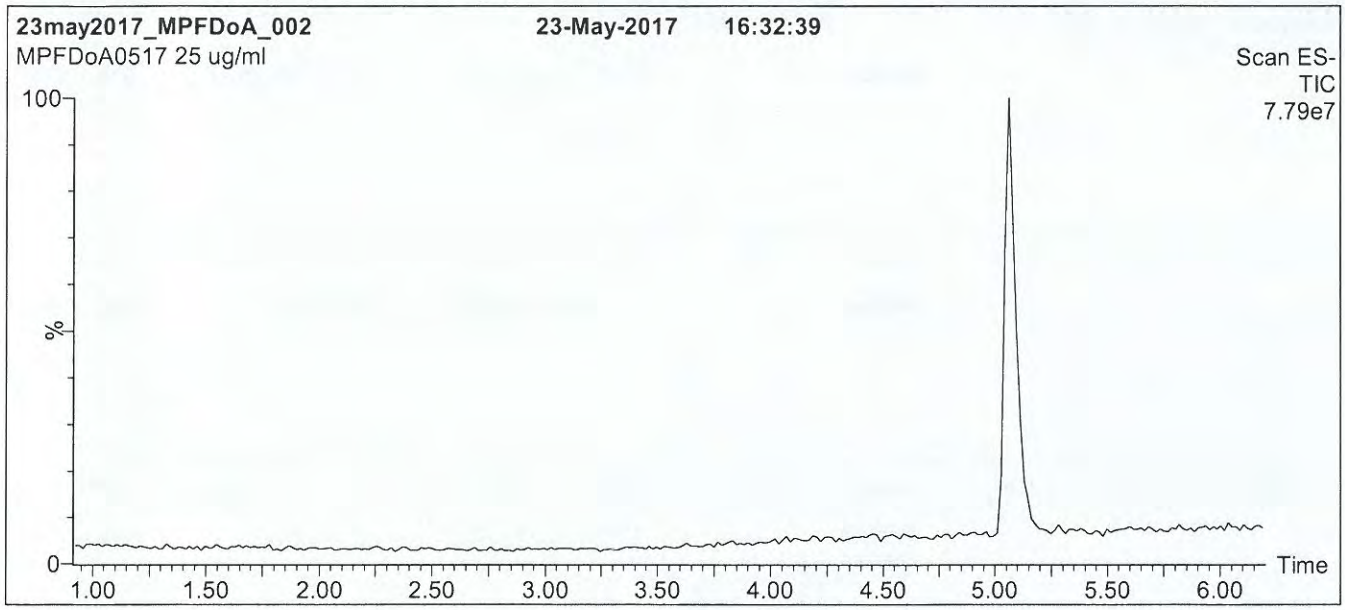
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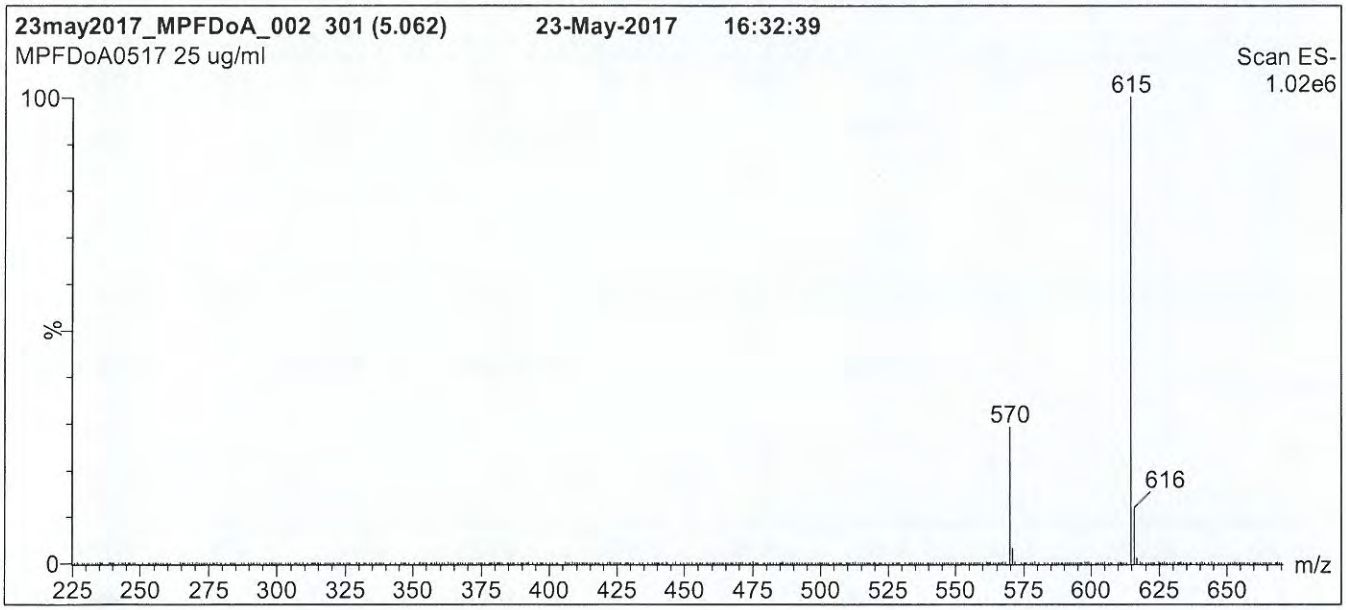
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

17L2322

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

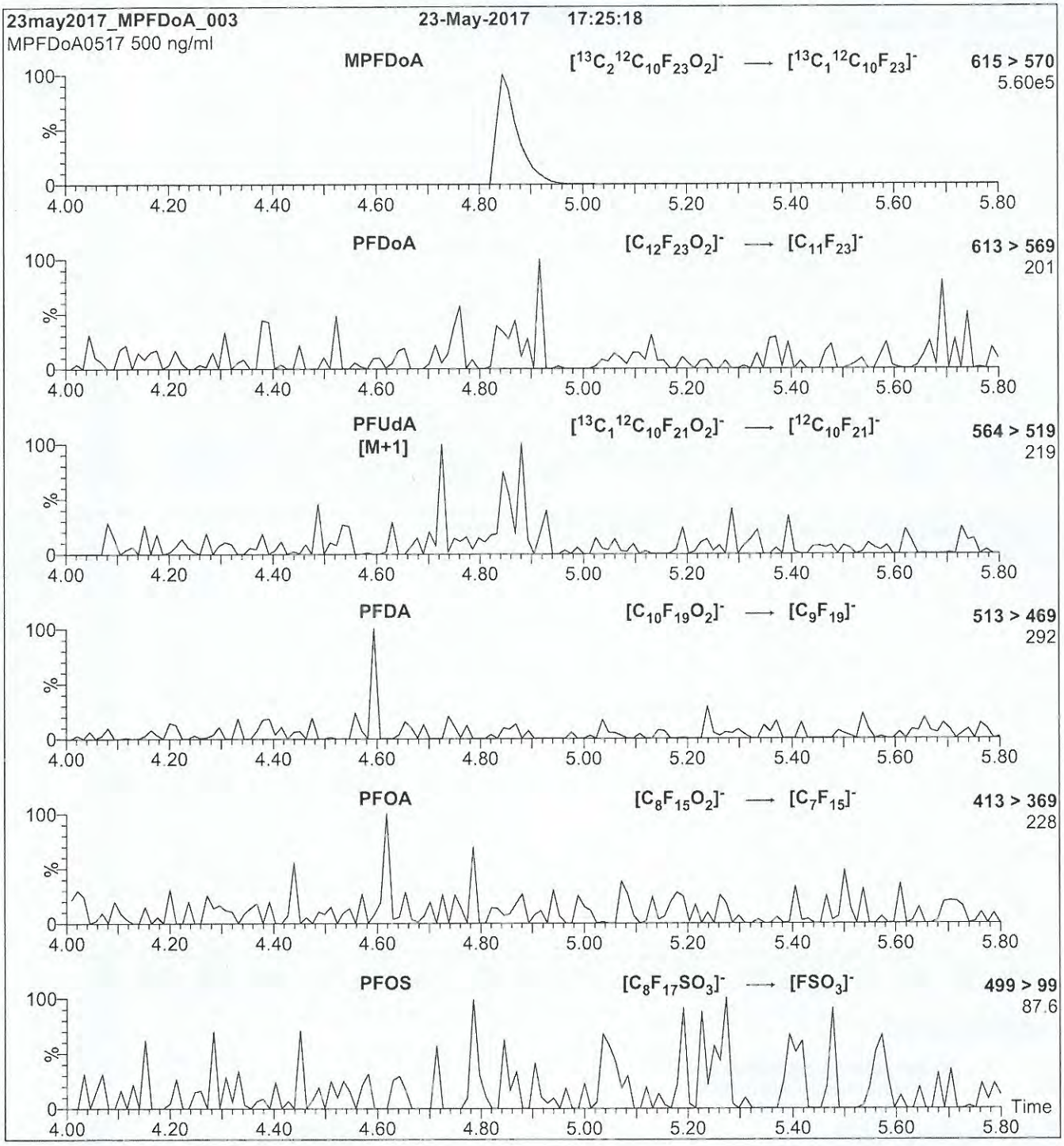
MS Parameters

Experiment: Full Scan (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

17L2322

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 µl/min

MS Parameters

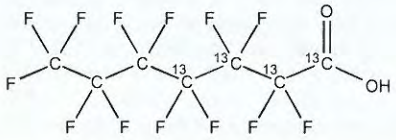
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 13

17L2323

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M4PFHpA	**LOT NUMBER:**	M4PFHpA0517
COMPOUND:	Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_3HF_{13}O_2$	**MOLECULAR WEIGHT:**	368.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
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: _____ **Date:** 05/11/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2323

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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.

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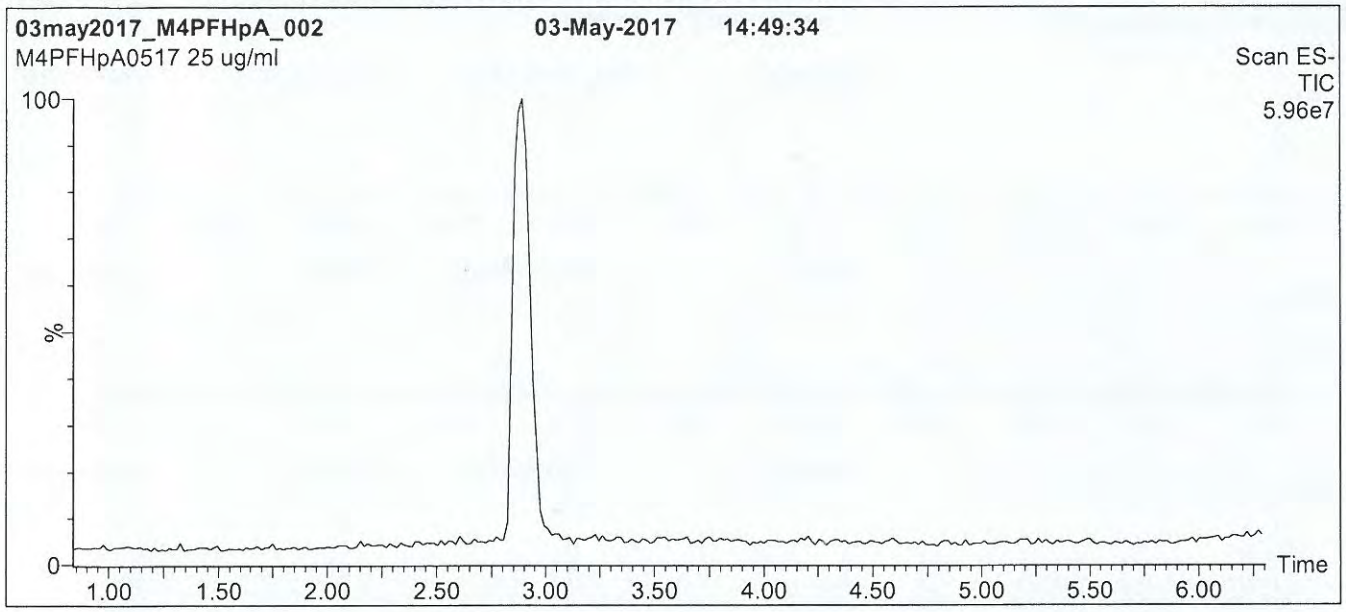
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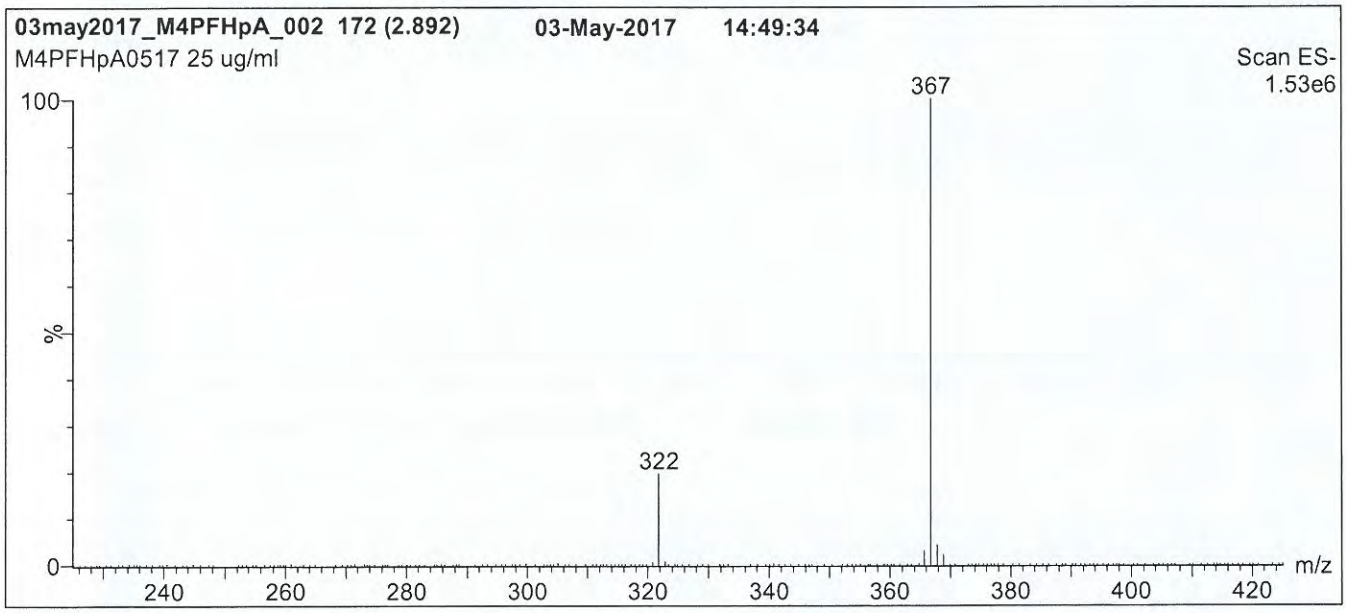
ANAB ACCREDITED

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

17L2323

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

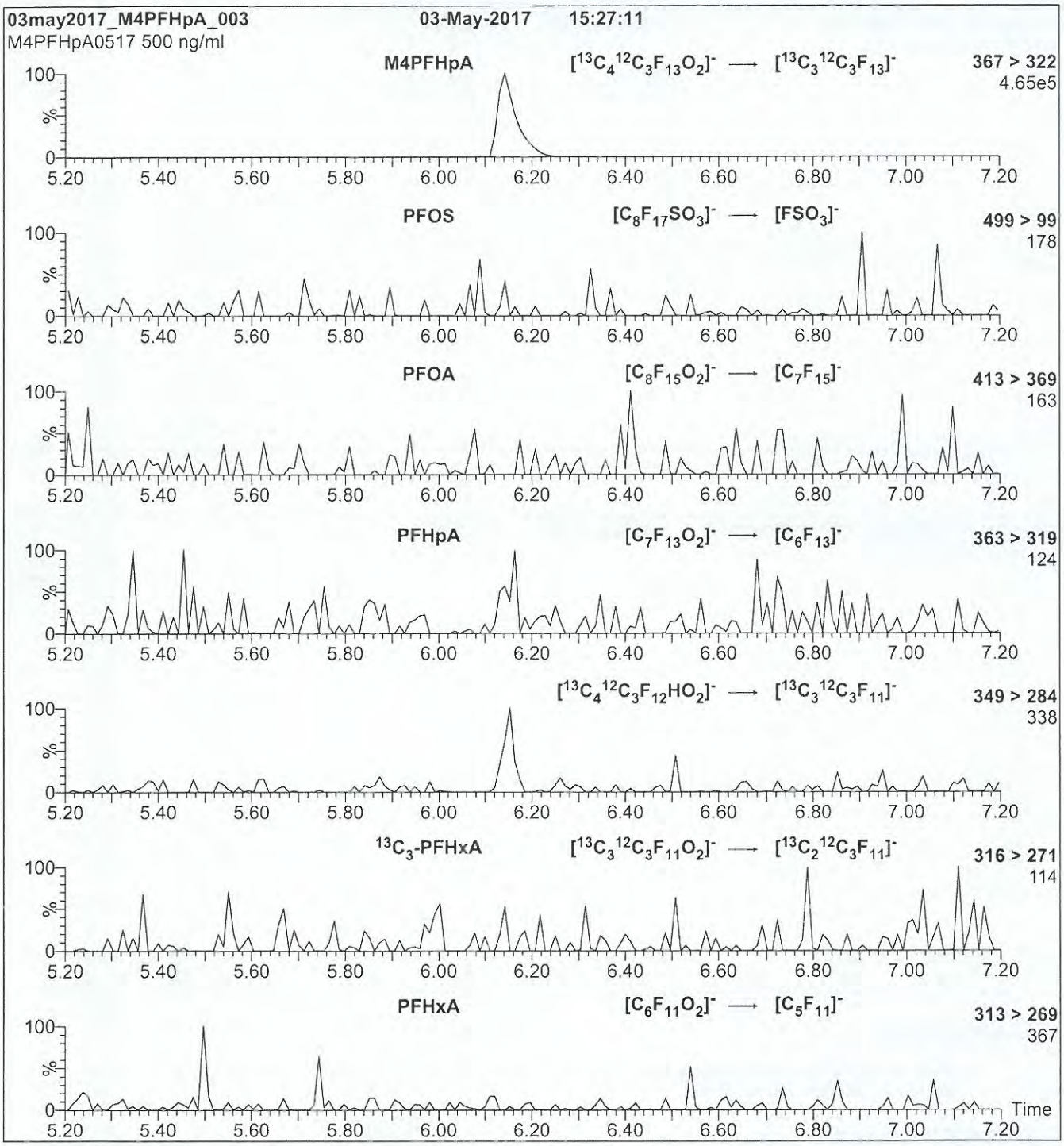
MS Parameters

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

17L2323

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 9

17L2324

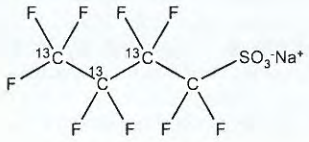
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS0815

COMPOUND: Sodium perfluoro-1-[2,3,4-$^{13}C_3$]butanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}CF_9SO_3Na$	**MOLECULAR WEIGHT:**	325.06
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 46.5 ± 2.3 µg/ml (M3PFBS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($2,3,4\text{-}^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	05/24/2017		
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 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2324

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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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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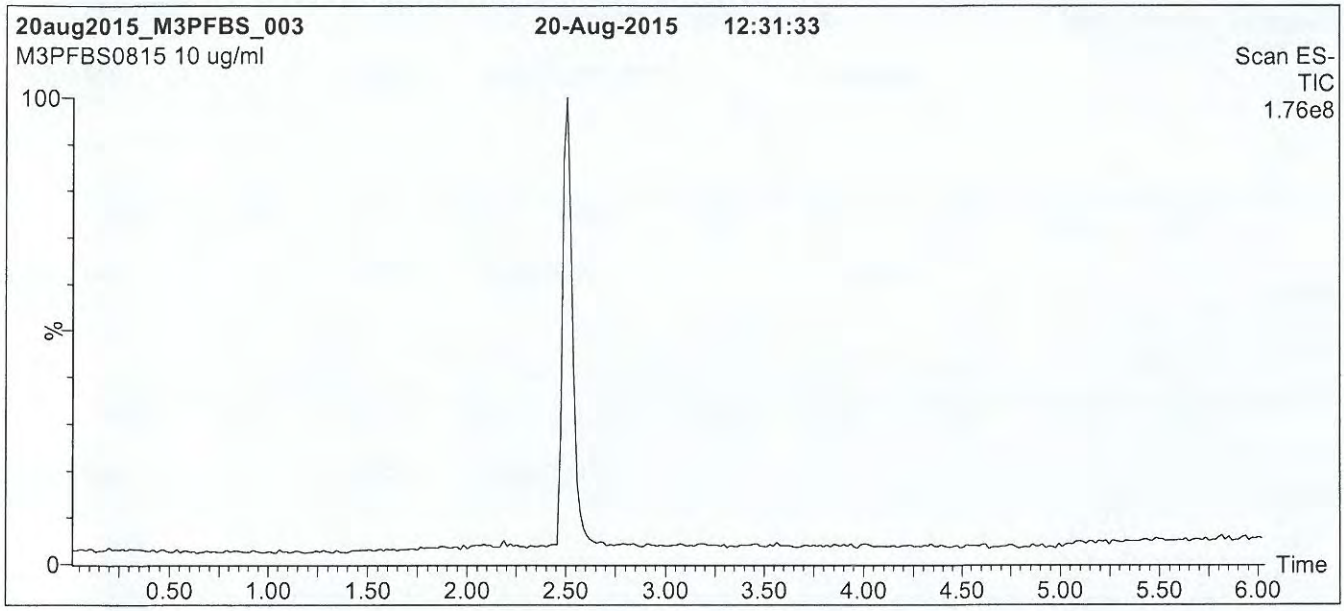
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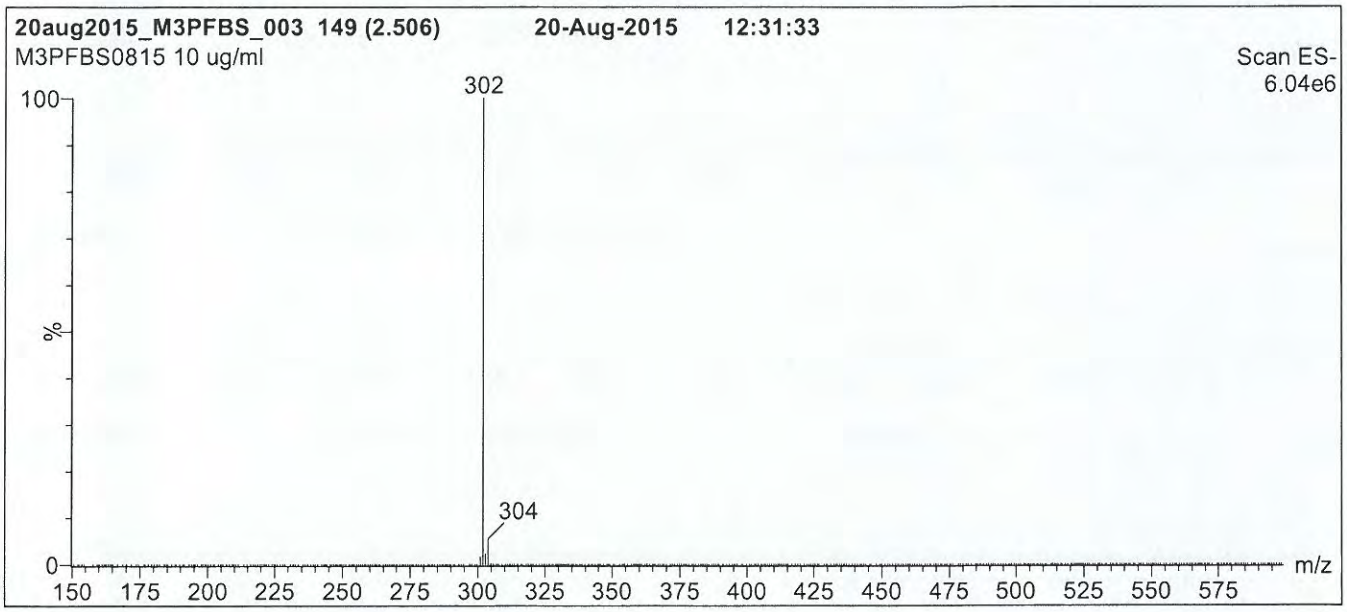
ANAB ACCREDITED

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17L2324

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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

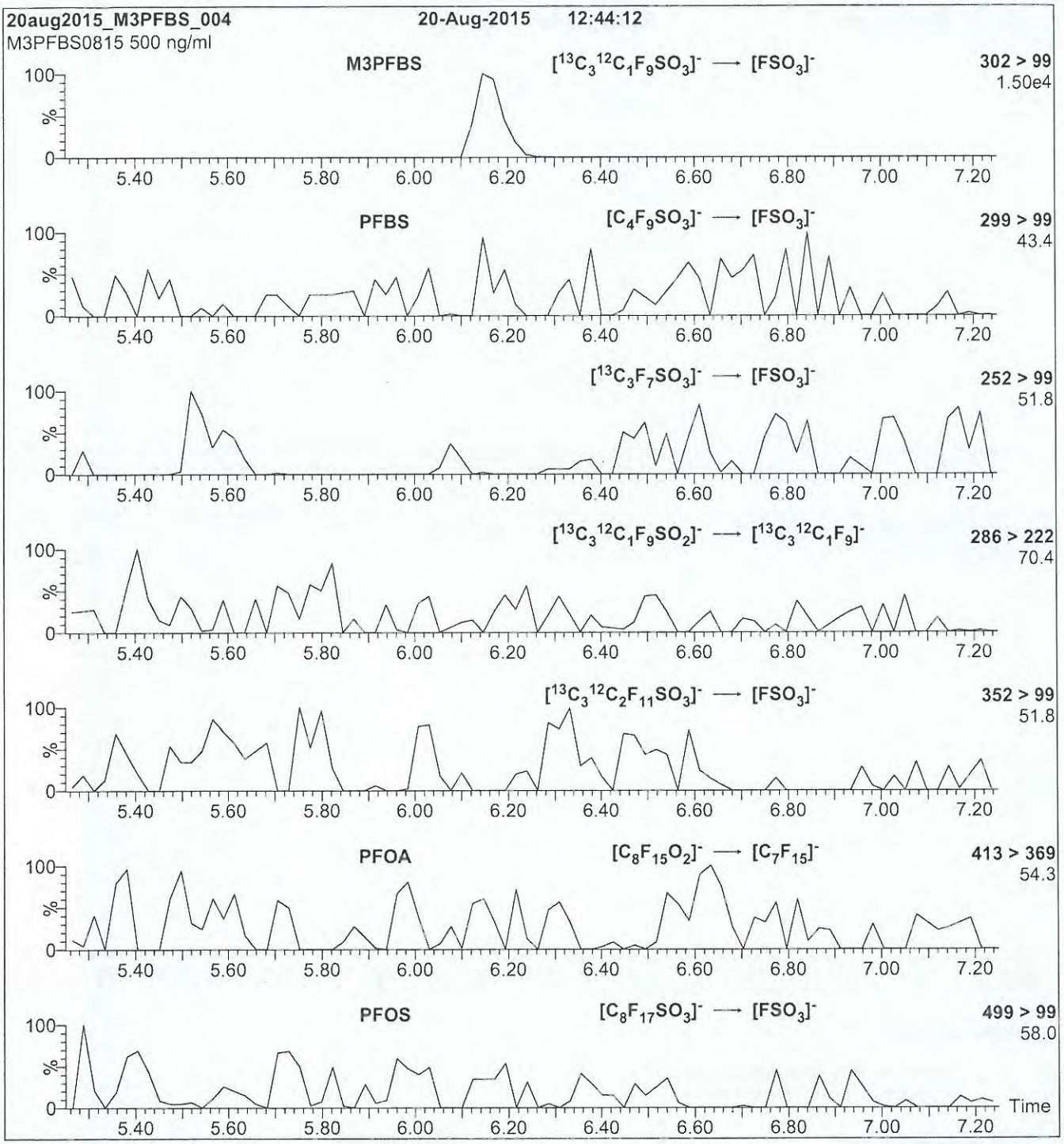
MS Parameters

Experiment: 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

1701324

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 µl/min

MS Parameters

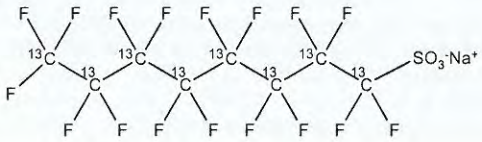
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 25

17L2325

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8PFOS	**LOT NUMBER:**	M8PFOS1117
COMPOUND:	Sodium perfluoro-1-[$^{13}C_8$]octanesulfonate		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_8F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	530.05
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (M8PFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	>99% ^{13}C ($^{13}C_8$)
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 ~ 0.3% of sodium perfluoro-1-[$^{13}C_7$]heptanesulfonate ($^{13}C_7$-PFHpS) and ~ 0.8% of sodium perfluoro-1-[$^{13}C_4$]octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/22/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2325

INTENDED USE:

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HAZARDS:

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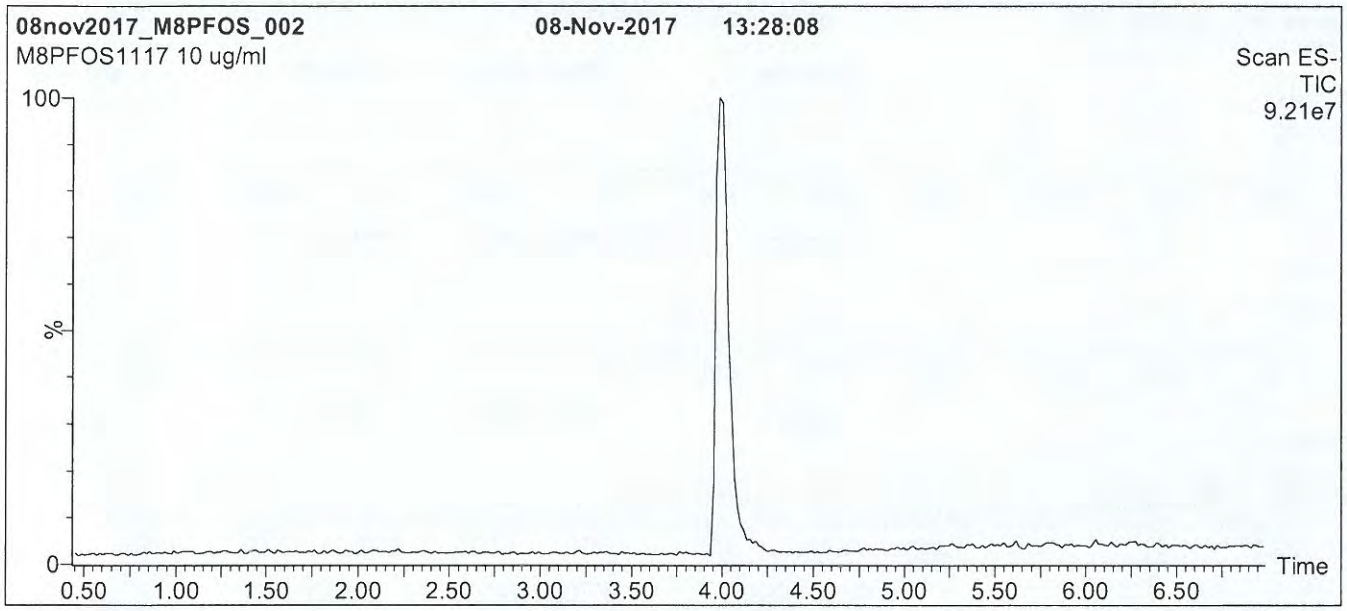
CALA

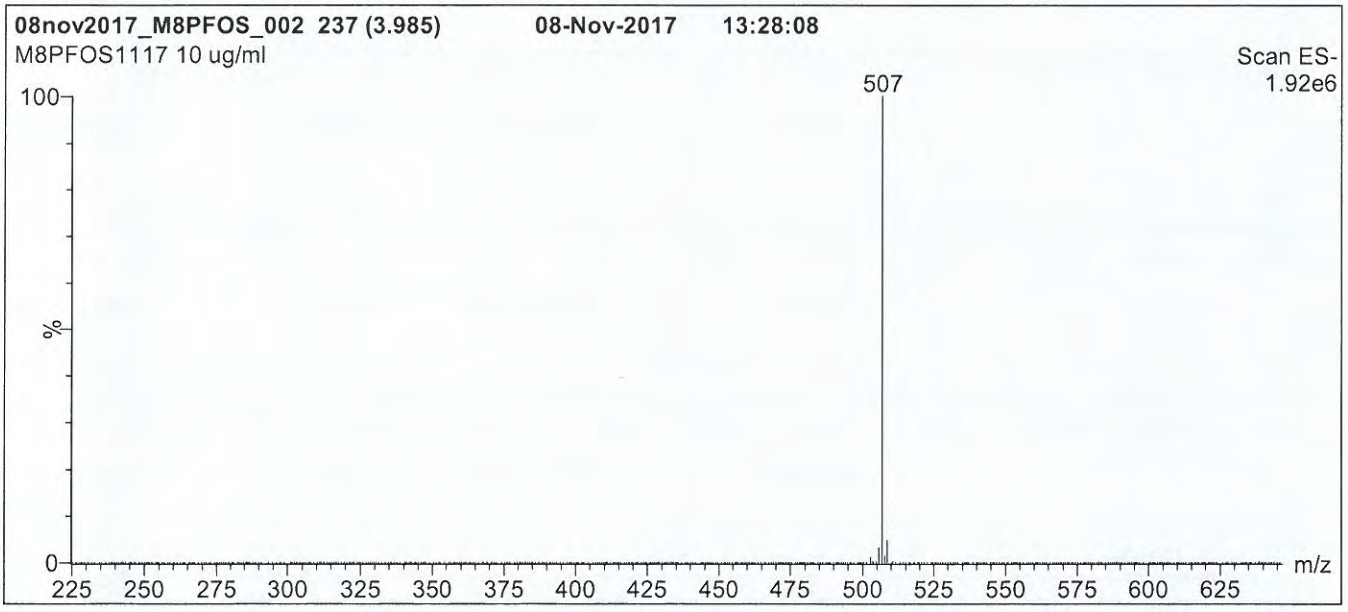
ANAB ACCREDITED

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1712325

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

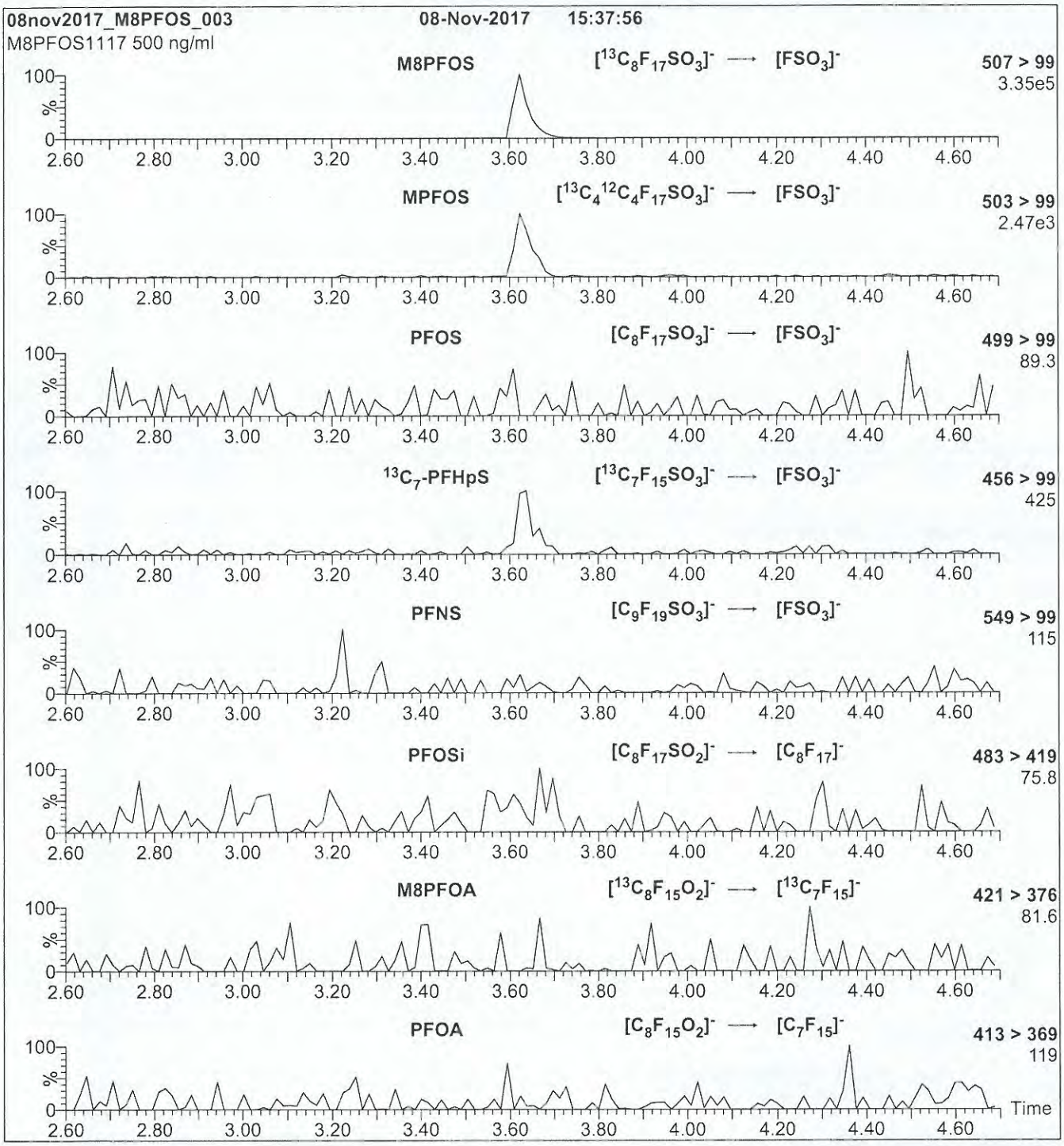
MS Parameters

Experiment: 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

1712325

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 40

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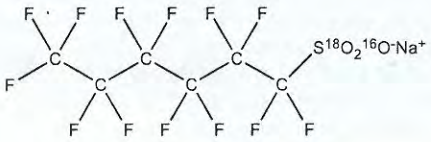
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS
COMPOUND: Sodium perfluoro-1-hexane[$^{18}O_2$]sulfonate

LOT NUMBER: MPFHxS0217

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$C_6F_{13}S^{18}O_2{}^{16}ONa$	**MOLECULAR WEIGHT:**	426.10
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.3 ± 2.4 µg/ml (MPFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	>94% ($^{18}O_2$)
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 ($C_6F_{13}S^{18}O_2{}^{16}O^-$) has been observed to be up to 10% lower than for PFHxS ($C_6F_{13}S^{16}O_3^-$) when both compounds are injected together. This difference may vary between instruments.
- Contains ~ 1.0% of sodium perfluoro-1-octane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFOS).
- Due to the isotopic purity of the starting material ($^{18}O_2$ >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

17L2326

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

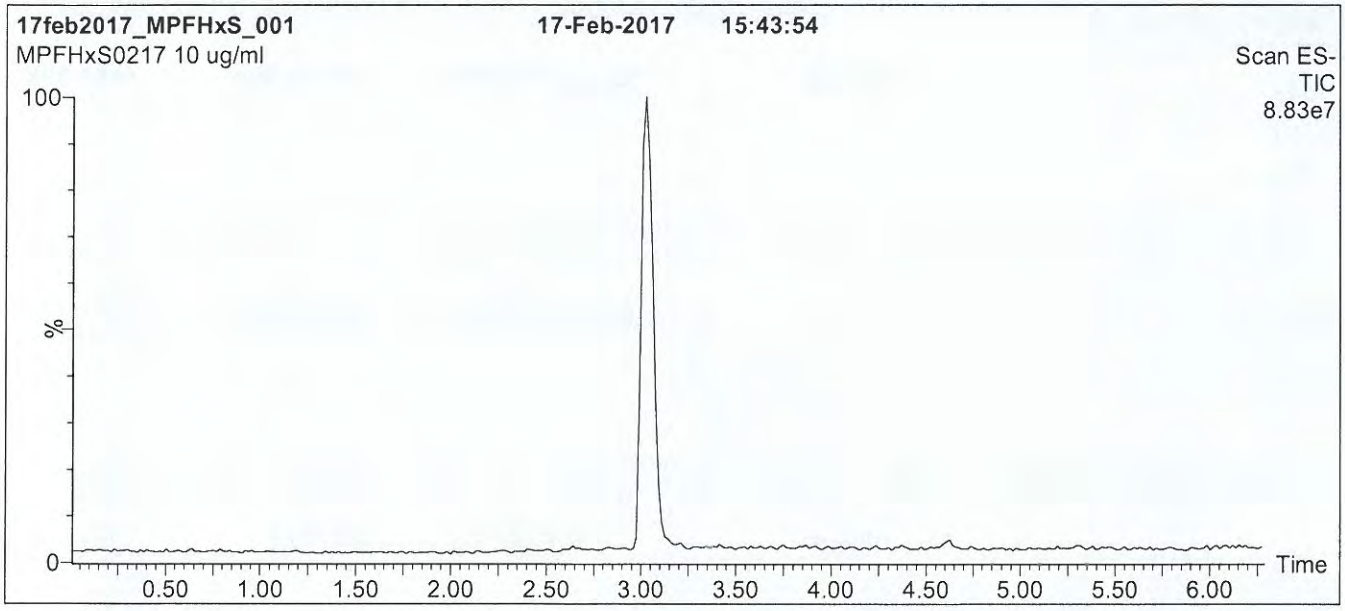
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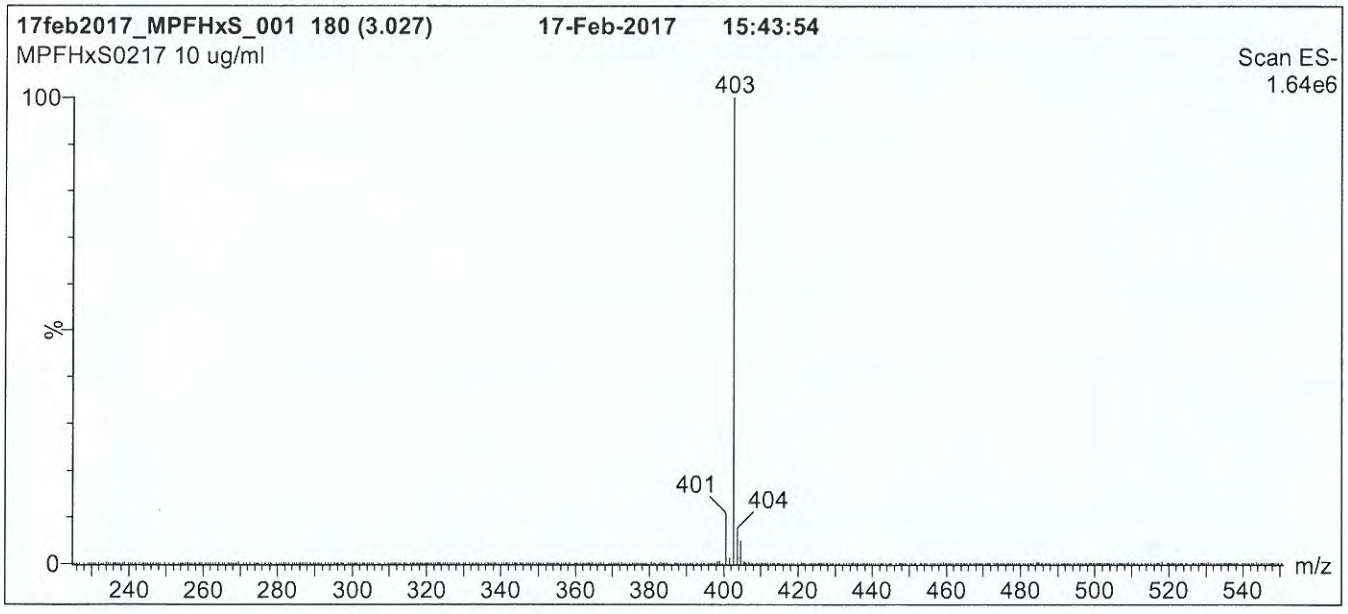
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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17L2326

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

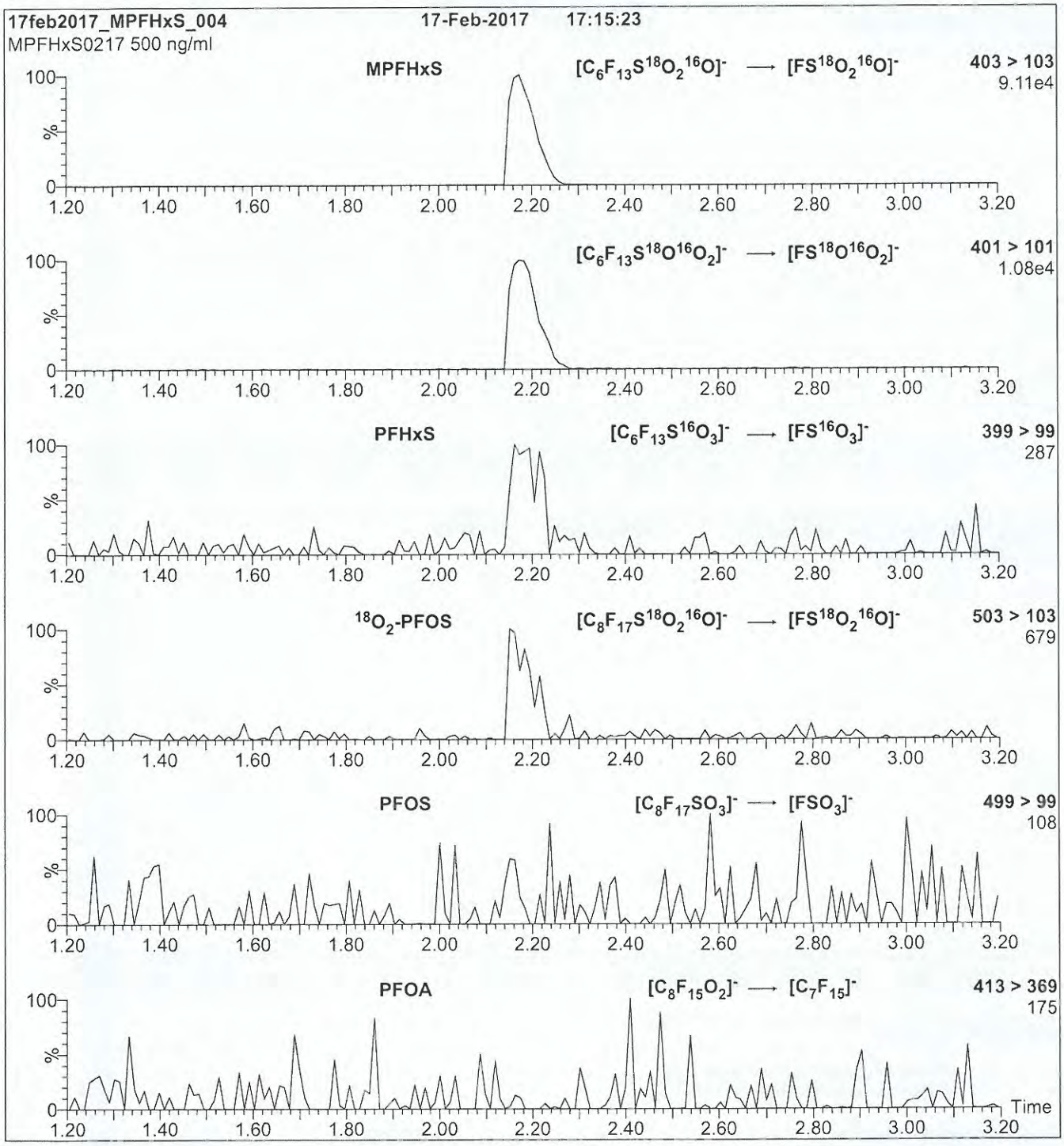
MS Parameters

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

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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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

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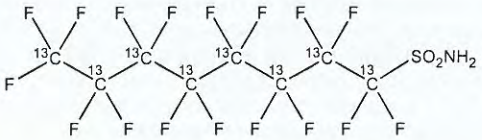
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I
COMPOUND: Perfluoro-1-[$^{13}C_8$]octanesulfonamide

LOT NUMBER: M8FOSA1017I

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	507.09
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	10/11/2017		
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-[$^{13}C_4$]octanesulfonamide and ~ 0.01% of perfluoro-1-[$^{13}C_7$]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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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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.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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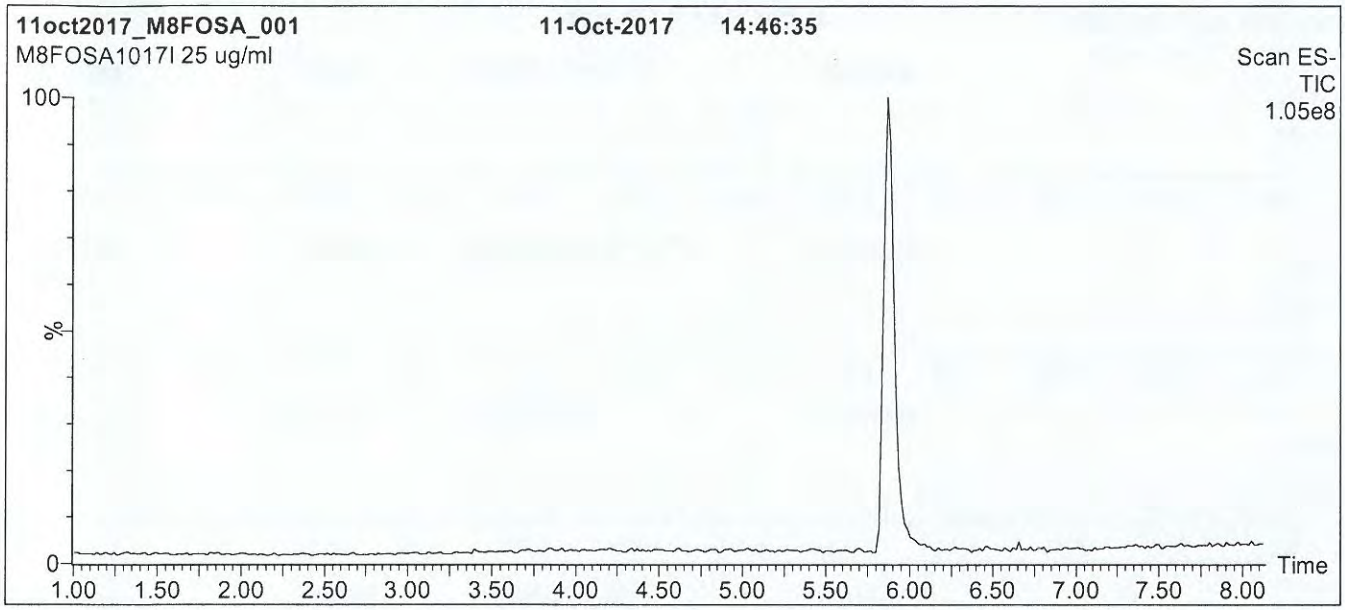
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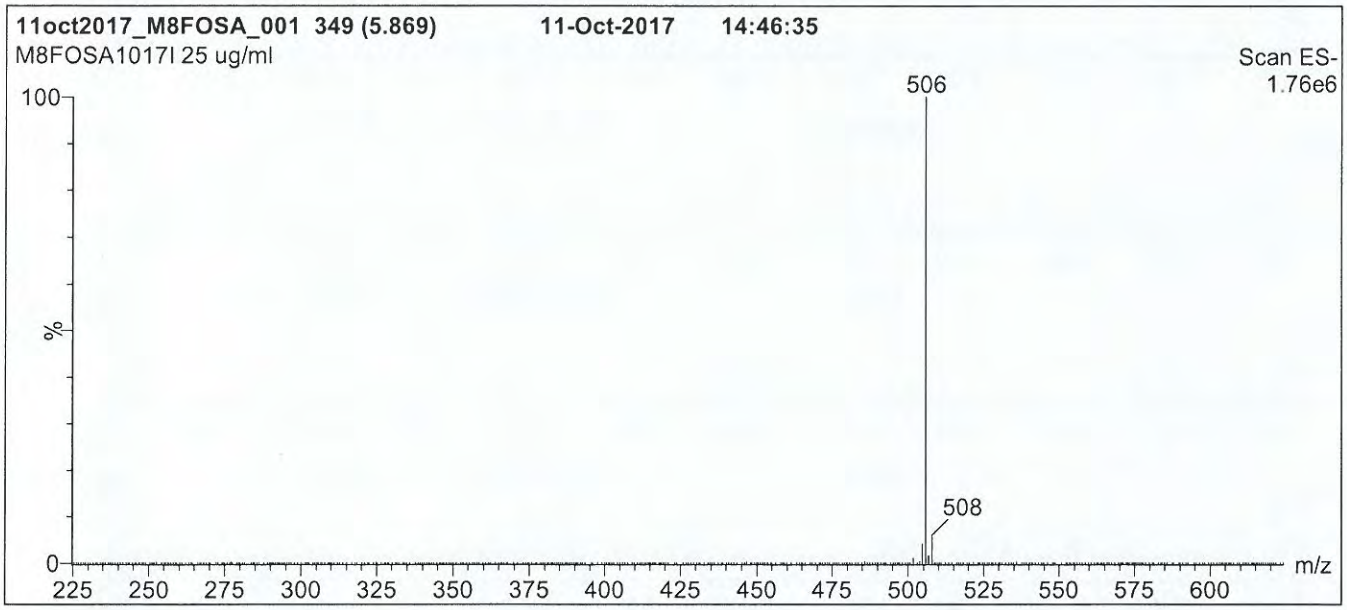
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INJ 12/22/17 17L2327

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

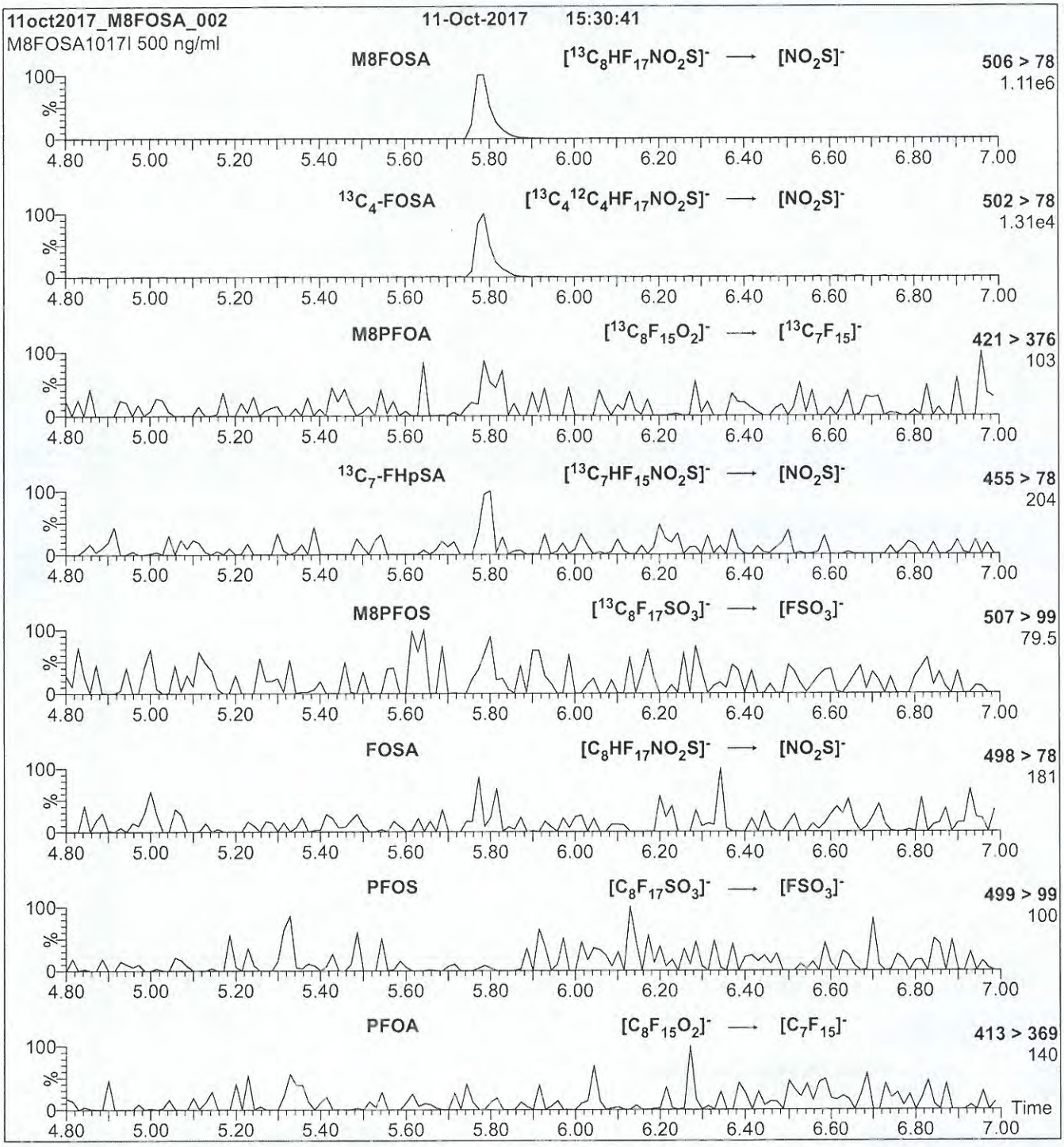
MS Parameters

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

1712327

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

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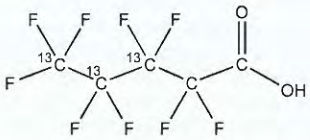
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFPeA
COMPOUND: Perfluoro-n-[3,4,5-$^{13}C_3$]pentanoic acid

LOT NUMBER: M3PFPeA0417

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_2HF_9O_2$	**MOLECULAR WEIGHT:**	267.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($3,4,5$-$^{13}C_3$)
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-[$^{13}C_3$]butanoic acid and 0.05% of perfluoro-1-pentanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/24/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2328

INTENDED USE:

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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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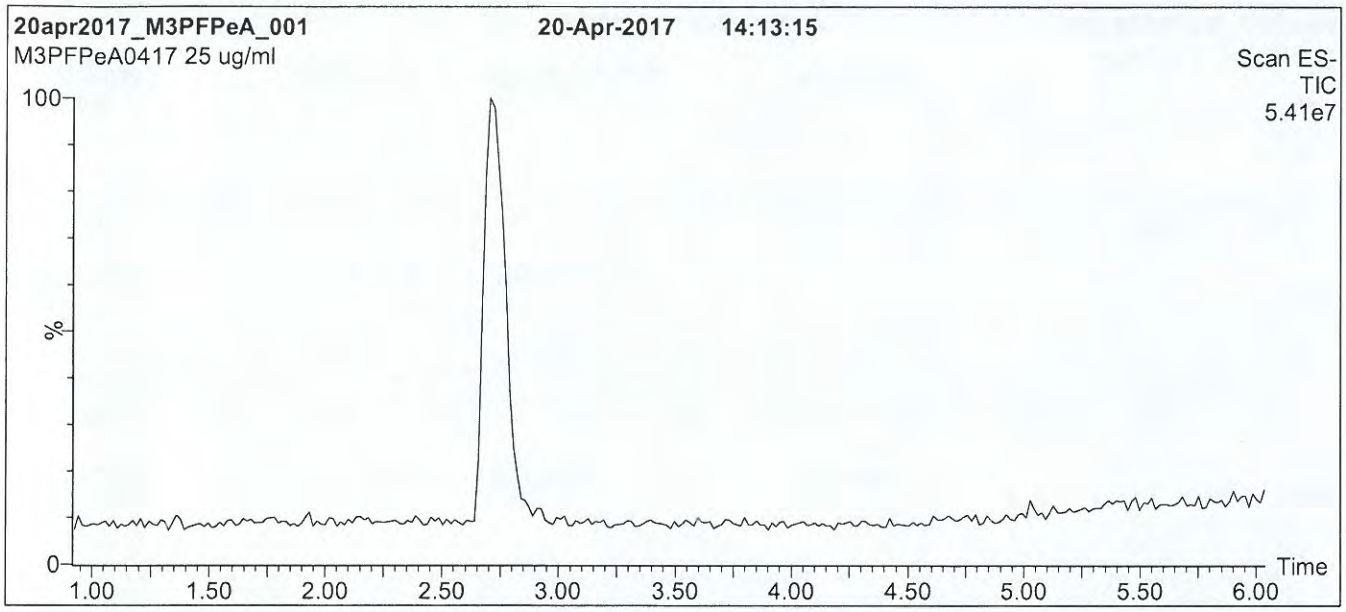
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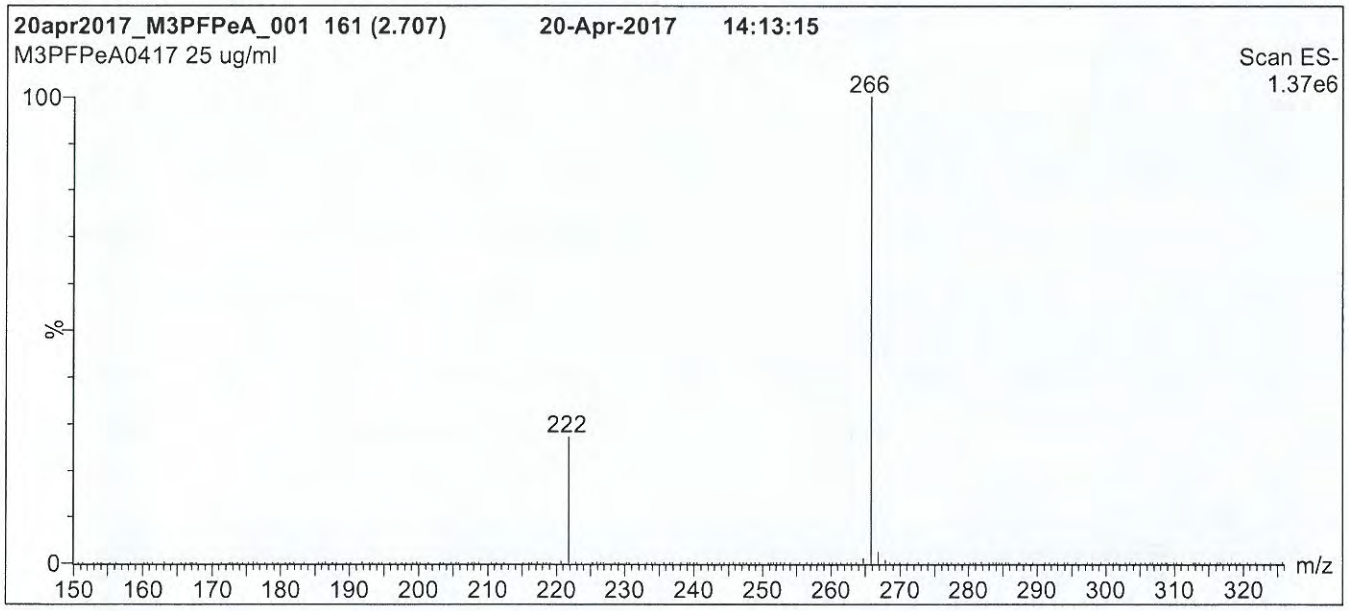
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17L2328

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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

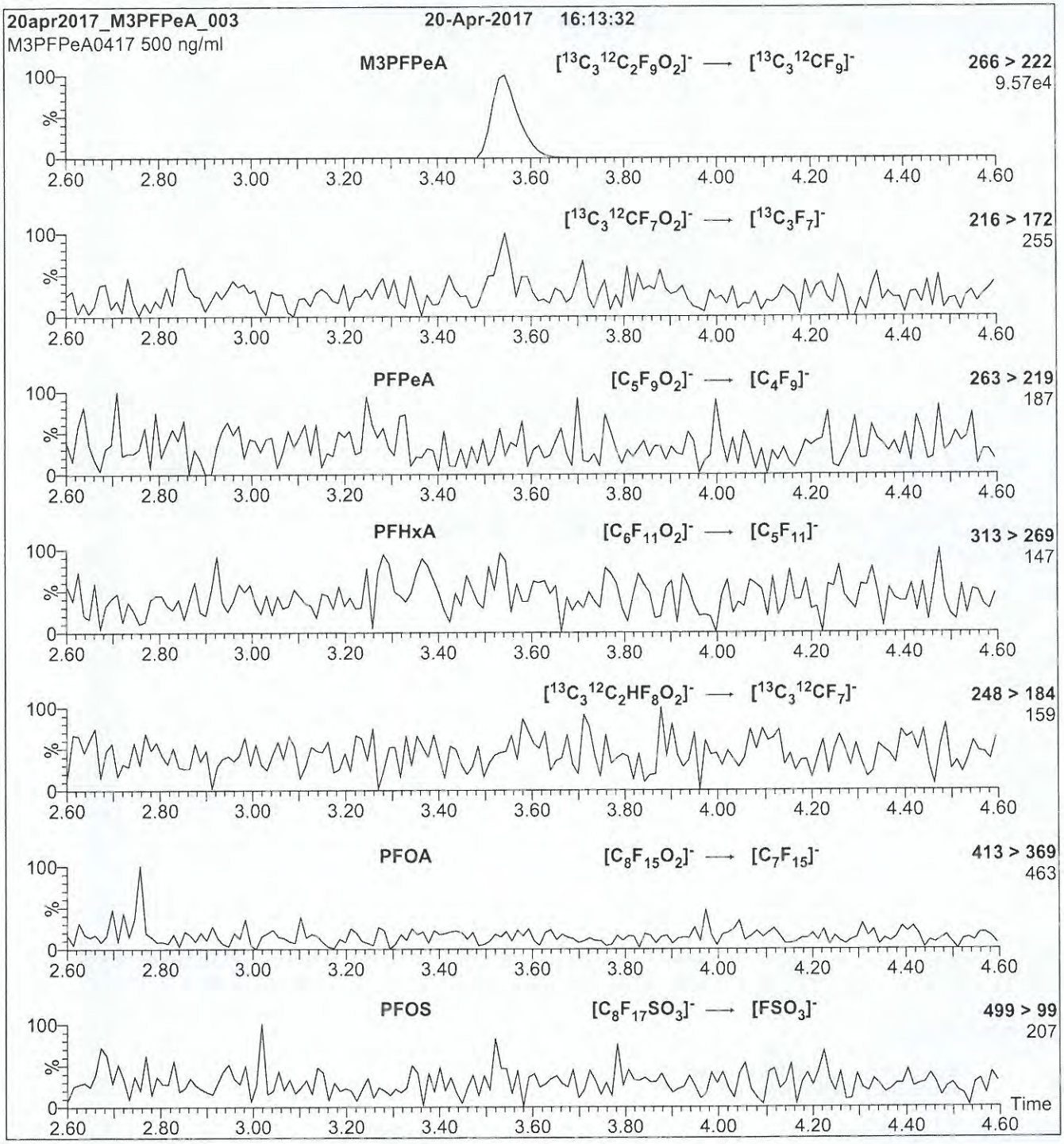
MS Parameters

Experiment: 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

17L2328

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 9

1712329

WELLINGTON LABORATORIES

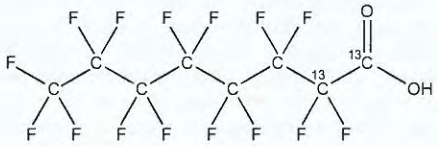
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid

LOT NUMBER: M2PFOA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_6HF_{15}O_2$	**MOLECULAR WEIGHT:**	416.05
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/26/2017		
EXPIRY DATE: (mm/dd/yyyy)	10/26/2022		
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:** 10/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1712329

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

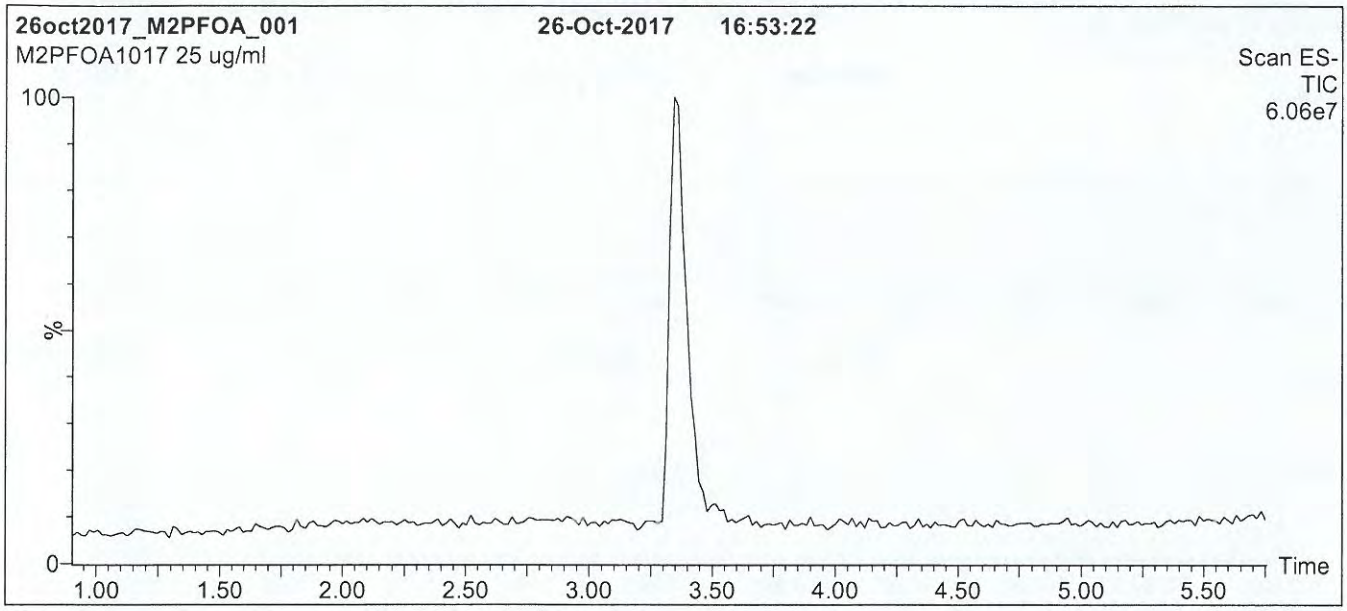
CALA Testing

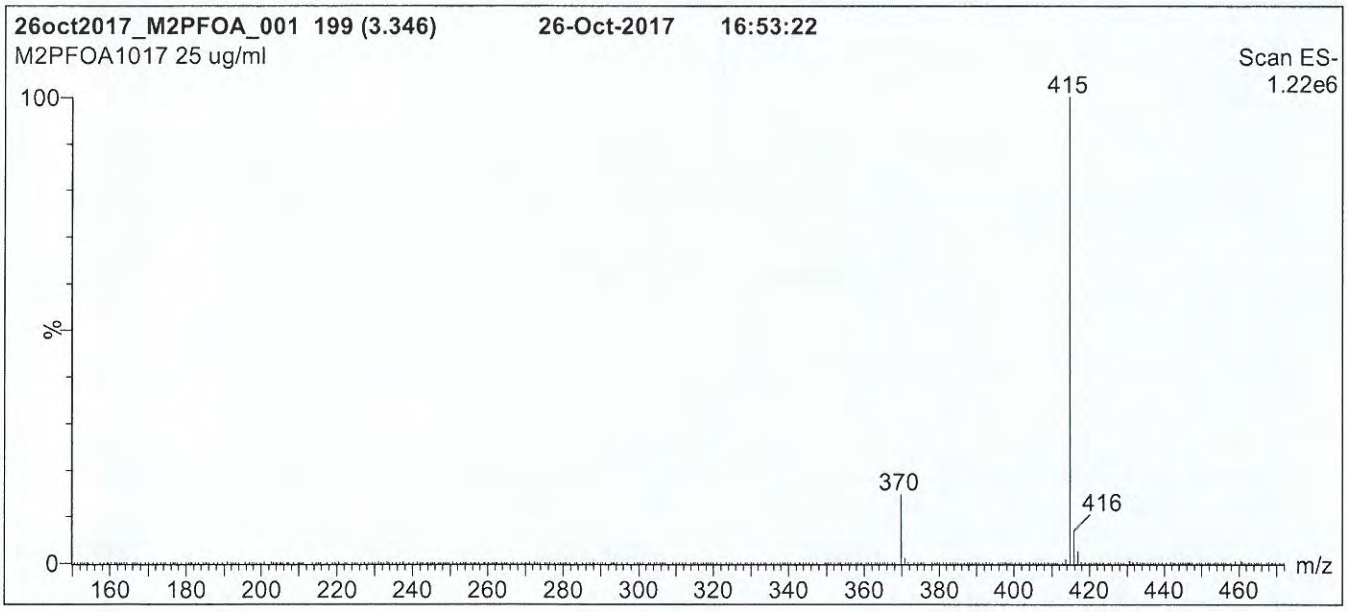
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

17L2329

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

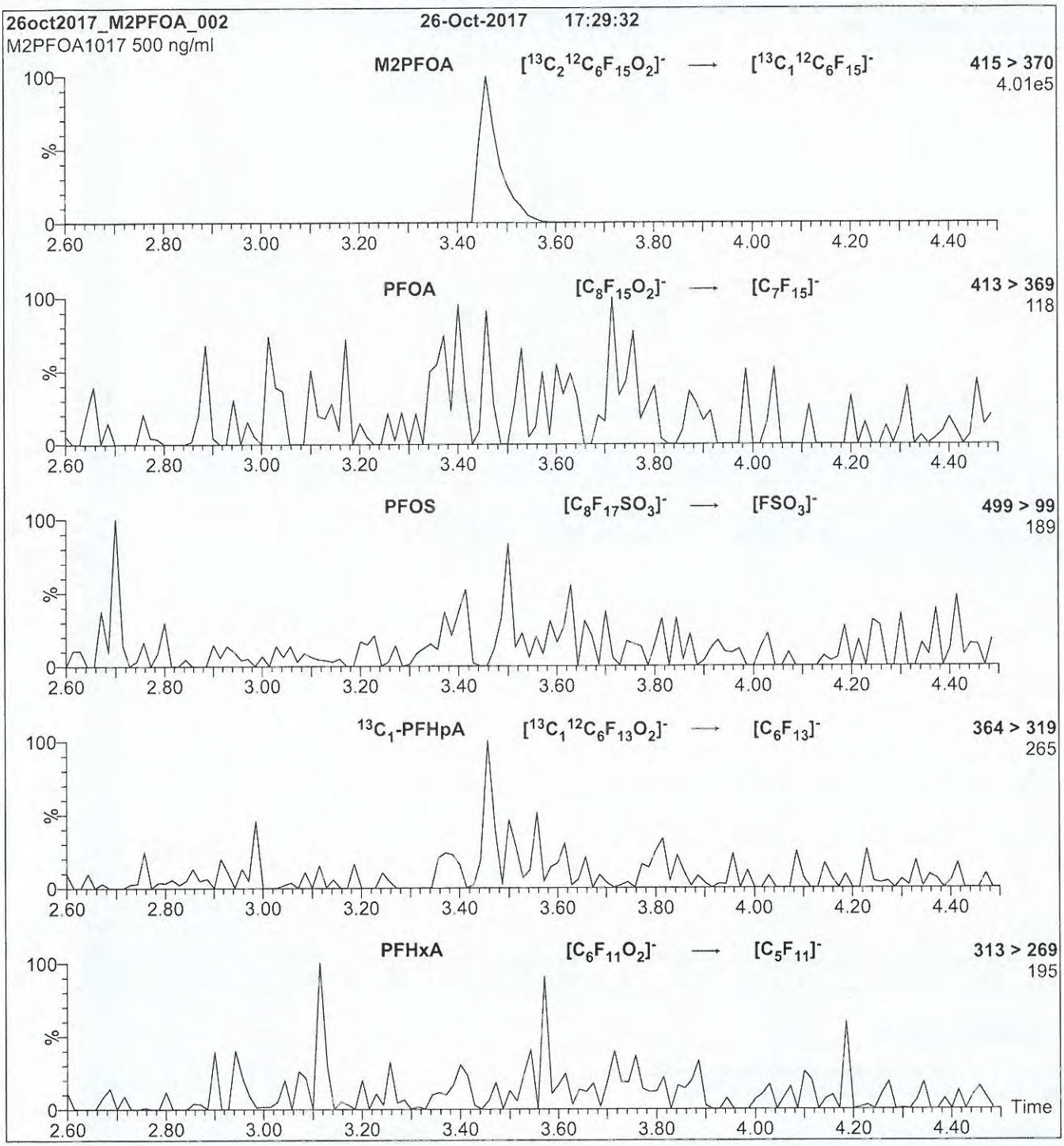
MS Parameters

Experiment: 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

17L2329

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 10

Analytical Standard Record

Vista Analytical Laboratory

17L2103

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
16G1221	br-PFOSK anion	12-Jul-16	** Vendor **	14-Oct-20	0.431
16I3002	N-MeFOSAA	30-Sep-16	** Vendor **	20-Jan-21	0.4
16I3003	N-EtFOSAA	30-Sep-16	** Vendor **	20-Jan-21	0.4
17D2615	br-PFHxSK	26-Apr-17	** Vendor **	04-Jan-22	0.44
17D2620	L-PFDS	26-Apr-17	** Vendor **	17-Feb-22	0.415
17G1313	PFTrDA	13-Jul-17	** Vendor **	02-May-22	0.4
17G1326	L-PFHpS	13-Jul-17	** Vendor **	18-Oct-21	0.42
17G1809	PFBA	18-Jul-17	** Vendor **	29-May-22	0.4
17H0820	PFDoA	08-Aug-17	** Vendor **	31-May-21	0.4
17H0821	PFNA	08-Aug-17	** Vendor **	30-Sep-21	0.4
17H0822	PFPeA	08-Aug-17	** Vendor **	14-Jun-22	0.4
17H0823	PFOA	08-Aug-17	** Vendor **	17-Feb-22	0.4
17H0824	PFUdA	08-Aug-17	** Vendor **	18-Oct-21	0.4
17H0825	PFHxDA	08-Aug-17	** Vendor **	25-May-21	0.4
17H0826	PFHpA	08-Aug-17	** Vendor **	02-Dec-21	0.4
17K0815	L-PFPeS	08-Nov-17	** Vendor **	11-Jan-22	0.428
17K0817	L-PFNS	08-Nov-17	** Vendor **	27-Sep-22	0.418
17K0823	4:2 FTS	08-Nov-17	Kyle Byrd-Fisher	12-Dec-21	0.43
17L2008	FOSA-I	20-Dec-17	** Vendor **	01-Sep-22	0.4
17L2009	PFTeDA	20-Dec-17	** Vendor **	21-Sep-22	0.4
17L2013	PFDA	20-Dec-17	** Vendor **	29-May-22	0.4
17L2014	PFHxA	20-Dec-17	** Vendor **	27-Sep-22	0.4
17L2020	PFODA	20-Dec-17	** Vendor **	13-Jul-22	0.4
17L2021	L-PFBS	20-Dec-17	** Vendor **	21-Sep-22	0.454
17L2022	8:2FTS	20-Dec-17	** Vendor **	12-Dec-21	0.418
17L2023	6:2FTS	20-Dec-17	** Vendor **	20-Apr-22	0.422
17L2031	N-EtFOSA-M	20-Dec-17	** Vendor **	05-Jul-22	2
17L2032	N-MeFOSA-M	20-Dec-17	** Vendor **	05-Jul-22	2
17L2033	N-EtFOSE-M	20-Dec-17	** Vendor **	24-Apr-22	2
17L2034	N-MeFOSE-M	20-Dec-17	** Vendor **	24-Apr-22	2

Description:	PFC NS Stock	Expires:	21-Dec-19
Standard Type:	Analyte Spike	Prepared:	21-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	21-Dec-17 11:29 by INJ

PFOS and PFHxS linear and branched components

Analyte	CAS Number	Concentration	Units
L-PFDS		1	ug/mL
L-PFTrDA		1	ug/mL
L-PFTeDA		1	ug/mL
L-PFPeA		1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

17L2103

Description:	PFC NS Stock	Expires:	21-Dec-19
Standard Type:	Analyte Spike	Prepared:	21-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	21-Dec-17 11:29 by INJ

PFOS and PFHxS linear and branched components

Analyte	CAS Number	Concentration	Units
L-PFOSA		1	ug/mL
L-PFOS		0.789	ug/mL
L-PFODA		1	ug/mL
L-PFOA		1	ug/mL
L-PFNA		1	ug/mL
L-PFHxS		0.812	ug/mL
L-PFHxDA		1	ug/mL
L-PFHxA		1	ug/mL
4:2 FTS		1	ug/mL
L-PFHpA		1	ug/mL
MeFOSAA	2355-31-9	1	ug/mL
L-PFDoA		1	ug/mL
L-PFDA		1	ug/mL
L-PFBS		1	ug/mL
L-PFBA		1	ug/mL
L-8:2FTS		1	ug/mL
L-6:2 FTS		1	ug/mL
EtFOSE	1691-99-2	5	ug/mL
EtFOSAA	2991-50-6	1	ug/mL
EtFOSA	4151-50-2	5	ug/mL
Br-PFHxS	3871-99-6	0.189	ug/mL
8:2 FTS	39108-34-4	1	ug/mL
6:2 FTS	27619-97-2	1	ug/mL
L-PFHpS		1	ug/mL
PFNA	375-95-1	1	ug/mL
Total PFHxS		1	ug/mL
Total PFHpS		1	ug/mL
Total PFDS		1	ug/mL
Total 6:2 FTS		1	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFTrDA	72629-94-8	1	ug/mL
PFTeDA	376-06-7	1	ug/mL
PFPeS	630402-22-1	1	ug/mL
PFPeA	2706-90-3	1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

17L2103

Description:	PFC NS Stock	Expires:	21-Dec-19
Standard Type:	Analyte Spike	Prepared:	21-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	21-Dec-17 11:29 by INJ

PFOS and PFHxS linear and branched components

Analyte	CAS Number	Concentration	Units
PFOSA	754-91-6	1	ug/mL
PFOS	1763-23-1	1	ug/mL
PFODA	16517-11-6	1	ug/mL
L-PFUnA		1	ug/mL
PFNS	98789-57-2	1	ug/mL
MeFOSA	31506-32-8	5	ug/mL
PFHxS	355-46-4	1	ug/mL
PFHxDA	67905-19-5	1	ug/mL
PFHxA	307-24-4	1	ug/mL
PFHpS	375-92-8	1	ug/mL
PFHpA	375-85-9	1	ug/mL
PFDS	335-77-3	1	ug/mL
PFDoA	307-55-1	1	ug/mL
PFDA	335-76-2	1	ug/mL
PFBS	375-73-5	1	ug/mL
PFBA	375-22-4	1	ug/mL
MeFOSE	24448-09-7	5	ug/mL
Total PFUnA		1	ug/mL
PFOA	335-67-1	1	ug/mL

1681221

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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:	brPFOSK1015
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)	10/13/2015
LAST TESTED: (mm/dd/yyyy)	10/14/2015
EXPIRY DATE: (mm/dd/yyyy)	10/14/2020
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 ^{19}F-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).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

CALA

ANAB ACCREDITED

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

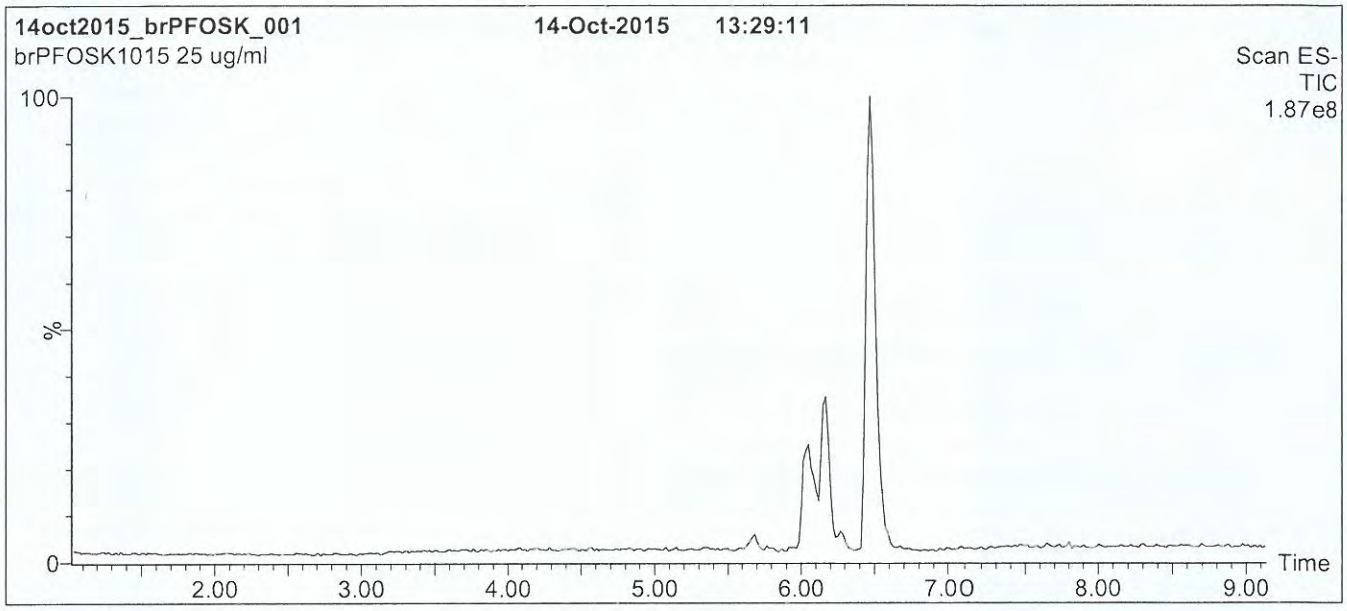
Table A: **br-PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

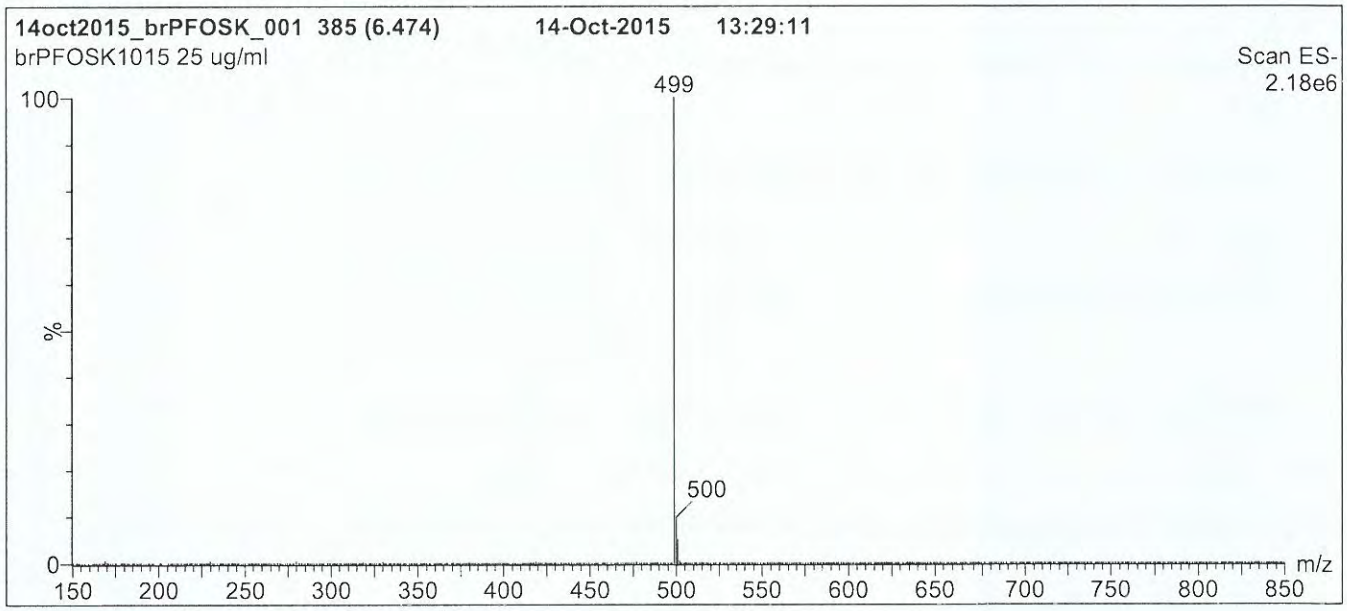
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07

* Percent of total perfluorooctanesulfonate isomers only. Isomers are labelled in Figure 2.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 10/15/2015
B.G. Chittim (mm/dd/yyyy)

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 12 min and hold for 2 min.
Return to initial conditions over 0.5 min.
Time: 16 min

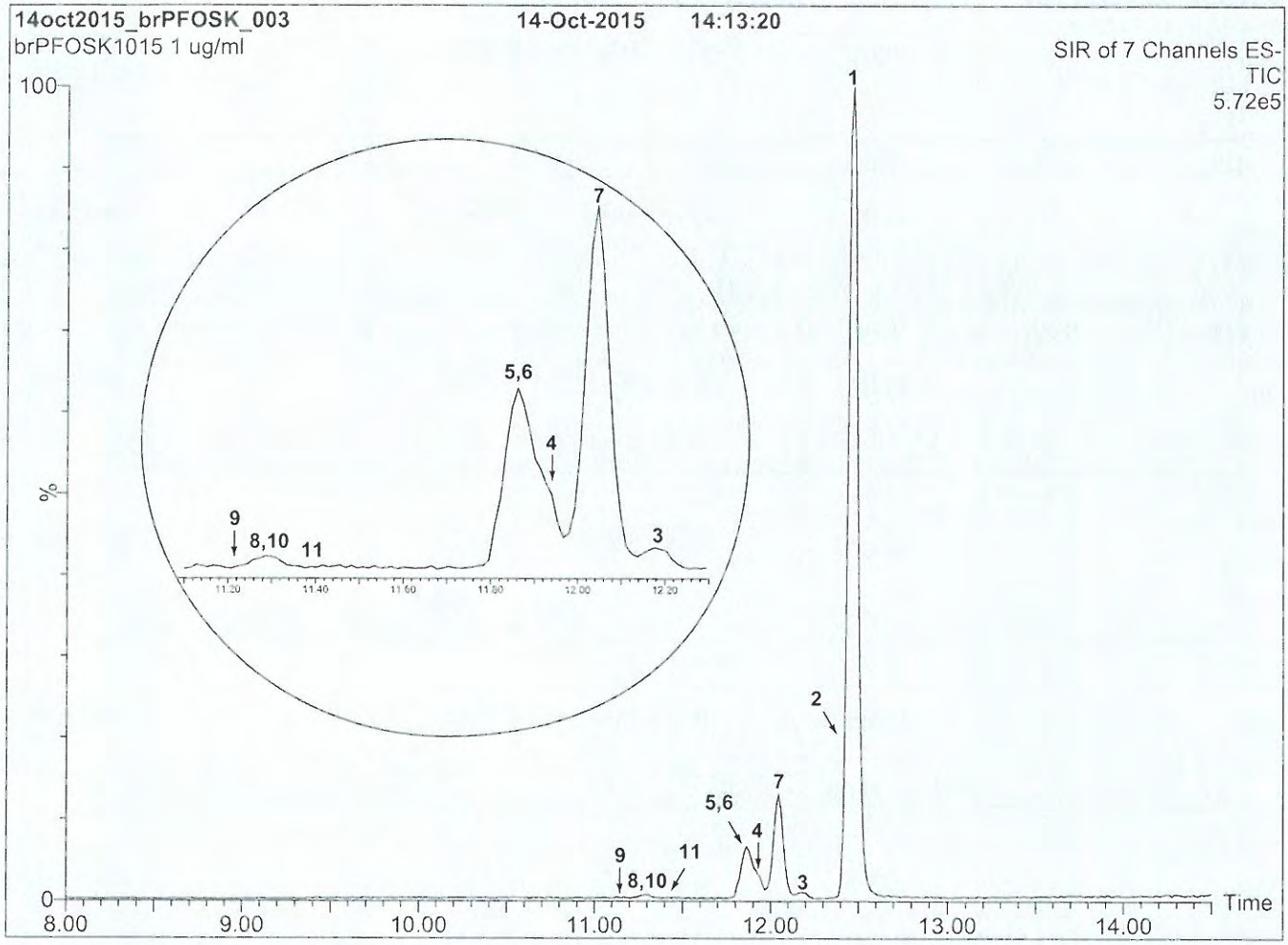
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

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 RP_{18} (1.7 µm, 2.1 x 100 mm)

Injection: 1.0 µg/ml of br-PFOSK

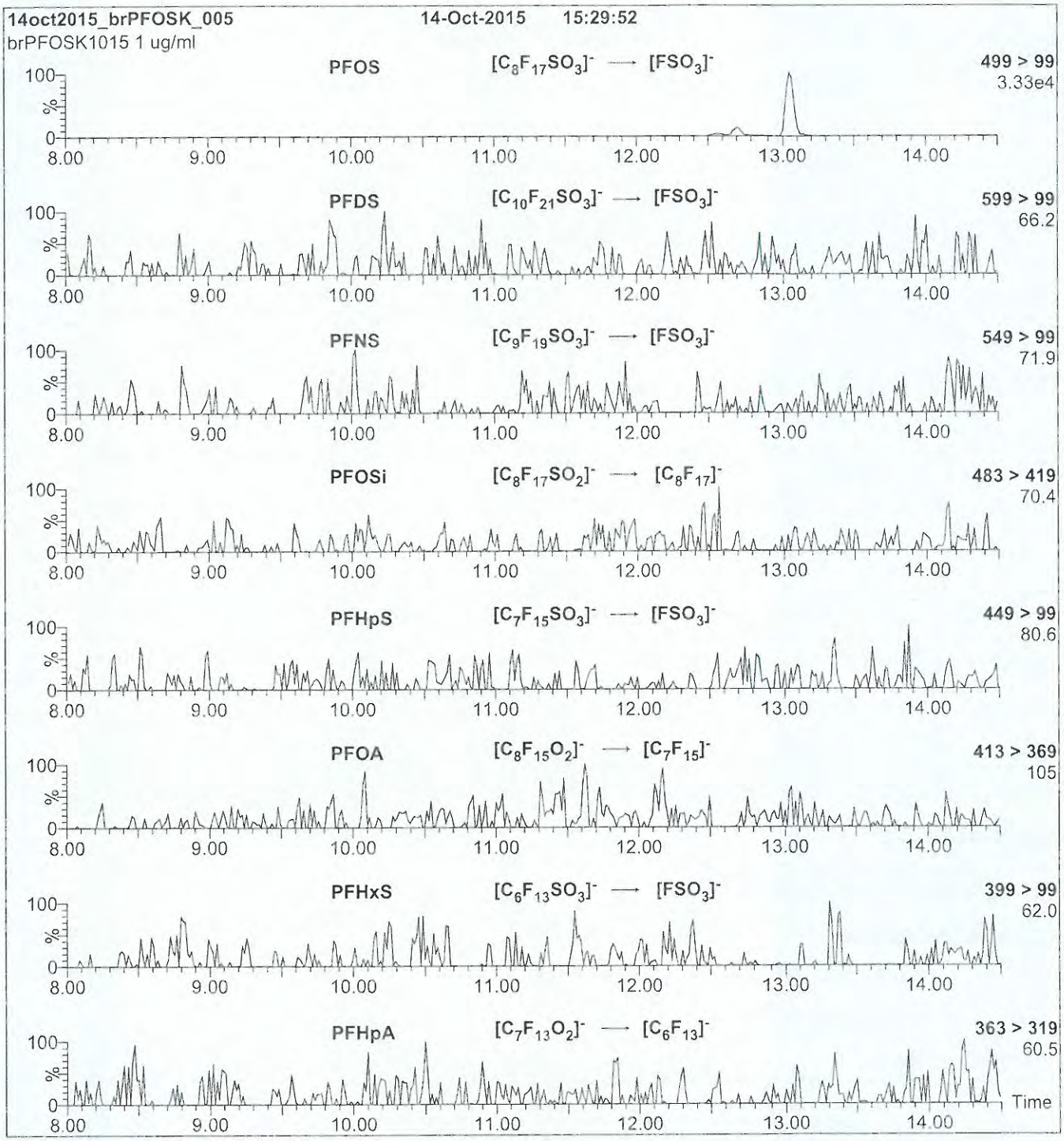
Mobile Phase: Gradient
45% (80:20 MeOH:ACN) / 55% H_2O (both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 15 min and hold for 3 min.
Return to initial conditions over 1 min.
Time: 20 min

Flow: 300 µl/min

MS Conditions:

SIR (ES^-)
Source = 110 °C
Desolvation = 325 °C
Cone Voltage = 60V

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) = 3.06e-3
Collision Energy (eV) = 11-50 (variable)

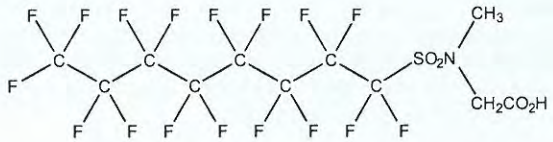
IGI3002

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSAA
LOT NUMBER: NMeFOSAA0116
COMPOUND: N-methylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:
CAS #: 2355-31-9



MOLECULAR FORMULA: $C_{11}H_6F_{17}NO_4S$
MOLECULAR WEIGHT: 571.21
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/20/2016
EXPIRY DATE: (mm/dd/yyyy) 01/20/2021
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.
- 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 **Date:** 01/21/2016 (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

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

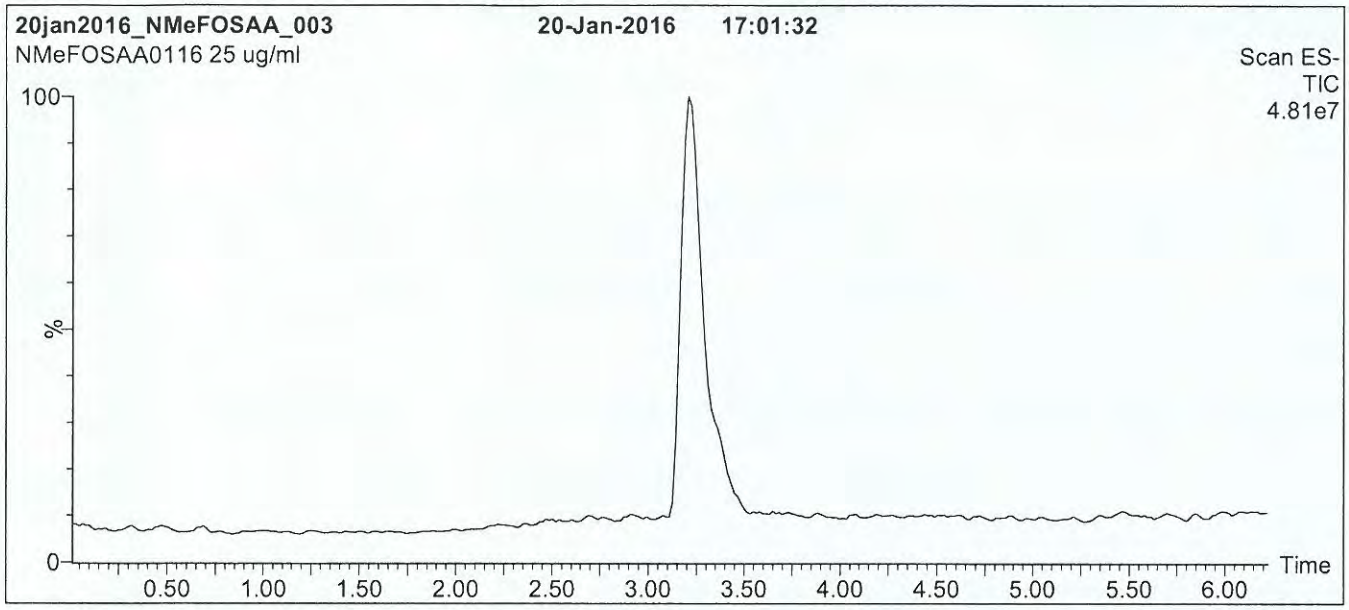
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

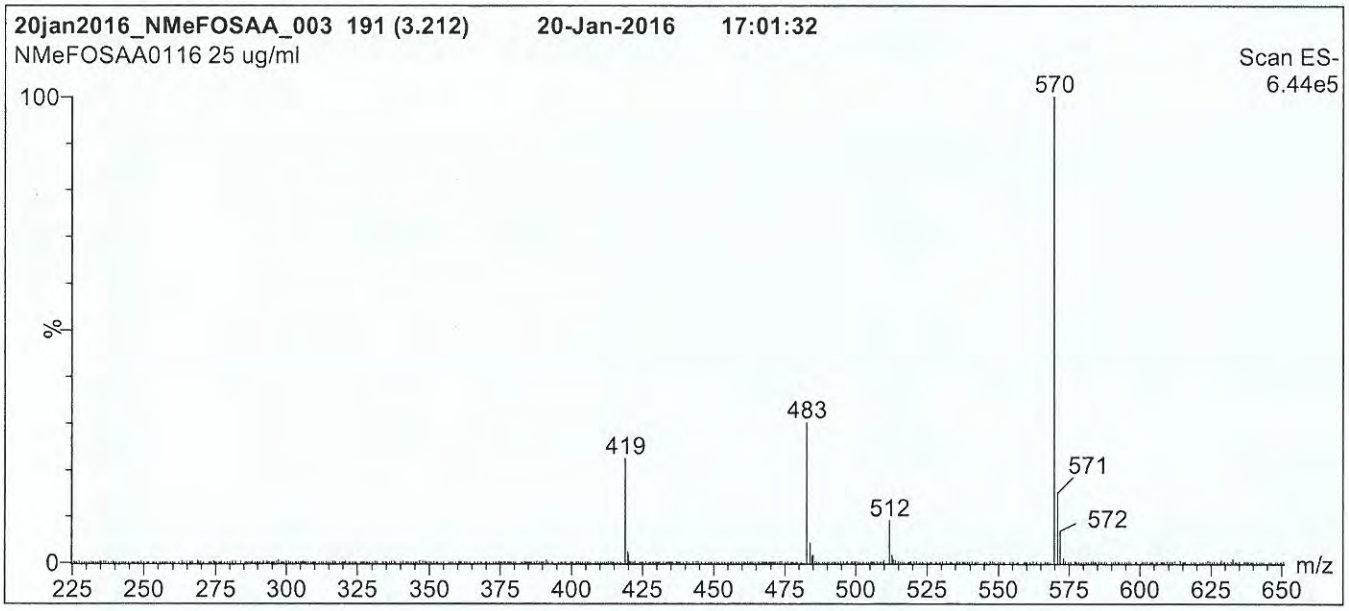
CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

Figure 1: **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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

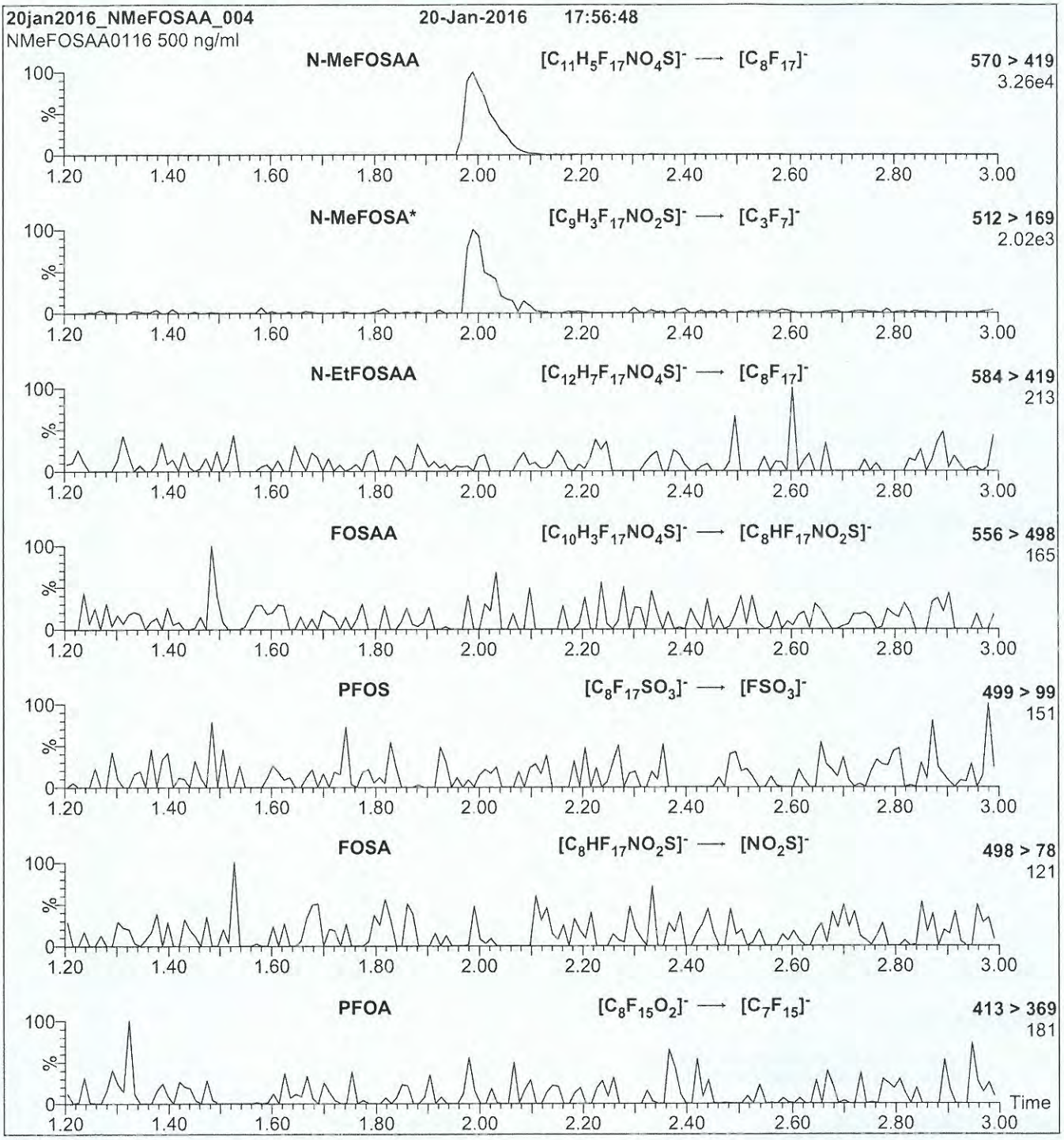
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (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

Figure 2: **N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



***Note**: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 25

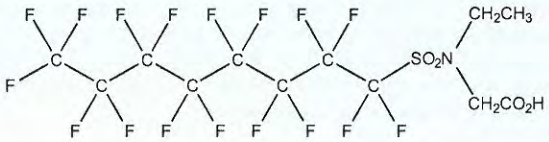
1GI3003

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSAA **LOT NUMBER:** NEtFOSAA0116
COMPOUND: N-ethylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 2991-50-6



MOLECULAR FORMULA: $C_{12}H_8F_{17}NO_4S$ **MOLECULAR WEIGHT:** 585.23
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/20/2016
EXPIRY DATE: (mm/dd/yyyy) 01/20/2021
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.
- 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 **Date:** 01/21/2016 (mm/dd/yyyy)

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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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 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.

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QUALITY MANAGEMENT:

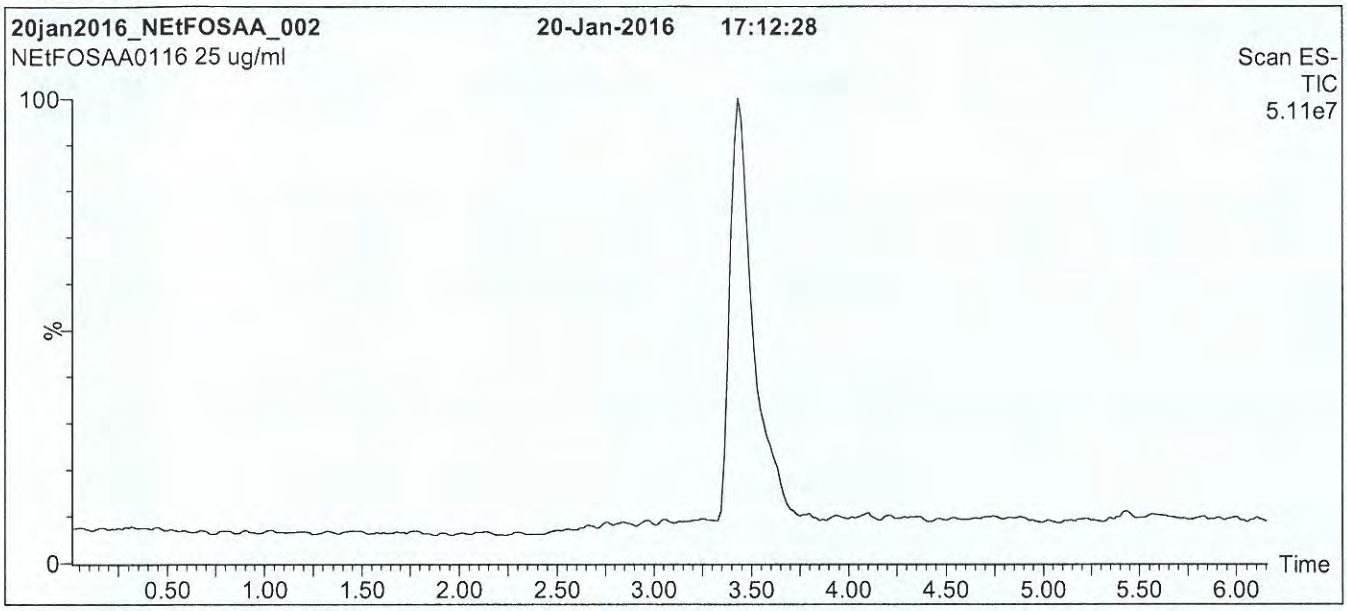
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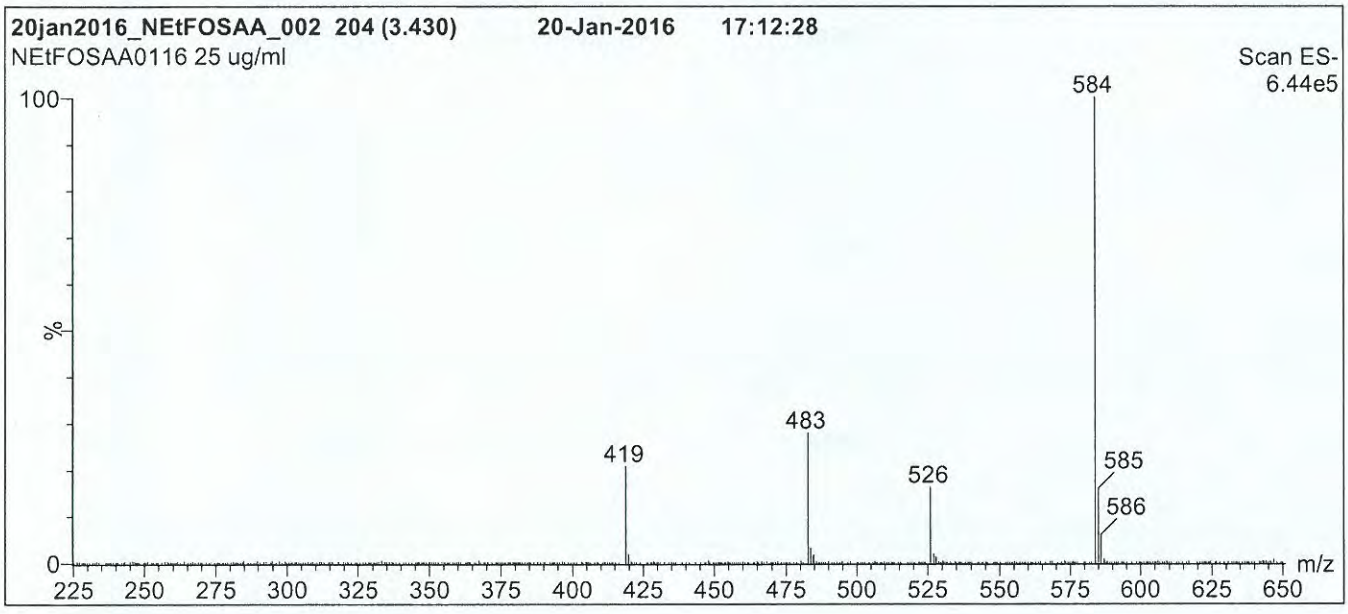
CALA

ANAB ACCREDITED

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Figure 1: **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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

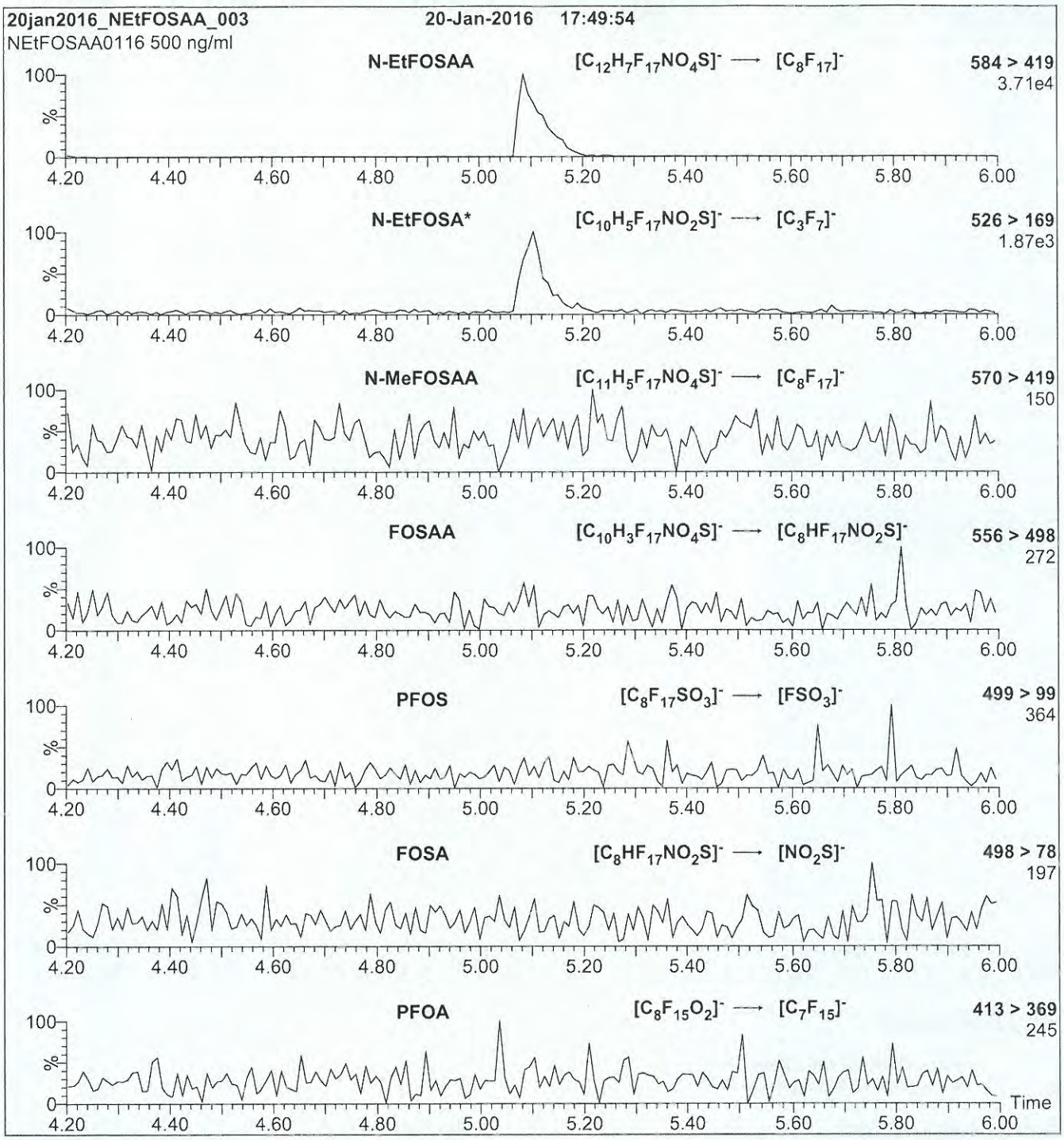
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (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

Figure 2: **N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Note: N-EtFOSA is formed by fragmentation of N-EtFOSAA.

Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 25

1702615

WELLINGTON LABORATORIES

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 ^{19}F-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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CALA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

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

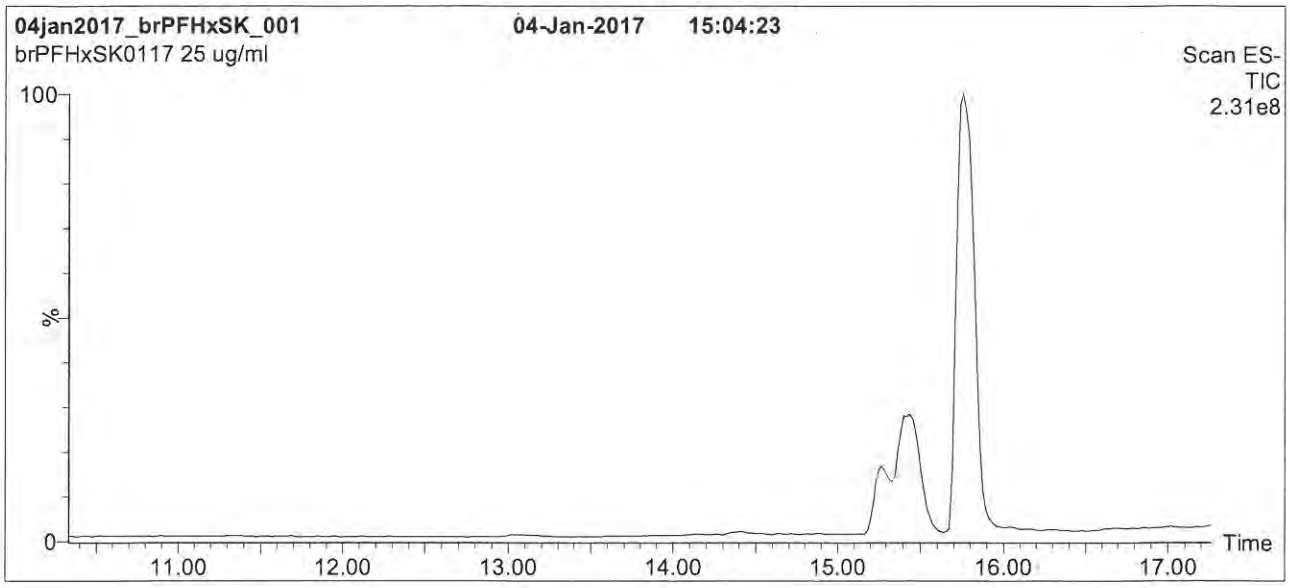
Table A: **br-PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

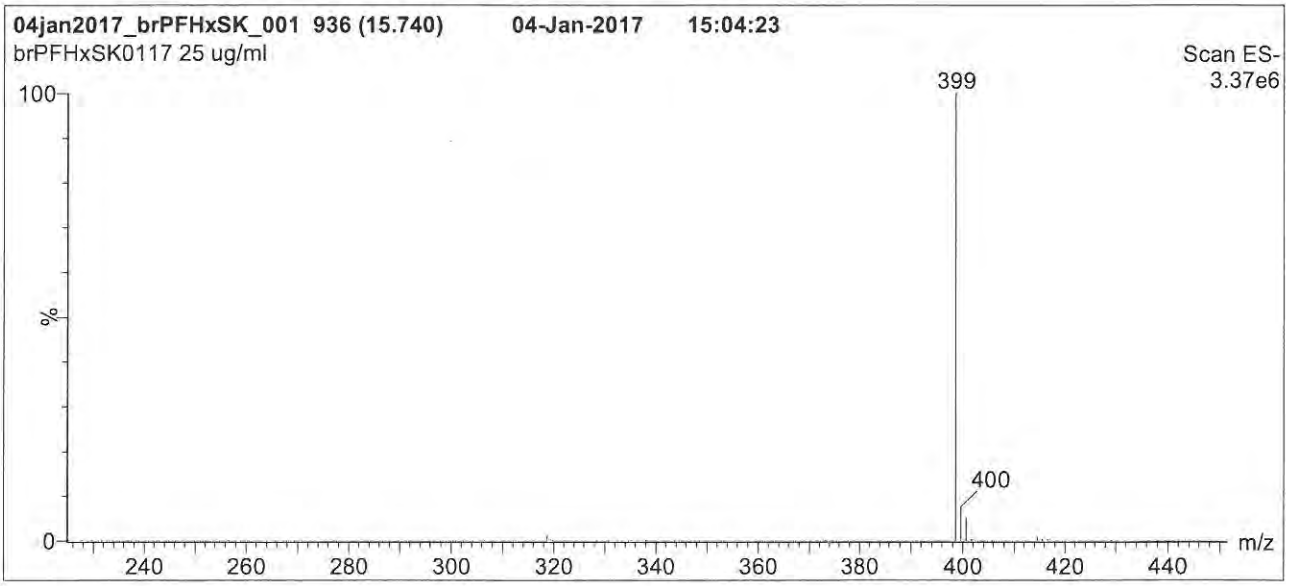
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)CF_2CF_2SO_3^-K^+$	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)

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H_2O
(both with 10 mM NH_4OAc 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

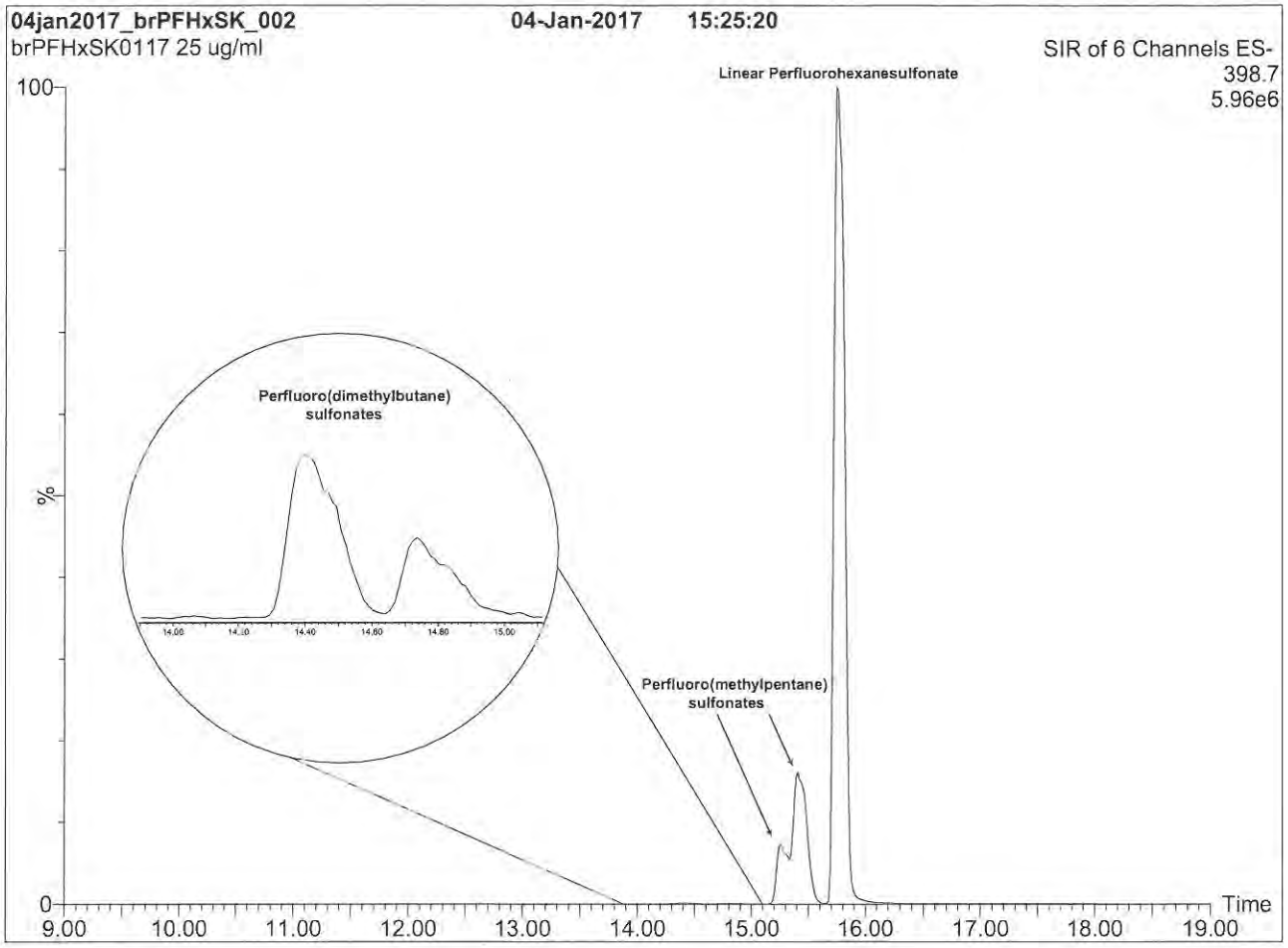
Flow: 300 µl/min

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

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H_2O
(both with 10 mM NH_4OAc 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

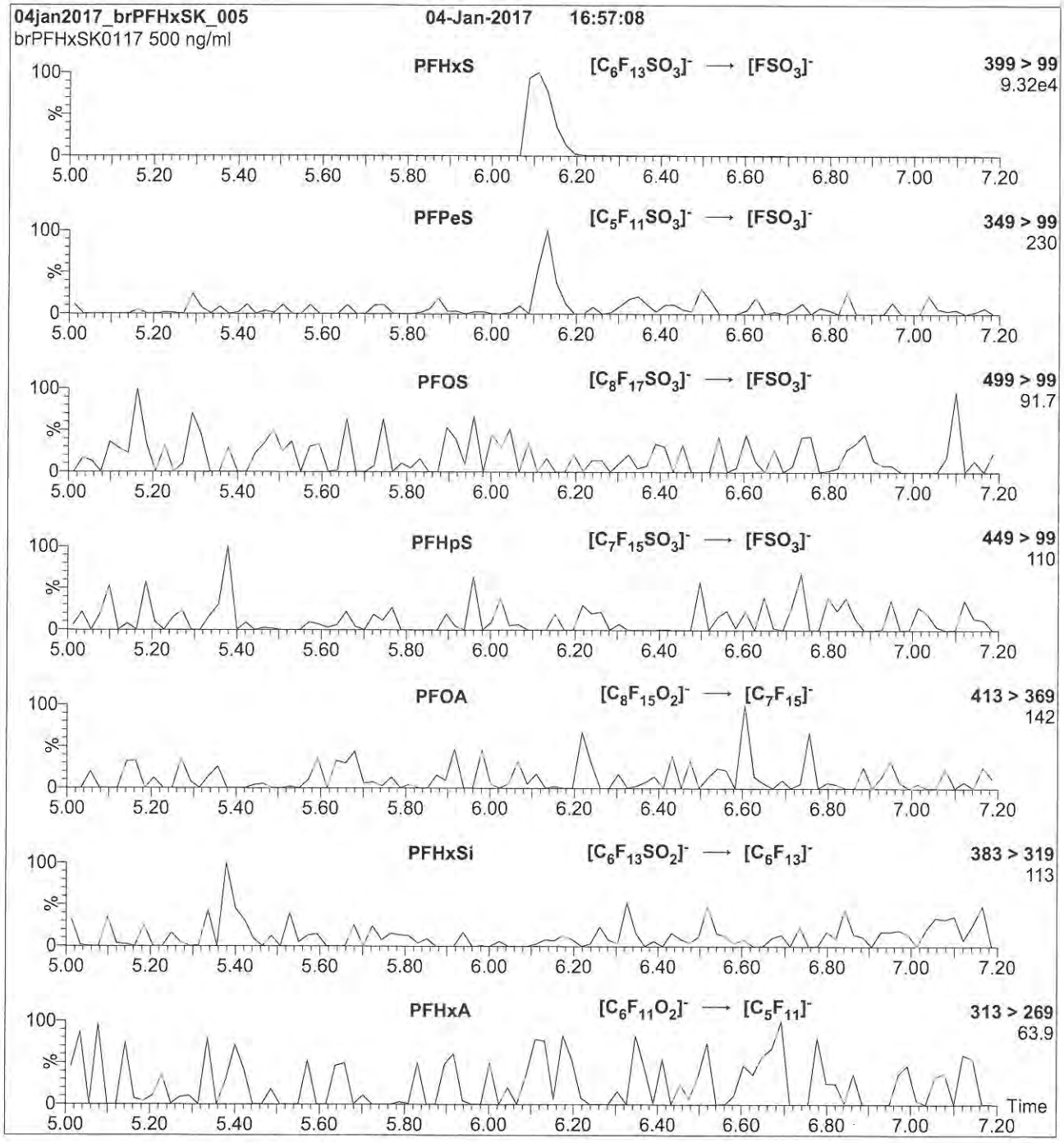
Flow: 300 µl/min

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

Figure 3: **br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 30

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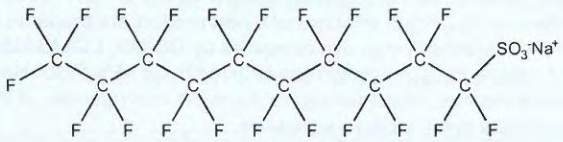
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFDS
LOT NUMBER: LPFDS0217
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 ± 2.5 µg/ml (Na salt)
48.2 ± 2.4 µg/ml (PFDS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
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.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

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Certified By: B.G. Chittim **Date:** 02/22/2017 (mm/dd/yyyy)

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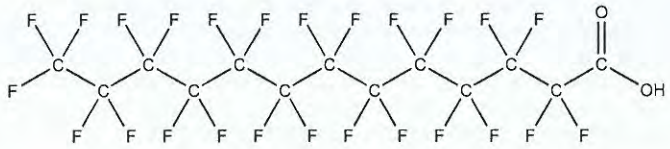
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFTrDA
COMPOUND: Perfluoro-n-tridecanoic acid

LOT NUMBER: PFTrDA0517

STRUCTURE:

CAS #: 72629-94-8



MOLECULAR FORMULA: $C_{13}HF_{25}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 664.11
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 PFDoA ($C_{12}HF_{23}O_2$), 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)

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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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

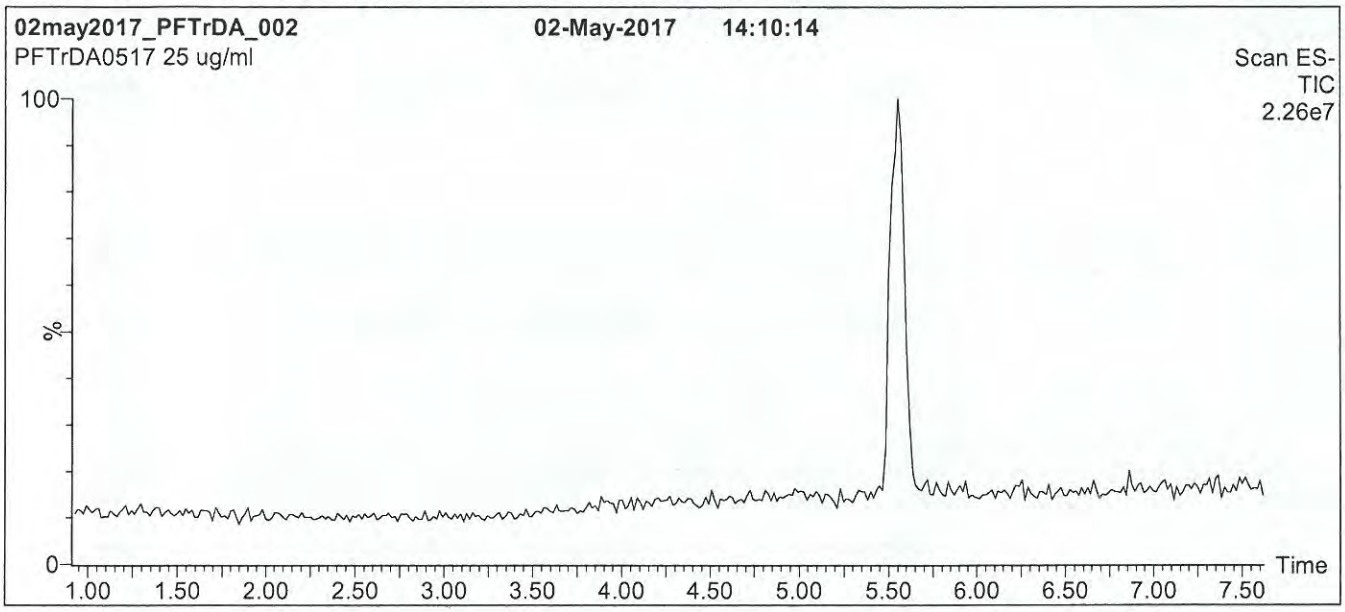
CALA

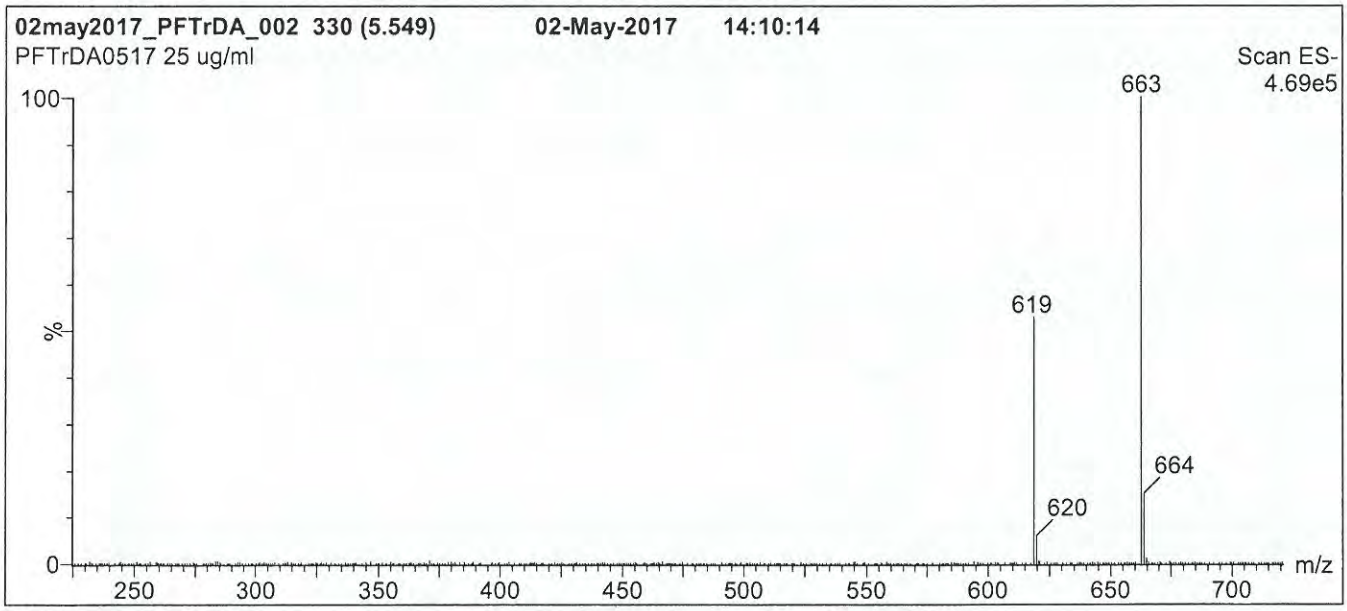
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17G1313

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

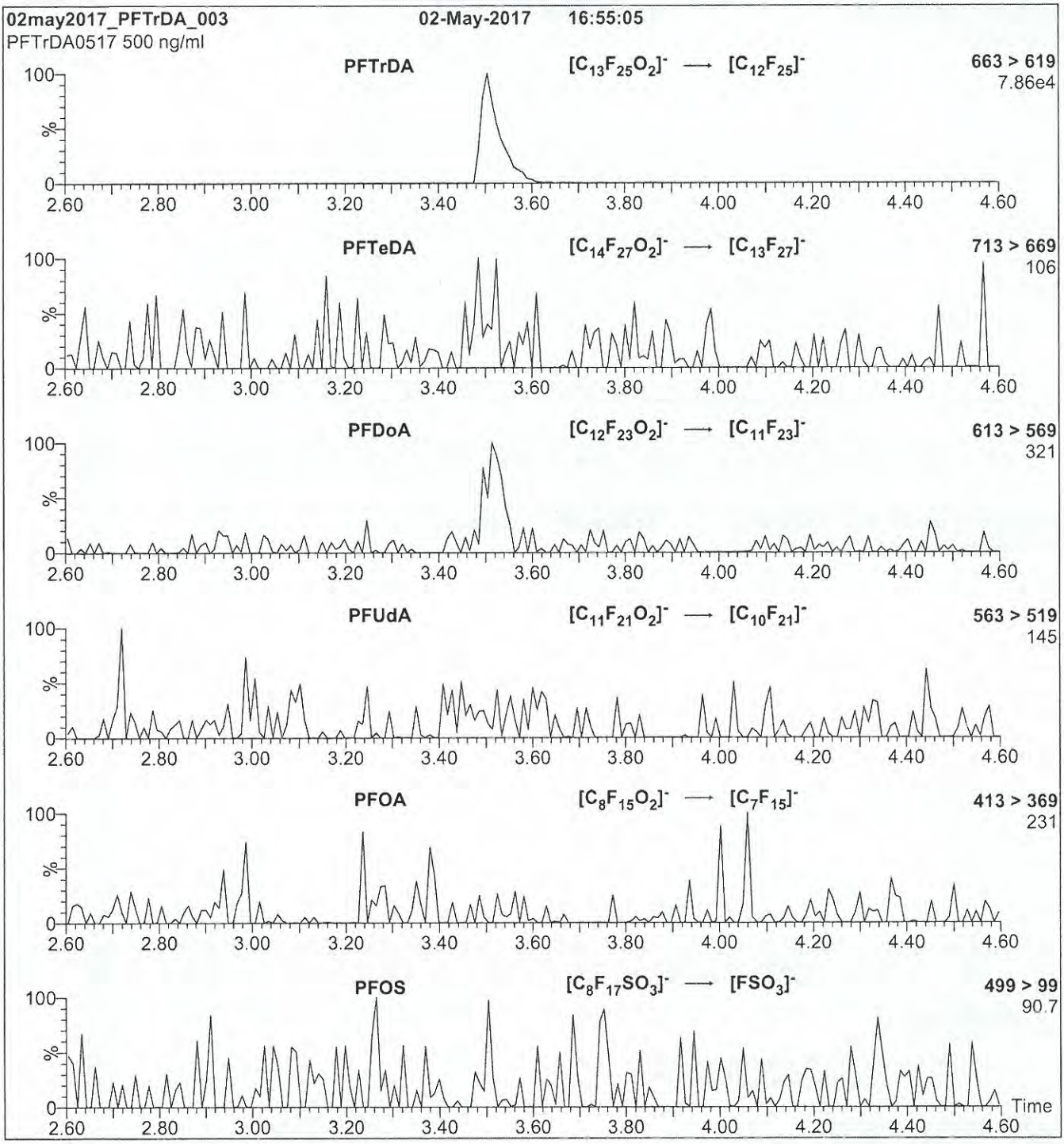
MS Parameters

Experiment: Full Scan (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

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Figure 2: **PFTrDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFTrDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3
Collision Energy (eV) = 15

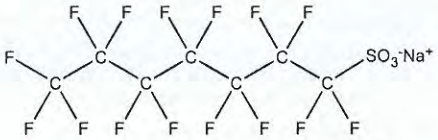
17G1326

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFHpS
COMPOUND: Sodium perfluoro-1-heptanesulfonate
LOT NUMBER: LPFHpS1016

STRUCTURE:



CAS #: Not available

MOLECULAR FORMULA:	$C_7F_{15}SO_3Na$
MOLECULAR WEIGHT:	472.10
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.6 ± 2.4 µg/ml (PFHpS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	10/18/2016
EXPIRY DATE: (mm/dd/yyyy)	10/18/2021
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 ~ 0.2% of L-PFHxS ($C_6F_{13}SO_3Na$) 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 **Date:** 10/20/2016 (mm/dd/yyyy)

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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.

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,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

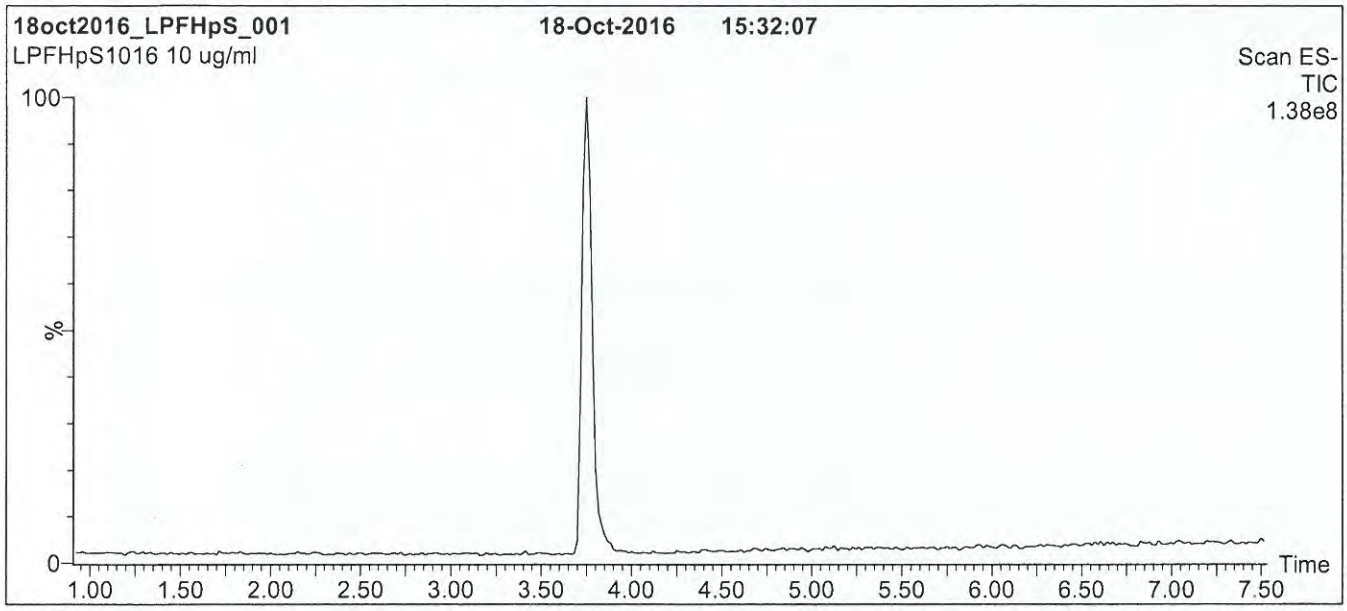
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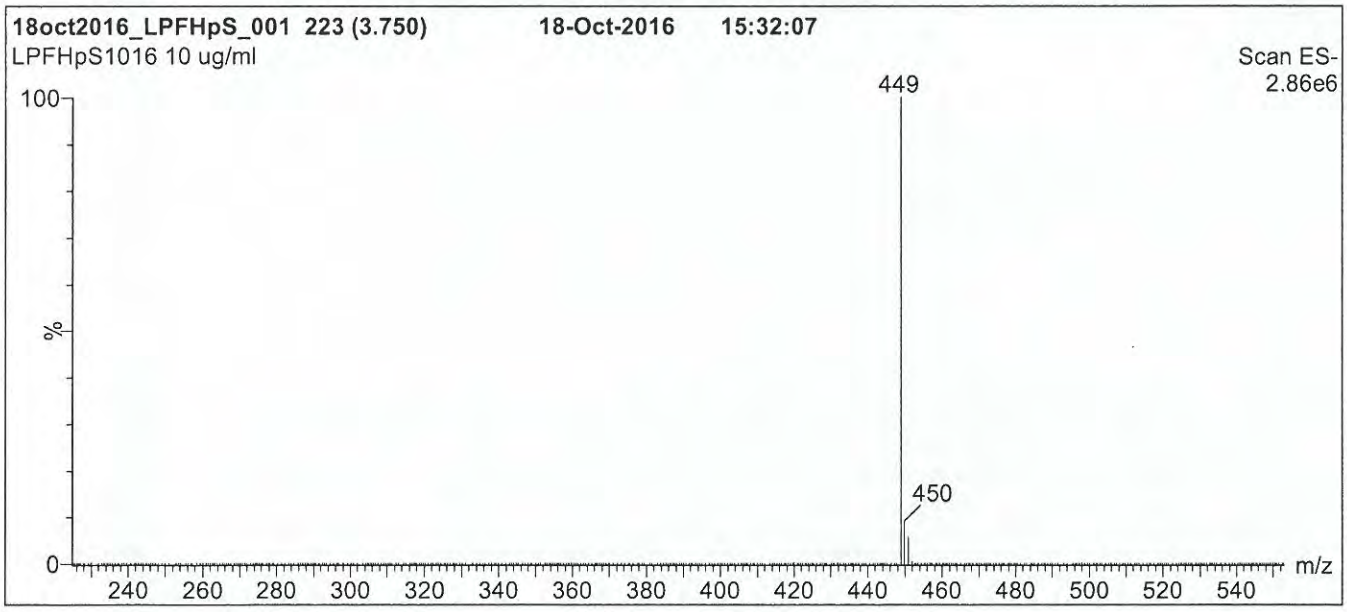
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17G1326

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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

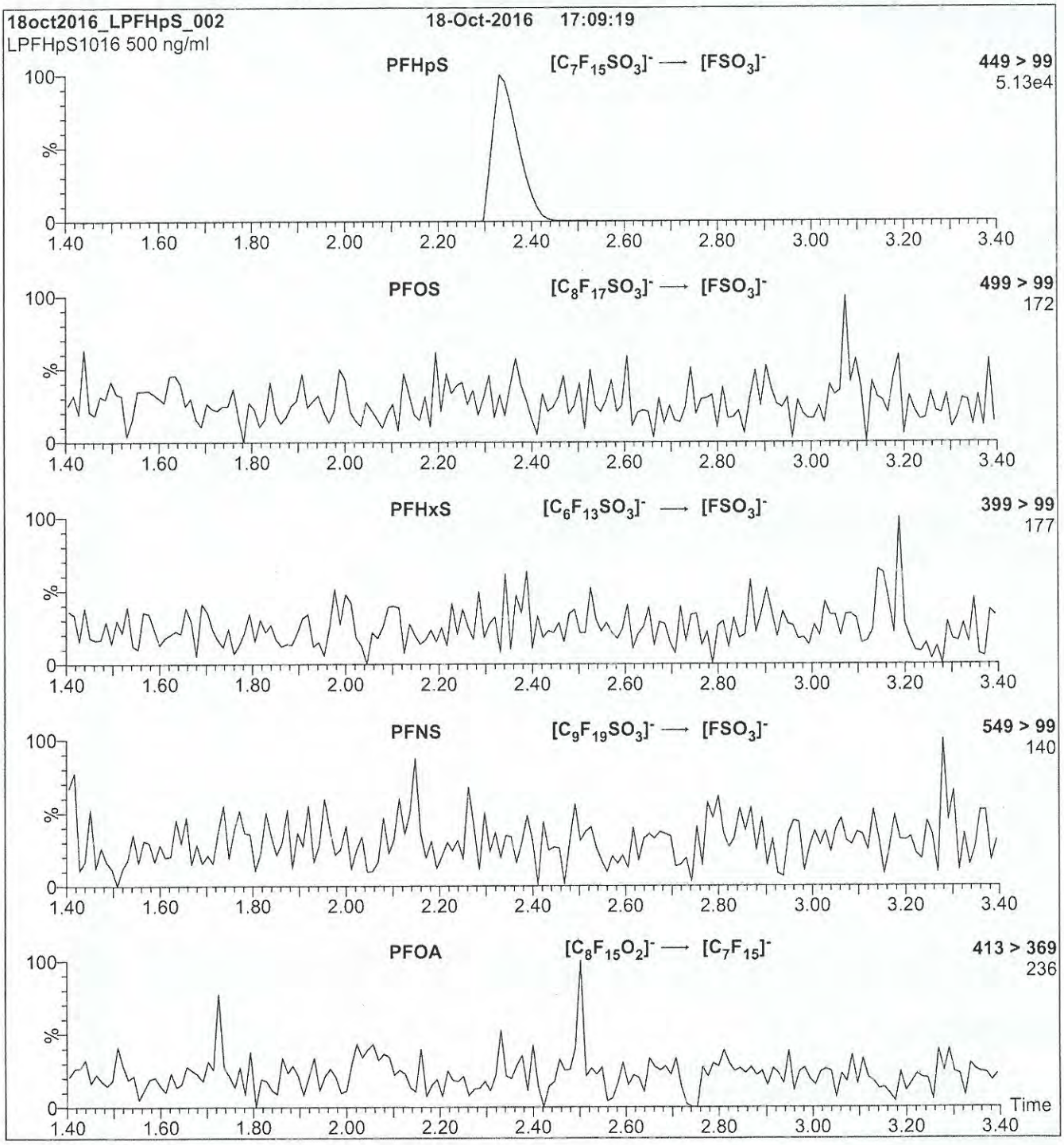
MS Parameters

Experiment: 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

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Figure 2: **L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 35

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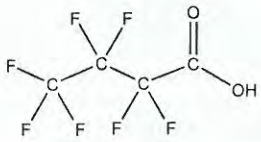
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFBA
COMPOUND: Perfluoro-n-butanoic acid

LOT NUMBER: PFBA0517

STRUCTURE:

CAS #: 375-22-4



MOLECULAR FORMULA: $C_4HF_7O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 214.04
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: _____ **Date:** 05/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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:

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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:

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QUALITY MANAGEMENT:

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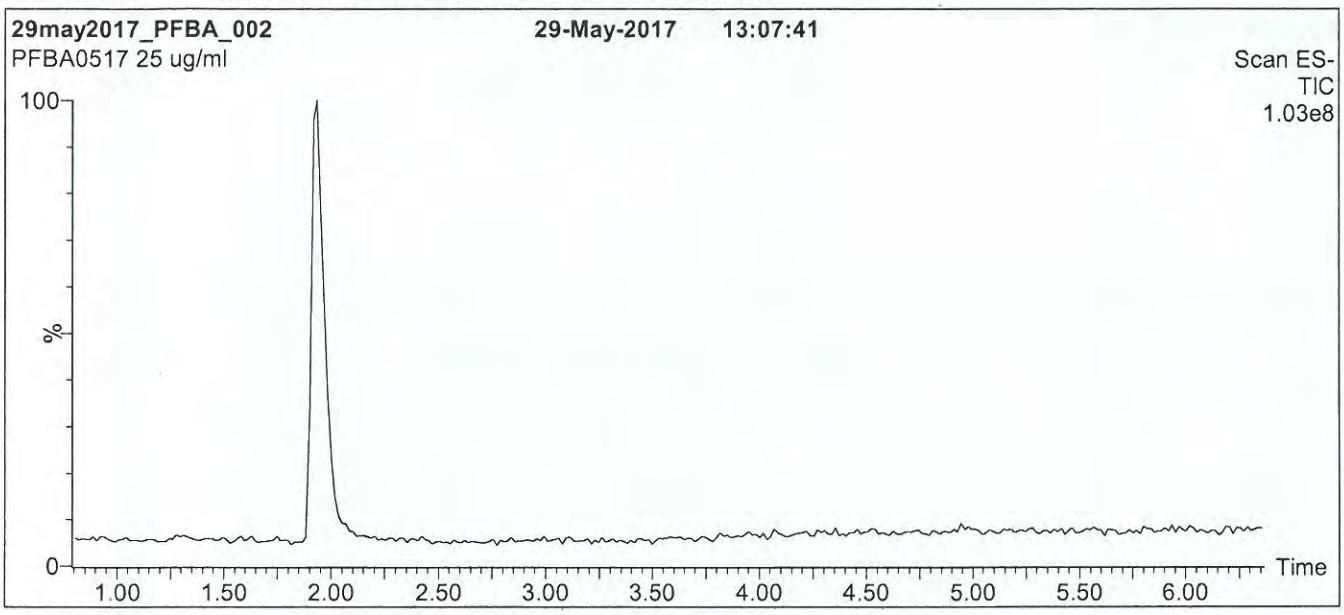
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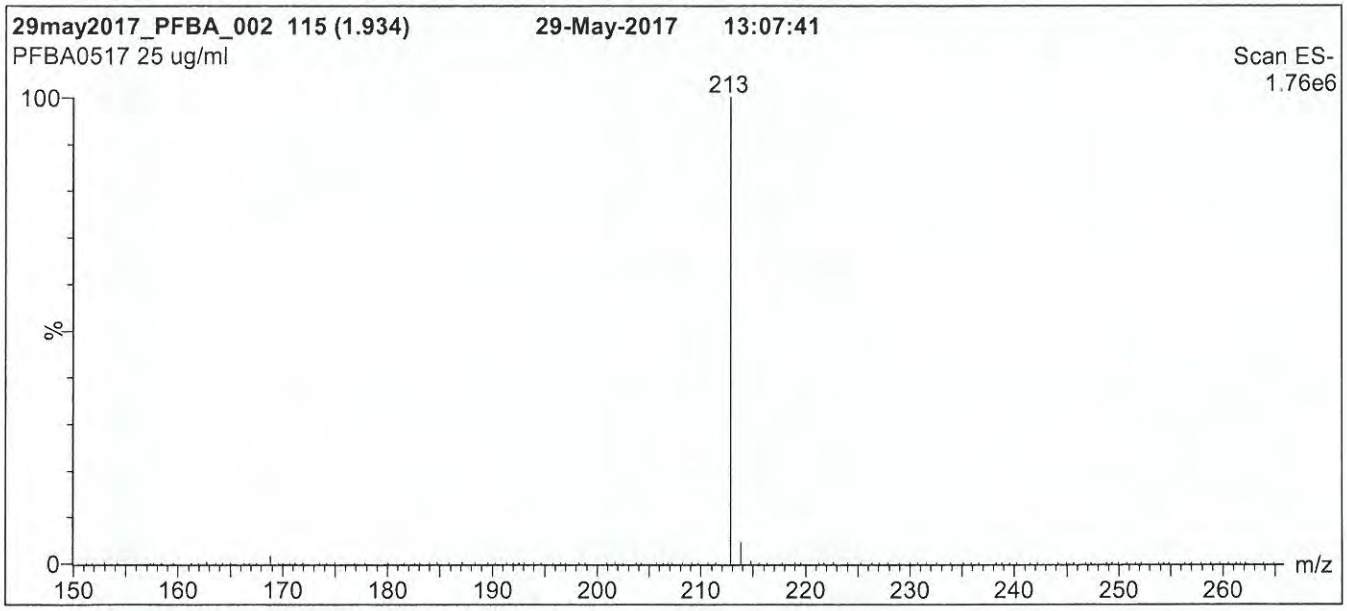
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17G1809

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc 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

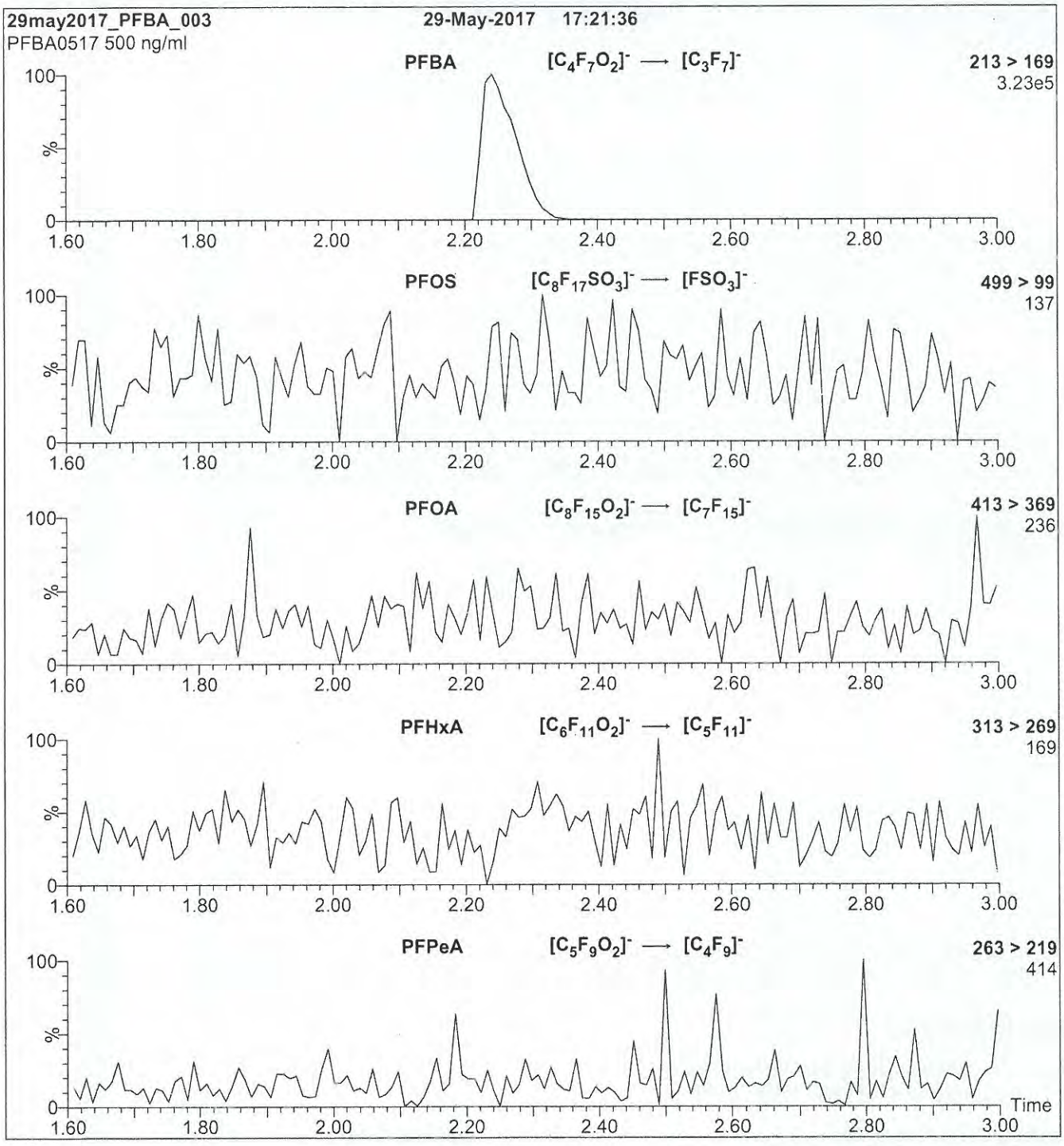
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17G1809

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

1710820

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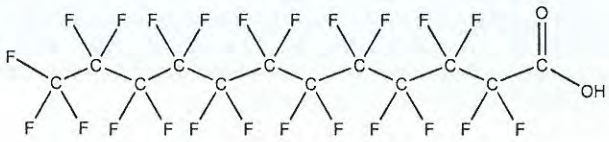
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFDoA
COMPOUND: Perfluoro-n-dodecanoic acid

LOT NUMBER: PFDoA0516

STRUCTURE:

CAS #: 307-55-1



MOLECULAR FORMULA: $C_{12}HF_{23}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 614.10
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/31/2016
EXPIRY DATE: (mm/dd/yyyy) 05/31/2021
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 06/02/2016 (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

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

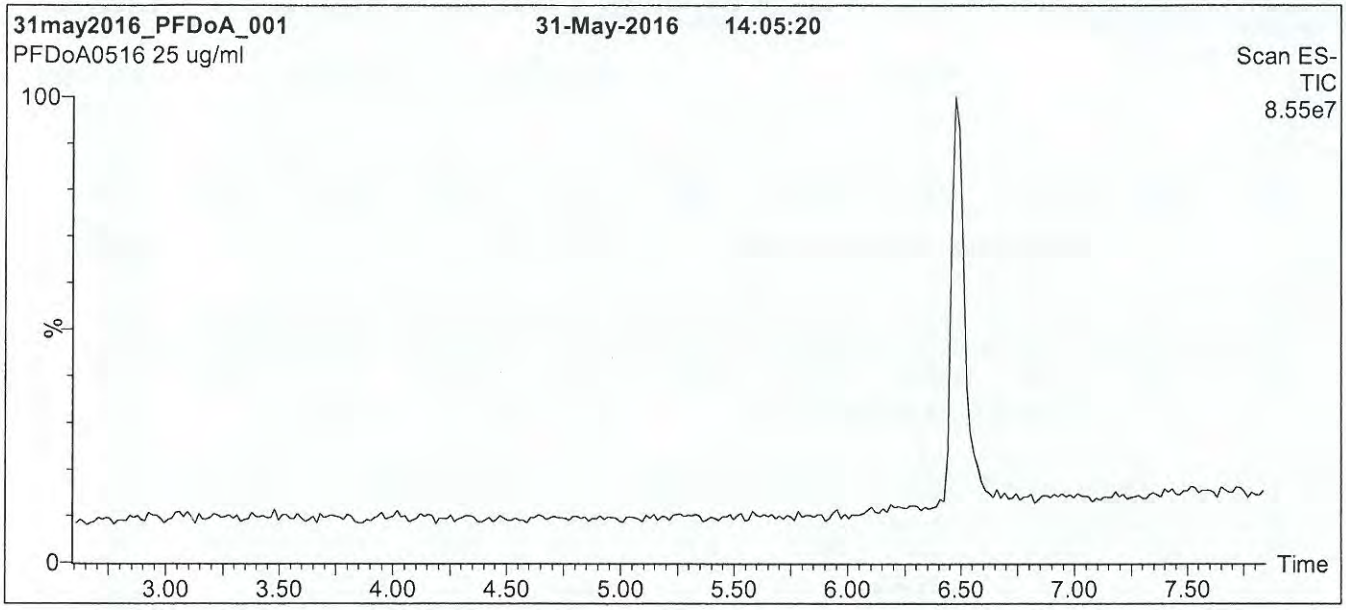
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

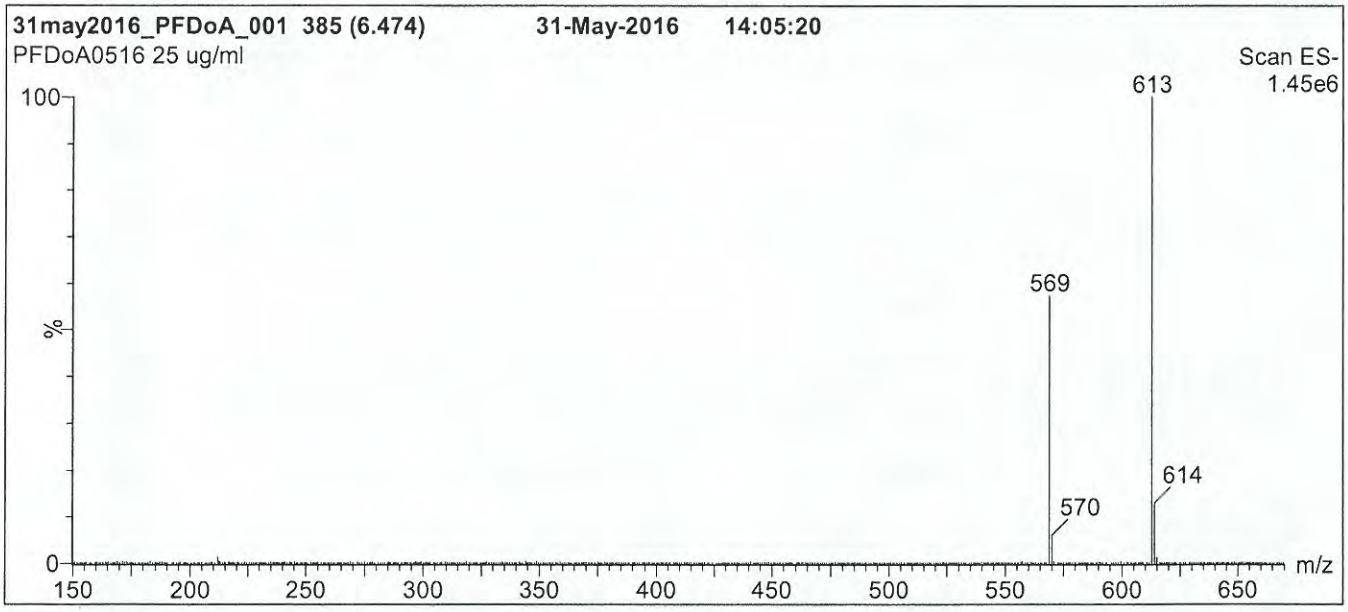
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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

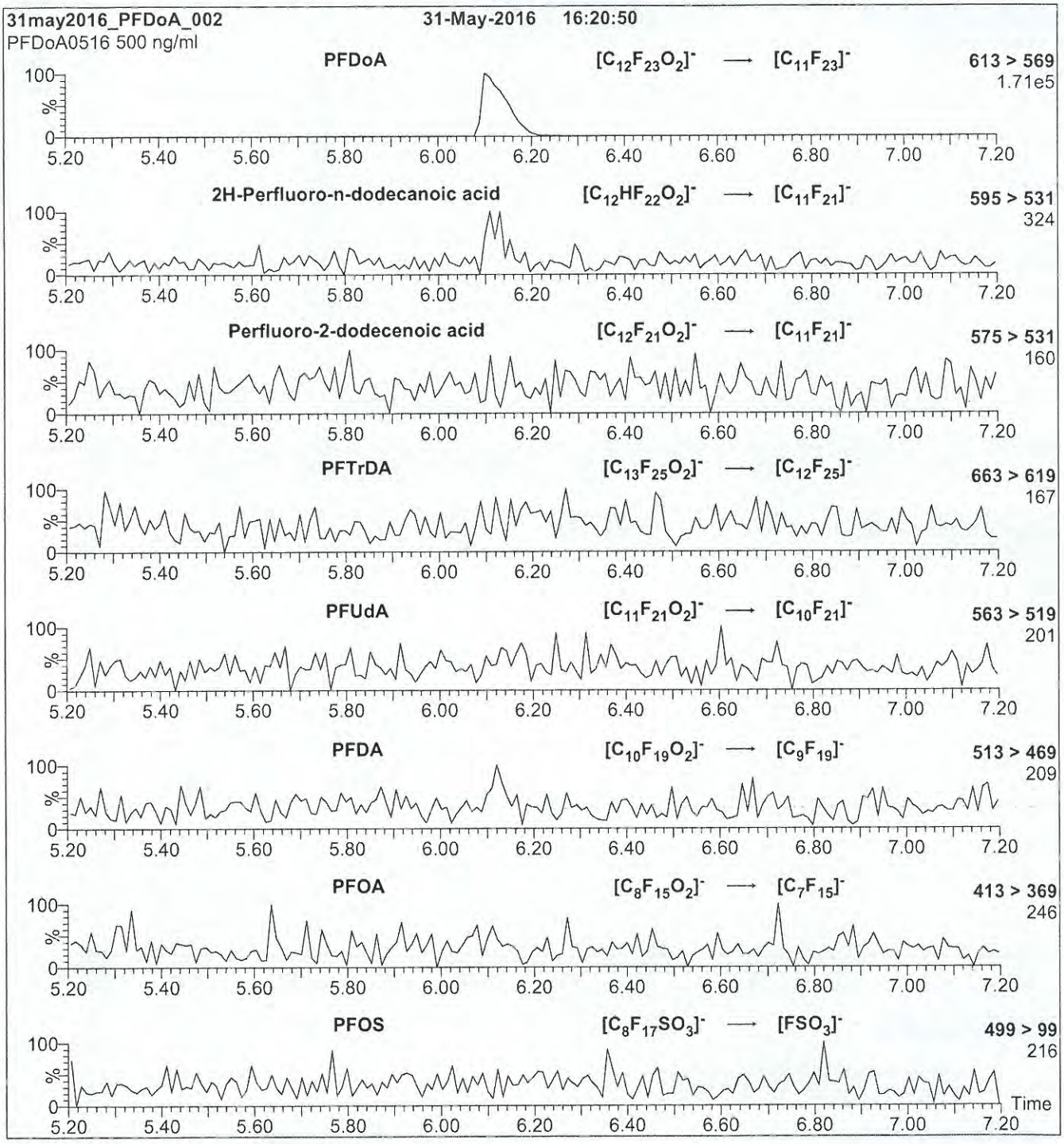
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 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

Figure 2: **PFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection:	Direct loop injection 10 µl (500 ng/ml PFDoA)	**MS Parameters**
Mobile phase:	Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O (both with 10 mM NH_4OAc buffer)	Collision Gas (mbar) = 3.39e-3 Collision Energy (eV) = 13
Flow:	300 µl/min	

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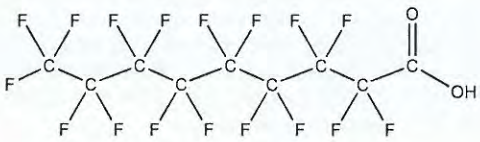
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFNA
COMPOUND: Perfluoro-n-nonanoic acid

LOT NUMBER: PFNA0916

STRUCTURE:

CAS #: 375-95-1



MOLECULAR FORMULA: $C_9HF_{17}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 464.08
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/30/2016
EXPIRY DATE: (mm/dd/yyyy) 09/30/2021
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 ~ 0.1% of perfluoro-n-octanoic acid (PFOA) and < 0.1% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 10/11/2016 (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

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:

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

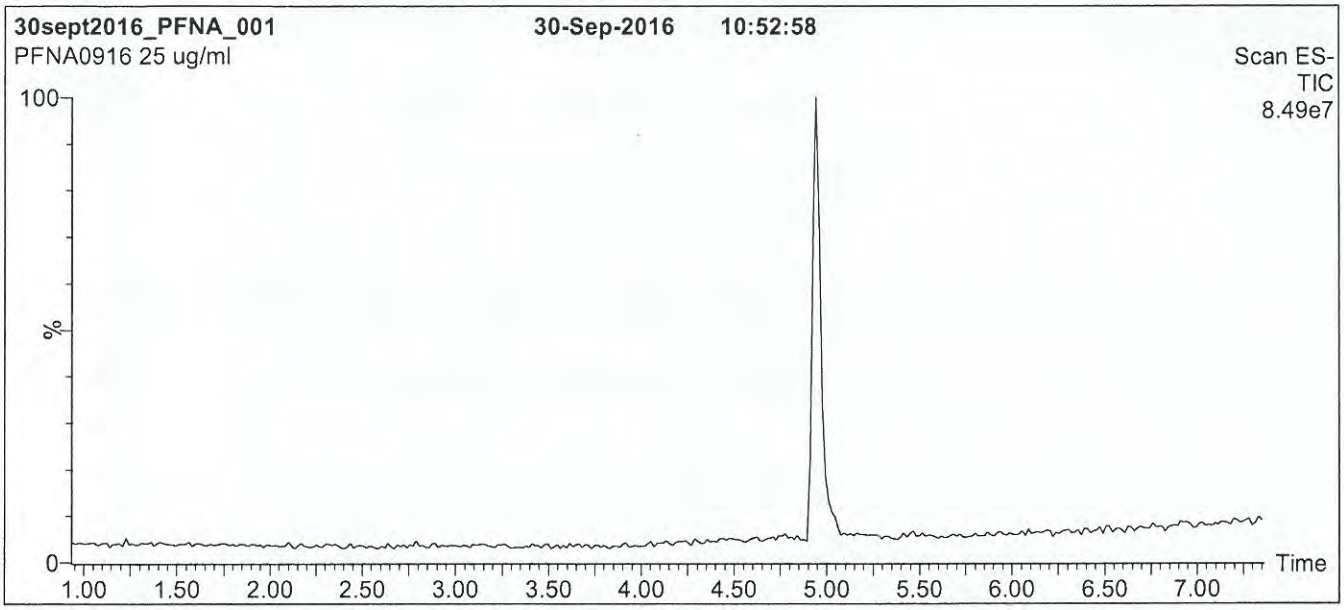
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

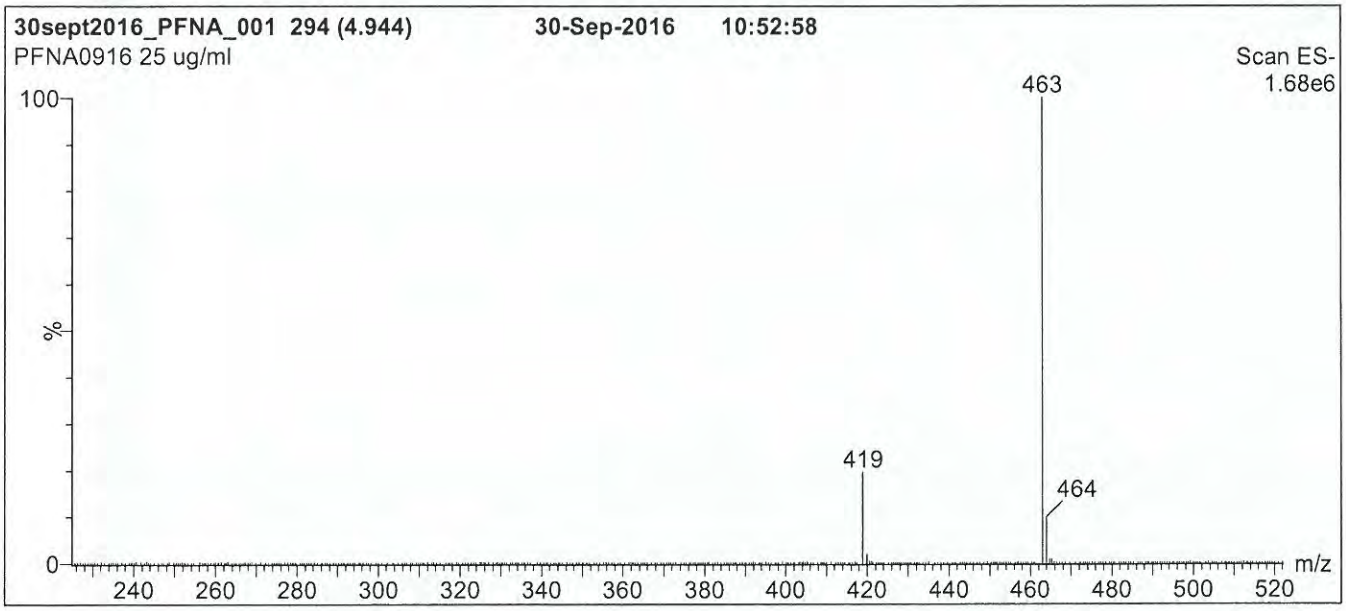
CALA

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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

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

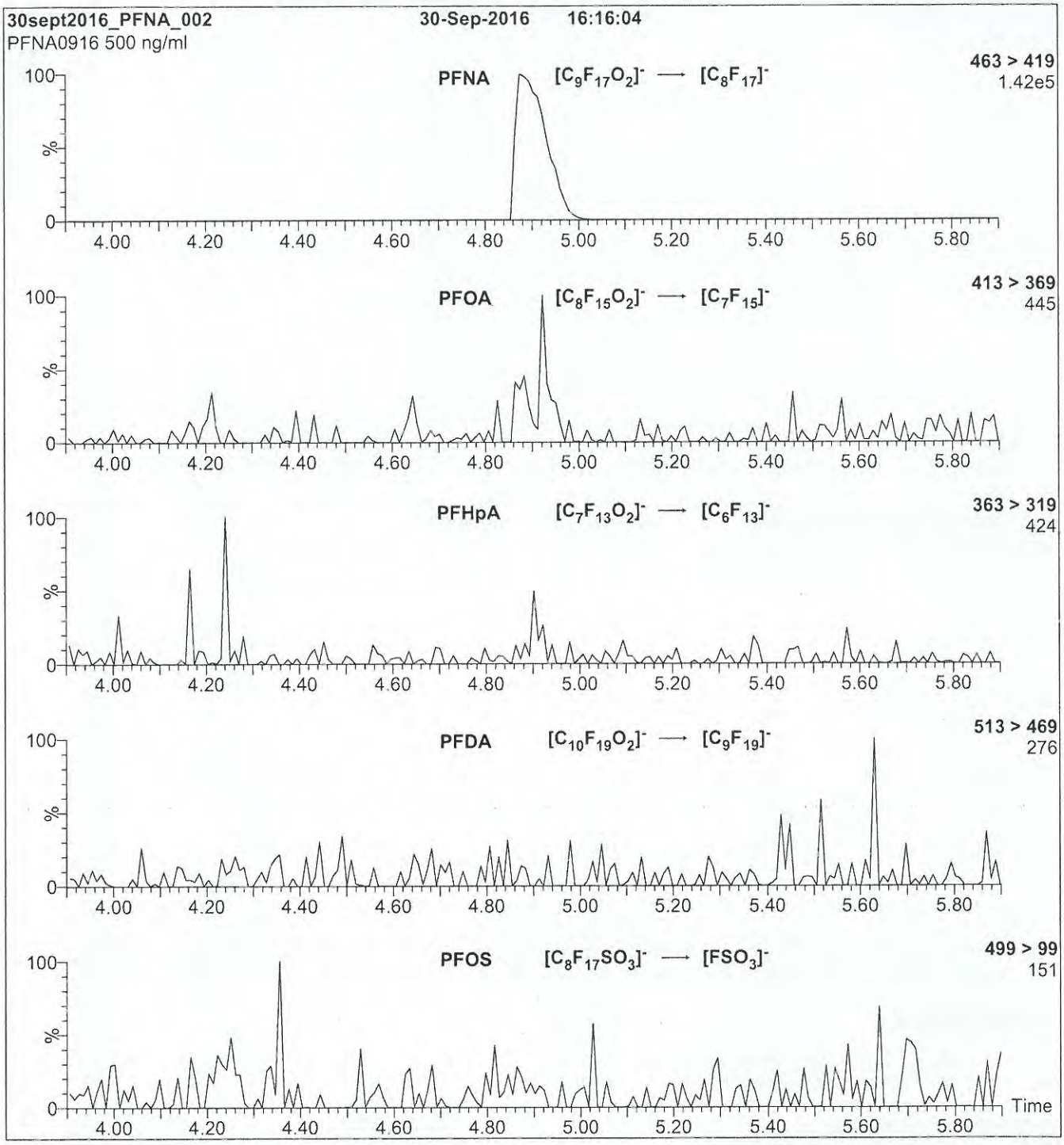
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (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

Figure 2: **PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 11

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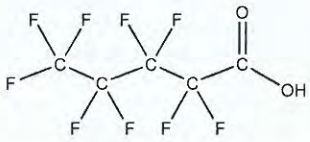
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFPeA
COMPOUND: Perfluoro-n-pentanoic acid

LOT NUMBER: PFPeA0617

STRUCTURE:

CAS #: 2706-90-3



MOLECULAR FORMULA:	$C_5HF_9O_2$	**MOLECULAR WEIGHT:**	264.05
CONCENTRATION:	50 ± 2.5 µg/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: _____ **Date:** 06/16/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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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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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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:

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QUALITY MANAGEMENT:

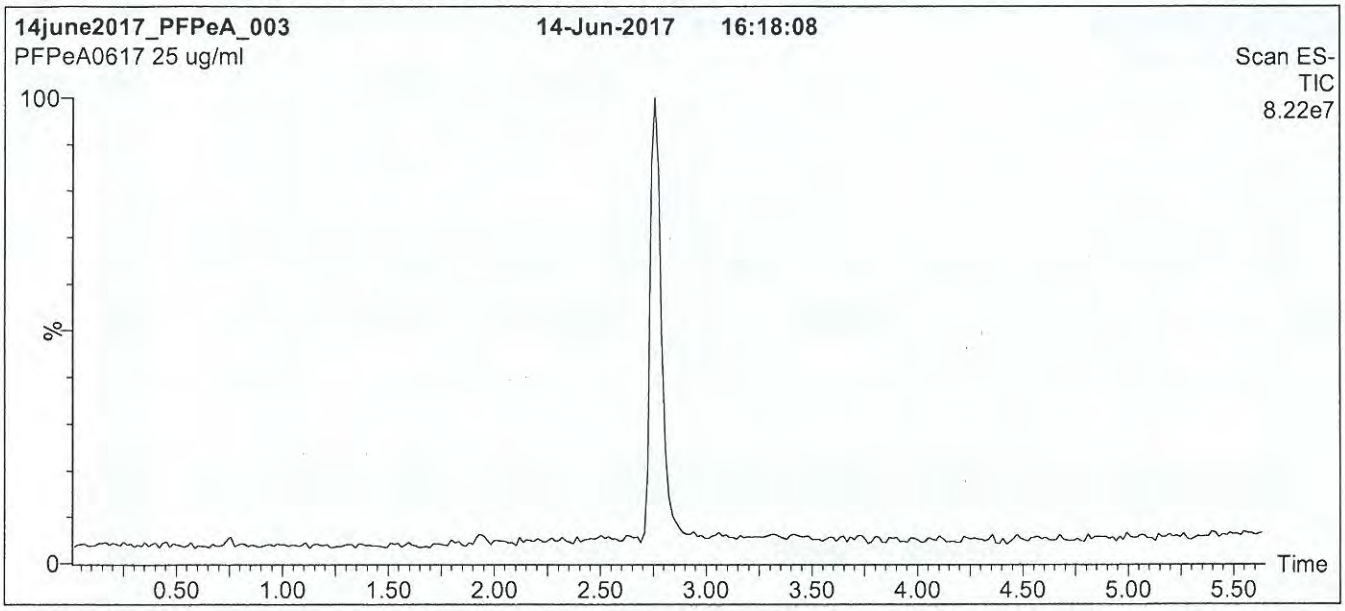
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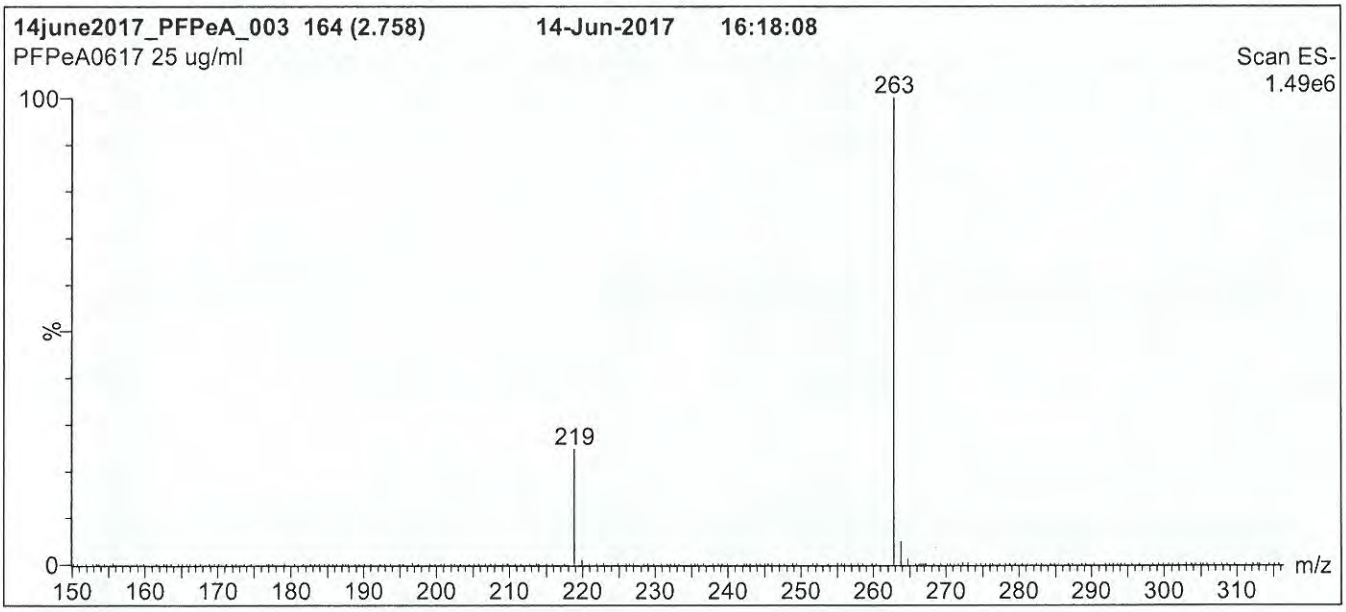
CALA

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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

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc 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

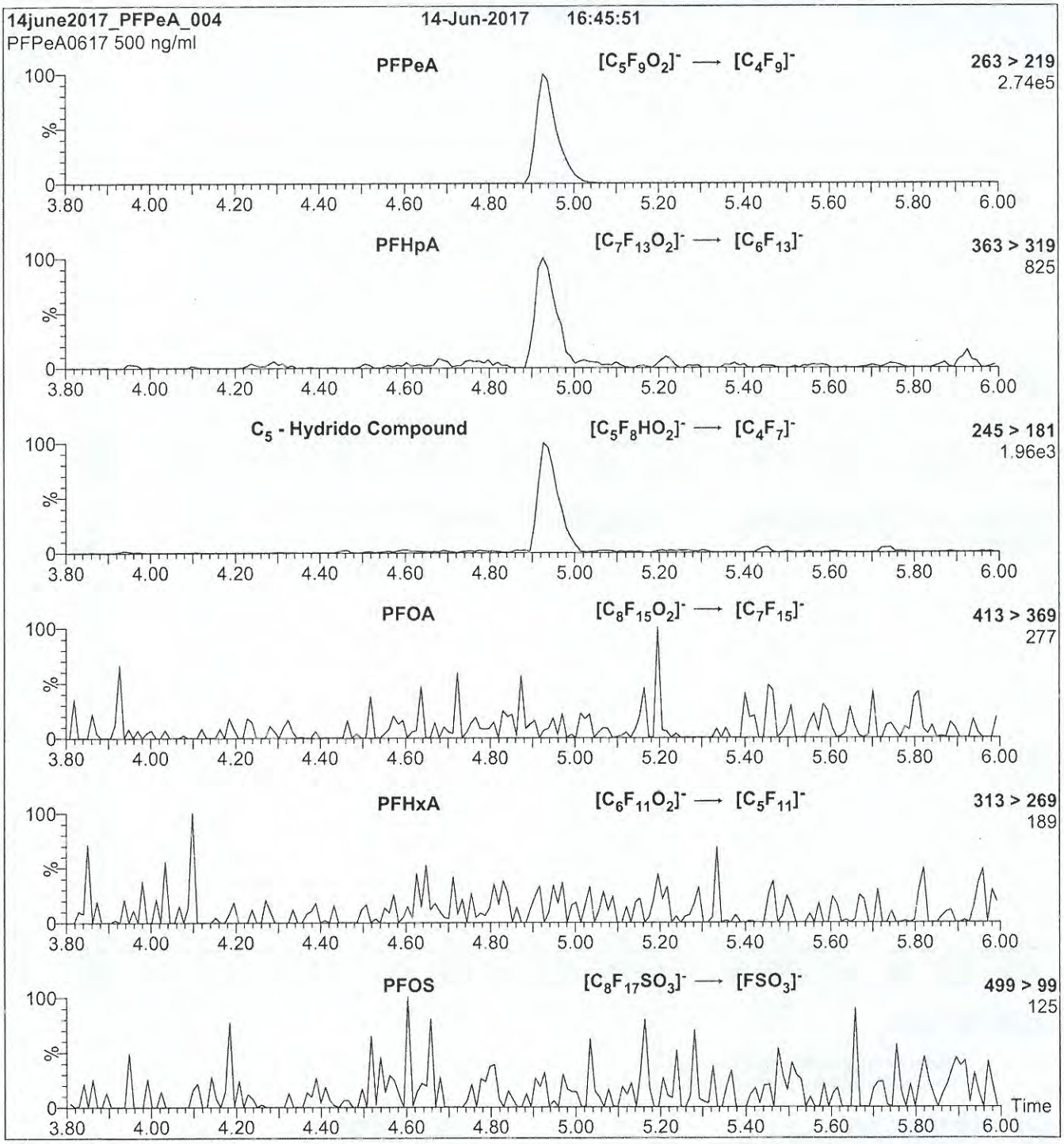
Flow: 300 µl/min

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

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3
Collision Energy (eV) = 9

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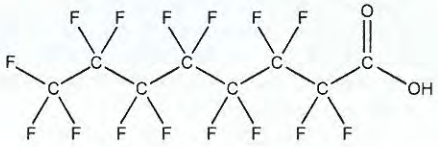
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFOA
COMPOUND: Perfluoro-n-octanoic acid

LOT NUMBER: PFOA0217

STRUCTURE:

CAS #: 335-67-1



MOLECULAR FORMULA: $C_8HF_{15}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 414.07
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
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.
- 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 **Date:** 02/22/2017 (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

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c\left(y(x_1, x_2, \ldots x_n)\right) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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.

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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:

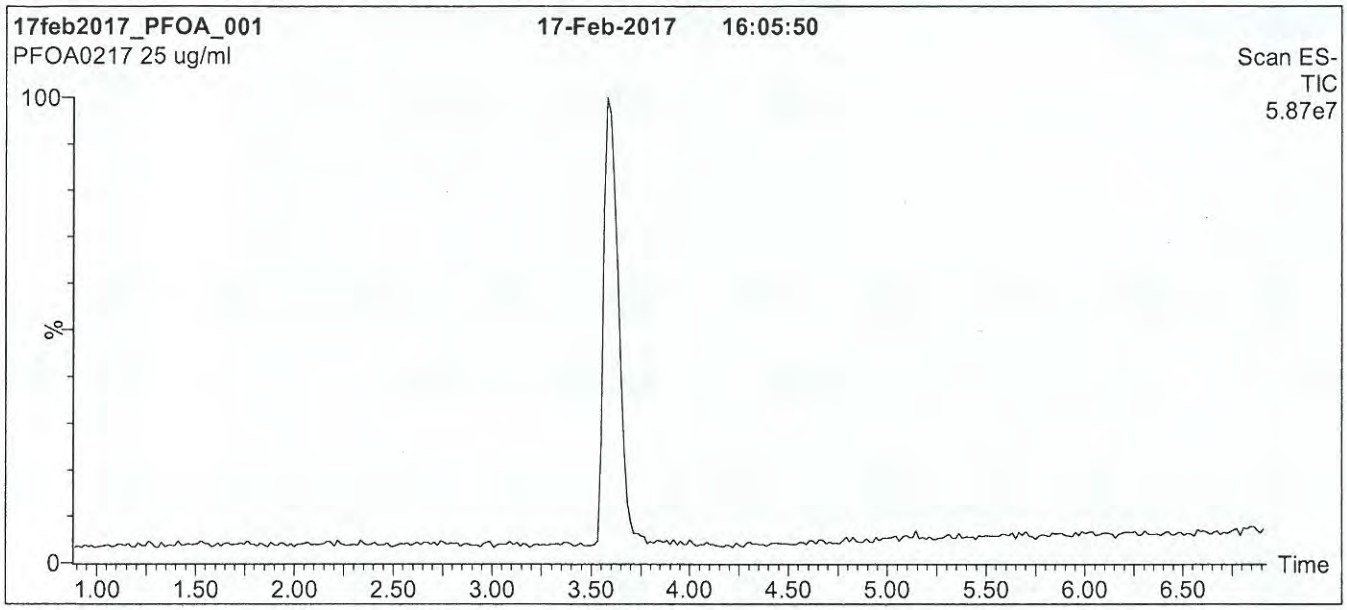
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

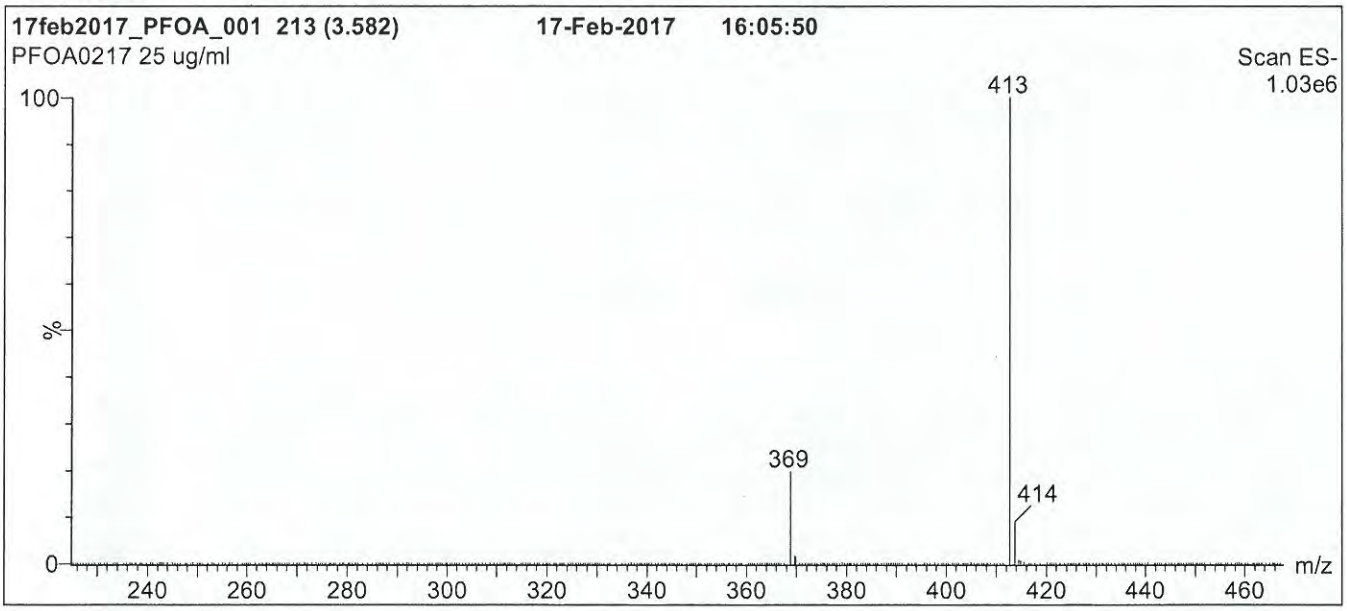
CALA

ANAB ACCREDITED

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

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

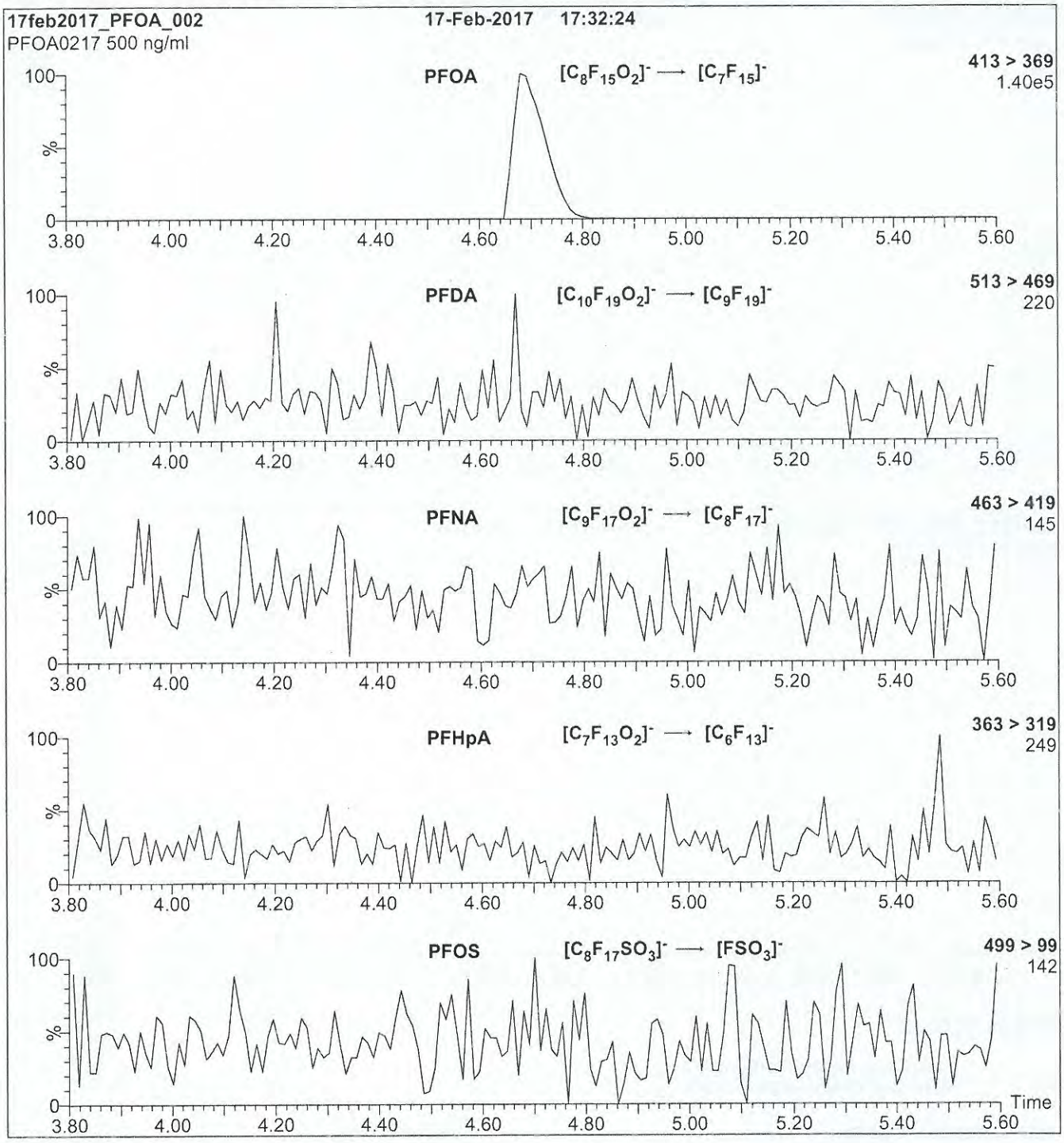
Flow: 300 µl/min

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

Figure 2: **PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

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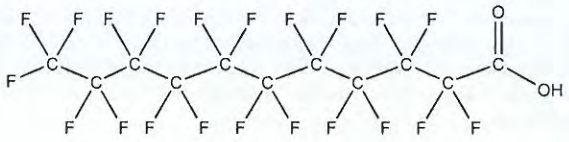
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFUdA
COMPOUND: Perfluoro-n-undecanoic acid

LOT NUMBER: PFUdA1016

STRUCTURE:

CAS #: 2058-94-8



MOLECULAR FORMULA:	$C_{11}HF_{21}O_2$	**MOLECULAR WEIGHT:**	564.09
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/18/2016		
EXPIRY DATE: (mm/dd/yyyy)	10/18/2021		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 10/19/2016 (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

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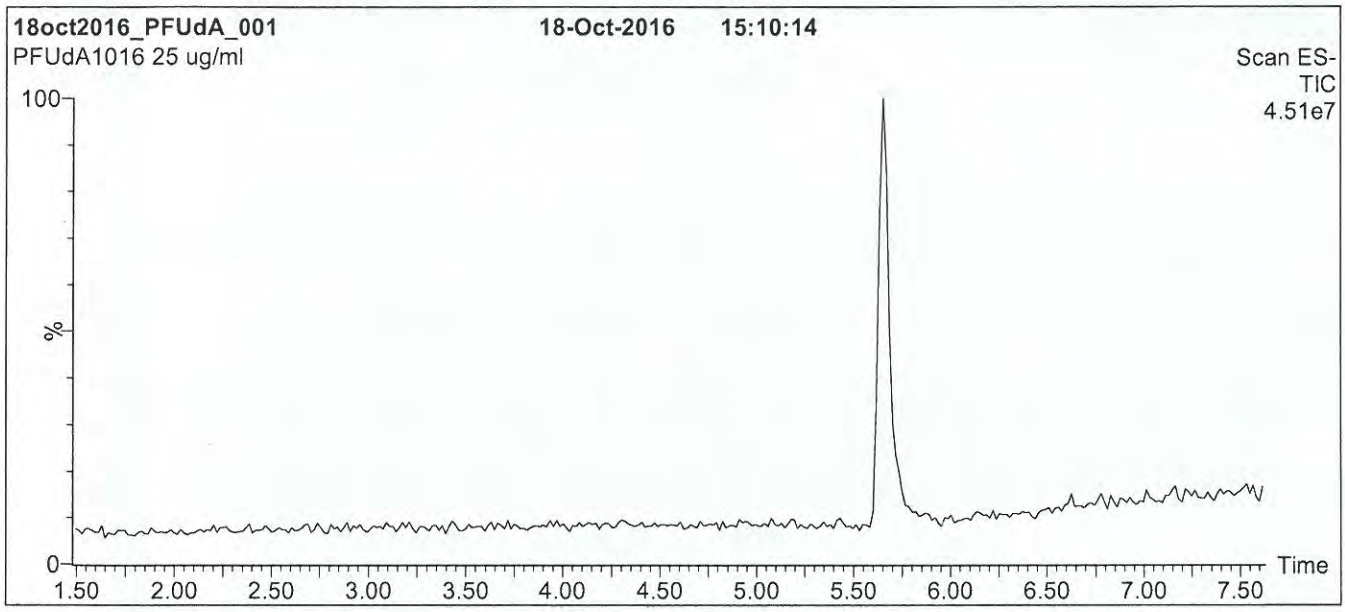
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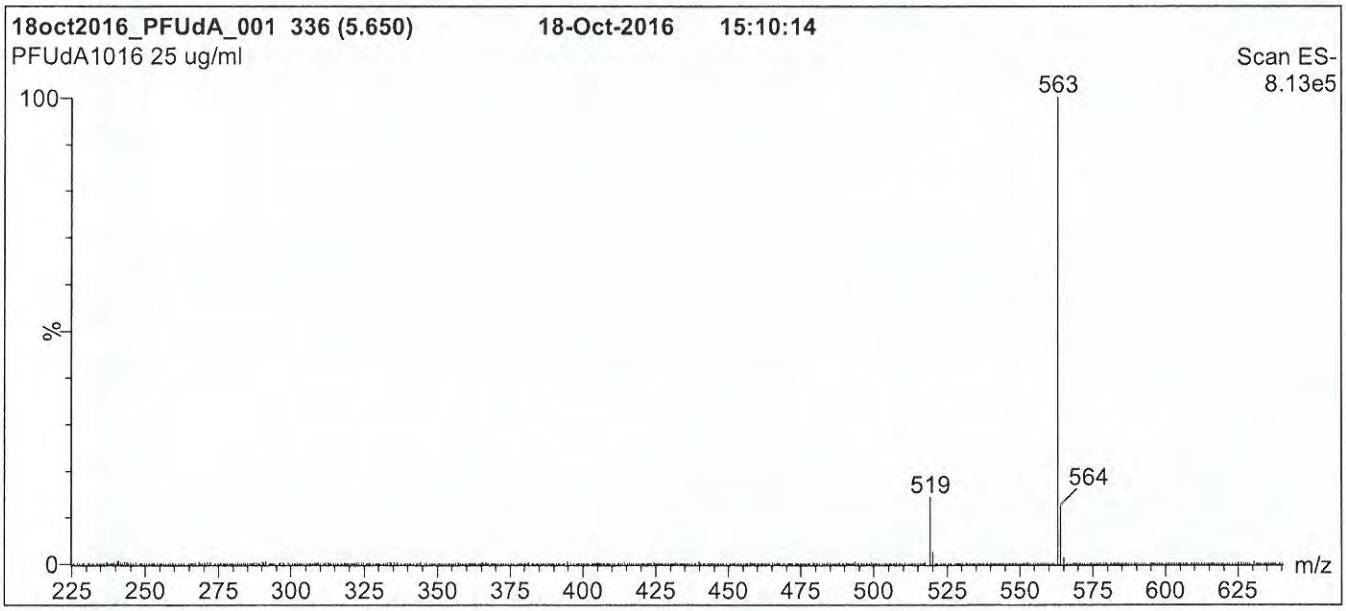
CALA

ANAB ACCREDITED

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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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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

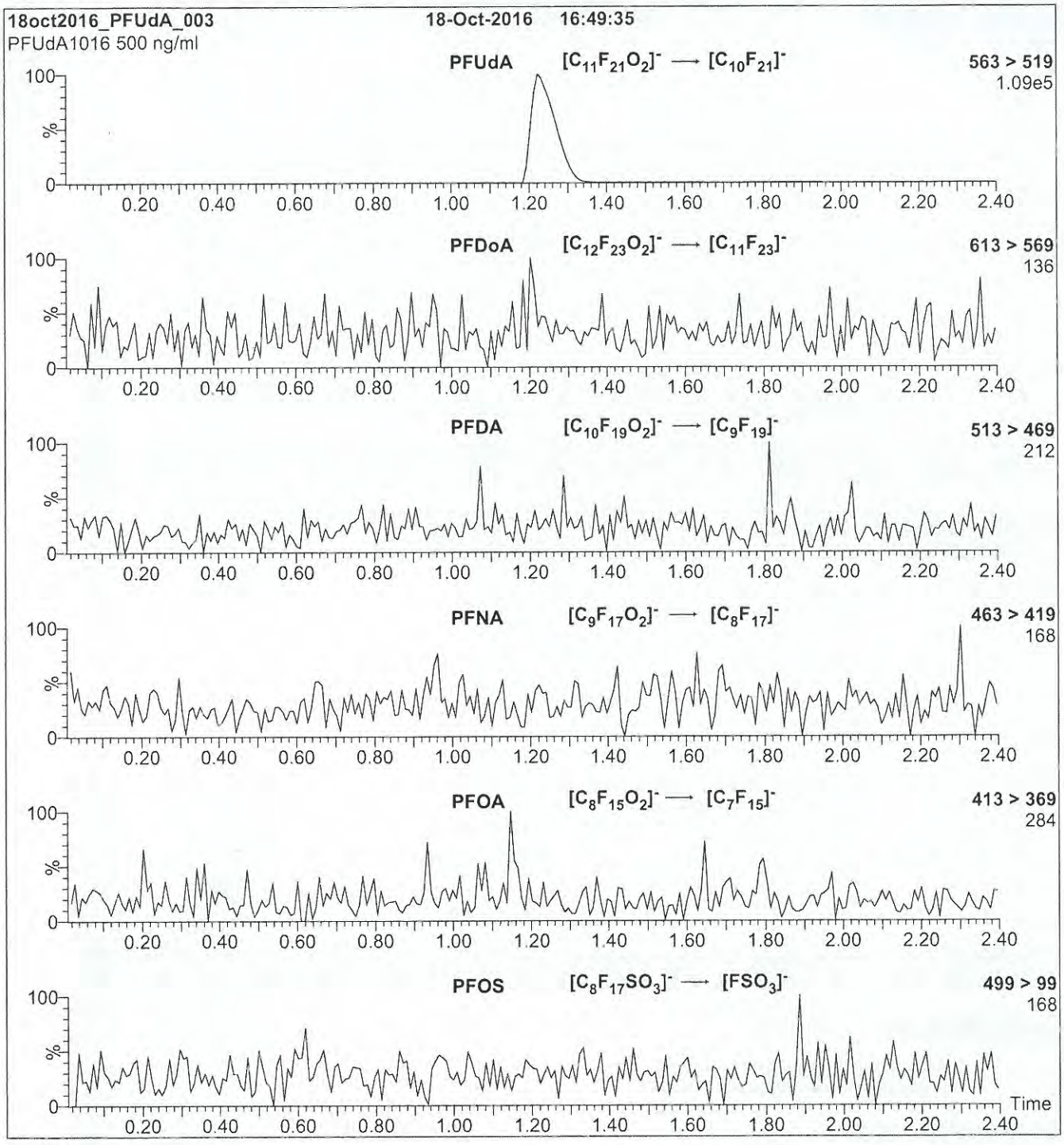
Flow: 300 µl/min

MS Parameters

Experiment: 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

Figure 2: **PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection:	Direct loop injection 10 µl (500 ng/ml PFUdA)
Mobile phase:	Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O (both with 10 mM NH_4OAc buffer)
Flow:	300 µl/min

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 11

17H0825

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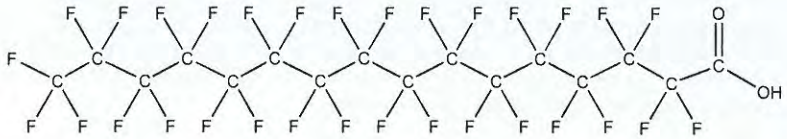
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHxDA ✓
COMPOUND: Perfluoro-n-hexadecanoic acid

LOT NUMBER: PFHxDA0516

STRUCTURE:

CAS #: 67905-19-5



MOLECULAR FORMULA: $C_{16}HF_{31}O_2$
MOLECULAR WEIGHT: 814.13
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/25/2016
EXPIRY DATE: (mm/dd/yyyy) 05/25/2021
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 ~ 0.4% of PFODA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 05/27/2016 (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

INTENDED USE:

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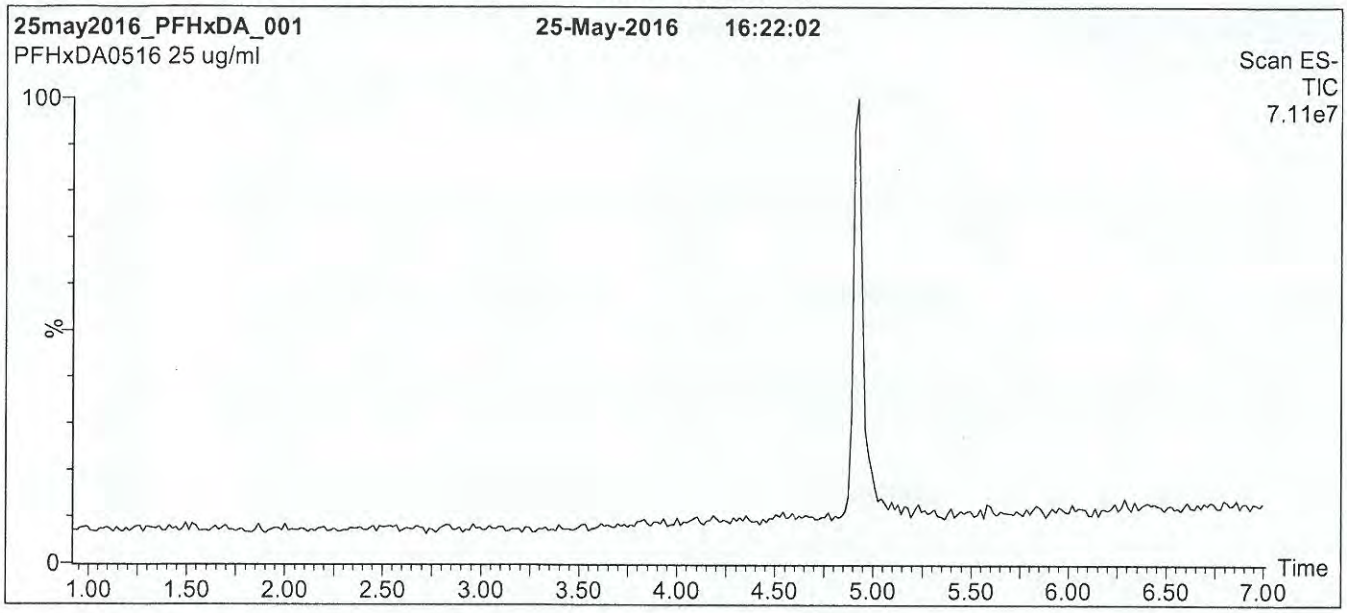
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

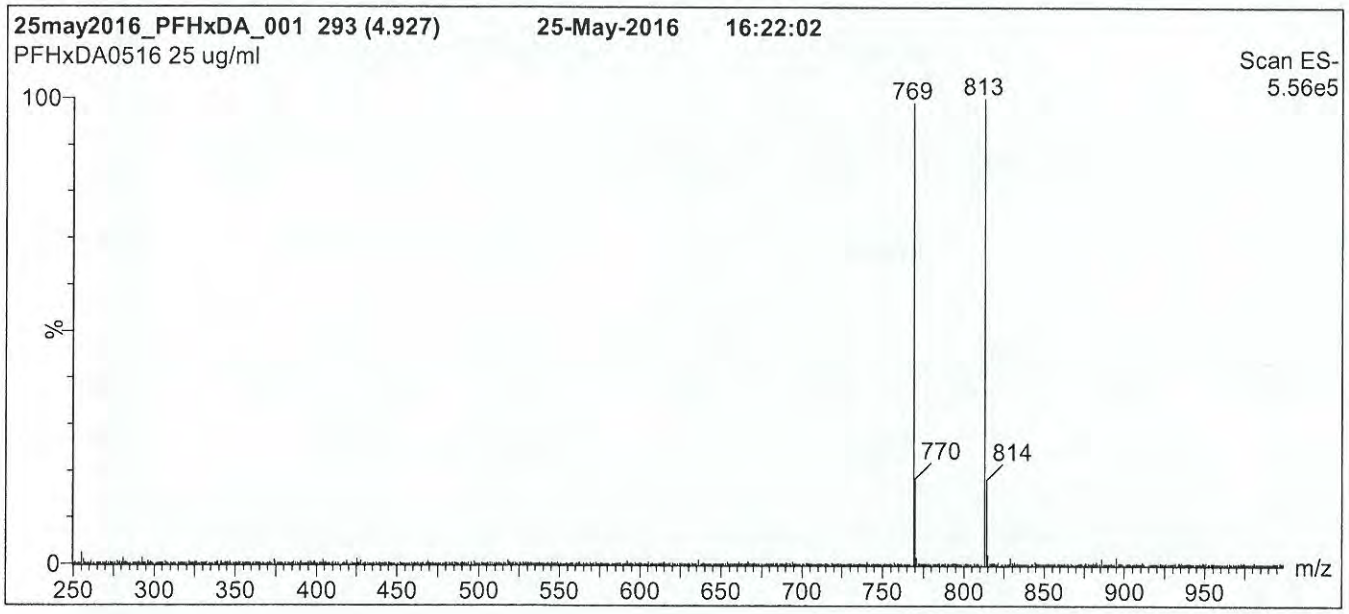
CALA Testing

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 70% (80:20 MeOH:ACN) / 30% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 95% organic over 6 min and hold for 2.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

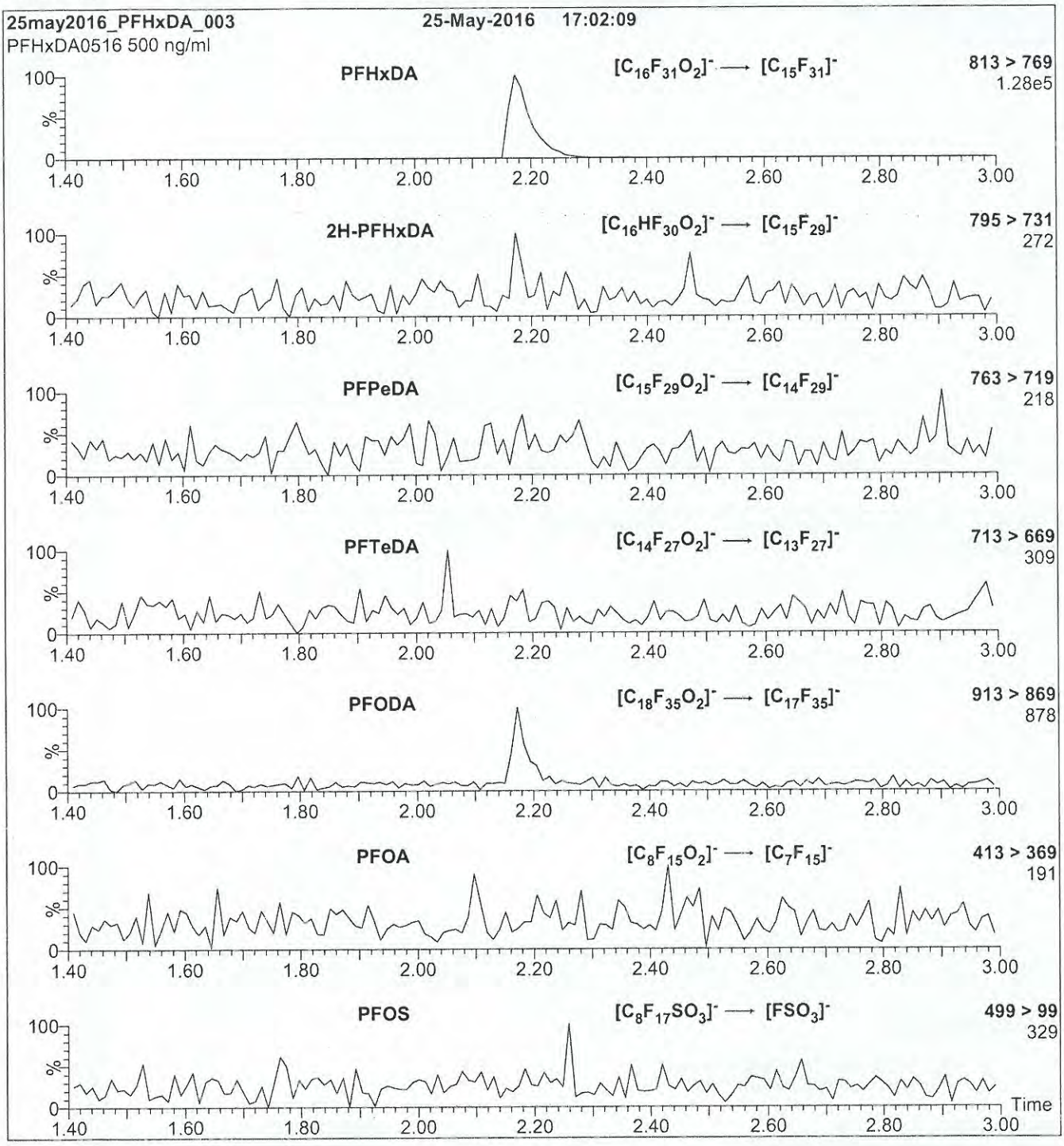
Flow: 300 µl/min

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

Figure 2: **PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 15

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WELLINGTON LABORATORIES

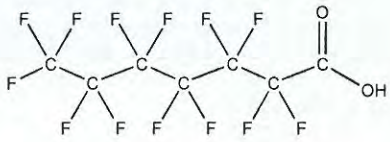
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHpA ✓
COMPOUND: Perfluoro-n-heptanoic acid

LOT NUMBER: PFHpA1216

STRUCTURE:

CAS #: 375-85-9



MOLECULAR FORMULA: $C_7HF_{13}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 364.06
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/02/2016
EXPIRY DATE: (mm/dd/yyyy) 12/02/2021
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.
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Certified By: B.G. Chittim **Date:** 12/12/2016 (mm/dd/yyyy)

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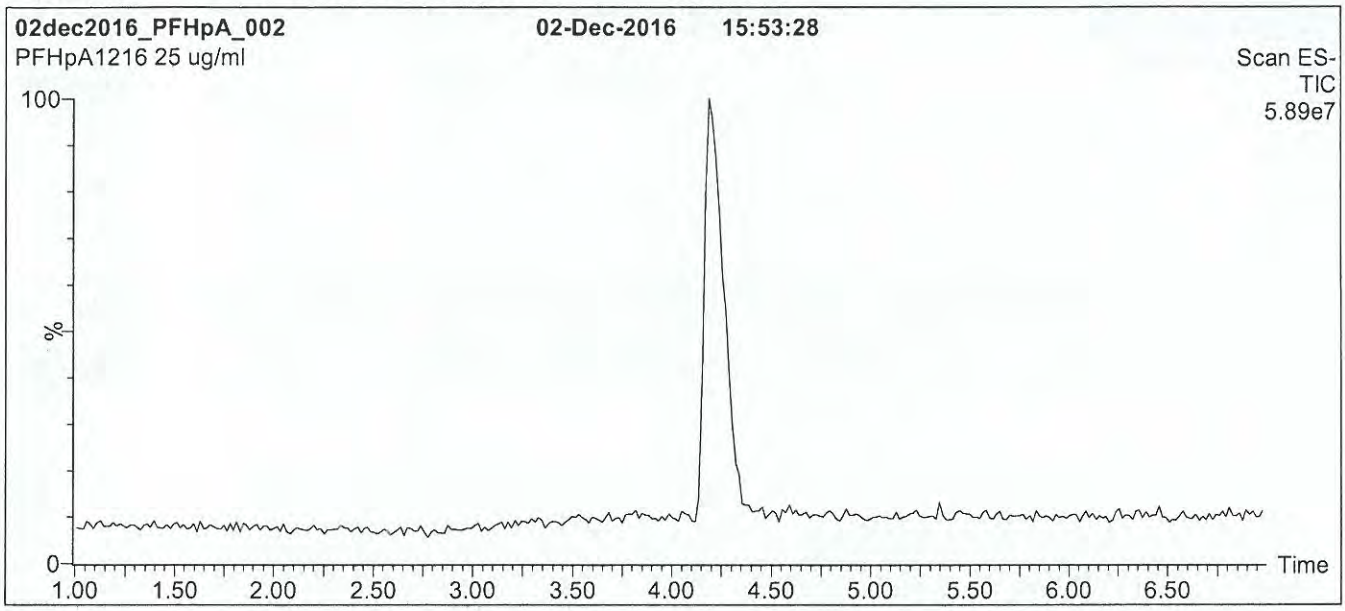
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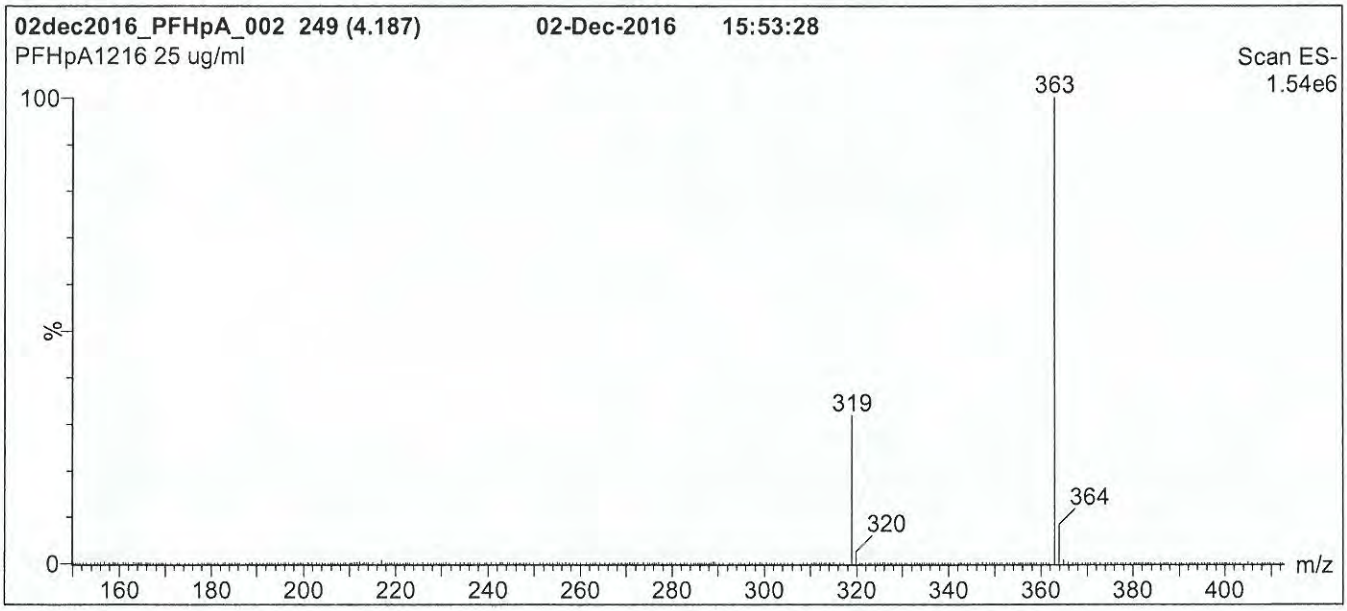
CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

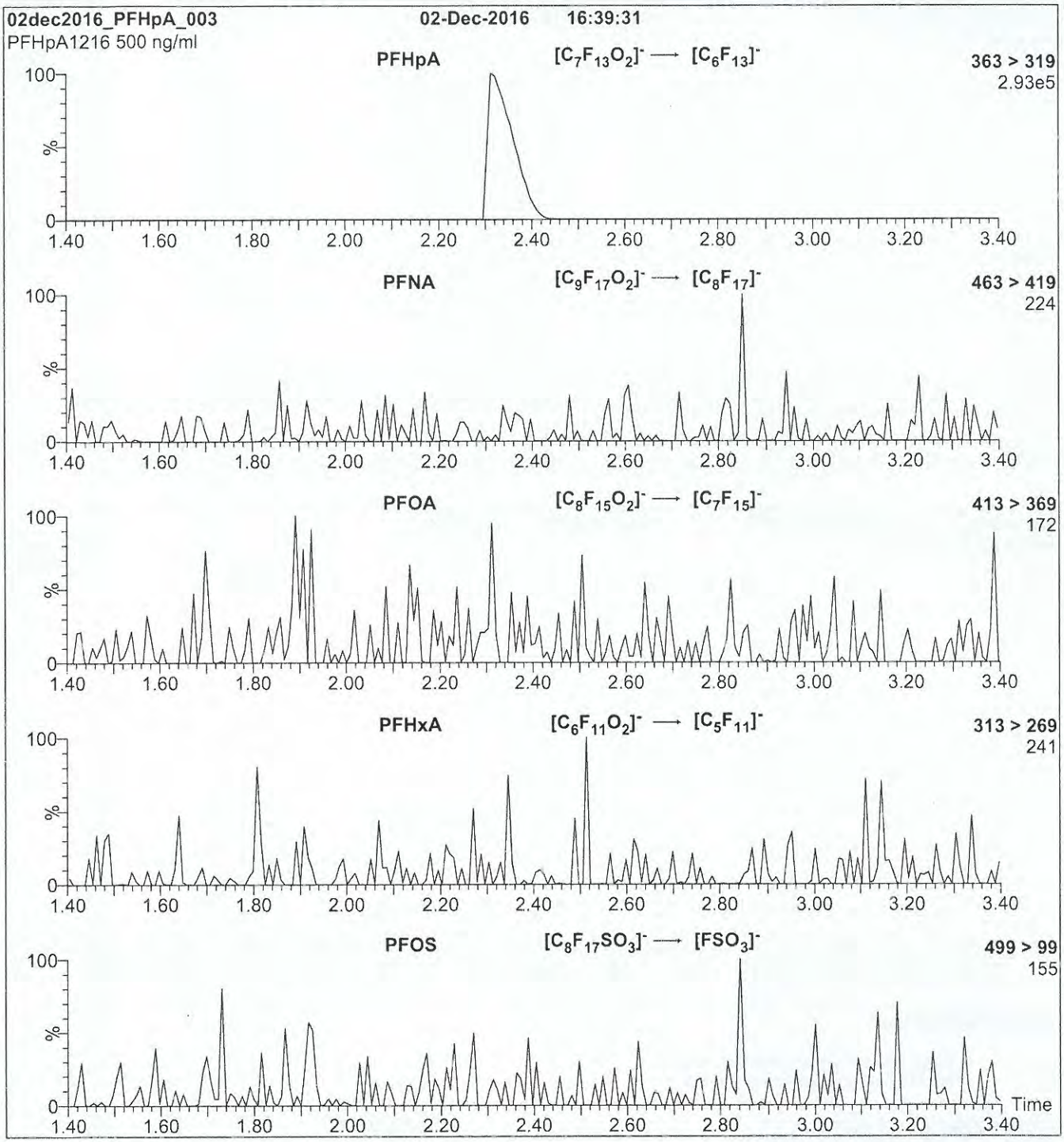
Flow: 300 µl/min

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) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

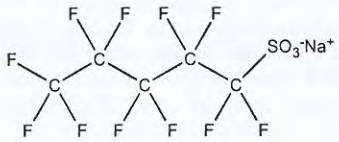
Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 11

17K0815

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPeS
COMPOUND: Sodium perfluoro-1-pentanesulfonate
LOT NUMBER: LPFPeS0117
STRUCTURE:
CAS #: 630402-22-1



MOLECULAR FORMULA:	$C_5F_{11}SO_3Na$	**MOLECULAR WEIGHT:**	372.09
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 46.9 ± 2.3 µg/ml (PFPeS anion)	**SOLVENT(S):**	Methanol
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: _____ **Date:** 09/06/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17K0815

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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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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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.

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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:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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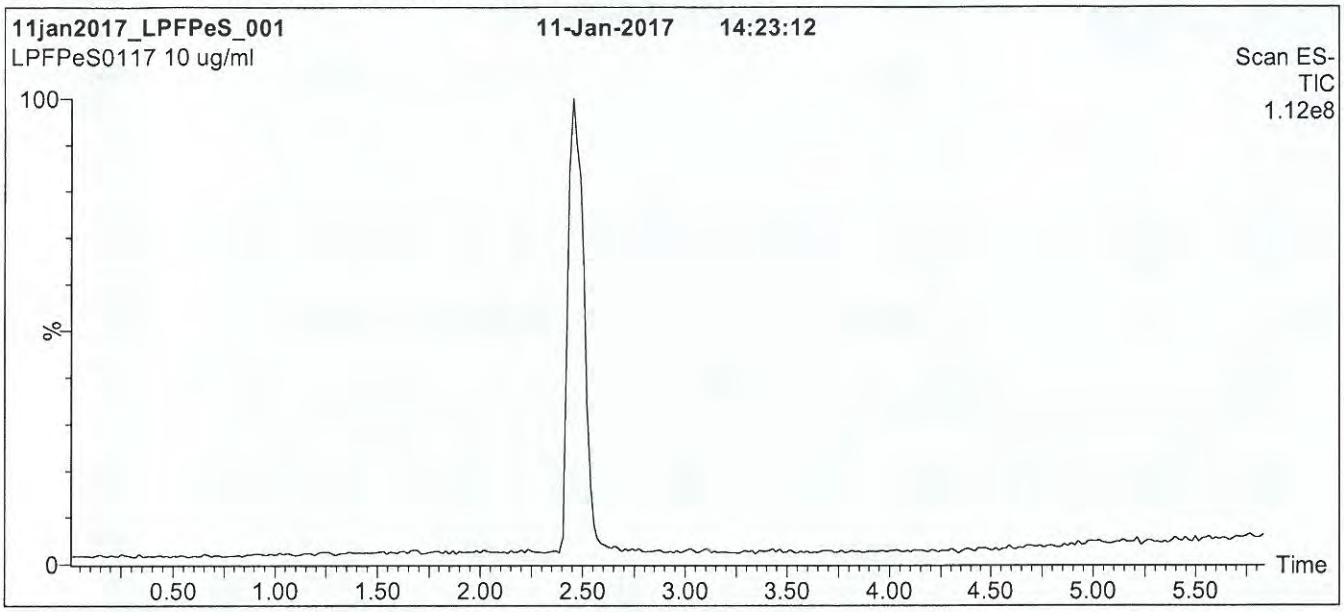
CALA Testing

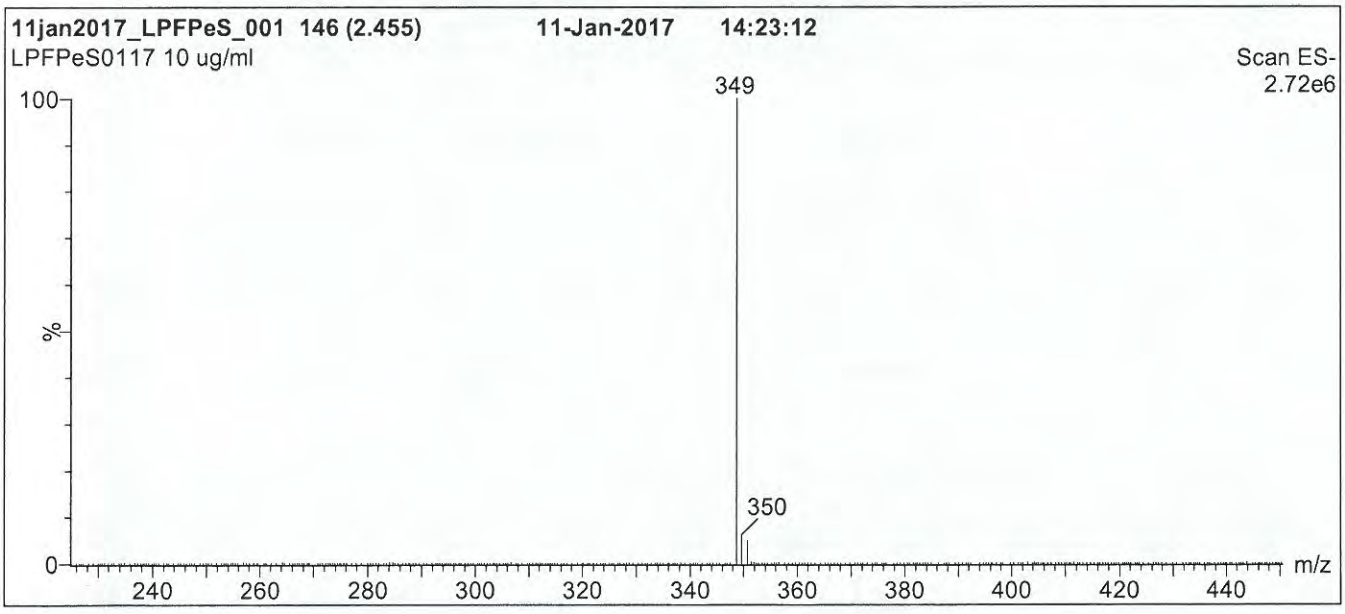
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17K0815

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

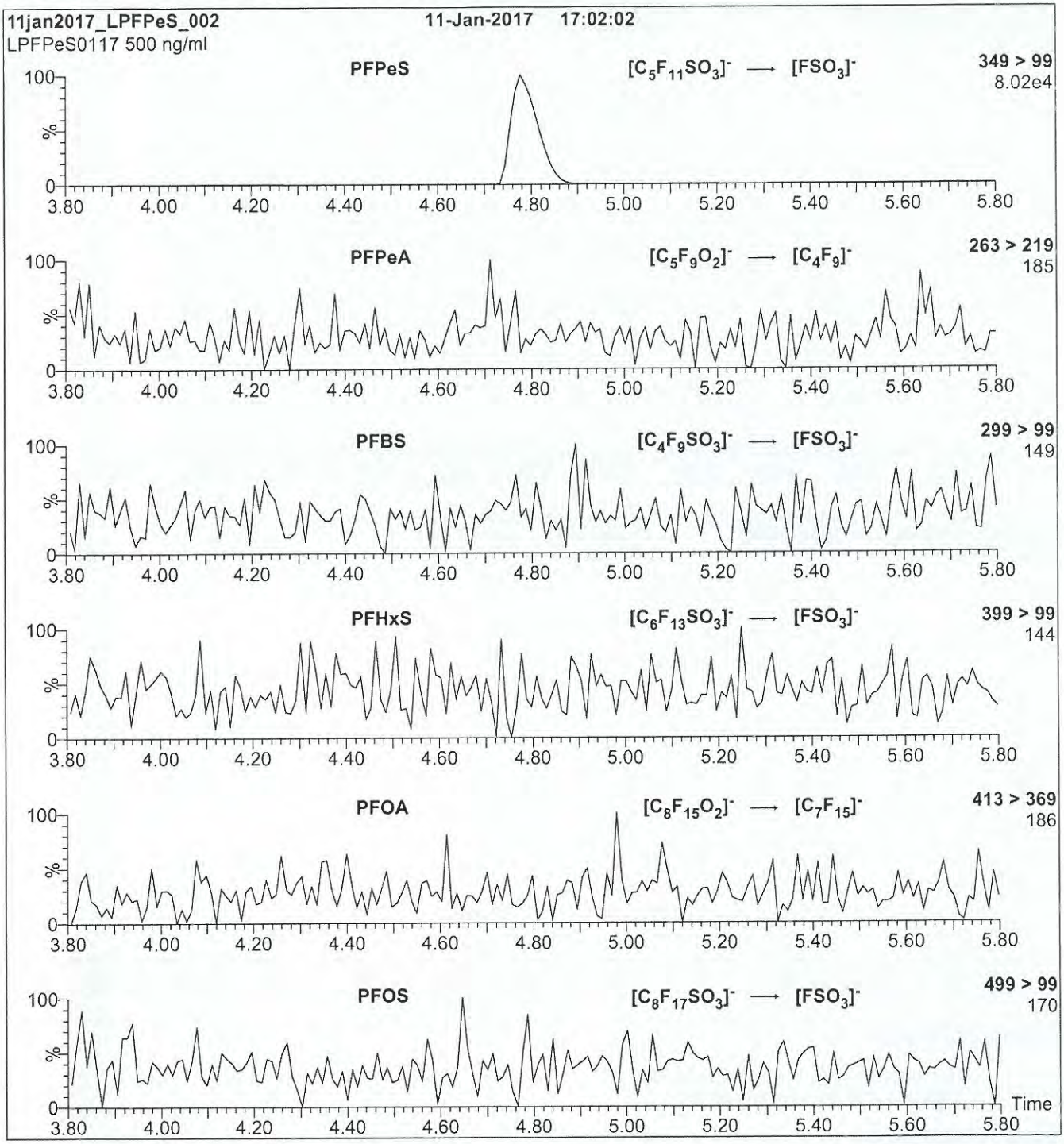
MS Parameters

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

17K0815

Figure 2: **L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFPeS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

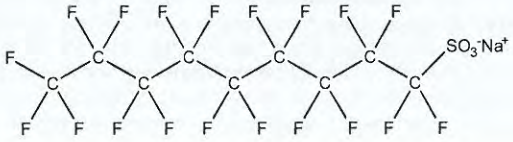
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 30

17K0817

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:	$C_9F_{19}SO_3Na$	**MOLECULAR WEIGHT:**	572.12
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 48.0 ± 2.4 µg/ml (PFNS anion)	**SOLVENT(S):**	Methanol
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 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17K0817

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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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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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:

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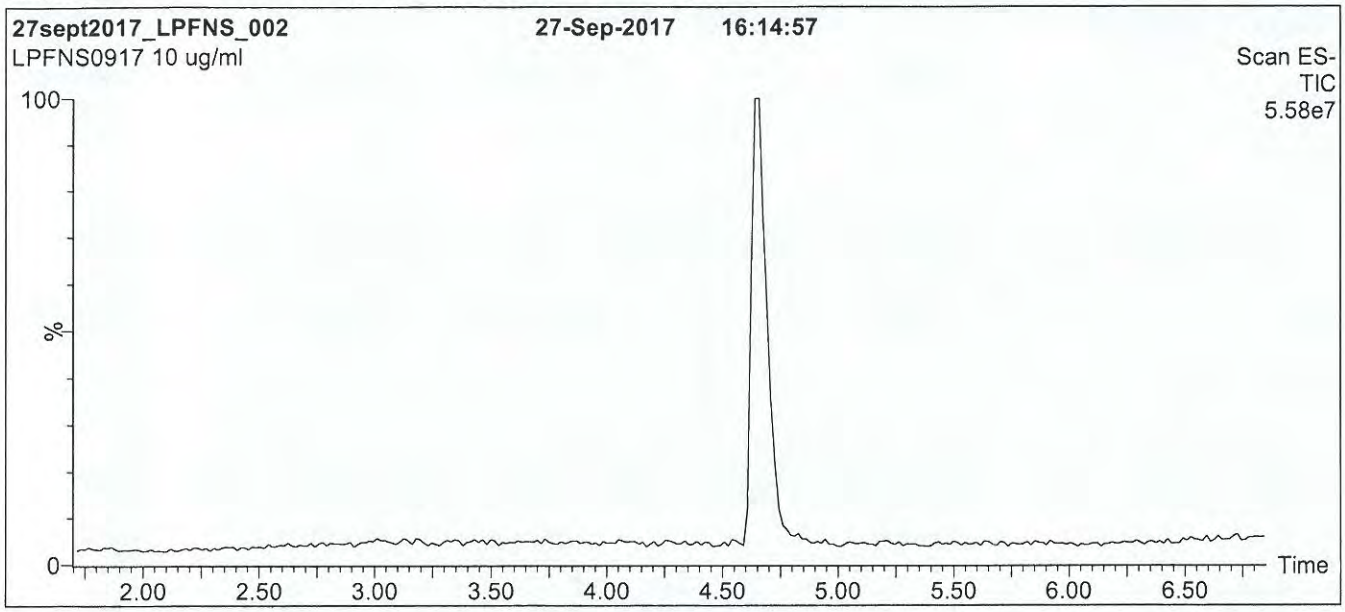
CALA Testing Accreditation No. A 1226

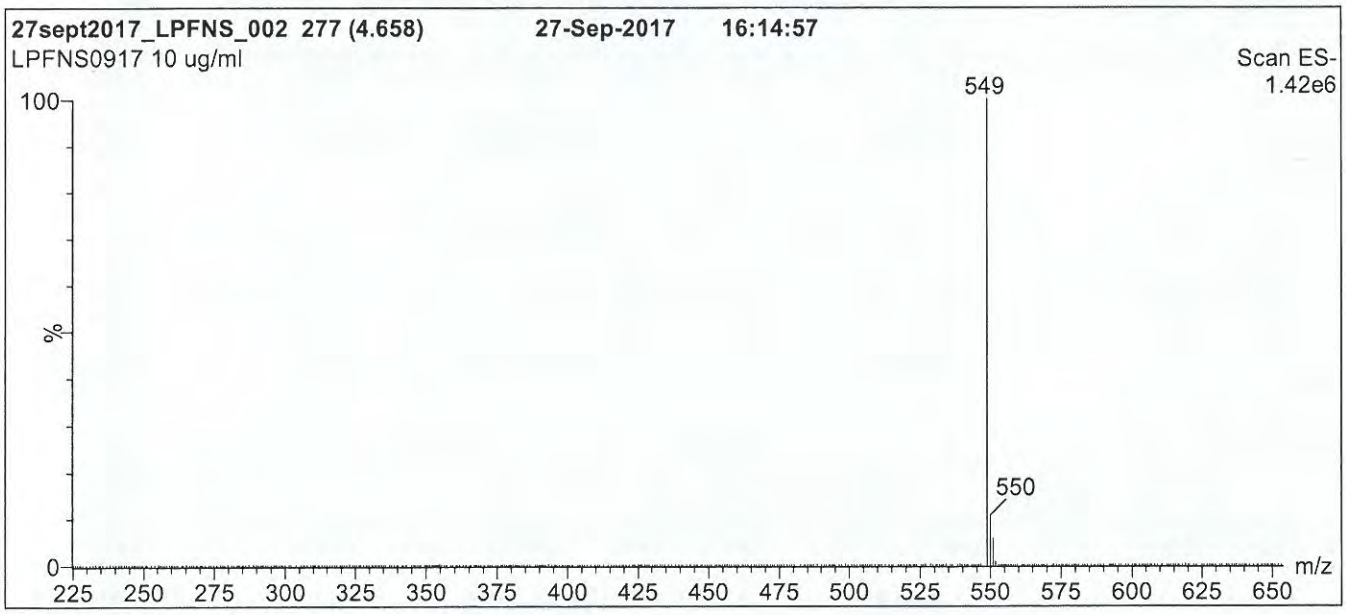
ANAB ACCREDITED Reference Material Producer

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17K0817

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

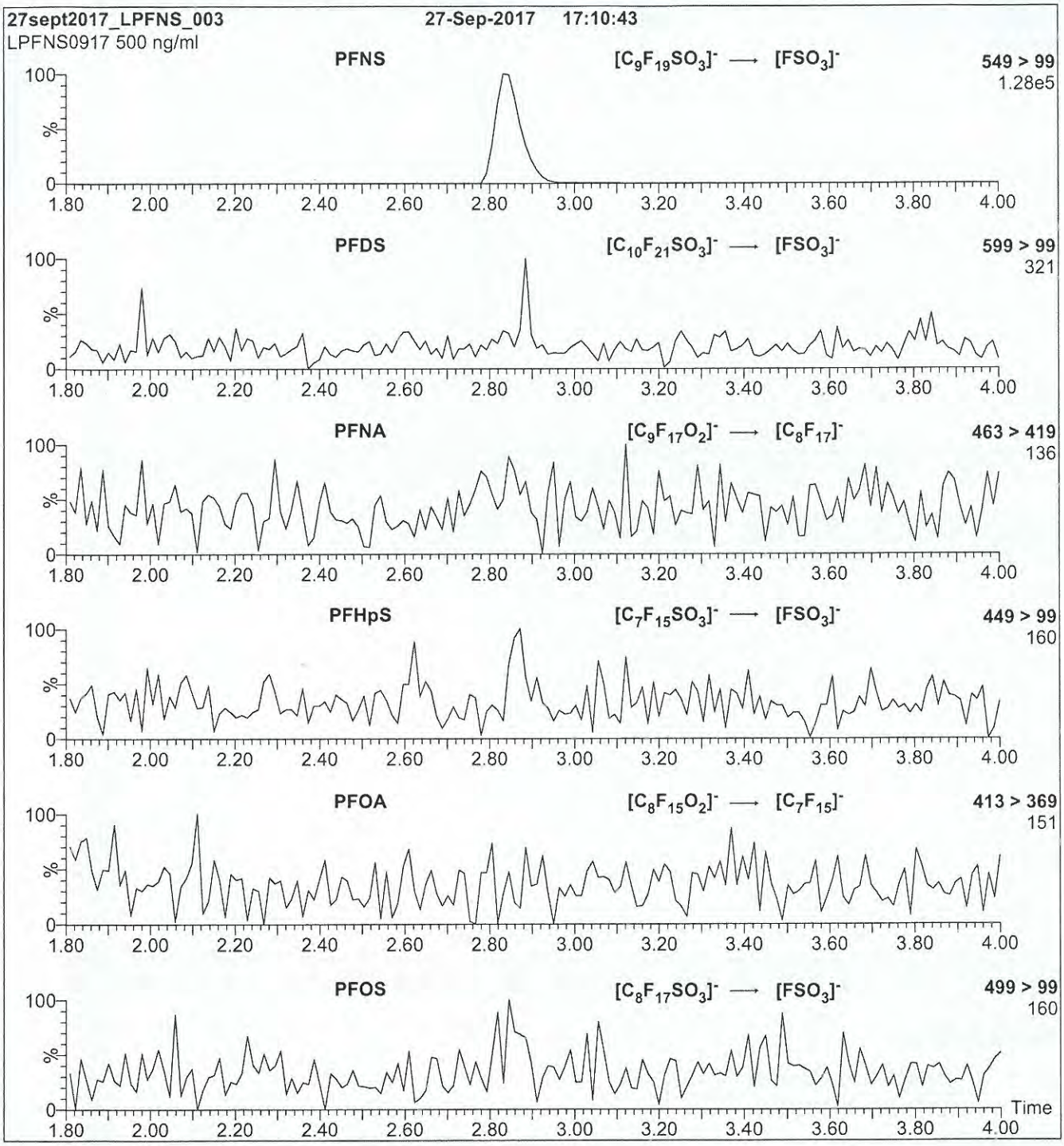
MS Parameters

Experiment: 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

17K0817

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 45

17K0823

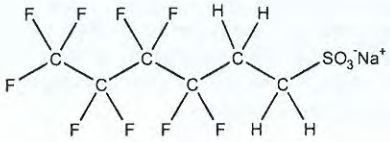
WELLINGTON LABORATORIES

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: $C_6H_4F_9SO_3Na$ **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

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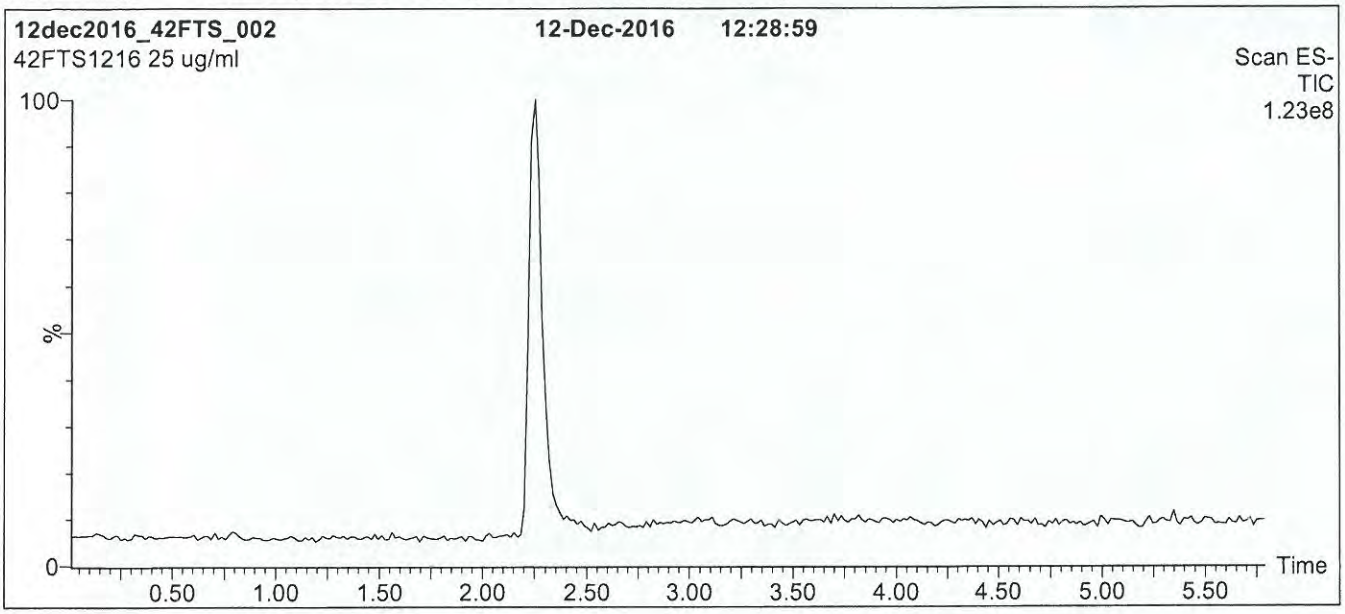
CALA Testing

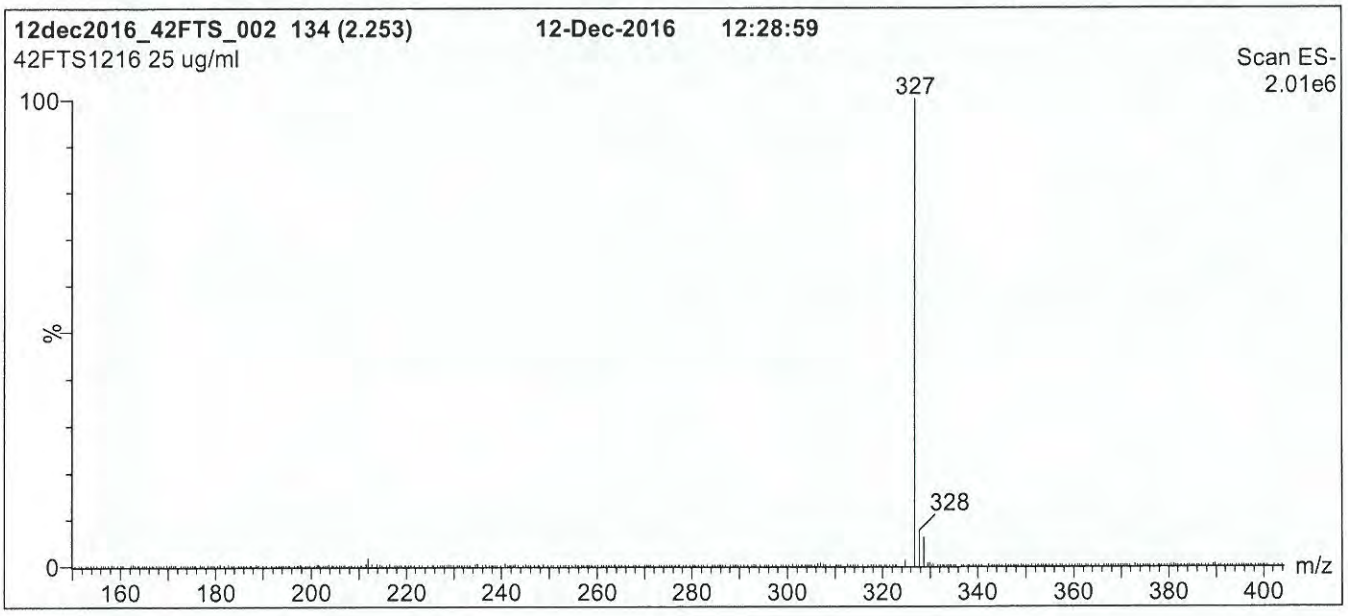
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~~17K0801~~ ICBF 11/8/17 17K0823

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

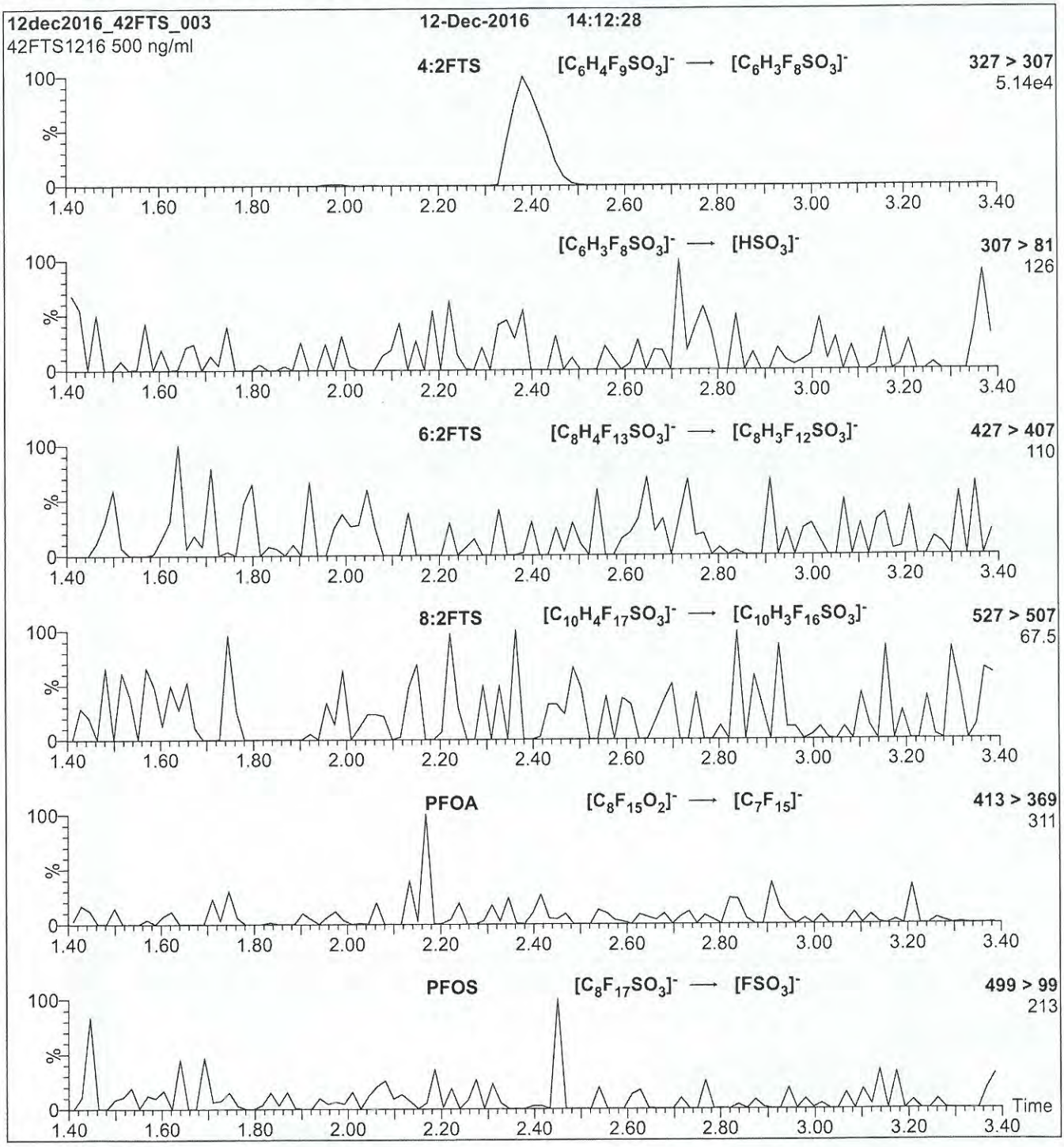
MS Parameters

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

17K0823

Figure 2: **4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml 4:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 25

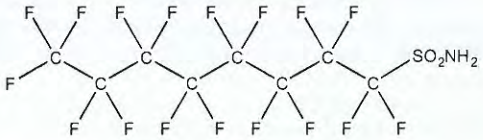
17L2008

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide
LOT NUMBER: FOSA0817I

STRUCTURE:
CAS #: 754-91-6



MOLECULAR FORMULA:	$C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	499.14
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/01/2017		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2008

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

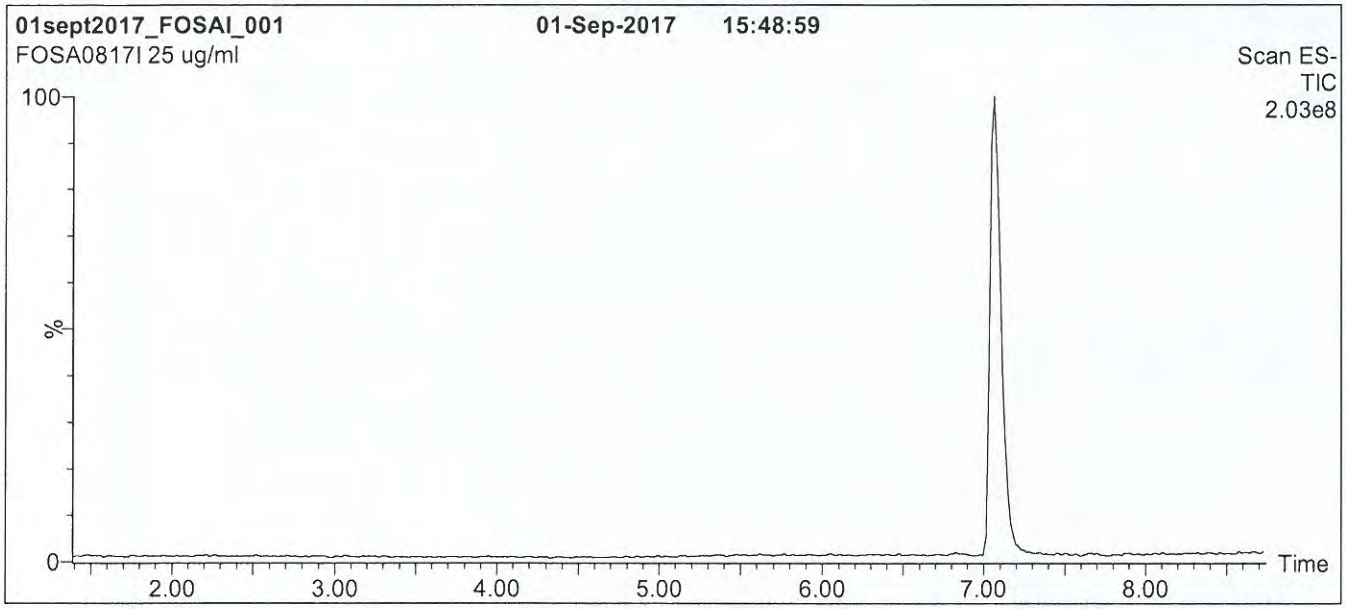
CALA

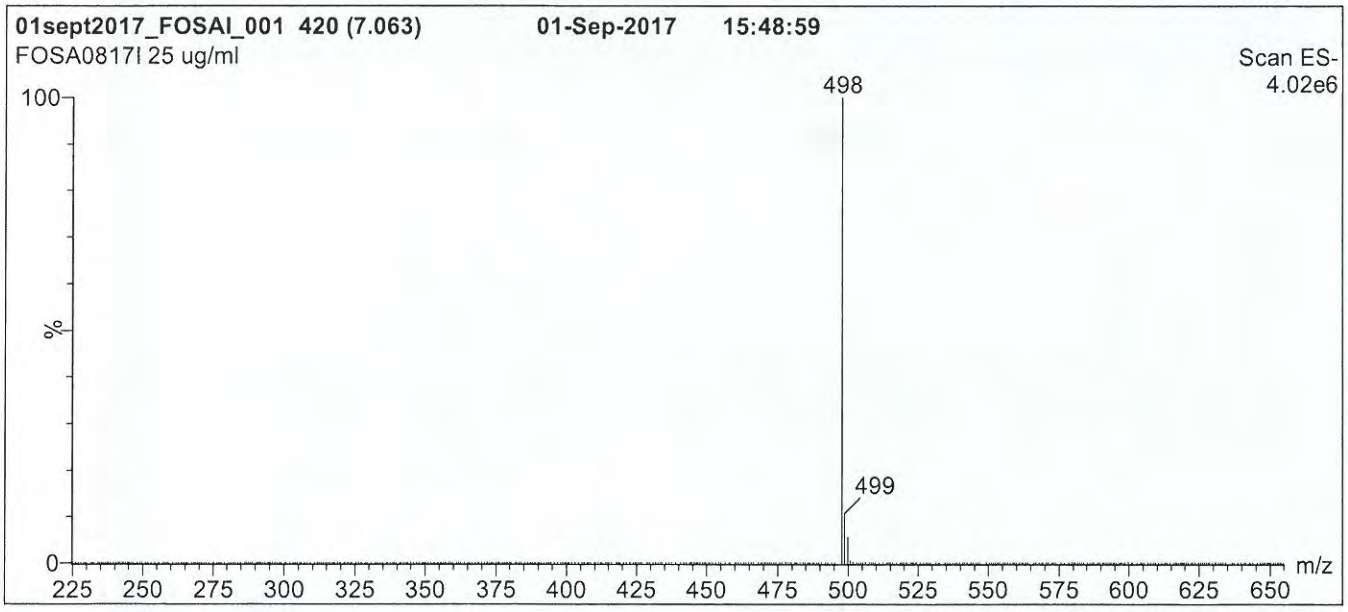
ANAB ACCREDITED

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

17L2008

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

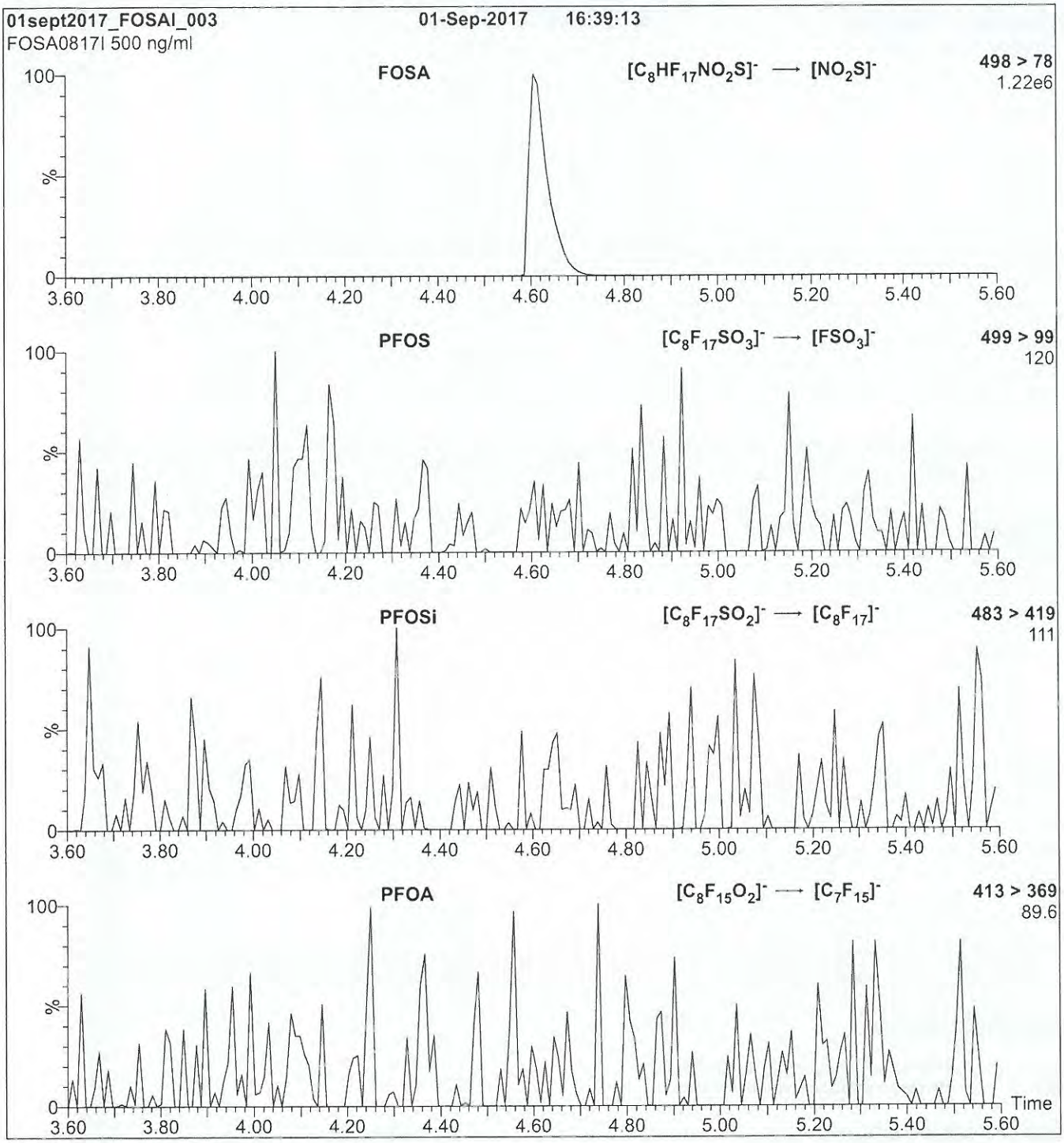
MS Parameters

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

17L2008

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 30

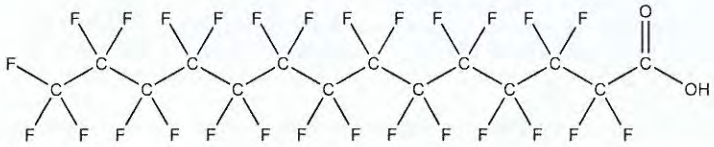
17L2009

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 ± 2.5 µg/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 PFDoA ($C_{12}HF_{23}O_2$) and ~ 0.2% of PFPeDA ($C_{15}HF_{29}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/21/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2009

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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:

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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).

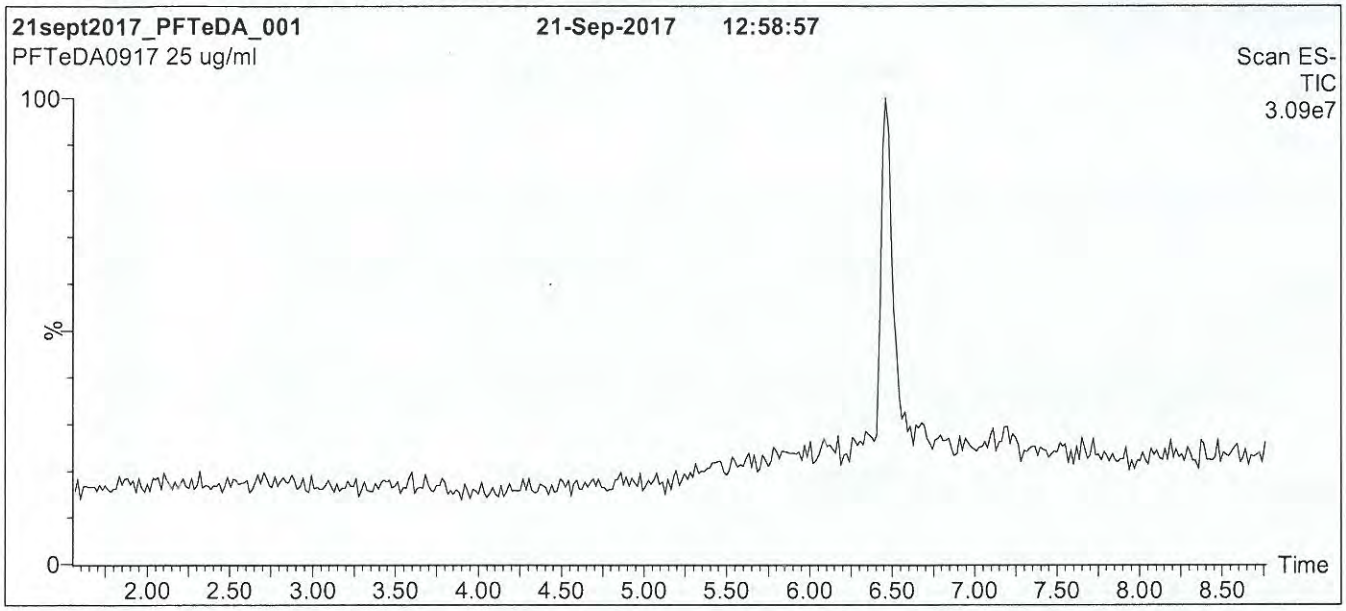
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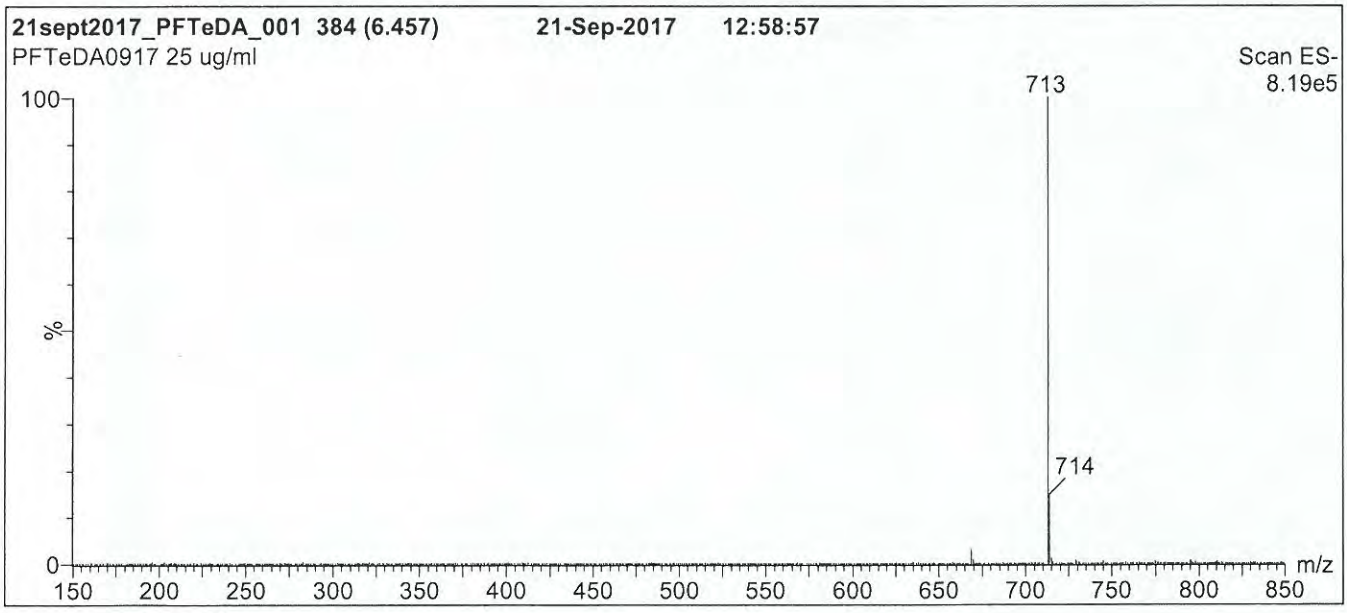
ANAB ACCREDITED

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17L2009

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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 µl/min

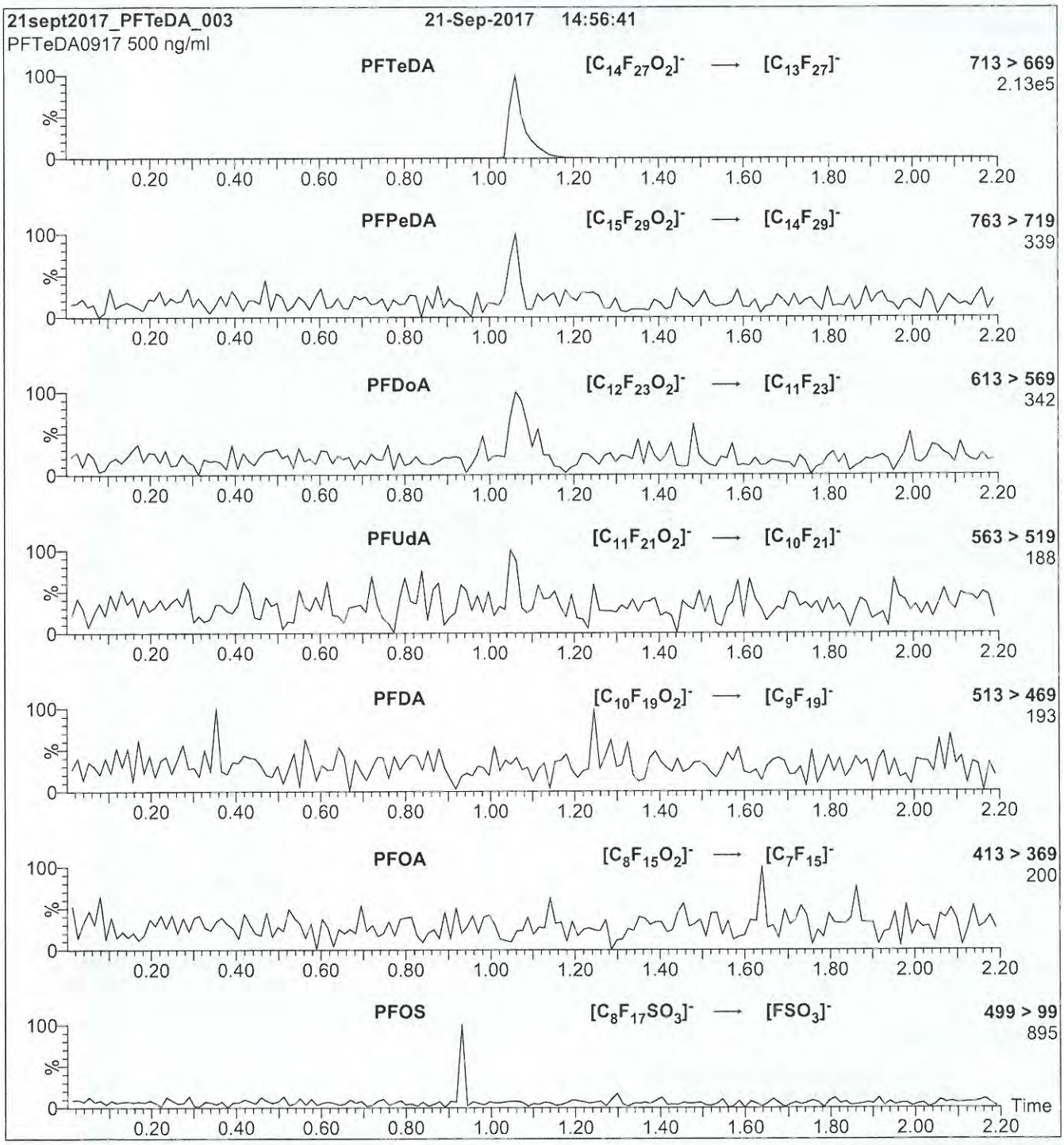
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

17L2009

Figure 2: **PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 14

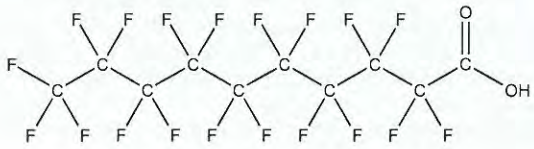
17L2013

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFDA
COMPOUND: Perfluoro-n-decanoic acid
LOT NUMBER: PFDA0517

STRUCTURE:
CAS #: 335-76-2



MOLECULAR FORMULA: $C_{10}HF_{19}O_2$
MOLECULAR WEIGHT: 514.08
CONCENTRATION: 50 ± 2.5 µg/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.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2013

INTENDED USE:

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TRACEABILITY:

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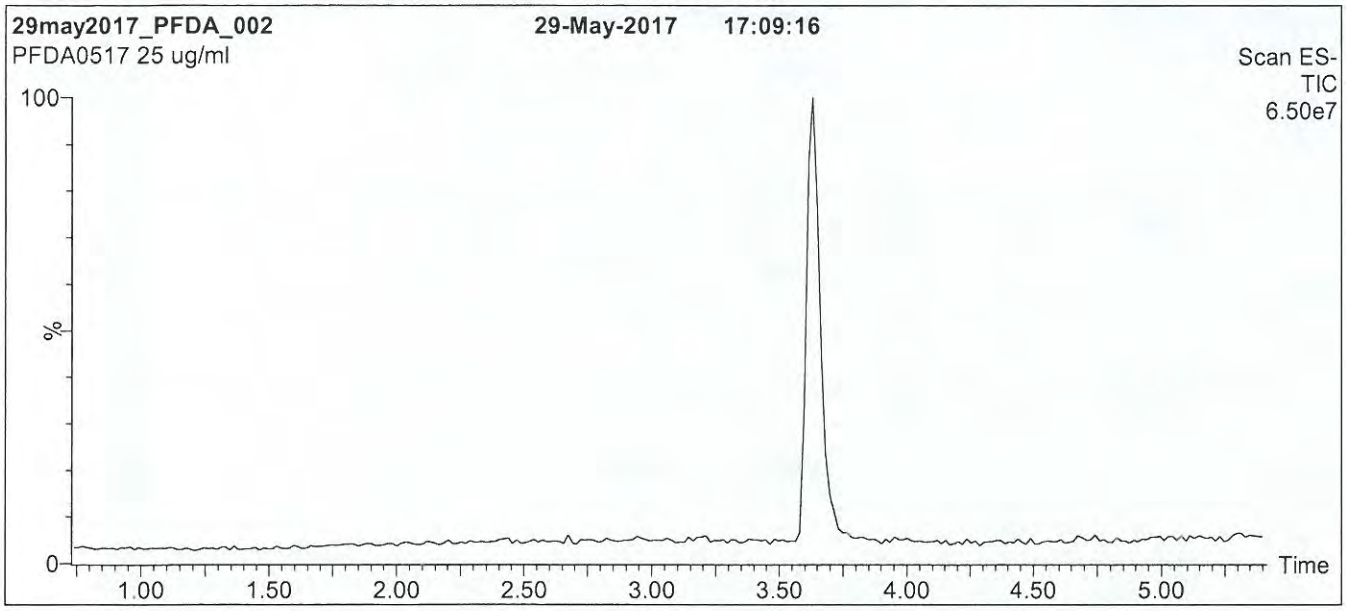
CALA

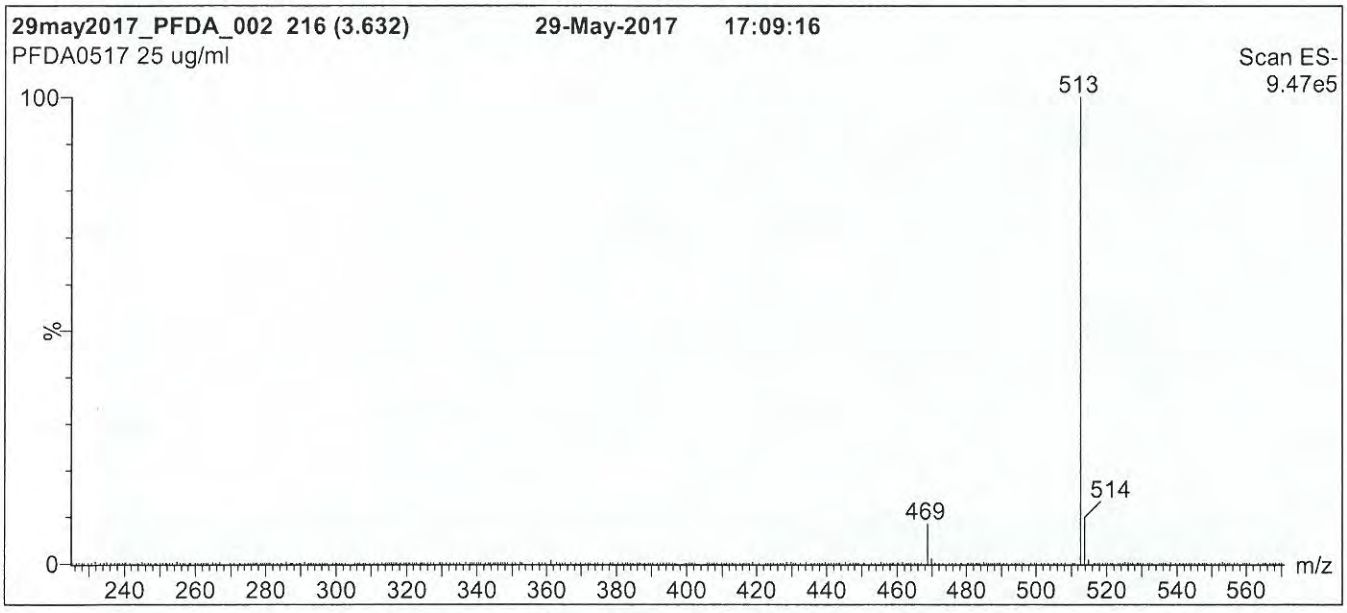
ANAB ACCREDITED

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17L2013

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

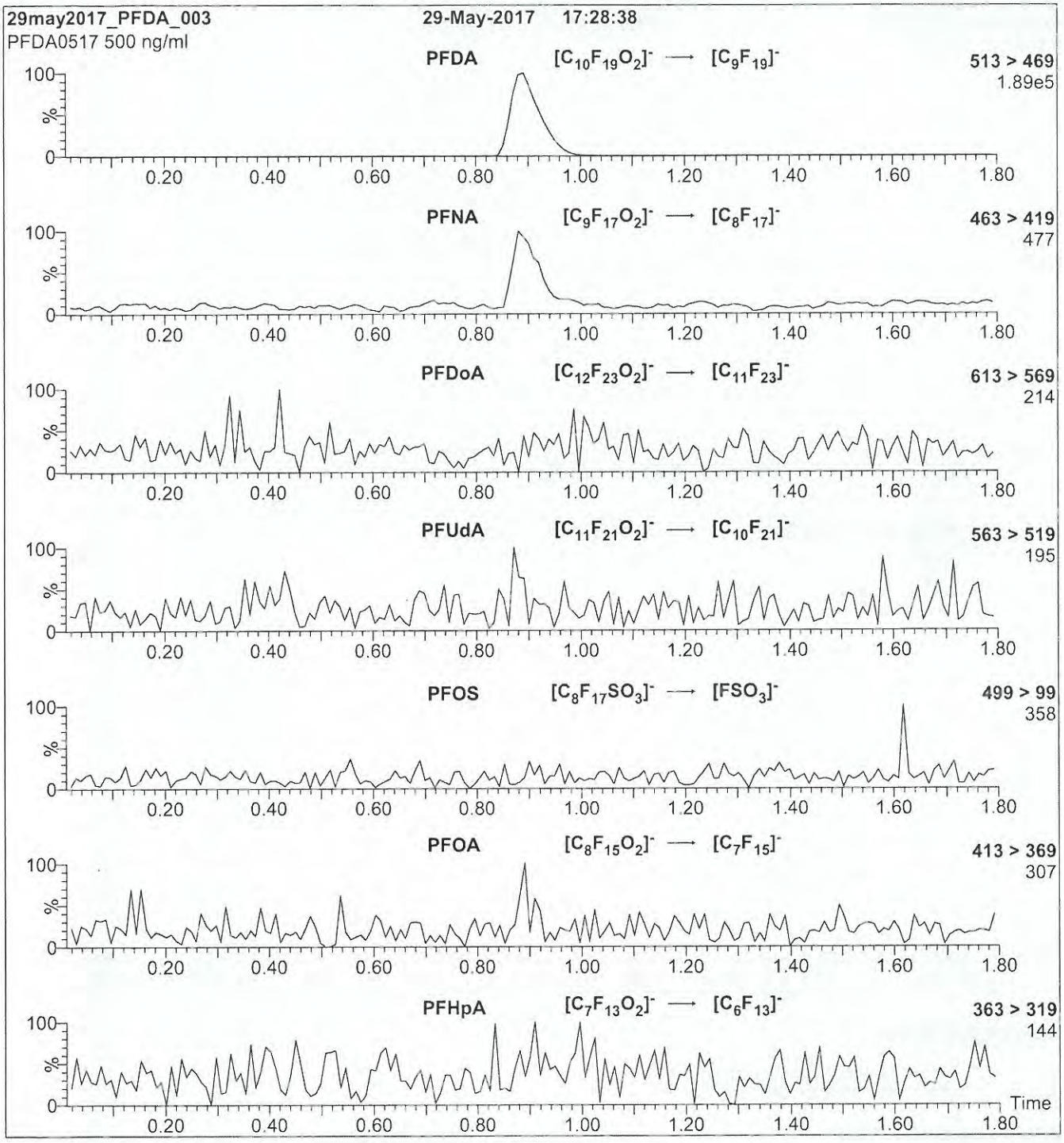
MS Parameters

Experiment: Full Scan (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

17L2013

Figure 2: **PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 13

17L2014

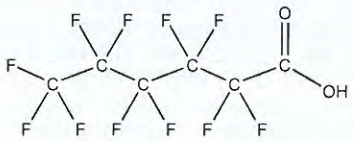
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxA
COMPOUND: Perfluoro-n-hexanoic acid
LOT NUMBER: PFHxA0917

STRUCTURE:

CAS #: 307-24-4



MOLECULAR FORMULA: $C_6HF_{11}O_2$
MOLECULAR WEIGHT: 314.05
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.
- Contains ~ 1.0% of branched isomers.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/01/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L 2014

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:

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

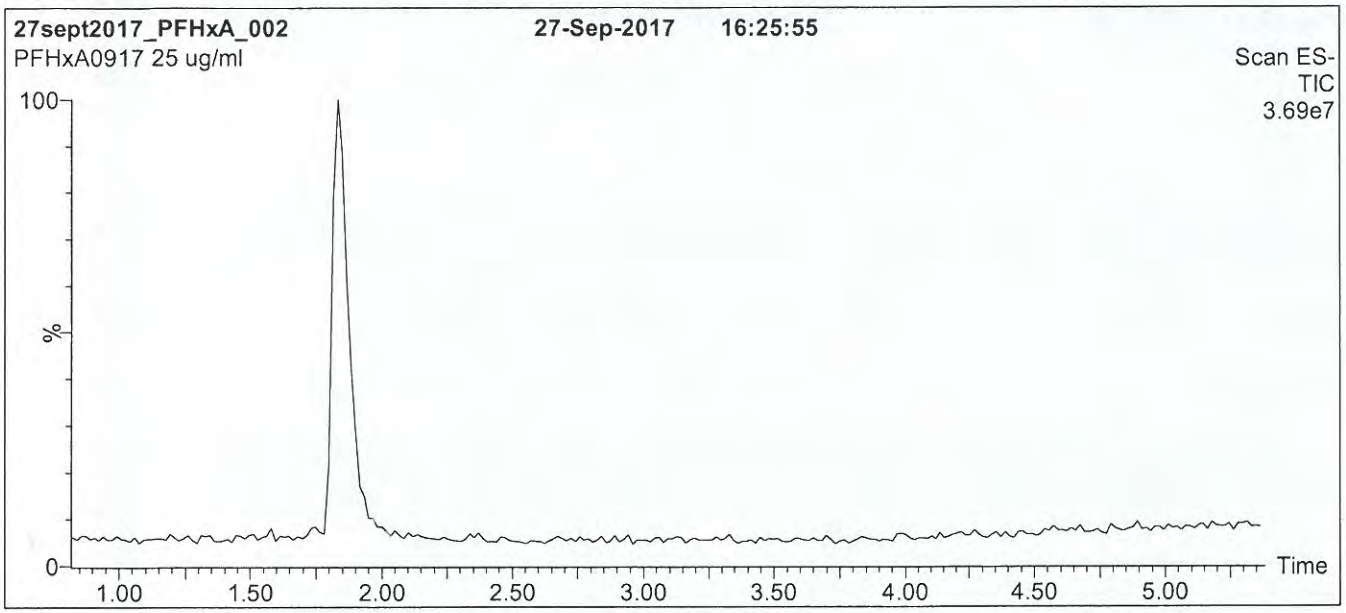
CALA

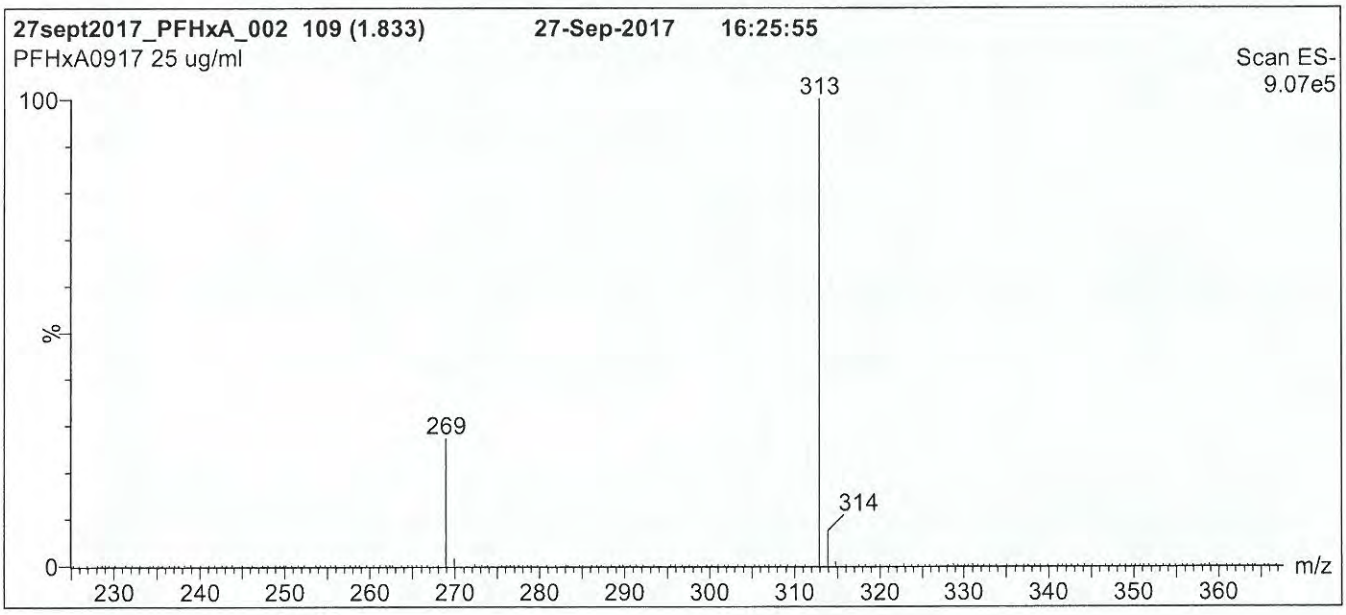
ANAB ACCREDITED

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

17L 2014

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

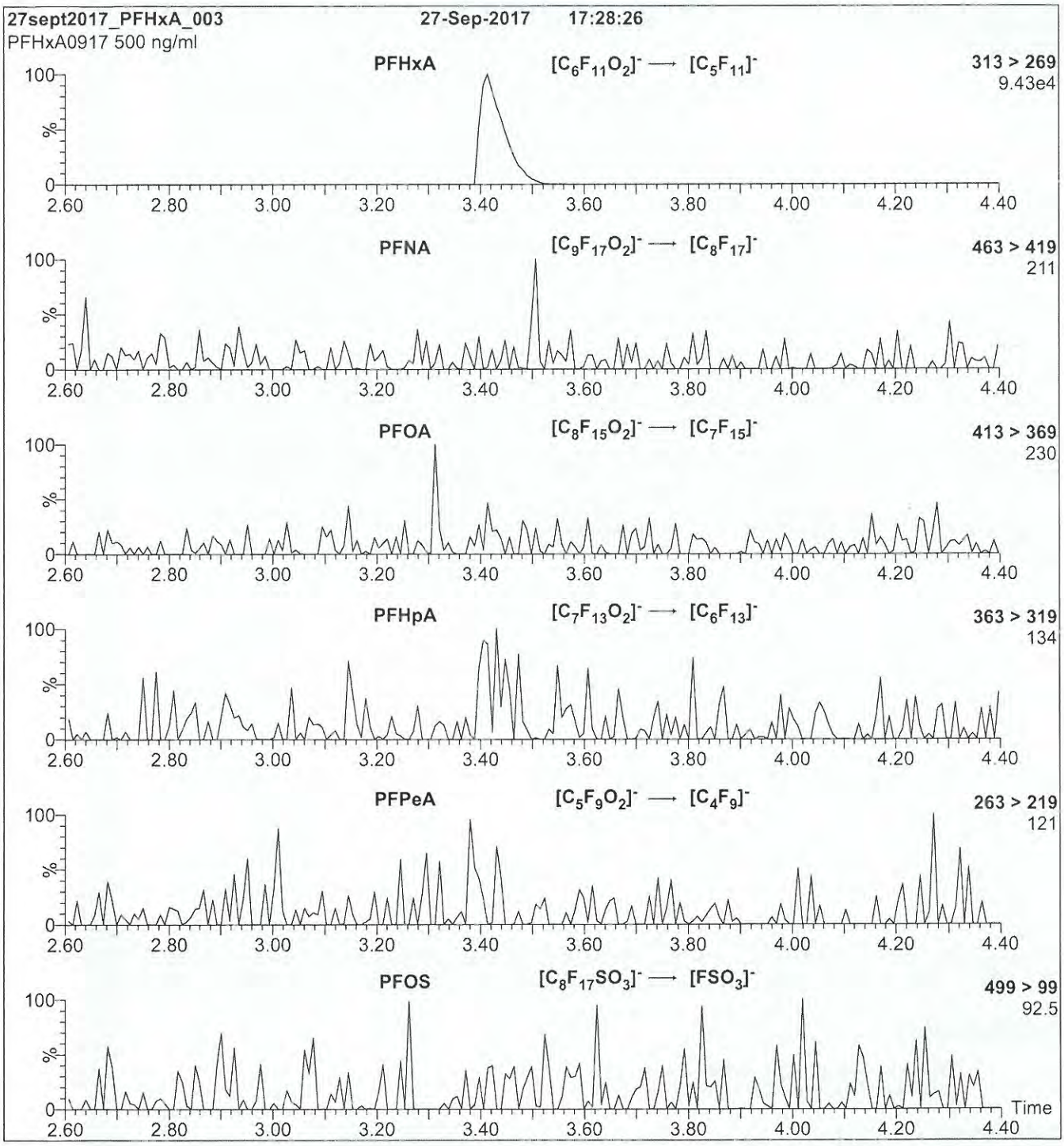
MS Parameters

Experiment: 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

17L2014

Figure 2: **PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

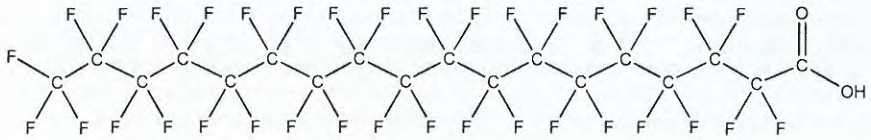
Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 10

17L2020

WELLINGTON LABORATORIES

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 ± 2.5 µg/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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2020

INTENDED USE:

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HAZARDS:

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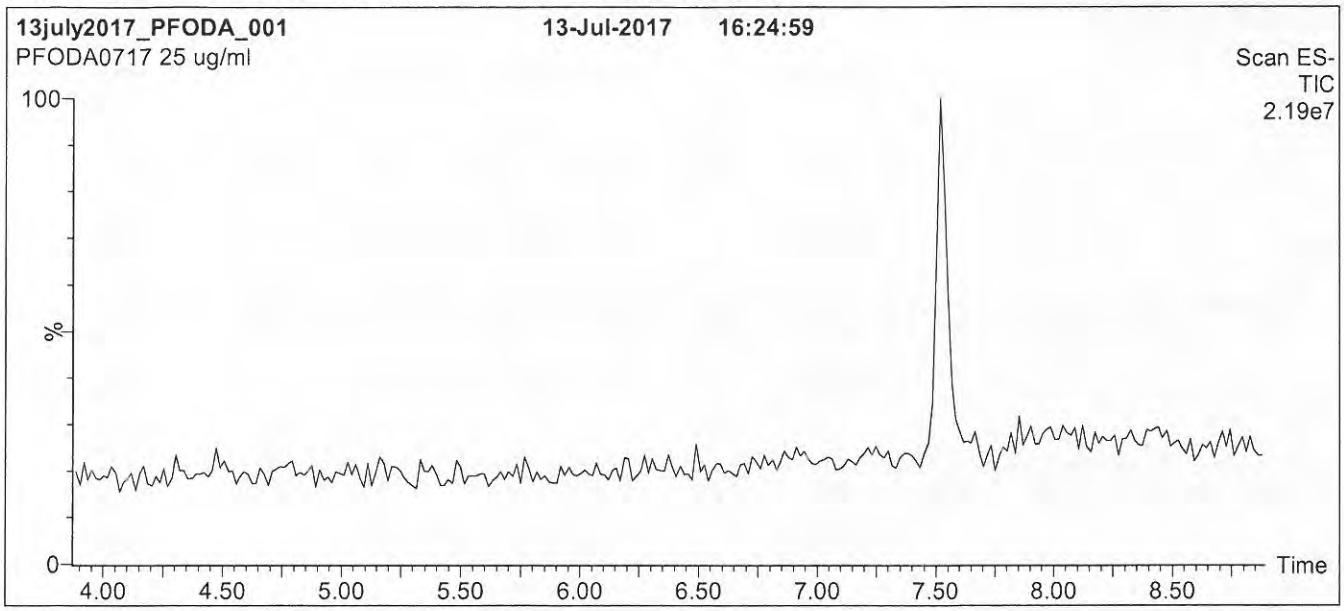
CALA

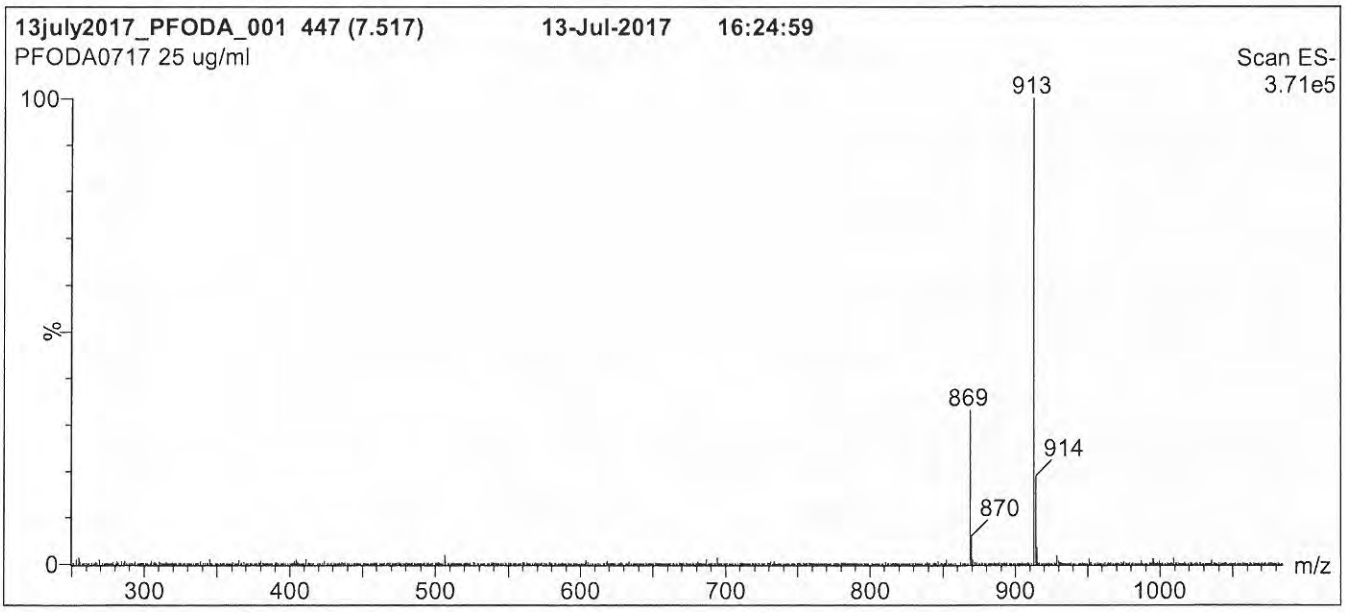
ANAB ACCREDITED

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1/2/2020

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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

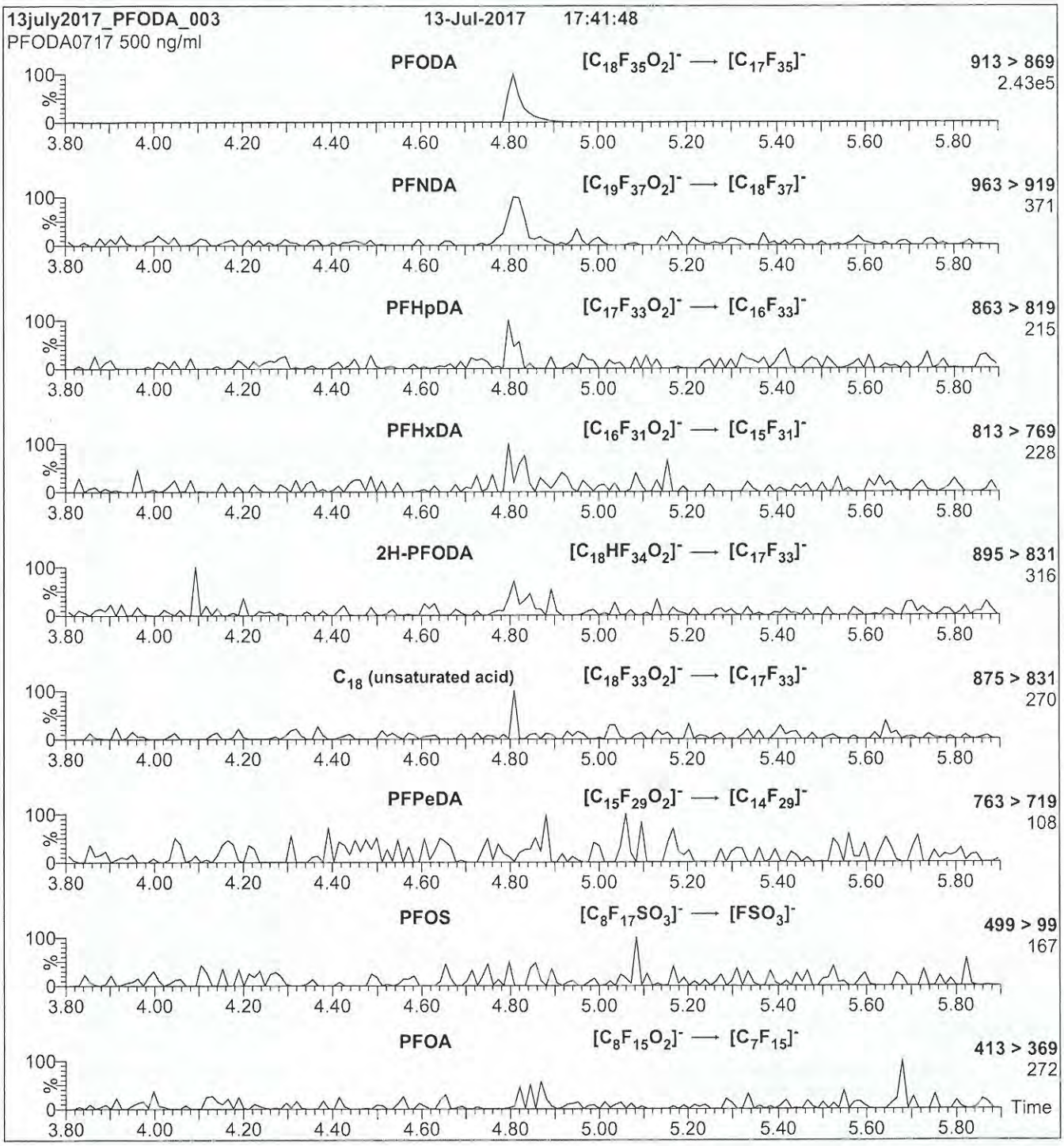
MS Parameters

Experiment: 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

17L2020

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

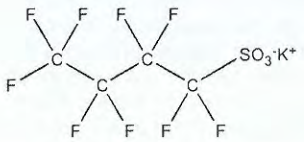
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 15

172021

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:	$C_4F_9SO_3K$	**MOLECULAR WEIGHT:**	338.19
CONCENTRATION:	50.0 ± 2.5 µg/ml (K salt) 44.2 ± 2.2 µg/ml (PFBS anion)	**SOLVENT(S):**	Methanol
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: _____ **Date:** 09/22/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2021

INTENDED USE:

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HOMOGENEITY:

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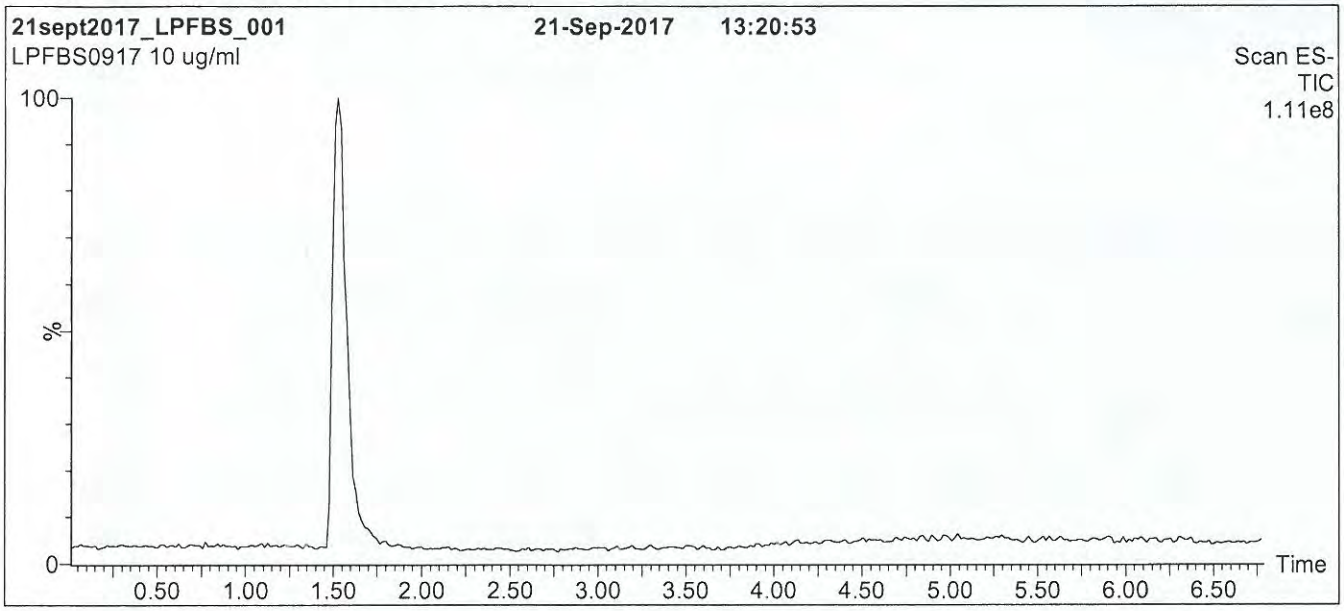
CALA

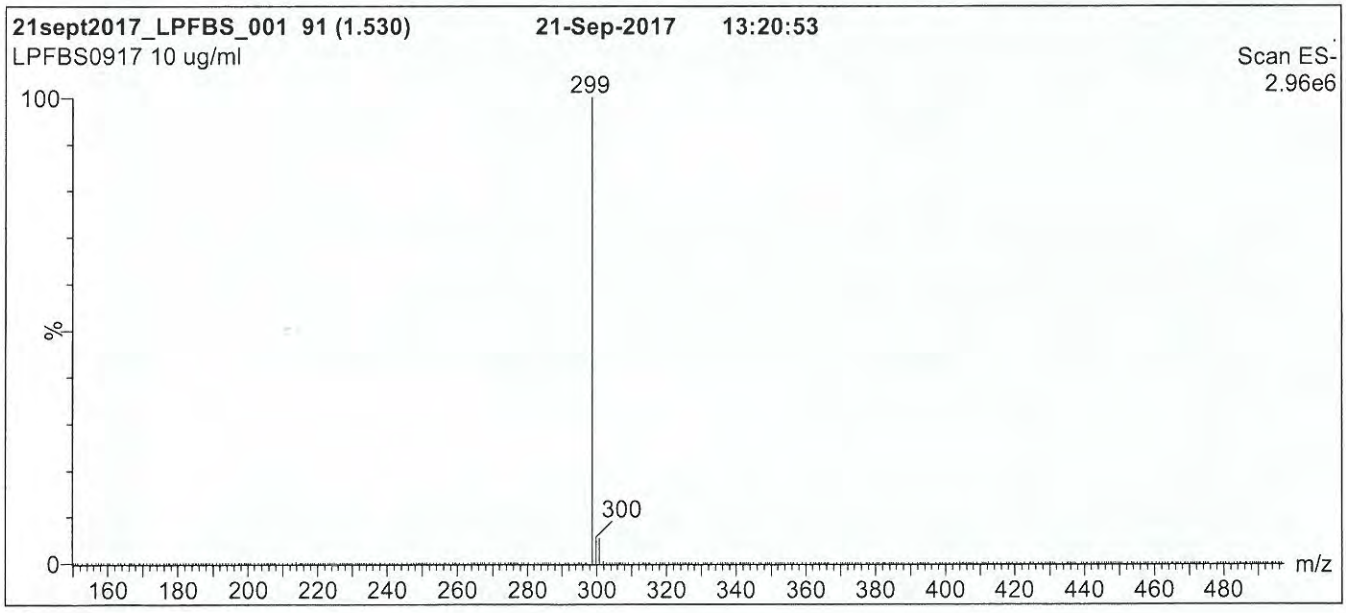
ANAB ACCREDITED

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17.2021

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

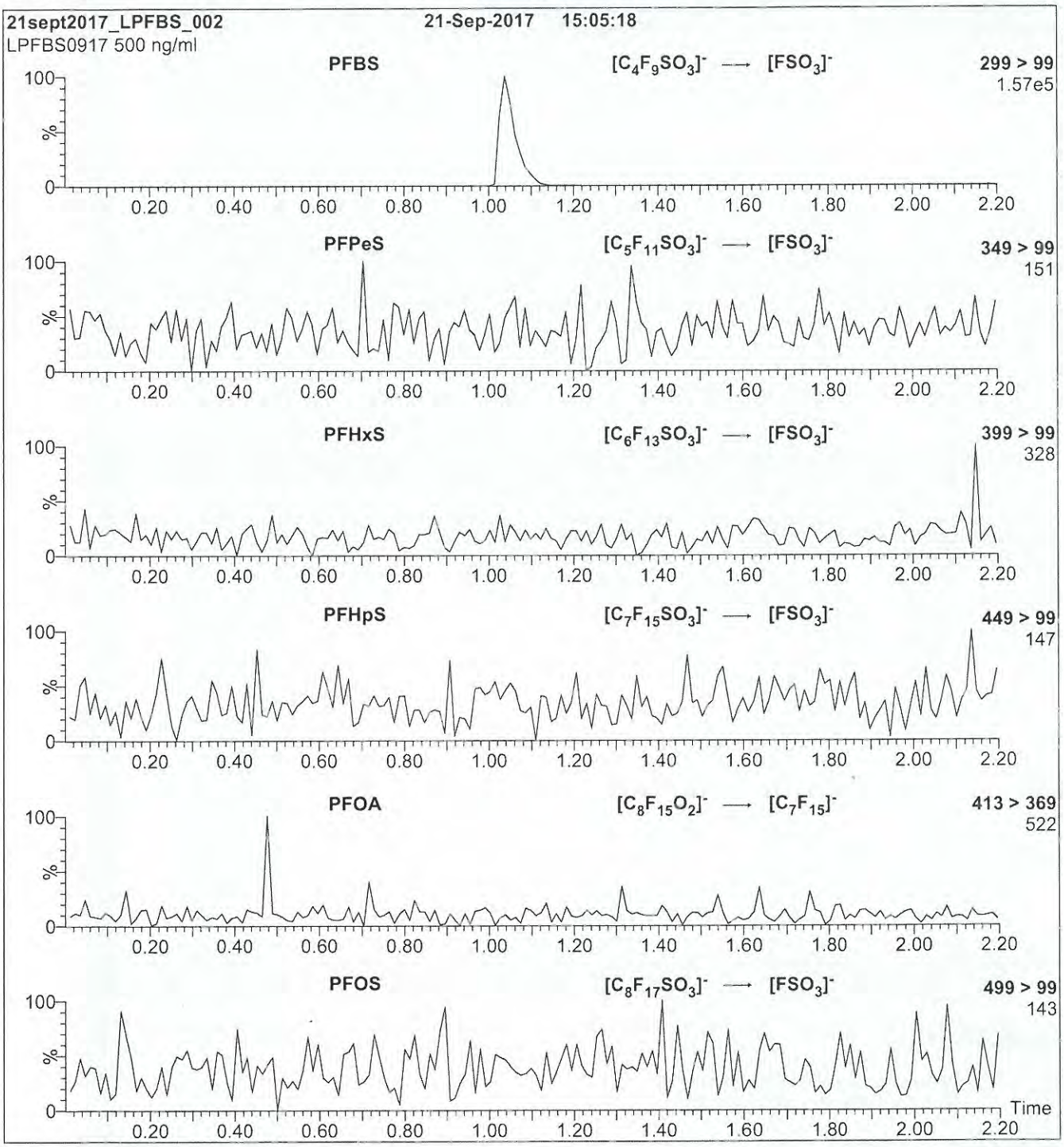
MS Parameters

Experiment: 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

17L2021

Figure 2: **L-PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 25

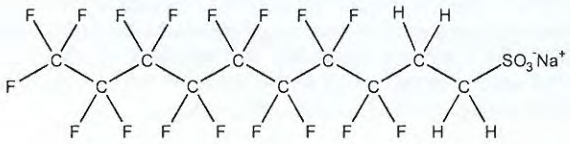
17L2022

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS1216
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)	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

17L2022

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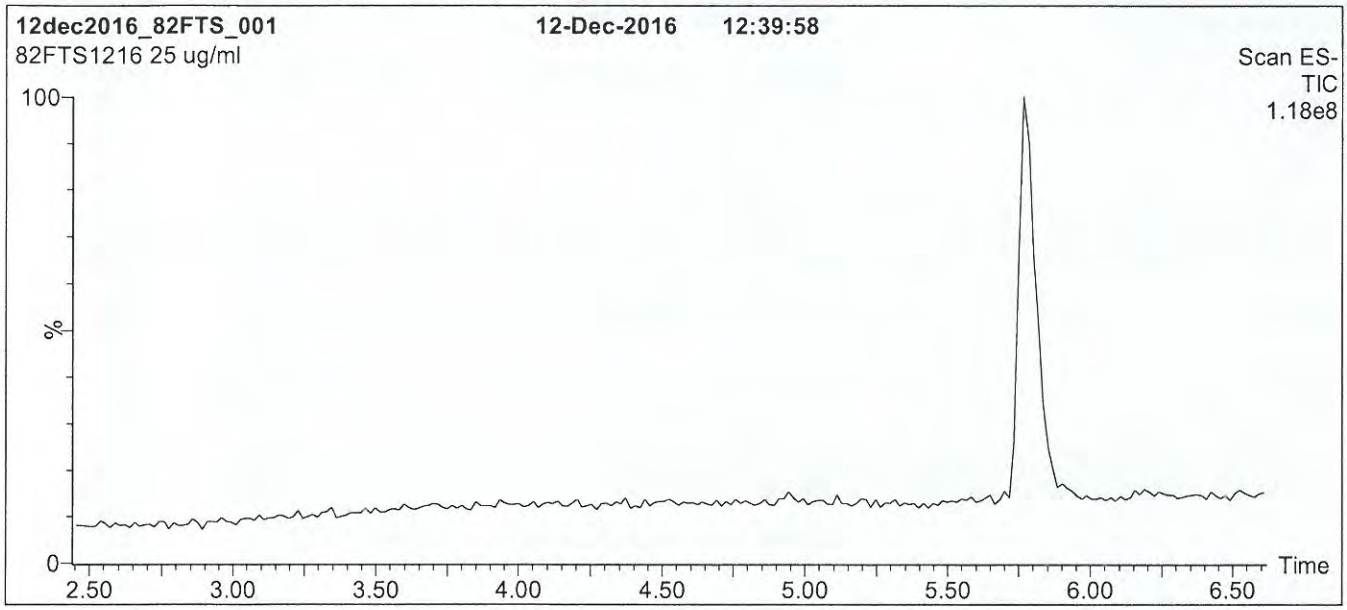
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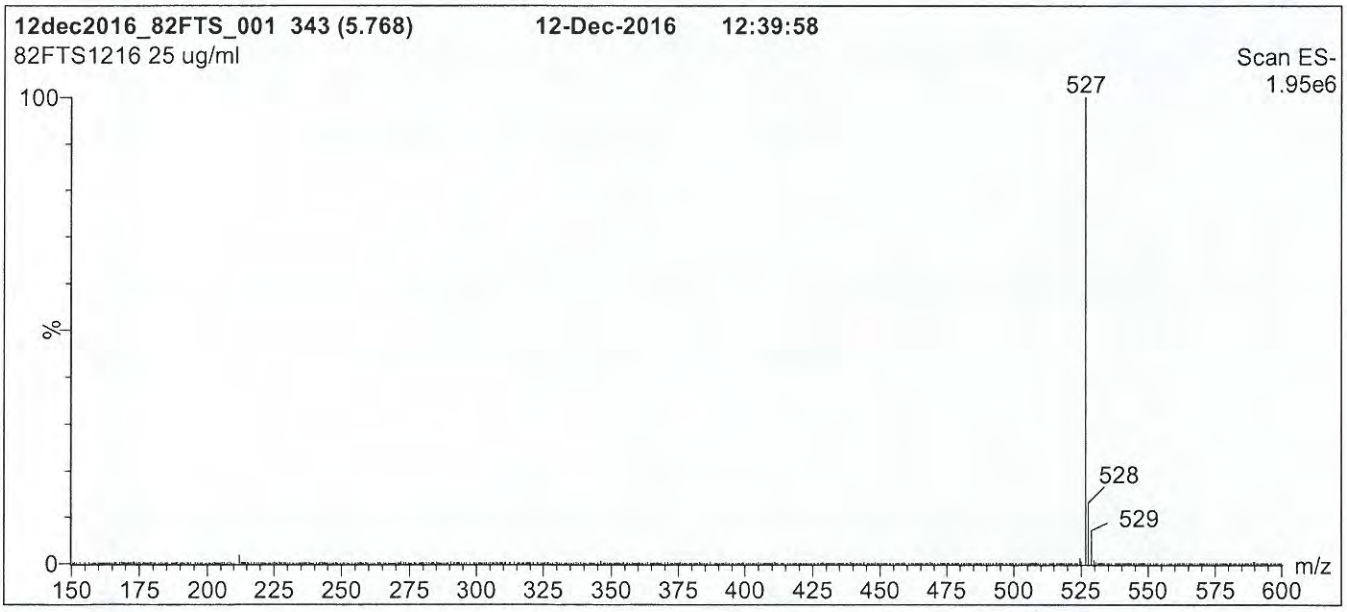
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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17L2022

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

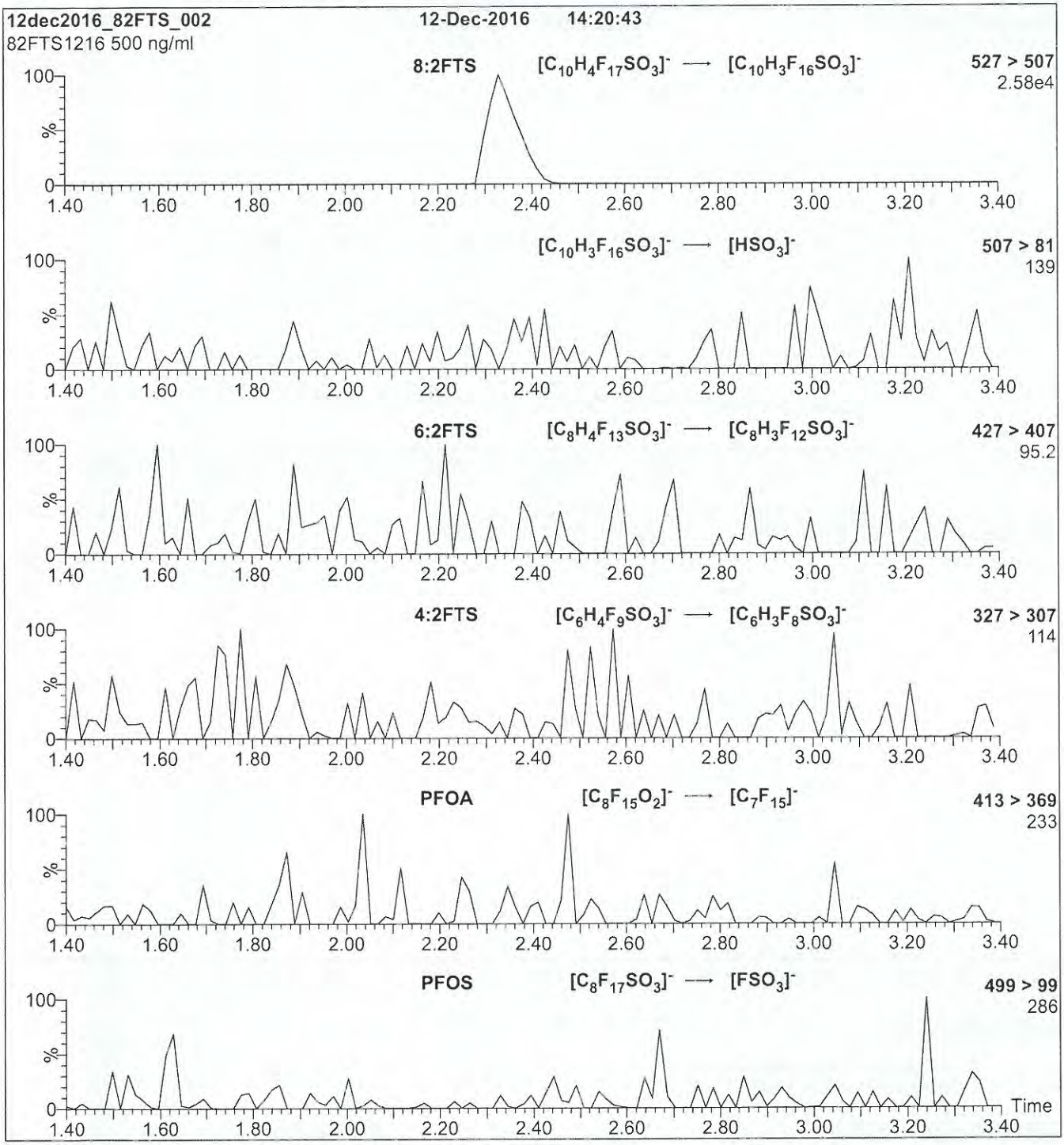
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

17L2022

Figure 2: **8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml 8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 30

17L2023

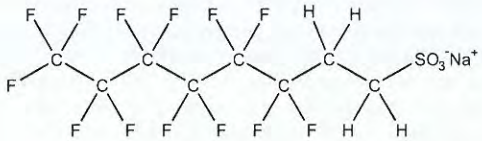
WELLINGTON LABORATORIES

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 ± 2.5 µg/ml	(Na salt)	**SOLVENT(S):**	Methanol
	47.4 ± 2.4 µg/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: _____ **Date:** 04/24/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2023

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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:

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,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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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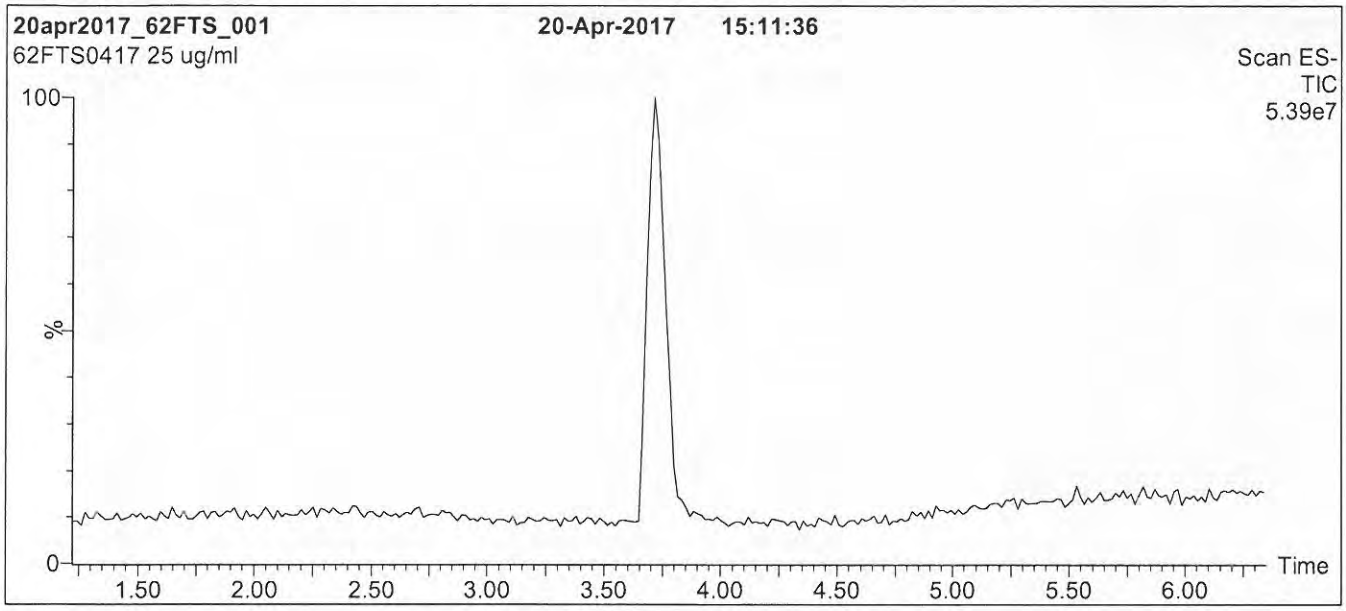
CALA

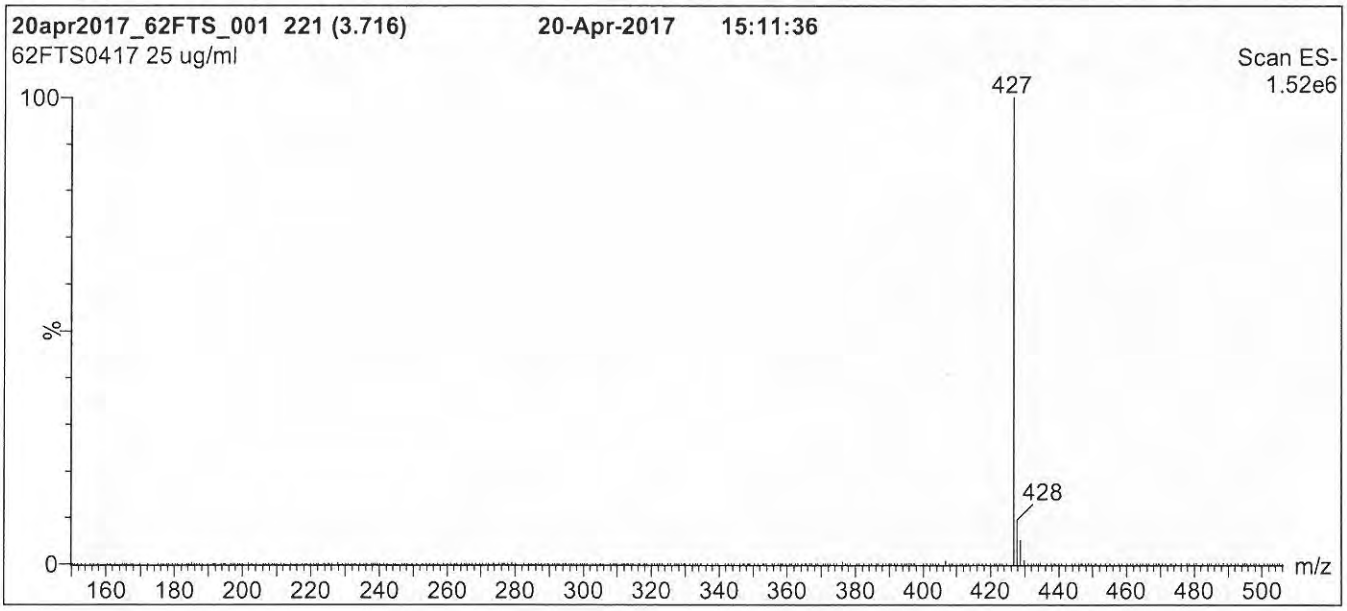
ANAB ACCREDITED

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17L 2023

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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 µl/min

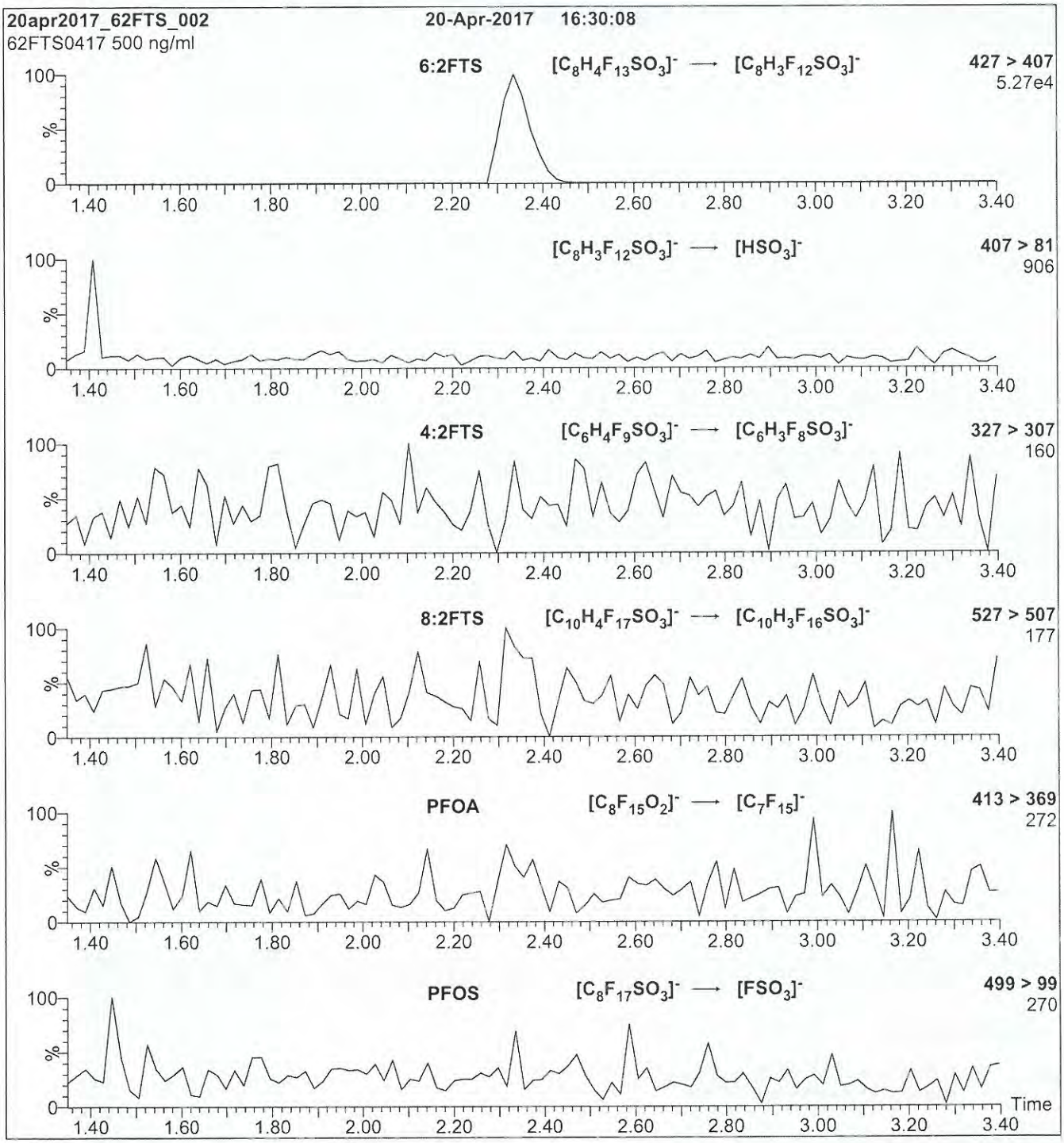
MS Parameters

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

17L2023

Figure 2: **6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml 6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

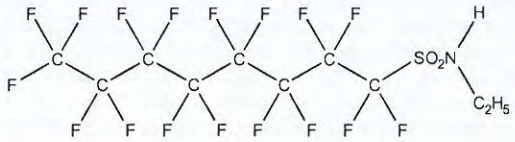
Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 25

17L 2031

WELLINGTON LABORATORIES

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 ± 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:** 07/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2031

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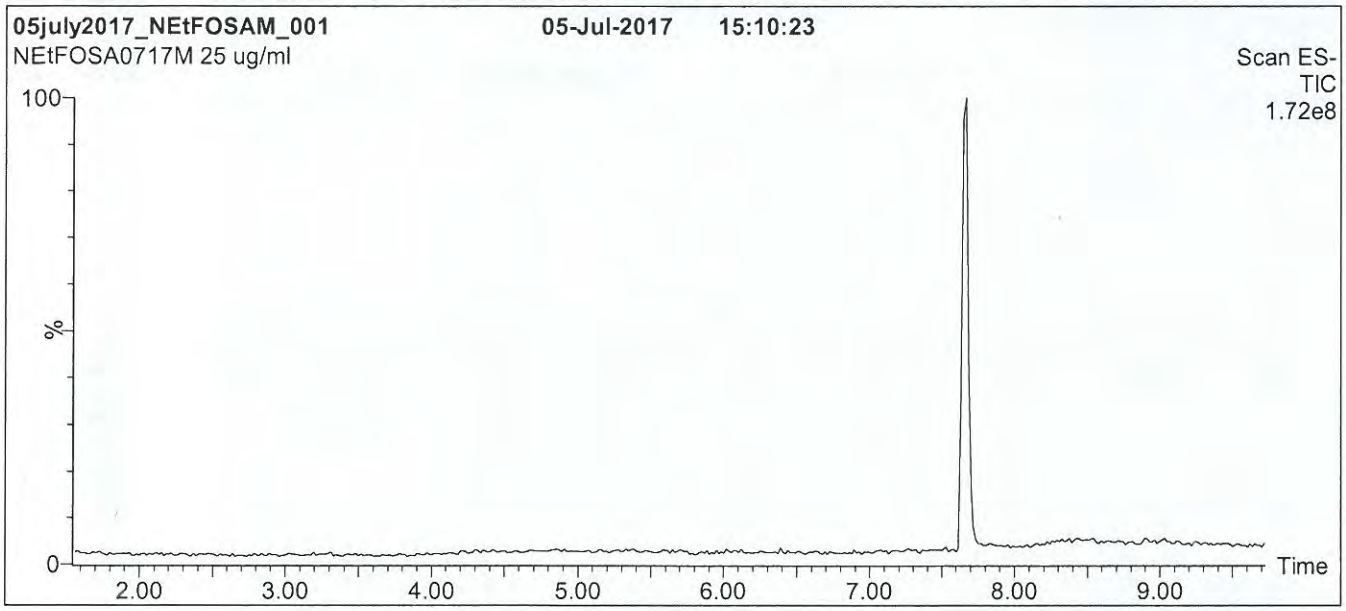
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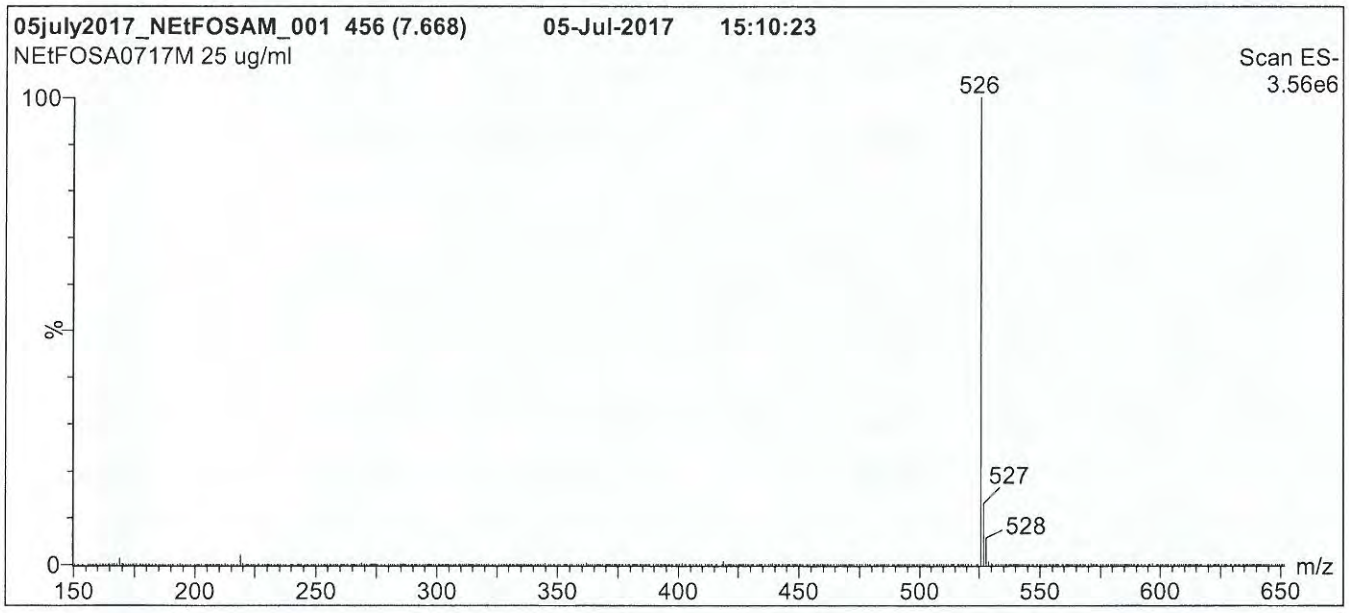
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17L2031

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc 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 µl/min

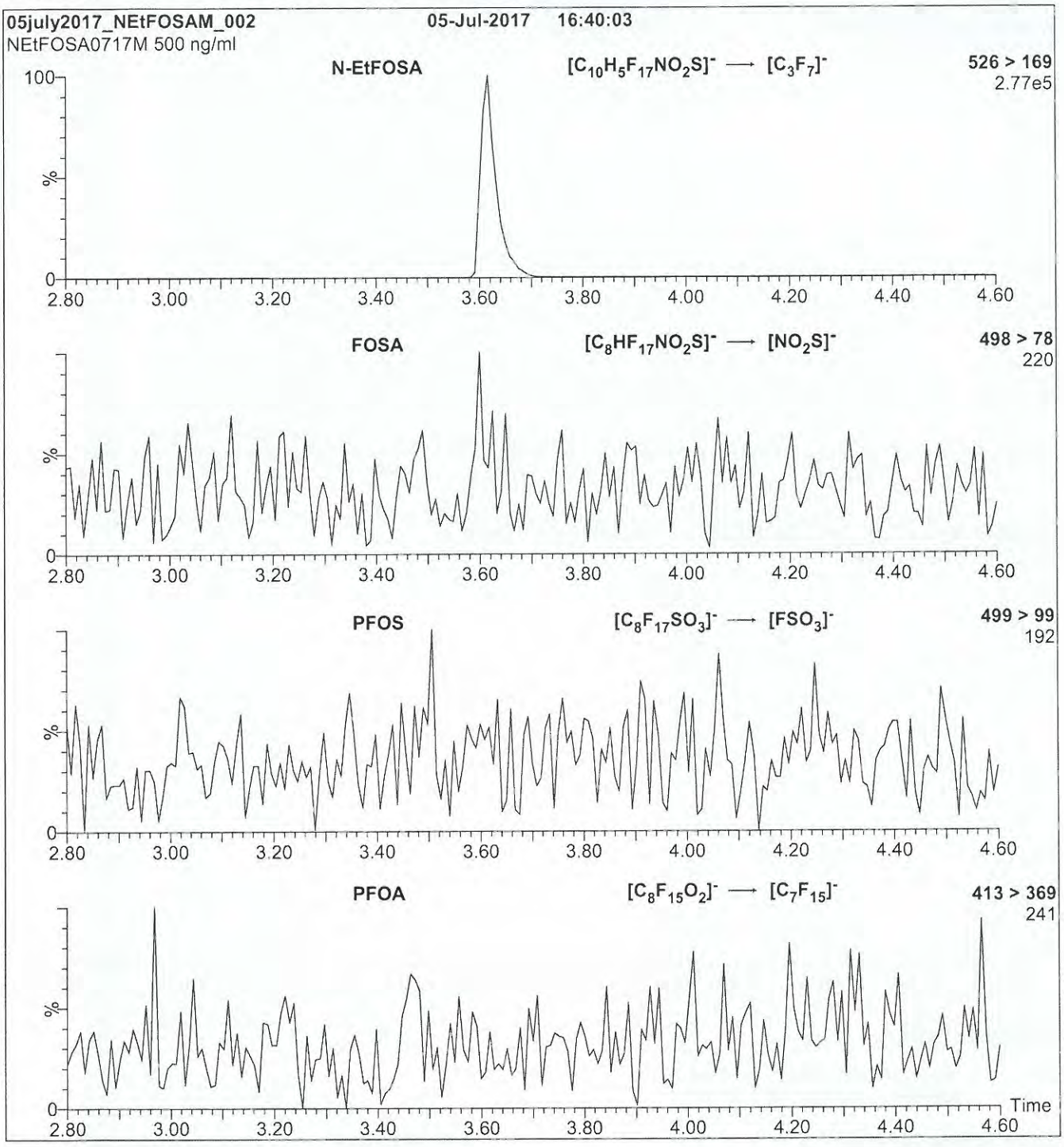
MS Parameters

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

17L2031

Figure 2: **N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-EtFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

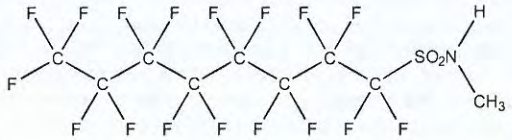
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

17L2032

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	N-MeFOSA-M	**LOT NUMBER:**	NMeFOSA0717M
COMPOUND:	N-methylperfluoro-1-octanesulfonamide		
STRUCTURE:		**CAS #:**	31506-32-8



MOLECULAR FORMULA:	$C_9H_4F_{17}NO_2S$	**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		

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Figure 1: LC/MS Data (TIC and Mass Spectrum)
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ADDITIONAL INFORMATION:

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Certified By: _____ **Date:** 07/10/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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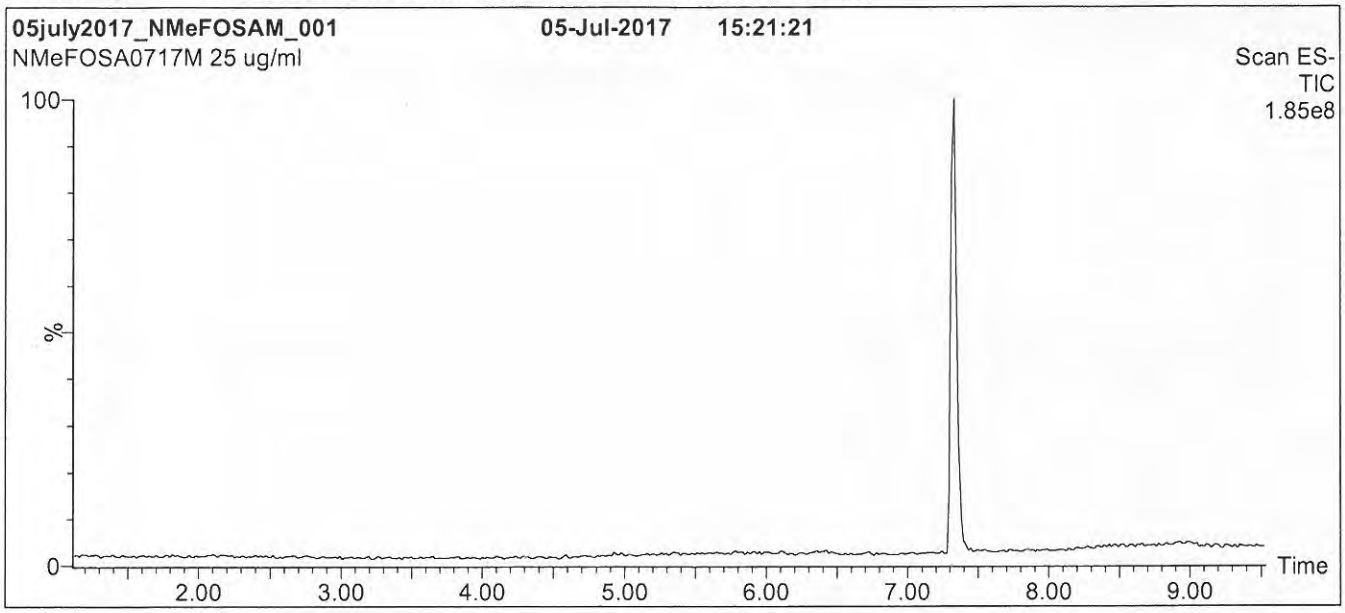
CALA

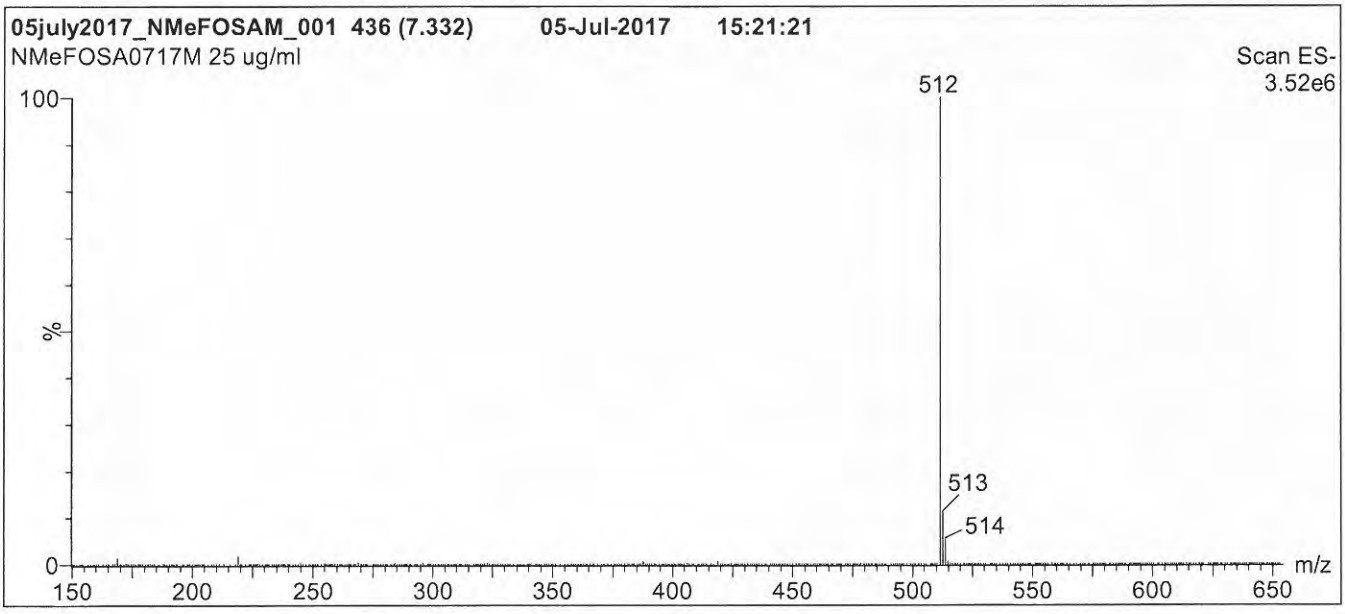
ANAB ACCREDITED

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17L2032

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
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Ramp to 90% organic over 7.5 min and hold for
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Time: 10 min

Flow: 300 µl/min

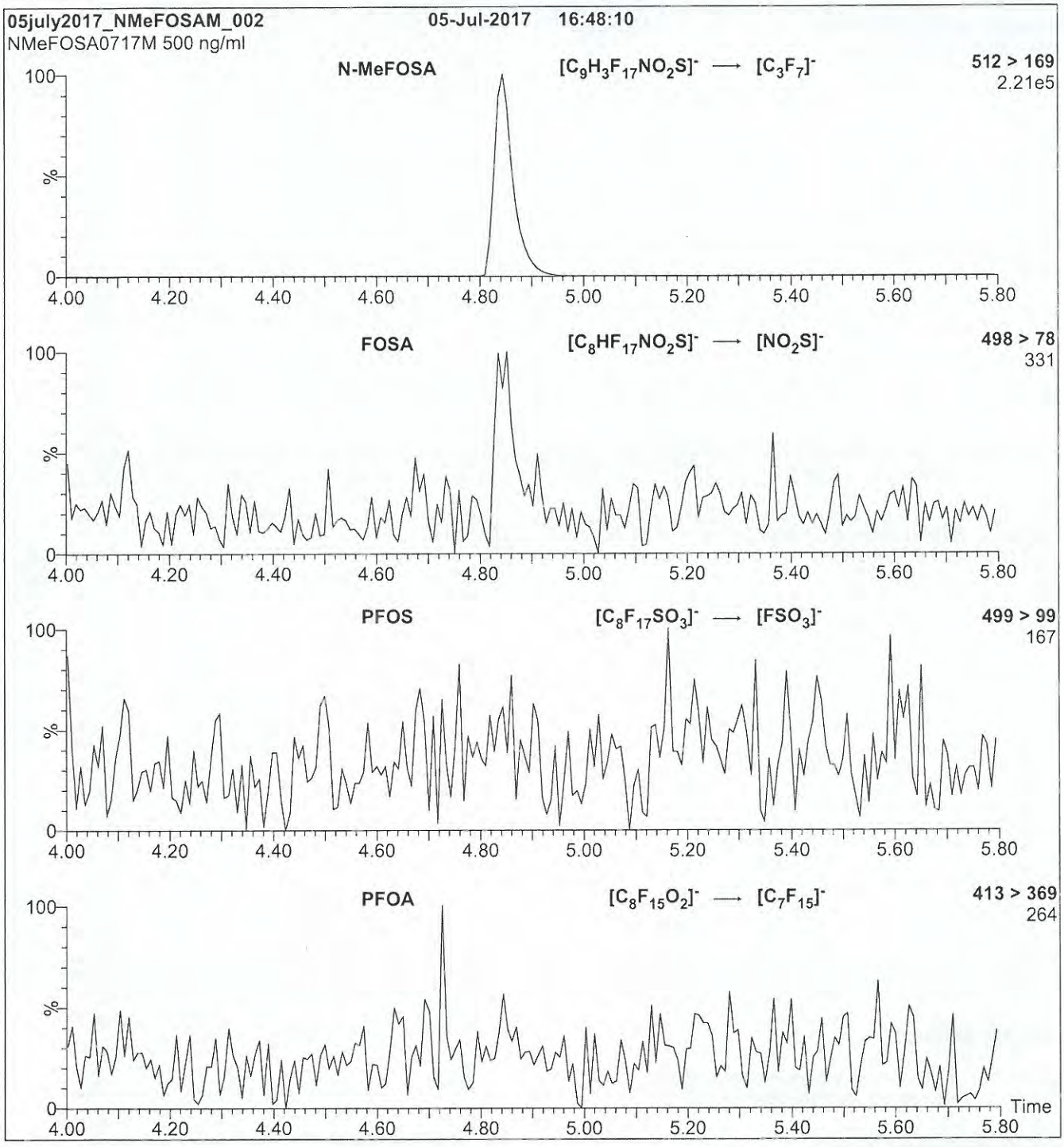
MS Parameters

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

17L2032

Figure 2: **N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml N-MeFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 30

17L2033

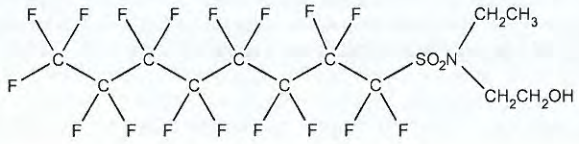
WELLINGTON LABORATORIES

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:	$C_{12}H_{10}F_{17}NO_3S$	**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: _____ **Date:** 04/26/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2033

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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.

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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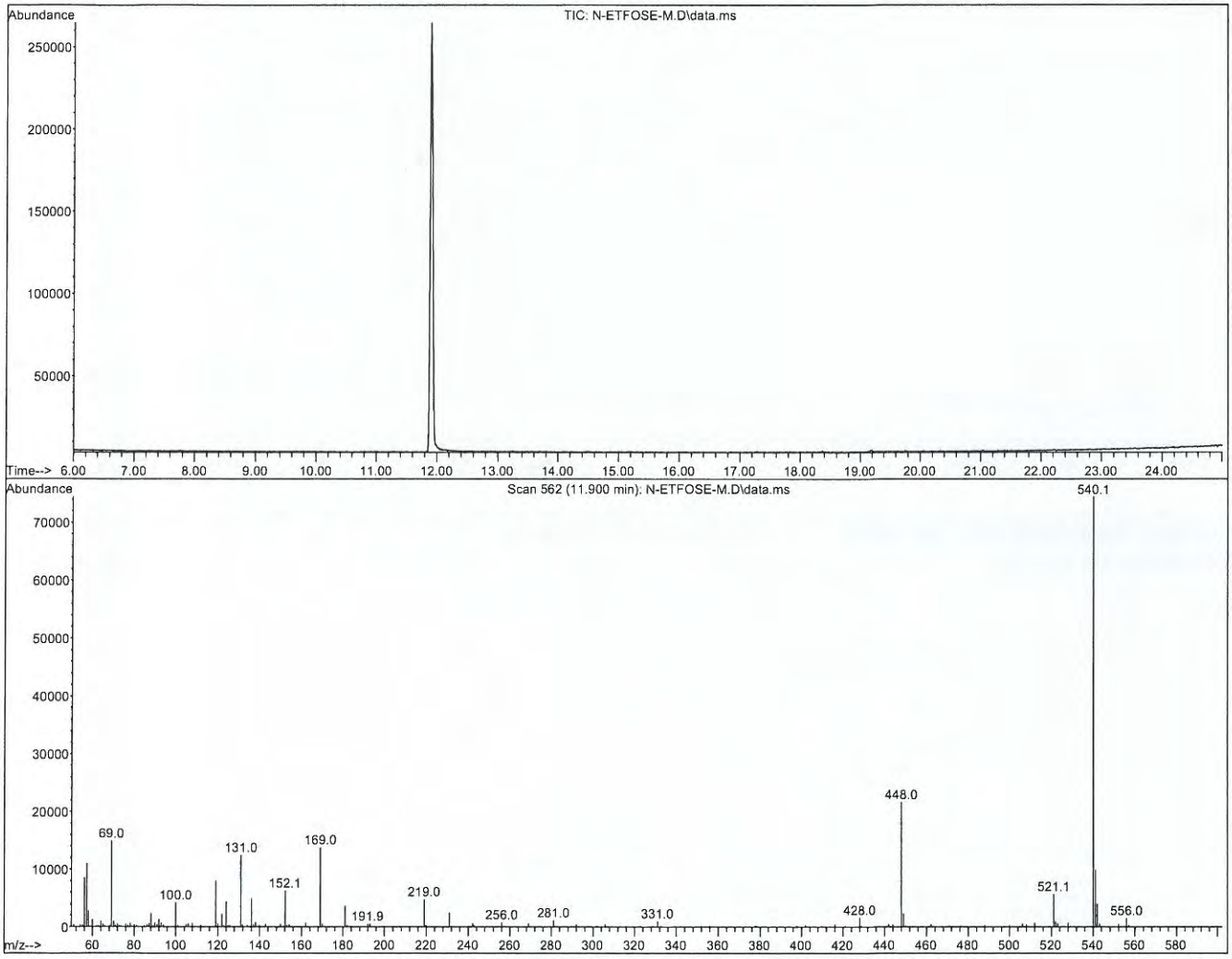
CALA

ANAB ACCREDITED

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17L2033

Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)**



HRGC/LRMS:

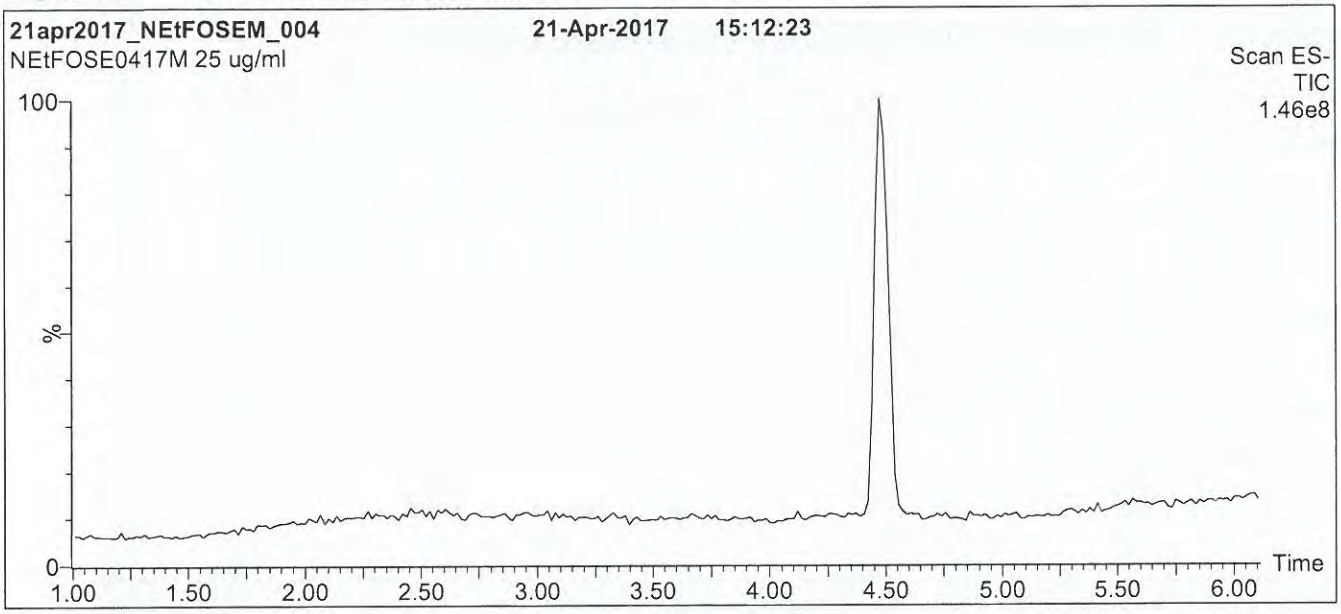
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

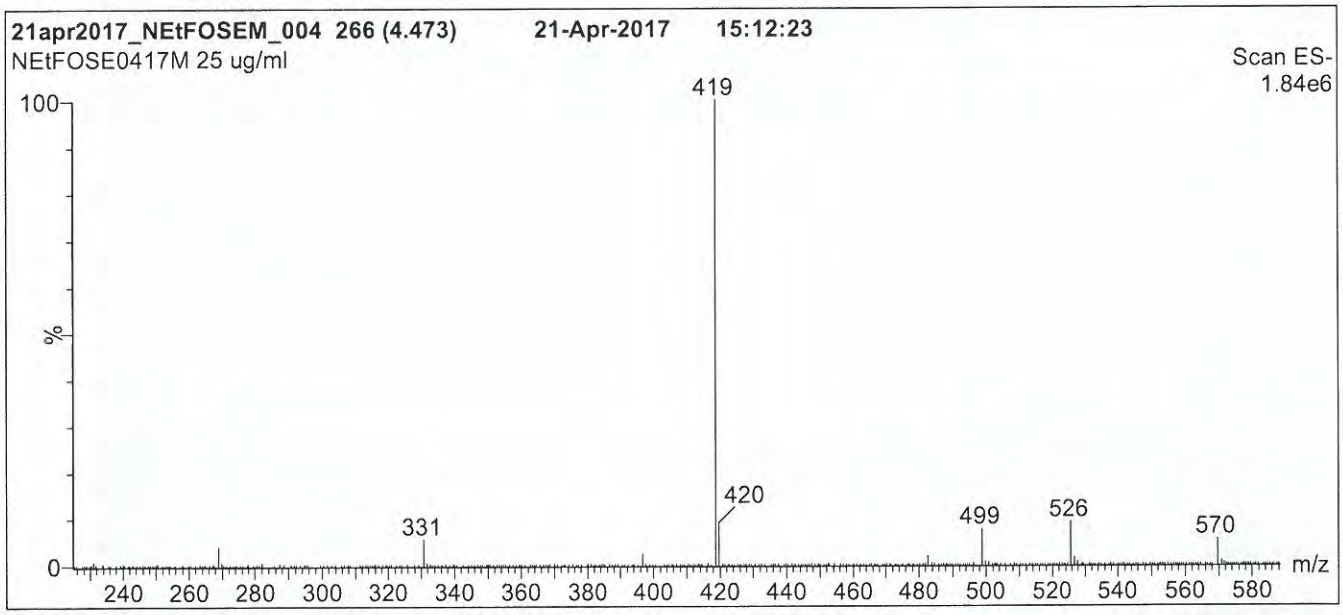
Chromatographic Conditions:

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)

17L2033

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% MeOH / 40% H_2O
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

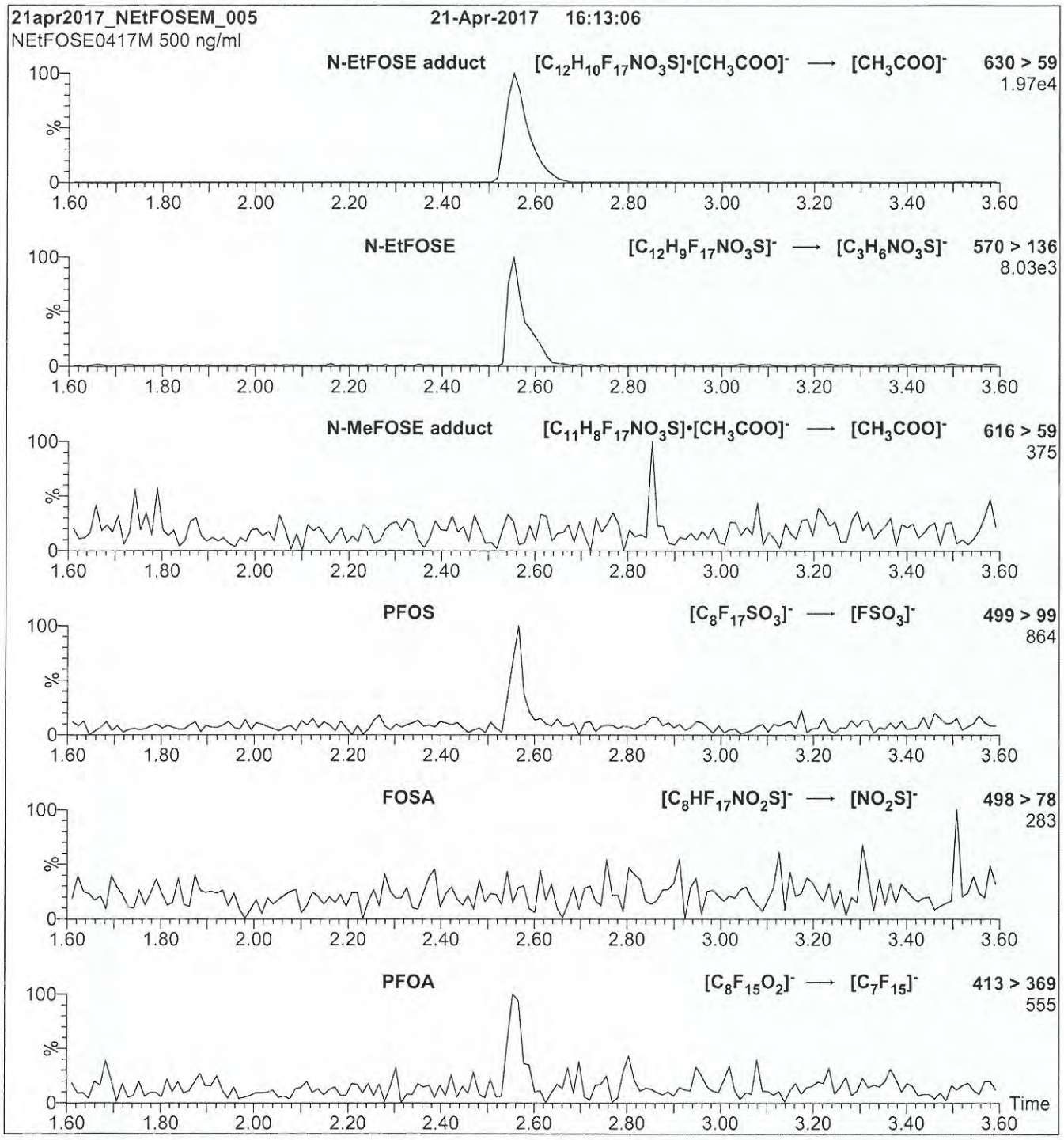
MS Parameters

Experiment: Full Scan (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

17L2033

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% H_2O

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 33

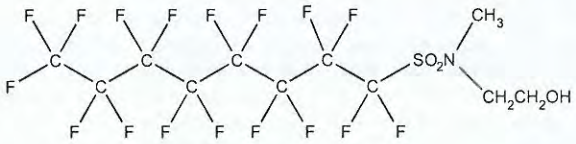
17L2034

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: $C_{11}H_8F_{17}NO_3S$ **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: _____ **Date:** 05/05/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2034

INTENDED USE:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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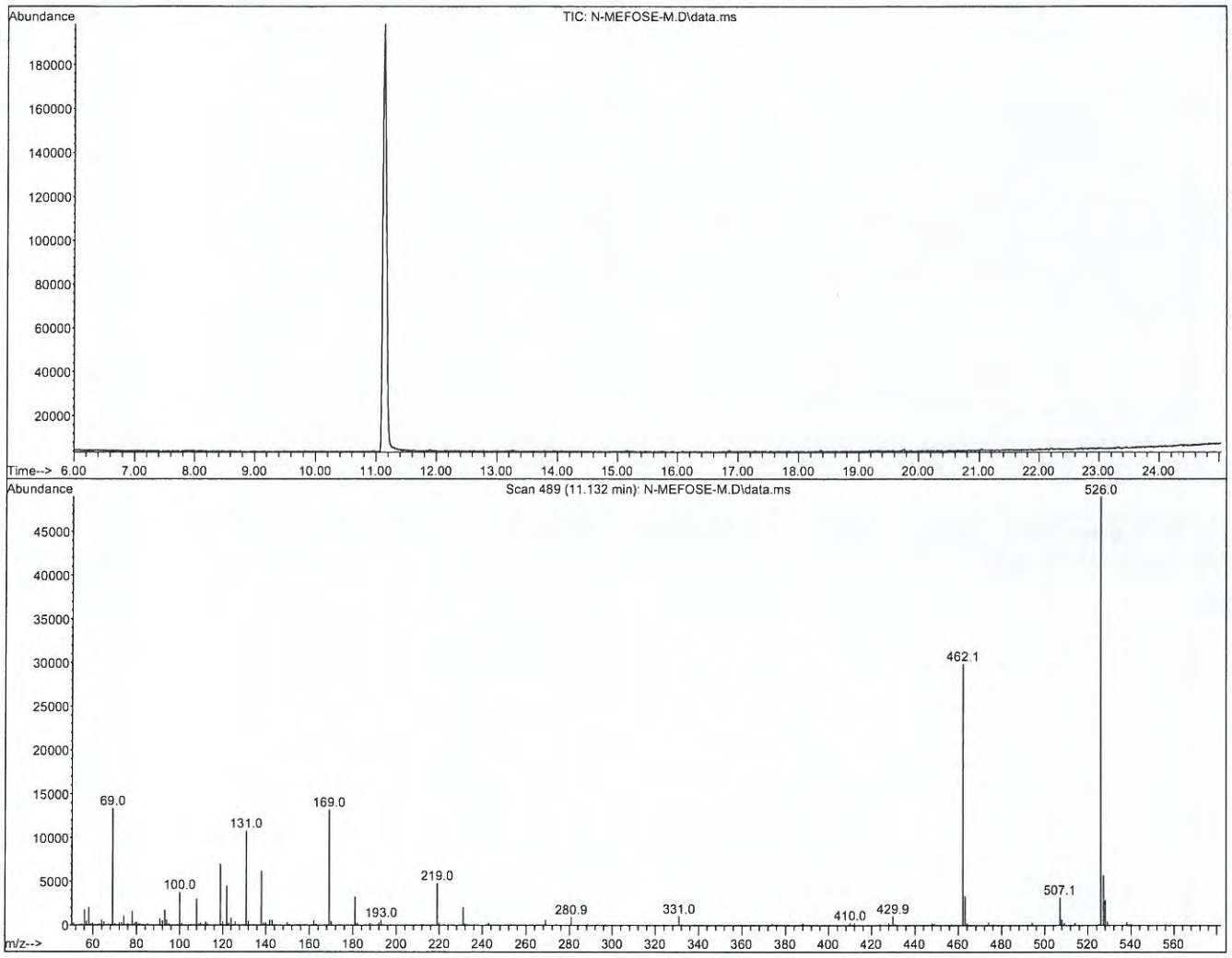
CALA

ANAB ACCREDITED

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

17L2034

Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)**



HRGC/LRMS:

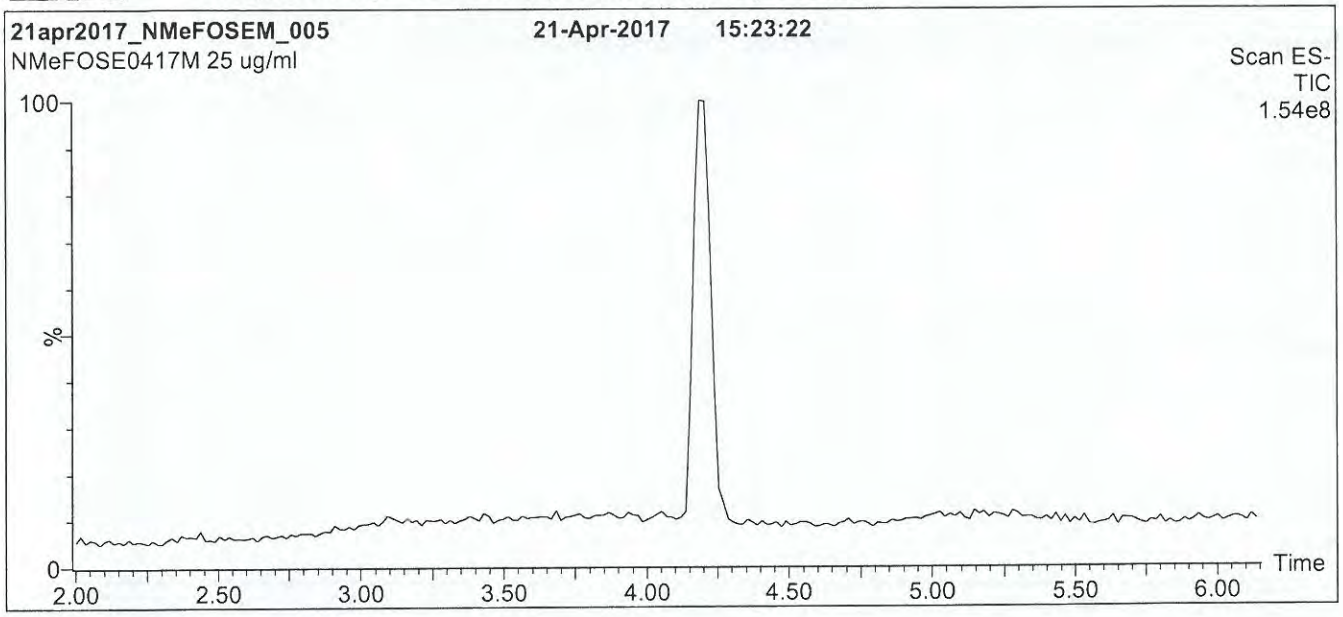
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

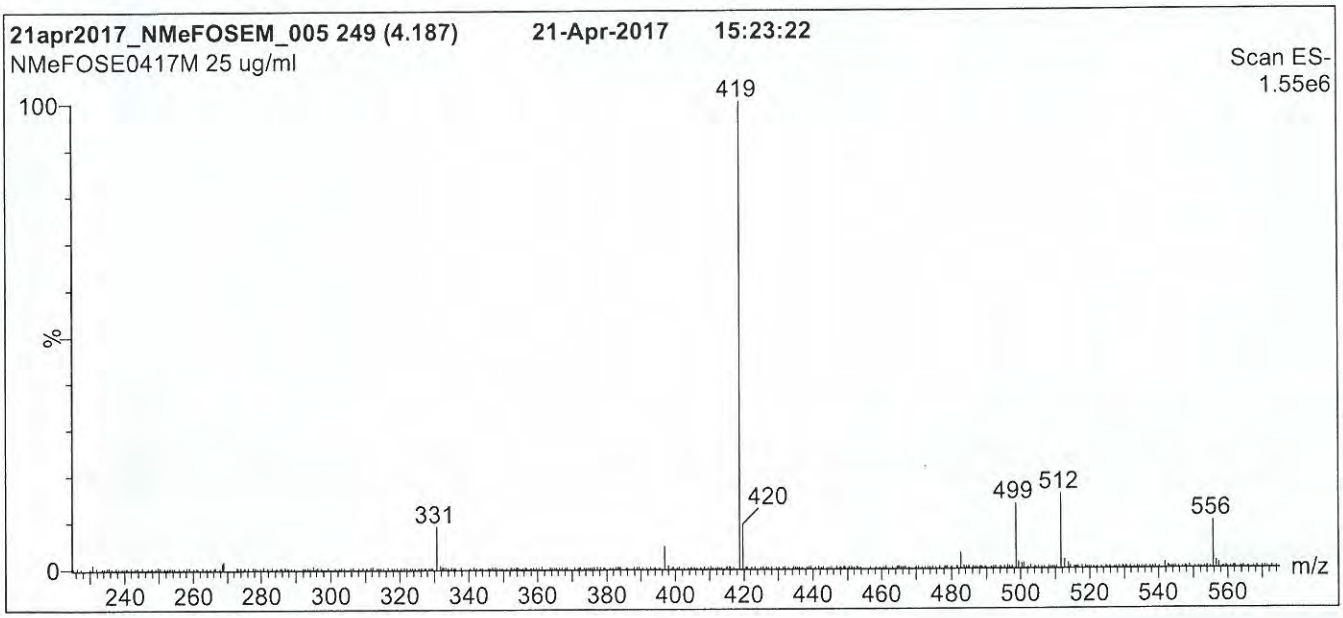
Chromatographic Conditions:

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)

1712034

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% MeOH / 40% H_2O
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

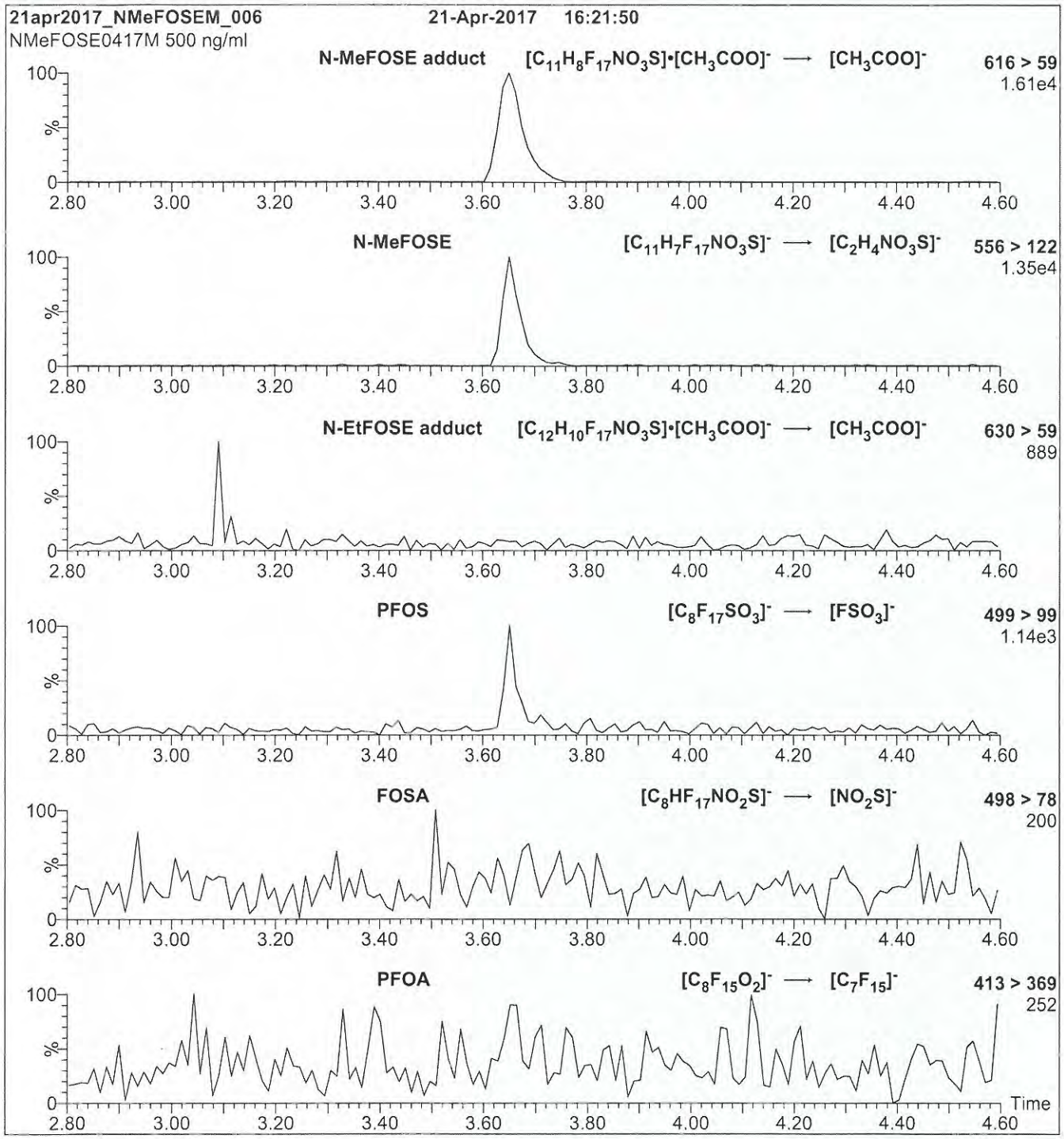
MS Parameters

Experiment: Full Scan (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

1701970

Figure 3: **N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml N-MeFOSE-M)

Mobile phase: Isocratic 80% MeOH / 20% H_2O

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 35

Analytical Standard Record

Vista Analytical Laboratory

17L2332

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
17L2301	13C2-FOUEA	23-Dec-17	** Vendor **	14-Nov-19	1
17L2302	13C3-PFHxS	23-Dec-17	** Vendor **	05-Jul-22	1.06
17L2303	13C4-PFOS	23-Dec-17	** Vendor **	17-Oct-22	1.05
17L2304	13C7-PFUdA	23-Dec-17	** Vendor **	13-Jul-22	1
17L2305	13C5-PFHxA	23-Dec-17	** Vendor **	17-Oct-22	1
17L2306	13C6-PFDA	23-Dec-17	** Vendor **	17-Oct-22	1
17L2307	13C8-PFOA	23-Dec-17	** Vendor **	05-Jul-22	1.02
17L2308	13C4-PFBA	23-Dec-17	** Vendor **	12-Apr-22	1
17L2309	13C9-PFNA	23-Dec-17	** Vendor **	23-May-22	1

Description:	PFC-RS	Expires:	23-Dec-19
Standard Type:	Reagent	Prepared:	23-Dec-17
Solvent:	MeOH	Prepared By:	Isaac N. Johnson
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	23-Dec-17 12:26 by INJ

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

17L2301

WELLINGTON LABORATORIES

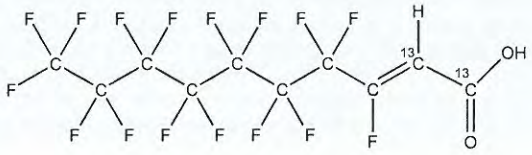
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MFOUEA
COMPOUND: 2H-Perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid

LOT NUMBER: MFOUEA1117

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_2F_{16}O_2$	**MOLECULAR WEIGHT:**	460.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	11/14/2019		
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.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-[1,2-$^{13}C_2$]-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: _____ **Date:** 11/15/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2301

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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).

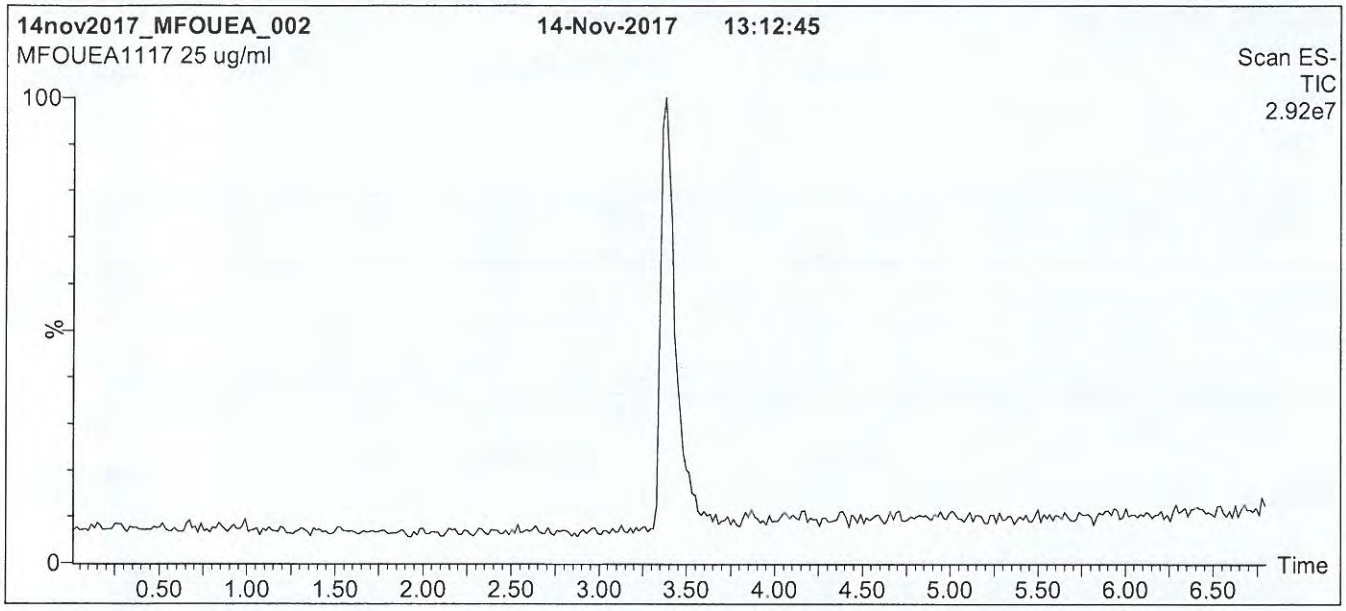
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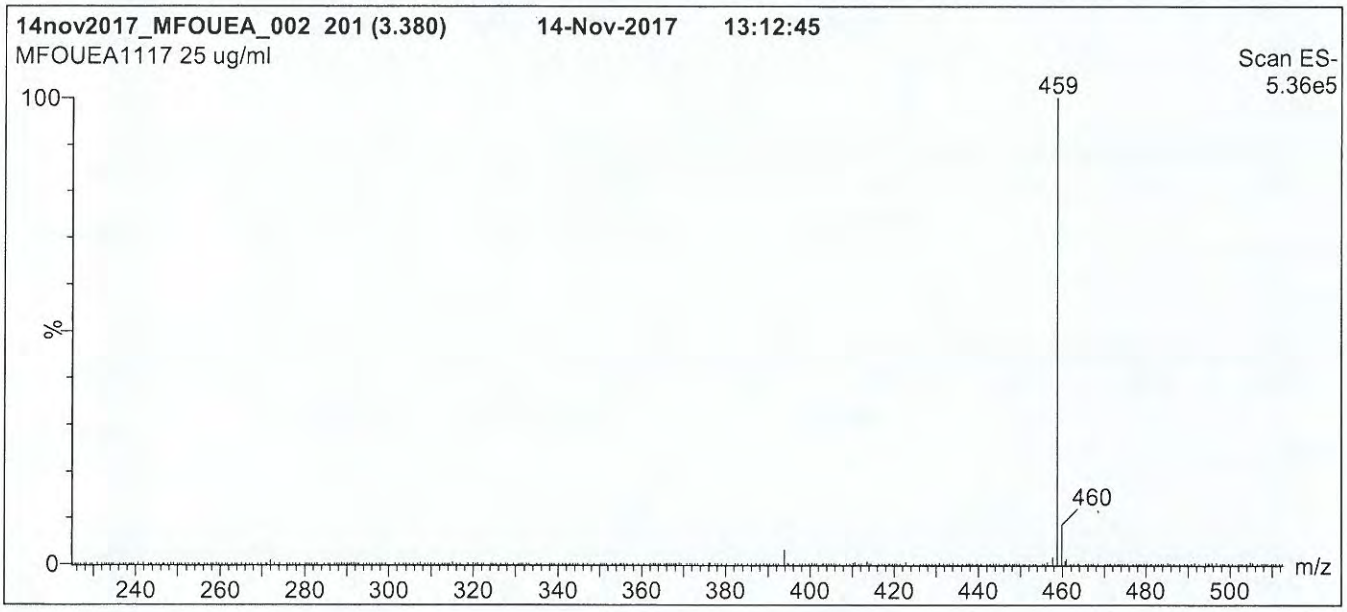
ANAB ACCREDITED

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17L2301

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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 µl/min

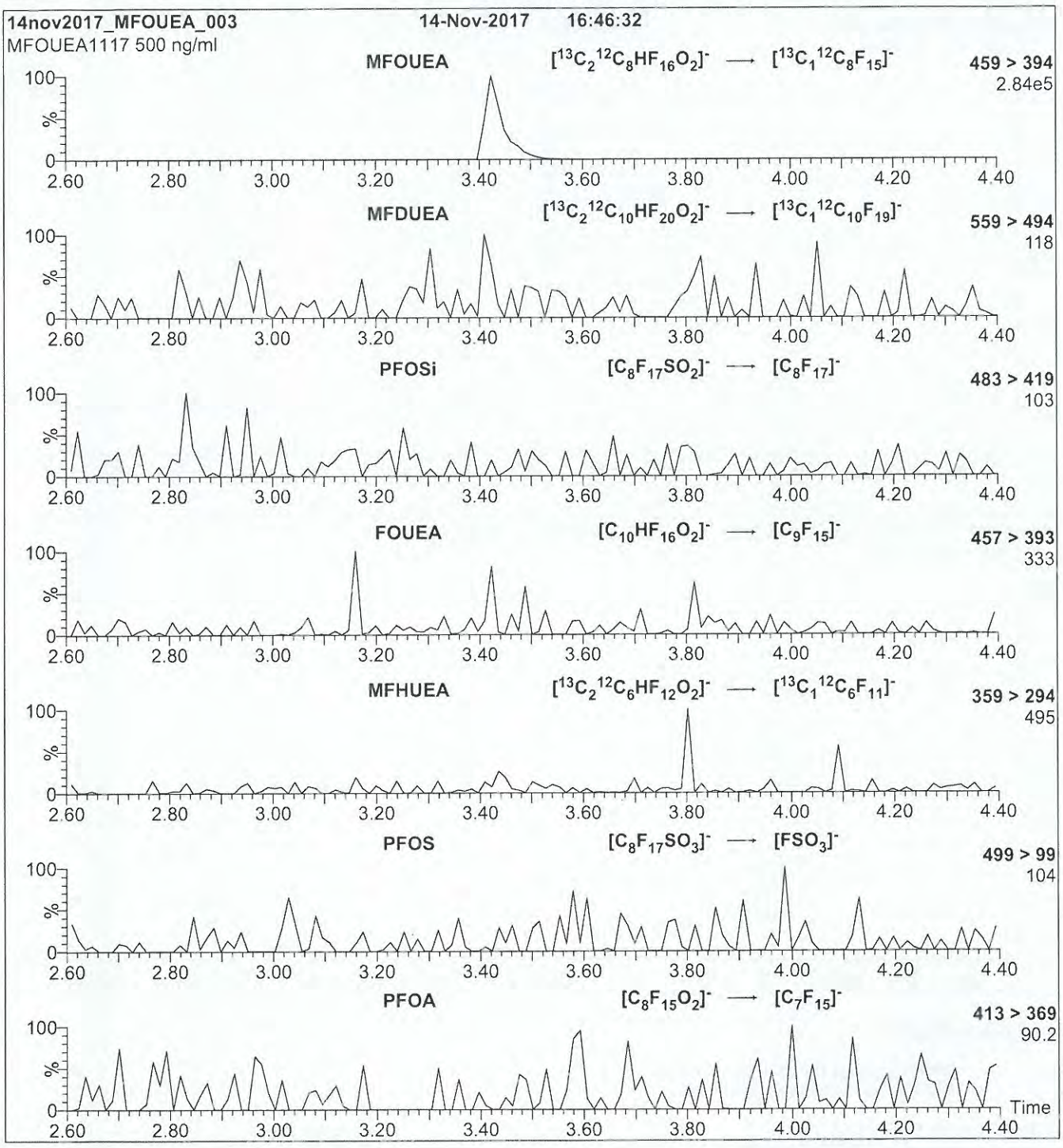
MS Parameters

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

17L2301

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 21

17L2302

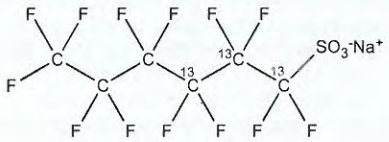
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFHxS **LOT NUMBER:** M3PFHxS0717

COMPOUND: Sodium perfluoro-1-[1,2,3-$^{13}C_3$]hexanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3F_{13}SO_3Na$	**MOLECULAR WEIGHT:**	425.07
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.3 ± 2.4 µg/ml (M3PFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3\text{-}^{13}C_3$)
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:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2302

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

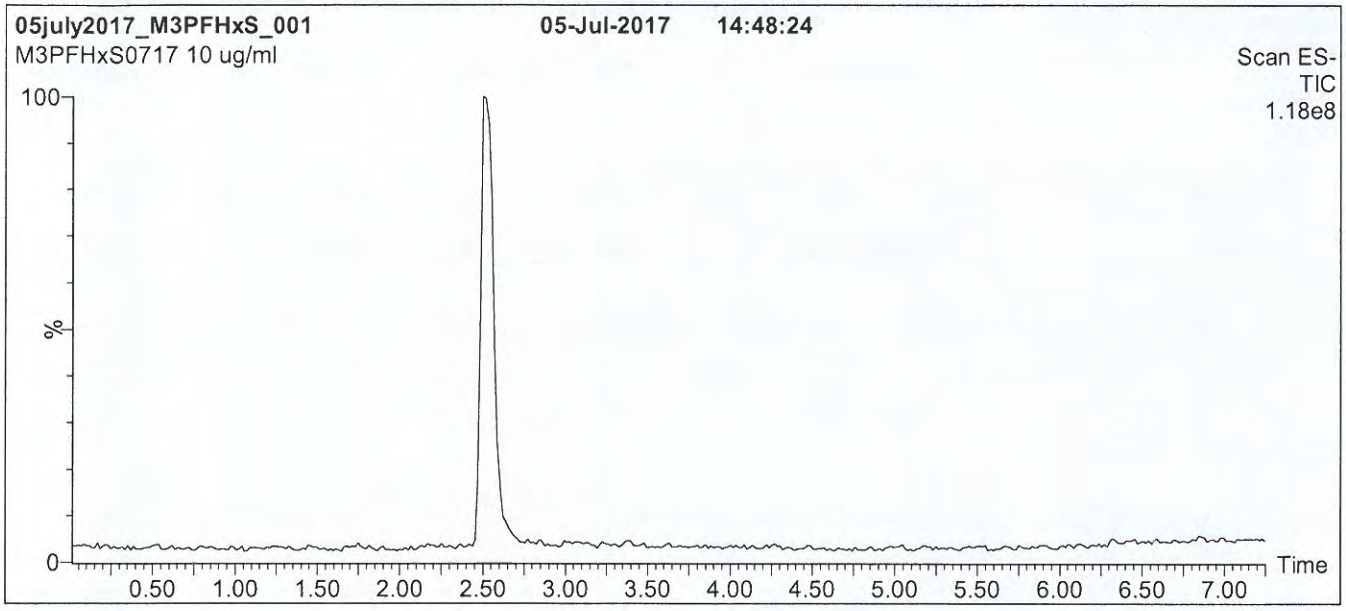
CALA

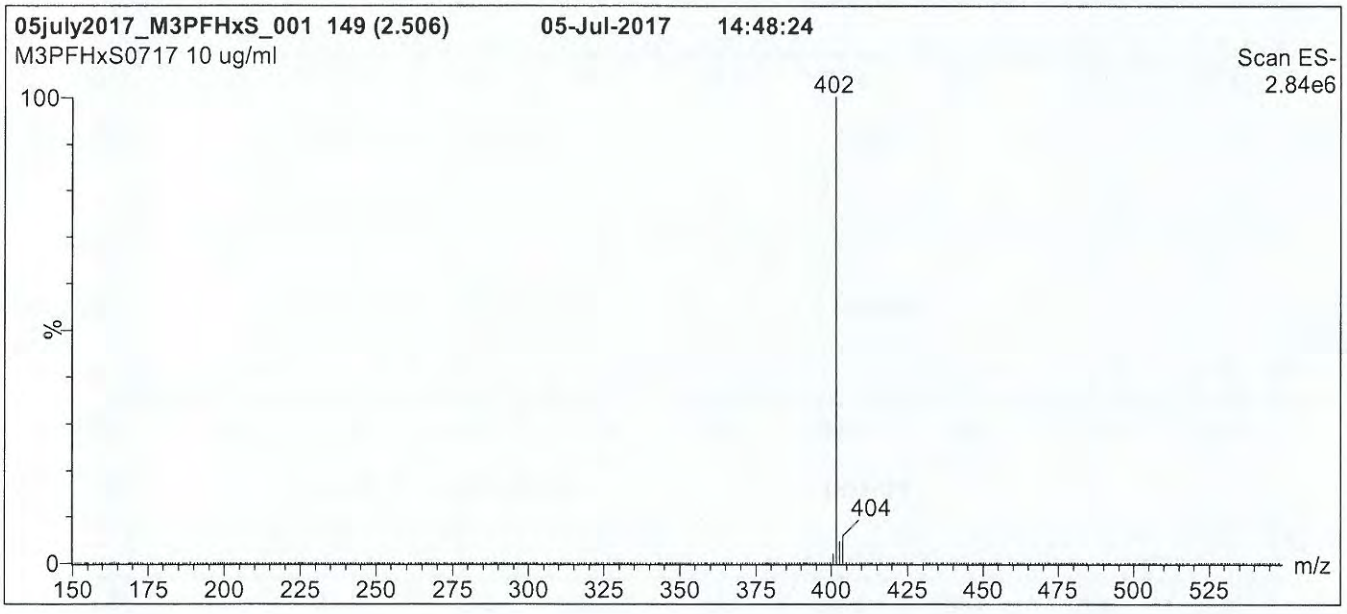
ANAB ACCREDITED

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17L2302

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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 µl/min

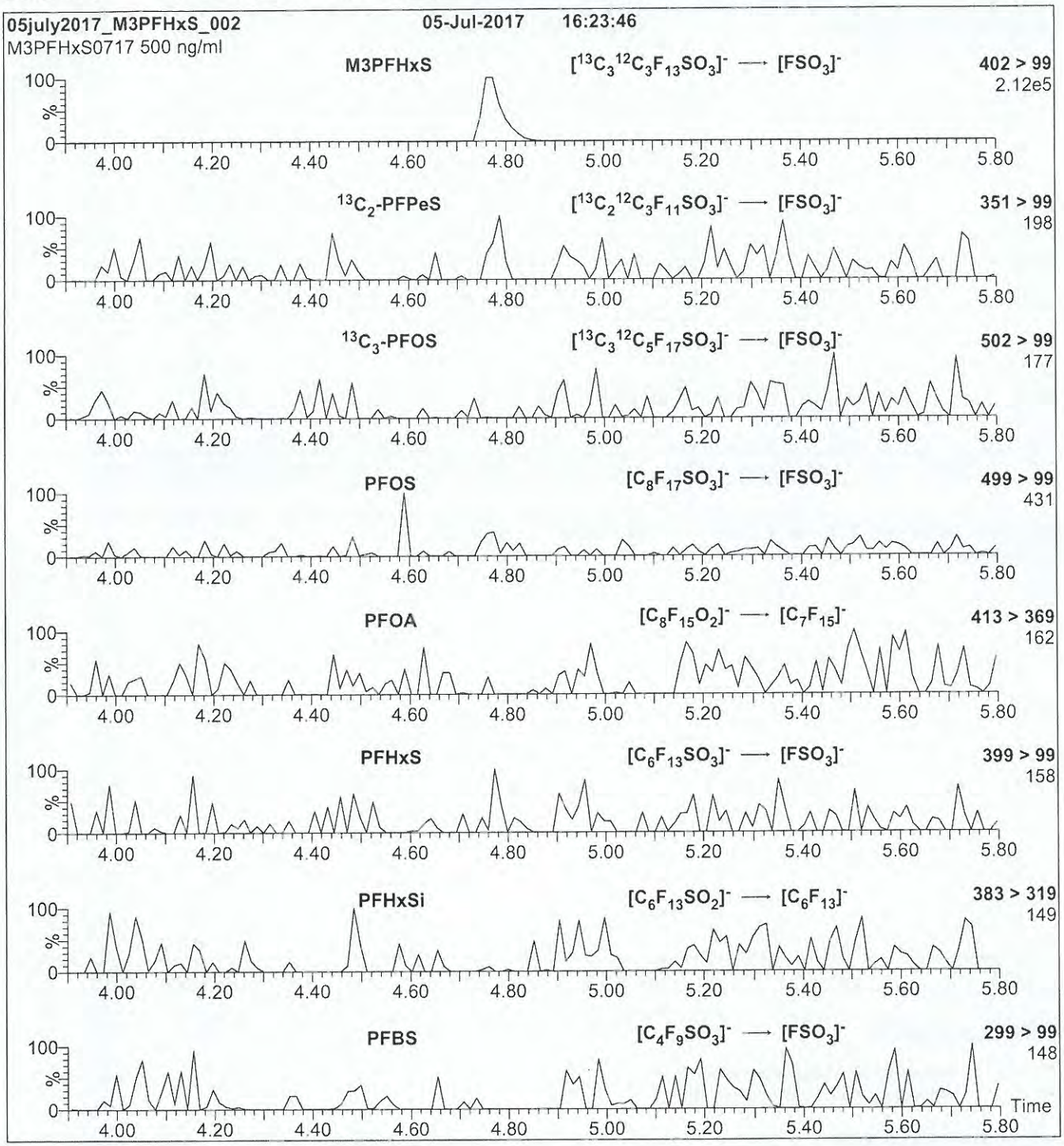
MS Parameters

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

17L2302

Figure 2: **M3PFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3PFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 30

17L2303

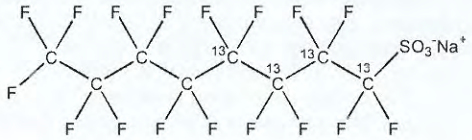
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS1017

COMPOUND: Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	526.08
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (MPFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4\text{-}^{13}C_4$)
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 ~ 0.4% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2303

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,...x_n on which it depends is:

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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 ±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:

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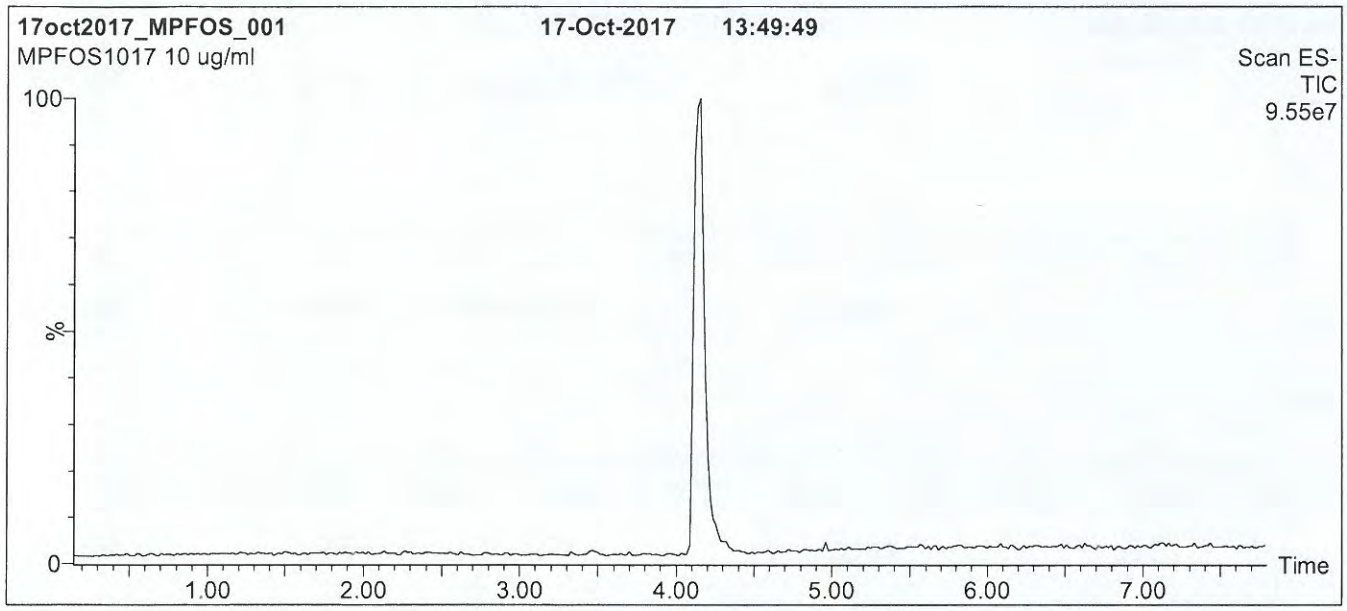
CALA

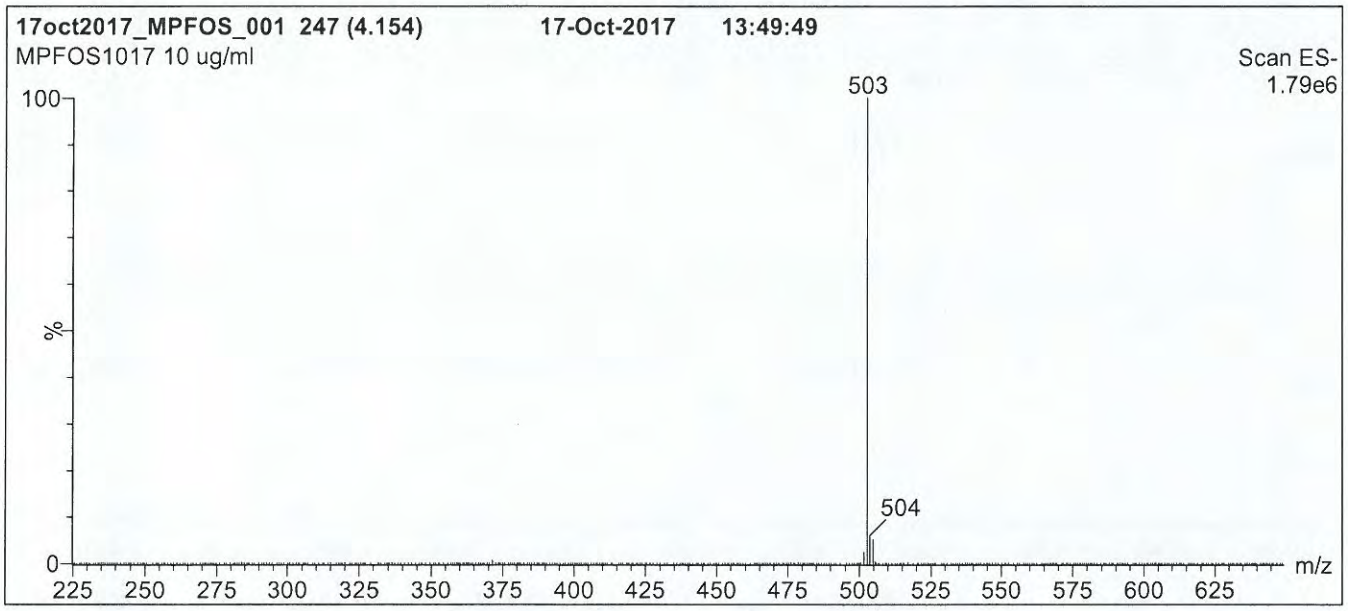
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1712303

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

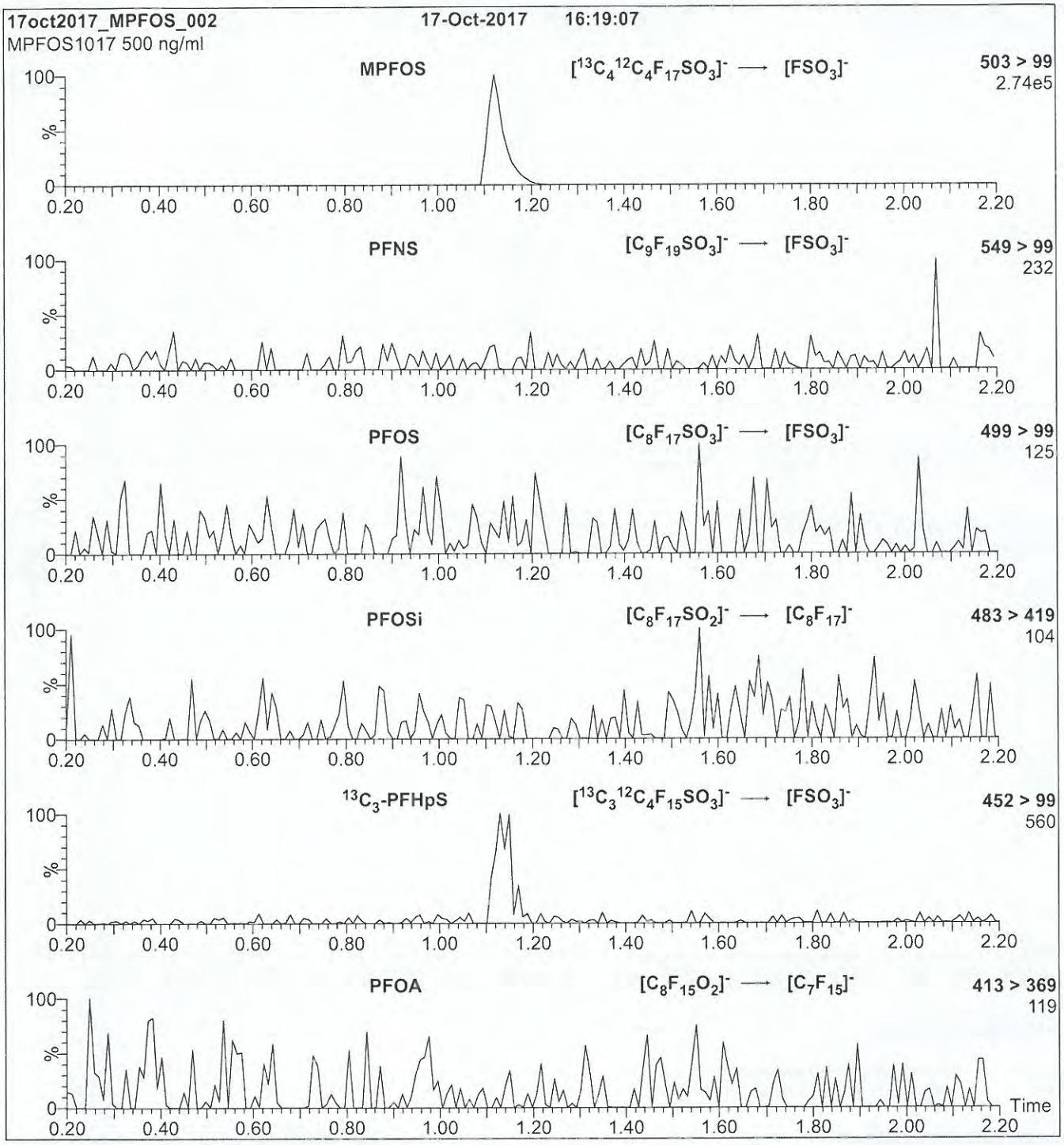
MS Parameters

Experiment: 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

17L2303

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 µl/min

MS Parameters

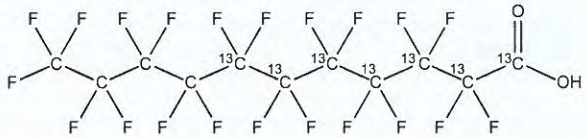
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 40

1712304

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M7PFUdA	**LOT NUMBER:**	M7PFUdA0717
COMPOUND:	Perfluoro-n-[1,2,3,4,5,6,7-$^{13}C_7$]undecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_7{}^{12}C_4HF_{21}O_2$	**MOLECULAR WEIGHT:**	571.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C
LAST TESTED: (mm/dd/yyyy)	07/13/2017		(1,2,3,4,5,6,7-$^{13}C_7$)
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: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2304

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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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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:

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:

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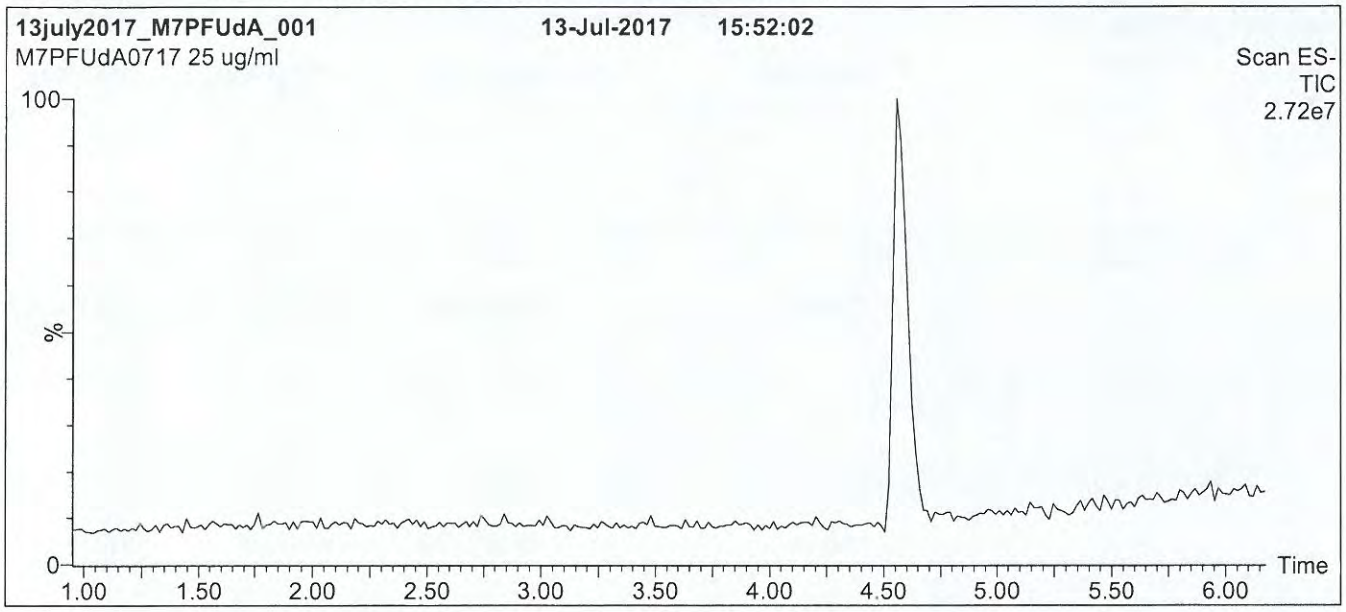
CALA

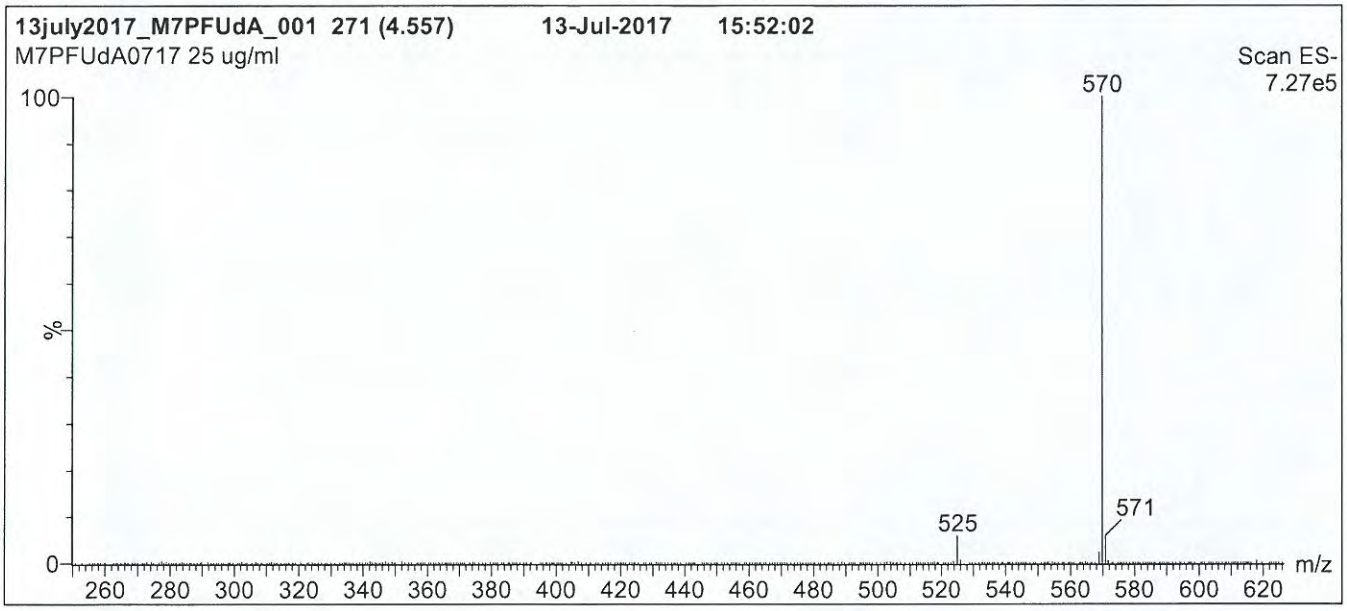
ANAB ACCREDITED

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1712304

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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

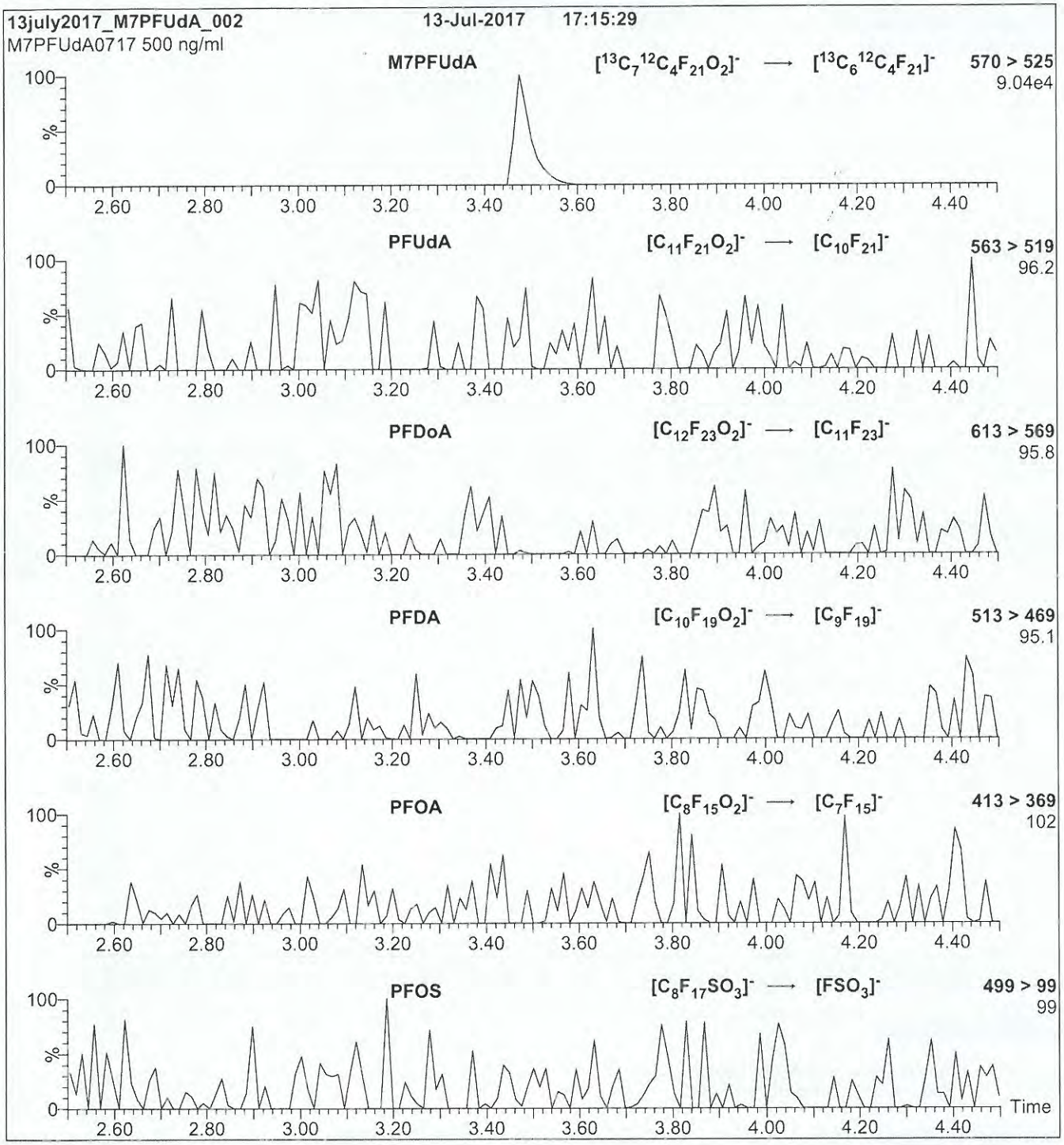
MS Parameters

Experiment: 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

1712304

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 11

17L2305

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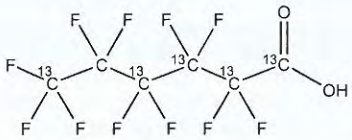
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFHxA
COMPOUND: Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid

LOT NUMBER: M5PFHxA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_1HF_{11}O_2$	**MOLECULAR WEIGHT:**	319.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4,6-$^{13}C_5$)
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: _____ **Date:** 10/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2305

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:

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

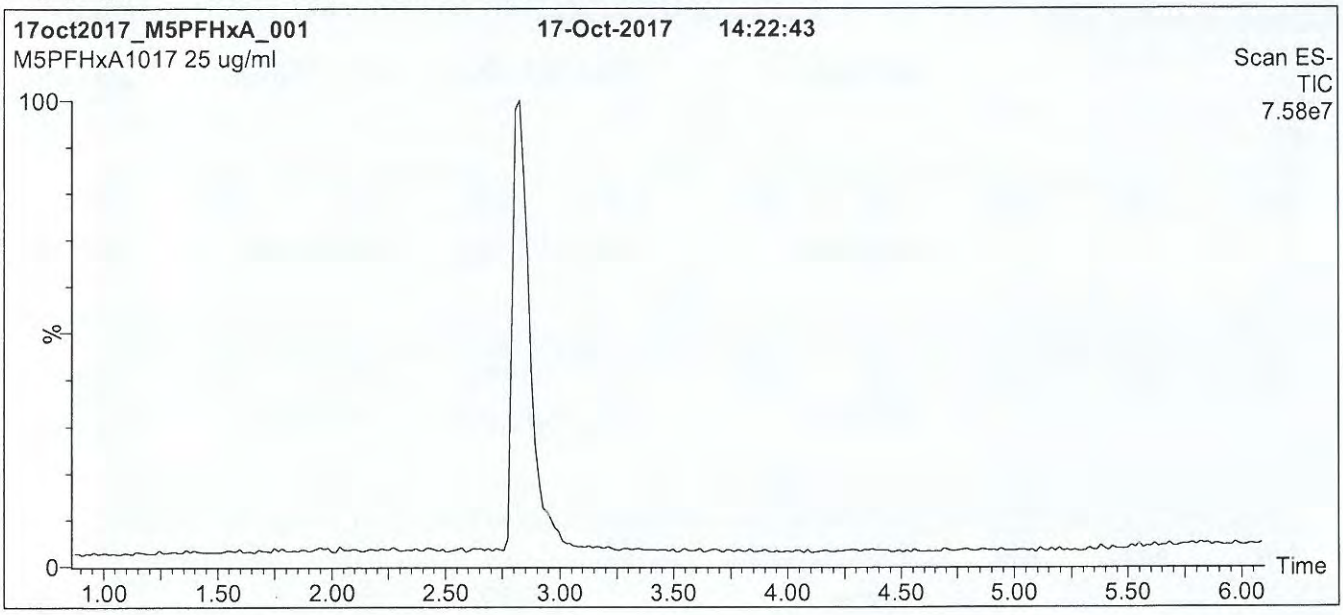


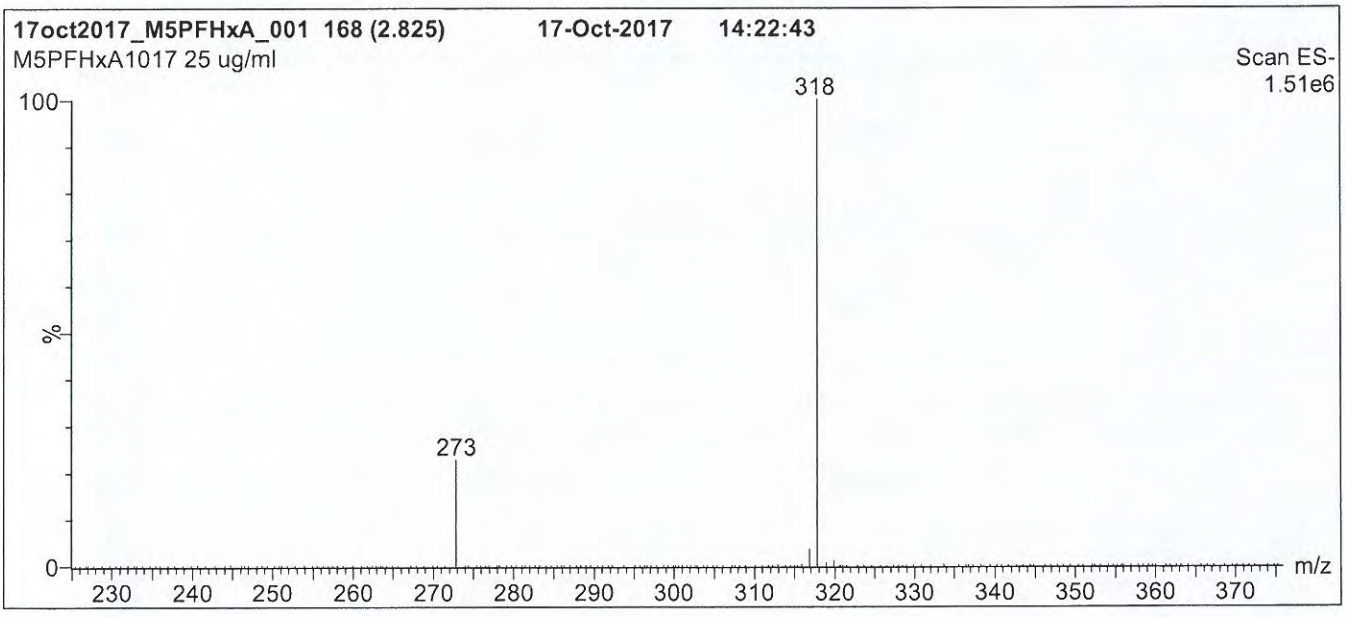


For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

17L2305

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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

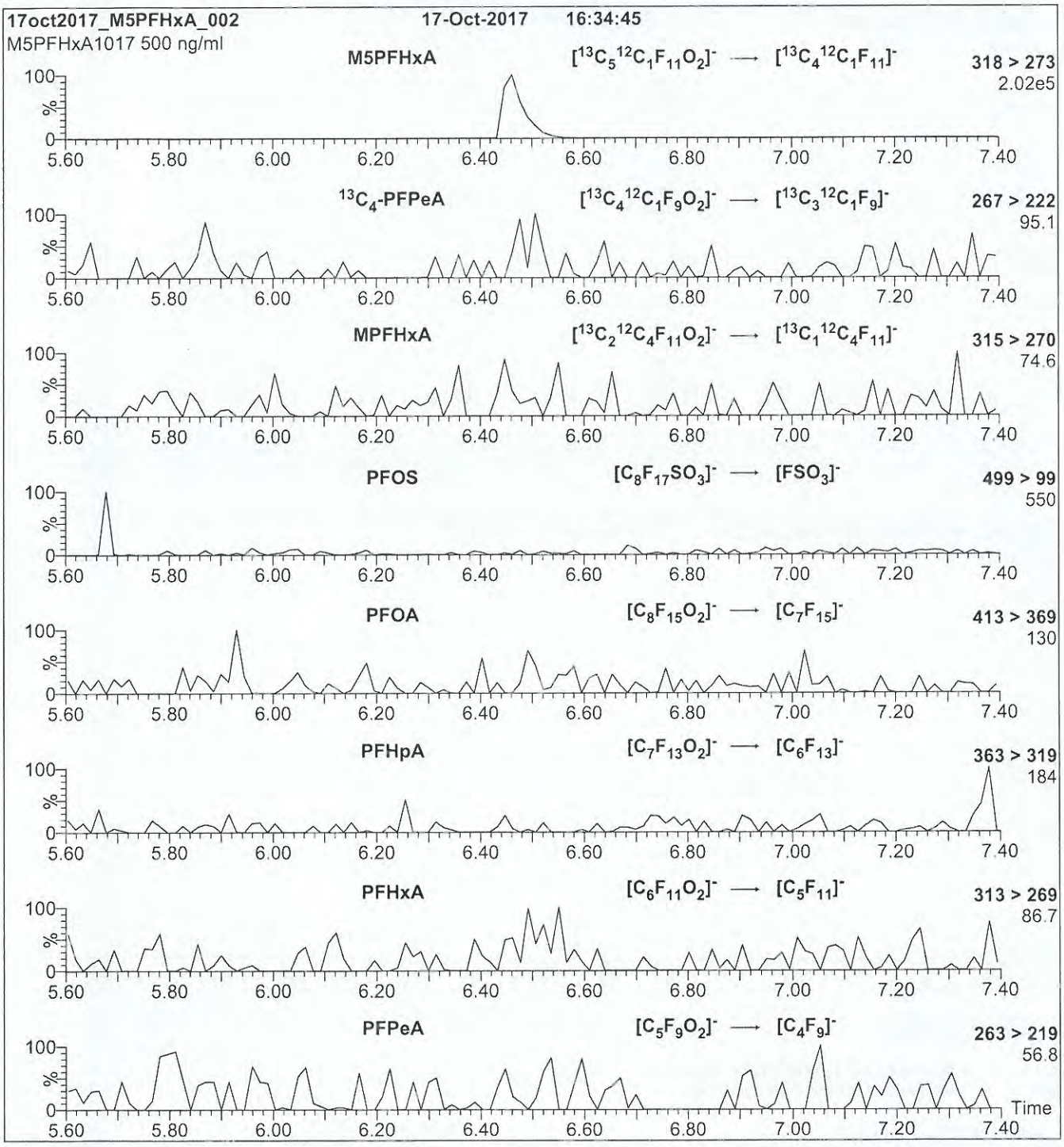
MS Parameters

Experiment: 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

17L2305

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 9

17L2306

WELLINGTON LABORATORIES

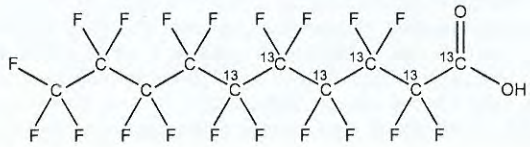
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M6PFDA
COMPOUND: Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid

LOT NUMBER: M6PFDA1017

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_6{}^{12}C_4HF_{19}O_2$	**MOLECULAR WEIGHT:**	520.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4,5,6-$^{13}C_6$)
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: _____ **Date:** 10/20/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1712306

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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HOMOGENEITY:

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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:

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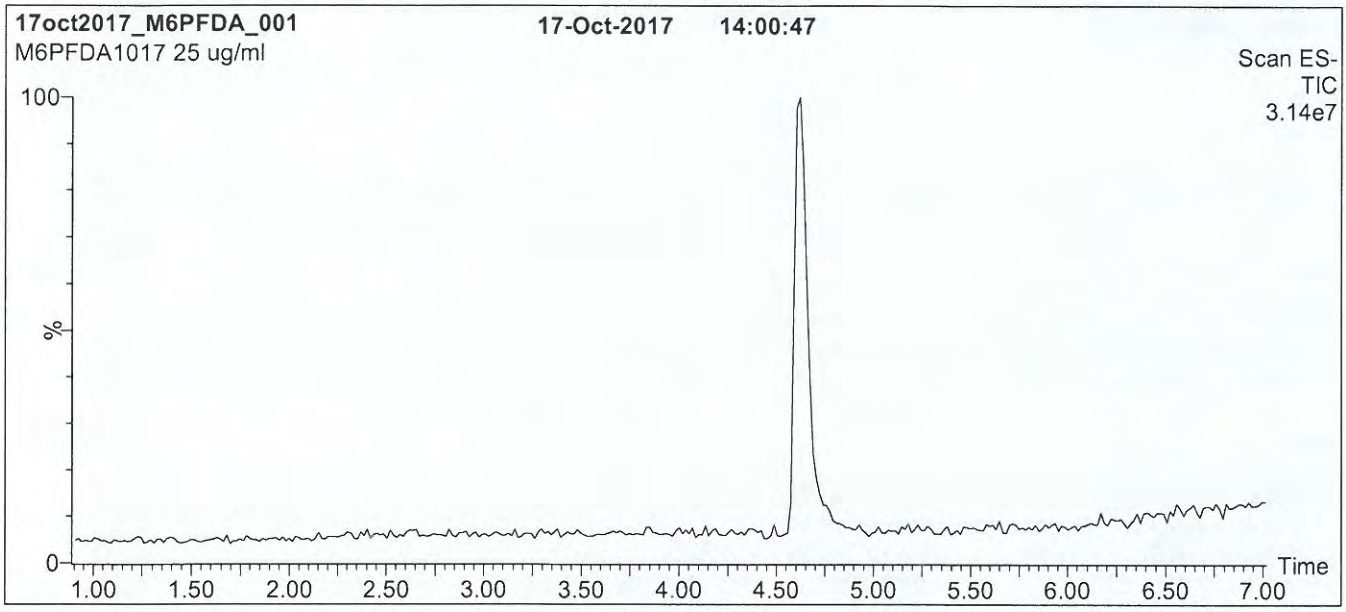
CALA

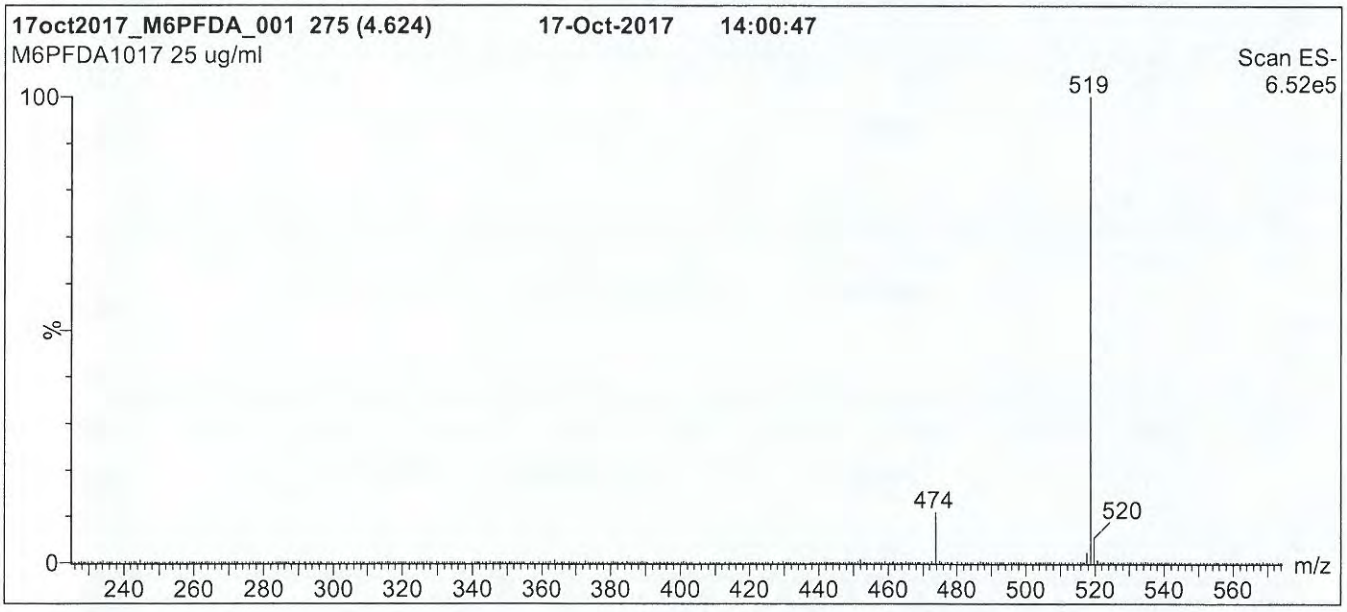
ANAB ACCREDITED

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

17L2306

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc 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

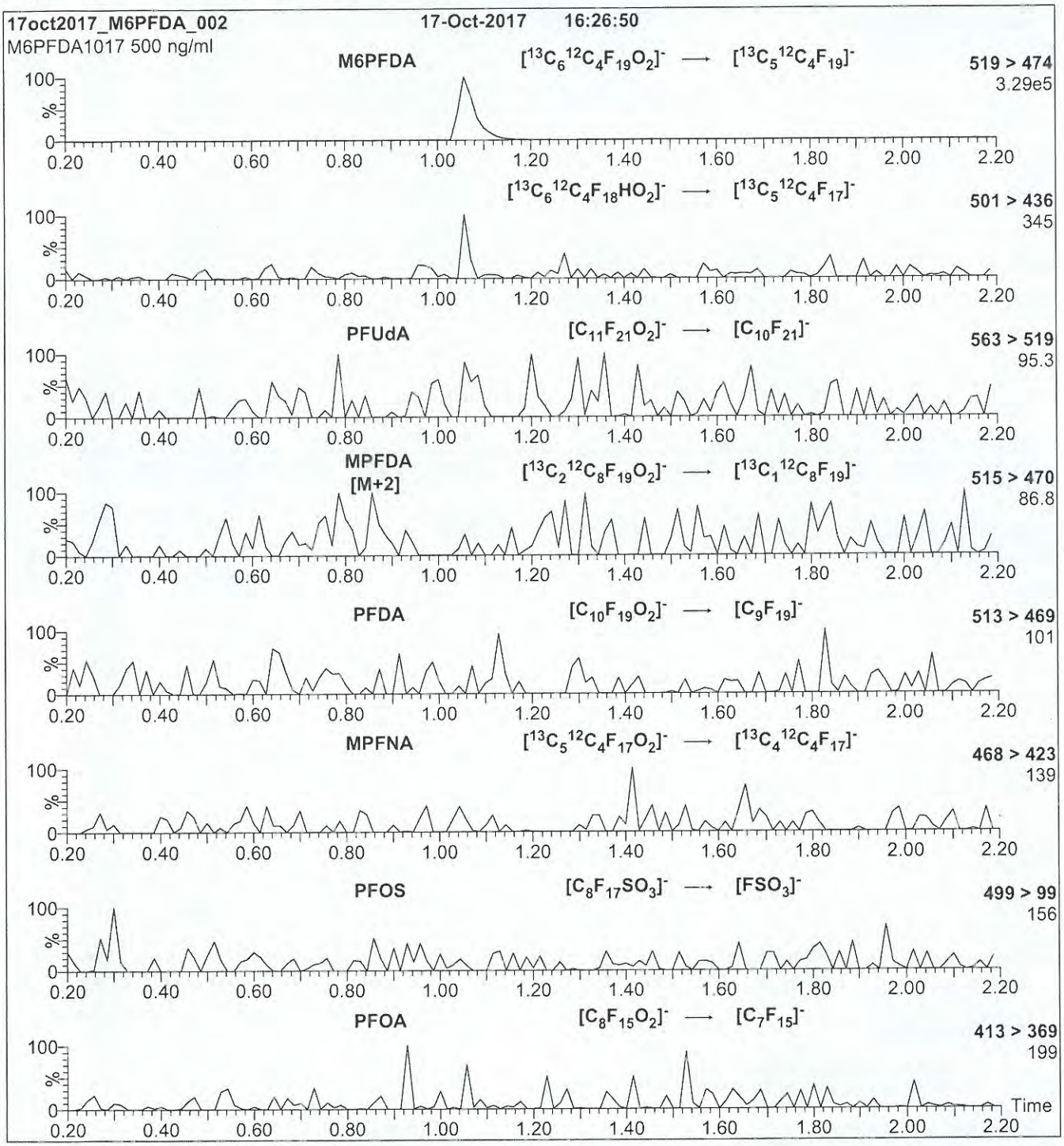
MS Parameters

Experiment: 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

17L2306

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% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

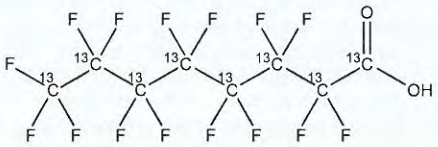
Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 13

17L2307

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M8PFOA	**LOT NUMBER:**	M8PFOA0717
COMPOUND:	Perfluoro-n-[$^{13}C_8$]octanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_8HF_{15}O_2$	**MOLECULAR WEIGHT:**	422.01
CONCENTRATION:	49 ± 2.45 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	97.9% (M8PFOA) 2.1% (MPFOA [M+4])	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
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: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2307

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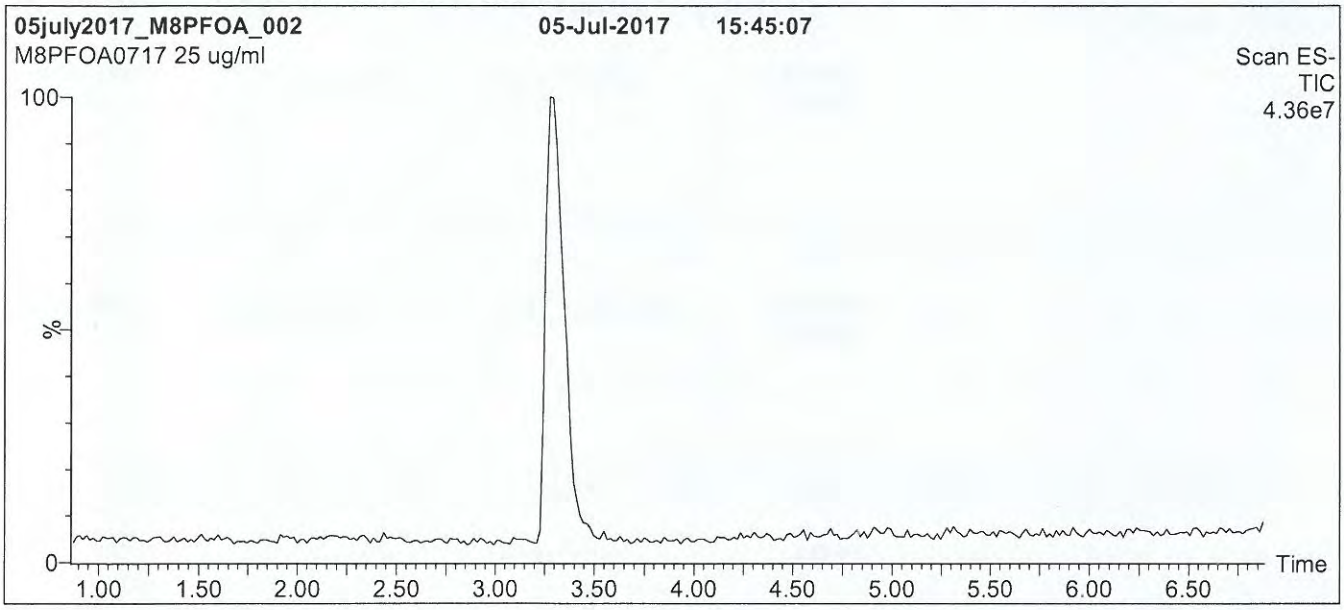
CALA

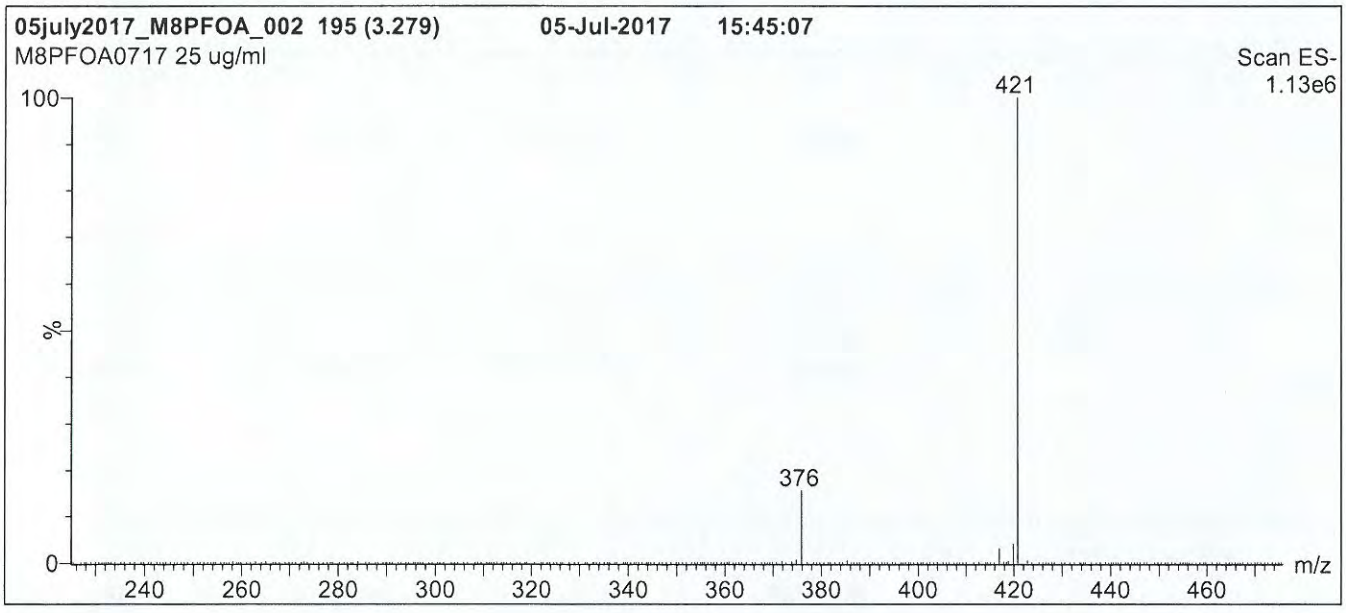
ANAB ACCREDITED

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17L2307

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc 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 µl/min

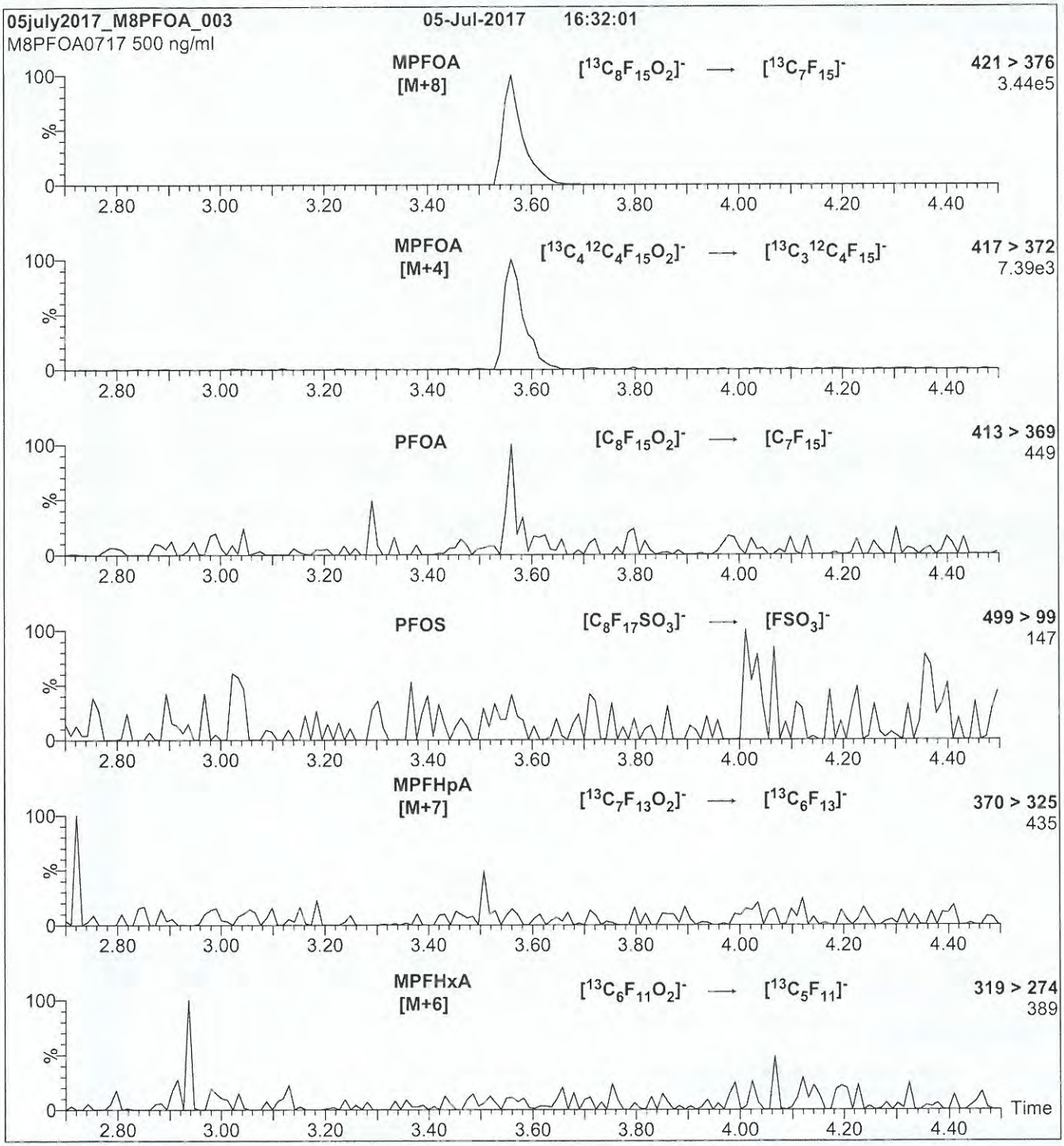
MS Parameters

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

17L2307

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3
Collision Energy (eV) = 10

17L2308

WELLINGTON LABORATORIES

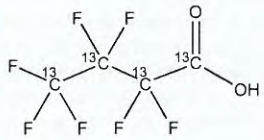
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFBA
COMPOUND: Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid

LOT NUMBER: MPFBA0417

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_4HF_7O_2$	**MOLECULAR WEIGHT:**	218.01
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4$-$^{13}C_4$)
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: _____ **Date:** 04/20/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

17L2308

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 $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 ±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).

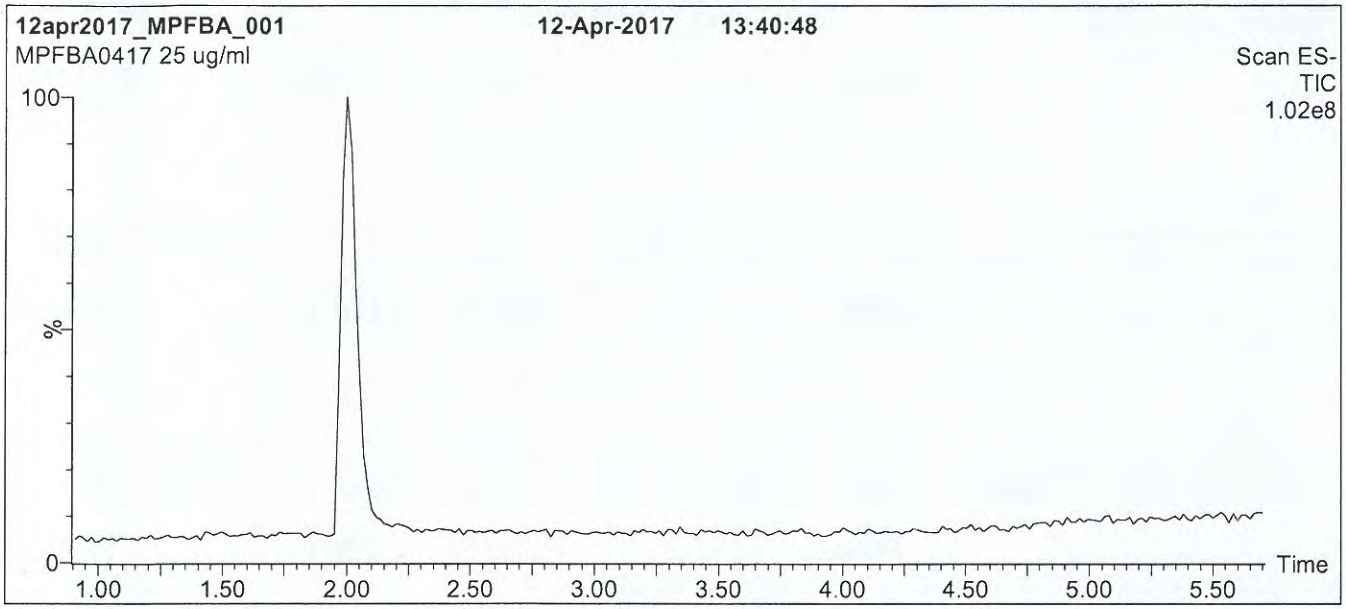
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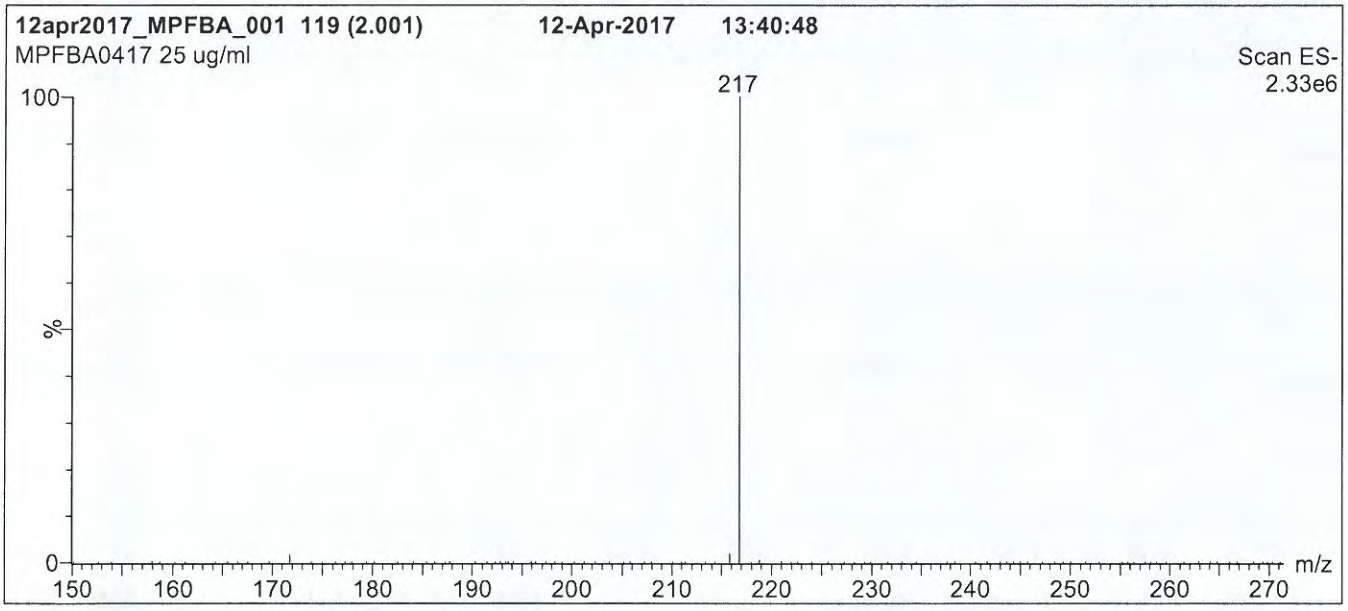
ANAB ACCREDITED

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

17L2308

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc 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

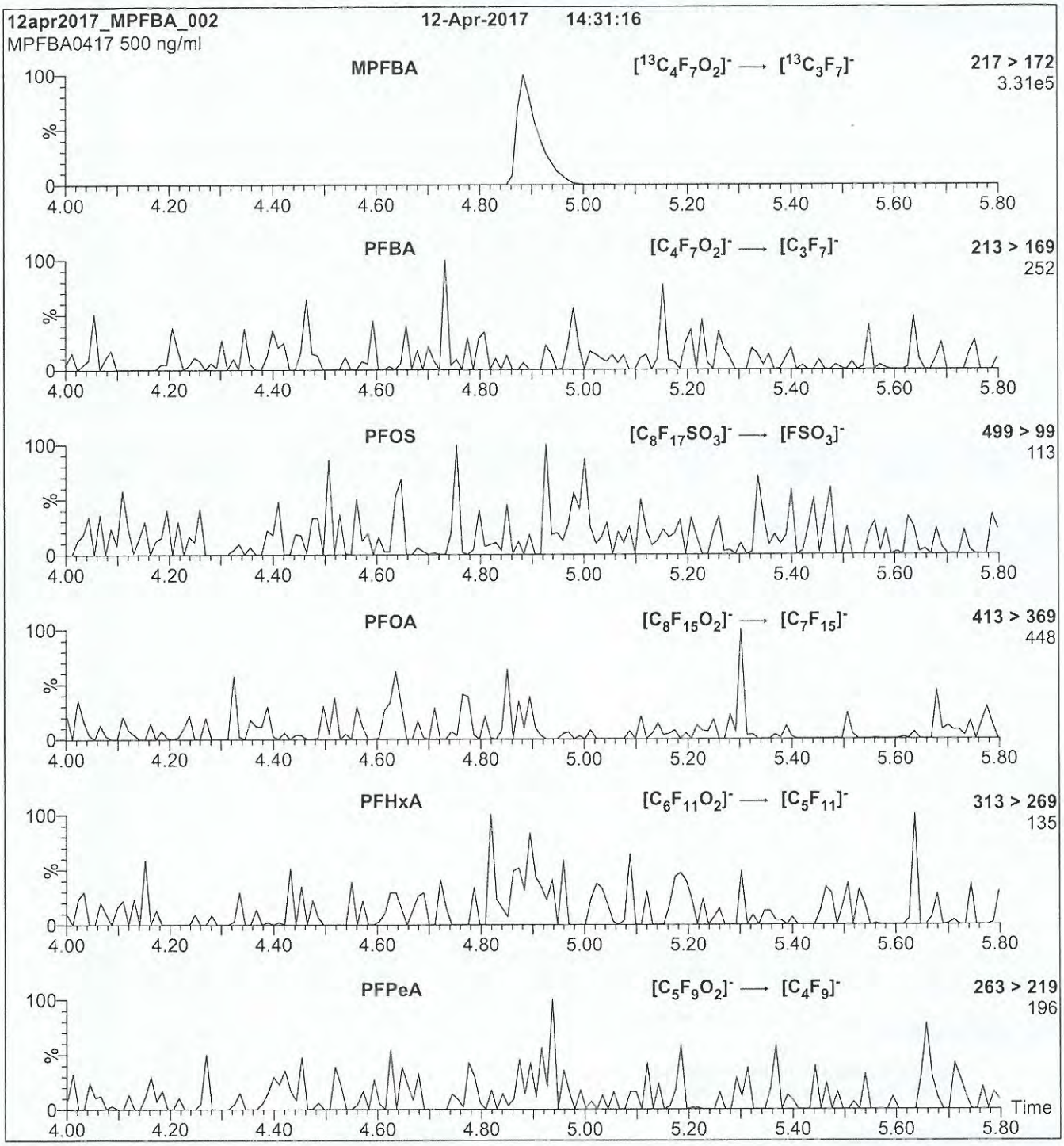
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

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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 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 10

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WELLINGTON LABORATORIES

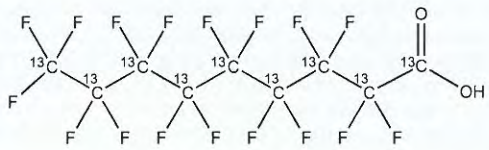
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M9PFNA
COMPOUND: Perfluoro-n-[$^{13}C_9$]nonanoic acid

LOT NUMBER: M9PFNA0517

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_9HF_{17}O_2$	**MOLECULAR WEIGHT:**	473.01
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_9$)
LAST TESTED: (mm/dd/yyyy)	05/23/2017		
EXPIRY DATE: (mm/dd/yyyy)	05/23/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

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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 $^{13}C_5{}^{12}C_4HF_{17}O_2$ (MPFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/25/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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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where x is expressed as a relative standard uncertainty of the individual parameter.

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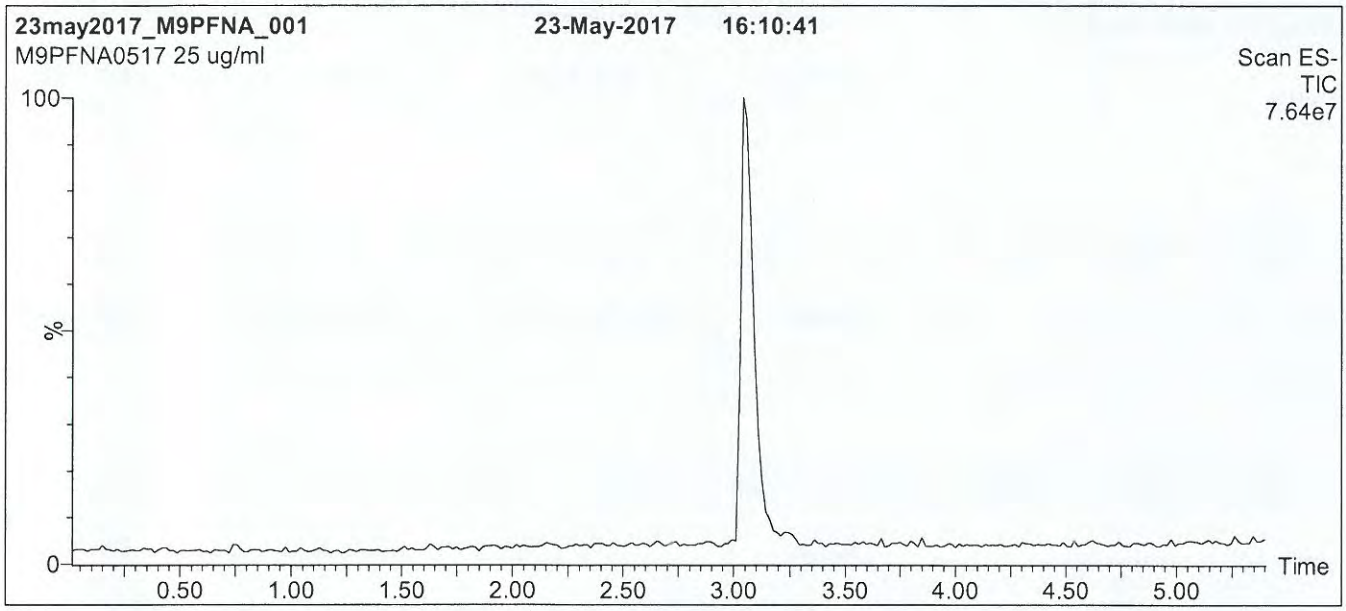
CALA

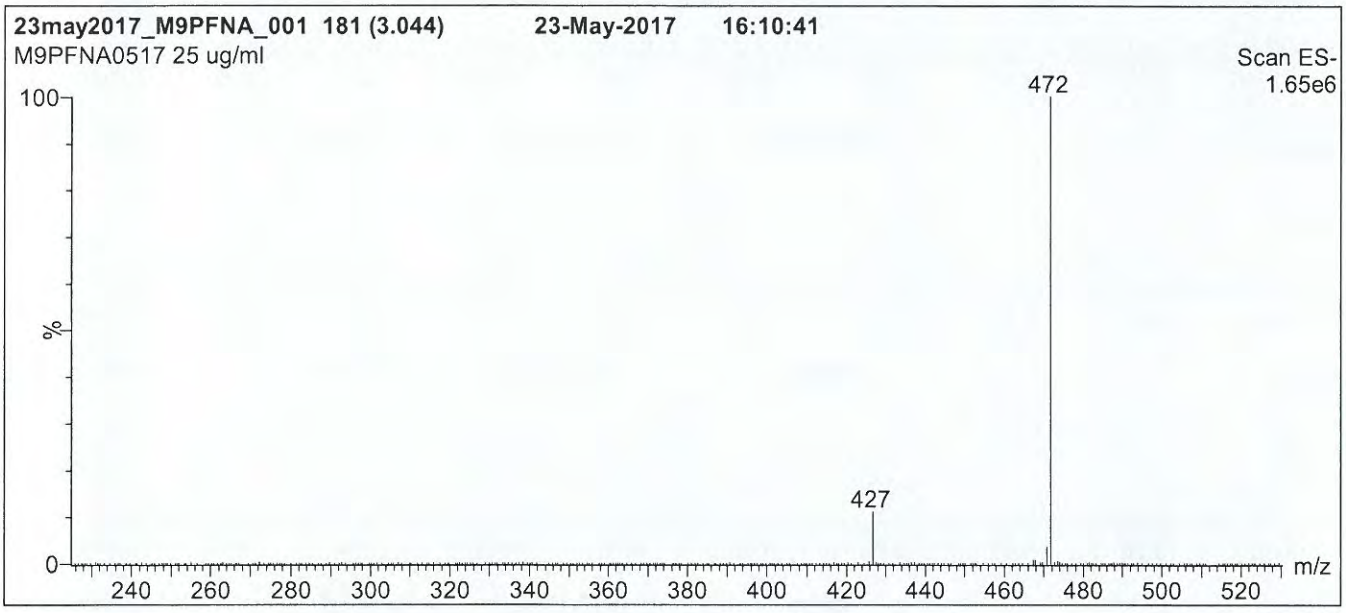
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17L2309

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 RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc 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

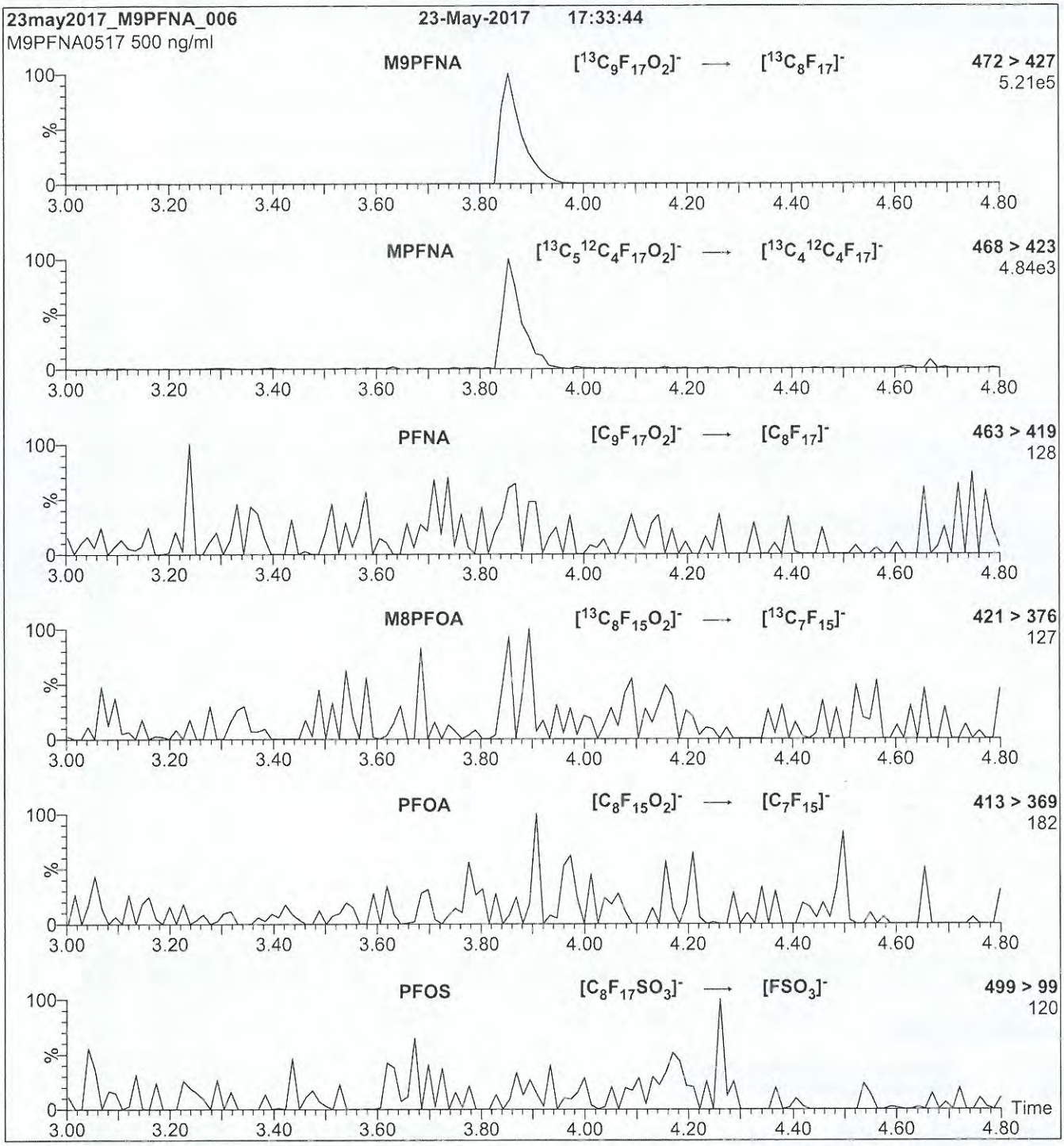
MS Parameters

Experiment: Full Scan (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

17L2309

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 11